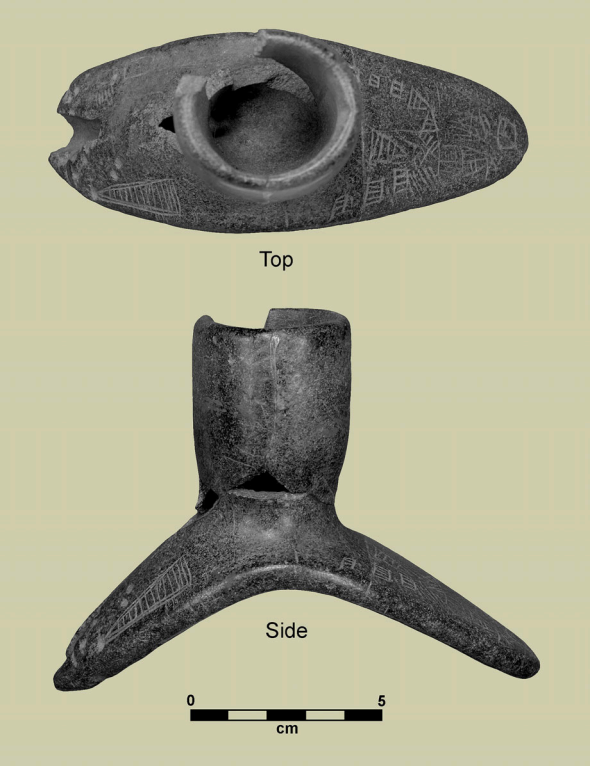
# North Carolina Archaeology

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organized and compiled by Joseph M. Herbert

# INTRODUCTION TO "PREHISTORIC POTTERY: SERIES AND SEQUENCE ON THE CAROLINA COAST"

**by**
**Joseph M. Herbert**

In the summer of 1954 William G. Haag, then a relatively new faculty member in the Department of Geology and Anthropology at Louisiana State University, launched one of the first exploratory archaeological expeditions along the coast of North Carolina. Bill's work with William S. Webb in the WPA and TVA archaeology programs and his graduate studies with James B. Griffin at the University of Michigan had developed in him a passion for prehistory and a penchant for scientific inquiry. Public interest in the archaeological research of the lost colony and Fort Raleigh was running high. When the U.S. Navy began a research project to study the natural and cultural history of the North Carolina coast, they hired Bill for the task of discovering what he could of the remains of the misbegotten Roanoke voyagers and the Indians among whom they settled. Taking the assignment to heart, Haag requisitioned a post-war jeep and a graduate-student assistant, and began a survey of coastal sites that would take the better part of four summers. Beginning with Fort Raleigh, at the present site of the Elizabethan Gardens in Manteo, they explored sites on Albemarle Sound as far west as Chowan River, east to Currituck County, and down the Outer Banks to the Cape Creek or Croatan site on Hatteras Island. Data collected those first two summers (1954–1955) were the basis of monograph titled *The Archaeology of Coastal North Carolina.* This eloquently written report illustrates Bill's affinity for describing the natural environment of coastal Carolina and his understanding of its prehistoric past. His descriptions of the results of testing and surveying sites along the northern coast of North Carolina provided the foundation for the prehistoric ceramic sequence still in use today.

Collections were also made during the summers of 1956 and 1957 at sites on Pamlico, Neuse, New, and Cape Fear rivers. Before he was satisfied, Bill and his assistant had surface-collected 79 sites in coastal North Carolina, 73 sites in South Carolina, and 18 in Georgia. Back in the laboratory with artifacts spread across every available tabletop, the task of making sense of those remains must have seemed daunting; however, as fate would have it, the job was cut short. Wanting to do Bill a favor and to impress the Navy with the great research Bill was doing, a university administrator invited a visiting admiral to visit the archaeology facility. After patiently touring the lab the admiral turned to Bill and said, "Do you mean to tell me that the Navy is paying for all these rocks? Well, not any more!" Sure enough, it wasn't long before funding for the project was withdrawn, effectively eliminating the possibility for further analysis and publication.

Archaeology on the Carolina coast (and Federal policy regarding the funding of archaeological research) has come a long way since that first jeep survey. But our imaginations are still fired by traces of ancient cultures amidst an environment unique in its beauty and resources. The challenges of unraveling the tangled evidence of prehistoric Native American peoples are no less daunting, but the way has been substantially smoothed by the hard work of previous researchers. In the spirit of this quest and in celebration of Bill Haag's initial explorations, a symposium was organized at the Fifty-fifth Annual Meeting of the Southeastern Archaeological Conference in Greenville, South Carolina. Bill was not able to attend the symposium, but he welcomed Bennie Keel into his home for a videotaped interview. Thanks to Bill and Bennie, the tape was aired at the 1998 conference along with a wonderful assortment of slides that Bill took during his survey. Needless to say, it was very warmly received. The symposium papers reflect some of the most important current research of coastal North Carolina prehistory. Six of these papers are published as articles in this volume of *North Carolina Archaeology,* as a tribute to the pioneering efforts of William G. Haag. The remainder will appear in the next volume.

The articles that appear here are arranged roughly in order of the age of their archaeological subjects, from early to late, and geographically from south to north. Erica Sanborn and Lea Abbott begin with a description of the Riegelwood site in Columbus County and pottery found in contexts that produced several surprisingly early radiocarbon dates. Mark Mathis presents the data that have led him to call for retiring the shell-tempered Oak Island series and describes the ramifications of this proposed retirement. Joe Herbert reviews pottery taxonomies for the lower Cape Fear basin and presents several recently obtained thermo-luminescence dates for sand- and clay-tempered sherds. Jeff Irwin, Wayne Boyko, Joe Herbert, and Chad Braley review information about the sand mounds of the southern coast and offer an interpretation of the age and meaning of this cultural development. Adam Marshall provides evidence suggesting that paddle impressions on the interior surfaces of the rims of shell-tempered pottery from the central and northern coast may help to sort White Oak and Colington series wares. John Byrd describes pottery from the Davenport site and attempts to identify the source of variability among several pottery series found at the site. Dane Magoon closes this issue with a discussion of the Chesapeake pipe model and evidence from the Jordan's Landing, Neoheroka Fort, and Croatan sites that suggests the model may require revision.

All of the papers in this issue of *North Carolina Archaeology* were submitted by the editor for formal peer review.

# EARLY CERAMIC TRADITIONS ON THE SOUTHERN COASTAL PLAIN OF NORTH CAROLINA: RADIOCARBON DATA FROM 31CB114

by
**Erica E. Sanborn and Lawrence E. Abbott, Jr.**

## Abstract

31CB114 is a Middle Archaic through Middle Woodland site in North Carolina's southern Coastal Plain. The ceramics at the site represent a mixture of decorative and technological attributes typically found within the North and South Carolina Coastal Plain. Radiocarbon analysis of charcoal from five features (three prehistorically cleaned crematory pits, one hearth, and one partial vessel) at 31CB114 indicate that they date to the Late Archaic and Early Woodland periods. All contained associated ceramics. These dates indicate that the production of ceramics, with sand and limestone tempering, and cord-marked exterior surface treatments, occurred as much as 1500 years earlier than previously expected in the southern Coastal Plain of North Carolina.

31CB114 is a prehistoric site located on a broad ridgetop south of the Cape Fear River in Columbus County, North Carolina (Figure 1), overlooking a first-order drainage (Abbott et al. 1999; Lautzenheiser et al. 1995, 1997). This site comprises a series of small, short-term, Middle Archaic through Middle Woodland encampments. Radiocarbon dates of five features with associated ceramics indicate that ceramic production in the southern North Carolina Coastal Plain has greater antiquity than previously thought (Abbott et al. 1999). This paper will discuss the results of the ceramic analysis in light of the new radiocarbon data.

## Field Methods

Approximately 1,800 square meters of the site, separated into four areas, were bush-hogged. The plowzone (A horizon) was removed using a box blade on the front of a backhoe, exposing the top of the E horizon. All graded areas were prepared for surface inspection by troweling to expose artifact concentrations and features. The utility of shovel shaving was limited due to the leached nature of the features, a phenomenon also noted by others working in the sandy North Carolina Coastal Plain (Abbott 1993; Cable et al. 1998; Gunn and Wilson 1993; O'Steen 1994). The E horizon at the site was observed as a zone where leaching had removed a large portion of organic materials and minerals from the soil matrix. As a result, features were generally drained of contrasting color and required identification by artifact concentrations. (One exception was an organically stained historic postmold, designated Feature 2). Identification of features at the top of the E horizon was accomplished by identifying and mapping the distribution of artifact concentrations.

Subtle differences in color and texture noted during excavation guided the definition of features below the surface. In addition, a

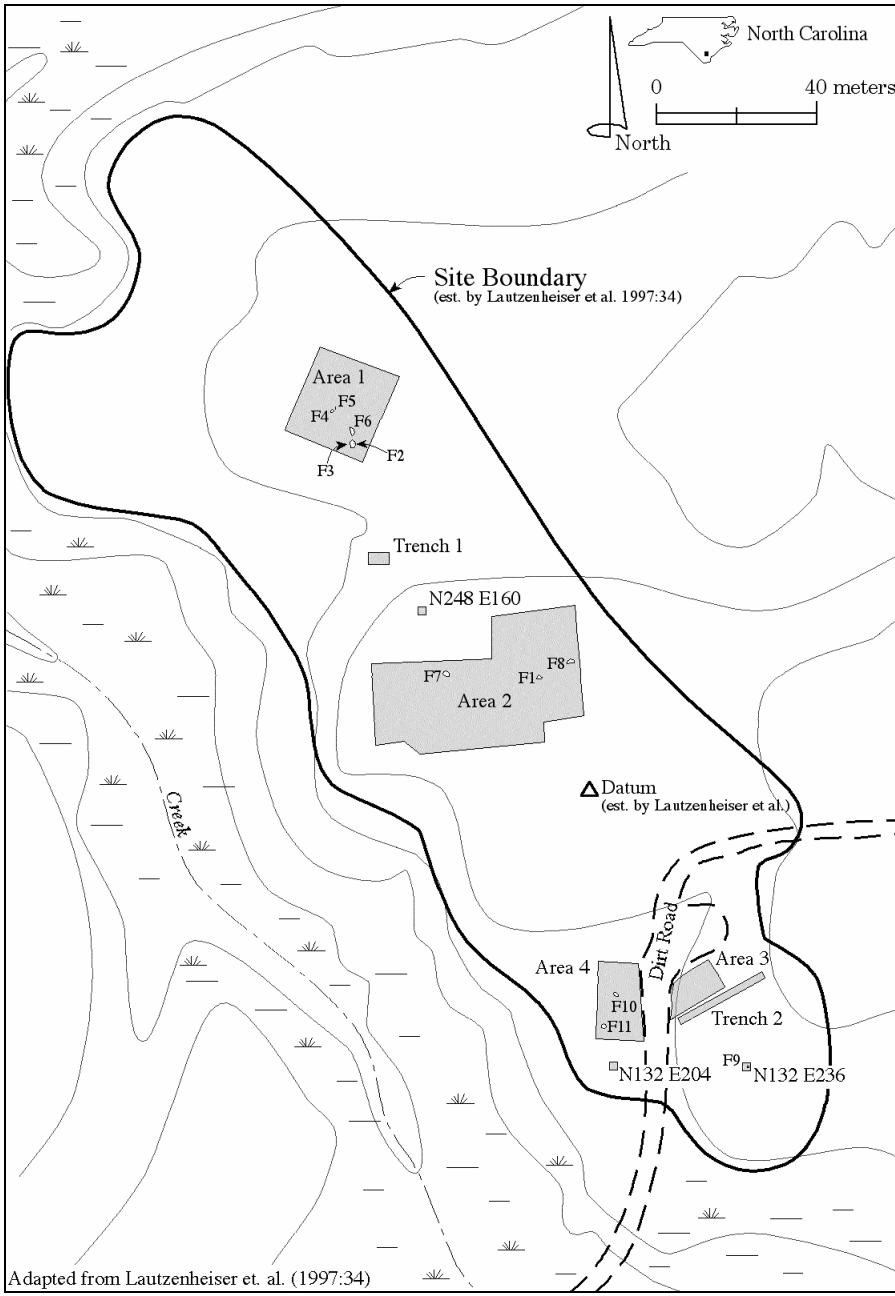


Figure 1. Map of 31CB114 showing the locations of data recovery investigations.

minimum of 10 liters of soil for flotation was collected in areas outside the features, but within the excavation units, in order to compare with those taken from within the features. The samples taken within features contained much higher densities of ethnobotanical and faunal material than the samples taken outside the features (Abbott et al. 1999). This also indicates that the features retained their integrity.

Test Unit 1, which contained Feature 1 (Lautzenheiser et al. 1997), was relocated by Abbott et al. (1999) at the time Area 2 was graded. The backfill was removed from the unit and screened through 1/8-inch mesh. The remainder of Feature 1 was found in the south and east walls of the unit. In the case of Feature 1, the entire portion of the feature remaining was collected for flotation. All newly found features were bisected. The bisected portion was screened through 1/8-inch mesh. The remainder of each feature was extracted, according to any recognized strata, and retained for flotation and radiometric dating.

Ten features in addition to Feature 1 were recorded during data recovery operations at the site (Figure 1). One of these, Feature 9, was determined upon further investigation to be the remnant of a root. Two features, Features 5 and 11, were determined to lack integrity. As a result, eight relatively intact features were examined and excavated. These included three prehistorically cleaned cremation pits (Features 1, 3, and 6), one historic postmold (Feature 2), one hearth with an intrusive partial vessel (Feature 10), and three partial ceramic vessels (Features 4, 7, and 8). Charcoal samples from Features 1, 3, 6, 7, and 10 were submitted for radiocarbon analysis.

## Ceramic Analytical Methods

A number of attributes were assessed for each sherd in order to describe the variability of the ceramic assemblage at 31CB114. These included: vessel form, paste, temper, width/thickness (in millimeters), exterior and interior surface treatments, and, where applicable, rim form, decoration, and treatment. Coarseness of temper followed the Wentworth scale. In order to determine grain size of sand temper, visual comparisons were made between sherd cross-sections and broken cross-sections of quartz-tempered clay briquettes prepared by Mr. Christopher Espenshade. Where needed, measurements of the inclusions were also made with calipers and a comparator. Combinations of the above-mentioned attributes were used to place the sherds recovered from 31CB114 within presently existing ceramic types. Where sherds did not meet the criteria for an existing type, no type was assigned.

Each of the five features chosen for radiocarbon analysis showed integrity in the field and was associated with ceramics. It was anticipated that the radiocarbon dates would provide information concerning the date of use of particular ceramics types in the southern North Carolina Coastal Plain, and thus would be useful in developing a ceramic chronology. Two partial Hanover vessels (from Features 4 and 8) were excluded from this analysis because pit outlines could not be determined during excavation

Table 1: 31CB114, Uncalibrated Radiocarbon Data.

| Feature | Sample Number | Measured $^{14}$C Age | $\delta^{13}$C Value | Conventional $^{14}$C Age |
|---|---|---|---|---|
| F1 (extended count) | Beta-115425 | 2470 ± 40 BP | -25.7 ‰ | 2460 ± 40 BP |
| F3 (standard count) | Beta-115426 | 4290 ± 50 BP | -26.6 ‰ | 4260 ± 50 BP |
| F6 (standard count) | Beta-115427 | 3700 ± 50 BP | -27.1 ‰ | 3670 ± 50 BP |
| F7 (extended count) | Beta-115428 | 3630 ± 70 BP | -26.9 ‰ | 3600 ± 70 BP |
| F10 (extended count) | Beta-115429 | 3700 ± 40 BP | -26.8 ‰ | 3670 ± 40 BP |

Table 2: 31CB114, Calibrated Radiocarbon Dates

| Feature | Intercept | One-Sigma Range | Two-Sigma Range | Associated Ceramics |
|---|---|---|---|---|
| F1 (cremation pit) | 525 BC | 760–635 BC<br>560–415 BC | 780–405 BC | Hanover, Hamp's Landing, New River |
| F3 (cremation pit) | 2890 BC | 2905–2875 BC | 2140–1920 BC<br>2810–2695 BC | Hamp's Landing, Hanover, New River |
| F6 (cremation pit) | 2025 BC | 2125–2065 BC<br>2060–1955 BC | 2135–1750 BC | Thom's Creek |
| F7 (vessel) | 1935 BC | 2025–1880 BC | 2135–1750 BC | New River |
| F10 (hearth) | 2025 BC | 2120–2080 BC<br>2050–1965 BC | 2140–1920 BC | Hamp's Landing |

and the artifact concentrations were not cohesive. These features appeared to be dispersed as a result of land clearing and logging activities.

## Data Presentation: The Ceramic Assemblage at 31CB114

The ceramic assemblage from 31CB114 spanned the Late Archaic through the Middle Woodland periods. No sherds were recovered from the site that could be definitively placed within a Late Woodland framework. The lack of organically stained features, generally associated with Late Woodland sites, may indicate that a Late Woodland component did not occur at this site. The following ceramic series were represented at 31CB114: New River, Hamp's Landing, Thom's Creek, Refuge, Deptford, Cape Fear, Hanover, and Yadkin. The features chosen for radiocarbon assay contained a smaller range of ceramic types (Tables 1 and 2). Initially these five features were thought to be associated with New River, Hamp's Landing, Cape Fear, and Hanover ceramics. However, after reviewing Thom's Creek comparative specimens housed at East Carolina University's Phelps Archaeology Laboratory, the Cape Fear partial vessel was determined to be a partial Thom's Creek vessel which had a perpendicular over-stamped, cord-marked exterior surface treatment.

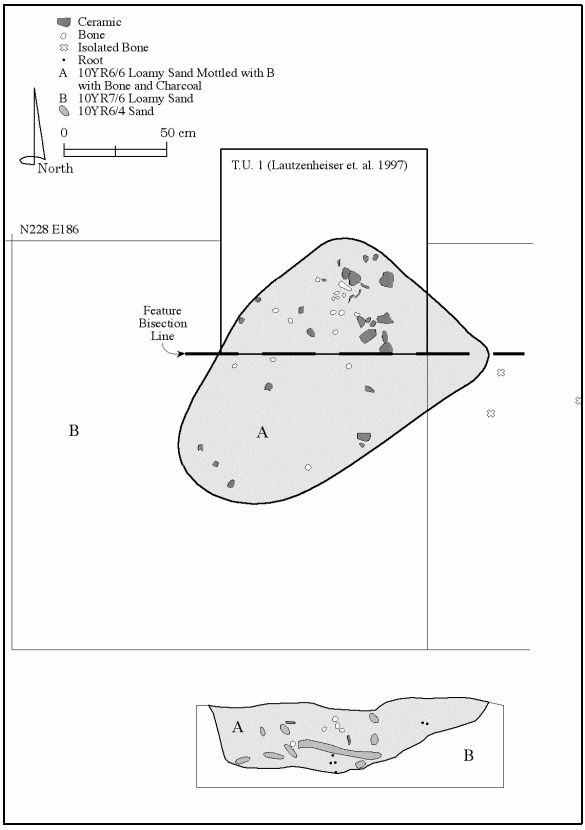


Figure 2. Plan and profile drawings of Feature 1 at 31CB114.

Feature 1 was the remnant of a cremation pit, most of whose human remains had been removed for interment elsewhere (Figure 2). Hanover, Hamp's Landing, and New River sherds were all found within this pit (Figure 3). However, excavation of the area surrounding Feature 1 indicated that it intruded into a previous Hamp's Landing zone. The large conjoinable Hamp's Landing sherds recovered by Lautzenheiser et al. (1997) may have been used as a digging tool. The one-sigma calibrated radiocarbon date range associated with Feature 1 was 780–405 B.C. (Beta-115425, conventional $^{14}$C date of 2460 ± 40 B.P.). This indicates that grog tempered sherds were produced in the southern North Carolina Coastal Plain as early as the Early-Middle Woodland interface.

Feature 3 was also the remnant of a cremation pit, and its flat plan and profile are similar to that of Feature 1. Like Feature 1, most of the human remains had been removed for interment elsewhere. One New River sherd was found within this feature (Figure 4). The one-sigma calibrated radiocarbon date range associated with Feature 3 was 2920–2865 B.C. and 2810–2695 B.C. (Beta-115426, conventional $^{14}$C date of

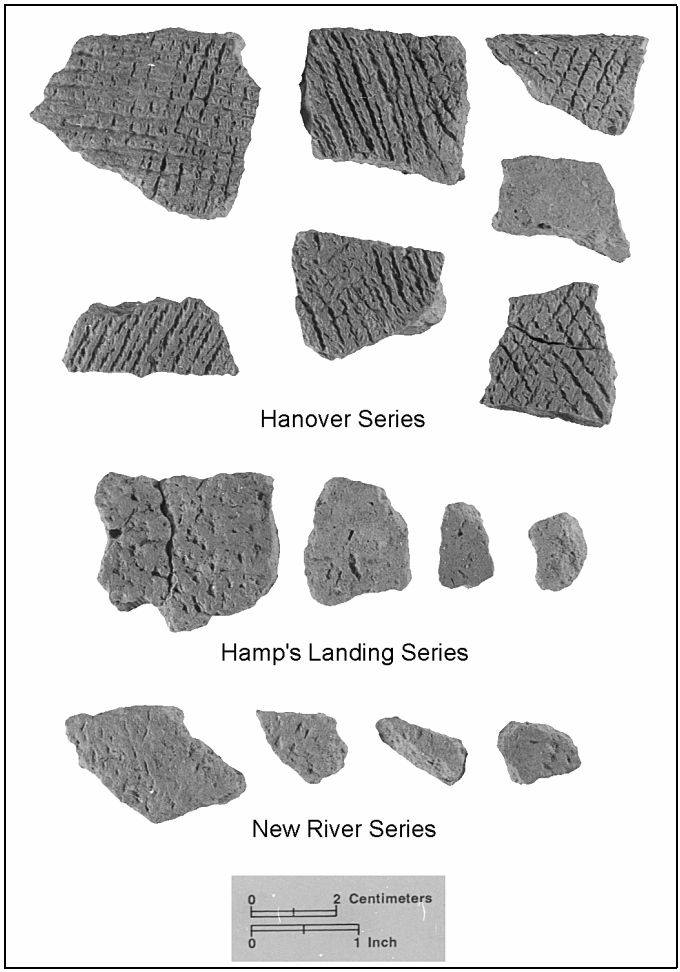


Figure 3. Hanover, Hamp's Landing, and New River series sherds from Feature 1.

4290 ± 50 B.P.). This suggests that New River series ceramics may be among the earliest produced in the southeastern United States, being contemporaneous with the Stalling's series in extreme southern South Carolina.

Feature 6 was almost identical to Features 1 and 3, and also contained the ephemeral remains of a human cremation. One Hamp's Landing sherd was found within the fill of this cremation (Figure 4). Chisel plow marks were visible in the top three centimeters of this feature; however, the sherd was not associated with these chisel marks. Instead, it was found within undisturbed feature fill in the densest area of human bone. The one-sigma calibrated radiocarbon date range associated with

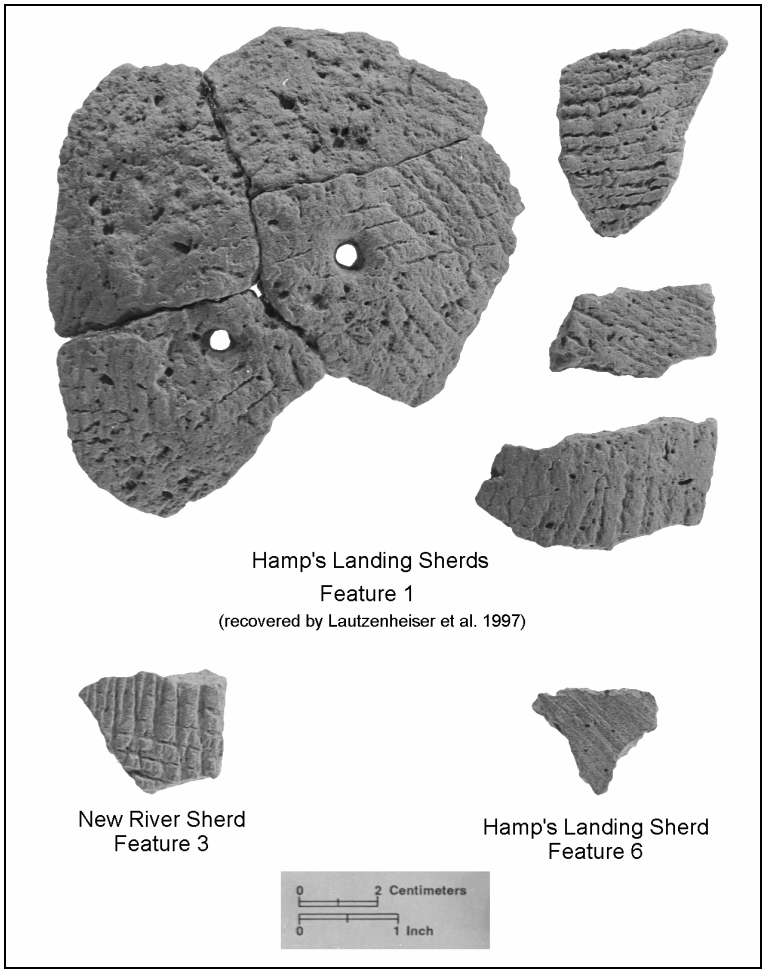


Figure 4. Hamp's Landing and New River series sherds from Features 1, 3, and 6.

Feature 6 was 2175–1900 B.C. (Beta-115427, conventional $^{14}C$ date of 3700 ± 50 B.P.). This supports a similar date associated with a Hamp's Landing pit found at 31ON190 and reported by Jones et al. (1997).

Feature 7 was the remnant of a partial ceramic vessel which had been sheared by earlier chisel plowing or other logging activities (Figure 5). This vessel was tempered with fine and medium sand. Its exterior surface treatment consisted of cord marking and perpendicular over-stamped cord marking, and its rim was finger pinched (Figure 6). This feature was delineated by the distribution of sherds from this vessel. Excavation of Feature 7 exposed a basal portion of the vessel that was *in situ*. In addition to floating one half of the feature fill associated with this vessel,

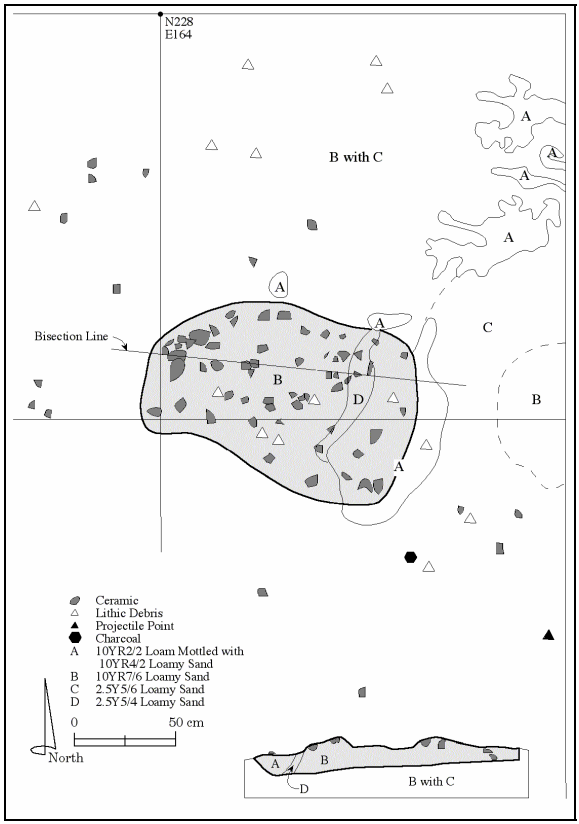


Figure 5. Plan and south profile drawings of Feature 7 at 31CB114.

a flotation sample was taken from the area immediately adjacent to the pot base. It was from this sample that the radiocarbon sample was drawn. This vessel was originally attributed to the Cape Fear series, based on its cord-marked exterior surface treatment and sand tempering. However, the one-sigma calibrated radiocarbon age for Feature 7 was 2135–1750 B.C. (Beta-115428, conventional $^{14}C$ date of 3630 ± 70 B.P.). This placed the use of this vessel at the beginning of the established date range for the occurrence of Thom's Creek pottery in the South Carolina Coastal Plain. The paste, temper, and rim treatment are consistent with that expected for Thom's Creek pottery (David S. Phelps, personal communication, April 1998). Thus, it appears that Feature 7 represents a Thom's Creek vessel with an exterior surface treatment commonly associated with other North Carolina ceramic types. We suggest that, at least within North Carolina, exterior surface treatments for the Thom's Creek series be expanded to include cord marking and perpendicular over-stamped cord marking.

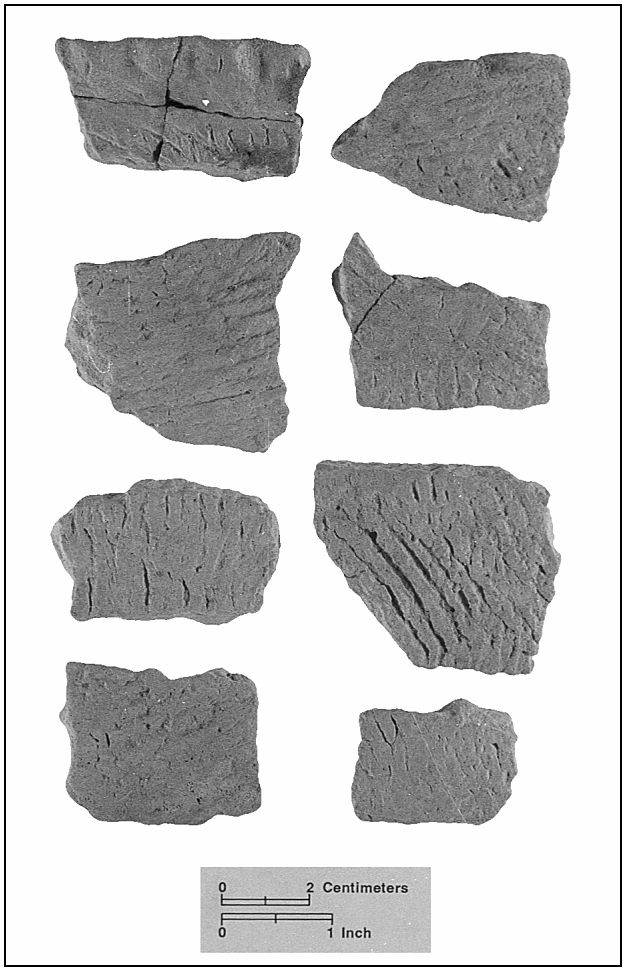


Figure 6. Thom's Creek series sherds from Feature 7.

Feature 10 represented a hearth associated with Hamp's Landing sherds (Figure 7). This area was originally excavated because a cluster of Hanover sherds, thought to represent an intact partial vessel, was found on the surface at the top of the E horizon. Excavation of this partial vessel revealed fire-cracked rocks below most of the Hanover sherds. These hearth rocks were associated with limestone/marl tempered sherds (Figure 8), and the Hanover sherds intruded into the area of the hearth. The one-sigma calibrated radiocarbon date range associated with Feature 10 was 2140–1920 B.C. (Beta-115429, conventional $^{14}C$ date of 3700 ± 40 B.P.). This is consistent with the date range for both Feature 6 and the above-mentioned Hamp's Landing pit at 31ON190 (Jones et al. 1997).


Figure 7. Plan and southeast profile drawings of Feature 10 at 31CB114.

## Discussion

The radiocarbon dates from the features at 31CB114 indicate that they are associated with occupations dating to the Late Archaic period (represented by New River, Hamp's Landing, and Thom's Creek series pottery) and the Early-Middle Woodland period interface (represented by Hanover series pottery). The earliest of these dates is associated with Feature 3, a cremation, and places New River series ceramics at the beginning of the Late Archaic period and contemporaneous with the Stalling's series (Figure 9). David S. Phelps (personal communication, April 16, 1998) has indicated that the distribution of the Stalling's series is related to the distribution of Spanish moss, which was used as a tempering medium. Thus, New River ceramics may reflect the use of an alternate temper—coarse and very coarse sand—which was readily available. In addition, Sassaman (1993) has suggested that the replacement of organic tempering materials with inorganic materials reflects the transition from

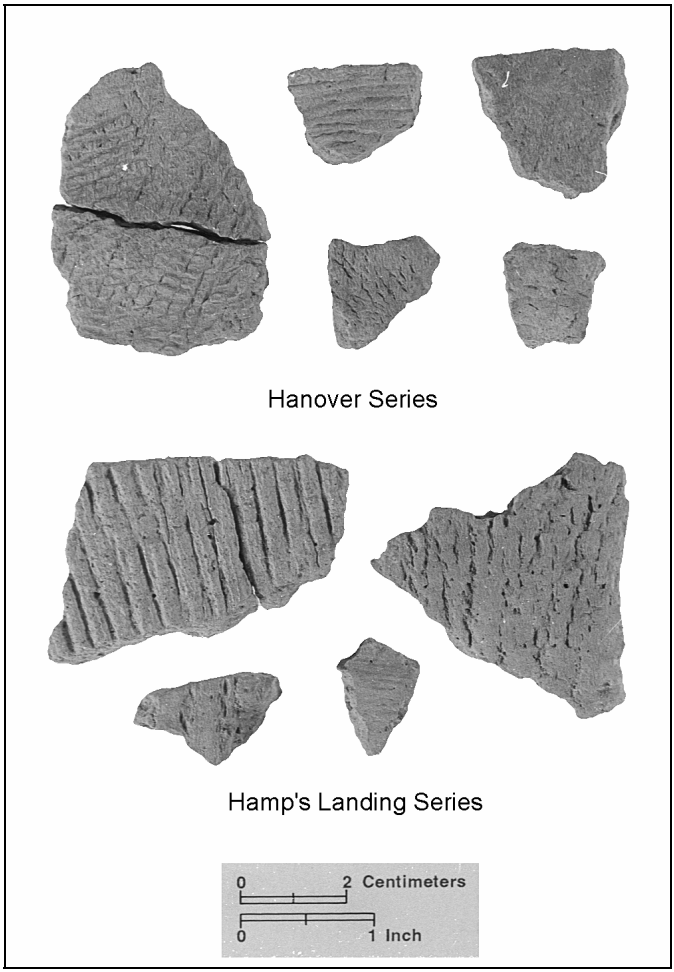


Figure 8. Hanover and Hamp's Landing series sherds from Feature 10.

indirect to direct cooking methods. If this is the case, then it appears that direct cooking was practiced in the southern North Carolina Coastal Plain possibly as early as circa 2,900 B.C. Stratigraphic information from excavation unit N132E236, located on a bench on the south end of 31CB114, suggests that in this part of the site the New River series may be coeval with, or post-date, Hamp's Landing series pottery (Abbott et al. 1999:134–135). Thus, production of New River series ceramics may last for 800–900 years. Additional dates associated with New River series ceramics will be needed in order to validate the radiocarbon date for this series from 31CB114.

Two radiocarbon dates were associated with the newly defined Hamp's Landing series (Hargrove 1993; Herbert and Mathis 1996).

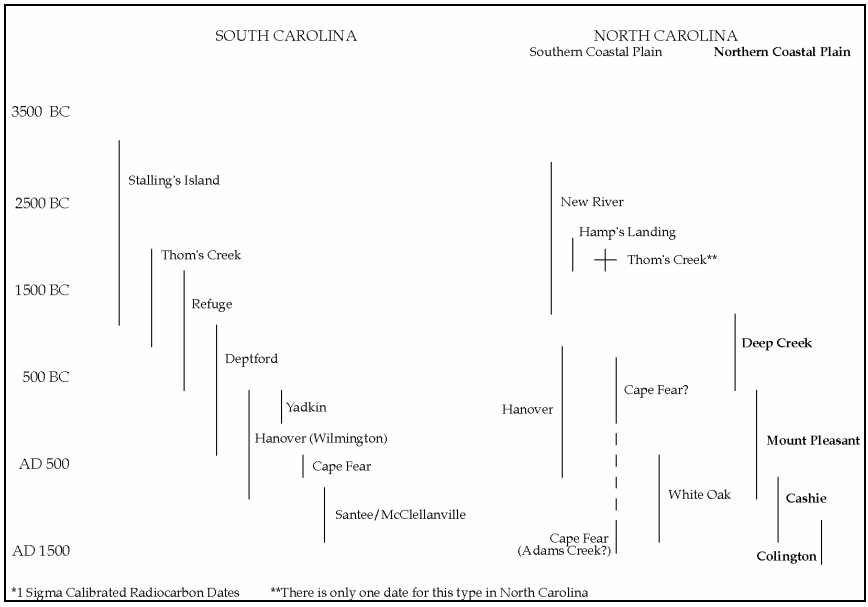


Figure 9. Radiocarbon* and thermoluminescence dated ceramic sequence in the South Carolina and North Carolina Coastal Plain.

Hamp's Landing is now represented by three nearly identical dates in two disparate areas of North Carolina's southern Coast and Coastal Plain. The similarity of the dates indicates that they probably reflect the use of this ceramic type within this geographic area. The stratigraphy at N132E236 indicates that Hamp's Landing sherds predate both Cape Fear and Hanover components in this part of 31CB114 (Abbott et al. 1999:134–135).

One last Late Archaic radiocarbon date was associated with the Thom's Creek series. This type is typically found in the South Carolina Coastal Plain, and the range of variation for this type within South Carolina is well described (Anderson 1996:248–256). It appears that the Thom's Creek series within the southern North Carolina Coastal Plain includes exterior surface treatments (e.g., cord marking and perpendicular over-stamped cord marking) typically found within the coeval New River and Hamp's Landing ceramic series. The radiocarbon date associated with the Thom's Creek vessel represents the earliest portion of the date range for this ceramic type. This suggests that Thom's Creek pottery has as great antiquity in North Carolina as in South Carolina.

There was only one radiocarbon date at 31CB114 that was not associated with the Late Archaic period. This was a date associated with grog-tempered Hanover series ceramics in Feature 1. This date spans the latter part of the Early Woodland period and the early part of the Middle Woodland period and is as much as 300 years earlier than the earliest dates in South Carolina for Hanover ceramics (Bob Morgan, personal

communication 1998). Earlier grog-tempered Refuge series ceramics have been described by Anderson (1996:226) as being almost identical in paste to the Hanover wares in South Carolina, with exterior surface treatment being the primary distinguishing attribute between the Refuge and Hanover ceramics. Punctations, smoothing, dentate stamping, and simple stamping are found on Refuge series ceramics, while check stamped, fabric-impressed, and cord-marked exterior surface treatments are common in the Hanover series. In North Carolina, however, cord-marked exterior surface treatments appear to have great antiquity, and potentially may be found on grog-tempered ceramics dating to the period associated with the Refuge series. In short, there may not be a clear distinction between Refuge and Hanover types in North Carolina's southern Coastal Plain; therefore, the Hanover series in North Carolina may, in fact, encompass ceramics identified in South Carolina as both Refuge and Hanover series. The relatively early radiocarbon date for Feature 1 supports the theory that Refuge and Hanover series are manifestations of a grog-tempered ceramic tradition that began as early as 1,000 B.C.

## Conclusions

The radiocarbon data from 31CB114 indicate that ceramic production in North Carolina has its origins at the beginning of the Late Archaic period (Figure 9). This extends the date for the start of ceramic production in North Carolina approximately 1,700 years earlier than previous dates indicated (Herbert 1997), and is contemporaneous with the earliest known ceramic type (Stallings series) in the southeastern United States. In addition, the present data suggest a proliferation of ceramic production during the Late Archaic in North Carolina as evidenced by at least three Late Archaic ceramic series at 31CB114. The dates at this site consistently extend the production of the represented ceramic types to at least 1,000 years earlier than previously expected. While information from a single site is never conclusive, the information at 31CB114 suggests that the ceramics within the southern North Carolina Coastal Plain represent a mixture of attributes typically found within the South Carolina Coastal Plain and the northern North Carolina Coastal Plain. In addition, it appears that technological attributes, such as exterior surface treatment and temper type, were combined independently. Exterior surface treatment appears to reflect geographic differences in production, rather than being a key chronological indicator. It would appear that the primary chronological attribute is temper type in the southern Coastal Plain of North Carolina. Additional radiocarbon and thermoluminescence dates will be needed to conclusively determine the range of the dates of production for the ceramic series represented in the southern North Carolina Coastal Plain.

## Notes

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# OAK ISLAND: A RETIRING SERIES

by
Mark A. Mathis

## Abstract

Nearly four decades ago, the shell-tempered, Late Woodland Oak Island ceramic series was identified and formally defined along the southeastern coast of North Carolina and northeastern coast of South Carolina. Recent research, however, has shown that much, if not all, of the "shell" temper previously identified in pottery along the southern coast and portions of the central coast is actually limestone or marl. More importantly, this pottery probably dates to the Early Woodland or early Middle Woodland period. This paper discusses the archaeological and historical implications of this problem and makes the case for abandoning the Oak Island nomenclature.

In a period of four days in May of 1960, Stanley South (1960, 1976) collected 2,701 potsherds from 81 sites on the southeastern coast of North Carolina and northeastern coast of South Carolina (Figure 1). At the time, virtually nothing was known about the prehistory of the area, and South reiterated William Haag's (1958:1) comment of two years before that "It may be stated categorically that very little specific knowledge is available about the cultural succession of aborigines in the whole of coastal Carolina" (South 1976:3).

South's investigation was a true example of a "car survey," wherein "The method employed was to drive south on U.S. 17 or other highway closely paralleling the shoreline of the ocean and turn left onto each road leading toward the sound. . . . When the road cut through an oyster and clam shell midden, a stop was made and pottery fragments were collected and the site recorded" (South 1976:4).

No excavations were conducted. Nevertheless, equipped with a respectable sample of sherds, South developed the first pottery sequence and relative chronology for the Woodland period in the southern coastal region. In doing so, he drew on Haag's (1958) observations in the northern coast and the more detailed sequences worked out further to the south and west by Griffin (1952), Caldwell (1952), and Waring (Williams 1968).

With a few exceptions, the most notable being the occurrence of Stallings, Thom's Creek, and Deptford sherds, the majority of South's collection did not readily fall into existing typological frameworks. This left him to the create several new ceramic series, including the Middle Woodland grog-tempered Hanover series, the Middle to Late Woodland sand-tempered Cape Fear series, the shell-tempered Oak Island series, a terminal Late Woodland to Contact period ware, and, finally, the untempered Brunswick Burnished, found in Historic period contexts and later referred to as Colono Ware (Ferguson 1992) (Figure 2).

South's sequence has been employed in more or less unaltered fashion since 1976 for the categorization of ceramics and, by extension, for the interpretation of the archaeological record of the region. Until

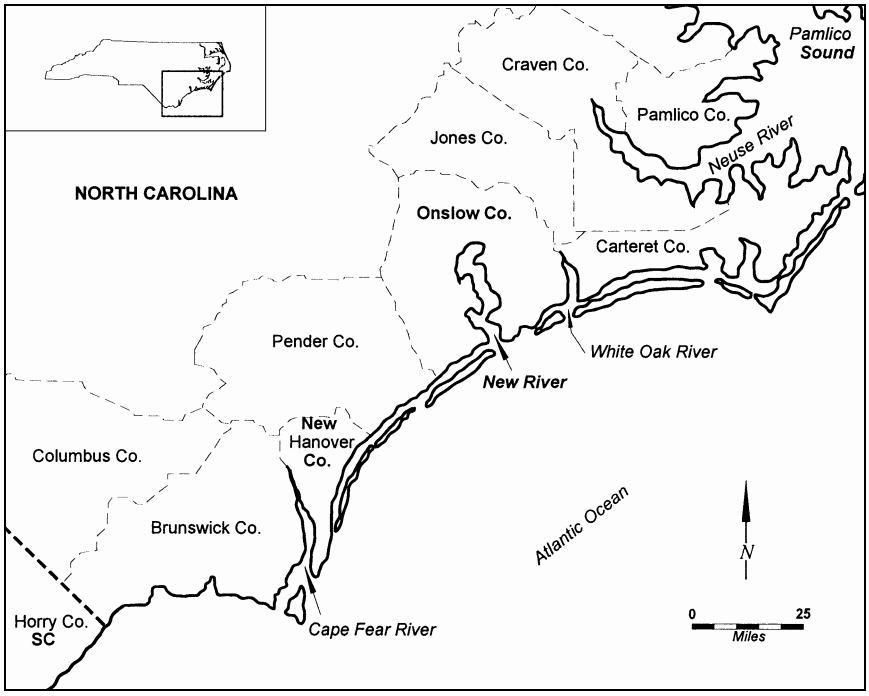


Figure 1. Map of the southern North Carolina coast.

recently, there has been little substantive basis for modifying his basic framework. This paper presents a summary and recommendation for a relatively significant change to South's typology and cultural sequence.

## Background

In 1956, William Haag (1958) conducted the first professional archaeological survey on the coast of North Carolina. Although the survey included portions of the southern region, where South would conduct his survey a few years later, Haag's report covered only the northern region and a few sites in the central region. Haag did not attempt to develop a detailed regional ceramic typology or chronology, but did propose a generalized temper-type sequence, including a Late Woodland shell-tempered ware which he attributed to the Algonkian-speaking cultures encountered by the Roanoke colonists in the late sixteenth century. This shell-tempered ware was later identified as the Colington series by David Phelps (1983) and is dominated by sherds with fabric-impressed surfaces. A small percentage of Colington sherds have plain or simple-stamped surfaces.

In contrast, of the 248 shell-tempered sherds in South's collection, only three were identified as fabric impressed and none could be clearly

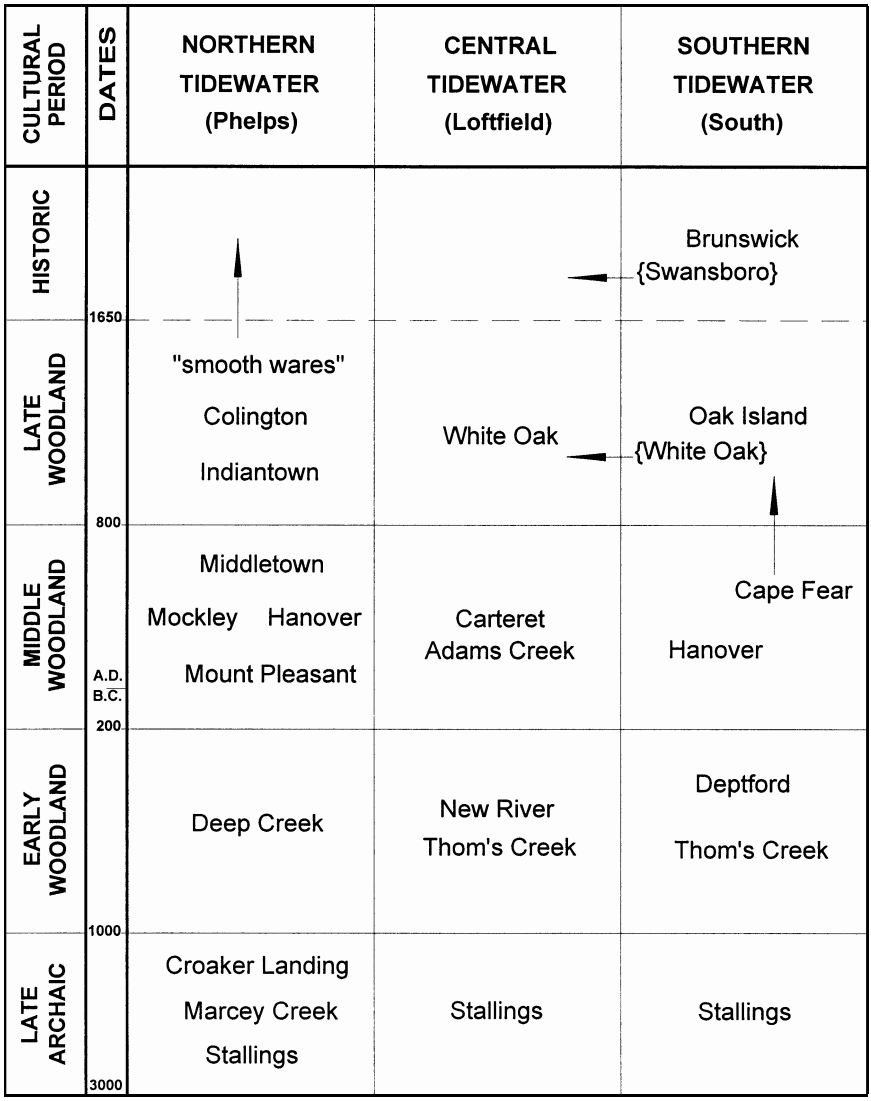


Figure 2. Generalized ceramic sequences of the North Carolina Tidewater, as originally defined by Phelps (1983, personal communication), Loftfield (1976, 1979, 1987), and South (1960, 1962, 1976).

identified as simple stamped (South 1976:20) (Table 1). Most sherds were plain, with lesser but significant amounts of cordmarked and net impressed. This led South to suggest that cordmarking and net impressing persisted much longer along the southern coast, with fabric impressing all but disappearing. Additionally, since historical documents indicated that the southern coast had been home to Siouan-speaking groups (see

Table 1. Percentages of surface treatments on shell-tempered ceramics along the central and southern North Carolina coast, as reported by South (1962, 1976) and Loftfield (1976).

| Surface Treatment | Oak Island (South 1976) | White Oak (South 1962) | White Oak Loftfield (1976) |
|---|---|---|---|
| Burnished | 0 | 4 | * |
| Fabric Impressed | 1 | 88 | 82 |
| Plain | 68 | 4 | 16 |
| Cordmarked | 21 | <1 | 1 |
| Net Impressed | 10 | 0 | <1 |
| Simple Stamped | 0 | 0 | <1 |

*Identified by Loftfield (1976:160–161) within his White Oak Smoothed subtype and apparently subsumed under "plain" in the series tabulations (Loftfield 1976:175–82).

Swanton 1946), South postulated that at least some of the north-south differences were due to broader cultural issues; however, he also allowed for the likelihood of interaction between the Siouan and Algonkian groups. Like the widespread use of similar or identical surface treatments, the use of shell as a tempering agent was also seen as transcending cultural and linguistic boundaries. Shell tempering was not, however, known to occur further to the south or west of the southern North Carolina coast.

In 1976, the same year South's sequence was published, Thomas Loftfield completed his dissertation research along the central coast, principally in the areas covered by Carteret and Onslow counties (Figure 1). Loftfield's (1976) study involved both archaeological survey and limited testing, and it resulted in the recovery of over 22,000 potsherds from 149 sites. Using the combination of stratigraphic data and seriation, he developed a separate typology and sequence for the region, one which contained some elements comparable to South's sequence but with some notable differences (see Figure 2).

## Shell-Tempered Ceramics of the North Carolina Coast

Loftfield's (1976) shell-tempered White Oak series is the most common pottery found along the outer fringes of the central coast and occurs almost exclusively on sites with associated shell middens located adjacent to the estuarines. In his dissertation study, 6,535 White Oak sherds were identified. The majority were fabric impressed, with lesser amounts of plain (and apparently including burnished specimens), cordmarked, net impressed, and "thong marked" (also known as simple stamped) (Table 1).

As an important historical side note, the name White Oak was actually coined by South (1962) in an unpublished survey of two small islands in the mouth of the White Oak River between Onslow and Carteret

counties. The name was applied to shell-tempered pottery which, in South's opinion, differed from his Oak Island series of the southern region. The majority (88%) of the sherds in South's White Oak collection were fabric impressed, with lesser numbers of burnished (referred to as Swansboro), plain, and cordmarked sherds (Table 1).

Based on the analyses by South and Loftfield, there is only a limited technical or statistical overlap between the White Oak and Oak Island series (Table 1). Nevertheless, similarities in the range of surface treatments prompted Phelps, in his 1983 summary, to propose subsuming White Oak under Oak Island. Phelps (1983:48) also agreed with South that the range of Oak Island surface treatments distinguished them from the shell-tempered wares of the northern coast (designated Colington series). As noted above, the Colington series is dominated by fabric impressing but also contains plain and simple-stamped surfaces, along with true decoration (particularly incising). Cordmarked, net-impressed, and burnished types are not found in the Colington series. With the exception of a few instances of incising (e.g., Coe et al. 1982; Ward and Davis 1999), decoration is not a common feature of either White Oak or Oak Island.

Based on these data, the previous model for the coastal region held that the use of crushed shell as a tempering agent extended southward from the Middle Atlantic region along the outer coast of North Carolina and into northeastern South Carolina. Within this long, narrow distribution, the tempering technology remained the same, but at or just below the Neuse River the range and frequency of surface treatments changed, with a wider variety of treatments in the south. In many ways, the similarities and contrasts along this north-south line would be expected within the context of changing cultural and linguistic landscapes (cf. Phelps 1983:48). As noted previously, historical records (see Swanton 1946) indicate that by the time of European contact, Siouan-speaking groups occupied much of the territory south of the Neuse River. However, the archaeological evidence (e.g., shell-tempered ceramics, longhouses, large ossuary burials, and skeletal morphology) clearly indicates that Algonkian groups moved into the territory no later than A.D. 900 and remained there until at least A.D. 1450 to 1500 (Loftfield 1975, 1990, 1995; Mathis 1995).

The vagaries and complexities of intermingling technological and stylistic traditions would be expected along a cultural "frontier," such as existed between the Algonkian and Siouan groups. South (1976) and Phelps (1983) suggested that the variability observed between the shell-tempered ceramics of the North Carolina coast—represented by the Colington, White Oak, and Oak Island series—was a reflection of this frontier territory during the Late Woodland period (see also Loftfield 1990). While it is clearly an intriguing and archaeologically complicated picture, it is also somewhat inaccurate, being based on what now appears to have been a case of *observation influenced by expectation and assumption*.

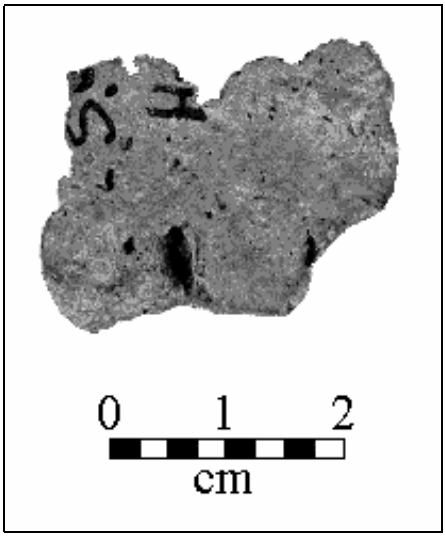


Figure 3. Oak Island sherd from 38Ho4 (Horry Co., South Carolina) with cavity formed by leached shell fragment (from South collection, Research Laboratories of Archaeology, University of North Carolina).

## "Hole-Tempered" Pottery

When South analyzed the 2,701 sherds collected in 1960, 248 (about 9%) were identified as containing crushed shell temper—the determining characteristic of the Oak Island ceramic series. However, none of the sherds actually retained any visible shell fragments. The definition was based solely on the observation of voids in the ceramic paste, some of which appeared as lenticular cavities as would be expected for leached-out shell. In a few cases, clearly defined molds of marine shell fragments were observed (Figure 3). The lack of any real shell, and the frequently porous nature of the paste, gave rise to the humorous characterization, by South (1976:20), of the pottery as "hole tempered."

A subsequent survey of New Hanover County, North Carolina, adjoining and overlapping South's survey area, reported the same phenomenon (Wilde-Ramsing 1978:47). This survey, which also included limited testing, recovered 403 Oak Island sherds from over 98 sites. As with South's sample, none of these "shell-tempered" sherds contained positive evidence of shell temper. Unfortunately, while many other investigations in the southern coastal region also have reported Oak Island "shell-tempered" ceramics, none specifically note whether the sherds actually retained any of the shell. Consequently, in order to evaluate the full extent of the "hole tempered" phenomenon it will be necessary to re-examine each of these collections.

Also relevant to this discussion are the unreported collections made by William Haag in the southern coastal region in the 1950s. Recently, Joseph Herbert (personal communication) completed an analysis of Haag's collections from Brunswick, New Hanover, and Pender counties, some of which may well have come from the same sites collected by South. No sherds containing shell were identified in the collections, although many sherds otherwise fitting the "hole tempered" Oak Island description were found.

From a different perspective, all of South's sites were associated with recently disturbed shell middens, as were many of the sites recorded in New Hanover County in the 1970s. Shell middens tend to be excellent environments for the preservation of organic materials, since the calcium carbonates serve to neutralize the soil acids. On the northern and central coasts, where shell-tempered ceramics are abundant, instances of leached temper have been observed but only rarely within shell middens (even when they have been plowed). The exclusively leached out condition of the Oak Island series is therefore rather curious, and telling.

## Oak Island Series Context and Chronology

The Late Woodland association of the Oak Island series has long been assumed but never firmly established radiometrically or stratigraphically. When South (1960) defined the series, the only reference for shell-tempered ceramics was Haag's (1956) survey and limited testing data from the north coast. Haag's collections did include sherds containing visible shell and his data did indicate a Late Woodland context. Since the "holes" observed in the Oak Island sherds occasionally appear comparable to those expected for leached shell fragments, the assumption of contemporaneity with the north coastal ware was both reasonable and justifiable, in spite of the differences noted in the relative and absolute occurrence of specific surface treatments. Nonetheless, there were no excavated data upon which to base that assumption. It would be another 19 years before a potential context was identified.

In 1978 and 1979, excavations were conducted at the Cold Morning site (31Nh28), in New Hanover County. During the initial investigations (Wilde-Ramsing 1978), involving the excavation of 11 2×2 meter units, a small ossuary burial was discovered; this led to additional work the following year. The 1979 investigations involved the recovery of the ossuary and excavation of 12 2×2 meter units, one 1×4 meter trench, and 35 shovel tests (Coe et al. 1982).

During the ossuary excavation, two small sherds identified as Oak Island Plain Smoothed were recovered from "within the bone matrix"; another was recovered from the "top of the matrix" (Coe et al. 1982:31). A radiocarbon assay for a sample of the bone returned a date of A.D. 950 ± 80 (Coe et al. 1982), with a calibrated intercept of A.D. 984 (Eastman 1994:54). Since ossuary burials were and are known to be associated with Late Woodland cultures (especially Algonkian) and the date was clearly Late Woodland, the investigators logically concluded that the Oak Island

sherds also were Late Woodland, as originally proposed by South. However, this is the only instance of an apparently *in situ* context for Oak Island pottery. In light of more recent studies in the region (e.g., Abbott et al. 1999; Sanborn and Abbott, this volume; Hargrove 1993; Hargrove and Eastman 1997; Herbert 1997, this volume; Herbert and Mathis 1996; Jones, et al. 1997; Reid and Simpson 1996), the Cold Morning data and interpretations require closer scrutiny and reappraisal.

The Cold Morning excavations revealed no cultural features, other than the ossuary, and no evidence of undisturbed, stratified deposits. A total of 1,846 potsherds were recovered from the site: 813 in 1978 (Wilde-Ramsing 1978:133) and 1,142 in 1979 (Coe et al. 1982:20). At least three major ceramic series (as defined at the time) were represented in the combined assemblage: Cape Fear (58%), Hanover (25%), and Oak Island (13%). Small quantities of other pottery types were recovered as well, indicating that the site represented at least three cultural components and possibly more. Analysis of the spatial distributions of the 1979 data showed concentrations of Hanover series pottery at the southern end of the site, Oak Island series pottery near the ossuary, and Cape Fear series pottery generally distributed across the entire site, but with concentrations to the north and south of the ossuary (Coe et al. 1982:34–36).

An important but often overlooked point is that one sherd, identified as sand-tempered Cape Fear Fabric Impressed, also was recovered from the ossuary matrix, along with the two Oak Island sherds. Two more Cape Fear sherds were recovered at the "top of the matrix" (Coe et al. 1982:31). The investigators concluded that these sherds were unrelated to the burial, since Cape Fear was assumed to be a Middle Woodland series and thus preceded Oak Island and the date obtained for the ossuary. A careful reading of South's report, however, reveals that in his discussions regarding the chronological placement of Cape Fear, he only suggested the possibility that it post-dated Hanover (South 1976:40–41). His taxonomy chart, on the other hand, shows Cape Fear originating sometime during the Middle Woodland, prior to A.D. 600, and persisting into the Late Woodland period (South 1976:28–29).

It also must be noted that the Cape Fear series is itself problematic and a bane to most researchers in the region. Phelps (1983:35), and more recently Herbert and Mathis (1996:51) and Herbert (1997), have pointed out that Cape Fear is possibly the least understood ceramic type (or series) on the southern coast. Pottery containing sand of various sizes and densities occurs throughout the Woodland period while specific surface treatments often persist through one or more of the sub-periods. Cordmarking, for instance, appears in the Early Woodland New River series and continues into at least the Middle Woodland period. If the original Cape Fear definition is used, it may last well into the Late Woodland in southeastern North Carolina. Fabric impressing also appears during the latter stages of the Early Woodland period and continues into the latter stages of the Late Woodland period (Anderson 1996:193; Herbert and Mathis 1976; Loftfield 1976; Phelps 1982). Unfortunately, the variability frequently observed in paste characteristics within a given

assemblage, let alone between assemblages, lends itself to differential—and often ambiguous—classification by independent researchers. Cape Fear, it would seem, may well be a proverbial "catch-all" category for sand-tempered ceramics or simply ceramics with a sandy paste and no other readily visible inclusions. To this end, Trinkley suggested as early as 1981 that the Cape Fear category should be "phased out of usage" (Trinkley 1981:11).

In line with this argument is the fact that Cape Fear, like Oak Island, has little substantiated stratigraphic or unambiguously dated context. The only radiocarbon date presumed to be associated with Cape Fear comes from the McLean Mound (31Cd7), in Cumberland County, and is calibrated to A.D. 1028 (Eastman 1994:5; MacCord 1966:17), later than the Cold Morning date. Furthermore, recent thermoluminescence (TL) dates for sherds initially identified as Cape Fear include dates of 434 ± 250 B.C., A.D. 1313 ± 193, and 593 ± 441 B.C. (Herbert 1997; Reid and Simpson 1996). These and other unpublished TL dates for sherds classifiable as Cape Fear serve to illustrate the current typological and chronological ambiguities pertaining to the series (Joseph Herbert, personal communication).

The point here is that the relationships of the Oak Island and Cape Fear sherds with the Cold Morning ossuary are not as clear-cut as presumed (cf. Ward and Davis 1999:222–223). There simply is little firm archaeological basis for the conclusion that the ossuary is associated with one of these ceramic series and not with the other.

## The Hamp's Landing Series

At the Hamp's Landing site (31Nh142) in New Hanover County, excavations recovered over 200 so-called "hole-tempered" ceramics, including simple-stamped, cordmarked, fabric-impressed, and plain specimens (Hargrove 1993; Hargrove and Eastman 1997; Legg and Loftfield 1992). The excavations revealed no obvious naturally or culturally stratified deposits, although artifacts were recovered at depths of up to 50 cm below surface in some areas of the site. Typically, the loose, sandy, and well-drained soils of the coastal plain are not conducive to the preservation of natural or cultural stratification and are highly susceptible to natural transformation processes (e.g., bioturbation). Vertical and horizontal mixing of cultural materials is commonly observed. However, analyses of the vertical distributions of artifacts by arbitrary (e.g., 10 cm) excavation levels can provide important data regarding relative associations and chronologies. Such was the case at Hamp's Landing. "Hole-tempered" ceramics, comparable in paste characteristics to South's Oak Island series, were recovered from levels between and overlapping the concentrations of Middle Woodland Hanover and Early Woodland Thom's Creek ceramics (Hargrove 1993:136–137; Hargrove and Eastman 1997:100–103). Sand-tempered wares, including many classified as Cape Fear, were distributed throughout the excavation levels but were concentrated in levels with

Hanover sherds and in lower levels. The "hole-tempered" ceramics have now been formally designated the Hamp's Landing series (Hargrove and Eastman 1997) and, based on close examination of the voids, were apparently tempered with either crushed limestone or marl, rather than shell.

Although no radiocarbon dates were acquired for the series at the type site, three dates were recently obtained for cultural features containing Hamp's Landing sherds at two other sites. The first, from the Cape Island site (31On190) on Topsail Island in Onslow County, yielded an calibrated intercept of 1945 B.C. (Jones et al. 1997). The date was obtained from a charcoal sample recovered from a shallow pit feature (#15) containing 66 Hamp's Landing fabric-impressed sherds (representing a single vessel) and one sherd identified as either New River or Cape Fear (Jones et al. 1997:38). While the investigators were understandably skeptical of the early date, the apparent association with Hamp's Landing is intriguing. Another pit feature (#16) located nearby contained 48 Hamp's Landing simple-stamped sherds (Jones et al. 1997:32). Hamp's Landing cordmarked and net-impressed specimens also were recovered at the site. Interestingly, no net-impressed sherds were identified at the Hamp's Landing type site while plain surfaces were not identified at the Cape Island site.

More recently, two dates were acquired from cultural features with reported Hamp's Landing associations at the Riegelwood site (31Cb114) in Columbus County, North Carolina (Sanborn and Abbott, this volume; Abbott et al. 1999). One of the dates, from a human cremation (Feature 6) containing a Hamp's Landing smoothed-over cordmarked or simple-stamped sherd, has a calibrated intercept of 2025 B.C.. The other, from a hearth (Feature 10) containing several smoothed-over cordmarked or simple-stamped sherds, has an identical calibrated intercept of 2025 B.C. These dates, combined with the Cape Island date, suggest a Late Archaic to Early Woodland association for Hamp's Landing and potential contemporaneity with Thom's Creek and the latter stages of Stallings Island.

With respect to South's Oak Island series, the "discovery" of Hamp's Landing is extremely significant. The author, in the company of Joe Herbert, recently examined a sample of South's original 1960 collection. Although all of the sherds from each site were mixed together in a single bag, the Oak Island ceramics were easily extracted. The "hole-tempered" paste is quite distinctive compared to the rest of the ceramic assemblage. Twelve site collections, containing a total of 112 sherds identified as Oak Island by South (45% of the total Oak Island collection), were examined. As expected, none contained visible shell. While some did exhibit occasional lenticular voids, the majority of the voids were blocky and angular in cross-section, a characteristic of the limestone- or marl-tempered Hamp's Landing series (Hargrove and Eastman 1997).

Based on the current data associated with the Hamp's Landing series, it is increasingly evident that Oak Island's definition as a Late Woodland to Contact period, shell-tempered series, is erroneous. South, and

virtually every other researcher (including the present author) until recently appear to have mistakenly identified the voids in the ceramic paste as leached or dissolved shell, rather than what we now think is calcareous limestone or marl. This mistake is understandable, given the fact that marl may contain fossilized shell which, when crushed and mixed into a clay paste and subsequently dissolved, can easily leave voids similar to those of non-fossilized crushed shell.

Thus far, only a single Hamp's Landing sherd has been found which still retains the limestone or marl temper (Figure 4). The specimen is simple stamped and was recovered from a disturbed pit feature which had previously been covered by a 10–20 cm layer of shell midden at the Broad Reach site (31Cr218) in Carteret County (Herbert and Mathis 1996:156). The shell midden had been removed by a road grader some months prior to discovery of the feature. Although severely damaged by subsequent heavy machinery traffic, the feature appeared to have been a shallow basin containing oyster shell. Many other Hamp's Landing sherds were recovered from the site, though none retained evidence of the temper. The fact that this particular sherd did retain the temper may be due to its depositional context (i.e., in a pit with shell). The fact that the temper has dissolved from all other specimens may be due to their extreme age (Early to early Middle Woodland) and the likelihood that the shell middens themselves are much more recent features, having accumulated primarily during the Middle Woodland and Late Woodland periods.

In order to evaluate the nature of the inclusions in the Broad Reach sherd, a small portion was removed and bathed in a 5% solution of hydrochloric acid (HCL). The inclusions immediately effervesced, and within an hour had dissolved completely, leaving small angular pores ("holes") ranging from 1 to 2 mm across (Figure 4). Some small lenticular holes were also visible.

Since its recognition in 1993, the Hamp's Landing series has been identified at numerous sites along the North Carolina coast, from just below the Neuse River in Carteret County to just below the North Carolina state line in Horry County, South Carolina. Theoretically, we would expect a distribution no greater than that of the natural distribution of marl or limestone deposits. Additional research, including analyses of both the archived archaeological collections and geological and mineralogical survey data, will be necessary to address this issue.

## Conclusions and Implications

In early 1993, Thomas Hargrove appeared at the North Carolina Office of State Archaeology with a handful of potsherds excavated from the Hamp's Landing site (31Nh142) in New Hanover County. The sherds looked very much like what Stanley South (1960, 1976) had described as Oak Island series ceramics. However, they were generally dissimilar to the shell-tempered White Oak series sherds commonly found a little further to the north in Onslow and Carteret counties. The fact that they had been recovered from excavation levels between and overlapping

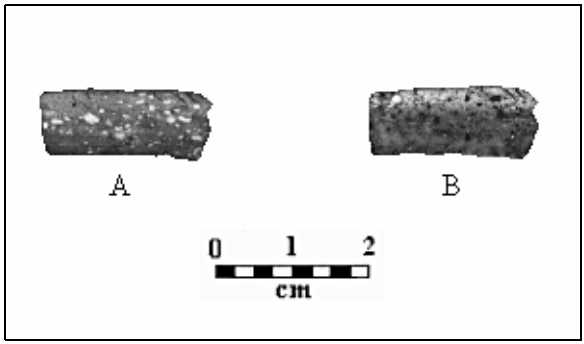


Figure 4. Hamp's Landing sherd from 31Cr218 with limestone or marl inclusions: (A) before HCL bath; and (B) after HCL bath.

levels containing Early Woodland Thom's Creek pottery and levels containing Middle Woodland Hanover sherds seems more important. While there was no immediate "revelation," it soon became apparent that what had been encountered at Hamp's Landing would have a significant impact on what had been assumed to be the ceramic sequence of the southern coastal plain of North Carolina. By 1997, when Hargrove and Eastman proposed the creation of the Hamp's Landing series, it was apparent that the original sequence required serious reconsideration.

A primary concern regarding the Hamp's Landing series is whether the evidence is sufficient to warrant creation of a new and separate ceramic series, as opposed to merely proffering an amendment to and expansion of the Oak Island series definition. The Hamp's Landing paste characteristics are effectively identical to South's Oak Island series. In fact, the only difference between the attribute descriptions for the two is in the range of surface treatments. South (1960) identified fabric-impressed, plain, cordmarked, and net-impressed types in the Oak Island series. From the data collected by Hargrove (1993), Hargrove and Eastman (1997) identified simple-stamped, cordmarked, fabric-impressed, and plain types in the Hamp's Landing series. However, based on the more recent studies noted above (e.g., Jones et al. 1997; Sanborn and Abbott, this volume), it appears that Hamp's Landing also includes a net-impressed type, reducing the differences between it and Oak Island. Furthermore, during the examination of a sample of South's collections (see above), simple-stamped specimens were identified which South had classified as either cordmarked or smoothed. The site-by-site differences in the presence or absence of specific surface treatments may be related to utilitarian or chronological issues. Nevertheless, it can be argued that the Oak Island and Hamp's Landing definitions refer to the same pottery, except for the actual temper and their proposed chronologies and possible cultural associations.

As discussed above, when the Oak Island series was defined it was assumed that the voids observed in the paste were the result of dissolved shell and therefore related to the shell-tempered wares documented for Late Woodland cultures further to the north. We are now confident that in most instances the voids are the result of dissolved marl or limestone and not shell. In the context of this misidentification, and without benefit of radiocarbon or stratigraphic data, South's conclusion that Oak Island sherds were associated with the Late Woodland or Contact periods was both natural and logical. Yet, with the exception of the Cold Morning site ossuary (discussed above), no chronologically late context has been identified. The ceramics found in the ossuary were accurately classified at the time as "Oak Island," but they are not shell tempered; instead, they are limestone- or marl-tempered (Hamp's Landing) sherds. Consequently, it can be argued that they predate the ossuary by many centuries.

In contrast to the presumed and unsubstantiated Late Woodland age for the Oak Island series, Hamp's Landing appears to be an Early Woodland to early Middle Woodland ware, based on a combination of stratigraphic and radiocarbon associations. Whether or not the series has the antiquity (i.e., nearly 4,000 years B.P.) indicated by the three radiocarbon dates obtained thus far remains to be seen. If so, it would be one of the earliest ceramic series in the region and in the Southeast as a whole. A measure of skepticism about the chronological placement of Hamp's Landing is necessary in the absence of better data. However, the stratigraphic evidence from the Hamp's Landing (Hargrove 1993) and Riegelwood (Abbott, et al. 1999; Sanborn and Abbott, this volume) sites indicates that it is not a Late Woodland pottery series (see also Botwick and Neville 1998; Davis and Child 1996; Reid and Simpson 1996).

Given the evidence now available, Hamp's Landing is considered a valid ceramic series, although future research will certainly refine the series definition as well as expand our understanding of its temporal and cultural relationships to other series in the region (see Hargrove and Eastman 1997). Nevertheless, Hamp's Landing represents more than an expansion and refinement of the original Oak Island series definition; it is a major revision and replacement. Consequently, with all appropriate respect to Stanley South's seminal work in the region, it is proposed that the Oak Island series name be abandoned.

The "discovery" of Hamp's Landing and the proposed abandonment of Oak Island carry a number of implications for future research in the southern coastal region. A few of these are mentioned below.

*Distribution of Shell-Tempered Ceramics*

Although it should be considered a preliminary observation, it is increasingly evident that true shell-tempered ceramics are all but absent in the southern coastal region. Cursory examination of exisitng collections from the region have identified no sherds containing shell, although many Hamp's Landing sherds are present. However, given the proximity to the extensive Algonkian occupations on the central coast, where shell-

tempering was prevalent, it should not be at all surprising to find a few sherds scattered around the area. It would perhaps be more surprising if we did not. The southernmost extent of the shell-tempered pottery tradition now appears to be in the central coast of North Carolina, around the northern part of Pender County. Given the well-documented association of shell-tempered ceramics with Algonkian-speaking groups and the distribution of other Algonkian characteristics in the region, we can now point with greater precision to the approximate maximum southern extent of pre-contact Algonkian culture. While some intermingling and "frontier" interaction probably did occur between Algonkian and Siouan groups, the cultural and archaeological differences may be more sharply defined and geographically distinct than previously assumed.

*White Oak Series Definition*

Hamp's Landing ceramics have now been identified in a wide array of geographic contexts along the coast from northern South Carolina to just below the Neuse River in Carteret County, North Carolina. Surface treatments associated with the series include simple stamping, net impressing, cordmarking, fabric impressing, and plain. These surface treatments are comparable to those found in the Early Woodland New River series (Loftfield 1997) and the Deep Creek series defined by Phelps (1983) to the north of the Neuse River (see also Herbert and Mathis 1996).

Loftfield (1976) reported that the Late Woodland White Oak series contained minor amounts of simple-stamped (what he called "thong marked"), cordmarked, and net-impressed variants. More recent investigations in the central coastal region (e.g., Daniel 1999; Davis and Child 1996; Lautzenheiser et al. 1994; Scott Shumate, personal communication) also report minor occurrences of these surface treatments. It appears likely that in many if not most instances, the same case of "mistaken identity" exists, and that specimens of the previously unknown Hamp's Landing series have been inadvertently lumped into the White Oak series. Simple stamping and net impressing are now thought to be primarily associated with Early Woodland ceramic traditions, including both the Hamp's Landing series and the sand-tempered New River series south of the Neuse River (Herbert and Mathis 1996). As noted above, these techniques also are common to the Early Woodland Deep Creek series (Phelps 1983), but they are not found in the clay/grog-tempered Hanover series, which appears to be the principal Middle Woodland pottery type of the southern coastal region. Cordmarking is commonly found in both Early Woodland and Middle Woodland contexts.

There does appear to be some shell-tempered cordmarked and net-impressed pottery in the region (Daniel 1999; Scott Shumate, personal communication); however, most of the verified examples occur in Carteret and northern Onslow counties along the central North Carolina coast. Given the otherwise early associations of cordmarking and net impressing and the lack of corroborating radiometric dates, this begs the

question of whether these ceramics can or should be subsumed under the Late Woodland White Oak series definition. The earliest form of shell-tempered ceramics along the Atlantic seaboard is identified as Mockley, which originates in the Middle Atlantic region and dates to between A.D. 200 and A.D. 900 (Wright 1973:21–22; see also Byrd, this volume). Mockley is suggested to be the precursor to the later Colington and White Oak series (Herbert and Mathis 1996; Byrd, this volume), and it does contain a net-impressed component, as well as cordmarked and plain varieties (Egloff 1985). Mockley has been found in northeastern North Carolina and has been reported in collections from the central coastal region (Thomas Loftfield, personal communication). Furthermore, a number of Mockley-like net-impressed and cordmarked potsherds were recently recovered from the Long Point site (31Jn2) (Scott Shumate, personal communication) on the White Oak River, in possible association with presumed Middle Woodland Hanover ceramics. Whether or not the reported examples are actually related to Mockley remains to be seen, particularly given the distance between the central coast of North Carolina and the Tidewater of the Mid-Atlantic region. The current evidence suggests that the White Oak series consists only of fabric-impressed, plain and, in the latter stages, burnished varieties. What South observed on the White Oak River in 1962 and what he called White Oak ceramics was apparently on the mark (South 1962).

*Late Woodland on the Southern Coast*

If, as proposed here, Oak Island pottery is not shell-tempered and is not a Late Woodland ceramic type, then there now exists a gap in our typological sequence. What is the principal Late Woodland ceramic series on the southern coast? One possibility may be hidden within the sand-tempered ceramics common to the region, including the Cape Fear series defined by South (1976) and thought to date to the Middle Woodland and early Late Woodland periods. Unfortunately, unambiguously dated or stratigraphic contexts for Cape Fear are lacking at this time, although research is currently underway in an effort to address this issue (Herbert, this volume and personal communication).

It also is possible that Hanover, or a derivative of it, is the principal Late Woodland ceramic series. Recent excavations in Onslow County (Botwick and Neville 1998) and New Hanover County (Hargrove 1993 and personal communication) have yielded interestingly late dates (post-A.D. 1000) for contexts containing sherds otherwise identified as clay/grog Hanover series. Since a discussion of these data is beyond the scope of this paper and much of the research is still underway, further assessment of this issue would be premature. However, the fact remains that the Late Woodland sequence for the southern coastal area is currently in a state of flux. The changes wrought by the identification and proposed chronological placement of Hamp's Landing, and the proposed elimination of Oak Island pottery as a diagnostic artifact class of the Late Woodland period, necessitate a reevaluation of our assumptions about the

ceramic and cultural sequence of the region. In this sense, the future of archaeological research in the region looks to be quite interesting and exciting.

*Data Correction*

On a practical note, the archaeological site files maintained by the North Carolina Office of State Archaeology contain records for nearly 3,000 sites along the central and southern coast. In New Hanover and Brunswick counties alone, over 200 sites have been identified, based on the presence of "shell-tempered" Oak Island ceramics, as having Late Woodland components. How do we now deal with this? Can we assume that if Oak Island pottery (also known as "hole tempered" pottery) is reported, that it is really Hamp's Landing and therefore Early Woodland to Middle Woodland? South of Pender County, this may a fairly safe assumption, given the apparent lack of true shell tempering (particularly in the case of simple-stamped, net-impressed, and cordmarked varieties). However, along the central coast, given the possibility for a scattering of earlier shell-tempered wares, it is clearly a less viable assumption. Consequently, the only empirically acceptable approach is to reanalyze the extant collections, which is a formidable task. Until then, research employing the state site file and archival data from the southern and central coast of North Carolina (and the northeastern coast of South Carolina) must be conducted with an appropriate measure of caution, recognizing the potential discrepancies and inaccuracies.

## Final Comments

Nearly 40 years ago, Stanley South (1960) identified what he perceived to be shell-tempered ceramics in surface collections from the coast of southeastern North Carolina and northeastern South Carolina. The ceramics were christened *Oak Island*, with a postulated association with the Late Woodland Siouan-speaking groups known to have occupied the region during early historic times. Recent research, however, indicates with reasonable certainty that the ceramics (1) are not tempered with shell, but with either crushed marl or limestone, and (2) are substantially older, dating to the Early or early Middle Woodland periods. Given these observations, it is recommended that the Oak Island nomenclature be formally "retired" in favor of the newly defined Hamp's Landing ceramic series (Hargrove and Eastman 1997).

The abandonment of a pottery type or series is a significant and serious matter, particularly when it has become so thoroughly embedded in the archaeological literature, as is the case with Oak Island. However, no ceramic typology can be held static in the face of new information, no matter how old or comfortable it may be. It must change in accordance with the realities of the data. In this case, the data belie the Oak Island series ceramics as originally defined and employed. This is not to suggest

that the Hamp's Landing series is fully understood either culturally or temporally, but only that it better represents the realities of the data.

## Notes

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# PREHISTORIC POTTERY TAXONOMY AND SEQUENCE ON THE SOUTHERN COAST OF NORTH CAROLINA

by
**Joseph M. Herbert**

## Abstract

Information requiring amendments to the typological schemes used for classifying prehistoric pottery from the southern coast of North Carolina is emerging. In broad outline, the data indicate the presence of an Early Woodland coarse sand-tempered series, a Middle Woodland grog- or clay-tempered series, and a Late Woodland medium and fine sand-tempered series. The addition of an Early Woodland limestone-tempered series (Hamp's Landing) appears to be warranted, as does the elimination of the Oak Island series. Although not resolved, the question of where to place the sand-tempered Cape Fear series—Early, Middle, or Late Woodland (or all three)—is considered. The implications of five dates for pottery from sites in the lower Cape Fear River basin also are reviewed. Results indicate that the Middle Woodland Cape Fear series, as originally defined, subsumes types classifiable to both the Early Woodland and Late Woodland periods.

Over the past 50 years five taxonomic sequences have been developed, more or less independently, for prehistoric pottery of the coastal region of North Carolina. Although Stanley South's (1960, 1976) typology is the only one designed specifically for the pottery of the southern coastal region, there is no a priori reason why types from the other four taxonomic systems should not be equally appropriate for sorting pottery from this region. In fact, each of the three authors of taxonomies developed subsequent to South (1960) identifies potential equivalencies among some of their types and those of adjacent taxonomic regions, including those from the Cape Fear basin. In the pages that follow, the typologies designed for adjacent areas are reviewed with the goal of synthesizing a regional taxonomy for the southern coastal region. Chronological data from recent research in the lower Cape Fear basin is also reviewed to provide information regarding the sequencing of taxa. Ultimately, revisions to South's scheme are proposed.

## Taxa Defined for Local Series

William G. Haag's coastal survey, published in 1958 as a monograph entitled *The Archaeology of Coastal North Carolina,* is a remarkably comprehensive consideration of the prehistoric material culture of the coastal region. In eloquent style, Haag's detailed scientific study reports on the analysis of 7,181 sherds from surface collections made at 79 sites spread across the northern and central coastal regions, and an additional 1,223 sherds from controlled excavations at three sites. In these samples, he distinguished two ware classes based on temper differences—grit[1] and shell. Within his grit-tempered ware, he recognized three series including sand, grit (presumably something coarser than sand), and clay-grit. In

absolute frequency tables, relating to arbitrary three-inch excavation levels, Haag first established the relative sequence of sand, clay, and shell tempering in early, middle and late periods, respectively. Five types of surface treatment were described as potentially sensitive temporal and geographic indicators, including net-impressed, cord-marked, fabric-impressed, simple-stamped, and plain. His frequency tables of grit-tempered ware from the Bandon site (31Co1) illustrate that net-impressed surface treatments effloresce earlier and fabric impressing later. Among the shell-tempered ware at the Cape Creek site (31Dr1), simple stamping effloresces later than fabric impressing. These temper series and surface treatment types became the baseline for all subsequent taxonomies in the coastal region of North Carolina and Haag's observations on their sequence has been largely borne out by subsequent studies.

In 1960 Stanley South launched a more geographically focused survey of sites in the southern coastal region from his post at Brunswick Town State Historic Site. South's survey was subsequently published in 1976 in the South Carolina Institute of Archaeology's *Notebook* series. As part of his investigation, South analyzed 2,256 sherds from the surfaces of 71 sites in Brunswick and New Hanover counties and in Horry County, South Carolina (Figure 1). From this collection he developed a taxonomic sequence that included six new series including: Middle Woodland, sherd-tempered Hanover; later Middle Woodland, sand-tempered Cape Fear; a temperless Tooled Interior; Late Woodland, shell-tempered Oak Island; and the historic sand-tempered Brunswick series. With no stratigraphic contexts and no radiocarbon dates, sequencing these pottery series became an exercise in archaeological inference. Haag (1958) had determined that shell tempering was a late phenomenon on the northern coast and South assumed the Oak Island series to be Late Woodland. This was sound archaeological reasoning, but for one minor glitch. South's interpretation of the presence of shell tempering in the paste of these sherds was based on his observation not of shell, but of the *voids* remaining after the total desolution of the calcium carbonate tempering. Expecting shell, he assumed the voids were the result of the leaching of crushed shell. The recent discovery of pottery fitting the description of Oak Island, but positioned stratigraphically between Middle Woodland Thom's Creek and Hanover, prompted a careful review of the circumstances and, after close examination of temper-void shape, the definition of a new limestone-tempered series (Hargrove 1993, 1998; Hargrove and Eastman 1997). The significant differences in surface treatment between South's Oak Island and Haag's shell-tempered series (later defined as Colington and White Oak) that were so puzzling to South (1976:41) make more sense in light of recent findings that redefine the Oak Island series as Hamp's Landing—an Early, and possibly Middle, Woodland series.

As for sequencing the sherd-tempered (Hanover) and sand-tempered (Cape Fear) series, South (1976:16–18) noted in his samples that fabric-impressed surfaces (85%) dominated the Hanover series and was the minority surface treatment (36%) in the Cape Fear series. Coe (1952:306)

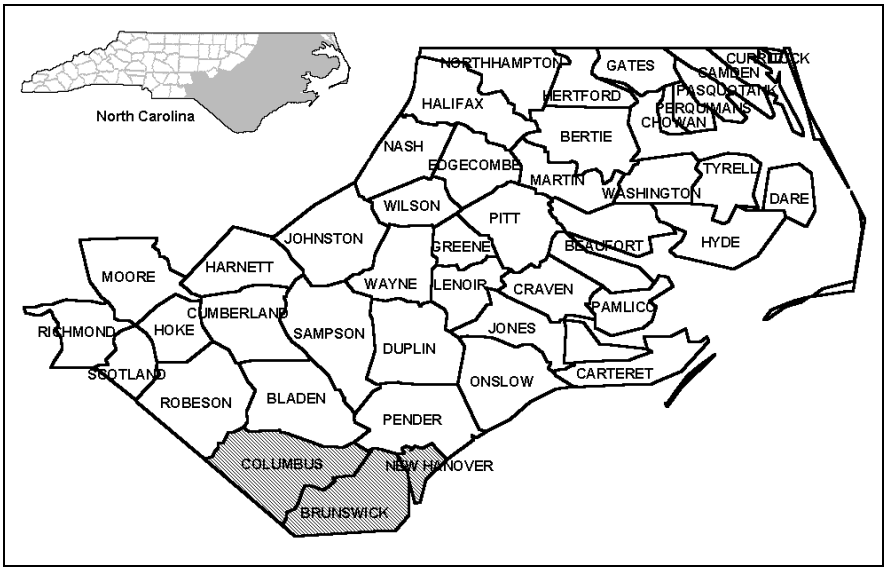


Figure 1. Prehistoric pottery-taxonomy area of the southern lower Coastal Plain. South analyzed 2,256 sherds from the surfaces of 71 sites in Brunswick and New Hanover counties, North Carolina, and Horry County, South Carolina (not shown).

and Haag (1958:108) were both of the opinion that fabric-impressed surface finishes were the earliest to be found in assemblages from Piedmont North Carolina and elsewhere in the Southeast. Furthermore, net impressing was observed as a minority type in the sand-tempered Cape Fear series and Coe had noted that net impressing first appeared in the Uwharrie series in the Piedmont. Its temporal range, at that time, was thought to be about A.D. 1200 to 1500. This line of reasoning was strengthened by South's (1976:40) conversations with Waring who, with Caldwell (Caldwell 1952:316; Caldwell and Waring 1939; Waring and Holder 1968), had observed the grog-tempered Wilmington series to follow the Middle Woodland Deptford series on the Georgia coast. Thus, South (1976:40) concluded that Hanover was the earlier of the two series. Subsequent dating appears to confirm the placement of the clay- or grog-tempered Hanover series primarily in the Middle Woodland period (although there is growing evidence that the tradition of tempering with clay or grog and sand extends well into the Late Woodland period). The Cape Fear series, as we shall see, is more problematic.

Following the publication of South's survey results, Robert Crawford began his research under the direction of Charles Fairbanks at the University of Florida. Crawford's (1966) Master's thesis data incorporated 3,814 sherds collected from the surfaces of 63 sites in Lenoir, Craven, Jones, Pitt, and Wayne counties (Figure 2). Three pottery series were defined for this collection: a coarse sand-tempered Middle to

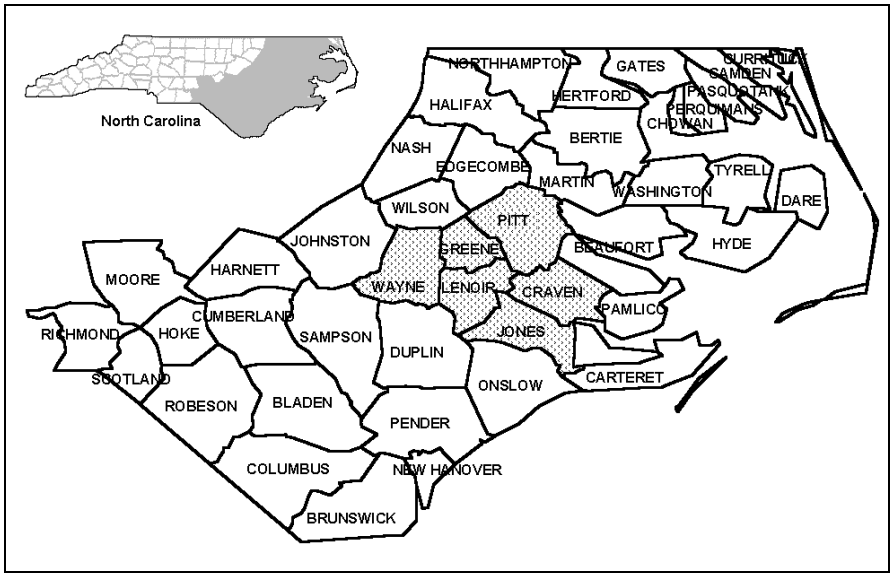


Figure 2. Prehistoric pottery-taxonomy area of the central upper Coastal Plain. Crawford's (1966) Master's thesis data incorporated 3,814 sherds collected from the surfaces of 63 sites in six counties within the middle Neuse River basin.

Late Woodland series (Lenoir); a clay-tempered Middle to Late Woodland series (Grifton); and a fine sand-tempered Late Woodland series (Tower Hill). Both sand-tempered wares were described as occasionally including granule-size, angular pieces of quartz (possibly prepared by crushing). Crawford (1966:38) noted a similarity between his Lenoir series and the Middle Woodland Vincent series (Coe 1964:101–102), and between his Tower Hill series and the Clements series (Coe 1964:33–34) from the Gaston site in Roanoke Rapids Reservoir. This is puzzling, as descriptions of the Vincent and Clements series (published before Crawford's thesis was written) are clearly at odds with his own Lenoir and Tower Hill series definitions. Coe describes the Vincent series as having fine sand temper and the Clements series as containing medium to coarse sand (with no crushed quartz reported for either). Nevertheless, Crawford (1966:46) correctly acknowledged the association of his Grifton series with Hanover (South 1960:16–17) and Haag's (1958:65–72, Tables 1 and 2) clay-grit or sherd-and-grit tempered ware. Seriating a sample of 20 of the original 53 assemblages, Crawford (1966:107, Figure 17) observed a trend from coarse to fine sand tempering among the Lenoir and Tower Hill assemblages that appears to be well supported by subsequent research in the region. Thus, within six years of South's (1960) definition of the Brunswick and New Hanover county series, things had become more complicated—Crawford had made a strong case for a coarse sand-tempered Middle Woodland series and a fine sand-tempered Late

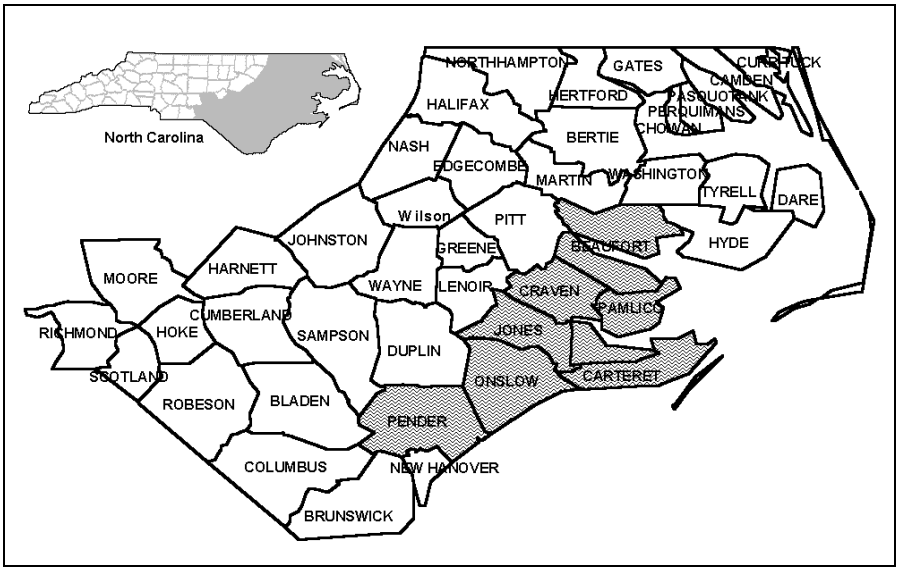


Figure 3. Prehistoric pottery-taxonomy area of the central lower Coastal Plain. Loftfield (1976) defined a pottery typology consisting of five series developed from 10,757 sherds collected from 147 sites in seven counties in the New River basin.

Woodland series. These results, however, have been overlooked or misunderstood in subsequent studies (e.g., Eastman et al. 1997).

About a decade later, Thomas Loftfield's dissertation (completed in 1976 under the direction of Joffre Coe) focused on the archaeology of the New River basin in the central coastal region. In his study, Loftfield (1976) defined a pottery typology consisting of five series developed from 10,757 sherds collected from 147 sites in seven counties in the New River basin (Figure 3). Sherds from the surfaces of 48 sites (n=8,794) were seriated and a chronological sequence established. Stratigraphic excavations were also conducted on three sites and the evidence from vertical provenience was found to generally support the sequence derived from the seriation model.

Loftfield's typology includes an Early Woodland coarse sand-tempered series (New River), two Middle Woodland series (clay-tempered Carteret and crushed quartz-tempered Onslow), a Late Woodland shell-tempered ware (White Oak), and a late Late Woodland series tempered with fine sand (Adams Creek). Loftfield acknowledged that his New River was potentially equivalent to South's Cape Fear, his Carteret equivalent to South's Hanover, and his White Oak equivalent to South's Oak Island. Judging from type descriptions in print at the time his research was reported, he might also have added that New River was equivalent to Crawford's Lenoir series, Carteret equivalent to Grifton, and Adams Creek equivalent to Tower Hill.

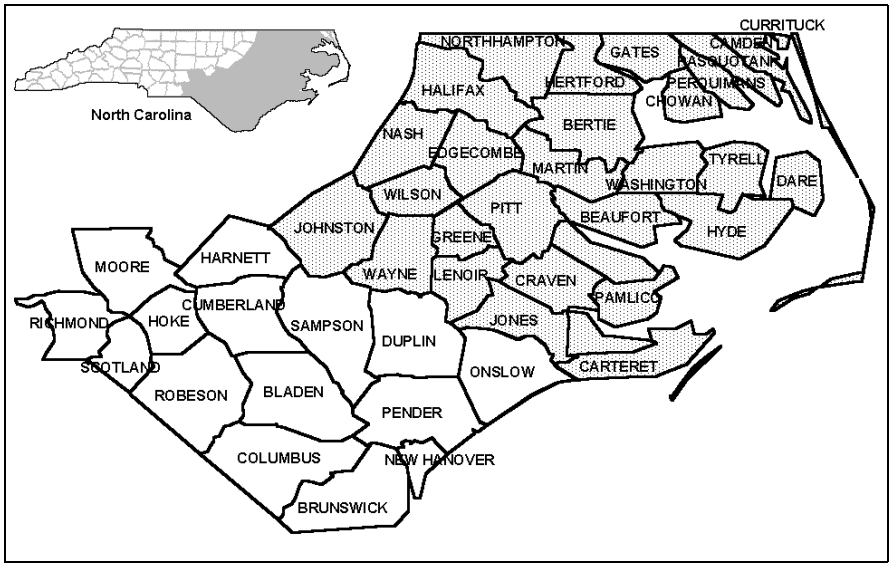


Figure 4. Prehistoric pottery-taxonomy areas of the northern upper and northern lower Coastal Plain. Phelps (1983) developed a sequence of four pottery series for these areas based on numerous excavations.

Over the course of several years, following the completion of Loftfield's dissertation study, David Phelps developed a sequence of four pottery series for the northern coastal area (Figure 4) based on numerous excavations (Phelps 1975a, 1975b, 1976, 1977, 1978, 1981a, 1981b, 1983). Phelps' taxonomy includes a coarse sand-tempered Early Woodland series (Deep Creek), a Middle Woodland sand-and-pebble-tempered series (Mount Pleasant), a Late Woodland series consisting of a mixture of crushed-quartz (or subangular quartz) and fine-sand tempering (Cashie), and a Late Woodland shell-tempered series (Colington). Recent research has also led Phelps to propose, for the outer Coastal Plain, a late Late Woodland series tempered with fine sand (Indian Town) that complements typologies to the south (Phelps, personal communication 1998). In his 1983 summary, Phelps notes the potential equivalency of the Deep Creek series with Loftfield's New River series and the Colington series with Loftfield's White Oak series. The Deep Creek and New River series might also be considered equivalent to Crawford's Lenoir series. The presence of crushed quartz in some sherds of the Tower Hill series has also been taken as evidence of a Cashie-series component at the Tower Hill site (Eastman et al. 1997).

## Types Indicating Extra-Local Interaction

In addition to the types defined for pottery traditions believed to be indigenous to the North Carolina coast (South 1976), several examples of

series more common to the South Carolina or Virginia coasts have been identified in low numbers in assemblages from the southern coast of North Carolina. Fiber-tempered Stallings Plain (Griffin 1943; Sassaman 1993; Stoltman 1972, 1974) is the earliest pottery on the Atlantic Slope and is most commonly found in the lower Savannah River valley and along the coasts of northern Georgia and southern South Carolina. The earliest dates for Stallings (about 2500 B.C.) place it in the Late Archaic period. Stallings Plain is occasionally found in southern coastal North Carolina collections, and fiber-tempered specimens identified as Stallings Plain have been found as far north as the Chowan basin and as far inland as the Sandhills, but such finds are rare (Irwin et al. 1998:20; Phelps 1983:26–27, Figure 1.4).

Specimens of soapstone-tempered ware possibly related to the Early Woodland Marcey Creek series (1200–800 B.C.) of the Potomac basin (Egloff and Potter 1982; Evans 1955; Manson 1948) are occasionally found in the northern part of the coast (Phelps 1983), and rarely occur in the southern area (South 1976:40).[2] Contemporary with the Marcey Creek series is the clay and grog-tempered Croaker Landing series (Egloff and Potter 1982; Evans 1955). Croaker Landing specimens are well represented at Davenport (31Br28) and other sites in the northern area of the coast (Byrd, this volume), but have not been found south of Albemarle Sound.

Thom's Creek is another Late Archaic pottery series that is most abundant in the lower Savannah River valley and South Carolina coastal regions (Griffin 1945; Phelps 1968; Sassaman 1993; Stoltman 1974; Trinkley 1980, 1989, 1990) but also occasionally found in collections from the southern coast of North Carolina (Phelps 1983:27; South 1976:40). While more common in Brunswick and New Hanover counties, specimens have occasionally been identified from sites in the Inner Coastal Plain Sandhills province at Fort Bragg (Irwin et al. 1998:20). In general, the Thom's Creek material found in assemblages from southern coastal North Carolina comprise plain or reed-punctate varieties which are thought to be among the earlier (2000–1000 B.C.) surface-treatment types (Cable 1998:306, Figure 113; Trinkley 1980, 1990).

A recently identified limestone-tempered series, Hamp's Landing (Hargrove 1993; Hargrove and Eastman 1997; Herbert and Mathis 1997), has been proposed for the late Early Woodland or early Middle Woodland period. At the Hamp's Landing site, this pottery was found in stratigraphic context between zones with Early Woodland Thom's Creek and Middle Woodland Hanover series pottery (Hargrove 1993). A feature containing Hamp's Landing ceramics at the Cape Island site (31On190) has been radiocarbon dated to cal 1945 B.C. (Jones et al. 1997). Hamp's Landing sherds have also been found in features at 31Cb114 ranging in age from cal 2890–525 B.C. (Sanborn and Abbott, this volume). So far, limestone-tempered pottery has been found in the lower Cape Fear drainage and along the coastal margin as far north as Carteret County. The Hamp's Landing series may also be related to the limestone-tempered

Wando series (Adams and Trinkley 1993) found in Horry County, South Carolina.

Although sand-tempered check-stamped specimens, classifiable as Deptford (Caldwell and Waring 1939; Williams 1977), have been found in collections from the southern coast (South 1976), their occurrence further north is rare (Phelps 1983). Coe (1964:32) identified a linear check-stamped minority type in the Yadkin series at the Doerschuk site (31Mg22) and found simple-stamped and check-stamped surfaces among the Yadkin assemblage at Town Creek (Coe 1995:154). Although the Middle Woodland Yadkin series is defined as tempered with crushed quartz in very high proportions (reportedly 40–50 %), the check-stamped materials from Doershuk and Town Creek suggest some cultural relationship to the Deptford linear check-stamping tradition to the south. Cable and others (1998) include a check-stamped type in the Cape Fear series from northern South Carolina. And, Deptford-like linear check-stamped sherds were found in very low frequency in South's (1976) survey of Brunswick and New Hanover counties and are found in low frequency in the Sandhills region of the southern coast. Check stamping does not appear again in the Piedmont ceramic sequence until the late prehistoric and contact period Hillsboro and Fredricks phases (ca. A.D. 1400–1710) where it appears as Hillsboro Check Stamped and Fredricks Check Stamped, respectively.

Cable and others (1998:322–324) suggest a taxonomic sequence for the northern coast of South Carolina that divides the sand-tempered Cape Fear series into three phases, each distinguished by slightly different paste characteristics and proportions of various surface treatment types. Cape Fear I (600–200 B.C.), equivalent to early Deptford and coeval with Deep Creek II, is characterized by very hard paste and abundant medium and coarse sand, with primarily cord-marked (50%), lesser amounts of fabric-impressed (23%), and check-, simple-, or complicated-stamped surfaces (27%). Cape Fear II (200 B.C.–A.D. 200), equivalent to upper Deptford and coeval with Deep Creek III, comprises sherds of compact paste with moderately abundant medium-sand temper, with cord-marked (56%), fabric-impressed (22%), and check-, simple-, or complicated-stamped surfaces (22%). Cape Fear III (A.D. 200–800), coeval with Hanover I, is described as having soft to compact paste with sparse, fine-sand temper with cord-marked (47%), fabric-impressed (39%), and check-, simple-, or complicated-stamped surfaces (14%) (Cable et al. 1998:286–297, Table 91).

The principal point made by Cable and others (1998) with regard to the sand-tempered pottery component of the Horry County sites is that clusters of sherds with slightly different paste qualities (i.e., hardness, temper size, and proportion) exhibit different proportions of surface-treatment types. Their results suggest a trend, over the 1400-year period when sand-tempered Cape Fear pottery was made, toward softer pastes with smaller sand grains at lower proportions. In surface-treatment attributes they postulate a trend toward a lower proportion of stamping and higher relative frequency of fabric impressing—although cord

marking dominates (about 50%) in all three phases throughout the period. A similar trend toward higher relative frequency of fabric impressing with a decline in stamping and cord marking is noted by Phelps (1983:29–32) through Deep Creek Phases I–III (1000–200 B.C.). The trends observed in paste and temper for coastal South Carolina are not observed in either the Deep Creek or Mount Pleasant series (200 B.C.–A.D. 800); instead, "a trend toward larger clastic temper" is observed (Phelps 1983:33). Crawford's data for the middle Neuse River drainage, however, do indicate higher relative frequencies of sherds with smaller sand-grain sizes in the Tower Hill series (the later of the two sand-tempered series from that area).

The pottery from the McLean and Buie mounds and the Cold Morning ossuary provide additional evidence regarding Late Woodland pottery series. Seventy-five percent of the McLean Mound pottery (classifiable as Hanover under the current definition) is fabric-impressed and tempered with clay or grog (or both) and sand. The presence of medium sand along with clay or grog, and a complete absence of sherds tempered exclusively with clay or grog without sand, distinguishes these specimens from the Hanover series described by South for the lower Cape Fear. Sand-tempered smoothed and fabric-impressed ware also occur in the McLean Mound assemblage. Although the fabric-impressed material is classifiable as Middle Woodland Cape Fear, the total absence of cord marking (the dominant surface treatment in the Cape Fear series) is not characteristic for the series. These data suggest that both the sand-tempered and clay- or grog-tempered wares may represent an early Late Woodland (ca. A.D. 1000) tradition. The Buie Mound pottery assemblage includes mostly (79%) sand-tempered, burnished plain ware with some (12%) clay or grog-tempered sherds (Wetmore 1978:44, Table 3). Fabric impressing is the minority type (about 10%) at the Buie Mound, but comprises 86% of the McLean Mound sherds. This suggests that the McLean assemblage may be somewhat earlier than the Buie mound, both exhibiting Late Woodland, sand-tempered components (Irwin et al., this volume). Two pottery types, Cape Fear Fabric Impressed and Hamp's Landing Plain,[3] are associated with the Cold Morning ossuary burials, dated cal A.D. 984 (2-sigma, A.D. 778–1163) (Eastman 1994b:10; Ward and Wilson 1980). The proveniences reported for these specimens—each found in association with the dated skeletal remains—do not allow discrimination of temporal priority for one or the other series (Ward and Wilson 1980:27). At present the chronological data available for either series (established from other contexts) are inadequate to resolve the issue. At best it can be hypothesized that one or both of these series were found in primary association with bone dated to the transitional Middle-Late Woodland period.

In summary, the broad outline for a taxonomic sequence for the southern coast of North Carolina may be postulated by considering these taxonomies simultaneously (Figure 5). Late Archaic series will include fiber-tempered Stallings (plain) and Thom's Creek (plain and reed-

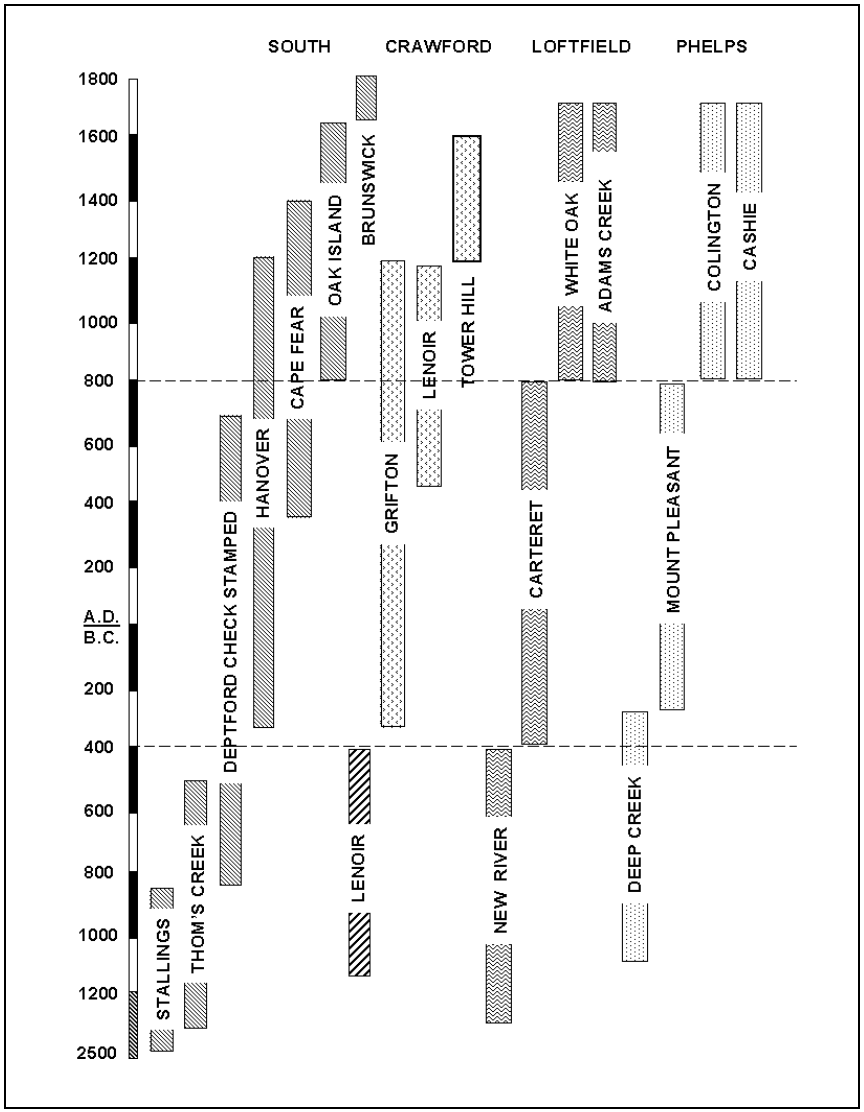


Figure 5. Four taxonomic sequences as defined by South (1976), Crawford (1966), Loftfield (1976) and Phelps (1983) for pottery from the coastal region of North Carolina. Horizontal dashed lines represent arbitrary boundaries between the Early, Middle, and Late Woodland periods. An alternative placement of the Lenoir series in the Early Woodland (depicted by a hatched bar) denotes where it might be placed according to the results of Crawford's (1966:98–101, Figure 17) seriation. Elsewhere, Crawford (1966:38) interprets the Lenoir series as a regional variant of the Vincent series (Coe 1964). The Onslow series is not included in the central coastal sequence as its occurrence in Loftfield's collections was so rare that it could not be properly seriated.

punctate). Early Woodland period pottery will include a coarse sand-tempered ware with (in ascending order of frequency) cord-marked, simple-stamped, and fabric-impressed surface treatments potentially equivalent to the Deep Creek, New River, and Lenoir series. The absence of a sand-tempered Early Woodland type in South's series is obvious, considering current data from adjacent taxonomic regions. Among Middle Woodland types are Hanover Cord-Marked and Hanover Fabric Impressed (with equivalent types within the Grifton and Carteret series), and cord-marked and fabric-impressed types within the Cape Fear series. Occasionally, sherds tempered with sand or crushed quartz exhibit linear check stamping (identified as Deptford Linear Check Stamped and Yadkin Linear Check Stamped, respectively). With the recent reassessment of the Late Woodland shell-tempered Oak Island series (Mathis, this volume), a considerable gap is potentially opened in the sequence. Pottery from the McLean Mound (MacCord 1966) and Buie Mound (Wetmore 1978) suggests the possibility of both a clay/sand-tempered series dominated by fabric-impressed types and a sand-tempered series with mostly plain and burnished surfaces (with occasional reed-punctate and incised decoration) for the Late Woodland period. The Cold Morning ossuary (Ward and Wilson 1980) leaves open the possibility of the early Late Woodland association of sand-tempered fabric-impressed (Cape Fear series) and limestone-tempered smoothed (Hamp's Landing series) wares.

## Recent Data

I would now like to review some recent data pertaining to the sequencing of the pottery series within the Cape Fear drainage. In 1995 several Woodland-period sites were discovered during a survey of the proposed corridor of the Wilmington bypass (Klein et al. 1995). Middle Woodland sherds of the Hanover and Cape Fear series were commonly found in low density on closely spaced, small sites (Figure 6). Two of these sites (Papanow and Pond Trail) were tested for the purpose of recovering sherds for thermoluminescence dating (Herbert 1997). Several test units were excavated at locations where the probability of recovering Hanover and Cape Fear pottery was high. Although the cultural deposits were not stratified, they did provide diagnostic sherds for dating.

Several coarse sand-tempered sherds with cord-marked surfaces, classifiable as Early Woodland New River or Deep Creek series, were recovered from the excavations (Table 1). One of these was TL dated to 1221 B.C. (2-sigma, 2076–367 B.C.) (Figure 7). Also found were several conjoining pieces of a medium sand-tempered vessel with a fabric-impressed surface; it was TL dated to 434 B.C. (2-sigma, 924 B.C.–A.D. 56) (Figure 8). The fabric impression on the vessel surface does not indicate an interwoven or plaited fabric with rigid warps, as is more common in both the Cape Fear and Hanover series, but either a plain-twined or a weft-faced fabric with flexible warp elements. These specimens are classifiable as Cape Fear, according to South's type description. Their age—some 800 years older than South expected for the

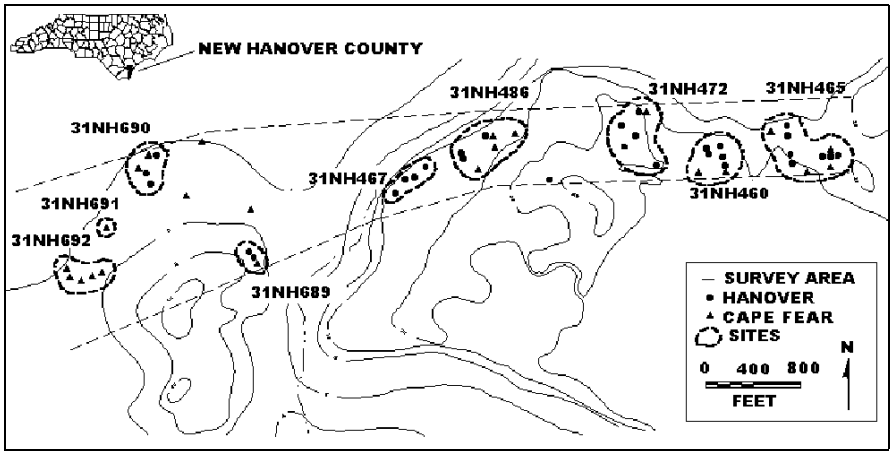


Figure 6. Sites located along the lower Cape Fear River. Circles and triangles identify the shovel tests in which Hanover and Cape Fear series sherds were found. Excavations at the Papanow (31NH690) and Pond Trail (31NH486) sites were conducted to recover pottery samples for dating. Small, pottery-bearing sties are found in close proximity along the terrace margins overlooking the bottomland, and on slightly elevated floodplain hammocks. The co-occurrence of Hanover and Cape Fear pottery on almost every site is notable.

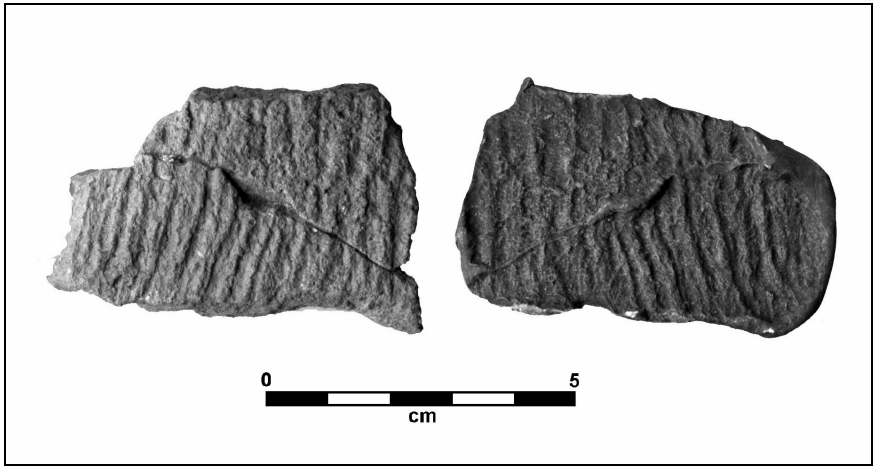


Figure 7**.** New River Cord Marked (sherd [left] and corresponding cast [right]). These sherds are tempered with coarse and medium, sub-angular sand in moderate proportion (20–40%). Average sherd thickness is 9 mm. Exterior surface is over-stamped with cord-wrapped paddle in nearly parallel orientation. Cordage is two-ply, z-twist, of 1–2 mm diameter with about 4 twists per cm. Cordage was wound upon the paddle with about 1 mm of space between each cord. An example of this Early Woodland series from the Papanow excavations was TL dated to 1221 ± 436 B.C.

Table 1. Frequency of sherds among pottery classes from the Papanow site (31NH690).

| Temper | Surface Treatment Type | Surface Treatment Variety | Series and Type Name | Count |
|---|---|---|---|---|
| marl | cord marked | parallel, not spaced | Hamp's Landing Cord Marked, var. 1 | 3 |
| marl | simple stamped | narrow, round grooved | Hamp's Landing Simple Stamped, var. 1 | 2 |
| coarse sand | cord marked | parallel, not spaced | New River Simple Stamped, var. 1 | 8 |
| coarse sand | fabric impressed | mediun twined textile | New River Fabric Impressed, var. 2 | 27 |
| grog | fabric impressed | coarse, interwoven | Hanover Fabric Impressed, var. 1 | 6 |
| grog | fabric impressed | fine, interwoven | Hanover Fabric Impressed, var. 3 | 3 |
| grog | cord marked | parallel, not spaced | Hanover Cord Marked, var. 1 | 56 |
| grog | cord marked | perpendicular, spaced | Hanover Cord Marked, var. 2 | 3 |
| med. sand | cord marked | parallel, not spaced | Cape Fear Cord Marked, var. 1 | 124 |
| med. sand | cord marked | perpendicular, spaced | Cape Fear Cord Marked, var. 2 | 4 |
| med. sand | net impressed | knotted, open weave | Cape Fear Net Impressed | 7 |
| med. sand | plain | smoothed | Cape Fear Smoothed | 1 |
| residual | – | – | – | 49 |

series—warrants either reclassification as the New River series or revision of the series description that extends the early end of the Cape Fear temporal range.

Several Hanover Cord-Marked specimens exhibited very distinctive perpendicular cord impressions (Figure 9). Casts of the surfaces of these sherds suggest an open-weave textile consisting of two sets of cordage elements, each comprising parallel, equally spaced cords, interwoven or twined at oblique or perpendicular angles, to form a net-like fabric. Experiments conducted to replicate these impressions (Herbert 1999) demonstrated that, in fact, the impressions were made by over-stamping with a paddle wrapped with a single cord wound in one direction with spaces between each wrap. The perpendicular orientation of the cords reflects the angle of the paddle. The age of these sherds, as suggested by a TL date of A.D. 173 (2-sigma 274 B.C.–A.D. 619), places them in the Middle Woodland period. Also recovered were grog-tempered, fabric impressed sherds TL dated to A.D. 680 (2-sigma, A.D. 396–964) (Figure 10). These specimens, classified as Hanover Fabric Impressed (Herbert and Mathis 1996), display the more common weft-faced fabric consisting of two-ply cordage weft elements, interwoven or twined on semi-rigid (non-cordage) warp elements. Both dates secured for these samples fall within the expected range for the Hanover series (South 1976:28–29; also

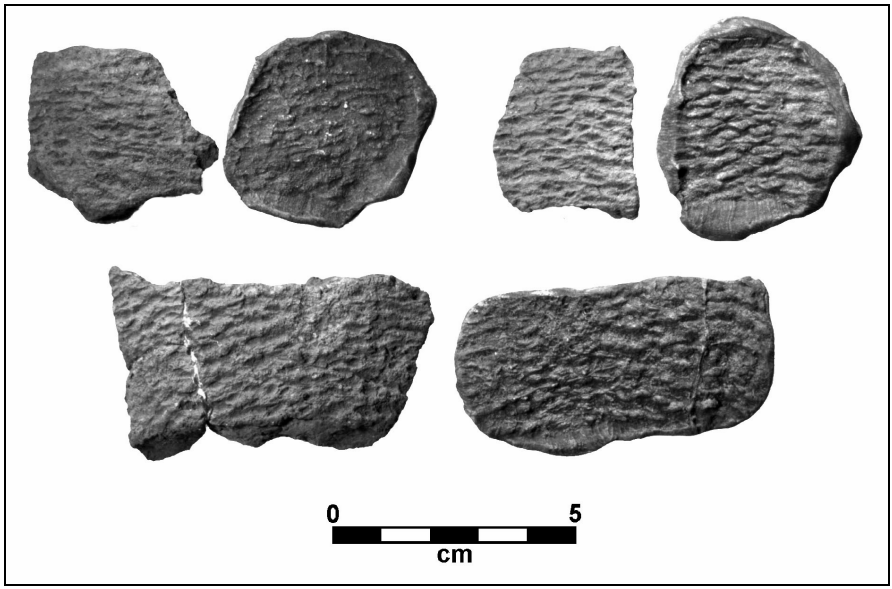


Figure 8. New River Fabric Impressed (sherds [left] and corresponding casts [right]). These sherds are tempered with medium, sub-angular sand in moderate proportion. Average thickness is 7 mm. The surface is impressed with either a plain-twined textile or a weft-faced interwoven fabric with flexible warp elements. The structure of the weft elements is not clear, but it appears to be spun-fiber yarn (one-ply) of about 1-mm diameter. A specimen that mended to those shown here was TL dated to 434 ± 250 B.C.

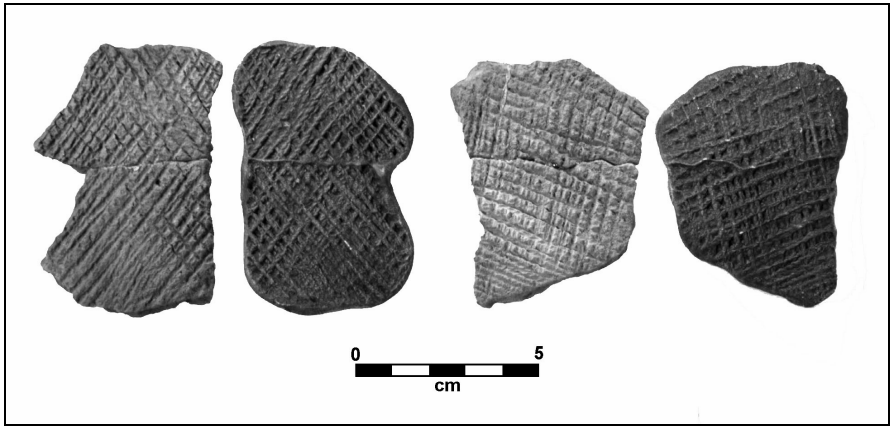


Figure 9. Hanover Cord-Marked (sherds [left] and corresponding casts [right]). These specimens are tempered with clay and are over-stamped with a perpendicularly oriented cord-wrapped paddle. The cordage is two-ply, z-twist of 1–2 mm diameter with about 5 twists per cm. Cords were wound around the paddle with about a 2-mm space between each wrap. The age of these sherds is suggested by a TL date of A.D. 173 ± 228 for a specimen that refits with those pictured here.

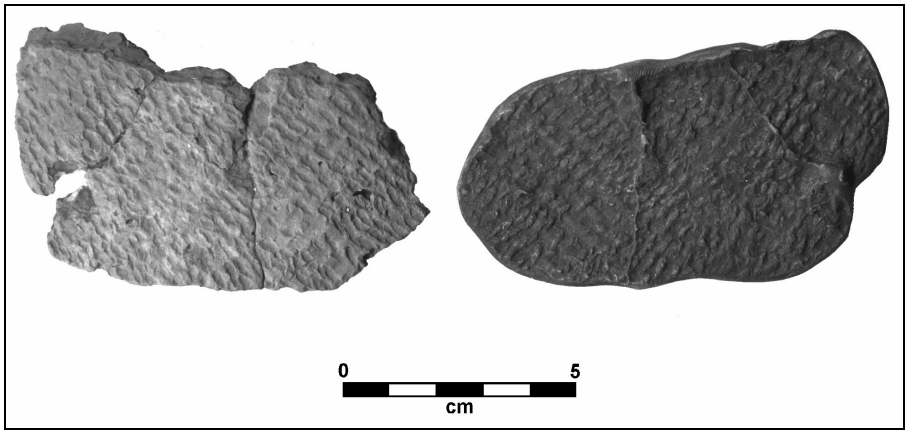


Figure 10. Hanover Fabric Impressed (sherd [left] and corresponding cast [right]). These specimens are clay-tempered and impressed with weft-faced textile. This fabric is the most common type observed on Hanover sherds, consisting of weft elements interwoven or twined on semi-rigid (non-cordage) warp elements. The weft cords on these specimens are two-ply, s-twist of about 1-mm diameter. The warp elements, clearly visible in the cast, appear to be a smooth plant stem, perhaps a rush of about 3-mm diameter. A specimen similar to those pictured was TL dated to A.D. 680 ± 145.

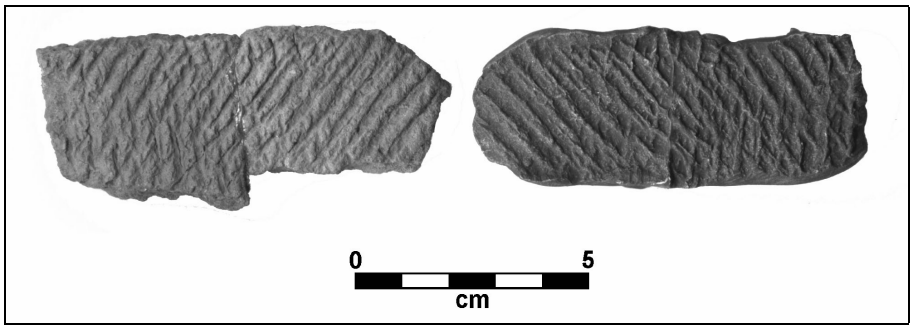


Figure 11. Cape Fear Cord Marked (sherd [left] and corresponding cast [right]). These specimens are tempered with medium sub-angular sand in moderate proportion. Exterior surfaces are over-stamped with an obliquely oriented cord-wrapped paddle. The cordage is two-ply, z-twist of 1–2 mm diameter with about 4 twists per cm. Cords were wound around the paddle with about a 2-mm space between each wrap. The surface treatment on these specimens is very similar to that observed on the clay-tempered Hanover specimens shown in Figure 9. A sherd that mends with those shown here was TL dated to A.D. 1319 ± 192.

see Figure 12). Perpendicular cord-marked surface treatment was also found on sand-tempered specimens classifiable as Cape Fear (Figure 11). Although the surface treatment on these specimens is identical to that observed on grog-tempered Hanover sherds, the TL date[4] derived for one of these specimens (A.D. 1319 [2-sigma, A.D. 943–1695]) places this type in the Late Woodland period.

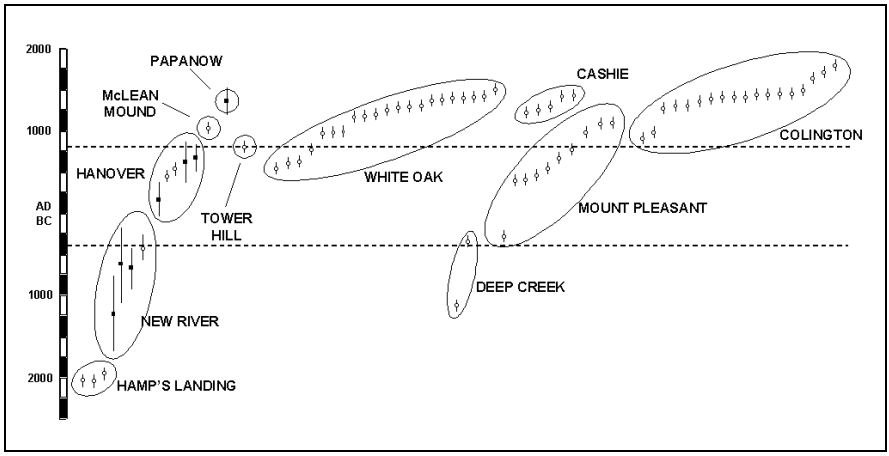


Figure 12. Radiocarbon and thermoluminescence dates associated with prehistoric pottery from the Coastal Plain of North Carolina. Thermoluminescence dates are shown as filled squares with whiskers depicting 1-sigma error ranges (minimum error values for all dates is shown as 100 years). The figure is arranged with the southern-coastal sequence on the left, the central-coastal sequence in the center, and the northern-coastal sequence on the right. Horizontal-dashed lines mark the Early, Middle, and Late Woodland periods. The scarcity of dates prior to A.D. 300 is striking. The Late Woodland period in the southern area is represented by only two dates. The McLean Mound pottery includes a clay/grog and sand-tempered series that could be classified as Hanover and a sand-tempered smoothed and burnished series (see Irwin et al., this volume). The Papanow TL date is for a sand-tempered cord-marked sherd classifiable to the Cape Fear series by current definition, but of a much later age than expected for that series.

## Implications for Sequencing Series from the Southern Region

Comparing these dates to others from the coastal region suggests some differences among the southern, central, and northern areas (Figure 12). In the southern area, the new limestone-tempered Hamp's Landing series is as yet dated only to a very early position, coeval with the Late Archaic period Stallings and Thom's Creek phases (Sassaman 1993:25, 235–244). Several factors, however, argue against assuming that the limestone-tempered series dates exclusively (or even primarily) to the Late Archaic period. First, it is noteworthy that the dates for Hamp's Landing are much earlier (about 700 years earlier) than the earliest New River date. Although there are few dates for this time period in North Carolina, the length of the period between the latest Hamp's Landing and earliest New River or Deep Creek series dates suggests that the hiatus is a product of sampling error. A hint of what may fill the gap is provided by a recent reanalysis of the Haag's collections from sites in New Hanover and Brunswick counties. Results indicate that voids created by the dissolution of carbonates are quite common in pottery from the southern coastal region. Pores of various sizes, shapes, and proportions occur in

sand-tempered as well as clay-tempered series, including fabric-impressed types within those series. This suggests that the temporal range of the Hamp's Landing series, if defined strictly on the basis of limestone inclusions, is likely to be extended into the Middle Woodland period as more opportunities for dating arise. Third, the presence of a fabric-impressed type in the Hamp's Landing series is cause for placing that type no earlier than the Middle Woodland period. On the South Carolina coast, fabric impressing makes its first appearance in the Deptford and Wilmington series no earlier than about 600 B.C. (Anderson et al. 1982:280; DePratter 1979:128–131). Finally, the stratigraphic position of the limestone-tempered materials at the Hamp's Landing site suggests that they were deposited later than the Thom's Creek sherds (Hargrove 1993).

Early Woodland sand-tempered, cord-marked and fabric-impressed types, that might be classified as New River series, currently occupy the period from 1221 to 434 B.C. with error terms extending that range somewhat earlier and later. The earliest date for the New River series is from a thick, coarse sand-tempered, cord-marked specimen from the Papanow site.[5] These sherds also conform well to descriptions for Deep Creek I phase ceramics. The New River, rather than Deep Creek, series name is used here in order to facilitate distinctions in the event that future studies find differences among the Early Woodland sand-tempered types from the southern and northern coastal areas (see Herbert and Mathis 1996:145). It is equally reasonable to classify these sherds as Deep Creek in the interest of reducing nomenclature and promoting regional comparisons. Perhaps the more important question is, why include the later three dates (593–434 B.C.) in the New River, rather than Cape Fear, cluster? To acknowledge that this association is largely arbitrary emphasizes the importance of securing more dates for sand-tempered ceramics from the southern coastal region. The medium sand-tempered, fabric-impressed sherds in this New River cluster could as easily be classified as Cape Fear series. At present there exists an interval of about 1400 years between the dates for sand-tempered pottery (434 B.C.–A.D. 1028) that subsumes most of the Middle Woodland period. Recent data from the northern coast of South Carolina (Cable et al. 1998), and research at Fort Bragg, suggest that future studies may find grounds for associating the latter three dates in this New River cluster with the Cape Fear series.

Dates for the Hanover series range from A.D. 173 to 680. Several radiocarbon dates obtained recently from sites on the coast of New Hanover County (Hargrove, personal communication 1999) suggest that the upper limit of the Hanover range may soon be extended as late as A.D. 1300. Among the two dates for Late Woodland sand-tempered wares are the cord-marked specimen from the Papanow site (dated A.D. 1319) and the date of A.D. 1028 obtained from the McLean Mound. Applying the McLean Mound date to the sand-tempered pottery found in mound context is legitimate only if the assemblage is homogeneous (i.e., reflecting a single component) and clearly associated with the dated carbon. As neither of these conditions exists, placing the McLean Mound

date in the Cape Fear group is tenuous. Taken as a whole, however, the McLean Mound pottery does exhibit Late Woodland characteristics (see Irwin et al., this volume).

In conclusion, the presentation of chronological data for pottery from North Carolina coastal sites illustrates the seriousness of the deficiency of dates from the southern area and in all areas of the coast for sites predating A.D. 300. For the central coast there is a very well developed series of Late Woodland White Oak dates—seven of which pre-date A.D. 1000.[6] On the northern coast, the suite of dates for the Mount Pleasant and Colington series is relatively rich with numerous dates that are nicely interdigitated. There are 18 dates associated with the Colington series, and only two pre-date A.D. 1000. Interestingly, the nine dates for Mount Pleasant series, while generally earlier than Colington dates from the northern coast, largely overlap dates for the White Oak series from the central coast. Radiocarbon assays predating A.D. 300, however, are very scarce. From the southern area, the absence of Late Woodland dates is conspicuous. This may be the result of sampling error, but it may also reflect a significant difference in settlement pattern between the areas north and south of the New River drainage during the Late Woodland period (post A.D. 800). The cluster of dates for the New River series in the southern area is composed mostly of TL dates from contexts where the absence of datable organics precluded $^{14}C$ dating. This illustrates the utility of the TL-dating method for Coastal Plain sites. Although much can be done to refine the chronology of these coastal-pottery series through further analyses of collections, questions regarding the sequencing of types (especially those thought to pre-date A.D. 300) will ultimately require additional absolute dates.

## Notes

[1] Haag did not define the term "grit" in 1958. Unfortunately, grit continues to find its way into descriptions of pottery from the Carolina coast—vaguely connoting particle size or angularity or texture or some combination of these qualities—with gritty results.

[2] Eight soapstone-tempered sherds were also found at the Cold Morning site, but were not considered to be related to the Marcey Creek series (Ward and Wilson 1980:25).

[3] Recent communication with Trawick Ward indicates that the pottery from the ossuary originally identified as shell-tempered Oak Island series may, in fact, be limestone-tempered Hamp's Landing series.

[4] The size of the sand-tempered, perpendicular cord-marked specimen that was submitted for this TL date was smaller than optimal. The small sample size resulted in a larger-than-normal error. Consequently, the actual date for this sherd could be several hundred years younger than the TL derived date. There is no doubt, however, that this sherd post-dates A.D. 800.

[5] There is actually one earlier reported date in association with a New River sherd from the Riegelwood site (Sanborn and Abbott, this volume), but the extreme antiquity of this date (about 400 years earlier than the earliest reported date for the Stallings series) suggests that it is erroneous.

[6] Fourteen additional dates (not shown) for features containing carbonized plant remains have recently been reported from the Hammock's Beach West site. Eleven of these dates, unquestionably associated with White Oak-series pottery, form a tight cluster ranging from AD 1290–1455. Two others fall between AD 800–1000 and may provide further evidence of early White Oak-phase pottery (Daniel 1999:159–161, Table 8.1, Figure 8.1).

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# WOODLAND BURIAL MOUNDS IN THE NORTH CAROLINA SANDHILLS AND SOUTHERN COASTAL PLAIN

**by**
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## Abstract

In the Sandhills and southern Coastal Plain of North Carolina, a sand burial mound tradition emerged in the Woodland period. Addressed sparingly by professionals in the past and represented today by a partial written and artifactual record, these mounds and the collective mortuary practice they represent are not well understood in North Carolina. Work at Fort Bragg over the past several years has sparked new interest in these mounds, particularly their chronological association. We revisit the existing documentary record as well as data from the McLean Mound, in an attempt to refine our understanding of the temporal placement and range of these mounds. Additionally, we propose that these mounds and their contents reflect an important social context of ritual intensification and participation in extra-regional exchange.

Overwhelmed, perhaps, by the simplicity and redundancy of the archaeological record, archaeologists in the North Carolina Sandhills frequently comment on the lack of prehistoric complexity. The Sandhills is seen as a resource-challenged physiographic zone, an environmental and social periphery, and a place of perpetual mobility, lacking the social complexity that eventually emerges in sedentary agricultural societies throughout the Southeast. This, however, is an unfortunate and, more importantly, an incomplete portrait of Sandhills prehistory. Careful investigation of the North Carolina Sandhills and southern Coastal Plain reveals a Woodland period in particular that is quite complex and an archaeological record that holds much more than the stereotypic lithic scatter or "pot bust."

A unique feature of the North Carolina Sandhills and southern Coastal Plain Woodland period is the occurrence of several low sand mounds, most prevalent along the Upper Cape Fear River drainage (Figure 1). These mounds do not extend into the Piedmont, nor do they appear to cross the Pee Dee River into South Carolina (Keith Derting, South Carolina Site Files, personal communication 1999). They do extend into the Coastal Plain, and at least one mound has been documented on the southern North Carolina coast. While interpretation of these mounds is hindered by poor chronological control and the fact that most were excavated during the late nineteenth and early twentieth centuries, ample evidence remains to suggest that they formed part of a unique and complex prehistoric development during the Woodland period. We review the archaeological and documentary records that exist for these mounds and attempt to place this phenomenon on a more secure footing chronologically. We argue that these sand mounds represent a Late Woodland culture that is at least in part a response to regional and extra-regional social dynamics. While our primary goal is the elucidation of

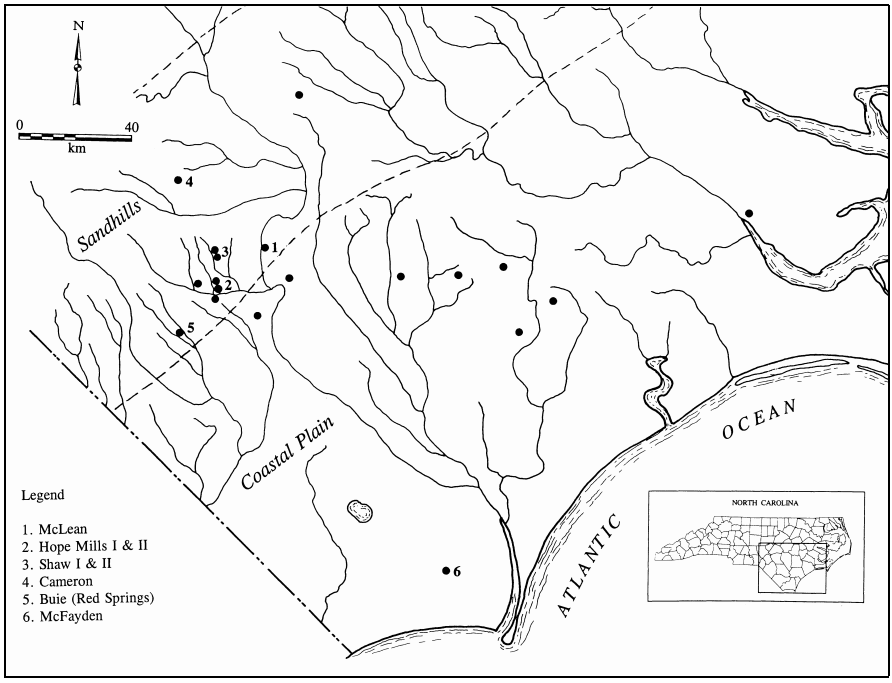


Figure 1. Burial mounds in the Sandhills and southern Coastal Plain.

chronology, we hope to reinvigorate the investigation of the sand mound phenomenon in North Carolina and establish its place in Southeastern archaeology.

Today, little remains of the sand mounds, either in the ground or in curated collections, most having been impacted by collectors or by the plow. Some were investigated by early avocational archaeologists like J. A. Holmes in 1883 (Sprunt 1916), Charles Peabody in 1910, and Charles MacCauley in the 1920s. The early descriptions of these mounds and associated artifacts, though limited, are somewhat informative. A few more recent investigations (Keel 1970; MacCord 1966; South 1962a, 1962b; Wetmore 1978) provide quantitative and qualitative information missing from earlier reports. The most important of these is clearly MacCord's (1966) report on the McLean Mound and his accompanying compilation of existing accounts of mound investigations. Due to space limitations, specific aspects of each mound will not be repeated here except when applicable to the problems at hand; instead, the reader is referred to summary descriptions of mounds in the Sandhills and Coastal Plain by MacCord (1966) and Wetmore (1978). Figure 1 depicts the locations of all mounds currently known in the Sandhills and southern Coastal Plain.

## Mortuary Treatment and Mound Formation

Of particular importance in addressing the sand mound phenomenon is the fact that these mounds were ritual centers where there was a conspicuous pattern of individual and group interment into a symbolic, collective mortuary facility. Such interment varied and included primary and secondary burials, with an emphasis on the latter. Primary interment is evinced by Holmes' description of tightly flexed individuals in Duplin and Sampson county mounds. Secondary burials include cremation and interment of individual and grouped bundle burials as well as concentrations of broken, disarticulated bones. In at least one case, there appears to be either a mass interment or a repeatedly opened grave where roughly 60 disarticulated individuals were interred within the space of a few cubic feet (Peabody 1910). In another case, approximately 21 flexed individuals were found, with some vertical superpositioning, in a space of six square feet (Sprunt 1916). The incorporation of fire into the mortuary sequence is obvious in many mounds, though some variability is apparent, ranging from a ritual fire associated with the act of interment to actual cremation of the remains prior to burial. Cremation is evident at Hope Mills, Shaw, McFayden, McLean, Cameron, and Buie mounds. Two mounds evince prepared graves. Wetmore (1978) noted charred wooden planks lying over some of the burials, while South (1962a, 1962b) found logs lying under burials at the base of McFayden Mound. Interestingly, burial populations in most mounds are predominantly adults with children occurring in low frequencies, if at all. Grave goods were occasionally interred with individuals or groups of individuals, and at least two instances of artifact caches have been noted. Some artifacts recovered from mounds are not clearly associated with individual burials. Certain items, such as stone pipes and ceramics, were ritually "killed" prior to interment.

As for the ritual interment of the dead resulting in the construction of a symbolic monument, the limited information on mound formation indicates a variable pattern of accretion. McLean Mound provides the only unequivocal evidence of submound pits being used before mound accretion began, with a dozen pits used to inter at least 24 individuals, formally initiating the site as a collective mortuary center. McFayden Mound's initiation seems to have been marked by the placement of burials on logs lying directly on the ground surface (South 1962a, 1962b). At other mound sites, there are vague references to buried humic soil horizons and even possible submound pits. For example, Peabody (1910:429) noted the occasional observance of a "sod-line" and he commented that his trenches were "carried quite deeper than the surrounding level, as not infrequently the ground had been disturbed to greater depths" (Peabody 1910:428). Additionally, a submound excavation through a buried surface may be what MacCauley (1966:46) referred to when he described the Cameron Mound's "depth from surface, three feet." On the other hand, Holmes was explicit in noting that the Duplin County mounds revealed "no evidence of any excavation having

been made below the general surface, in the building of the mound, but rather evidence to the contrary" (Holmes in Sprunt 1916). An exception to an overall pattern of mound accretion on pre-existing ground surfaces comes from the heavily disturbed Buie (Red Springs) Mound, in which Wetmore (1978) found no evidence of a buried A horizon, rather a fairly natural soil profile. Generally, mounds reach only a few feet in height but contain numerous interments, and there appears to have been a practice where mounds were either re-opened or simply added to in order to incorporate the newly deceased.

## Chronology

The mounds and the mortuary ritual described thus far are important elements of a Sandhills and southern Coastal Plain culture that emerged sometime in the Middle or Late Woodland period. A primary goal of this discussion is to assess the chronological evidence for the development and continuance of the sand mound phenomenon and to make an initial statement that will hopefully place this mortuary ritual within a larger regional framework. With limited artifactual data, a fledgling regional culture history, and only one radiocarbon date, this is no small task. Furthermore, chronological assessments which have been made on these mounds are not necessarily consistent with one another nor with the available data. For example, although MacCord (1966) secured the only existing date of approximately A.D. 1000 (A.D. 970 ± 110, calibrated to A.D. 1028 [Eastman 1994]), he still called the mound Middle Woodland. And he did so despite his initial assessment revealed in a presentation during his mound excavations (MacCord n.d.). In this unpublished paper, MacCord reasoned that the plain pottery from the McLean Mound was likely associated with the Pee Dee culture and that the mound dated as late as the fifteenth century. Meanwhile, Phelps (1983), apparently persuaded by the presence of Middle Woodland-style artifacts and MacCord's assessment in 1966, also argued that these mounds were a Middle Woodland phenomena. Writing in the same volume as Phelps, however, Coe (1983:173) disagreed with a Middle Woodland date for these mounds, stating that "they are much later and are in effect inverted ossuaries rather than tomb structures." Meanwhile, Wetmore (1978), in her interpretation of the Buie Mound in Robeson County, believed that it postdated McLean, being contemporary with the Lamar and Pee Dee Mississippian cultures to the west and south into Georgia. Her assessment was not unlike MacCord's, an initial hunch based at least in part on the presence of plain pottery at Buie. Finally, South (1962a, 1962b) placed the McFayden Mound in the Late Woodland period, ca. A.D. 1450–1650, based primarily on the presence of a stone pipe.

Since no new dates are yet available (efforts to secure AMS dates from McLean are underway), we turn to the artifacts from the McLean Mound and from the written reports on the early investigations of these mounds to attempt an evaluation of the apparent discrepancy between what some see as a Middle Woodland culture and others see as a Late

Woodland culture. These artifacts vary in how precisely they can be placed temporally, and, as noted above, the fledgling culture history of the Sandhills does not aid our task especially well. Nonetheless, enough data exist to construct a fairly strong argument for these mounds as an integral component of a regional phenomenon that is characteristic of the Late Woodland period.

*Ceramics*

Though pottery was found in almost all of the mounds, the number of sherds from each mound ranges from a handful in most cases to over 200 sherds from the McLean Mound and more than 600 from the Buie Mound. Although the latter two assemblages are not representative of all mounds, they do provide an interesting contrast between mound sites—a contrast that likely represents a broad temporal span of collective mortuary practices. The McLean Mound assemblage, curated at the Research Laboratories for Archaeology, University of North Carolina (RLA), was reanalyzed for this study and is summarized below. Comparisons are made to Wetmore's (1978) description of Buie Mound material.

The McLean Mound assemblage exhibits enough homogeneity in paste, surface treatment, and vessel form to constitute a primary assemblage. In addition, the majority of sherds appear to be intentional inclusions resulting from ritual mound use, not accidental inclusions from earlier site occupations. Such a primary assemblage, consisting of a few pieces from several vessels, contrasts sharply with the more typical "pot bust" found on Sandhills Woodland sites and, as such, represents a unique opportunity in the Sandhills to examine the range, albeit quite limited, of technological and stylistic variability within a particular Woodland period culture.

The predominant temper in the McLean assemblage is a combination of sand and clay. Of 202 sherds with identifiable temper inclusions, approximately 75% are tempered with some mixture of clay or grog and sand; the remaining 25% are tempered with quartz sand of various sizes and angularity. Among 50 sand-tempered sherds, 82% include grains in the medium size range, 14% are coarse, and 4% are granule-size. Most grains are uncrushed and either subrounded or subangular in shape, although one rim sherd of a fabric-impressed jar is tempered with angular quartz. Fifteen sherds are tempered with grog or crushed pottery. One sand-tempered, net-impressed specimen exhibits voids in the paste suggesting some marl inclusions.

Fabric impressing is the primary surface treatment, with some notable minority treatments occurring as well. Among 183 specimens with identifiable surface treatments, 86% are fabric-impressed, 11% are smoothed or smoothed-over stamped, 2% are net-impressed, and 1% are burnished. Among the fabric-impressed specimens, most appear to have been impressed with weft-faced, interlaced, or plaited textile. The structure of most of the fabric suggests non-fiber warp elements of 3–4 mm diameter and two-ply cordage weft elements of 1–2 mm diameter,

Table 1. Cross-tabulation of Temper Type and Surface Treatment at the McLean Mound (31CD7).

| | Temper Type | | | | | |
|---|---|---|---|---|---|---|
| Surface Treatment | Medium Sand | Coarse Sand | Granule | Clay/Sand | Grog/Sand | Total |
| Smoothed | 9 | – | – | 6 | 2 | 17 |
| Smoothed-over Stamped | – | – | – | 3 | – | 3 |
| Net Impressed | 1 | 2 | – | – | – | 3 |
| Fabric Paddle-Edge | 12 | – | 2 | 44 | – | 58 |
| Fabric Impressed | 10 | 5 | – | 73 | 12 | 100 |
| Burnished | 2 | – | – | – | – | 2 |
| Total | 34 | 7 | 2 | 126 | 14 | 183 |

apparently corresponding with MacCord's (1966:33) dominant "coarser weave." Seven specimens exhibit a weft cordage diameter less than 1 mm and a warp diameter of 2–3 mm. Both S-twist and Z-twist weft cordage are represented. About one-third of the fabric-impressed specimens exhibit a variety of impressions created with a cord-wrapped stick or the narrow (4–5 mm) edge of a fabric-wrapped or composite paddle. The pattern characterizing this variety of fabric impression is similar to that created by interlaced or plaited fabric, except that the warps are not parallel and integrated into a weft-faced textile, but overlap sometimes at nearly perpendicular angles. This variety of fabric impression is familiar to analysts working in the southern coastal region of North Carolina and has often been illustrated in plates depicting fabric-impressed specimens (South 1976:Figure 9*b*; Ward and Wilson 1980:Figures 8*b–c*, 9*a*, 11*a*; Wetmore 1978: Figure 8*a*). It is not common, however, in Middle Woodland or Late Woodland assemblages from the northern coastal region (e.g., Mount Pleasant, White Oak, Colington, and Cashie series) and, with further study, may prove to be characteristic of a southern coastal tradition. The net-impressed specimens are vague and the net structure is unclear, but suggest knotted net, perhaps bunched or over-stamped. The smoothed and burnished specimens represent a continuum from smoothed-over stamped to slightly burnished. No specimens exhibit the highly burnished finishes characteristic of the Brunswick series or historic Catawba wares.

Cross tabulation of temper series and surface-treatment types illustrates that both sand and clay/sand or grog/sand series are represented among most classes of surface treatment (Table 1). Exceptions to this are the three net-impressed and two burnished specimens that are exclusively sand-tempered. Although this may be a function of small sample size in these two surface-treatment classes, net-impressed or burnished surfaces are not expected among clay- or grog-tempered (Hanover series) classes.

Comparison of rim sherds suggests a minimum of 33 vessels that can be grouped into five vessel categories based on vessel form, decoration, and/or temper. Overall, bowls are the most frequent vessel form from the

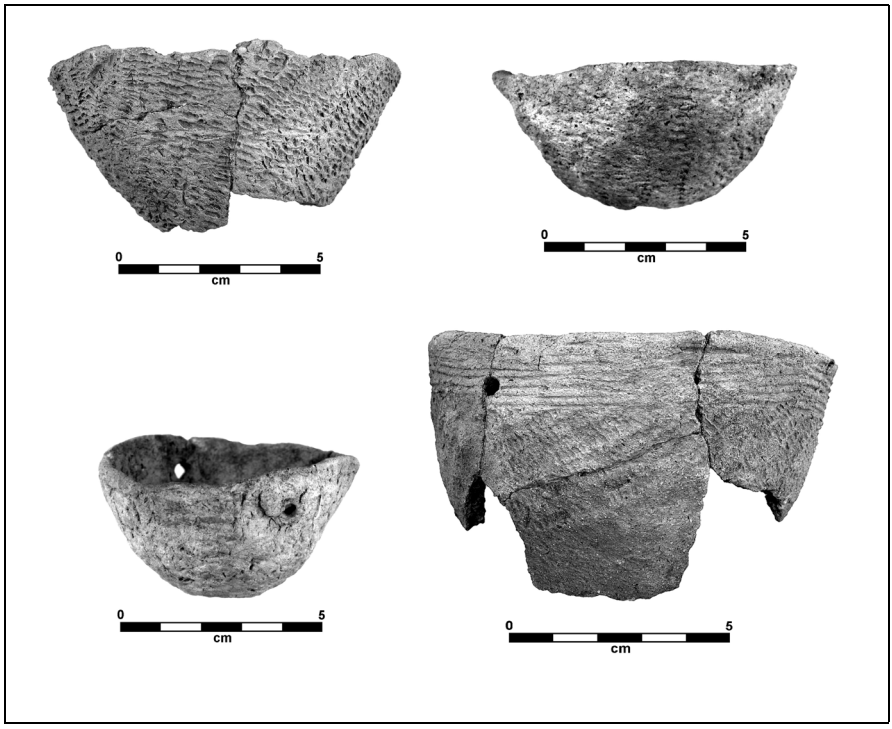


Figure 2. Category I vessels include 17 clay/sand-tempered or grog/sand-tempered cups and bowls with straight or slightly incurvate rims and rounded or flattened lips. Orifice diameters range from 7–17 cm. One vessel (at bottom right) is decorated with a series of horizontally incised lines just below the lip.

McLean Mound. The 17 vessels that comprise Category I are clay/sand-tempered or grog/sand-tempered small bowls and cups with fabric-impressed surfaces (Figure 2). Two of these are considered miniatures (probably pinch pots). Two (including one of the miniatures) have a pair of opposing suspension holes just below the lip. Three clay/sand-tempered or grog/sand-tempered small, open bowls comprise Category II (Figure 3). Each is well smoothed and decorated with a row of split-reed punctations just below the lip. Three sherds representing two bowls comprise Category III (Figure 4). These bowls are sand-tempered, slightly burnished, and decorated with a row of square-reed punctations below a flattened lip. They are also uniquely large, with estimated orifice diameters of 22 cm and 32 cm (Table 2). Nine other clay/sand or grog/sand bowls or cups comprise Category IV. They vary from Category I bowls only in rim form, having flared or everted rims and rounded or rolled lips (Figure 5). Only four jars (Category V), assumed to be cooking or storage containers, are represented in the assemblage (Figure 6). A wide range of temper types is represented among the jars, including medium sand, granule-sized crushed quartz (angular grains), and


Figure 3. Category II vessels comprise three clay/sand-tempered or grog/sand-tempered bowls with smoothed surfaces decorated with a linear series of circular reed punctations arranged horizontally around the rim just below the lip. Rims are slightly incurvate and lips are rounded or flattened. Orifice diameters range from 12–20 cm.

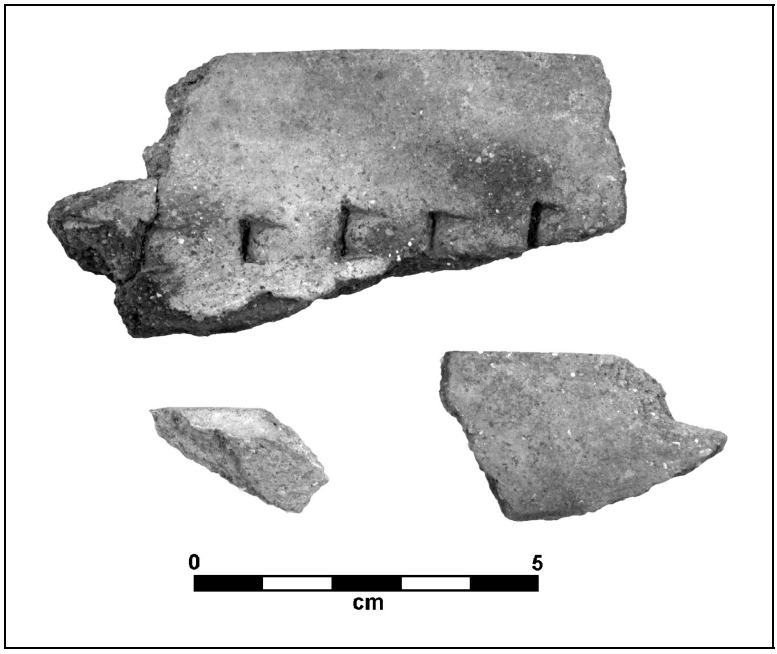


Figure 4. Category III vessels are two sand-tempered bowls represented by three rim sherds. Vessels are tempered with medium sand (0.5–1 mm diameter) and occasional coarse subangular grains. All specimens are burnished, but not highly so. A flat reed section or splint tip was used to decorate one vessel with a single row of stab-and-drag punctations horizontally arranged about 2.5 cm below the cleanly fashioned, flattened lip. Rims are slightly incurvate, and orifice diameters range from 22–32 cm.

Table 2. Cross-tabulation of Orifice Diameter and Vessel Category at the McLean Mound (31CD7).

| Vessel | Orifice Diameter (cm) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 7 | 8 | 9 | 10 | 12 | 13 | 14 | 16 | 17 | 19 | 22 | 32 | Total |
| I | 2 | 5 | 2 | 1 | 1 | – | 2 | 3 | 1 | – | – | – | 17 |
| II | – | – | – | – | – | 1 | 1 | – | – | 1 | – | – | 3 |
| III | – | – | – | – | – | – | – | – | – | – | 1 | 1 | 2 |
| IV | – | – | 1 | 2 | 1 | – | 2 | 2 | – | – | – | – | 9 |
| V | – | – | – | – | – | – | – | 1 | – | – | 1 | – | 2 |
| Total | 2 | 5 | 3 | 3 | 2 | 1 | 5 | 6 | 1 | 1 | 2 | 1 | 33 |

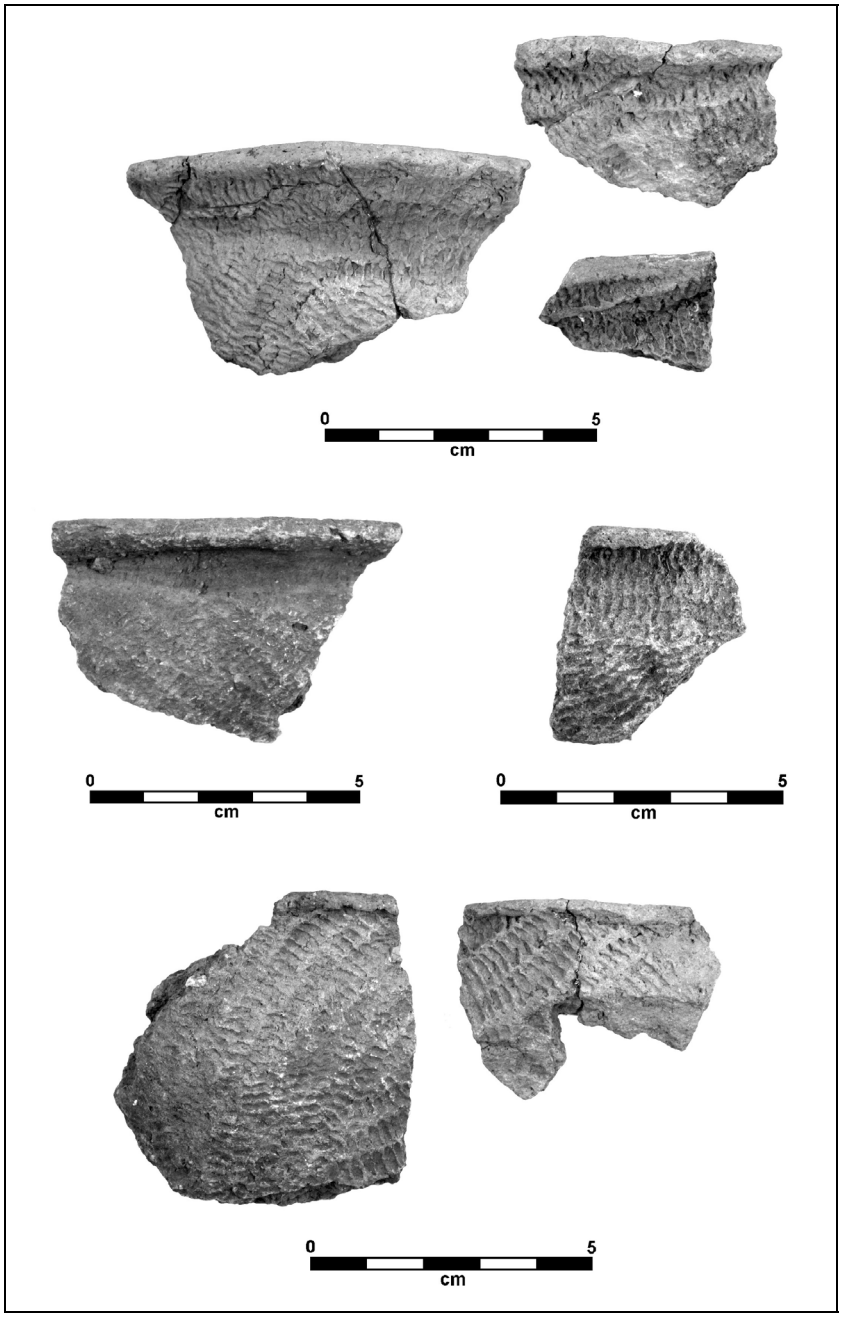


Figure 5. Category IV vessels are also clay/sand-tempered or grog/sand-tempered small bowls, very similar to Category I vessels except in rim forms, which include flared, everted, and rolled. Orifice diameters range from 9–16 cm.

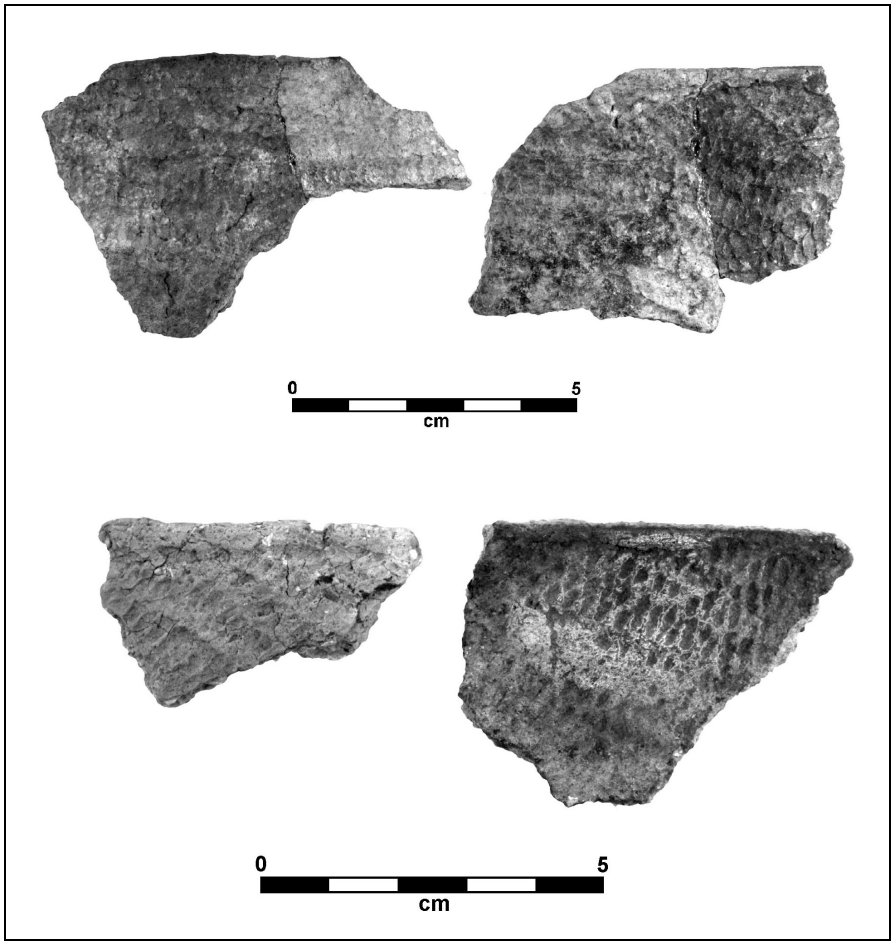


Figure 6. Category V comprises jars of three possible temper series: sand, granule-sized crushed quartz (angular grains), and clay/sand. Five sherds, including two with slightly flaring rims, one with a slightly incurvate rim, and one with a straight rim, represent variations in vessel form. Surfaces are fabric impressed with one rim stamped down the interior about 1.5 cm. Orifice circumferences range from 28–33 cm.

clay/sand. All are fabric-impressed. Several conical base fragments were represented in the assemblage, suggesting that the jars were likely of this form. The 26 clay/sand-tempered or grog/sand-tempered, fabric-impressed bowls comprising Categories I and IV account for about 80% of the vessel assemblage. When orifice diameters for Categories I and IV are compared, a bimodal distribution is observed with one mode having orifices less than 13 cm and the other mode with orifices greater than 13 cm (Figure 7). These modes suggest the presence of two size categories—cups and bowls.

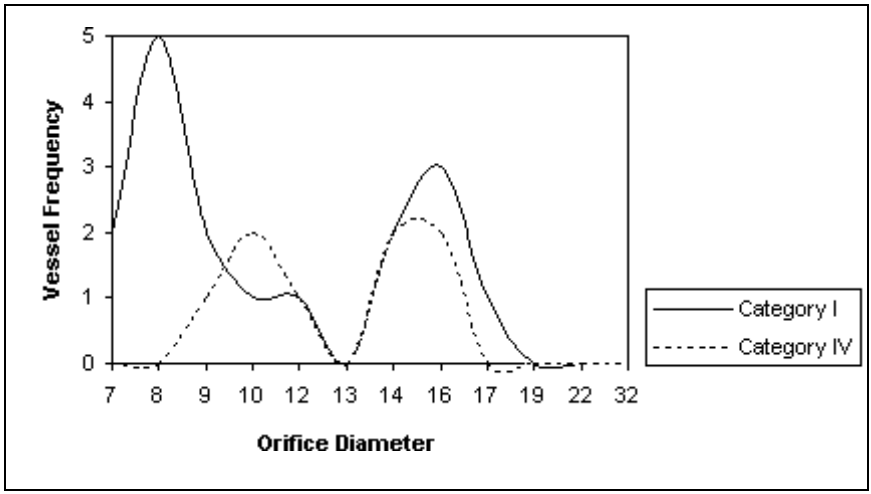


Figure 7. Plot of orifice diameters (cm) for 26 vessels in Categories I and IV show a bimodal distribution. In the smaller mode, orifices are less than 13 cm and in the larger, orifices are greater than 13 cm.

With regard to the question of chronology, the majority of the pottery from the McLean Mound can be classified as Hanover. Seventy-five percent of the assemblage consists of clay/sand-tempered or grog/sand-tempered, fabric-impressed specimens. The presence of a background of medium sand in the paste (and complete absence of sherds tempered exclusively with clay or grog), however, distinguishes these specimens from Hanover series specimens typical in assemblages from the lower Cape Fear region. Although the majority of the specimens may be classified as Hanover (i.e., tempered with clay or grog), there is some justification for considering them as a subset of the series, perhaps occupying a position on the margins of the temporal range for this series. This raises the question of the relationship of the sand-tempered materials. The sand-tempered fabric-impressed sherds are classifiable as Middle Woodland Cape Fear series according to South's (1976) typology for the lower Cape Fear. Indeed, South (1966:60) considers the six fabric-impressed, sand-tempered sherds from the McFayden Mound to be Cape Fear.

It is quite notable, however, that cord marking (the dominant surface treatment in the Cape Fear series) is completely absent from the McLean assemblage. Both the sand-tempered sherds and the clay/sand-tempered or grog/sand-tempered sherds have similar proportions of fabric-impressed or smoothed surface treatment types. Rather than considering the presence of these two tempering traditions as evidence of two disparate cultural components, the evidence seems to suggest a homologous relationship between the sand-tempered and clay-tempered or grog-tempered wares of minimal, if any, temporal or cultural distance. The three medium and coarse sand-tempered net-impressed sherds, on the

other hand, could be classified as Early Woodland New River or Deep Creek series (Loftfield 1976:151–152; Phelps 1983:29–31, Figure 1.6*b*) and may, in fact, represent a second component in the assemblage, likely in secondary context. Field notes do not specify the association of individual sherds and burials.

Most of the McLean Mound sherds (excepting the net-impressed specimens) seem to be a late expression of the Hanover tradition. The placement of the clay or grog-tempered pottery from McLean at the end of the Hanover tradition is logical with regard to the presence of several traits not common to Hanover assemblages elsewhere in the southern coastal region. These include the inclusion of sand temper, punctate decoration, and everted rim forms, all of which are characteristic of later traditions. The circular and flat reed-punctate bowls suggest some affinity with Pee Dee (Coe 1995:176, 187, Figures 9.18 and 9.35), but other decorative features of Pee Dee pottery (e.g., appliquéd nodes or rosettes and rim notching) are not evident in the McLean assemblage. Circular reed-punctate decorations noted on sand-tempered plain ware from the lower Cape Fear were suspected by South (1976:42) to represent a relationship with Lamar period traditions. The reed-punctate decorated bowls are also similar to those found at the Buie Mound (Wetmore 1978:45, Figure 7*d*). Despite such similarities, however, the Buie Mound pottery assemblage is quite different from McLean.

Wetmore (1978:44, Table 3) classified most (79%) of the sherds from Buie as Sand Tempered Burnished Plain, with clay or grog-tempered sherds comprising only 12% of the assemblage. These proportions are reversed at McLean with 75% being clay or grog tempered and only 24% sand tempered. Fabric impressing appears as a minority type (about 10%) at the Buie Mound but is the most common surface treatment (86%) among the McLean Mound sherds. These indicators suggest that the McLean Mound assemblage may be somewhat earlier than the Buie Mound, although both exhibit some association with the Mississippian Pee Dee and Savannah traditions to the west and south. Therefore, it can be postulated that the single date thus far secured for McLean (corrected to A.D. 1028 [Eastman 1994]) does not represent the late portion of the temporal range for interments to the mound which, judging from the characteristics of the pottery assemblage, may have extended several hundred years after this date.

*Projectile Points*

Thirty-three projectile points were identified in the McLean Mound collection curated at the RLA (Figure 8). All projectile points are triangular in shape and are made from both quartz (57.5%) and metavolcanic sources (42.5%), the latter including three porphyritic and three flow-banded rhyolite varieties. In addition to these points, a drill, graver, an intermediate-stage biface, and two possible projectile point fragments were identified. The majority of triangular points (84.8%) exhibit fracturing, much of which comes in the form of small distal-tip or

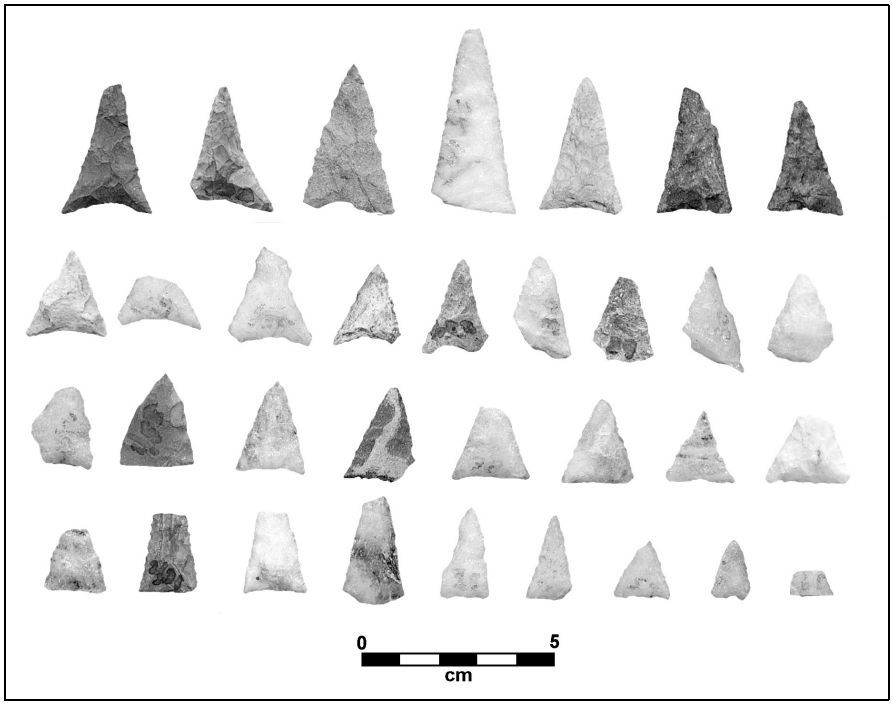


Figure 8. Projectile points from McLean Mound (31CD7). Yadkin points are the first three in the top row, upper left corner.

basal fractures. While many of these may be post-depositional, there are four impact, four transverse, two perverse, and one haft fracture that indicate damage through use and maintenance prior to deposition.

Morphologically, the McLean points can all be classified as triangular with the majority corresponding with the Caraway Triangular type (Coe 1964:49). The median maximum length[1] on 19 measurable points is 25 mm, well below the average length of 30 mm given for this type; however, the median basal width on 25 measurable points is 20 mm, matching that provided by Coe (1964:49). A few large points in the collection stand out as exceptions. Three of these large points exhibit distinct concave bases and correspond more closely with the Yadkin Large Triangular type (Coe 1964:45). Another large quartz triangular point, though its base and distal tip are removed, not only contrasts with the Caraway type in terms of size but further contrasts with the other quartz points in its carefully pressure-flaked blade. These larger points may represent earlier Woodland points and at least limited temporal depth to the mound's uselife.

Points described from other mounds, though few in number, add support to a Late Woodland pattern. From Cameron Mound came a single, small triangular quartz point (MacCauley 1966), while a white

quartz point, two triangular metavolcanic points, eight triangular quartz points, and three leaf-shaped quartz points were recovered from Hope Mills Mound I (Peabody 1910). Wetmore recovered four triangular projectile points from the Buie Mound (three metavolcanic and one quartz), of which she labeled two as Caraway and the other two as Clarksville. Keel (1970) also recovered a small metavolcanic triangular point from the Buie Mound. South (1962a) recovered two triangular points from a feature at the McFayden Mound. One of the latter resembles a Caraway while the other appears to be closer to a Yadkin (South 1962a:18). A consistent pattern of small triangular points supports a general Late Woodland association for those mound sites from which we have data. The occurrence of large triangular points, including Yadkins at McLean and McFayden, may be indicative of differential time depth to these mounds. Still, even these points may reflect only limited temporal depth, as Oliver (1995) dates the Yadkin point type in North Carolina at only ca. A.D. 1000, a date that corresponds well with radiometric dates from Virginia and the single radiocarbon date from the McLean Mound (Eastman 1994).

*Pipes*

Stone pipes are one of the most conspicuous surviving elements of the culture associated with the construction and use of these burial mounds. Extant documentation reveals either a single pipe or pipe fragments recovered from several mounds, including Cameron, McFayden, Hope Mills I, and Buie. However, the McLean Mound produced by far the greatest number of stone pipes with some 10 definite whole pipes and several others represented by fragments. The occurrence of these pipes is intriguing in several respects, with implications for assessing chronology and for modeling extra-local interaction.

A common and somewhat bedeviling response to pipes recovered at McLean as well as the general mention of the term "platform" is recognition of a Hopewellian style. One of the McLean pipes, Pipe #1 (Figure 9) resembles the plain-bowl platform pipe diagnostic of Hopewellian assemblages from the Ohio Valley to Georgia (Jefferies 1979; Otto 1992; Seeman 1979). Pipe #1 assumes a classic platform profile with a bowl roughly centered on an arching, flattened stem, lacking only the thinner stems and effigy character of many of the classic Hopewell specimens (Otto 1993). Two other pipes from McLean also were identified as platform pipes, while MacCauley (1966) identified two platform pipes and a “trumpet”-shaped pipe from the Cameron Mound. Meanwhile, Peabody noted a monitor pipe of the platform variety and an elongated monitor pipe at Hope Mills Mound I. Unfortunately, no further information is available for the Cameron or Hope Mills pipes.

The use of the term “platform” may be misleading. MacCord (1966) actually describes the Hopewellian-style McLean pipe as a monitor pipe and reserves the term “platform” for pipes having a flattened stem with a short bowl set perpendicular to one end (Figure 10). Two such pipes were

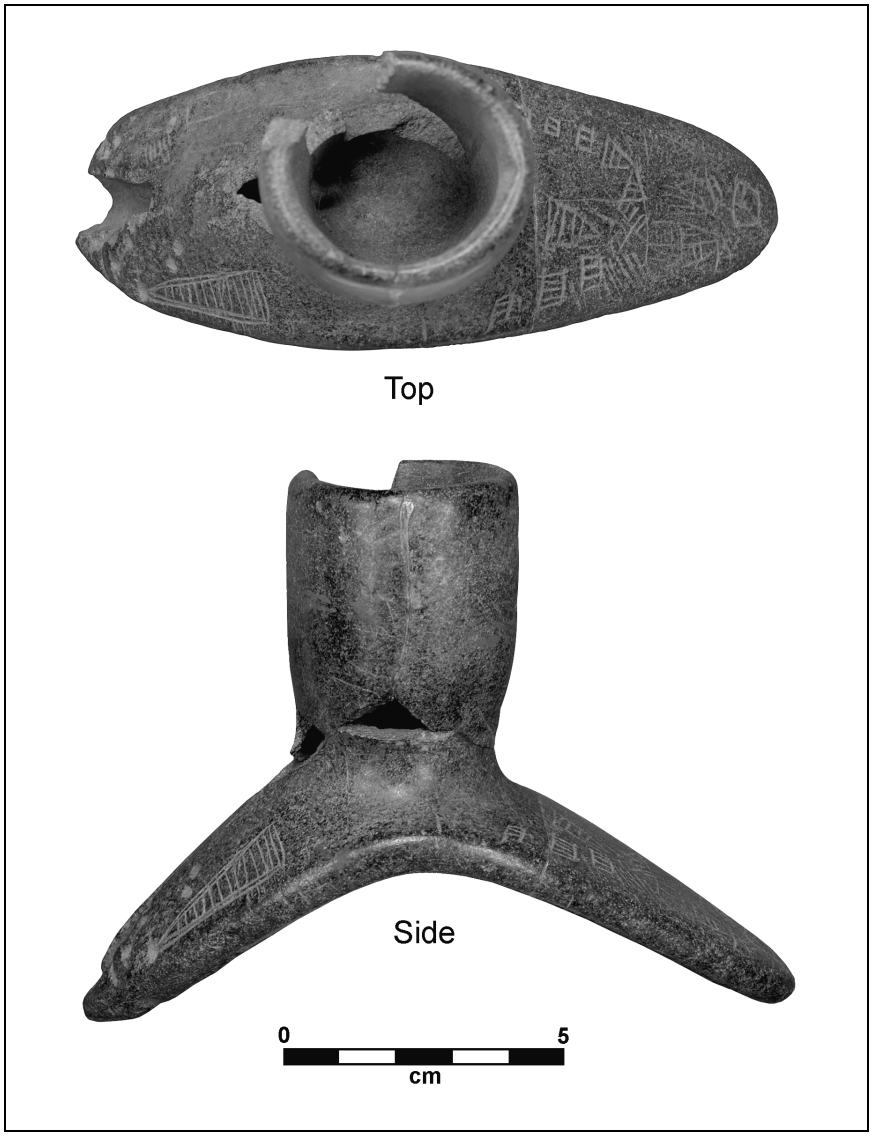


Figure 9. Pipe #1 (RLA catalog no. 2102a129) from McLean Mound (31CD7).

recovered from McLean, and at least three more may be represented by flat stem sections. If the monitor pipes from the Hope Mills Mound I follow MacCord's terminology, then Hopewellian-style pipes likely occurred there as well, though it is impossible to say unequivocally since efforts to locate these artifacts were unsuccessful. The description of a monitor pipe as elongated casts some doubt on the exact shape of such a

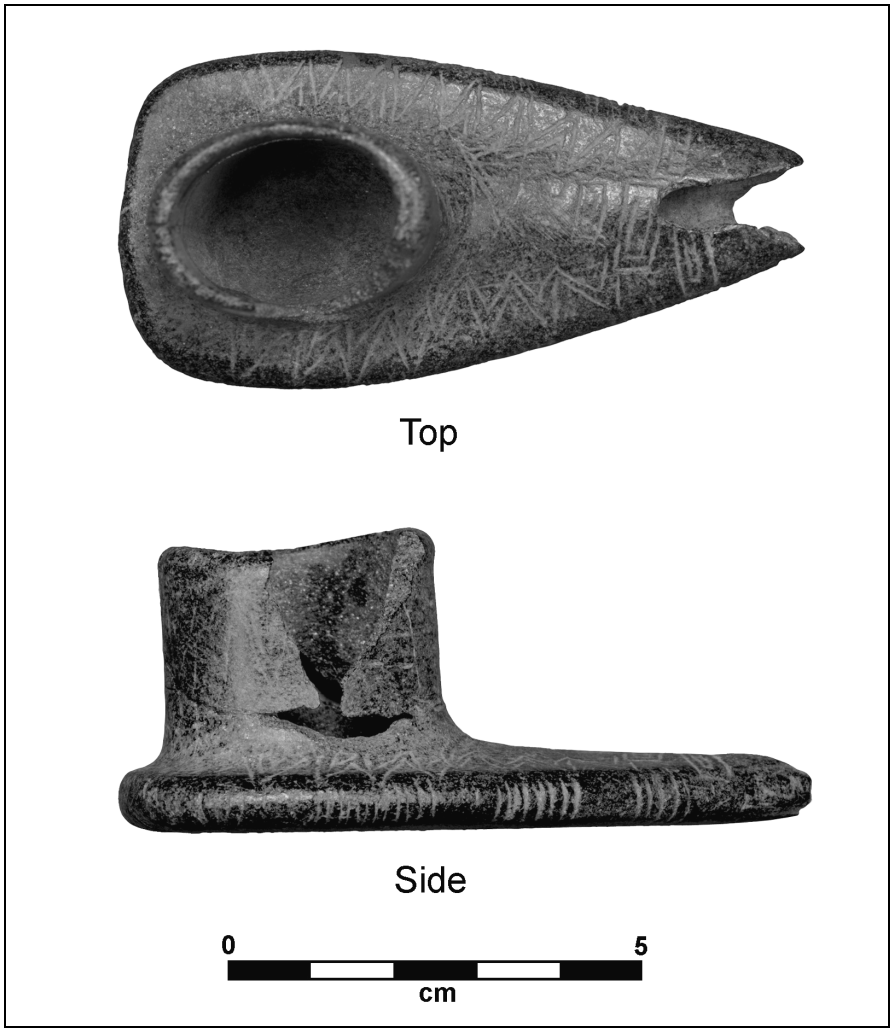


Figure 10. Pipe #3 (RLA catalog no. 2102a63) from McLean Mound (31CD7).

pipe. Nonetheless, while this Hopewellian style does seem to appear in the Sandhills, it is clearly a minority in the relatively large number of stone pipes recovered from McLean.

Including the monitor and platform pipes already described, there is one other prominent morphological style at McLean. Five pipes are what MacCord refers to as "bent-tube," indicating a large bowl set at an obtuse angle off a flat stem. Three of these bent-tube pipes from McLean can be further classified as winged or alate as they exhibit a rounded stem cavity with flattened wings expanding in width towards the bowl (Figure 11). Two of these winged pipes, as well as the Hopewellian monitor pipe and

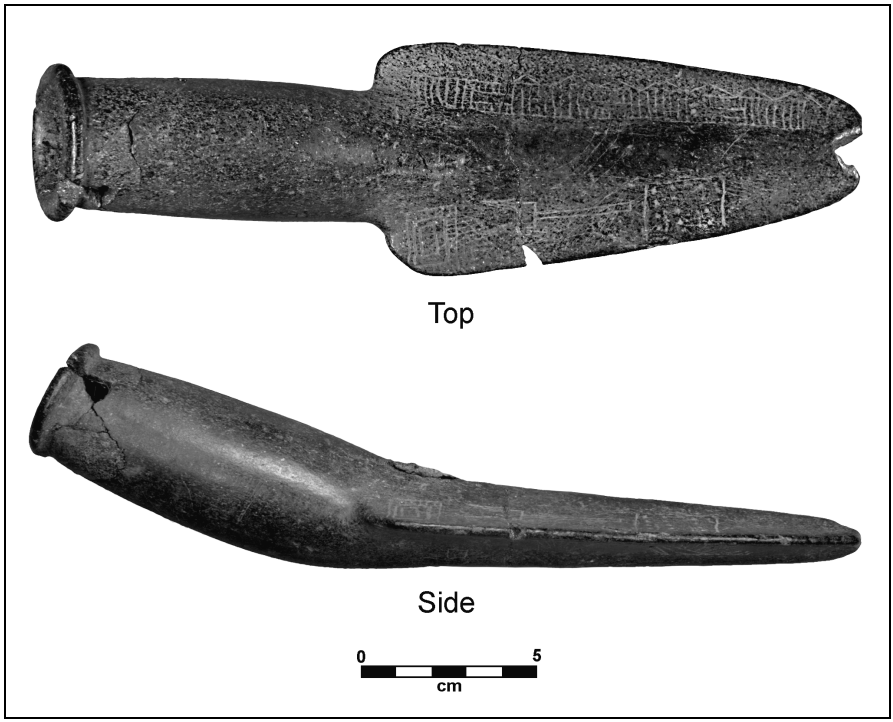


Figure 11. Pipe #2 (RLA catalog no. 2102a130) from McLean Mound (31CD7).

two of the platform pipes from McLean, exhibit incised geometric designs on the ventral and/or dorsal surface.

Given their relative predominance at McLean compared to the single monitor pipe, MacCord's platform and bent-tube pipes are perhaps the most salient pipe styles for temporal association. Bent-tube and winged pipes are especially intriguing. Similar pipes have been recovered from burial contexts in at least one mound and at several non-mound sites in the Piedmont and Coastal Plain of North Carolina and southeastern Virginia. In addition to the stone pipe stem he excavated, South (1962b) reported that an apparent winged pipe was recovered from McFayden Mound by a local collector. At least two sites in the Piedmont have produced winged pipes. An engraved, winged stone pipe closely resembling McLean specimens was recovered with a purportedly historic Siouan burial at Town Creek (Coe 1995:222). Fundaburk and Foreman (1957:Plate 79) illustrate two large engraved, winged pipes from Stanly County, North Carolina. In the North Carolina Coastal Plain, a bent-tube pipe with a simple flat stem and geometric engraving was recovered from a disturbed burial at the Kearney site (31GR84) in Greene County (Phelps, personal communication 1999). Unfortunately, the latter site has yet to be dated. At the Hand site along the Nottoway River in Virginia, Smith (1984)

describes and illustrates "flanged stem" pipes—one made of steatite and two local clay copies—that are similar to winged pipes. The latter occurred in individual burials thought to be Late Woodland, while the other burials at the site clearly date to the early seventeenth century (Smith 1984). One additional platform pipe (its current location unknown) was documented from a burial site (31CR29) along Emerald Isle (U.S. Army Corps of Engineers 1978).

The occurrence of at least one and perhaps more Hopewellian-style pipes in the Sandhills is anomalous given a general absence of Hopewellian culture in the North Carolina Piedmont or Coastal Plain. The nearest Hopewellian manifestation, the Connestee phase of western North Carolina and eastern Tennessee, may be implicated here as a source of ideas, raw materials, or actual pipes themselves, along with mica and copper beads found at Cameron and Hope Mills mounds, respectively (see below). The Garden Creek Mound No. 2 provides the most well-known and elaborate Hopewellian artifact assemblage from the Connestee phase in North Carolina (Keel 1976). If we assume that the McLean Mound and others are at least partially contemporary with the Connestee phase, then we must face the purported end of Hopewell interaction ca. A.D. 400 (Keel 1976:225) and the somewhat troubling absence of anything Hopewellian identified in the intervening area between the Sandhills and the Appalachian Summit Region.

While a Hopewell connection is intriguing, there is sufficient reason to question the chronological weight of one or a few Hopewellian-style stone pipes with respect to the Middle Woodland period. The majority of pipes at McLean are not traditional Hopewell platform pipes, but are instead MacCord's platform or bent-tube variety. The latter pipes, especially the winged variety, are more consistent with those from Late Woodland or Mississippian contexts (Coe 1995; Smith 1984). Further, there is little reason to suspect temporal depth between the platform pipes and the bent-tube pipes; in fact, the McLean monitor pipe (Figure 9) was recovered from the same burial as the largest bent-tube pipe (Figure 10). This burial (designated SK 72) was located within the lower portion or base of the mound, placing the occurrence of these pipes relatively early in the history of McLean's use. Add to this the fact that all pipes described thus far, with the exception of the two clay copies from the Hand site, are made from steatite and that several have some degree of decorative geometric engraving, and it appears that these represent a regional, roughly contemporary style. This style seems to develop into historic-period stone pipes that roughly resemble the bent-tube or winged pipe though the wings are removed from the stem and the bowl typically has a pronounced lip (e.g., Coe 1964, Figure 114; King 1977). In fact, South (1962a, 1962b) dates the McFayden Mound to the Late Woodland period based largely on the similarity between the stone pipe stem he recovered there and one at the Gaston site (Coe 1964). Given a lack of Hopewellian precedent and the predominance of other types of platform pipes, we suggest that the McLean pipes as well as others from the Coastal Plain and Piedmont represent a Late Woodland context with

possible initiation in the terminal Middle Woodland period. It should be noted that Coe (1995:226) references local copies of Hopewell-style pipes made by North Carolina Siouan groups throughout the Late Woodland and into the seventeenth century.

*Other Artifacts*

Other artifacts recovered from mounds include marine shells, marine shell beads, beads and tools made from animal bones, copper beads, celts, a shell gorget, and mica fragments. Shell beads were recovered from at least six mounds. These beads, primarily *Marginella* but also including *Columella*, were recovered in varying quantities, ranging from 75 recovered from the Kenansville Mound to several hundred "minute" beads (presumably *Marginella*) recovered from Hope Mills Mound I. Meanwhile, less specific descriptions include "2 bunches" of *Marginella* beads recovered from the mound at Clinton, a bead "necklace" from Cameron Mound, and 19 *Columella* beads recovered from the Buie Mound. The fairly consistent recovery of shell beads from the various mound contexts, despite collection or preservation biases, suggests these items served as widely distributed and traded goods. Importantly, Phelps (1983) notes a widespread exchange of such shell beads as a notable cultural marker of the Late Woodland period along the northern and southern Coastal Plain. In addition to shell beads, conch shells were recovered from McLean and Buie mounds.

Copper items were recovered from Hope Mills Mound II by Peabody (1910) and at one of the Hope Mills mounds five years later (Oates 1950). Peabody (1910) describes "a few beads of copper of the regular rolled cylindrical type" and in 1915 John Oates, a local Cape Fear area historian and doctor, visited what is likely either Hope Mills Mound I or II and found "copper ornaments" (Oates 1950:328). No further description was given for the latter, but it is certainly possible that these were also rolled copper beads. The occurrence of copper and rolled copper beads likely reflects either a Middle Woodland or Late Woodland (even seventeenth-century) context. Within North Carolina, rolled copper beads were found at Garden Creek Mound No. 2, presumably associated with the Hopewellian component of that site (Keel 1976), but rolled European brass beads have also been found in contact-period sites in North Carolina (e.g., the Mitchum site) (Ward and Davis 1993). Outside of North Carolina, especially in Virginia and Maryland, European rolled brass beads are fairly common in seventeenth-century coastal ossuaries (Curry 1999) as well as further inland (Barber 1994). While copper is found in numerous forms at Mississippian sites in the Southeast, rolled beads are not common in Mississippian assemblages (Goodman 1984). Unfortunately, efforts to locate copper artifacts from Hope Mills Mound II were unsuccessful, so the question of their aboriginal or European origin remains unanswered, though the preponderance of such ornaments in the seventeenth century is certainly intriguing.

A shell gorget was excavated from Hope Mills Mound I by Peabody (1910). His limited description leads us to believe that it is not of the Mississippian variety but that some simple engraved decoration was present. The gorget, approximately 5 cm in diameter, had "a perforation running parallel with the flat surfaces" (Peabody 1910:432). Given such limited description and an apparent nondescript decoration, dating this shell gorget by association with others is not possible. It is conceivable, however, that this gorget was either an attempt to emulate, or an actual version of, a Mississippian-style shell gorget.

A few fragments of mica were found at the Cameron Mound by MacCauley (1966). Mica cutouts and other artifacts are fairly common elements of Hopewell and Mississippian culture, and a regional source for mica is thought to be in the Appalachian Summit area of North Carolina (Purrington 1983). While a few fragments of mica cannot offer particular chronological associations, the presence of mica likely evinces a western contact, direct or indirect, occurring in either Middle Woodland or later times.

Though not temporally diagnostic, several artifacts made from animal bones are noteworthy from the McLean Mound. The existing faunal assemblage at RLA, incomplete when compared to the original catalog, was re-examined for this study. The faunal assemblage includes six worked antler tine, possible projectile points, an unworked antler tip, five beamer fragments from the metapodial bones of deer, nine broken wild turkey leg bones, 21 fox squirrel innominates, 14 tubular bone beads (bird bones), and two canine mandibles, originally identified as dog, but metrically within the wolf size range (Haag 1948). Interestingly, though there is a general absence of faunal refuse from mound fill, the people responsible for creating McLean Mound apparently had a thriving bone-working and shell-working industry. Also of interest is the association of faunal artifacts with burials; some six burials had faunal artifacts in direct association.

*Discussion*

Woodland-period chronology in the Sandhills remains a significant area of research. Bringing resolution to this problem may begin with a consideration of one of the most significant aspects of prehistory in the region—the development of a burial mound culture. Absolute dates remain a priority for dating these mounds. Nonetheless, the above review of ceramics, projectile points, pipes, and other artifacts, while not excluding a Middle Woodland association, suggests a Late Woodland timeframe. It is intriguing and relevant that the emergence of a collective burial-mound phenomenon, concurrent with extra-regional trade, is analogous to similar developments throughout the Late Woodland Southeast (Cobb and Nassaney 1995; Schroedl and Boyd 1991). We propose, largely as a working model that we hope will be evaluated further, that sand mounds are a conspicuous phenomenon that marks the inception of the Late Woodland period at about A.D. 800–1000. The

temporal range of this period likely extended several centuries, with some mounds possibly in use through the latest indigenous occupation of the Sandhills and southern Coastal Plain. It is instructive to note that mounds form such important, sacred monuments, that their use can extend over many generations. As seen in the occasional visits of natives to old burial mounds on Jefferson's Virginia plantation in the eighteenth century, the meaning of such monuments can last even longer than the communities themselves (Dunham 1994:1–3).

## Ritual, Exchange, and Social Organization

> Bones of the most distant parts were found together. . .so as, on the whole, to give the idea of bones emptied promiscuously from a bag or basket, and covered over with earth, without any attention to their order [in Bushnell 1920:124; from *Notes on the State of Virginia*, by Thomas Jefferson, 1788, p.103–106]

It is the last phrase in this quote that presents us with, albeit unwittingly to Jefferson at the time, a kind of interpretive problem regarding mortuary treatment in the Sandhills and southern Coastal Plain. As the ritual, collective burial of individuals in southeastern North Carolina is analogous to late prehistoric mounds in central Virginia, so too is Jefferson's comment on an apparent absence of order relevant to their interpretation. Did these people, deeply engaged in ceremony and ritual, actually inter their dead in mounds "without any attention to their order"? On the contrary, as Dunham (1994) argues for central Virginia, collective burial mounds are important places for elaborate ritual and as such are effective mediators "facilitating and orchestrating" symbolic concepts and social relations. These are the places of highest-order rituals creating, conveying, and transforming culture. Indeed, though collective mortuary facilities may seem to lack order internally, their role as active agents reflecting and reinforcing social relations is most salient. Viewed in such a way, the sand mounds of the Upper Cape Fear and southern Coastal Plain represent a unique prehistoric cultural development manifest in an intensification of public ritual.

We suggest that, in the sense of an Adena ritual landscape (Clay 1998) or a Hopewell ceremonial center (Dancey and Pacheco 1997), the North Carolina sand mound sites should be viewed as important vacant ritual centers, serving a largely dispersed population, particularly in the Sandhills (Culpepper et al. 1999; MacCord 1966). The development of such complex ritual and a concomitant ritual landscape is unique to the Woodland period in the region and has important implications in terms of social organization. Most important is that, among tribal societies, ritual may serve as a mechanism of social integration. As a response to culture change and social tensions, an intensification of ritual serves to establish order and cohesion, to create and reinforce solidarity (Dunham 1994). Importantly, such a social response is correlated with increasing social inequality or heterogeneity, to the point that ritual serves a dual purpose; while it creates a sense of solidarity and masks inequality, it

simultaneously reproduces the very social relations that enhance heterogeneity and that provide impetus for ritual (Dunham 1994). Mortuary ritual, then, may effectively correct "the asymmetry that exists between the profane and sacred, the dead and living" (Levi-Strauss 1966:32). At the same time, however, such ritual accents the "asymmetry" it attempts to resolve.

In the Late Woodland Sandhills, the role of mortuary ritual does seem bent towards integration and the establishment of a collective identity. The dead and living were symbolically, if not physically, united through the repetitive re-opening of mounds and the incorporation of the recently deceased with their ancestors. As individuals (some disarticulated and bundled, others cremated, and still others tightly flexed) were transported to a sacred center and ritually interred in a collective mound, there is a strong suggestion of a collective identity. The occasional distinction of certain individuals via the inclusion of unique artifacts may signal an element of heterogeneity, with status reflected in the individual skills or leadership of a few individuals. Yet the inclusive treatment of the dead in a public facility accents the social group and its ancestry. Though individuals were not completely obscured, the emphasis on collective identity and a ritual landscape seems to reflect culture change geared towards integration. Such integration may reflect a response to a changing social environment and an attempt to produce solidarity amidst increasing social tensions.

But what created the condition of asymmetry (i.e., what was the source for social tension) in the Late Woodland Sandhills and southern Coastal Plain? Unlike Dunham's predilection towards the changing modes of production and social relations resulting from an increase in sedentism and agriculture, the source of tension in the environmentally challenging Sandhills, in particular, may be largely related to external relations. At the same time that we see evidence of an intensification of ritual, we have the first clear evidence of extra-regional interaction as well. The grave goods discussed earlier provide evidence of exchange in nonlocal goods originating both eastward from the coast and westward from the Piedmont and mountains. *Marginella* and *Columella* beads and conch shells provide evidence of contact and exchange with groups on the coast, while chlorite schist and metavolcanic stone, though possibly procured by trips to the Piedmont, are likely exchange items as well. Certainly the finished product of stone pipes is a likely exchange good that is found from Town Creek to the coast and possibly beyond. Additionally, the occurrence of mica and rolled copper beads clearly reflects exchange, probably with groups westward as far as the Appalachian mountains and perhaps, in the case of copper, with groups along the coast who were trading with Europeans. We can add to this list the rimsherd at Cameron Mound "secured by these mound builders from much further westward" (MacCauley 1966:46), presumably a sherd from either the Piedmont or Appalachian Summit Region. The latter, combined with a shell gorget from the Hope Mills I mound, are possible indicators of contact with Mississippian groups.

To the extent that acts of exchange are acts of negotiation (Braun 1986:122), the intensification of ritual may be linked to increasing participation in extra-regional relations, particularly the leadership roles that may emerge in the context of such relations. If our chronological assessment is correct, the sand mound culture occurs in a dynamic social environment with an intrusive Mississippian chiefdom to the immediate west (Oliver 1992), Siouan communities in the Piedmont (Ward and Davis 1993), and Algonquian groups on the coast (Phelps 1983). Within such a social framework, participation in extra-regional trade may reflect efforts toward risk management and alliance formation (Braun 1986; Braun and Plog 1982; Seeman 1995), though the particular alliances sought and the economic risks alleviated remain ambiguous. It is perhaps instructive to note that, beginning in the Middle Woodland period, the mobility range of people living in the Sandhills apparently decreased. Furthermore, there is no evidence at present for the diffusion, via trade or intermarriage, of Pee Dee complicated-stamped pottery into the Sandhills during the Late Woodland/Mississippian period (Culpepper et al. 1999). Ultimately, in the context of interregional relations, the potential for increasing tensions may lie in one or several aspects of inter-group relations, including negotiations toward risk management and alliance formation, competition over resources, or control over trade.

It is possible that individuals in the Sandhills, perhaps even different descent groups, were variably successful if not proprietary over exchange with other groups. On the individual level, burials associated with non-local goods may represent such leaders, though generally such associations are few in number. On the group level, variation in mound size and number of grave goods, even position on the land, may reflect variable status among groups. McLean, for example, has one of the largest burial populations, contains the most grave goods, and is positioned on a major Coastal Plain river between the Piedmont and coast. Yet while the potential for status differentiation exists, what seems important was the consistent and widespread incorporation of individuals into a symbolic collective facility that included their ancestors and would ultimately include subsequent generations.

## Conclusions

Although the record of the North Carolina sand mounds is partial at best, there remains significant potential for us to learn about the prehistoric culture behind these mounds and other dispersed Woodland sites across the Sandhills and southern Coastal Plain. In revisiting the problem addressed by MacCord (1966), Wetmore (1978), and others, we have attempted to refine our model of the chronology of these mounds and the dynamic period they represent. We place this phenomenon in the Late Woodland period, employing its appearance as a marker for the inception of the period in the Sandhills and perhaps southern Coastal Plain as well. In so doing, we not only emphasize diagnostic artifact assemblages but also the development of complex mortuary ritual and the selection of

certain sites on the landscape as sacred ceremonial centers. Together with evidence of extra-local interaction, the sand mound phenomenon presents us with culture change and social complexity in a broad regional perspective, not without parallels in other areas of the Southeast. There remains a considerable amount to learn about these mounds and the culture supporting them, and we hope this paper brings this intriguing problem out of the peripheral shadows and into the fore of research once again.

## Notes

[1]Estimated on points with slight distal-tip or basal edge fractures.

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# INTERIOR RIM IMPRESSIONS AS AN INDICATOR OF TYPOLOGICAL RELATIONSHIPS

**by**
**Adam Marshall**

## Abstract

The purpose of this paper is to investigate a new attribute for determining typological relationships among Late Woodland ceramics of coastal North Carolina. The impressions found along rim interiors are examined in order to differentiate among the two series of Late Woodland shell-tempered pottery produced by the Carolina Algonkians: Colington and White Oak. These two series are found to exhibit significantly different types of interior rim impressions. Also, these attributes are suggested to have utility for determining further typological relationships among other prehistoric ceramic series of coastal North Carolina.

Archaeologists who study North Carolina's Coastal Plain examine the material culture left behind by prehistoric populations. Based on the analysis of these artifacts, archaeologists are able to provide interpretations concerning past lifeways. In order to determine relationships among the various cultural groups that inhabited the Coastal Plain, similarities and differences found among the attributes of prehistoric artifacts are examined. This practice is based on the idea that differences in the manufacture of artifacts represent differences in behavior. Generalized behavioral differences and associated cognitive patterns are used by anthropologists in the designation of populations as distinct cultural groups.

Ceramics are an artifact class commonly used by archaeologists to identify prehistoric cultures. Ceramic attributes, including exterior surface treatments or decorations and tempering agents, are traditionally used as typological indicators. Along the North Carolina coast, for example, shell tempering and fabric-impressed exterior surfaces are considered hallmarks of Late Woodland (A.D. 800–1550) Algonkian pottery. However, other characteristics such as interior rim treatments have been little utilized as a potential diagnostic typological attribute. This study is meant to document a new method for determining significant typological differences between two Late Woodland ceramic series. Specifically, the impressions found along the interiors of rim sherds are examined as another attribute to distinguish the two series of Late Woodland shell-tempered ceramics of coastal North Carolina: Colington and White Oak.

To date, the primary determining factor for distinguishing Colington from White Oak ceramics is the presence of simple-stamped and incised components in the former, and the lack of these components in the latter (Herbert and Mathis 1996; Loftfield 1976; Phelps 1983). This study shows that these two series also differ with regard to interior rim impressions. Furthermore, with the identification of two separate types of interior impressions, previously undetected typological relationships

might be investigated among other ceramic series of coastal North Carolina that exhibit these same types of interior rim impressions.

## Late Woodland Algonkian Pottery of Coastal North Carolina

Prehistoric populations considered to be culturally and linguistically Algonkian occupied a large portion of the North American Atlantic coast, with the southernmost boundary falling around North Carolina's Cape Fear River. These "Carolina Algonkians" spoke a southern variety of the Algonkian language and inhabited the northern and central Coastal Plain of North Carolina during the Late Woodland and protohistoric periods, from around A.D. 800 to A.D. 1550 (Mathis 1993; Herbert and Mathis 1996).

Much of what is known about the lifeways of the Carolina Algonkians is based on archaeological evidence. Two distinct ceramic traditions were manufactured by the Carolina Algonkians, suggesting some degree of cultural diversity between the northern and central coast. In the northern coastal region of North Carolina, north of the Neuse River, shell-tempered Colington ceramics with fabric-impressed, simple-stamped, incised, plain, and burnished surfaces are found at Algonkian sites (Phelps 1983). But below the Neuse River, and north of the Cape Fear, Algonkian sites yield White Oak pottery—shell-tempered wares with fabric-impressed, plain, and burnished surfaces.

Even with these differences in surface treatments, White Oak and Colington ceramics might still be considered to belong to a single series, if some surface treatments (e.g., simple stamping) could be shown to have arisen in a particular area during a later or earlier period of production. Therefore, it is important to note that there is no current evidence that would suggest simple stamping only occurred during an early or late period within the span of Colington ceramic production. Preliminary ceramic analysis of the Cape Creek site at Buxton (31DR1) indicates simple-stamped components can be found throughout the Colington phase (David Phelps, personal communication 1998). Therefore White Oak ceramics, defined as consisting of fabric-impressed, plain, and burnished types exclusively (Herbert and Mathis 1996), can be considered a distinct series.

## Analysis

Apart from the differences in surface treatments, a new attribute distinguishing Colington and White Oak ceramics has recently been identified (David Phelps, personal communication 1998). Simple visual observation has revealed that the fabric-impressed interiors of Colington and White Oak rim sherds are distinct (Figures 1 and 2). Although the presence of interior fabric impressing has been noted in Late Woodland assemblages (see Herbert and Mathis 1996), no attempt has been made to determine the variability with which this trait occurs.


Figure 1. Representative rim sherds of the Colington series (interior view).

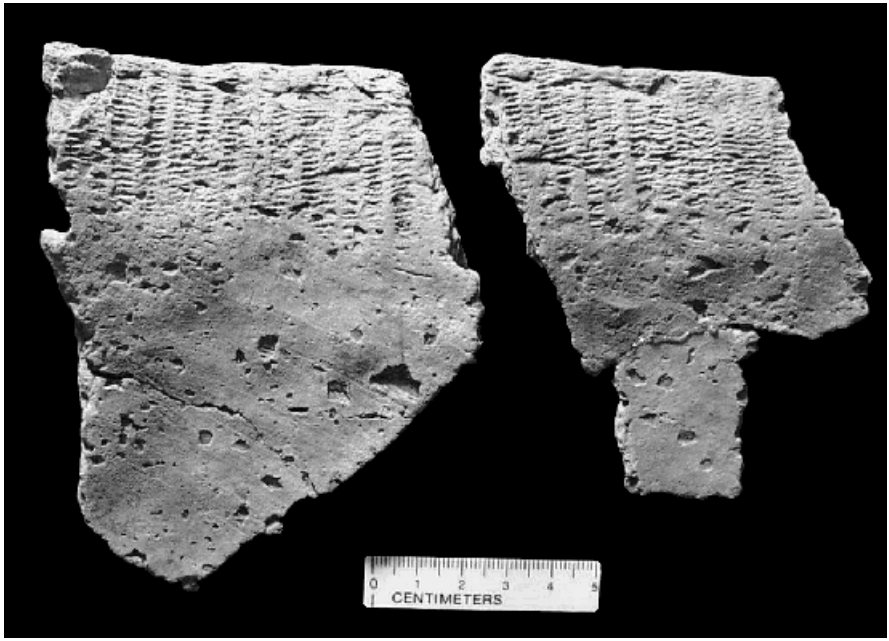


Figure 2. Representative rim sherds of the White Oak series (interior view).

In order to document this variation empirically, both metric and non-metric attributes were recorded with regard to interior fabric impressions. Metric variability was documented by comparing average lengths of interior fabric impressions for the two series. Examination of non-metric variability included a comparison of fabric application techniques, as indicated by distinct kinds of interior impressions. Sherd samples

Table 1. Mathematical summary of the differences in lengths of interior decoration for the two samples.

| Ceramic Series | n | Mean (cm) | Standard Deviation (cm) | 95% Confidence Interval of the Mean (cm) Lower | Upper | *p*-value |
|---|---|---|---|---|---|---|
| Colington | 83 | .943 | .370 | .863 | 1.024 | <.001 |
| White Oak | 68 | 2.659 | .995 | 2.418 | 2.900 | <.001 |

included 83 Colington specimens taken from six sites and 68 White Oak specimens from two sites. The White Oak ceramics came from Holland Point (31CR15) and Long Island (31CR124) in Carteret County; the Colington sherds came from the Baum site (31CK9) in Currituck County, Kitty Hawk Bay (31DR14) in Dare County, Roberts Wharf (31GA1) in Gates County, Hollowell (31CO5) in Chowan County, and the Mount Pleasant and Liberty Hill (31HF20/30) sites in Hertford County.

Within each collection, every rim sherd exhibiting any evidence of interior fabric impressing qualified for inclusion in the sample. Interior fabric lengths were measured from the lip of each rim to the termination of the longest impression. Mean lengths of these groups were calculated at .943 cm for the Colington sample and 2.659 cm for the White Oak sample. An independent samples *t*-test shows that the difference between the mean lengths of the two samples is statistically significant ($p<.001$) (Table 1).

Using these numbers, trends concerning the interior fabric impressing of ceramic vessels within the sample can be noted. The mean length of interior impressions on White Oak ceramics was approximately three times that of Colington rims. However, the ratio of 3:1 does not reflect the actual difference in interior fabric impression lengths since most (44 of 68) of the lengths measured from White Oak specimens were not complete lengths; that is, the interior fabric impressions did not terminate at a point above where the rim had broken from the remaining vessel portion. In contrast, complete lengths for all of the Colington sherds could be measured. This sample limitation does not bias the above conclusion; instead, the conclusion is actually strengthened since many interior impression lengths of the White Oak sherds represent minimum lengths. Therefore, White Oak interior impressions constitute, *at the very least*, an average length three times that observed for Colington rims.

The difference in interior impression length between the Colington and White Oak series is represented visually in a side-by-side box plot (Figure 3). As the name implies, the data are illustrated in a box-like graph with the median value indicated by the center of the notches in the box (Tukey 1977; Velleman and Hoaglin 1981). Top and bottom box edges, called hinges, constitute the $75^{th}$ and $25^{th}$ percentiles, respectively. The difference between the two hinges represents the hinge spread. The remainder of the graph includes a solid vertical line called a whisker that

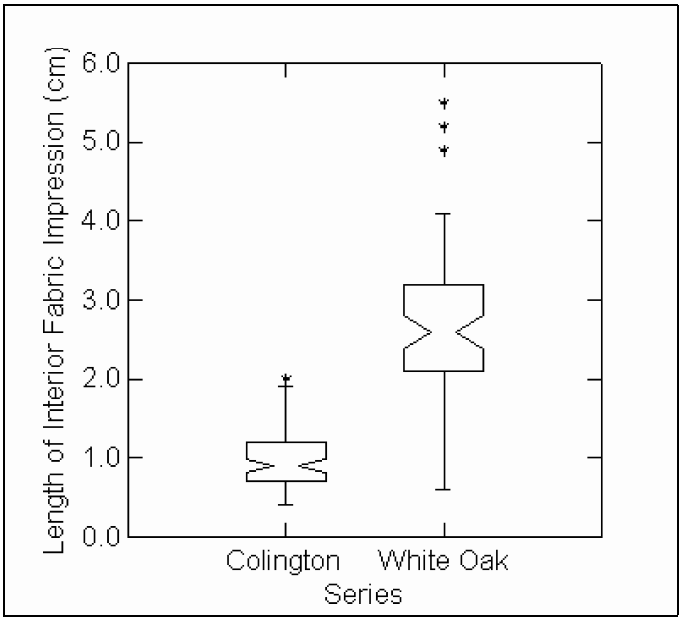


Figure 3. Box plots comparing interior fabric impression length for Colington and White Oak sherds.

extends from each hinge. Whiskers display the range of values that fall within 1.5 hinge spreads of the median (see Velleman and Hoaglin 1981:66–69). Confidence intervals around the medians are indicated by the width of the notches, and these intervals can be used for group comparison. That is, if the confidence intervals around the medians of two different groups do not overlap, then the difference between the medians is statistically significant at a 95% level.

Box plots comparing interior impression lengths indicate that the median length for Colington sherds (.943 cm) is significantly different from that of the White Oak sample (2.659 cm). Although the boxes do not overlap, the shortest 25% of the White Oak measurements, represented by the bottom whisker, overlap with almost the entire Colington plot. This overlap is attributed to the fact that, again, many of the White Oak measurements do not represent complete lengths.

A second, qualitative distinction can also be observed between Colington and White Oak assemblages with regard to the different techniques used in the fabric impressing of rim interiors. All Colington interiors are characterized by a series of single fabric impressions spaced at uniform intervals. Moreover, these impressions were either oriented vertically, diagonally, or in a chevron pattern from the top of the rim. The designs were probably made with a single cord-wrapped stick or with the lateral edge of the fabric mat used in the treatment of the vessel's exterior (Figure 4).

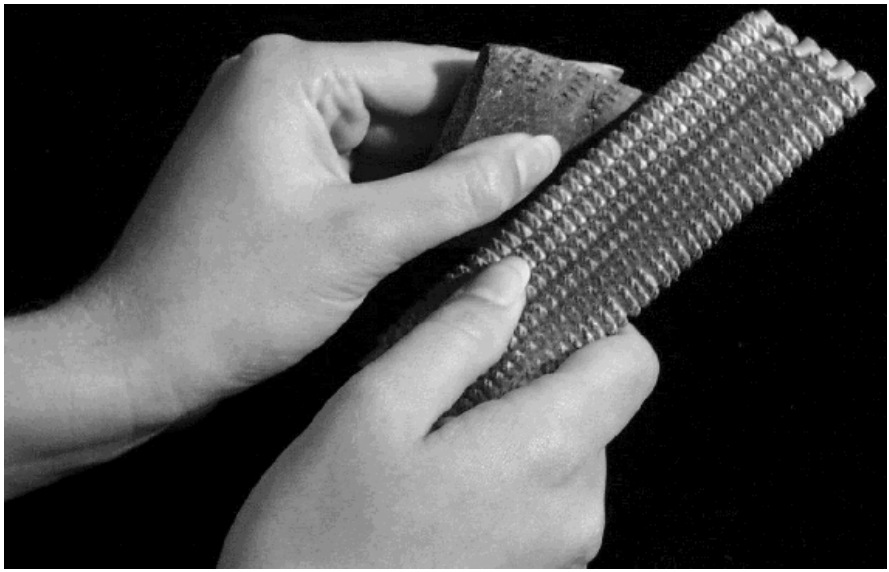

Figure 4. Hypothesized method for decorating the interior rim of a Colington vessel.

On the other hand, White Oak interior impressions exhibited characteristics more similar to those found on typical *exterior* fabric surface treatments. That is, interiors exhibited continuous fabric impressions like those found on exterior vessel surfaces. However, in contrast to exterior patterns, interior fabric warps were oriented vertically. Such a pattern was likely created when the flat surface of a fabric mat was applied to the interior surface of the clay container (Figure 5). Ninety-one percent of the White Oak specimens conform to this description. The remaining 9% (n= 6) exhibited single, uniformly spaced impressions like the Colington sherds. The mean impression length (1.6 cm) of these six specimens also indicates a more Colington-like method of interior fabric impressing.

## Conclusions

The diversity of interior rim impressions found on Carolina Algonkian pottery strengthens the notion that the Colington and White Oak ceramic traditions represent populations that were, to some degree, culturally different. However, the true significance of this study is not so much determined by the recognition of a new attribute that distinguishes Colington and White Oak ceramics, as these series have been sorted for years using attributes other than interior rim impressions. Rather, the conclusion that differences in interior fabric impressions do exist may be utilized in more substantial research projects. This study was limited to Late Woodland ceramics but, in the process of gathering specimens from the East Carolina University lab collections, the same two types of interior

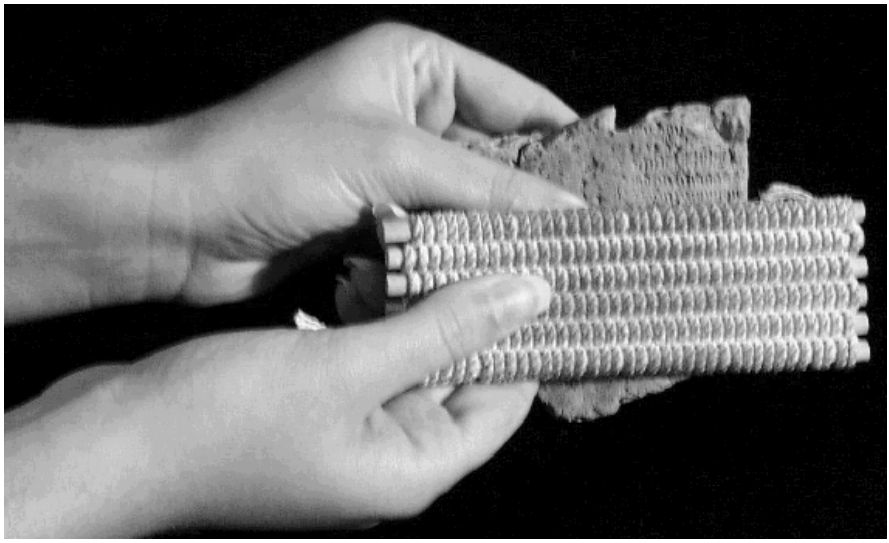

Figure 5. Hypothesized method for decorating the interior rim of a White Oak vessel.

impressions also were noted on Early and Middle Woodland sherds, including those of the Deep Creek, Hanover, and Mount Pleasant series.

Future studies may be able to address questions concerning the origins of particular ceramic series. For instance, if Mockley, a Middle Woodland shell-tempered series from Virginia, was found to exhibit interior impressions like those of the Colington series, then it might be postulated that this trait spread from Virginia into North Carolina either by cultural diffusion or migration. In this way, a sort of cultural continuity might be inferred between these two, with the Mockley tradition serving as a sort of cultural precursor to the Colington ceramic tradition. Or, it might be determined that fabric-impressed interiors present in a Middle Woodland series (e.g., Mount Pleasant series) from coastal North Carolina correspond both stylistically and geographically to White Oak and Colington patterns. It could then be posited that the Late Woodland ceramic traditions arose *in situ* and did not originate from outside the state. At present, such scenarios are conjectural, and these examples do not represent actual facts. It might also be determined that types of interior rim impressions reflect different techniques used in the manufacture of particular kinds of vessels. In this case, the impressions would be functional rather than decorative, and similarities or differences between ceramic series would not necessarily denote interaction between the people who produced the pottery. Only with more research can these possibilities be realized or refuted.

Another interesting issue raised by this study concerns the presence of the six sherds with Colington-like rim interiors within the White Oak sample. This occurrence brings to mind two questions. First, do these six specimens represent Colington sherds? If so, trade could be inferred

between the two Algonkian populations of North Carolina. Or are these, in fact, White Oak ceramics that exhibit Colington-like interior rim treatments? This scenario would represent evidence of cultural diffusion between Algonkian groups from the northern to the central Coast. Again, further research is needed to better define these patterns, but in either case we can begin to document intracultural variability within Algonkian populations.

In conclusion, it is suggested that future efforts at ceramics analysis should pay close attention to interior fabric impressing and treat it as an attribute just as important as exterior surface treatment or tempering agent. As more reports include detailed data on this subject, patterns may begin to emerge that will allow archaeologists to gain new insights concerning the prehistoric Native American cultures of North Carolina's coast.

## Notes

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# CERAMIC TYPES AND TYPOLOGY IN NORTHEASTERN NORTH CAROLINA: THE VIEW FROM THE DAVENPORT SITE (31BR39)

**by**
**John E. Byrd**

## Abstract

Four ceramic series used in northeastern North Carolina were evaluated against an assemblage from the Davenport site (31BR39) in eastern North Carolina. It was found that three of the series exhibited the expected temporal distributions. The fourth appears to have been deposited earlier than expected in the Davenport deposits. The Davenport data suggest ways in which the current culture-historical framework in northeastern North Carolina might be refined. An attempt also was made to explain temporal changes in ceramic temper recipes as the result of innovations that led to the ability of potters to make thinner-walled vessels. The Davenport data indicate that vessel wall thickness is highly correlated with vessel size, leaving cultural drift as a more likely explanation for the changes. Finally, a proposal is made to incorporate a taxonomic class for ceramics above the series that would include, in a single taxon, ceramic series that have similar design characteristics due to mechanisms of cultural transmission.

This paper is dedicated to the discussion and evaluation of specified ceramic types previously defined for northeastern North Carolina and surrounding regions. The types, defined and described by Phelps (cf. 1983) and others (see Egloff and Potter 1982), will be briefly described and then evaluated with reference to a ceramic assemblage recovered from the Davenport site (31BR39), a prehistoric site with deposits dating from the Late Archaic through the Middle Woodland periods (see Tables 1 and 2). The types are tested against the Davenport assemblage for the integrity of the temporal aspect of the type definitions. In short, it will be determined whether or not ceramics which fit the definitions of the respective types are present and, if present, are found to have temporal distributions in line with the chronology developed by Phelps. Data from a single site cannot be used to evaluate the purported spatial distribution of a type except to confirm its presence in a site within the region proposed to contain its distribution. The temporal patterning in paste temper and surface finish—attributes that play key roles in the type definitions—are examined, and an attempt is made to explain the changes in tempering materials over time.

## Culture-Historical Units for Northeastern North Carolina

The culture-historical units currently used by archaeologists working in North Carolina's northern Coastal Plain were defined by Phelps, as discussed in his summary of prehistoric culture in the region (Phelps 1983). The chronological scheme is laid out on the basic framework provided by four of five major periods of change used over much of

Table 1. Phases of the Tidewater region of Northeastern North Carolina.

| Temporal Range | Period | Phase |
|---|---|---|
| AD 800 – 1650 | Late Woodland | Colington |
| 300 BC – AD 800 | Middle Woodland | Mt. Pleasant |
| 1000 BC – 300 BC | Early Woodland | Deep Creek |
| 1500 BC – 1000 BC | Late Archaic | Croaker Landing |

Table 2. Phases of the Inner Coastal Plain of Northeastern North Carolina.

| Temporal Range | Period | Phase |
|---|---|---|
| AD 800 – 1715 | Late Woodland/Historic | Cashie |
| 300 BC – AD 800 | Middle Woodland | Mt. Pleasant |
| 1000 BC – 300 BC | Early Woodland | Deep Creek |
| 1500 BC – 1000 BC | Late Archaic | Croaker Landing |

eastern North America: Paleoindian, Archaic, Woodland, and Historic. The Mississippian period is not recognized in eastern North Carolina since none of the classic manifestations of Mississippian culture (e.g., platform mounds and Southern Cult paraphernalia) are present. Phelps has proposed a number of phases as useful demarcations of culture in time and space at a smaller scale than the periods. The phases of the Paleoindian and Archaic periods (see Phelps 1983) were adopted from Coe's framework for the Piedmont, where the excavation of deeply stratified deposits permitted detailed study of culture during these early periods (Coe 1964). The excavation of deposits from a number of Late Archaic and Woodland period sites has led to the development of a breakdown of culture into five phases as listed in Tables 1 and 2. The five phases are each named for a ceramic series, a fact which reflects the manner in which the development of culture-historical units has proceeded. Ceramic series, as conceptualized by many archaeologists, are ubiquitous within a defined region for relatively brief intervals of time; consequently, they serve as convenient markers of cultural materials deposited during specific, restricted time intervals. Phases are defined so that culture, which changes through time due to evolutionary processes, can be conveniently segmented into spatial-temporal units that facilitate the organization of data. These phases have been proposed as hypothetical units, subject to revision as better data lead to a more refined view of culture in the region and as changing research interests warrant new units.

Phelps has not argued that his phases are concrete entities that reflect individual cultures. They are simply constructs that offer archaeologists a framework with which to view spatial-temporal cultural patterns in eastern North Carolina. However, since the phases are defined with reference to the distribution of cultural artifact modes (since types are defined with reference to mode distributions), they must be seen as

reflecting underlying cultural evolutionary processes (see Neiman 1995). Therein lies their usefulness. An illuminating example of the potential of aptly defined phases to reflect significant cultural patterning is that of the two late Woodland phases, Cashie and Colington. Cashie phase materials are known to have been produced by the Iroquoian-speaking Tuscarora people who occupied the inner Coastal Plain during that period (Byrd 1997; Phelps 1983). The Colington phase materials were demonstrably produced by the Algonkian-speaking peoples of the tidewater region of the Coastal Plain during the same era (Phelps 1983). These two phases index the changing cultures of two groups having different languages and largely separate and unique historical trajectories.

The greatest weakness of the phase as a unit of culture-historical integration is the lack of attention phases have received over the past few decades. As pointed out above, phases continue to be popular in American archaeology, but few archaeologists have bothered to refine phase definitions as new data have become available. The result is that, in most regions of North America, phases remain defined on the basis of the presence of artifact types, especially ceramics and projectile points. Phase definitions must include data related to subsistence, settlement systems, and sociopolitical organization, as well as particularistic historical data, if they are to realize their full potential as tools for indexing cultural developments in a region. Such developments as the shift to greater sedentism, migrations, the adoption of domesticates, and the rise of an elite class should take precedence over artifact styles as the basis of phase definitions.

Pottery types in northeastern North Carolina have been defined to reflect the distributions of a limited number of ceramic modes in space and time. Ceramic attributes found most useful thus far are paste temper and surface finish. This is not surprising since these attributes show significant spatial and temporal patterning throughout adjacent areas of the Southeast and Middle Atlantic. Table 3 lists the basic variations of temper and surface finish that characterize the ceramic series discussed in this paper. Though it is acknowledged that many other attributes can be found in the type descriptions, and many more could be considered relevant in a rigorous analysis of the ceramic assemblage treated here, only these basic characteristics are included.

## Excavation and Analysis of Ceramics from the Davenport Site

The Davenport site (31BR39) is located in Bertie County, North Carolina, on the west bank of Albemarle Sound. Prehistoric deposits have been found along the edges of bluffs 3–4 meters in height near the confluence of a small stream with the sound. The site is noted for containing a preponderance of materials dating from the Late Archaic period through the Middle Woodland period. Excavations at the Davenport site were carried out by East Carolina University as part of a cultural resource management project during the fall of 1992 and the spring of 1993.

Table 3. Prevalent ceramic types defined for Northeastern North Carolina (after Phelps 1983).

| Series | Period | Temper | Surface Finish |
|---|---|---|---|
| Croaker Landing | Late Archaic | Clay particles | Plain, cordmarked |
| Deep Creek | Early Woodland | Sand<br>net impressed, fabric impressed, simple stamped | Plain, cordmarked, |
| Mt. Pleasant | Middle Woodland (some with clay particles) | Sand and pebbles impressed, fabric impressed | Cordmarked, net |
| Mockley | Middle Woodland | Shell impressed | Cordmarked, net |
| Cashie impressed, | Late Woodland | Pebbles<br>simple stamped | Plain, fabric |
| Colington impressed, | Late Woodland | Shell<br>simple stamped | Plain, fabric |

The archaeological deposits at the Davenport site include both subsurface pit features and midden accumulation. Midden deposits were excavated in 5-cm levels within natural soil zones. All excavated soil was sifted through ¼-inch screens. Features were excavated in 5-cm arbitrary levels where applicable and all fill was processed through fine-mesh (1/32-inch) screens in a flotation device. Ceramics recovered from the site were separated by provenience and sorted according to surface finish and temper. Type names were assigned to the groups of sherds according to existing definitions.

Quantification of the Davenport ceramics departed from traditional approaches and requires some description and explanation of the quantifiers used. The purpose of quantifying the ceramic materials in the analysis was to provide a means of observing the temporal patterning inherent in the site assemblage. Thus, valid measures of relative abundance were needed. The sherd count, necessary for producing inventories, is ill suited as a measure of relative abundance due to the confounding effects of varying sherd size (Byrd and Owens 1997). An approximation to sherd surface area called "effective area" (EA) is largely free of confounding influences and provides a satisfactory quantifier for these purposes (see Byrd and Owens [1997] for a more thorough discussion of the merits of the EA). The significant aspect of the EA is that it is a direct measure of sherd size. An additional step toward developing an appropriate quantifier was taken to mediate the effects of bioturbation and other processes (Rapp and Hill 1998:81–85) that tend to move smaller sherds up and down in a soil matrix and, consequently,

obscure quantitative patterns inherent in the original deposits. The EA for a set of sherds (grouped according to typological criteria and provenience in preparation for comparative analyses) was multiplied by the average sherd size in the group, calculated as the EA divided by the sherd count, to produce a quantifier called the weighted EA ($WEA = EA^2/N$, where N is the sherd count). The WEA was expected to provide significantly smoother frequency curves than either sherd counts or EA. This expectation was met in the analysis.

Frequency curves using WEA as the quantifier were then generated for individual excavation units and for all of the excavation squares together, such that the respective levels over the entire site were compared. The first set of curves was a comparison of the ceramic series frequencies in the excavation levels. The second set compared frequencies of surface finishes in the respective levels. A final analysis examined changes in sherd thickness over time. Mean sherd thickness was plotted by level. Next, rim sherds assigned to the respective ceramic series were used to estimate vessel orifice diameter and the mean diameter for each series was calculated. Vessel diameter was used as a proxy for overall vessel size. Mean vessel diameter was plotted against mean thickness.

## Results

A total of 3,321 sherds from eight excavation units were examined and placed into type categories by level. The frequencies of three of the four primary ceramic series represented in the Davenport assemblage exhibit the characteristic pattern traditionally called the "battleship curve" (Figure 1). Croaker Landing pottery was most abundant in the lowest levels (Zone III, Levels 3 and 4), Deep Creek pottery was most prevalent in the intermediate levels (Zone II; Zone III, Levels 1 and 2), and Mt. Pleasant pottery was most prevalent in the uppermost level (Zone I). This pattern indicates that the modes used in the definitions of these types exhibit temporal relationships consistent with the popularity principle of culture history.

The Mockley series is the only ceramic series strongly represented in the Davenport assemblage that was not the dominant ceramic group in one or more levels (Figure 1). This shell-tempered series exhibits a modest peak in Zone III, Level 3, followed by a gradual drop in abundance. Given current descriptions of Mockley (Egloff and Potter 1982) which place the series in the Middle Woodland period after A.D. 200, it appears that an extension of Mockley's temporal range back into the Early Woodland period is in order. Hodges (1993:349–342) has considered the relationship of Painter's (1977:43–60) "Currituck beakers" to Mockley and has suggested that the flat-bottom beakers, which are tempered with shell and a mixture of other inclusions, are probably part of a shell-tempering tradition that includes Mockley. Painter (1977:43–60) acquired radiocarbon dates from materials associated with the "beakers" at the Currituck, site, and they range from approximately 800 B.C. to 600 B.C.,

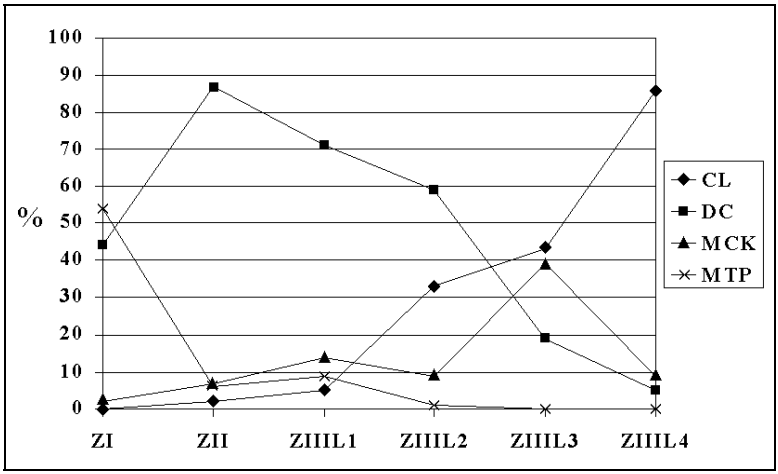


Figure 1. The relative abundance of the four major ceramic series in the Davenport assemblage from all excavation units combined (Z=zone, L=level, CL=Croaker Landing, DC=Deep Creek, MCK=Mockley, MTP=Mt. Pleasant).

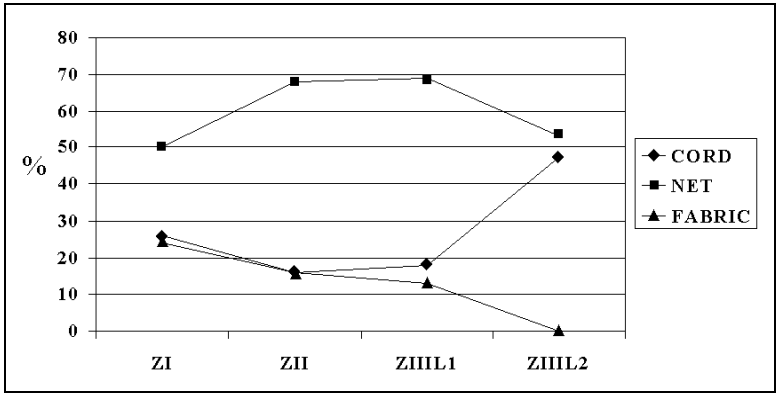


Figure 2. The relative abundance of respective surface finishes in all units (abbreviations are same as in Figure 1).

well within the Early Woodland period as defined in eastern North Carolina.

An examination of the frequencies of surface finishes in the respective levels indicates that temporal patterning exists (Figure 2). Levels 3 and 4 in Zone III are not included in the figure due to a high proportion of sherds in those levels of the Croaker Landing series which have an indeterminate surface finish. Cordmarking and net impressing are equally abundant in the lowest levels. Cordmarking drops in abundance in the higher levels while net impressing shows proportional gains in the

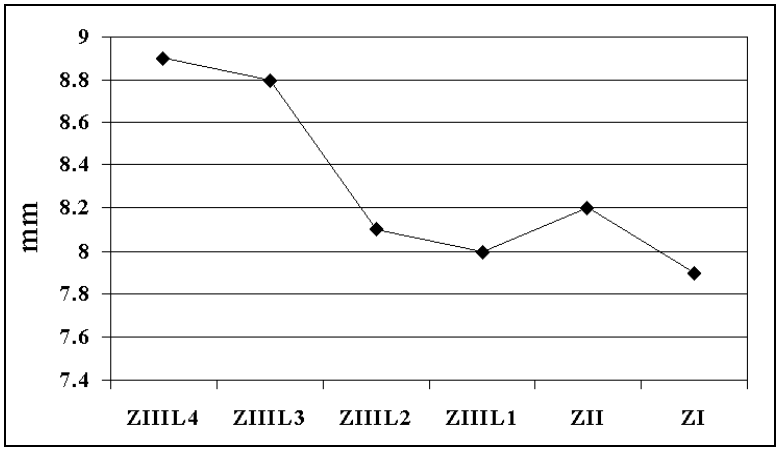


Figure 3. Mean sherd thickness by level in all excavation units (abbreviations are same as in Figure 1).

intermediate levels followed by a modest drop in the uppermost level. Fabric impressing is not present in the lowest level, but exhibits a gradual increase in abundance over time.

Significant temporal patterning is seen in the frequency of tempering agents used in the production of ceramic vessels over time. This result was expected since the respective types have different tempers. The changing frequencies can be seen in Figure 1, where it is observed that clay temper (characteristic of Croaker Landing series) is most abundant in the lowest levels, sand temper (characteristic of Deep Creek series) is found in highest proportions in the intermediate levels, and sand-with-pebble temper (characteristic of Mt. Pleasant series) is most abundant in the uppermost level. The possibility that changes in tempering agents were technological advancements is briefly evaluated below.

The plot of mean sherd thickness by level (Figure 3) indicates that ceramic vessels became increasingly thin-walled over time. This pattern corresponds to that seen elsewhere during the Woodland period in eastern North America and has been argued to reflect improving ceramic technology (especially paste temper) in the Midwest (Braun 1987; O'Brien et al. 1994). However, the plot of mean sherd thickness against mean pot orifice diameter in the Davenport assemblage (Figure 4), which exhibits a linear relationship, strongly suggests that the trend towards thinner vessel walls over time is actually related more to a trend toward smaller vessels than to any particular improvements in technology, such as changing tempering materials.

## Discussion

The purpose of ceramic types is to provide groupings that correspond to patterns in the distributions of modes of ceramic production. While

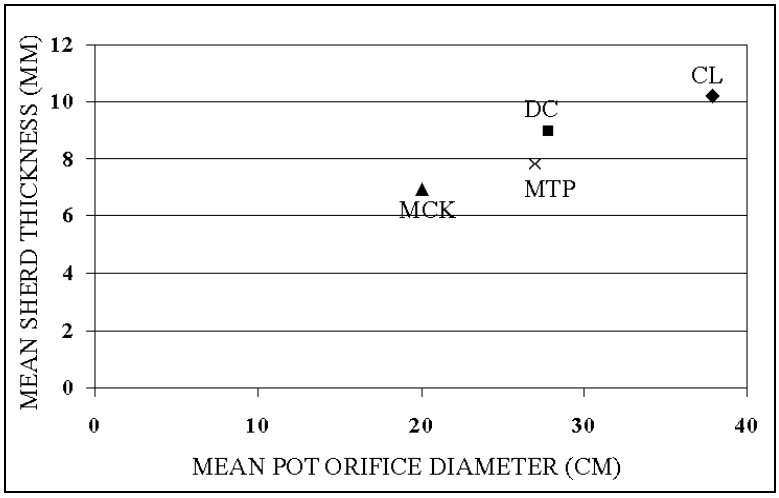


Figure 4. Plot of mean sherd thickness against mean vessel diameter in all units (abbreviations are same as in Figure 1).

types are not an end-product of archaeological research nor an answer to many important questions of theoretical origin, they do provide a useful means of organizing our view of variability in the archaeological record. The frequency distributions of the Croaker Landing, Deep Creek, and Mt. Pleasant series in the Davenport site ceramic assemblage show that these series effectively represent the temporal patterns they were originally defined to reflect.

The Davenport data also offer some suggestions for refinement of the existing culture-historical framework. First, the temporal range of the Mockley series needs to be reassessed in northeastern North Carolina, and the possibility that the series begins during the Early Woodland period should be investigated. Second, a temporal subdivision of the Deep Creek phase into three subphases should again be considered (see Phelps [1983] for a discussion of subdividing the Deep Creek phase). The earliest of the three subphases would be characterized by high frequencies of cordmarking and net impressing; the second subphase would exhibit a large proportion of net-impressed vessels; and the third subphase would show equally high proportions of net-impressed and fabric-impressed vessels. Whether or not these subdivisions have application throughout the region will have to be assessed with data from other sites.

The changes over time in tempering agents reflected by the Davenport data are consistent with what has been observed throughout northeastern North Carolina. Clay temper is replaced by sand temper, which is then replaced by sand-and-pebble temper. Temporal changes in tempering agents have been observed throughout the Eastern Woodlands area. Such changes have been explained in the Midwest as the result of technological advancements which permitted the construction of thinner-

walled vessels (Braun 1987; O'Brien et al. 1994). Figure 3, which shows that vessel walls became thinner over time, suggests that advancing technology could be a factor for the Davenport ceramics as well. Consistent with this interpretation is the increase in the size of tempering particles in the transition from Deep Creek series to Mt. Pleasant series (O'Brien et al. [1994] have noted that temper size has an effect on vessel wall strength due to the tendency of larger particles to arrest crack development). However, the linear relationship between mean vessel wall thickness and mean vessel size (Figure 4) reveals that decreasing wall thickness over time can be most easily explained as part of the overall decrease in vessel size that had occurred.

We are currently left with no clear functional explanation of the temporal changes in temper or surface finish in the Davenport assemblage. However, the classic (monotonic) frequency curves seen in the Davenport ceramics are consistent with what is predicted by Neiman's (1995) computer simulations of cultural drift. Since no technological explanations of the changes are forthcoming, cultural drift as modeled by Neiman (1995) appears to be the process behind the patterns.

Accepting drift as the source of the changes in ceramic design, the question then arises as to who made up the population in which the drift was occurring. Archaeological data are insufficient to satisfactorily answer "who" per se, but they can offer information as to where and when the pool of cultural variants in which drift was occurring existed. Figure 5 depicts the duration through time of the more ubiquitous temper types in northeastern North Carolina and adjoining regions. It is clear that the changes seen in the ceramics at the Davenport site are not unique to that locale but are part of general trends occurring throughout a large geographic area. Clay (ignoring for purposes here whether it was fired, dried, or recycled sherds) was a common tempering agent in the earliest ceramics in northeastern North Carolina and southeastern Virginia, and it was used later in the more southern regions. Sand as a tempering agent became dominant in all of the regions during the Early Woodland period and is known to have been common throughout much of the Southeast at this time. Sand temper continued to be used into the historic period in some areas. The idea of adding larger inclusions, or pebbles, to a sandy paste became popular in the Middle Woodland period in the North Carolina Piedmont, northeastern North Carolina, and southeastern North Carolina; it became popular later in eastern South Carolina.

It is clear that the temporal changes in tempering agents noted for the Davenport assemblage are seen throughout a relatively large area. It is reasonable to infer from these patterns that there was a common cultural pool with a geographic distribution that at times (notably during the Early Woodland period) encompassed all of northeastern North Carolina and adjacent regions. Thus, the cultural drift of temper recipes must be viewed as a complex regional phenomenon rather than simply a process operating on an isolated group, such as the inhabitants of a single site. It is unclear how groups akin to "populations" in Neiman's computer simulations can be delineated. Perhaps more fine-grained analyses will

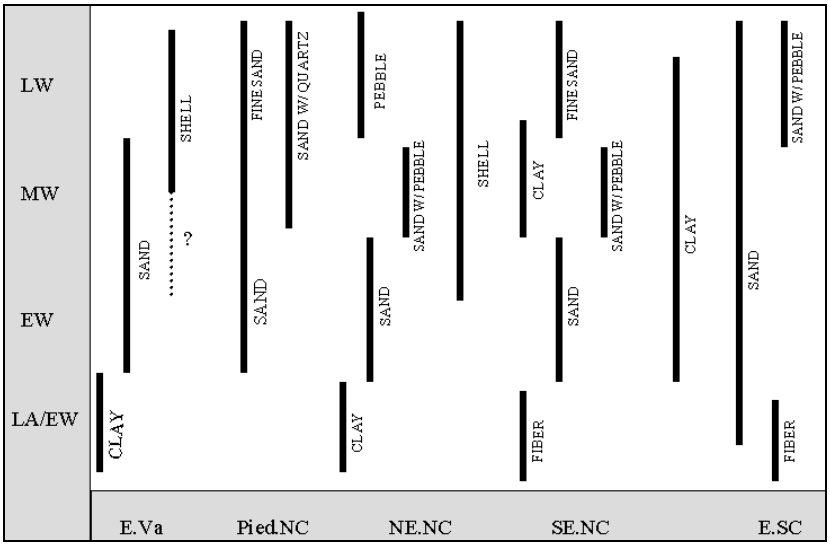


Figure 5. Schematic diagram depicting the major tempering agents used in ceramic production in regions bordering northeastern North Carolina. References: Egloff and Potter (1982), Coe (1964), Eastman (1996), Herbert and Mathis (1996), and Lilley and Gunn (1996).

illuminate discrete trajectories of change in ceramics in specific regions or locales that reflect a degree of intragroup homogeneity. In any event, the pattern of shared ceramic design attributes over large geographic areas deserves special attention.

Culture historians recognized long ago that cultural artifact forms have been frequently shared over large areas throughout time. This pattern was referred to as the horizon. Horizons can be viewed as patterns reflecting processes of cultural evolution, notably cultural transmission. Ceramic design attribute horizons, such as the Early Woodland sand temper horizon discussed above, link numerous ceramic types together as related by cultural transmission. It is proposed here that a taxonomic class be devised that will formally represent this relatedness. For example, Early Woodland ceramic series with sand temper can be placed into a common class, a family, in which all members have similar temper due to the transmission of the recipe for making pots. This use of a large-scale, inclusive taxonomic class is more directly analogous to the language family of historical linguistics than to taxonomic classes in biological taxonomy. Thus, Deep Creek series can be placed into a taxon (call it the New River family since New River series is found in a central location) that includes Accokeek Creek, Popes Creek, Stoney Creek, New River, Badin, Dunlap, Deptford, and others. The value of the family as a taxonomic class is that it indexes a significant cultural pattern (a ceramic design horizon or tradition) that exists due to mechanisms of cultural transmission. Other families can be defined based on widely shared

attributes such as fiber tempering, shell tempering, and complicated stamping. Primary criteria for defining families should be the presence of one or more shared design attributes and a firm basis (such as geographic proximity or independent evidence for frequent contact between groups of potters) for assuming that cultural transmission partially explains the similarity in form. Thus, members of a family exhibit homologous similarity.

## Conclusion

Ceramic types defined to reflect homogeneity in form within specified temporal and spatial bounds have utility in archaeology because they reflect cultural artifact patterns which are the result of mechanistic processes that operate in culture. Selected ceramic types defined by Phelps for use in northeastern North Carolina have been evaluated against data from the Davenport site and found to have integrity; that is, they work as advertised. Suggestions for refinement of the temporal distribution of the Mockley series and of the Deep Creek phase have been offered.

A final suggestion to develop a hierarchical taxonomic system for ceramics was also made. This taxonomy is intended to reflect patterning that is the result of processes that govern cultural transmission. The taxonomic class "family" was added to the existing "series" and "type" to provide a larger, more inclusive unit.

## Notes

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# "CHESAPEAKE" PIPES AND UNCRITICAL ASSUMPTIONS: A VIEW FROM NORTHEASTERN NORTH CAROLINA

**by**
**Dane T. Magoon**

## Abstract

The clay tobacco pipes recovered from three Native American sites in northeastern North Carolina provide an excellent test case for the "Chesapeake" pipe model postulated by Emerson (1988, 1994) and expanded by Deetz (1993, 1996). Jordan's Landing (31BR7) is a prehistoric Iroquoian Tuscarora village, while Neoheroka Fort (31GR4) is the site of the defining battle of the Second Tuscarora War in 1713. Croatan (31DR1) is an Algonkian village located on the Outer Banks of North Carolina. Four components of the "Chesapeake" model—geographic range, temporal duration, pipe decoration and decorative attributes, and pipe form—were assessed using pipe data from these three sites. While many of the pipes are either similar or identical to "Chesapeake" pipes from Tidewater Virginia and southern Maryland, the model developed by Emerson for their production and use in colonial plantation contexts does not adequately explain their presence on these sites. Significant flaws were found in the "Chesapeake" pipe model as it currently exists. The pipes from the study area appear to represent larger interregional trends for tobacco pipe manufacture and tobacco use by Native American groups along the eastern seaboard of the Middle Atlantic and the upper Southeast, as outlined by Turnbaugh (1992).

Over the last decade, the subject of "Chesapeake" clay tobacco pipes has been a source of heated debate in the historical archaeology of Virginia and Maryland. As defined by Matthew Emerson (1988:2), they are "locally-made tobacco pipes. . .made from clays collected from deposits throughout the Chesapeake-Tidewater region." The geographic range for these artifacts is given as ". . .only in the Chesapeake, east of the fall line" in Virginia and southern Maryland (Deetz 1993:91). James Deetz (1993:101) adds that "no pipes of this type have been found either in the northern colonies or to the south in the Carolinas and Georgia." While Emerson (1988:64) originally gave the pipes a production life beginning in 1640 and ending in about 1710, Deetz (1993:91, 1996:245) has since expanded this range slightly, from 1630 to 1720. Emerson (1988:2) posits that the significance of these artifacts is that they "demonstrate the participation of West Africans in a local craft prior to the full institutionalization of slavery."

This interpretation of West African ethnic affiliation for "Chesapeake" tobacco pipes rests upon two theoretical tenets. First, the decorative motifs and individual design attributes recorded on the pipe bowls are postulated as having West African counterparts, and the bowl forms represent a distinct break from examples produced by local Native American populations. While many of the designs, such as the hanging

triangle, are described as culturally non-specific, other motifs, including the kwadarta, the lozenge, and the double bell, are portrayed as having no known Native American counterparts (Deetz 1993:97–99; Emerson 1988). Pipes with the quadruped motif (also known as the running deer) are suggested to be of probable African or African-American manufacture, since some of the animals represented would not have been known to Native Americans prior to contact (Deetz 1993:99). The use of white inlay, or intaglio, in pipe decoration is also forwarded as an indicator of West African influence (Emerson 1988:79, 131–132, 138). "Chesapeake" pipe forms are generally described as mold-made and based upon English bowl forms. Throughout the early historic period, Native Americans within this region are depicted as manufacturing pipes by hand in "traditional" and static pre-contact shapes (e.g., monitor, platform, effigy, straight, and extreme obtuse-angled pipe forms) unchanged from the Late Woodland period (Deetz 1993:96; Emerson 1988:110–115, 166, 1994:38).

Second, "Chesapeake" pipes are depicted as the product of a specific multi-cultural plantation environment in Virginia and southern Maryland during the second half of the seventeenth century. Emerson (1988, 1994) and Deetz (1993, 1996) attribute these pipes to the interaction between early African slaves and English indentured servants, with Africans contributing the designs and the English providing the pipe molds. Local Algonkian populations are depicted as removed from this specific social context and also as physically absent from this geographical region by the time of Bacon's Rebellion in the later seventeenth century (Deetz 1993:83; Emerson 1988:166). Native Americans are thus eliminated from the production of these artifacts. According to Emerson (194:46), the "death of Chesapeake pipe-making" came with the full institutionalization of slavery toward the end of the seventeenth century. Slaves were removed to separate quarters due to their increasing numbers, altering the existing intercultural dynamic. In this way, African slaves were also separated from European pipe molds, and this distinct tradition in material culture ended.

Four significant and intertwined foundational components contribute to the "Chesapeake" pipe production model: geographic range, temporal duration, pipe decoration and decorative attributes, and pipe form. Knocking any of these theoretical piers out of alignment brings the entire model into question, due to its highly particular construction. This paper examines these four components in relation to the material record of northeastern North Carolina, utilizing the pipe assemblages from three archaeological sites. While the model has been criticized previously by Mouer (1993) and Mouer et al. (1999), it has been done from a primarily Virginian viewpoint. It should also be noted that previous researchers in Virginia and Maryland have long considered local Algonkians responsible for the manufacture of the majority of these artifacts (Harrington 1951; Henry 1979; Noël Hume 1969; Potter 1993; Speck 1928). A perspective from North Carolina provides not only a fresh look at old material but also simultaneously develops an entirely different social context and a new body of material evidence for "Chesapeake" pipe production.

## "Chesapeake" Pipes in Northeastern North Carolina

"Chesapeake" pipes are found throughout northeastern North Carolina, in deposits dating from the precontact Late Woodland period through at least the early to middle eighteenth century. They are not uncommon, and examples of such pipes from the Outer Banks were first illustrated by William Haag (1958:Figure 10) in *The Archaeology of Coastal North Carolina*. Similarities in form and decoration were also noted by Coe (1964:115–116) between examples from the Gaston site in North Carolina and Accokeek Creek along the Potomac River in Maryland. Ward and Davis (1993:204–205; 365–368) also discuss the recovery of "terra-cotta" pipe forms with rouletting and incising from a number of historic Siouan sites in the North Carolina Piedmont

While the initial reaction may be "North Carolina and Virginia are neighbors, so what?", the expansion of the proposed geographic range during the protohistoric and historic periods has a significant impact on the "Chesapeake" pipe model, since the colonial history of North Carolina differs markedly from that of Virginia. The main shift in social landscape between the two areas is in the continuing power that was held by the aboriginal populations of North Carolina. Native Americans clearly remained a force to be reckoned with in the eastern half of North Carolina through at least the first quarter of the eighteenth century, as evidenced by the strong showing of the Tuscarora during the conflicts of 1711 through 1713 (Barnwell 1908; Barnwell 1909; Parramore 1982, 1987). Organized settlement in North Carolina by large numbers of English and other European colonists did not begin until the end of the seventeenth century, almost a century later than the establishment of Jamestown in Virginia. The difficulties in navigating the Outer Banks of North Carolina, as opposed to the direct access provided to colonial Virginia and Maryland via the Chesapeake Bay, contributed to the slow initial development of the region (Camp 1963:7). The first recorded, permanent settler for the area was Nathaniel Batts, who had constructed a house on Albemarle Sound by 1655 (Powell 1989:52). By 1710, the population for North Carolina is estimated at approximately 11,000 settlers (Powell 1989:70).

This paper examines the locally-produced clay tobacco pipes from three archaeological sites in northeastern North Carolina. All three—Jordan's Landing (31BR7), Neoheroka Fort (31GR4), and Croatan (31DR1)—have markedly different temporal and cultural affiliations, and have been investigated by the Coastal Archaeology Office at East Carolina University (Figure 1). Jordan's Landing and Croatan were excavated under the direction of David S. Phelps, and the excavations at Neoheroka Fort were co-directed by Phelps and John Byrd. The initial study of the locally-produced clay tobacco pipes from these sites was presented at the 1998 Annual Meeting of the Society for American Archaeology in Seattle, Washington, and it represents the first systematic research into this class of material from northeastern North Carolina (Magoon 1998). The study was composed of an attribute-based analysis

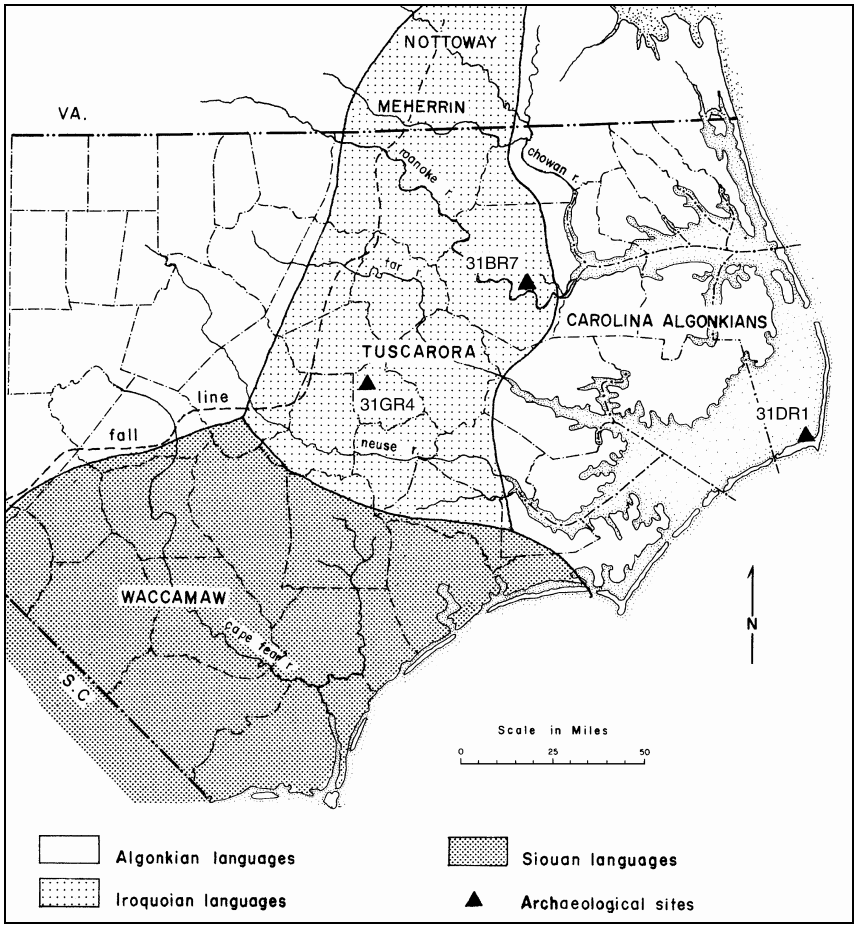


Figure 1. Map locating the Jordan's Landing (31BR7), Neoheroka Fort (31GR4), and Croatan (31DR1) sites (adapted from Phelps 1983:Figure 1.8).

of pipe decoration and form, with definitions for pipe form and bowl shape following those proposed and utilized by Bradley (1987) and Rutsch (1973).

Two of the study sites, Jordan's Landing and Neoheroka Fort, were chosen for their ability to address questions of continuity and change in the pipe traditions of the Iroquoian Tuscarora from the late prehistoric through the historic periods. Jordan's Landing is a small Late Woodland, Cashie I sub-phase village located in Bertie County, North Carolina (Phelps 1983; Phelps and Heath 1998). Neoheroka Fort is the site of the defining battle of the Second Tuscarora War, which took place in March 1713. Croatan is a Colington phase site and the documented capital of the Algonkian Croatan chiefdom (Phelps 1983). The pipe assemblage from

Croatan was examined to help define similarities and differences in the pipe traditions of the historic Tuscarora and contemporaneous Algonkians on the coast.

In order to avoid the contradiction inherent in using the term "prehistoric" to label tobacco pipes recovered from both historic and prehistoric Native American contexts, the term "locally-produced pipes" has been used to refer to all pipes not made of white ball clay and imported from Europe. The descriptor "Native American" was not used because it automatically imparts an ethnic identity upon the manufacturer of the pipes being studied. Directly applying the term "Chesapeake" to the materials was avoided for two reasons. The label is geographically incorrect for the study area, and it automatically presumes manufacture by African slaves and English indentured servants in a tightly-prescribed plantation context. It should also be pointed out that the emphasis on local production does not mean that all pipes in each assemblage were necessarily manufactured on a particular site, but the assumption is that most of them were. While some examples were undoubtedly acquired through trade, evidence for the manufacture of clay tobacco pipes, such as unfired wasters and other early failures, was recovered from each of the three sites examined in this study.

## Jordan's Landing

European trade goods are completely absent in the artifact assemblage from the Cashie component at Jordan's Landing, and radiocarbon dates of A.D. 1425 ± 70 (UGa-1086) and A.D. 1290 ± 60 (Beta-73742) were recorded for two well-defined features from this prehistoric Iroquoian palisaded village (Byrd 1997; Phelps 1983:43–46; Phelps and Heath 1998). A total of 62 clay pipes and pipe fragments from Jordan's Landing were examined for this study.

The Jordan's Landing pipe assemblage consists almost entirely of small, obtuse-angle pipes with plain, basket-shaped bowls. Several examples of monitor-style pipes were also recovered, but these clearly represent a minority type at Jordan's Landing. While 90% (n=28) of the pipe bowls and bowl fragments were undecorated, 46% (n=16) of the pipe stems displayed some type of decoration. Two stem decorations, found on 23% (n=8) of the stems from the assemblage, were highly distinctive. Both consisted of a raised area on the top of the pipe stem near its juncture with the bowl: one variant had a series of small incised marks along this raised area and the other did not (Figure 2). The effect is similar to a long heel on top of the pipe stem, as opposed to underneath it. Three pipe bowls were also decorated. One of these bowls displayed two horizontal bands and a catfish motif (Figures 2 and 3). This design motif is highly problematic for the "Chesapeake" model, since pipes with identical designs from Tidewater Virginia are considered typical examples of this tradition. This evidence establishes the precedence for this combination of pipe bowl form and decorative style in North Carolina prior to the arrival of both English settlers and African slaves.

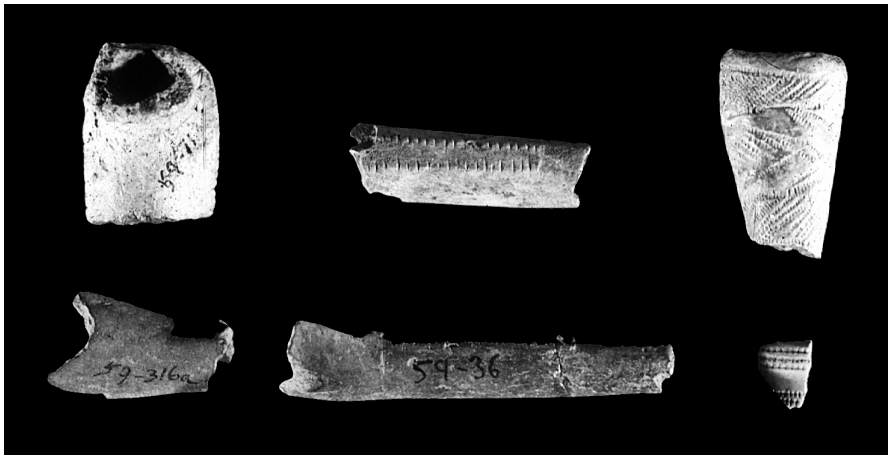


Figure 2. Representative sample of locally-produced clay tobacco pipes from Jordan's Landing.

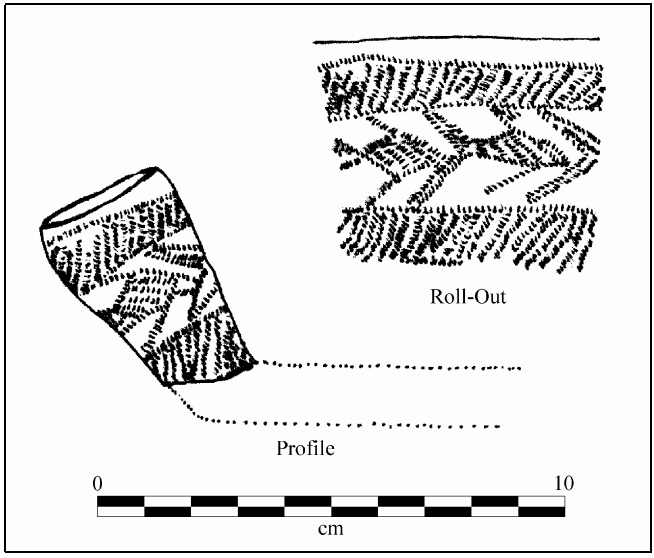


Figure 3. Roll-out and profile drawings of locally-produced clay tobacco pipe with catfish motif from Jordan's Landing. Drawing by Catie Galloway, East Carolina University.

## Neoheroka Fort

Neoheroka Fort is an historic Cashie II sub-phase site located in Greene County, North Carolina (Phelps and Heath 1998). Excavations there have revealed a palisaded fort with bastions, constructed and defended by the Iroquoian Tuscarora and their allies (Byrd and Heath 1997; Heath and Phelps 1998). A total of 297 pipes and pipe fragments from a variety of contexts were analyzed for this study. A large number of these were recovered from the floors of subterranean dwellings, sealed by burnt and collapsed roof fall (Heath and Phelps 1998).

Forty-six percent (n=74) of the pipe bowls and bowl fragments from Neoheroka Fort were decorated, a marked increase from the Jordan's Landing collection. Obtuse-angle pipe forms with plain basket-shaped bowls comprised the majority of the collection. Thirty-nine percent (n=27) of the local pipe bowls were shaped like large European belly bowls, which date to the third quarter of the seventeenth century (Noël Hume 1969:303; Oswald 1975). Of these, 23 had large, flat heels that were circular in shape, and three of these displayed stylized "maker's marks." These marks were dentate-stamped imitations of designs commonly found on tobacco pipes of white ball clay during the seventeenth century. Thirty-one percent (n=47) of the pipe bowls were decorated with simple dentate or incised lines placed near to and parallel with the rim of the pipe bowl. A pair of iron ember tongs were also recovered in direct association with several of these pipes.

Several of these locally-produced, European-style pipe forms displayed additional decorative elements which were vertical in orientation and symmetrical on the four cardinal sides of the pipe bowl (Figure 4). The execution of these decorative elements varied considerably, and numerous tools were used to create them. All had simple linear decorations along the bowl rim, with some examples containing up to three additional decorative attributes. While initially appearing to be copies of older European pipe forms, these locally-produced clay pipes exhibited design elements totally unlike their imported, European-made counterparts.

Pipe forms and decorative palettes representing a number of different Native American groups were exhibited in the Neoheroka assemblage (Figure 5). These pipes may have been traded in from other areas or possibly manufactured on site by allies of the Tuscarora during the course of the conflict. Allies from North Carolina included the Neusiok, the Coree, the Bear River, the Pamlico, the Weetock, and the Mattamuskeet (Barnwell 1909:40; Parramore 1987:130). Two pipes were reminiscent of Iroquoian forms from the northeastern United States (Rutsch 1973; Kent 1984; Bradley 1987). This was not unexpected, given the close ties between the Tuscarora and the Iroquoian Five Nations, particularly the Seneca (Barnwell 1908; Barnwell 1909; Lee 1963; Parramore 1982, 1987).

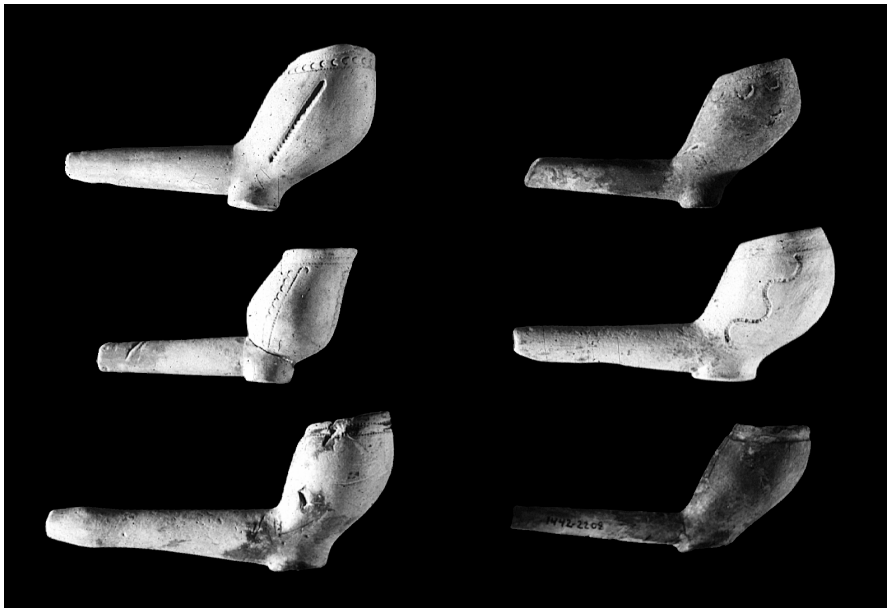

Figure 4. Representative sample of locally-produced clay tobacco pipes from Neoheroka Fort with European-style pipe bowl form. Note the additional design elements on four of the examples, not found on imported European pipes.

Figure 5. Representative sample of lower-frequency clay tobacco pipe forms recovered at Neoheroka Fort.

Several straight-stemmed pipes, similar to contemporary Siouan clay pipes from Lower Saratown in piedmont North Carolina and referred to as "onion" pipes, were also recovered at Neoheroka Fort (Ward and Davis 1993:203). Two other locally-produced bowl fragments were decorated with geometric hollow forms created through dentate stamping, identical to "Chesapeake" pipes recovered in Tidewater Virginia. Forty-four percent (n=68) of the pipe stems from Neoheroka Fort were decorated, but most of these decorations were form-based with the stem expanding and contracting in width to create a mouthpiece at the proximal end. One stem was recovered with white infill packed into a series of dentate-stamped lines, a decorative trait considered by Emerson (1988:79, 131–132, 138) as indicative of West African influence.

Six imported European pipes and pipe fragments were also recovered at Neoheroka Fort, representing only two percent of the entire pipe assemblage. This proportion seems relatively low for a site from the early eighteenth century, especially considering the high volume of cultural contact and trade between the Tuscarora and English colonists prior to the conflict. The small number of white ball-clay pipes in the Neoheroka assemblage, combined with the wide variety of locally-produced pipes recovered, may represent a re-emphasis on local craft production and symbolic expression by the Tuscarora and their allies during a period of crisis.

## Croatan

The Croatan site is located on Hatteras Island, North Carolina, and was occupied from at least A.D. 1100 through the first half of the eighteenth century, when the Croatan became known as the Hatteras Indians (Lefler 1967:242; Moseley 1733). A recently discovered land grant, decreed by Royal Governor Arthur Dobbs in 1759, documents the assignment of a 200-acre reservation in this area to the Hatteras Indians (Phelps, personal communication 1998). Ninety-three clay pipes and pipe fragments from the Croatan site were analyzed for this study, and all were recovered from features and stratified midden contexts.

Twenty-five percent (n=23) of the pipes and pipe fragments from Croatan were made of white ball clay and imported from Europe. The dating of 14 pipe stems using Harrington's (1954) histogram and Binford's (1963) regression methods place the historic occupation levels of the site within the second half of the seventeenth century, slightly earlier than the Neoheroka Fort assemblage. One imported bowl fragment with a maker's mark displaying the initials "LE" was also recovered. The mark is that of Lluellin Evans, a Bristol manufacturer of clay tobacco pipes from 1661 to 1688 (Oswald 1975:152).

The majority of locally-produced pipes from Croatan consist of obtuse-angle pipe forms with a plain basket bowl shape, and most are undecorated. For the 14 (36%) bowl fragments that were decorated, the differences in overall design attributes between the Algonkian and Iroquoian cultural regions are striking (see Figures 4 and 6). As originally

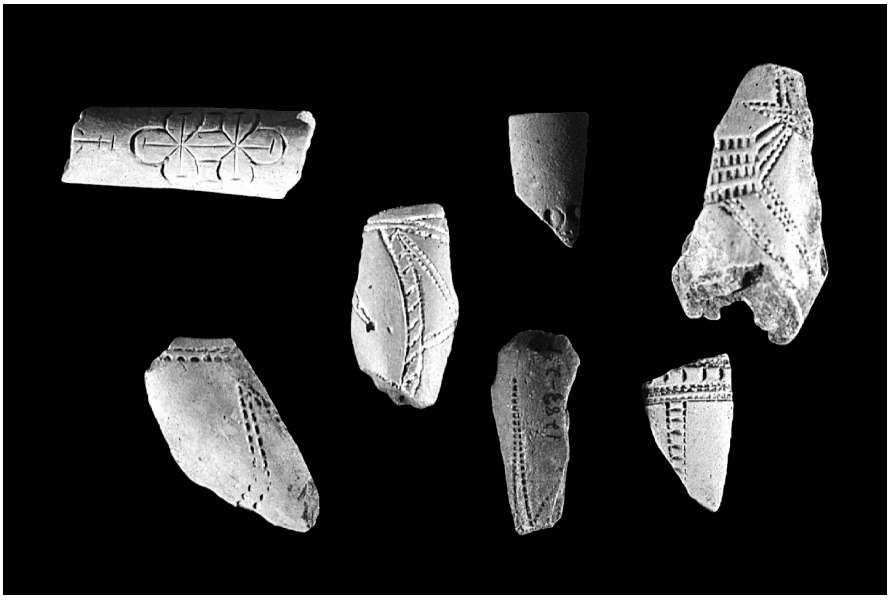

Figure 6. Representative sample of decorated clay tobacco pipe bowls and pipe stems from Croatan.

noted by Haag (1958) in his study of Hatteras Island, the majority of decorated pipes from Croatan were recovered from features and midden deposits that date to the early historic period. The Croatan designs were mainly geometric hollow forms and solid forms constructed from a series of dentate-stamped lines. They are also similar to the decorated local pipes illustrated by Haag (1958) which were recovered from Croatan and other Colington phase sites on the Outer Banks of North Carolina. The Croatan decorative pipe motifs are also identical to some of the pipe decorations that occur in lower frequency at Neoheroka Fort and the catfish motif from Jordan's Landing. One of the Croatan bowls exhibits the quadruped motif, a design common to Tidewater Virginia and Maryland. While the tools used to create the designs varies, the overall effect is the same. Ten percent (n=4) of all bowl fragments from Croatan have white infill. Several of the undecorated, locally-produced examples were made in a mold, with seam lines clearly visible. While common at Neoheroka Fort, the locally-produced belly bowl pipe form with a pipe heel, rouletted rim, and additional decorative attributes did not occur at Croatan. Furthermore, only 10% (n=3) of locally-produced pipe stems were decorated, a small number in comparison with the examples recovered from Jordan's Landing and Neoheroka Fort.

## Preliminary Insights

Clay pipe decoration among the Tuscarora changed from the Late Woodland to the historic periods. A substantial increase in the frequency of pipe bowl decoration was noted in the Neoheroka Fort assemblage, as opposed to the high frequency of undecorated pipe bowls recovered at Jordan's Landing. Pipe smoking as an activity also appears to have increased dramatically from the pre-contact Late Woodland period to the historic period, as noted by the marked difference in the raw totals of pipes and pipe fragments between the two non-contemporaneous Iroquoian sites. The overall size of the obtuse-angle clay pipe form became larger over this same time period, a trend also observable in European clay tobacco pipes throughout the seventeenth century. Many of the locally-produced tobacco pipes recovered at Neoheroka Fort resemble older European pipes in form, while exhibiting additional design elements unknown on imported examples. A set of iron ember tongs was also recovered in direct association with several locally-produced European-style pipes, a pattern similar to that recorded for Burial 3 at the Fredricks site, an historic Siouan site in piedmont North Carolina (Carnes 1987:155; Ward 1987:94–95).

It is important to note that a high percentage of obtuse-angle pipes with plain basket-shaped bowls was recovered at all three sites and that monitor, straight-stemmed, and other forms occurred as minority types. Thus, the differences in overall pipe form between the two periods (i.e., from pre-contact forms to later European-influenced forms) are essentially minimal. While the locally-produced tobacco pipes from Jordan's Landing and Neoheroka Fort generally conform to Emerson's (1988:2, 1994) definition for "Chesapeake" pipes in form, decorative motifs, and decorative elements, the designs and decorative attributes specifically considered by Emerson (1988, 1994; see also Deetz 1993:97–99) to be of West African origin occur as minority decorative types in both historic and prehistoric Iroquoian contexts.

The roughly contemporaneous Iroquoian and Algonkian clay pipe assemblages from the historic period differ primarily with respect to decoration. These differences are the same ones that distinguish the Iroquoian assemblage at Neoheroka Fort from "Chesapeake" pipes of proposed African and African American manufacture found in Virginia and Maryland (Deetz 1993, 1996; Emerson 1988, 1994). Comparison with examples from the study collection at the Virginia Department of Historic Resources in Richmond, Virginia (Figure 7), shows striking similarities in both decorative motifs and individual decorative attributes among "Chesapeake" pipes from Virginia, the locally-produced pipe subassemblage from Croatan, and a handful of examples from Jordan's Landing and Neoheroka Fort. The fish motif found on a pipe from the Chesopeian site (44VB48) in Virginia Beach is markedly similar to the catfish pipe motif found at Jordan's Landing (also see Emerson 1988:Figure 4b). The other three examples in Figure 7, including the


Figure 7. Examples of "Chesapeake" clay tobacco pipes from the study collections at the Virginia Department of Historic Resources, Richmond, Virginia.

quadruped motif, are from the Walter Astin site (44CC178) in Charles City County, Virginia. Thus, a substantial number of the locally-produced pipes from coastal North Carolina are identical to those recovered from Tidewater Virginia and southern Maryland. As noted earlier, Deetz (1993:101) has stated that "no pipes of this type have been found either in the northern colonies or to the south in the Carolinas and Georgia, areas with an equally significant Indian population at the time." I suggest that it is the Native American archaeological contexts—both Iroquoian and Algonkian—for these materials in North Carolina that break the "Chesapeake" model as it presently exists.

With the addition of these three sites from North Carolina to Emerson's original study, the distribution for "Chesapeake" pipes now extends south from St. Mary's City, Maryland to Cape Hatteras, North Carolina, along the coast and inland at least as far west as the fall line. The northernmost extent for "Chesapeake" pipes also requires expansion. An example of a "Tidewater" pipe with the quadruped motif and other "Chesapeake" decorative attributes (dentate stamping and white infill) was recovered by Cadzow in 1931 from cemetery deposits dating to the middle of the seventeenth century at the Strickler site, an historic Susquehannock village in Pennsylvania (Kent 1984:146–151). This site (36LA3) is located in Lancaster County one mile south of Washington Boro along the Susquehanna River, a primary tributary to Chesapeake Bay. Subsequent excavations by Futer (1959:137–138, 147) produced a

cache of five pipes from a burial dating between 1650 and 1675. Two of the pipes were made of stone, one was an imported pipe made of white ball clay, and the remaining two were locally produced and exhibited dentate stamping packed with white infill. A single prehistoric example, dating to A.D. 1550 or earlier, was recovered at the Shultz-Funk site in Pennsylvania (Kent 1984:147–148).

Examples of pipes exhibiting "Chesapeake"-style designs and design attributes have also been recovered from the North Carolina Piedmont at Lower Saratown (31RK1), Upper Saratown (31SK1a), Occaneechi Town (31OR231), and the Jenrette site (31OR231a), all of which are historic Siouan sites that date from the seventeenth and early eighteenth centuries (Ward and Davis 1993:204–205, 365–368). These design attributes include the use of dentate stamping to produce "Chesapeake"-style designs and the use of white infill. The densest concentration for the expanded range of "Chesapeake" pipes in the strict sense, however, overlaps that for southern Algonkian-speaking peoples as presented by Goddard (1996). It seems likely that the cultural and geographical distribution of southern Algonkian-speaking peoples has far more to say about the production of certain "Chesapeake" pipes than the location of mid-seventeenth century tobacco plantations in Virginia and southern Maryland.

In a 1989 paper, William Turnbaugh (1992) noted a number of distinct trends for locally-produced Native American tobacco pipes from the Late Woodland period through the contact period along the eastern coast of North America. These trends include: (1) the adaptation of European tools and technology in the manufacture and use of clay and stone tobacco pipes; (2) the diversification of aboriginal tobacco pipe manufacturers into new production materials, such as exotic stone, metals, and wood; (3) the appearance, spread, and acceptance of new pipe forms and decorative attributes (including copies of European pipes and European pipe attributes); and (4) the increasing presence of tobacco pipes and tobacco-related implements in the archaeological record, especially in contexts relating to "intertribal communication, social ceremonies, and mortuary symbolism" (Turnbaugh 1992:120–121). Native American groups discussed in Turnbaugh's paper include the Narragansett Algonkians, the Onondaga Iroquois (Bradley 1987), and the Susquehanna of Pennsylvania (Kent 1984). The temporal transformations noted in the Iroquoian Tuscarora tobacco pipe traditions from Jordan's Landing to Neoheroka Fort clearly follow these larger interregional patterns. The majority of locally-produced clay tobacco pipes from southern Maryland, Tidewater Virginia, and the coastal region of northeastern North Carolina, including Croatan, also follow these same trends when considered as a material tradition of local Algonkian populations. Therefore, the rapid changes in decorative styles from the Late Woodland period through the historic period for "Chesapeake" pipes do not require the input of West African design traditions to explain their presence in the archaeological record.

The trends outlined by Turnbaugh (1992) have also been discussed by Swanton (1946:383–384), Haag (1958), Bradley (1987), Ward and Davis (1992:365–368), and Mouer (1993), and they appear to depict a widespread shift in tobacco and pipe use by Native Americans during the historic period. Following initial contact with European explorers, the practice was transformed from ritual event to everyday behavior. Mouer (1993:152–153) makes the argument that European settlers, Native Americans, and Africans (as their numbers increased toward the end of the seventeenth century) became part of a larger creolized culture in colonial Virginia, with all parties contributing to the final product. No tradition illustrates this view more clearly than the use of tobacco and tobacco pipes (Mouer 1993:128). While smoking tobacco began as a Native American practice, it was greatly modified by the English between the period of early exploration in the sixteenth century and the establishment of the first permanent settlement at Jamestown. Dental evidence indicates that smoking was a near-constant activity for many settlers. The production of mass quantities of tobacco by English settlers for exportation and domestic use must have further accelerated this shift in Native American smoking traditions. Swanton (1946:383) points out that, by the end of the seventeenth century, Native Americans in Virginia had become dependent on the English settlers for the production of ordinary tobacco. A possible archaeological correlate for this transformation in tobacco use would be the recovery of a diverse array of locally-produced pipe forms and pipe decorations on post-contact Native American sites, with an increasing presence of European pipes as trade goods. This closely matches the patterns observed for the sites examined in this study and was also noted by Ward and Davis (1993:367–368) for historic Siouan sites in the North Carolina Piedmont.

## Precedents for English Clay Tobacco Pipes: Where Do They Come From?

The "Chesapeake" model places an emphasis on an English-shaped, mold-made pipe bowl, postulated as distinct from those produced by Native Americans in Tidewater Virginia and southern Maryland. However, this distinction in cultural traditions may not be appropriate, since the overwhelming majority of pipes recovered from the three sites examined in this study were of the obtuse-angle pipe form with plain basket-shaped bowls, which are essentially identical to the forms manufactured in Europe. Furthermore, the "Chesapeake" model does not consider when and where the English pipe form originated.

According to an account contained in a 1605 work by Carolus Clusius, early English clay pipes were based on Algonkian examples from Roanoke Island, North Carolina, and the surrounding locality:

> Wingandecaew (which they themselves now call Virginia) discovered by the English, under Richard Grenfeld, in 1585, in the province of the new world, 36 degrees N. Latitude: They report that the inhabitants often use certain pipes made of clay to take in the smoke of burning tobacco leaves that grow in great

> abundance among them, or more truly to inhale it in order to maintain good health. The English, upon their return from there, brought with them *similar pipes* for taking tobacco smoke. Thereupon the use of tobacco spread even throughout the whole of England, especially among the courtiers with the result that they saw to the manufacture of many *similar pipes* for the inhalation of tobacco smoke [Clusius 1605:310, *emphasis* added].

The significance of the passage is multifold. While Thomas Harriot (1589, in Quinn and Quinn 1973:58) clearly documented the use of tobacco and tobacco pipes by English explorers in the Outer Banks, Clusius is far more specific in detailing the early development of the English pipe-making industry and its reliance on prototypes from coastal North Carolina. Arthur Barlowe (1589, in Quinn and Quinn 1973:4) ties the account from Clusius to the coastal Algonkian chiefdom of Roanoke by noting that ". . .the King is called Wingina, the countrey Wingandacoa. . . ." Quinn and Quinn (1973:152–153) state that while tobacco had already been introduced into England prior to the Roanoke expeditions, "What the colonists apparently introduced was the smoking pipe used on Roanoke Island, as a model for English pipe makers." The pipes the English settlers brought to Jamestown in 1607 were, therefore, hybrid forms only 20 years removed from their Roanoke predecessors (Walker 1977:31–32). The distinction, then, between European bowl shapes and Native American forms, is clearly a false dichotomy. Moreover, the tattoo art on the arms and legs of coastal Algonkians, as painted by John White (see "One of the Wyves of Wyngyno," in Hulton 1984: Plate 47), provides excellent examples of correlates for the decorative motifs and design elements observed on "Chesapeake" pipes.

## Conclusions

In light of the material evidence from northeastern North Carolina and information incorporated from other areas, significant flaws have been discovered in the "Chesapeake" pipe model proposed by Emerson (1988, 1994) and expanded by Deetz (1993, 1996). A brief review of the four foundational components outlined earlier illustrates some of the key weaknesses of the model as it presently exists. With a geographic range originally restricted to the coastal plain of Virginia and southern Maryland, the actual range for these pipes, indicated by a variety of Native American contexts, extends from at least Cape Hatteras, North Carolina, to Lancaster County, Pennsylvania, and inland throughout the North Carolina Piedmont. Emerson (1988:64) originally defined the temporal duration for "Chesapeake" pipes as beginning in 1640 and ending in 1710; Deetz (1993:91) has since expanded this proposed range to 1630 through 1720. While primarily an historic development, the temporal range for "Chesapeake" pipes begins in the pre-contact Late Woodland period, as indicated by examples recovered from Jordan's Landing in North Carolina, the Shultz-Funk site in Pennsylvania (Kent 1984:147–148), and additional sites in Virginia (Mouer 1993:128). There are also potential problems with the terminal date, since the vast majority

of locally-produced pipes recovered at Neoheroka Fort, which is tightly dated to 1713, fall within the definition of form and decoration as proposed by Emerson (1988, 1994).

The examination of pipe decoration and decorative attributes for northeastern North Carolina found that examples of "Chesapeake" pipes were recovered at all three of the sites examined, with the Algonkian site of Croatan producing the highest concentration of motifs and decorative attributes emphasized by Emerson and Deetz as being of African influence. There also was no sharp break in pipe form between the sites examined for this study, and the distinction made between "Chesapeake" pipe forms and Native American pipes during the historic period does not exist (Deetz 1993:96; Emerson 1988:110–115, 166, 1994:38). Instead, the results indicate a mix of continuity and change in the pipe traditions of Iroquoian and Algonkian groups in northeastern North Carolina, from the pre-contact Late Woodland period through the historic period.

Simply put, the "Chesapeake" pipe production and use contexts hypothesized by Emerson (1988; 1994) for Virginia and Maryland do not adequately explain the materials recovered in North Carolina, or from other Native American contexts along the coastline of the Southeast and the Middle Atlantic. "Chesapeake" pipes, whether in a strict or broad sense of definition, are predominantly the products of Native Americans, with different cultural groups making and using pipes with different decorations. Developments and changes in local pipe-making traditions for Algonkian and Iroquoian populations in northeastern North Carolina, Tidewater Virginia, and southern Maryland from the Late Woodland through the historic periods appear to mirror larger, interregional cultural patterns such as those described by Turnbaugh (1992) for much of the Mid-Atlantic seaboard of the eastern United States. Due to the lack of geographical coherence, the term "Chesapeake" should be set aside and replaced with the more neutral label "locally-produced pipes" until a better grasp is obtained on the range, distribution, and specific cultural affiliations for these material traditions. As shown here, these issues are resolvable and detailed answers are well within the reach of future study. While the results of this study are preliminary, they do add significantly to our understanding of an intriguing archaeological dilemma. Similar research conducted on a larger scale will help further address these questions.

## Notes

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