

SOUTHERN INDIAN

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Southern Indian Studies

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Tucker R. Littleton

Tucker R. Littleton
(1936-1983)

This issue of *Southern Indian Studies*, which describes work at an osuary site in New Hanover County, North Carolina, is one that Tucker Littleton would have anticipated with great pleasure. Tucker knew the coastal area of North Carolina, and he had a great interest in its history and prehistory. He also had a long-standing friendship with H. Trawick Ward and Jack Wilson, Jr., the co-authors of this report.

To those who equate success in archaeological pursuits solely with extensive publication lists, and to those who did not have the opportunity to know Tucker Littleton personally, a note as to why it is so fitting that an issue of *Southern Indian Studies* be dedicated to his memory is appropriate.

Tucker embodied the very essence of the kinship between the archaeologist and historian, between the amateur and the professional investigator, and between peoples and the lands they inhabit and come to cherish. Whenever Tucker recounted tales of former peoples and events that he had reconstructed with infinite patience from long-neglected artifacts and documents, the apparent dichotomy between the past and present was dispelled. His talent for merging the past and present was not merely intellectual; Tucker's friends from the past were as real to him as those of the present, and his loyalty to them was equally profound.

Perhaps it was Tucker's long nurture, study, and synthesis of the fragments of history which made him such an effective recorder and preserver of archaeological data. Over a period of approximately twenty years, Tucker, alone or with others, recorded over 1,000 archaeological sites in North Carolina. The great majority of these sites are from the area he knew and loved best, the southern coastal region of the state, and many of the sites were among the first recorded in their respective counties. More than merely record these sites, however, Tucker brought the locations and surface materials from them into the public domain by donating them to a repository where they can be perpetually curated and, therefore, have the greatest opportunity to forge new links between the past and present. In this respect, Tucker personified ethical archaeological research by preserving endangered data and seeing to it that such data were disseminated to the widest possible audience. Some of the most direct evidence of Tucker's contributions to archaeology are, therefore, seen in the reports of numerous professional archaeologists, wherein his expertise and selfless aid are gratefully acknowledged.

No full explanation of the reasons Tucker will be so genuinely missed by those interested in the archaeology and history of North Carolina can be ex-

pressed without some mention of the fact that he was a unique and truly unforgettable personality. Tucker's enthusiasm for the past was contagious, and his profound sense of humor and generosity made him accessible to all he met. Some measure of the friendships that Tucker made and kept can be appreciated when it is understood that the enormous number of archaeological sites he helped to locate and record were identified without his ever learning to drive an automobile. Among those who were with Tucker when sites were located were individuals associated with the University of North Carolina's Research Laboratories of Anthropology. Some measure of the range of Tucker's interests can also be perceived when it is realized that many other people with whom he recorded sites came from disciplines outside of archaeology and history. Among these were individuals from the disciplines of geology, music, and botany. For example, there are over 360 sites recorded on joint archaeological/botanical forays with Stephen Leonard, a former curator of the herbarium at the University of North Carolina, Chapel Hill.

A few months before Tucker's untimely death, a bronze plaque was placed in Swansboro's Bicentennial Park. The inscription on this plaque commemorates a past president and dear friend of the Archaeological Society of North Carolina:

In recognition of Tucker Reed Littleton. For his diligent pursuit of history, for outstanding contributions to an accurate knowledge and portrayal of the past, and for a life of untiring service, leadership, and inspiration to preserve our heritage, this plaque is presented with deepest gratitude. Erected by his friends.

Archaeological Investigations at the Cold Morning Site

INTRODUCTION

During the fall of 1979, the Research Laboratories of Anthropology of the University of North Carolina conducted an archaeological salvage and testing program at the Cold Morning site, 31Nh28, in New Hanover County, N.C. The site is located northeast of the intersection of S.R. 1100 and S.R. 1186 in the Echo Farms subdivision south of Wilmington. It is situated on an old sand dune that borders Barnard's Creek to the southeast (Figure 1). The creek flows to the southwest and empties into the Cape Fear River some 600 meters away (Figure 2). This work was funded through a contract with the Interagency Archaeological Services.

In 1977, test excavations were conducted at the Cold Morning site by the New Hanover County Archaeological Survey as part of a C.E.T.A. (Comprehensive Employment Training Act) sponsored project. In December 1977, 11 two-meter square test pits were excavated, and in three contiguous units, an ossuary was exposed. After the human skeletal material was uncovered, a scale drawing was made and photographs were taken. A wooden cover was then placed over the ossuary to protect it until the bone could be examined in situ by a physical anthropologist. In June 1978, it was examined by Dr. David S. Weaver of Wake Forest University, and the results of this field inspection are summarized in Table 1. Subsequently, the ossuary was covered with a mantle of clean white sand, and the excavation units were backfilled to protect the remains until they could be removed by a team of archaeologists and physical anthropologists.

In addition to discovering the ossuary, the C.E.T.A. test excavations recovered 823 potsherds, 2 projectile points, 29 flakes, and a few Historic period artifacts. The prehistoric ceramics indicated an occupation span from the Early Woodland through Late Woodland periods, although the majority of the specimens were affiliated with the Middle Woodland period. The two projectile points also dated to the Middle and Late Woodland periods. The historic artifacts probably represent residue from an old rice mill that operated on Barnard's Creek during the early nineteenth century.

Since the site was determined eligible for the National Register of Historic Places and the construction activities planned for the Echo Farms subdivision posed a threat of adverse impact, a program of mitigation was developed to comply with the provisions of the Archaeological and Historical Preservation Act of 1974 (PL 93-291). In addition to re-excavating and removing the skeletal remains, the goals of this project included a determination of the size of the site, as well as the identification and isolation of cultural components. It was felt that a determination of the site's extent and an

analysis of its spatial structure would aid in interpreting the nature of the relationship between the ossuary and the various Woodland components. A final goal was to determine whether or not stratigraphic conditions and the potential for preserved subsurface features would warrant additional excavations.

Table 1. (after Wilde-Ramsing, et al. 1978)
Preliminary Inventory of Skeletal Remains at 31Nh28

1. Skull associated with femur and tibia (another layer of bone lies underneath), 1 complete femur, portions of a radius, 1 first molar
2. Perhaps 2 skulls, teeth, humerus fragment
3. Mandible, no teeth
4. Skull — very poor condition
5. Mandible and teeth below femoral shaft
6. Skull, upside down, wormian bones, extra bones around sutures
7. Skull, two ribs
8. Female tibia
9. Femur
10. Complete mandible of female, 25–30 years old
11. Radius over radius, potsherd on top
12. Adult skull
13. Adult skull
14. Adult skull
15. Adult skull
16. Adult skull
17. Adult skull
18. Adult skull
19. Mandible
20. Potsherd, 3 cm above bone
21. Skull
22. Infant, 2.5 years old, mandible and milk teeth
23. Innominate (R), blade and Sciatic Notch, probably female



Figure 1.

View of 31Nh28 Looking Up Barnard's Creek



Figure 2.

View of Confluence Between Barnard's Creek and the Cape Fear River

ENVIRONMENTAL BACKGROUND

The New Hanover County land surface is a plain with a slight slope toward the Cape Fear River. It represents part of a Pleistocene sea floor exposed by a lowering of sea level in the recent geologic past. Although essentially flat in the broad interstream areas, the plain is broken by low escarpments along the Cape Fear and Northeast Cape Fear Rivers (Bain 1970:7). The most prominent geologic feature in the immediate vicinity of the site is the Chowan Terrace which ranges in elevation between 9 m and 15 m above sea level. Portions of the topography are also characterized by low rolling sandhills that were once active dunes, and it is upon one of these dunes that the Cold Morning site is located.

In the site area, basement crystalline rocks have been encountered at a depth of 390 m. Resting on top of the rock are beds of Cretaceous age comprised of marine sands, clays, and marls, with the lower 120 m of this deposit representing the Black Creek formation. The next stratum up is some 270 m thick and consists of greenish grey sands and clays that have been assigned to the Pee Dee formation. This formation is characterized by an undulating surface that holds shell limestone and calcareous sands of Eocene age that belong to the Castle Hayne formation. Thin sheets of Miocene sands and clays form a discontinuous cover over this surface, and they in turn are concealed by the Pleistocene sands forming the current surface (Larson 1958:11-12).

Two major drainage systems are divided by a line running west and south of Scotts Hill in Pender County to the Northeast Cape Fear River. North of this line, streams flow northward and drain into the Northeast Cape Fear River, whereas to the south, drainage is either eastward to the Atlantic Ocean or westward to the Cape Fear River. Smaller streams and creeks flow from bays and swamps scattered throughout the county. Salt marshes, shallow sounds, and tidal flats are located between the present barrier beaches and the mainland and interact with the ocean through a series of narrow inlets (Bain 1970:7).

Four major soil types are found within the immediate site area. These consist of Craven fine sandy loam, Lakeland sand, Dorovan soils, and tidal marsh soils. Craven fine sandy loam is located south and west of the site on a broad flat peninsula that juts into the marsh. This soil type defines a dark grey fine sandy loam some 20 cm deep that overlies a subsoil roughly 125 cm thick. The upper part of the subsoil is composed of a mottled yellowish brown clay loam that grades into a mottled brownish grey clay. Toward the bottom of the subsoil stratum, a fairly homogeneous light grey clay is typical. Craven fine sandy loam is generally poorly drained and has only limited use potential (Weaver 1977:6).

Dorovan soils correspond to a band of swamp forest along the southeastern border of the site. These soils make up a black muck roughly 10 cm in depth resting on top of a dark grey to black muck. Dorovan soils are also poorly drained, and today most of their acreage is used for woodlands and wildlife habitats. They are flooded for long periods and usually have an extremely high acidity (Weaver 1977:7).

The Dorovan soils at the site are bordered on the southeast by marsh. The surface layer here is typically a black clay loam that extends to a depth of 45 cm and grades into a black silty clay loam. The latter usually extends to a depth of roughly 150 cm (Weaver 1977:13).

The ridge where the site is located is covered by Lakeland sand. The surface layer is comprised of a greyish brown sand 5 cm thick. Beneath this zone is a band of mottled brownish yellow sand that varies in thickness from 10 cm to almost 30 cm. The mottled sand grades into a homogeneous yellow sand that extends to an indeterminate depth. This soil is excessively drained, very acidic, and of little use for agricultural purposes.

Although it is very unlikely that vegetation at the site today is identical to that of the remote past, some of the plant communities may have had similar counterparts in the more recent past and may reflect the general conditions during that time. In the immediate vicinity of the site, at least three plant communities are present today. Along the ridge crest, the dominant trees are scrub oak and slash pine. Turkey oak, blackjack oak, and post oak also occur frequently along with huckleberry and dwarf myrtle. A swamp forest community borders the site along the lower contours. Here the dominant trees are sweet gum, tupelo, and cypress. Other species include greenbrier, red maple, willow, and ash. Between the swamp forest community and the creek is a fresh water marsh that contains primarily cat-o-nine tails, bulrushes, and clubbrushes.

Except for the marsh along Barnard's Creek and the thin border of hardwoods between the marsh and the dune ridge, the food resource potential of the site area today is very low. The creek and its immediate environs would probably have offered a good habitat for a variety of fish and fowl, and the swamp forest with its hardwoods probably produced ample mast for browsers such as deer. The upland areas away from the creek, however, if at all similar to the present environment, would have offered very little to human inhabitants. Not only would wild food resources have been scarce, but agricultural production would have been minimal because of excessive drainage and low fertility.

HISTORICAL BACKGROUND

The New Hanover County-Cape Fear area has a long and colorful history. It was first explored in 1526 by a large expedition of Spaniards led by Lucas Vasquez de Ayllon. During the course of this journey, one of the ships wrecked, and the expedition paused long enough to build another vessel, making this the first recorded report of ship building by Europeans in America. Ayllon sent parties into the interior and along the coast to look for a site to establish a permanent settlement. A location was finally chosen some 100 miles down the coast at the mouth of Winyaw Bay in South Carolina. There, the town of San Miguel de Gualdalpe became the first white settlement in what is now the United States. However, disease, cold, and hunger during the first winter, along with the death of Ayllon, signaled an early end to the settlement (Lee 1965:11; 1971:3-4).

After this brief Spanish foray, almost 150 years passed before other explorers ventured into the Cape Fear region. These were Puritan colonists from the Massachusetts Bay area who wanted to establish a settlement in a warmer climate. In the summer of 1662, Captain William Hilton was dispatched to explore the coast and locate a suitable site. Hilton was favorably impressed with the Cape Fear area (he was the first to use the name "Cape Fear"), and the following winter a group of Massachusetts Puritans settled on the Cape Fear River. They, however, did not share Hilton's enthusiasm. After a brief stay, they departed abruptly and reportedly left a message attached to a post at the point of the cape warning others to stay away. No one is sure why they left (Lee 1971:4-5).

Another group of English colonists, these from Barbados, ignored the warning of their Puritan cousins and landed in the area in 1664. They established a small colony on the west bank of the Cape Fear River. This settlement, which thrived for a few years with as many as 800 people, was also doomed to failure. By 1667, the village had been abandoned (Lee 1971:5-6).

The first permanent settlement along the Lower Cape Fear was established in 1725. Maurice Moore perceived the need for a town in the heart of the Cape Fear region, and Brunswick Town was laid out in 1725 to fill this need. Although the town grew slowly at first, by 1729 it had become the seat of government for New Hanover County. In 1731, the Port of Brunswick was created, and the town became the official port of entry for the region (Lee 1955:183-186).

THE CAPE FEAR INDIANS

There are few historical accounts of the Indians of the Cape Fear area. Hilton, following his visit in 1662, described them as

very poor and silly Creatures divers of ym are very aged; but they are not numerous: for in all our various travells for 3. weeks and more, we saw not 100 in all, they were very courteous to us, and afraid of us, but they are very theevish (Hilton 1662; quoted in Lee 1965:70).

Although the Indians apparently were friendly to the English, one account of conflict was reported and is noteworthy because it provides a glimpse into the aboriginal material culture. Hilton and his men were examining land from the ship's longboat when a solitary Indian shot an arrow into the vessel. He was recognized as one of four seemingly friendly Indians from whom the English had previously bought acorns. Hilton's party tried to catch the culprit at the time of the incident but were unsuccessful. A little later and several miles downstream, they recognized the Indian's canoe tied up on the bank. They then, "Went to his Hut, and pulled it down, brake his pots, platters, and spoons, tore his Deer-skins and mats in pieces, and took away a basket of Akorns" (Hilton 1662; quoted in Lee 1965:71).

According to Swanton (1946:206), these Indians were probably affiliated with Siouan speakers to the south and may have been part of the Waccamaw tribe. No native name, however, has been preserved for the Indians living along the Cape Fear River. Based on Hilton's account and a 1715 census that listed five towns containing a total population of 206, it would appear that the area was not intensively occupied.

During the Yamasee War, Indians in the Cape Fear area suffered from attacks by both other Indians and the militia led by Colonel Maurice Moore. When Moore took captives to South Carolina, it marked the beginning of an exodus of the remaining Indians from the area. After Moore's campaign, the Indians who stayed along the Cape Fear were frequently attacked by Tuscaroras, and they, too, finally fled southward to seek security among the South Carolina settlements (Lee 1965:82, 83).

There is not an Indian to be seen in this place; the Senekas — with their Tributaries the Susquehannah and Tuskarora Indians having almost destroyed those called Cape Fear Indians, and the small remains of them abide among the thickest of the South Carolina Inhabitants, not daring to appear near the out settlements, for the very name of a Seneka is terrible to them (Meredith 1730; quoted in Lee 1965:83).

ARCHAEOLOGICAL BACKGROUND

The first systematic archaeological survey in the North Carolina coastal area was carried out by William Haag in the early 1950s. This work fo-

cused on the northeast coastal region, from the Neuse River to Virginia. As a result of this survey, a preliminary ceramic sequence, based on seriation, identified three temporally distinct wares. The earliest was sand tempered, the latest shell tempered, and sandwiched between was a grit-tempered ware (Haag 1958).

In 1960, Stanley South surveyed several areas along the coast and recorded sites in New Hanover and Brunswick Counties in North Carolina and Horry County in South Carolina. South was primarily interested in comparing his data with that collected by Haag. He felt that the archaeological record should reflect differences in linguistic groups on the north vs. the south coasts, i.e. between Algonquian speakers to the north and Siouan speakers in the Cape Fear region. There were also environmental contrasts that South believed would be represented in the cultural remains (South 1960: 1-3). As a result of this work, a detailed ceramic seriation was established for the southeastern coastal area, and the types described by South form the basis for the ceramic analysis presented in a later section of this report.

South, like Haag, developed a ceramic sequence that was comprised of three basic series — Cape Fear, Hanover, and Oak Island — defined primarily by temper. Cape Fear is characterized by sand temper, Hanover contains crushed-sherd temper, and Oak Island is shell tempered. Earlier Thom's Creek sherds are recognized in the southeastern coastal area along with a few fiber- and steatite-tempered specimens. South also described an unnamed sand-tempered plain type and the Brunswick series, both of which extended well into the eighteenth century (South 1960, 1976).

Loftfield (1976) has worked extensively in the area between Haag's survey area and the Cape Fear region. The ceramic sequence he has defined for this area closely parallels that of South. A fine sand-tempered ware, the New River series, probably is oldest and may be related to the Thom's Creek series (Loftfield 1976:234). Trinkley (1976) has demonstrated that there is considerable temporal overlap between Thom's Creek and Stallings Island pottery. Loftfield's New River series corresponds temporally to South's Cape Fear series. Next in Loftfield's sequence is a sherd-tempered ware, the Carteret series, that closely resembles South's Hanover series. The Late Woodland shell-tempered series is called White Oak by Loftfield as opposed to South's Oak Island (Loftfield 1976). Based on comparison of South's and Loftfield's type specimens, there appear to be few distinctions between the two other than geographic location.

Recently, Phelps (1983) has reported on his extensive research primarily in the northern coastal area. He has added considerable detail to our knowledge of coastal archaeology by defining Early, Middle, and Late Woodland phases in the northern region, and by correlating these with South's and Loftfield's southern coastal work. The Deep Creek, Mount Pleasant, and

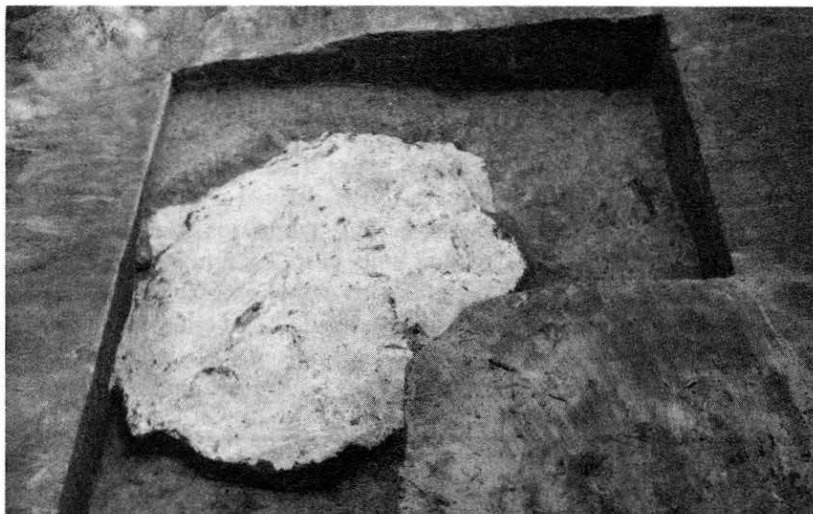


Figure 4.
Ossuary After Initial Cleaning



Figure 5.
Ossuary After Final Cleaning

on the bone, was then removed with trowels until a white sand cover was encountered (Figure 4). Most of the sand was brushed away; the remainder, once it had dried, was dusted off with an aerosol lint-and-dust remover. This latter technique worked especially well in delicate situations close to the more fragile bones. After the sand was cleared, additional cleaning was carried out (Figure 5).

When cleaning was completed, the ossuary was photographed and removed under the direction of a paleo-osteologist from the Research Laboratories. The skeletal material was better preserved than initially anticipated, particularly the bone that had not been previously exposed. As a consequence of the good preservation, it was possible in most cases, to remove individual bones. These were mapped, labeled, and wrapped separately. Some of the pieces were, however, so fragile that they were removed within their soil matrix so that final cleaning could be facilitated under laboratory conditions.

In order to tie the existing grid into the format used by the Research Laboratories, stake S55, W55 located in the southwest corner of the ossuary unit, was arbitrarily assigned the horizontal coordinates 200R100. Excavation units were then designated by the location of their southeastern corners relative to that point.

Based on the results of the previous work and the topography of the ridge, the site was divided into three sampling units. These were defined in terms of relative productivity, proximity to the ossuary, and slope characteristics. The first unit extended from the southwestern toe of the ridge northeasterly for approximately 25 m to a point immediately southwest of the ossuary. The second unit included the ossuary area and the relatively flat ridge crest extending roughly 30 m to the northeast. The final sampling unit was comprised of the remaining ridge crest and the northeastern toe slope.

Because the relatively gradual slope on the border of the ridge offered the best opportunity for accumulation of sheet wash, Unit I was selected for a search for buried deposits. Previous excavations in this area had yielded relatively large quantities of ceramics, as well as some categories of artifacts not found in other areas. A 2 x 4 m deep test trench and a 2 x 2 m square were excavated in areas selected on the basis of topography, spacing relative to previously excavated units, and vegetative cover.

Unit II defined the most critical area because of its proximity to the ossuary and because the ridge crest would have provided terrain best suited for occupations that were long enough and of sufficient intensity to have left indelible archaeological traces. Six 2 x 2 m test pits were opened in the immediate vicinity of the ossuary. These units were positioned so as to provide maximum areal coverage when added to the previously excavated squares. An additional test square was excavated on top of the ridge, northeast of

the ossuary, to give added coverage in a part of the site that had not been tested.

Based on the topography and the information obtained during the initial testing, Unit III was considered to have the lowest potential for producing either stratified deposits or additional spatial data. Only one flake had been retrieved from the previous tests here. Also, the northeast toe of the ridge was steeper and had a much narrower crest. Because of these considerations and time restraints, only two 2 x 2 m squares comprised Unit III. These were situated so as to fill in gaps in the coverage of the C.E.T.A. excavations.

In addition to the twelve 2 x 2 m units, 35 small shovel tests were excavated along 4 transects. Individual units were spaced 5 m apart. These transects were aligned 45° to the grid in order to provide added coverage over the slope along the ridge flank. Another series of shovel tests were dug along the top of the ridge on the opposite side of S.R. 1186. These units were excavated at 10-m intervals. Finally, 3 shovel tests and a 1 x 2 m trench were opened on top of the ridge remnant located west of the intersection of S.R. 1100 and S.R. 1186. All excavated soil was sifted through 6 mm — mesh screens.

These excavations revealed little beyond what already had been determined from the earlier C.E.T.A. investigations. The top 2 to 4 cm of deposit consisted of leaf mold that overlay a recent grey aeolian stratum that was virtually sterile. Beneath this layer was a mottled yellowish-brown plow zone that was roughly 10 cm thick. The plow zone graded into a less mottled yellow sand layer that was approximately 20 cm in thickness. In this zone, the mottling decreased rapidly with depth leaving a homogenous yellow sand that extended to an unknown depth (Figures 6, 7). The grey sand and the plow zone were combined into one vertical unit labeled Zone A; however, each stratum was removed as a separate layer and labeled Zone A, level 1 or 2. The mottled yellow sand layer was labeled Zone B and excavated in two arbitrary 10 cm levels. Zone C, which consisted of the final yellow sand band, also was removed in arbitrary 10 cm levels.

The mantle of grey aeolian sand was virtually sterile, with the overwhelming majority of artifacts being in the plow zone and the top 10 cm of Zone B. It should be stressed, however, that the break between the bottom of Zone A and the top of Zone B was defined by a transitional interface, not a sharp line. The bottom level of Zone B produced only a small amount of material that had migrated downward through root and rodent action. Zone C was sterile.

These tests failed to reveal any evidence of intact cultural deposits. The specimens that were not found associated with the plow zone were restricted to Zone B, which apparently represents the bottom of an A-1 horizon with a strong admixture of humified organic matter characterized by maximum

leaching. Much of the mottling here is the result of a very active system of pedoturbators, in particular root action, tree falls, and various faunal disturbances. These were isolated during the course of the excavation as stump impressions, tap root holes, and rodent runs or burrows (Figure 6). All of these probably contributed to the downward movement of specimens along with percolation and soil water movement.

The tests also indicated that the site does not extend much beyond the assumed 7 m contour line. The test trench west of S.R. 1100 revealed some prehistoric sherds, but there was very little undisturbed area left here. The small shovel tests north of S.R. 1186 were sterile, although specimens have been collected from the road cut paralleling the north side of S.R. 1186.

Apparently, road construction and a large borrow pit west of S.R. 1100 destroyed much of the site. Certainly the southwestern end was impacted by construction activities, and only a small remnant of the original ridge has been preserved west of S.R. 1100. The borrow pit, covering several hectares and extending to the tidal marsh bordering the Cape Fear River, had a major impact not only on sites probably relating directly to 31Nh28 but on several others as well. Survey along the rim of the pit turned up at least four discrete areas of cultural activity that had previously been assigned a single site number.

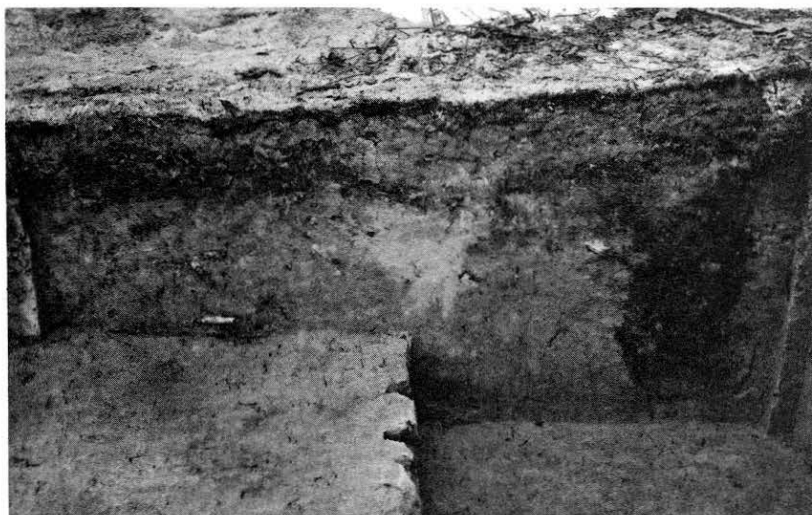


Figure 6.

North Profile 165R72, Deep Test

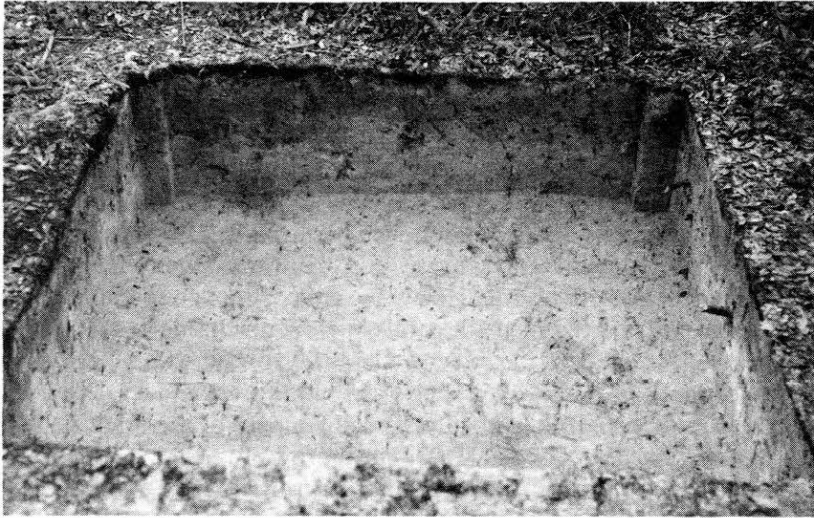


Figure 7.

165R72, Top of Zone C, Looking South

ARTIFACT ANALYSIS

The artifact patterns discussed in the original C.E.T.A. report, and the trends noted during the course of the current testing were similar. The overwhelming majority of the specimens recovered consisted of potsherds.

The 1979 excavations produced a total of 1142 sherds (Table 2). The great majority of these potsherds (1003 or 87.8% of the total) belonged to the three major types established by South (1960, 1976). A fourth type set up by South (1976:24) which he labeled "Sand Tempered Plain," is identified in the collection by the category, "Fine Sand Tempered." This similarity is felt to be valid even though the sherds from this site had a variety of surface finishes. Minority wares at the Cold Morning site consisted of crushed-quartz and crushed-steatite tempered sherds.

Of the 1142 sherds recovered, 237 (20.8%) are classified as Hanover (Table 3, Figure 8). The ceramics of the Hanover series are most notable for the aplastic clay used as temper (South 1976:16-18). The color range of red-orange to buff noted by South was approximated by the sherds from 31Nh28. Likewise, only two kinds of surface finish, cord-marked and fabric impressed, were present. Cord-marked sherds were a distinct minority as South indicated in his original type description.

Table 2. 31Nh28 Ceramic Summary, 1979

Excavation Unit	Hanover	Cape Fear	Oak Island	Sand Tempered	Quartz Tempered	Stearite Tempered	Total
163R72	51	132	2	8	7	0	200
165R72	34	133	0	0	10	0	177
182R90	30	77	0	1	0	0	108
193R108	7	18	2	0	0	0	27
195R104	22	54	0	34	0	0	110
198R112	0	27	88	11	0	0	126
200R123	8	66	12	5	31	0	122
200R112	33	7	4	9	0	0	53
211R119	2	21	9	7	1	0	40
224R132	10	58	12	5	0	0	85
246R160	1	5	2	1	0	0	9
275R174	1	2	0	0	0	0	3
Ossuary	0	3	3	0	0	0	6
*Trench	34	13	2	0	0	0	57
Shovel tests	0	3	0	0	0	0	3
Surface	3	8	1	0	1	0	13
Backfill	1	2	0	0	0	0	3
Total	237	629	137	81	50	8	1142
Percent	20.8%	55.1%	12.0%	7.1%	4.4%	0.6%	100.0%

*Refers to trench west of S.R. 1100

Table 3. Distribution of Hanover Ceramics
(20.8% of total sherds)

Excavation Unit	Cord Marked	Fabric Impressed	Unidentified	Total
163R72	1	50	-	51
165R72	5	13	16	34
182R90	15	14	1	30
193R108	-	7	-	7
195R104	2	13	7	22
200R123	-	8	-	8
209R112	1	31	1	33
211R119	-	1	1	2
224R132	3	6	1	10
246R160	-	1	-	1
275R174	-	1	-	1
Backfill	-	-	1	1
Surface	1	2	-	3
*Trench	-	33	1	34
Total	28	180	29	237
Percent	11.8%	75.9%	12.3%	100.0%

*Refers to trench west of S.R. 1100

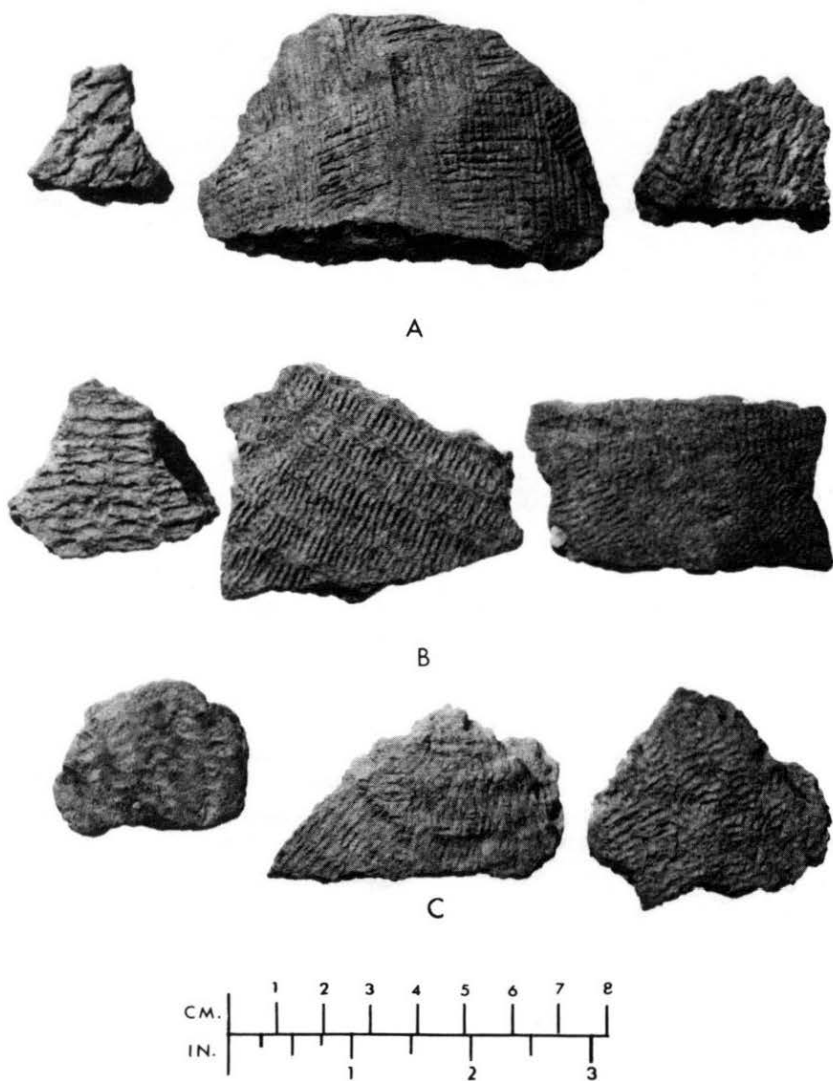


Figure 8.

Hanover Series Ceramics A. Cord Marked, B. Fabric Impressed, C. Fabric Impressed

Ceramics of the Hanover series have been placed at the end of the Early Woodland period. South cites two radiocarbon dates, 180 B.C. and 150 B.C. from a South Carolina site containing Hanover Fabric-Imprinted pottery (South 1976:40-41). Phelps reports finding Hanover ceramics associated with Mount Pleasant materials (Phelps 1983:32). No Hanover sherds were recovered from the ossuary, and only three were found on the surface.

The bulk of the sherds recovered from the Cold Morning Site 629 (55.1%), belonged to the Cape Fear series (Table 4, Figure 9). South (1976: 18) defined the Cape Fear series as a sand-tempered ware whose color ranged from red-brown to brown-black or buff. The paste may contain a particle or two of crushed quartz, but these inclusions are not common. The Cape Fear sherds from this site conformed to South's description with one exception. A few contained more than an occasional large quartz particle.

The three varieties of surface finish that were noted on Cape Fear ceramics from this site were cord marked (21.1%), fabric impressed (38.0%), and net impressed (6.8%). The remaining Cape Fear sherds (34.1%) were eroded and unidentified. The ratio of cord-marked to fabric-impressed sherds was significantly lower for the collection from 31Nh28 than South

Table 4. Distribution of Cape Fear Ceramics
(55.1% of total sherds)

Excavation Unit	Cord Marked	Fabric Impressed	Net Impressed	Unidentified	Total
163R72	22	49	21	40	132
165R72	21	44	6	62	133
182R90	40	28	7	2	77
193R108	5	8	-	5	18
195R104	6	35	2	11	54
198R112	10	12	-	5	27
200R123	-	23	-	43	66
209R112	-	7	-	-	7
211R119	6	6	2	7	21
224R132	12	8	2	36	58
246R160	3	-	-	2	5
275R174	-	1	1	-	2
Shovel tests	1	-	2	-	3
Backfill	-	2	-	-	2
Ossuary	-	3	-	-	3
Surface	3	4	-	1	8
*Trench	4	9	-	-	13
Total	133	239	43	214	629
Percent	21.1%	38.0%	6.8%	34.1%	100.0%

*Refers to trench west of S.R. 1100

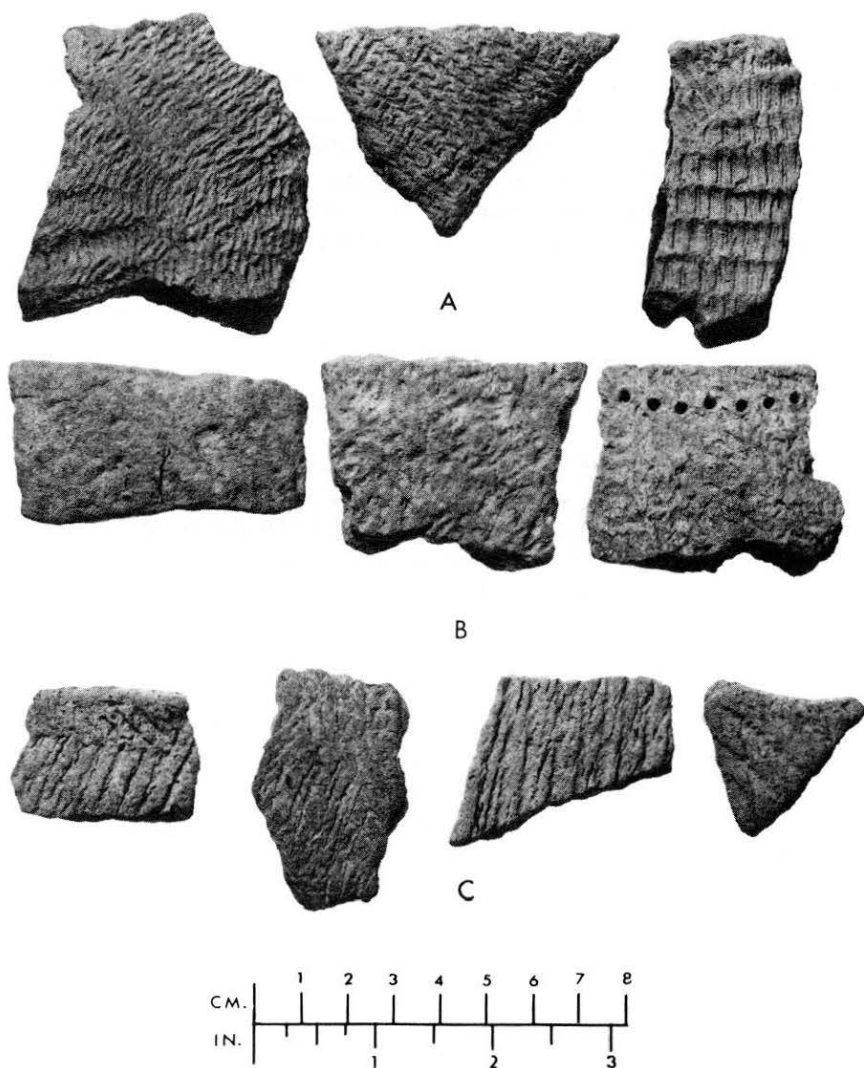


Figure 9.

Cape Fear Series Ceramics, A, Fabric Impressed, B, Net Impressed, C, Cord Marked

found in his original survey sample. Cape Fear ceramics were placed temporarily in the position following Hanover, although the exact segment of time represented is not known. Eight Cape Fear sherds were found on the surface of the site, and three were recovered from the ossuary.

The third most numerous group of potsherds, comprising a total of 137 (12.0%) sherds, was identified as Oak Island (Table 5, Figure 10). South defined the Oak Island series as a shell-tempered ware that was usually buff colored (South 1976:20). Typically, the shell used as the tempering agent leaches out, leaving a pock-marked or "hole-tempered" sherd behind. South noted cord marking and net impressing as two varieties of surface finish, although plain-smoothed surfaces predominated. There were a few examples of sherds with thong or sinew "simple-stamped" surfaces in South's collection. Sometimes incising was also present.

The Oak Island sherds from the Cold Morning Site were primarily the plain-smoothed variety (88.5%). Cord-marked sherds accounted for only 2.2% of the total, and eroded, unidentified sherds comprised the remainder of the sample (9.3%). Thirty-four (28.1%) of the plain-smoothed sherds had been incised. Although the "simple-stamped" sherds were noted from the earlier work at the site (Wilde-Ramsing et al. 1978:133, 139), none were recovered from the 1979 excavations. Three Oak Island plain-smoothed sherds were associated with the ossuary, and one was found on the surface. South has suggested that the shell-tempered ceramics date to the Late Woodland period and possibly into historic times (South 1976:42).

Table 5. Distribution of Oak Island Ceramics
(12.0% of total sherds)

Excavation Unit	Plain Smoothed	Cord Marked	Unidentified	Total
163R72	1	-	1	2
193R108	1	-	1	2
198R112	82	2	4	88
200R123	12	-	-	12
209R112	4	-	-	4
211R119	5	-	4	9
224R132	9	1	2	12
246R160	1	-	1	2
Ossuary	3	-	-	3
Surface	1	-	-	1
*Trench	2	-	-	2
Total	121	3	13	137
Percent	88.5%	2.2%	9.3%	100.0%

*Refers to trench west of S.R. 1100

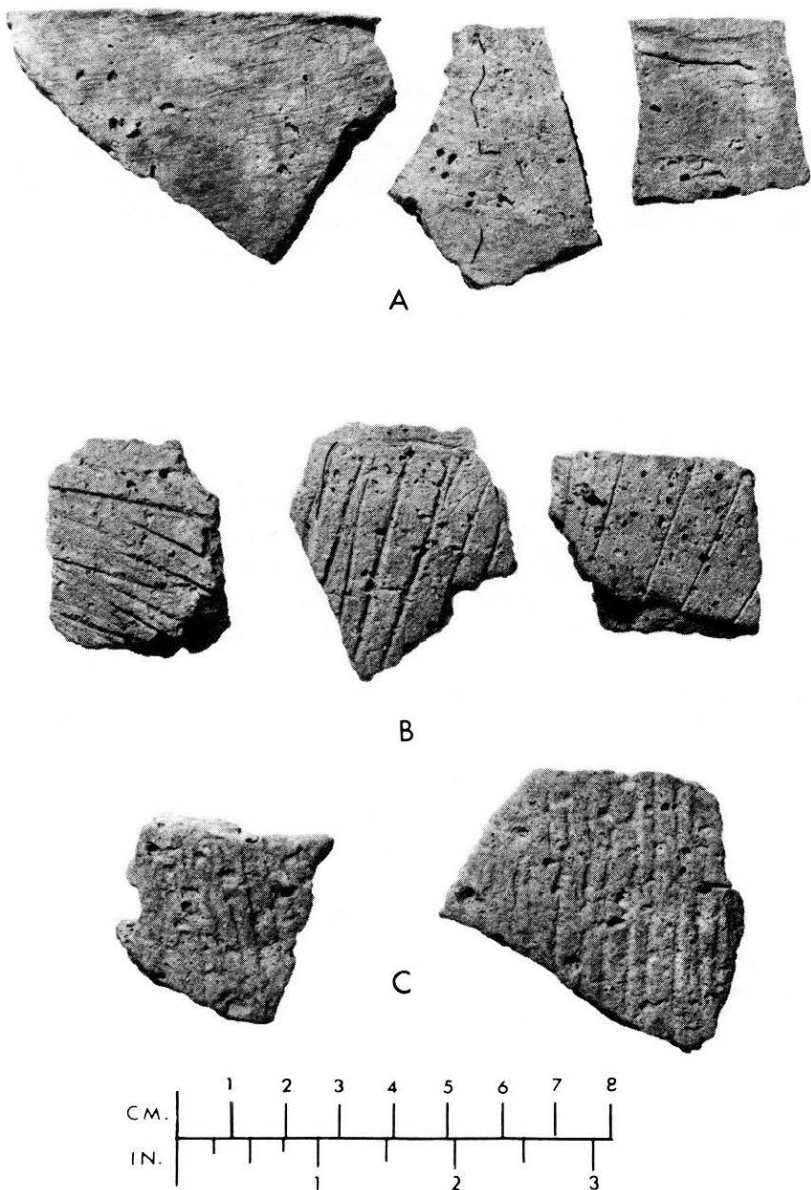


Figure 10.

Oak Island ceramics, A. Plain Smoothed, B. Incised, C. Cord Marked

Table 6. Distribution of Fine Sand-Tempered Ceramics
(7.1% of total sherds)

Excavation Unit	Simple Stamped	Plain	Cord Marked	Fabric Impressed	Unidentified	Total
165R72	-	-	-	8	-	8
182R90	1?	-	-	-	-	1
195R104	-	2	7	4	21	34
198R112	-	5	-	1	5	11
200R123	-	4	-	-	1	5
209R112	-	8	-	-	1	9
211R119	-	3	-	-	4	7
224R132	-	1	4	-	-	5
246R160	-	-	-	-	1	1
Total	1	23	11	13	33	81
Percent	1.2%	28.4%	13.6%	16.0	40.8%	100.0%

The fourth major group of sherds recovered was a fine sand-tempered ware (Table 6, Figure 11). A total of 81 sherds (7.1%) was placed in this category. This group was similar to South's (1976:24) sand-tempered plain type, although varieties of surface finish other than plain were noted in the sample. Surface finishes present on the sherds from this site included cord marked, fabric impressed, and plain. There was one sherd tentatively identified as "thong-marked," but its surface was very eroded. The remaining 33 sherds were unidentified. Other than noting their presence, little can be said about these fine sand-tempered specimens at this time.

The largest of the two minority groups present was a crushed quartz-tempered ware that was represented by 50 sherds (4.4% of the total collection) (Table 7, Figure 11). Surface finishes were primarily fabric impressed (50.0%), although a few were plain (10.0%) or cord marked (6.0%). The remaining 17 sherds (34.0%) were unidentified. For the present, the relationship of these sherds to the coastal ceramic sequence is not understood.

The last group of aboriginal ceramics consisted of eight plain, crushed steatite-tempered sherds. These were thin ranging in thickness between 5 and 7 mm. The crushed-steatite temper was very fine and powdery. It is doubtful that these sherds are related in any way to the Marcey Creek steatite-tempered sherds of the Early Woodland period in the Potomac River valley (Manson 1948). All eight sherds came from the trench west of S.R. 1100.

To summarize, the prehistoric ceramics at the Cold Morning Site date from the Early to the Late Woodland periods. The three major wares that define the aboriginal sequence of the southeastern North Carolina coast, Hanover, Cape Fear, and Oak Island, are all present. The relative percentages of these three wares nearly duplicate those of the C.E.T.A. study, with

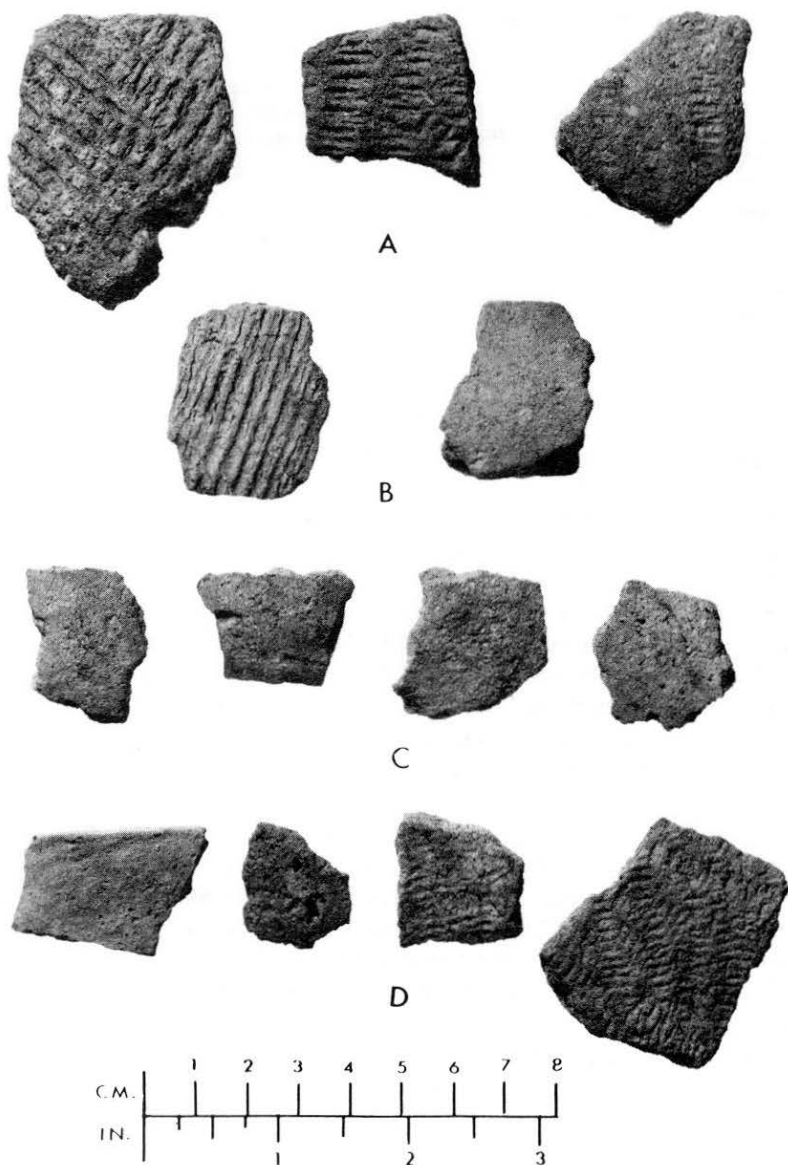


Figure 11.

Miscellaneous Sherds A. Crushed Quartz Tempered Fabric Impressed, B. Fine Sand Tempered Cord Marked and Plain, C. Steatite Tempered Plain, D. Sherds Associated with the Ossuary; Oak Island Plain (left two), Cape Fear Fabric Impressed (right two).

Cape Fear being best represented followed by Hanover and Oak Island. The precise temporal relationships of these three wares have not yet been defined, although the relative sequence is fairly well established (South 1976:39-43).

Table 7. Distribution of Crushed Quartz-Tempered Ceramics
(4.4% of the total sherds)

Excavation Unit	Plain	Cord Marked	Fabric Impressed	Unidentified	Total
163R72	-	-	-	7	7
165R72	-	2	5	3	10
200R123	4	-	20	7	31
211R119	-	1	-	-	1
Surface	1	-	-	-	1
Total	5	3	25	17	50
Percent	10.0%	6.0%	50.0%	34.0%	100.0%

Other than ceramics, the only aboriginal artifacts recovered were 13 unmodified flakes, 6 fragments of cracked rock, and 1 projectile point. The projectile point is a crude triangular variety normally associated with the first half of the Woodland period. Except for a few modern nails and glass fragments, and 15 nineteenth century sherds, no other cultural materials were recovered.

Based on the ceramic associations and one radiocarbon date derived from human bone, the ossuary is culturally and temporally affiliated with the Late Woodland, Oak Island period. Two of the three Oak Island sherds found with it were recovered from within the bone matrix. The remaining Oak Island specimen was removed from the top of the matrix. Two Cape Fear sherds were also found lying on top of the bone, and one was recovered while removing the skeletal material. However, in the absence of any evidence of intrusions, the ossuary can be no earlier than the latest inclusions. Its association with the Cape Fear period is verified by an uncorrected radiocarbon date of A.D. 950 \pm 80 years. This date adds support to Phelps's contention that shell-tempered pottery is strictly a Late Woodland manifestation (Phelps 1983:48).

THE OSSUARY

The ossuary contained at least 16 individuals, including one fetus. Cranial remains indicated 11 adults; six females, three males, and two adults of indeterminate sex. The minimum number of adults evidenced by postcranial remains was also 11, including 11 right femora and 11 left tibiae. At least three subadults were represented by cranial vault fragments. Four

were indicated by temporals and right femora. An analysis of the eruption and calcification of subadult teeth also indicated at least four subadults. Fetal temporals, lateral occipital fragments, vertebrae and rib fragments were present. An age estimate of six to eight lunar months was based on measurements of the petrous processes.

Though bone preservation was generally poor, the amount of cranial and postcranial bone missing suggest some possible deterioration and/or loss before interment in the ossuary. Loss was particularly characteristic of the smaller postcranial bones and teeth.

A comparison of cranial morphology and cranial metrics to samples of Siouan, Algonquian, and other populations from surrounding counties suggests a close relationship between the ossuary population and the Siouan groups, as well as other specimens from neighboring Brunswick County.

The Cold Morning Site ossuary contrasts with the Algonkian ossuaries to the north in several ways. The smallest Colington phase (AD 800 to AD 1600) ossuary reported thus far contained the remains of 38 individuals, the largest, 58. In these were individual bundles of bones as well as articulated skeletons. The ossuaries are similar, however, in the fact that few artifacts have been found in association with any of them (Phelps 1983:36-42).

DISTRIBUTIONAL ANALYSES

Lacking intact stratigraphy and subsurface features, the spatial structure of the site could only be approached through the use of the artifact densities from the disturbed zones. The only class of artifacts that occurred in sufficient quantities to permit the analysis of distributional variation was the ceramics. In order to graphically display the spatial variations in the ceramic densities, the computer graphic's SYMAP program was used to plot contour maps. SYMAPs were calculated for each of the major ceramic series in order to isolate temporal variability in the use intensity of the site. The C.E.T.A. ceramic data were combined with that from the current project to give a total of 23 data points dispersed along the ridge. Occupation limits were defined by the contour with an assumed elevation of 7 m and S.R. 1186.

The distributions generated by the different SYMAPs are not meant to indicate absolute ceramic densities in areas of the site that were not excavated. But rather, they are presented as heuristic devices to aid in visualizing the spatial variation among the ceramic categories from the excavation units themselves. The maps, however, have a degree of predictive acuity, depending upon the reliability of the sample in representing the site universe. Although the sample comprising the data point distribution was small, the site was extensively covered. In this instance, it is believed that because of prior knowledge and conditions of ground cover, the judgment

selection of excavation units was at least as valid as a sample derived from a more ridged scheme (c.f. Chenhall 1975, Doran and Hodson 1975, Flannery 1976).

In addition to the SYMAPs, a Statistical Analysis System (SAS) program was used to calculate an array of correlation coefficients between the various ceramic series. This procedure added another dimension to the analysis and also aided in the map comparisons.

In terms of the overall ceramic distribution, there was a high concentration at the southwest end of the site, whereas the northeastern half was characterized by low densities. This pattern came as no surprise and was mentioned in the C.E.T.A. report and recognized during the fieldwork phase of the study. There were also two secondary concentrations just northeast of the ossuary. Again, this pattern was expected from field observations (Figure 12).

The Hanover series sherds evidenced a restricted distribution at the southwestern edge of the site (Figure 13). They were primarily spread along the ridge from its tip northeastward toward the ossuary for approximately 30 m. A moderately dense but restricted concentration was also indicated around the ossuary. The distribution of the Cape Fear ceramics almost mirrored that of the total sherds and was very similar to the Hanover distribution (Figure 14). The two series were correlated at a correlation coefficient ($r = .72$) that is considered to be extremely high considering the amount of random noise that can affect the co-variance of archaeological data.

The fact that the Cape Fear pattern was nearly identical to that of the total sherds distribution was to be expected considering that over half the pottery from the site was identified as Cape Fear. Again, heavy densities were characteristic of the southwestern end of the site and of the area northeast of the ossuary. The immediate area of the ossuary, however, was defined by low Cape Fear densities.

The pattern of the sand-tempered pottery was restricted to the general area of the ossuary, with the highest concentration located just southeast of the interment. There was also a light cluster near the southwestern tip of the site. The quartz-tempered sherds clustered southeast of the ossuary but also peaked slightly at the southwestern end of the ridge (Figure 15; Figure 16).

Oak Island ceramics were restricted to the ossuary area with the densest concentration occurring in the units adjacent to it. Over half the Oak Island sherds (88) came from square 198R112, located some 8 m east of the ossuary. Oak Island was the only series that did not reveal a secondary concentration at the southwestern edge of the site (Figure 17).

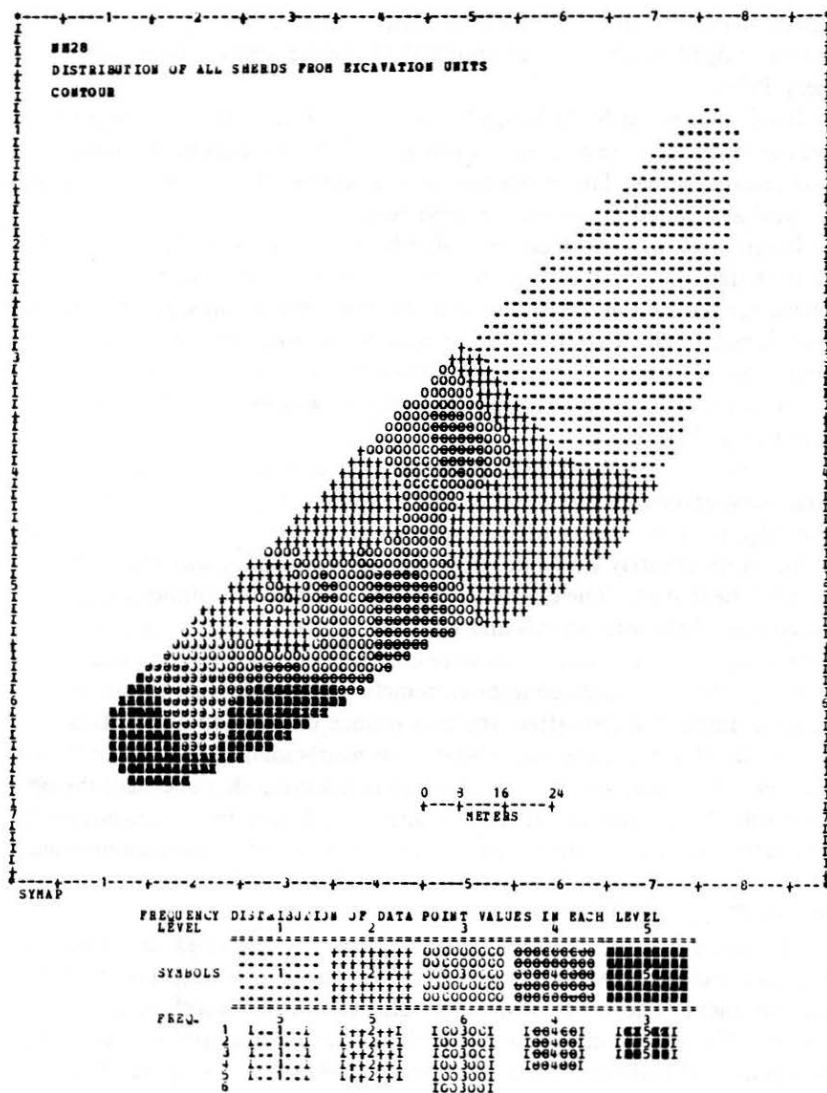


Figure 12.

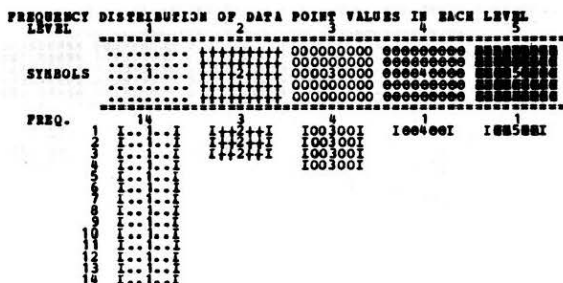
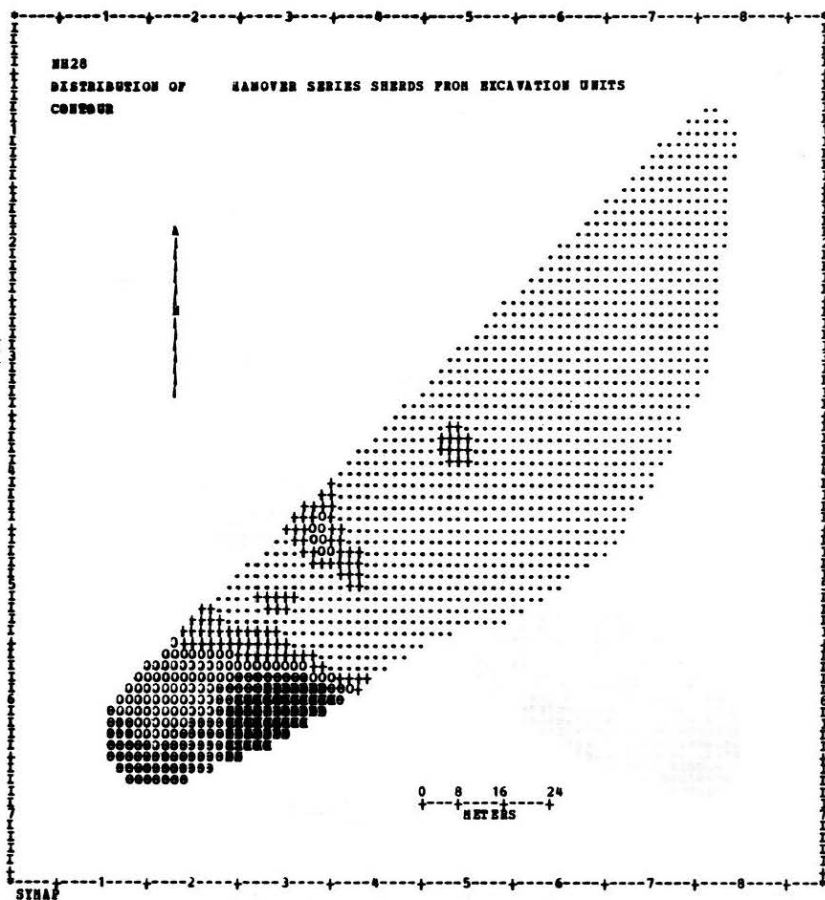
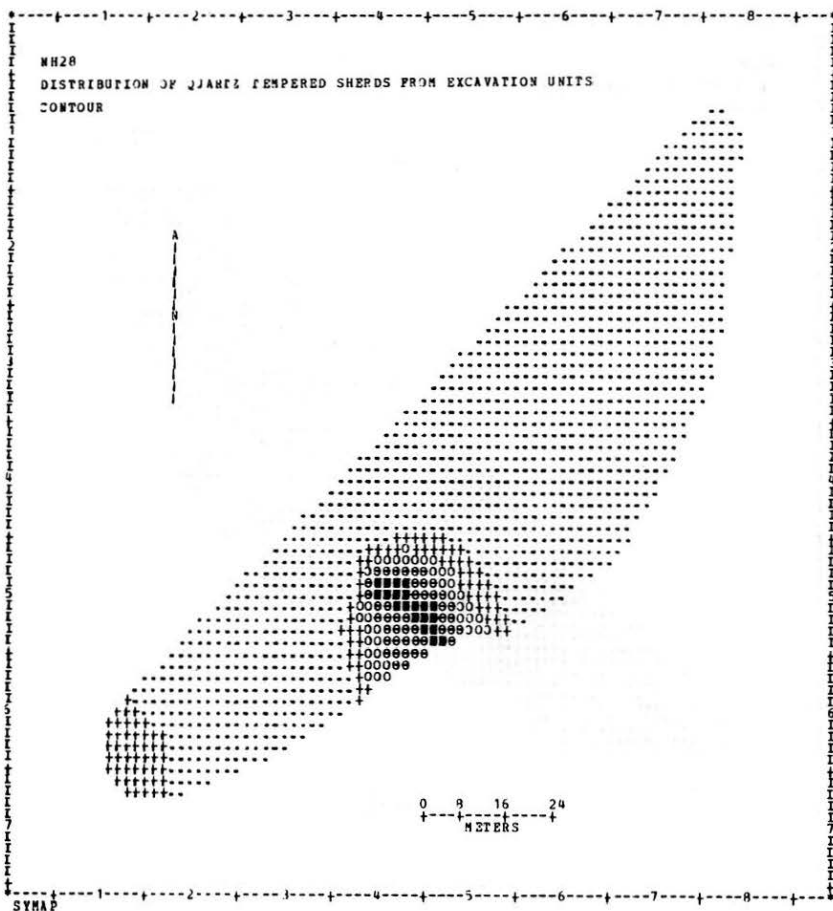


Figure 13.



FREQUENCY LEVEL	DISTRIBUTION OF DATA POINT VALUES IN EACH LEVEL				
	1	2	3	4	5
SYMBOLS	----- ----- ----- ----- -----	++++++ ++++++ ++++++ ++++++ ++++++	00000000 00000000 00000000 00000000 00000000	00000000 00000000 00000000 00000000 00000000	00000000 00000000 00000000 00000000 00000000
FREQ.	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Figure 16.

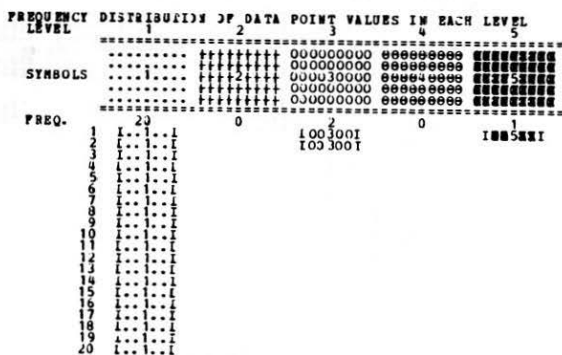
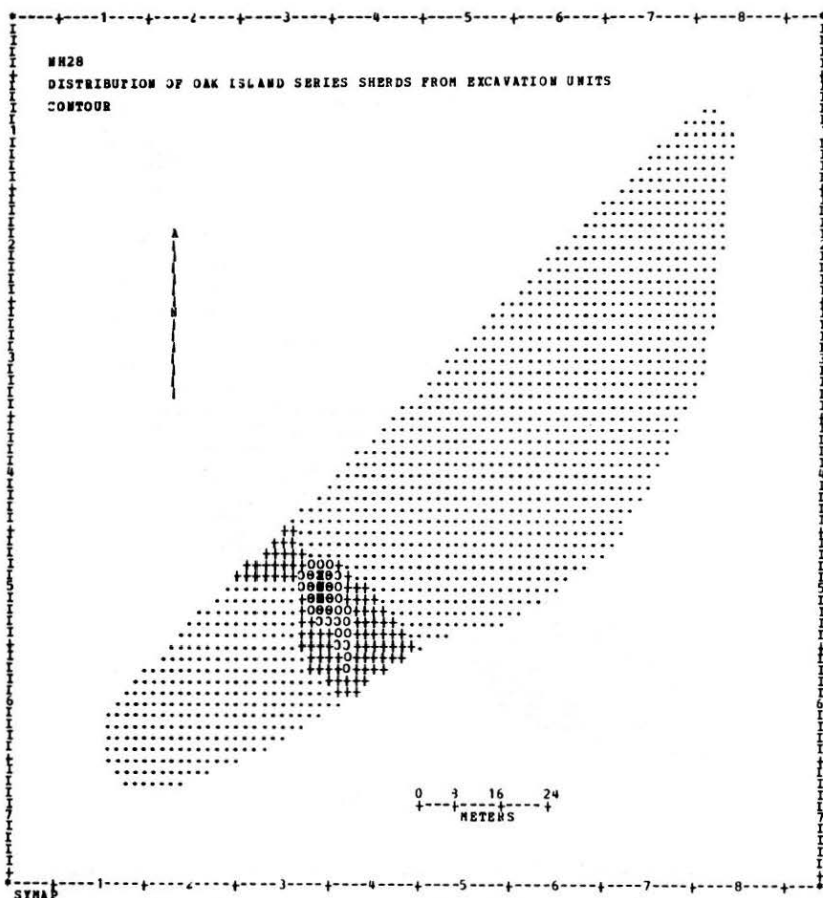


Figure 17.

Table 8. Pearson Correlation Coefficients

	Quartz Tempered	Oak Island	Hanover	Cape Fear	Sand Tempered
Quartz Tempered	1.00	-0.09	0.03	0.03	-0.01
Oak Island	-0.09	1.00	-0.29	-0.08	0.21
Hanover	0.03	-0.29	1.00	0.72	0.08
Cape Fear	0.30	-0.08	0.72	1.00	0.06
Sand Tempered	-0.01	0.21	0.08	0.06	1.00

Soil samples were routinely taken from all levels within each excavation unit. Samples from the top of Zone B of each square were submitted to the Agronomic Division of the North Carolina Department of Agriculture for testing. Phosphorus and soil acidity, as well as other chemical analyses were run; however, the phosphorus content proved to be the only chemical index that showed appreciable variation across the site.

Of all the macronutrients in soils, phosphorus has proven to be the best indicator of past human activity (Cook and Heizer 1965:1). It is very resistant to leaching and is found in feces and urine, whereas calcium phosphate is a major mineral component in bone (Brady 1974:457). The phosphorus index at 31Nh28 was highly variable, ranging from 7 to 91 units per square. The SYMAP of the distribution of these values, and the pottery distributions were almost isomorphic, and all of the phosphorus concentrations were also restricted to the southwestern third of the site (Figure 18).

In conclusion the ceramic and chemical data both indicate that the southwestern half of the site was much more intensively utilized than the remainder of the ridge. Most of this activity took place during the Middle Woodland period as evidenced by the Cape Fear ceramic distribution, and although this distribution was widespread, the greatest densities were at the southwestern end of the site. Evidence for the site being used during the Early Woodland was more restricted, yet, there was much overlap in the areas of Hanover and Cape Fear sherd concentrations. Although numbers of sand- and quartz-tempered sherds were small, they, too, were concentrated in the southwestern part of the site. The Oak Island ceramics, displaying the most restricted distributional pattern, were closely tied to the ossuary area.

SUMMARY

Excavations at the Cold Morning Site have shown that, although this site was utilized over a long period of time, there were no middens, no structural evidence, and almost no features. The one exception, the ossuary, was unique and isolated, apparently reflecting a relatively late episode not related to the time when the site was most intensively occupied.

Lacking subsistence remains, features, and structures, it is impossible to do anything more than speculate about the site's function. Given the size and density of the ceramic distributions, it would seem that, even during the Middle Woodland period, it was not occupied by large numbers of people nor were their stays long. Temporary seasonal encampments are suggested, with a marked increase in use during the Cape Fear phase. The ossuary deposition took place last on the site and represents a single brief incident. The people responsible for this last act lived elsewhere, perhaps nearer the confluence of Barnard's Creek and the Cape Fear River. Regrettably, this assumption cannot be verified since that area has been extensively damaged by a large barrow pit.

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