North Carolina Archaeology



North Carolina Archaeology

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FROM THE EDITOR

In April 1949, the North Carolina Archaeological Society published its first issue of *Southern Indian Studies*. The journal was established "as a medium of publication and discussion of information pertaining to the life and customs of the Indians in the Southern states, both prehistoric and historic." This reflected not only the primary interests of the Society's members, but also the prevailing attitude that the principal task of archaeology in North America was to study the ancient past, and thus only its Indian cultures.

Because the Society had only modest resources, *Southern Indian Studies* was published jointly with the newly revitalized Laboratory of Anthropology and Archaeology (now the Research Laboratories of Archaeology or RLA) at the University of North Carolina. Joffre Coe, who had only recently returned to Chapel Hill after a tour of duty in the Army Air Force and subsequent graduate study at the University of Michigan, became the journal's editor and continued in that capacity until his retirement from the University in 1982.

Over the years, numerous articles important to the archaeology of North Carolina and adjacent states have been published in *Southern Indian Studies.* However, the journal suffered in two areas. First, there often was not sufficient material to publish in the journal; consequently, many issues either contained only a single article or were published on an irregular schedule, as acceptable manuscripts were submitted. And second, the journal seldom contained articles about historical archaeology (including underwater archaeology), an area of the discipline that has grown enormously during the past three decades. One reason for this absence was that the journal's name did not invite manuscripts that dealt with the archaeology of non-Native Americans.

During two meetings in February and August of 1996, your Society's executive board visited the subject of changing the journal's name. The board decided that, in order to make the journal more inclusive, a new name should be chosen, and it voted unanimously to change the name to *North Carolina Archaeology*, with the timing of that change to be left to the discretion of the Editor. The board's action was announced at the Society's Fall 1996 meeting in Chapel Hill.

This issue represents the beginning of the North Carolina Archaeological Society's journal under its new name. However, because it is not a new journal, the volume-numbering sequence of *Southern* *Indian Studies* has been maintained. Perhaps symbolically, this issue focuses primarily, but not entirely, on historical archaeology. The number of articles also is substantially greater, and I hope that this trend will continue. Much interesting and exciting archaeology is being done in North Carolina, and the goal of *North Carolina Archaeology* will be to bring the results of that work to the Society membership.

R. P. Stephen Davis, Jr.

INTRODUCTION TO "FROM THE ASHES: RENEWED RESEARCH OF BRUNSWICK TOWN, NORTH CAROLINA'S COLONIAL PORT"

by Linda F. Carnes-McNaughton

The following series of papers came together as a special symposium given at the 1997 Society for Historical Archaeology Meeting held in Corpus Christi, Texas. This symposium was devoted to new research at the colonial port of Brunswick Town, located near Wilmington in Brunswick County, North Carolina (Figure 1). For those readers new to historical archaeology or those unfamiliar with this important eighteenthcentury site, a brief introduction about the site is in order. This will be accompanied by five very interesting studies which describe new areas of research. The final article is an overview with critical comments by Dr. Charlie Ewen of East Carolina University.

Site Background

Today, the site is owned and managed by the Historic Sites Section of the North Carolina Department of Cultural Resources and is open free to the public. It covers approximately 120 acres and includes a visitor center with museum exhibits, picnic facilities, a nature trail, and, more importantly, over 60 eighteenth-century archaeological ruins (the largest of which is St. Philip's Church) and a complex of nineteenth-century Civil War earthworks known as Fort Anderson. The site also hosts special programs which feature costumed interpreters and craft demonstrations. In 1994, new outdoor exhibit panels were installed at various "key" locations around the site, and these form the nucleus for a self-guided walking tour. Visitation to the site averages 29,000 guests per year.

A Brief History of Brunswick Town

The port of Brunswick began in 1726 along the western bank of the Cape Fear River. Among the earliest settlers were immigrants from Europe and merchants from South Carolina and Virginia. As a center for trade and commerce, the town contained numerous private and public



Figure 1. Map of North Carolina showing the location of Brunswick Town.

residences, civic and commercial buildings, religious structures, and a governor's estate. At the peak of occupation in 1769, it was mapped by the noted surveyor, Claude Joseph Sauthier. His detailed map (Figure 2) shows individual houses with their backlot outbuildings and gardens, public buildings (including the courthouse and the gaol), a network of streets, waterfront warehouses and docks, and, to the north, a governor's estate and plantation known as Russellborough. Sauthier's map captured Brunswick Town at its zenith and thus formed an archival imprint of the colonial port. Later, this same map served as an excavation guide for historical archaeologists who worked to expose the remains of a once-thriving community. During the Revolution, portions of the town were burned by British naval forces, and by 1830 the town was in total ruins. Evidence suggests the town was virtually abandoned by the midnineteenth century.

Trees and underbrush protected the remains at Brunswick until the 1860s when Confederate troops built Fort Anderson over a portion of the town. The military fort was installed to protect the entrance of the Cape Fear River. Fort Anderson consisted of a series of large earthen mounds and revetments, many of which buried the colonial ruins. It was later abandoned when Fort Fisher, a larger fort located downstream, was also sacked in 1865 by Union forces. Numerous Civil War artifacts, such as iron shot, canister fragments, and Minie balls, were archaeologically



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recovered from the fort. Following the Civil War period, the site became incorporated into the larger Orton Plantation (originally the home of Roger Moore, built in 1725 and later owned by the Sprunt family). Laurence Sprunt, owner of Orton Plantation, was greatly influenced by the early research of Dr. E. Lawrence Lee, an historian who began a campaign to preserve Brunswick Town in the 1940s. In 1952 Lee led the first archaeological survey which located the remains of several building foundations and prompted preservation efforts. Sprunt then donated 114-1/2 acres of the 119-acre tract to the state for a historic site. The Episcopal Diocese of East Carolina then collaborated to donate an additional five acres which included the ruins of St. Philip's Church to the state.

Extensive historical and archaeological research, begun by Lawrence Lee, was later continued by state archaeologist Stanley South. From 1958 until 1968, South excavated the remains of 23 of the 60 known foundation ruins (most of them dating to the colonial period of occupation), which produced a vast amount of cultural material and architectural details. But state officials agreed that Brunswick Town should remain an archaeological interpretation rather than a restoration. Through funds provided by the General Assembly in 1963, a visitor center/museum was built on site near St. Philip's Church. A federal grant furnished moneys needed to stabilize the earthen mounds of Fort Anderson and for a protective fence to enclose the entire site. A nature trail was later created around the site and to the ruins of Russellborough, just north of the town.

In his 1977 publication, *Method and Theory in Historical Archaeology*, South summarized his findings and created the framework for future analytical studies in the field of historical archaeology. Most noted and probably most cited are his studies on mean ceramic manufacturing dates and ceramic typologies, his eighteenth- and nineteenth-century button typologies, and a refinement of kaolin pipestem dating. As part of his research, South and his team created several conjectural drawings and models for a few of the house foundations found at Brunswick Town.

New Research at Brunswick Town

Now, some 30 years later, another team of researchers is resurrecting the burned town through renewed studies of its material culture. This monograph outlines new research in topical areas such as colonowares,

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delft tiles, olive and oil jars, naval stores industry, and individual house assemblages. More specifically, these recent studies venture into areas of important research not addressed by South in his earlier work. In addition, new preservation research has begun on the exposed stone and brick foundations, and, in conjunction with on-going site interpretation, recent architectural research has been done to reevaluate earlier conjecture drawings. These latter two topics, originally scheduled as part of this symposium, deserve a brief description.

As part of the redesign for new outdoor exhibits at the site, a team of professionals was assembled to evaluate the original architectural drawings derived by conjecture. The team included three architectural historians, an architect, a restoration specialist, and an archaeologist. Based on Catherine Bisher's 1990 book titled *North Carolina Architecture*, the drawings were re-evaluated. Specific changes addressed porch design, chimney configuration, window size and placement, door location, basement access, and exterior trim. Thus, these the new conjectures represent the "best guess" of the above-ground structures' appearances based on 30 years of additional research in eighteenth-century vernacular architecture of coastal North Carolina. One new conjecture even attempts to capture the interior appearance of St. Philip's Church, with its pew arrangements, aisles, and elevated pulpit.

The exposed ruins became the target of another project, this one designed to stabilize and conserve the foundations. After 30 years of exposure to destructive natural forces and visitors, stabilization was desperately needed. Previously failed, or inappropriate, attempts taken to consolidate the crumbling stones and bricks (such as the use of Portland cement) resulted in further deterioration of the original fabric. Through new scientific and technical analyses, a stabilization plan has now been devised which will soon be implemented on the ruins at Russellborough (the royal governor's estate) when funding is made available.

These efforts in on-going site preservation and interpretation make Brunswick Town one of our most dynamic cultural resources, though its past lay buried beneath the ashes for many decades. The following articles will verify we still have much to learn about this colonial port town and its former residents, and the material culture they left behind.

BRUNSWICK TOWN COLONOWARES RE-EXAMINED

by Thomas C. Loftfield and Michael Stoner

After its eventual decline and disappearance in the late eighteenth century, interest in Brunswick Town was renewed in 1958 when Lawrence Lee and Stanley South began archaeological excavations at the ruined town. This work exposed foundations and recovered many items of historical interest, among which were sherds of pottery which South named Brunswick Burnished and Brunswick Plain.

Some Brunswick sherds stand out because their shapes resemble European forms. South (1959:80) reasoned these forms to be "an attempt to copy various English ceramic styles." Following the lead of Ivor Noël Hume (1964), South (1959:81) attributed the pottery to Native American manufacture.

Basing his interpretation on Noël Hume's investigations in Tidewater Virginia, South subsumed the Brunswick Burnished and Brunswick Plain pottery under the term "Colono-Indian Ware." Applying the Virginia model of Colono-Indian Ware production, the Brunswick Wares were seen as items of trade between the residents of Brunswick Town as recipients and Native Americans as producers. Attributing manufacture to Cape Fear or Waccamaw Indians, South (1959:80–81) concluded "Indians adopted many elements of English colonial culture through contact with the citizens of the colonial towns."

More recent excavations and subsequent interpretations of plantation sites in the South Carolina Lowcountry, however, have yielded new hypotheses. These hypotheses are based primarily on the work of Leland Ferguson (1992:8) who writes, "Colono-Indian ware was uncovered more frequently on plantations . . . especially in the vicinity of slave quarters." Richard Polhemus' study of similarities between Colono-Indian vessels and contemporary African pottery at the Jos Museum in Nigeria led him to conclude that African samples "could not be differentiated from vessels excavated in South Carolina" (Polhemus 1977:258). Realizing the possibility of an African or African-American component to the Colono-Indian wares, Ferguson (1980) introduced the term "Colono Ware" to accommodate the variety of potential manufacturers. To be "Colono Ware," pottery need "only be found on a Colonial period site" and demonstrate "the effects of the colonial experience on the techniques of manufacture or the location of hand-built pottery" (Ferguson 1992:19). Wheaton and Garrow (1985) attempted to devise a set of discriminatory tests to differentiate African-American colonowares from Native American-made colonowares. Efforts to further refine type definitions and to produce ever more discriminating tests of manufacture for Lowcountry colonowares continues (Trinkley et al. 1995).

With the new hypotheses and new definitions in hand, a reexamination of Brunswick Burnished and Brunswick Plain pottery was undertaken in 1996 at the Laboratory of Coastal Archaeology by the University of North Carolina at Wilmington. The re-examination had two goals: (1) to determine if it was possible to associate Brunswick Wares with African-Americans or with Native Americans; and (2) of greater interest, to explore the causative forces that resulted in the presence of Brunswick Wares at Brunswick Town.

Description of Brunswick Wares

A total of 406 Brunswick Ware sherds were removed for evaluation from the collection of Brunswick Town materials curated by the Historic Sites Section of the North Carolina Department of Cultural Resources. The sherds represent eight loci from within the original excavation and are representative of the total body of Brunswick Wares available. The sherds were re-typed using constellations of attributes derived primarily from Wheaton and Garrow (1985). Thin sections were prepared for petrographic analysis. The petrographic analyses to determine the composition and possible sources of clay used to construct the Brunswick sherds are not yet completed. The petrographic data would, in any case, be of limited value since there is not yet a large enough body of comparative materials to permit meaningful statements on clay origin. Other work in the coastal area has determined that clavs in the vicinity of Brunswick Town are of materials redeposited from positions upstream in the Cape Fear drainage, thus further obscuring points of origin (Loftfield and Smith 1995; Smith, Loftfield, and Paulsson 1995).

Brunswick Burnished and Brunswick Plain sherds are made by modeling and coiling. The exterior sherd surfaces are all smoothed, with some sherds exhibiting additional polishing and occasionally burnishing to a glossy finish. Brunswick vessels were typically fired at low temperature in the open, with consequent poor control of surface coloration.

Surface colors for Brunswick sherds vary from black through dark brown to reddish orange, with most sherds being on the darker end of the continuum. Complete paste oxidation is unusual, reduced surfaces being far more numerous. Brunswick sherds rarely exhibit differential firing between sherd surfaces and sherd cores.

Grain size in the Brunswick paste is very fine with a highly compact texture. The uniformity of grain size indicates considerable attention in the preparation of the clay prior to vessel construction. Inclusions are very rare and no tempering is suspected.

Laminar cross sections and very uneven thickness in sherds indicates coil and modeling manufacture. Brunswick sherds average $0.625 \text{ cm} \pm 1.1 \text{ cm}$ in thickness. Rims are crudely rounded and flattened, perhaps with a finger or stick.

Surface finishes range from crudely smoothed to highly polished or burnished with a glaze-like luster. Generally, the exteriors of jar forms are polished while it is the interiors of bowl forms that are so treated. A rigid tool may have been employed for the burnishing, such as the "English tool" indicated by South (1959:79).

The use of a precision tool is also evident in some incised decorations made after burnishing. Chevron incisions appear on several body sherds, and punctations appear on some rims and lips. One sherd in the reexamined collection has a scalloped edge with two incised lines following the contour of the scalloped lip. The incisions deflect inwards as they touch the outer edge of the lip. This vessel is most likely an attempt to copy typical English Queen's Ware. A comparable example was seen by Loftfield in 1996 in a collection at the University of Ghana at Legon.

Two vessel forms appear to predominate in the re-examined collection: bowls and jars. Bowls, in this collection, segregate into two types based on mouth size (i.e., measured orifice diameter) and depth. The most frequently observed forms are possibly variations on deep-bottomed bowls. These bowls range from 6.9 cm to 9.5 cm deep, as measured from rim plane to projected bottom. The orifices are relatively constricted, ranging from 9 cm to 23 cm in diameter. Rims on these high-walled bowls vary from pinch-edged to flat-edged. The vessels are either flat-bottomed or well rounded. The least frequent bowl form is shallow, less than 2.5 cm deep with wide orifices ranging from 22 cm to 24 cm. These bowls are possibly the best examples of attempts to copy European wares and are the most frequently decorated, exhibiting flat, wide lips on

rims, some with decoration, and scalloped edges. These bowls also exhibited rounded or flat bottoms.

Jars are defined by their spherical body shape with flared mouths and extended lips. Orifices range from 11 cm to 14 cm in diameter with the inner-most portion of the rim reducing the orifice by approximately 0.7 cm. Measured from the outer-most tip of the flared lip, these forms ranged from 9 cm to 10.5 cm deep. Most rims have pinched edges.

A fragmentary loop handle (approximately 6 cm long by 1.2 cm wide) is also present in the collection. It is unclear to which form these handles may have been attached. The possibility of a pitcher of some sort may be indicated by the presence of a triangular spout-like sherd of similar paste.

The Brunswick Wares described above fall well within the definition of colonowares as defined by Ferguson. Further, the form and method of manufacture fall within the definition of African-American colonowares as defined by Wheaton and Garrow (1985:249).

Based upon the analysis of formal attributes, it would appear most likely that Brunswick Wares represent the product of African and African-American slaves residing in the vicinity of Brunswick Town. Not widely dispersed at Brunswick Town, Brunswick Wares were limited to a few discrete loci within the excavated area of the town. The vast majority of Brunswick Ware ceramics were recovered from intact levels within the cellars of a few larger houses within the town, and a secondary lot came from trash pits associated with the houses.

The Lower Cape Fear as an Extension of Lowcountry South Carolina

The explanatory model used by South to account for the Colono-Indian Ware at Brunswick Town was based upon the precept that North Carolina resembled Virginia as a colonial venture. Because the piedmont and northeastern regions of North Carolina were indeed settled by Virginians moving south, it was logical to look to the north for explanatory models. The Lower Cape Fear region, however, was founded by people moving north from South Carolina.

Thirteen rice planters and 10 tar-and-pitch planters (all friends or relatives of the Moore family) from the Goose Creek area of St. James Parish, South Carolina, acquired extensive tracts of land along the Cape Fear in the 1720s (Lee 1965:104; Clifton 1973:365). From this beginning resulted the concentration of land and power in the hands of a few

plantations which characterized the region for many years (Lee 1965:102). Land along the river was ideal for wet-paddy production of rice and this crop became, after naval stores, the second-most important product of the area. As early as 1731 (Meredith 1731), travelers in the Cape Fear region reported seeing rice plantations, which later, in the vicinity of Brunswick Town, included Kendall, Lilliput, and Orton (Lee 1965:188; Clifton 1973:365). In addition to the pattern of land holding, the settlers of the Cape Fear brought with them from the South Carolina Lowcountry their patterns of slave holding and slave management.

In eighteenth-century South Carolina and along the Cape Fear River, wet-paddy rice production required that irrigation networks be constructed to provide fresh water for irrigation and tidal water for control of weeds (Clifton 1973:366). Constructing and maintaining the irrigation dikes and canals required enormous labor which was provided by slaves.

Rice was produced on much smaller tracts (Clifton 1973:366), thus creating a concentrated pattern of slave occupation that resembled South Carolina Lowcountry plantations. In fact, during the time that Brunswick Town was occupied, the Lower Cape Fear region exhibited demographic characteristics more extreme than those typical of the South Carolina Lowcountry. The Lower Cape Fear region had the highest density of African-American population in the colony and had the largest concentration of slaves in the state (Kay and Cary 1995:22, 24). Comparing the Lower Cape Fear region and the South Carolina Lowcountry, Kay and Cary (1995:24) show that in the period 1760–1769 in the South Carolina Lowcountry, 88% of slaves were on plantations with 10 or more slaves, 75% were on plantations with 20 or more slaves, 40% were on plantations with 50 or more slaves, and 12% were on plantations with 100 or more slaves. During the same period along the Lower Cape Fear River, 75% of slaves were on plantations with 20 or more slaves, 46% were on plantations with 50 or more slaves, and 21% were on plantations with 100 or more slaves. Although incomplete, population records for New Hanover County in 1742 (which included Brunswick Town at the time) indicate 3,000 inhabitants of which 2,000 were of African descent (Lee 1965:185). In the records for 1767, by which time Brunswick County had been separated from New Hanover, there were 3,066 people of which 2,170 were "non-white" (Lee 1965:185). Brunswick Town and its surrounding supportive economic system were an "extension of the South Carolina plantation system and in a larger sense that of the West Indies, especially Barbados" (Clifton 1973:365). The extension of the South Carolina culture into the Lower Cape Fear region

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of North Carolina provides a model to explain the presence of colonowares, in the form of Brunswick Wares, in the Lower Cape Fear region.

Discussion and Hypotheses

Among many other places, African-American colonowares appear during the seventeenth century in Virginia, the South Carolina Lowcountry (Ferguson 1992), Jamaica (Armstrong 1990:147, 151), and Barbados (Handler and Lange 1978). In Barbados, colonowares disappeared early while the manufacture of African-American colonowares continued in Virginia, but only in limited amounts. The same ware became prevalent in the South Carolina Lowcountry and Jamaica while it was never present in New England (Turnbaugh 1985:22). Several causative conditions can be postulated to account for the geographic and temporal distribution of African-American colonowares.

Ferguson (1992) has suggested that the development of colonowares in the plantation areas of the American Southeast was influenced by the nature of the plantation system itself. African slaves living in virtual isolation on the plantations, encouraged by slaves imported directly from Africa, would have kept alive the traditions of their homeland. A similar association has been noted in Jamaica.

Following Ferguson's argument, it can be hypothesized that the critical factor limiting the production of colonoware by African-Americans in Virginia was the spatial placement of slave habitations, which in Virginia tended to be in close proximity to planters' houses. The form of slavery in Virginia, while conducive to colonoware production in the seventeenth century, was apparently not especially friendly to its manufacture and use by the eighteenth century.

The lack of colonowares in New England suggests that the presence of mere slavery was not sufficient to cause the production of African-American colonoware. Not only did slaves need to live in virtual isolation from Europeans and their cheap ceramic wares for colonowares to appear, there also had to be an absolutely large number of slaves in one location.

In the South Carolina Lowcountry and in Jamaica, absolutely large populations of African-Americans and African-Jamaicans, and the physical separation of slave villages from major European settlements, encouraged the preservation of African cultural norms, including the continued production and use of ceramics reflecting extensive African traditions in manufacture and design.

Even the presence of large numbers of slaves living in isolation, however, did not always lead to colonoware production. In Barbados (which had a very large population of slaves who were densely settled and lived in isolated slave villages), the development of a local industrial ceramic manufacture precluded the continued production of Africaninspired ceramic vessels (Handler 1963:131–133, 135). This also was what happened in New England.

Brunswick Town and Brunswick Ware

In general, the settlement at Brunswick Town did not begin until the second quarter of the eighteenth century. Because the colonists arrived from nearby settled and successful South Carolina, and not from overseas, the colony began with far more stability than was usual in the preceding seventeenth century.

The population of the town and region was from the beginning modeled after the South Carolina Lowcountry with large plantations producing staple crops through the labor of large numbers of slaves concentrated on large estates.

There was no apparent local manufacturing of redwares or other cheap domestic pottery in the Lower Cape Fear region. While there is some evidence for brick manufacturing, the pottery of the European settlers came from outside the colony as evidenced in the collection of ceramics from Brunswick Town.

In the Lower Cape Fear, slaves were dependent on the largess of their owners for access to imported ceramics. Barring this source, they were responsible for obtaining their own requirements. In the Lower Cape Fear region, many slaves lived on large estates with large and dense populations of Africans and African-Americans, thus mimicking South Carolina and Jamaica. In this setting of dense African and African-American population, the enslaved people of the Lower Cape Fear region produced and used significant quantities of African-American colonoware, as the hypotheses would suggest.

To date, Brunswick Wares have been recovered in significant numbers only from the town setting. The primary reason for this provenience is that not one of the large plantations on the Lower Cape Fear has been tested archaeologically, let alone excavated. In nearby Wilmington, only two loci have been excavated: the Latimer House servants quarters and the garden of the Bellamy Mansion. Both loci date from the late 1850s, long after colonoware is presumed to have been abandoned in the area.

Despite the provenience of the Brunswick Wares, their recovery from Brunswick Town, located in the center of the Lower Cape Fear region, strongly indicates that colonowares were being manufactured on the nearby large plantations.

With no plantations along the Lower Cape Fear River even cursorily examined, future work clearly requires intensive testing and controlled excavation at several such locations to provide further testing of the hypothesized colonoware grammar suggested above. Additional testing may also be undertaken at sites on numerous Caribbean islands where the plantation system was in operation and where island demography may have produced high-density habitation in isolation both from large numbers of Europeans and from cheap alternatives to colonoware.

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"SOME FRAGMENTS OF BLUE DUTCH TILING" AT BRUNSWICK TOWN: DECORATIVE DELFTWARE TILES FROM RUSSELLBOROUGH, PROSPECT HALL, AND THE PUBLIC HOUSE

by Thomas Beaman, Jr.

Abstract

Hand-painted delftware tiles, used to decorate the jambs of fireplaces in colonial-period homes, were a very expensive import item. Rarely found on archaeological sites, tin-enameled tile fragments were unearthed from three house ruins at Brunswick Town during excavations in the 1950s and 1960s. A recent analysis of the thousands of fragments of tile from Brunswick Town has revealed nine distinct decorative sets. These nine sets are described and compared to dated sets in known collections. A brief consideration of the consumer choice processes in selecting these decorative sets is also included.

In the late 1890s, Cape Fear historian James Sprunt set out to locate the ruins of Russellborough, the home of two of North Carolina's colonial Royal Governors. He enlisted the aid of a former African-American slave who lived at Orton Plantation, located to the north of Brunswick Town. The former slave said that as a child he remembered hearing about a man named 'Governor Palace,' who lived between Orton and old Brunswick. Sprunt later wrote:

We proceeded at once to the spot . . . [and] found hidden in a dense undergrowth of timber the foundation walls of Tryon's residence. A careful excavation of this ruin would doubtless reveal some interesting and possibly valuable relics of Governor Tryon's household. Near the surface was found, while these lines were being written, some fragments of blue Dutch tiling, doubtless a part of the interior decorations [Sprunt 1914:79–81].

Sprunt's observations, written nearly a century ago, began the process of documenting decorative delftware tiles at Brunswick Town. Archaeological investigations during the 1950s and 1960s at individual ruins within the eighteenth-century port town confirmed Sprunt's prophetic words. Numerous fragments of decorative tin-enameled tile fragments, representing nine distinct styles, were recovered from three structures: Russellborough, Prospect Hall, and the Public House (Figure 1). The intention of this study is to identify the decorative motifs from the



Figure 1. Decorative motifs and corner designs from delftware tile fragments unearthed at Brunswick Town: (*a*) pastoral scene framed by a Louis XV border and diaper corner pattern (blue); (*b*) blue pastoral scene with no border; (*c*) urban waterscape (blue); (*d*) pastoral scene with a bug's (or spider's) head corner design (blue); (*e*) grapevine motif (purple); (*f*) pastoral setting with Oriental influence and daisy corner design (purple); (*g*) pastoral setting with barred ox-head corner design (blue); and (*h*) pastoral scene with daisy corner design and dotted border (blue). Not pictured: purple pastoral setting with no border or corner design.

3000+ fragments of tile, and to consider what factors influenced consumer choice in the selection of these tile sets.

The Production and Import of Delftware Tiles

Delftware is a term used to describe a low-fired earthenware with a thick glaze made from mixing clear lead glaze with tin oxide. Upon firing, the glaze becomes opaque and whitish in appearance. Hand-painted images or patterns were then applied to the fired ceramic. Blue paint (made from cobalt) and purple paint (made from manganese) were often used to decorate tin-enameled vessels and tiles. While this ceramic was historically referred to simply as delft, the term delftware has traditionally been used by archaeologists to differentiate tin-enameled wares made outside the Dutch city of Delft. Since no tiles unearthed at Brunswick Town could be traced to the city of Delft, in this study either "delftware" or "tin-enameled" will be used to describe this type of ceramic.

According to historical accounts, the first Dutch decorative delftware tiles were made in the early sixteenth century and were used in the paving of floors. These floor tiles measured approximately 5-5/16 inches square, with an average thickness of 5/8 inches. However, due to high prices and extreme susceptibility to wear and tear, floor tiles proved impractical. Fragments of delftware paving tiles are very rarely found in North America and only on early seventeenth-century sites, such as the Jordan's Journey site in Virginia (Austin 1994:17). Tiles for fireplace jambs began to be manufactured in the late sixteenth century, and these were often used by the Dutch middle class as an affordable method of home decoration (van Dam and Tichelaar 1984:19–20). These tiles were approximately the same size as floor tiles, measuring 5-1/4 inches square, but were much thinner, with an average thickness of only 5/16 inches.

The English delftware industry began at Norwich in 1567, and produced tiles along with vessel forms simultaneously (Horne 1989:5; Noël Hume 1977:18). By the eighteenth century, London, Liverpool, and Bristol were the primary centers of delftware vessel and tile manufacture in England. Smaller factories were producing delftware in Wincanton (Somerset), Glasgow in Scotland, and Dublin, Limerick, and Belfast in Ireland (Austin 1994:15). Production of tin-enameled wares was still widespread in the Netherlands in the eighteenth century.

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While the Dutch middle class could often afford decorative fireplace tiles due to their accessibility, tiles in British Colonial America were a very expensive import item. These artifacts have only appeared on colonial-period sites that correlate with occupants of high status, both socially and materially. Some merchants advertised the arrival and availability of new tile sets for sale. Given the high price of imported decorative tiles, it is doubtful that the average urban merchant carried this high-priced item. In more sparsely populated areas, such as the southern coastal plain of North Carolina in the mid-eighteenth century, smaller merchants and local craftsmen would have supplied the consumer needs of the community (Bushman 1994).

In the southern colonies, both decorative Dutch and English delftware tiles have been recovered from domestic sites dating from the midseventeenth century through the early nineteenth century. These tiles were most commonly affixed by mortar to the jambs of fireplace openings and became known as 'chimney tiles' by the mid-eighteenth century (Lounsbury 1994:374) (Figure 2). Decorative tin-enameled tiles are not considered to be a reliable guide to dating the construction of a building, because tiles could have been added to the fireplace at any time the structure was standing.

Other than the three structures within Brunswick Town, the only site where delftware tiles have been recovered in North Carolina is at the Eden House site (31Br52), west of Edenton. The site was initially documented as the former estate of Proprietary Governors Charles Eden and Gabriel Johnson (Robinson 1994:14). Tile fragments with Biblical motifs were recovered during recent excavations by Coastal Carolina Research, Inc.; however, specific information on the number of fragments and contextual information were unavailable at the time of this writing (Loretta Lautzenheiser, personal communication 1997). In addition to being decorative, tiles with Biblical scenes commonly served a secondary function as education aids, to visually represent and constantly remind of lessons found in scriptures (van Dam and Tichelaar 1984:116).

Russellborough, Prospect Hall, and the Public House

The largest collection of decorative delftware chimney tiles recovered at Brunswick Town is from Russellborough. During the mid-1750s, in an effort to establish Brunswick Town not only as an official port of entry but also as the seat of government, a group of investors persuaded Royal Governor Arthur Dobbs to move his permanent



Figure 2. A reconstructed bedroom of the James Anderson House in Williamsburg, Virginia, illustrates how decorative delftware tiles would appear in a colonial setting when mounted on the jambs of a fireplace.

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residence from New Bern to Brunswick Town. Dobbs purchased a 55-acre tract to the north of the town known as Russellborough, the former property of Captain John Russell. William Moore of Orton Plantation had originally sold the land to Russell in 1751. Russell began construction on a house but died only a year later, leaving the house unfinished, and the land reverted back to Moore. The property was not occupied from 1752 until 1758, when Dobbs moved into what he referred to as "the shell of a very good house" (Saunders 1888:300). Dobbs was responsible for completing the house and adding several outbuildings. He is also credited for the general landscaping of the property, including the entry allé of trees, the formal gardens and orchards, and agricultural fields (Clarke 1957:152).

When Dobbs passed away in 1765, the new Royal Governor William Tryon moved into Russellborough. In a letter written to his uncle Sewallis Shirley in July of 1765, Tryon gave a written description of the main house. It was described as having two stories and a cellar, with four rooms and three closets on each floor, and a piazza which ran around the house (Powell 1980:138). This is the only period description of Russellborough that has been found.

From the time Tryon occupied Russellborough, historical records suggest that he felt too far removed in Brunswick Town to effectively maintain total governance of the North Carolina colony. Almost immediately, he ordered construction to begin in New Bern on what later came to be known as "Tryon's Palace." Upon its completion in 1770, Tryon moved his family, as well as the political and social attentions of the colony, to New Bern.

The following year Tryon sold the property to William Dry, the port customs collector of Brunswick Town. For the five years that Dry maintained the residence, he often entertained guests in what visitor Josiah Quincy (1825:119) referred to as "the house of universal hospitality." Dry's hospitality continued until the Revolutionary War, during which Russellborough and the majority of Brunswick Town was abandoned and destroyed by fire.

The fire at Russellborough sealed an eighteenth-century time capsule which remained virtually undisturbed until May of 1966, when archaeologist Stanley South and his crew of African-American fishermenexcavators began their investigations (South 1994). Few if any other sites excavated in North Carolina have yielded the sheer quantity and variety of domestic eighteenth-century artifacts found at Russellborough. The delftware tiles recovered at Russellborough remain the largest collection

of decorative tiles recovered in North Carolina. It is conjectured that six hearths existed in Russellborough, and the analysis of the identifiable portion of the collection has revealed a total of six distinct sets of decorative delftware tiles from the ruins (see Table 1).

Prospect Hall is the other domestic residence at Brunswick where decorative delftware tiles have been unearthed. Lot 337, where Prospect Hall is located, was owned by a number of people in the eighteenth century and, unlike many of the structures, was occupied briefly into the nineteenth century. One of the more notable people who resided there was merchant Thomas Mulford. Port records from Brunswick show Mulford's schooner *The Brunswick Packet* was used extensively in trading with Philadelphia, one of the centers of fashion and decorative arts in the eighteenth century (Brunswick Shipping Register 1774–1775). Now located under the mid-nineteenth-century earthworks of Fort Anderson, Prospect Hall was tested by Stanley South in 1960 but was never fully excavated (South 1960a). The testing yielded a reported total of 19 tile fragments, of which only 16 could be located in a recent search through the site's artifact collection (see Table 1).

Decorative tiles were also found in association with the structure originally identified as the Public House and Tailor Shop (S25) and the surrounding yard enclosed by the public wall (S13). There is not much historic data pertaining to the Public House ruin, although historical records suggest that it may have been an inn run by Cornelius Harnett prior to 1732. The abundance of sewing materials recovered also suggests that at one time the structure could have served as a tailor shop (South 1960b). South identified artifacts recovered in the public yard area as refuse from the Public House ruin (South 1960c, 1977:106). A total of 243 tin-enameled tile fragments, representing seven decorative sets, were recovered from both inside and outside of the Public House foundation (see Table 1).

Decorative Motifs of the Brunswick Town Tiles

Craftsmen and artisans moved from the Netherlands to England and back throughout the late seventeenth and eighteenth centuries, often freely copying each others' designs. The resulting diffusion of designs makes the product identification of specific tile manufacturers very difficult. Identification is additionally complicated by the fact that no artisan or craftsman signed or marked tiles. Differences in the evolution of decorative borders and corner motifs are the attributes most useful in

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	Corner Design		Russ	Russellborough		Prospect Hall	
Decorative Motif		Design Color	Ν	Wt. (g)	N	Wt. (g)	
Pastoral	None	Blue	132	2,916.32	2	63.85	
Pastoral	None	Purple	53	757.41	0	.00	
Pastoral	Barred ox-head	d Blue	130	2,438.93	1	52.31	
Pastoral	Daisy with Dot Border	Blue	0	.00	8	200.92	
Pastoral	Daisy	Purple	0	.00	3	71.22	
Pastoral	Bug's Head (Spider's Head	Blue l)	0	.00	0	.00	
Landscape	Louis XV border with diaper corner	Blue	194	3,975.48	1	64.40	
Waterscape	None	Blue	152	2,835.87	0	.00	
Grapevine	None	Purple	136	2,550.11	0	.00	
Non- Discernible	-	-	2,006	23,550.02	1	5.85	
Total	-	-	2,803	39,024.14	16	458.55	

Table 1. Summary of the Decorative Tile Motifs Recovered from Russellborough, Prospect Hall, and the Public House and Yard.

allowing archaeologists, architectural historians, and collectors to approximately date, and to generally infer, a tile's point of manufacture. Decorative elements of each set identified from Russellborough, Prospect Hall, and the Public House were compared to dated examples of decorative delftware tiles from both public and private collections. The result of this comparative analysis has provided an approximate date, and in some cases a place of manufacture, for each set.

The most common decorative motif identified on tiles recovered from excavations at Brunswick is a pastoral setting. Scenes of rural

Table 1 c	ontinued.
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Decorretion		Design	Public House and Yard		Total	
Motif	Corner Design	Color	Ν	Wt. (g)	Ν	Wt. (g)
Pastoral	None	Blue	2	28.65	136	3,008.82
Pastoral	None	Purple	0	.00	53	757.41
Pastoral	Barred ox-head	d Blue	8	91.71	139	2,582.95
Pastoral	Daisy with Dot Border	Blue	2	20.95	10	221.87
Pastoral	Daisy	Purple	0	.00	3	71.22
Pastoral	Bug's Head (Spider's Head	Blue l)	192	2,680.38	192	2,680.38
Landscape	Louis XV border with diaper corner	Blue	9	145.51	204	4,185.39
Waterscape	None	Blue	8	77.59	160	2,913.46
Grapevine	None	Purple	2	54.47	138	2,604.58
Non- Discernible	-	-	20	134.10	2,027	23,689.97
Total	-	-	243	3,233.36	3,062	42,716.05

landscapes with simple buildings, animals, and people in everyday clothes and activities are indicative of pastoral motifs. Six distinct sets of pastoral motifs have been identified. One of the common designs is an idyllic countryside setting with no decorative border or corner motif (Figure 3). Examples of this pattern were found at Russellborough, Prospect Hall, and the Public House. These cobalt blue designs are made throughout the eighteenth century in the Netherlands and England, again with much copying of other manufacturers' designs. In this set, the foliage pictured appears to be more sketchy in appearance, indicating it probably is



Figure 3. Blue tile fragments recovered from Russellborough, once mended together, show a typical pastoral scene.

English in origin rather than Dutch, who traditionally represented foliage in a more careful and natural manner (Noël Hume 1969:290).

Another pastoral motif with no apparent border or corner design was identified solely from Russellborough. Only 53 fragments of this decorative manganese pattern were identified, constituting a minimum of four tiles by calculated weight. The generally poor condition and small size of the tile fragments do not allow reconstruction of the whole design, limiting the possibility of identifying potential places and times of

manufacture. Manganese tiles with floral, landscape, and historical motifs saw a rise of popularity in the early and mid-eighteenth century, but were used alone or in conjunction with cobalt blue tile patterns until the twentieth century (Jonge 1971:69).

Another common blue design with pastoral scenes has the decorative motif enclosed within double concentric circles and barred ox-head corner designs. Double concentric circles appear on tiles beginning in the late seventeenth century and extend well into the mid-eighteenth century (Noël Hume 1969:293). The barred ox-head is the most common corner design on both Dutch and English tiles in the eighteenth century, and it commonly appeared on tiles with floral and pastoral landscapes (Horne 1989:11). Examples of tiles with rural scenes, double concentric circles, and the barred ox-head corner design exist from almost every manufacturer of tinenameled tiles in England and the Netherlands during the eighteenth century. Fragments of this style were recovered from Russellborough, Prospect Hall, and the Public House.

Pastoral scenes with a daisy corner design appear in two sets. The first set, painted in cobalt blue, has a double octagonal border with dots. The only fragments recovered that exhibit human figures illustrate what appear to be two Oriental men fishing (Figure 4). These three mended fragments were all recovered from Prospect Hall, though similar fragments of this blue daisy corner design with the decorative dot border were also unearthed from within the Public House. Tiles such as these were manufactured in Liverpool and Bristol, and probably London, from approximately 1750 until 1800 (Horne 1989:42–43).

The other set with pastoral scenes and a daisy corner design was recovered solely from Prospect Hall. Painted in manganese, the decorative motif on the few fragments found has a singular, thin octagonal border. The largest fragment recovered illustrates an Oriental female in a kimono carrying a basket on her head (Figure 4). While similar examples of this pattern could not be found, the daisy corner motif appears to have been most popular in the American colonies in the mid-eighteenth century (Noël Hume 1969:290–291). This manganese decorative motif possibly could have been used in conjunction with the cobalt blue daisy dot pattern in Prospect Hall. Sets of blue and purple decorative tiles with the same corner designs were occasionally used together, and both exhibit an Oriental influence, something not noted on tiles recovered from Russellborough and the Public House.

The final example of tiles with a pastoral decorative motif has a bug's head (also referred to as a spider's head) corner design. Tile



Figure 4. Tile fragments with a daisy corner design recovered from Prospect Hall. Both exhibit Oriental influence, something not noted on tile fragments recovered from other structures.

fragments with this design were recovered only at the Public House and represent the largest portion of that collection (82.89% by weight). Tiles with pastoral scenes and the bug's or spider's head corner design were produced commonly on Dutch tiles manufactured from 1660 until 1825, but rarely on tiles made in England after the seventeenth century (van Dam and Tichelaar 1984:112–113; Horne 1989:18).

A common decorative motif present in specimens from all three ruins centers on landscape scenes. Small clusters of buildings adjacent to bodies of water are the most common decorative features within this set. The center design area is framed by a double octagonal border, with a Louis XV decorative border design with diaper pattern corners (Figure 5). This decorative diaper corner is the same pattern that appears on the dot, diaper, and basket pattern of white salt-glazed stoneware, and is frequently noted on hand-painted tin-enameled and porcelain vessels of the eighteenth century. Very similar tile sets were produced in Liverpool from 1750 until 1780 (Horne 1989:45).

Another decorative set identified also shows buildings by water, but this decorative motif is different from the previously mentioned type. First, and most notably, there is no border framing the decorative scene.



Figure 5. Tile fragments with the Louis XV border design with diaper-pattern corners. When tiles with corner designs are placed together, a singular corner design becomes part of a larger decorative pattern.

The scale of the buildings and the water is also magnified, as is the attention to detail on the buildings. Common decorative elements of this set include tall, well-painted clusters of buildings, waterfront brick promontories, wooden pilings in the water to possibly suggest a pier or dock, and swans in the foreground. Large ships and church towers are also common. Urban scenes adjacent to water, often called "waterscapes," are not especially diagnostic since they were made commonly throughout the eighteenth and nineteenth centuries (van Dam and Tichelaar 1984:135). Very similar scenes of waterscapes in the tile collections of the Philadelphia Museum of Art were produced in either Utrecht or Rotterdam from approximately 1725 until 1875. Examples of this set were recovered from Russellborough and the Public House.

Finally, fruit motifs have been common on decorative tin-enameled tiles since the early seventeenth century, often mimicking the fruit arrangements in seventeenth-century Dutch still-life paintings. In both Russellborough and the Public House, identical sets of manganese grapevine tiles were identified. When placed end to end, the vines form an infinite oval-shaped weave (Figure 6). The grapes in this pattern are distinctive from many other grapevines as some of the grapes are colored and others are not. The exact variation of this weaving grapevine pattern

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Figure 6. Partially reconstructed tiles showing the grapevine pattern recovered from Russellborough and the Public House. This particular decorative pattern is known to have been produced in Liverpool between 1770 and 1790.

was identified by Jonathan Horne as being produced in Liverpool between 1770 and 1790 (1989:69).

Not all of the tile fragments could be identified. In each of the three ruins, excavations yielded a number of tile fragments on which the decoration was non-discernible, meaning that either the design on the tile fragment is too incomplete to be identified as a part of a certain motif or set, or that the tin-enamel is missing from the tile fragment. A large percentage of the tiles fragments recovered at Russellborough (60.35% by weight) were charred from the fire, obscuring the design.

Consumer Choice and the Delftware Tiles of Brunswick

Perhaps one of the more obvious questions to ask is which owners of either of the three structures were responsible for obtaining and mounting the decorative tin-enameled tiles on the fireplace jambs. The only tile set that can be linked to a specific owner is the manganese grapevine pattern in Russellborough (Figure 6). The production of this set began at approximately the same time William Dry acquired the property in 1770. Dry's choice of the grapevine pattern befits the owner of "the house of universal hospitality." In 1775, Scottish traveler Janet Schaw noted the abundance of wild grapes growing in the region, stating that "Finer grapes cannot be met with than are to be found everywhere wild" (Schaw 1921:175). It is also fitting since archaeologists recovered fragments from over 300 wine bottles in the ruin, all of which appeared to be extant at the time of the fire (South 1967:366–367).

The purchaser of the other five decorative tile motifs recovered from Russellborough is not known. However, among the owners of Russellborough, original owner Captain James Russell is the least likely candidate for acquiring the decorative tiles. Based on Governor Dobbs' 1760 description, it is extremely unlikely that the house was sufficiently complete under Russell's ownership for the hanging of interior decorative tiles. Governor William Tryon, upon moving into the house in 1765, immediately turned his attentions to building a permanent residence in New Bern and probably did not spend excessive time, energy, or financial commitment to making improvements inside Russellborough, excepting an initial "scouring of Chambers, White Washing of Ceilings, Plaisterers Work, and Painting the House inside and out" at Mrs. Tryon's request (Powell 1980:138). Documentary and archaeological evidence also indicate that at "Tryon's Palace" in New Bern, marble mantles and facings were placed around all the hearths, a decidedly more expensive and
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elegant fashion of the day than decorative tin-enameled tiles (Tryon Palace Commission 1958; Nancy Richards and Peter Sandbeck, personal communication 1996). Either Governor Arthur Dobbs or Customs Collector William Dry could have obtained any of the other sets. Both appear to have regarded Russellborough as a permanent residence, and cases can be made for either being the purchaser of the tile sets. Identification of the owners of Prospect Hall and the Public House who were responsible for acquiring the other decorative tile sets is purely speculative.

Considering the three basic elements in the acquisition of material culture—availability, affordability, and desirability—each of the owners of the three structures had the logistical and financial resources to obtain decorative tin-enameled tiles, as well as the desire to display conspicuous consumption fitting of their social status. Of all the decorative motifs available on delftware tiles in Colonial America, the consumers' tastes at Brunswick Town dictated which sets were selected and used. It is possible the choices made were based on more popular designs, as pastoral landscapes, urban waterscapes, and flora were relatively common motifs produced on tiles in both the Netherlands and England throughout the eighteenth century. It is also possible that the tiles chosen had a more specialized meaning for the purchasers, reflecting their conceptions of Brunswick Town as a prosperous port set within an idyllic landscape.

Conclusion

Archaeologists are accustomed to recovering fragments of ceramics, glasswares, and nails on historic-period domestic sites. It is a rare occasion that they are able to glimpse at the interior decorations of a structure which no longer exists. Handpainted delftware tiles, whose overt function is purely ornamental, is an artifact type that permits such a opportunity.

This study was intended to identify and document the decorative motifs on the tin-enameled tiles recovered at Brunswick Town, a process begun by James Sprunt and continued by Stanley South. In a town so often described by contemporary travelers as "a poor place" and "tho" the best sea port in the province... [it is] very poor," the presence of tiles in Russellborough, Prospect Hall, and the Public House reflect structures whose owners, both socially and materially, held a very high status in Colonial North Carolina (Mylne 1993:64; Schaw 1921:145). Based on the presence of tiles in three of the structures excavated in the 1950s and

1960s, the potential exists for recovering and identifying other tile sets from structures yet to be excavated at Brunswick Town. Future research on decorative vessel forms recovered may offer more insight into preferences of decorative motifs, as well as the processes of materialculture availability and acquisition.

Notes

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Collections. The numerous fragments of decorative delftware tiles excavated at Brunswick Town are in storage at the Historic Sites Section artifact repository at the Charlotte Hawkins Brown State Historic Site in Greensboro. Representative pieces are in artifact study collections at both the Office of State Archaeology and the Historic Sites Section Archaeology Branch in Raleigh.

Disclaimer. The author assumes full responsibility for any factual errors and the interpretations presented in this article.

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INVADED OR TRADED? OLIVE JARS AND OIL JARS FROM BRUNSWICK TOWN

by John J. Mintz and Thomas Beaman, Jr.

Abstract

During the eighteenth century, the primary British method of shipping commodities was in wooden crates and barrels. Fragments of two types of ceramic shipping containers—olive jars and oil jars—were unearthed during archaeological excavations at Brunswick Town. This study identifies the different vessel forms of olive jars and oil jars recovered at Brunswick Town. In addition, utilizing comparative examples of olive jars and oil jars recovered on other archaeological sites in North Carolina, the presence of these ceramic shipping containers in a British port context is explained as the natural result of an extensive global trade network.

Amphora-shaped coarseware vessels with restricted necks and an exterior that appears to have been washed in a white slip are traditionally identified as olive jars. Fragments of these vessels are frequently encountered on Spanish colonial sites in the Americas and occasionally found on British and Dutch colonial sites. Due to their often indistinct physical characteristics, these fragments have traditionally served merely as a marker for the Spanish colonial presence rather than to identify the temporal or qualitative attributes of a site.

Oil jars—coarse earthenware shipping and storage vessels—are considerably larger than olive jars, but functionally served the same primary purpose. The widespread occurrence of oil jars on British colonial sites has been noted and even appears to have been considered a popular utilitarian form preceding the American War for Independence (Noël Hume 1994:307). However, like olive jars, this vessel form has not received much more attention in archaeological literature than passing mention.

Examples of both types of ceramic shipping containers were recovered during Stanley South's excavations at the Brunswick Town State Historic Site during the 1950s and 1960s. This study is intended to obtain a minimum vessel count of the forms, examine the context in which they were found, and to consider the function of olive jars and oil

jars at Brunswick Town. Also, utilizing comparative data from other North Carolina sites, this study will consider the origins of these coarseware forms on British colonial sites.

Form and Function

In his recent work *Pottery from Spanish Shipwrecks*, Mitchell Marken referred to olive jars as "the most prevalent, yet most neglected, ceramic tradition found in Spanish colonial terrestrial and shipwreck sites in the Americas" (Marken 1994:41). While the term "olive jar" has been credited to W. H. Holmes (1903), one of the first comprehensive studies on olive jars was done in the 1950s by John Goggin. Based on forms recovered on terrestrial Spanish colonial sites in the Americas and the Caribbean, Goggin was able to classify forms of olive jars into temporal periods he referred to as Early (c. 1500 - c. 1580), Middle (c. 1585 - c. 1800), and Late (c. 1800) (Goggin 1960) (Figure 1). Goggin's seriation study still represents the authoritative chronology of olive jar forms.

Stephen James and Mitchell Marken have more recently produced categorization systems for olive jars by examining vessels found on Spanish colonial-period shipwrecks. While each of their classification systems varies slightly from Goggin's, the vessel forms identified are essentially the same. One of the primary contributions of James' study is the identification of an olive jar with a concave base, which would allow the vessel to stand upright (Figure 2). James refers to this type as Form III, and it was recovered on two wrecks dating from 1724 (James 1988:54–55). Marken (1994:80–89) also recognizes a form of the flat-based olive jar from the *Atocha*, which sank in 1622. Olive jars with flat bases have also been recovered at Santa Elena, a sixteenth-century Spanish terrestrial site located in present-day South Carolina (South et al. 1988:274–283).

The primary use of olive jars in Spanish colonial contexts appears to have been as trans-Atlantic and overland shipping containers for a variety of products. The use of ceramic containers for shipping is a Mediterranean tradition dating back thousands of years to Greek and Roman times, but it is not evident in Northern European trading traditions. Charles Fairbanks attributed the continuation of the Mediterranean tradition on the Iberian Peninsula from the sixteenth through the nineteenth centuries to the relative scarcity of timber. Fairbanks adds that the abundant forests in the Northern European countries is the reason why wooden casks and barrels became the primary shipping container



Figure 1. Olive jar forms, as classified by John Goggin's 1960 seriation study, showing comparative sizes (no scale) (after Deagan 1987).

(Fairbanks 1972:143). Beans, chick-peas, lard, olives in brine, olive oil, pitch, soap, tar, vinegar, and wine have all been mentioned in Spanish shipping records as being transported over sea and land in olive jars. Some of these products have been found still sealed in archaeologically recovered vessels.

Two secondary uses for olive jars have been noted by archaeologists working on Spanish colonial sites. First, it has been suggested that olive jars found in domestic contexts may have been used for liquid and general storage. The porous fabric of an unglazed olive jar could function to cool water by evaporation—a useful trait in the warm Caribbean climates. Foodstuffs such as corn, flour, and beans, as well as any number of general items, could have been stored in olive jars as well. The porous body would allow air flow around dry goods, thus retarding the growth of mold. Second, the durability of the jars have led them to be used both functionally and decoratively in Spanish colonial architecture. Complete



Figure 2. James' Form III olive jar. The concave base would allow the vessel to stand upright (after James 1988).

vessel forms have been found in roof vaults, walls, and gate arches. Fragments have been used as roofing tiles and in floor and patio construction. Whole late-style olive jars have also been noted as decorative embellishments on buildings and as finials on gate posts.

John Goggin (1960:5) speculated that the majority of olive jars were manufactured in and around Seville. Goggin based this theory on the fact that the majority of ships bound for Spanish colonies in the Americas sailed from Seville. A. Vince (1982) confirmed Goggin's Seville hypothesis with a thin-section analysis of several vessels recovered in England (cited in Hurst et al. 1986:66). While no other places of manufacture are presently known, Charles Fairbanks (1972:144) has speculated that if the quantity being shipped was any criterion, production must be relatively widespread. Research by Robert and Florence Lister suggests the coarseware forms were made as needed near the product to be transported (cited in Marken 1994:48). The lack of large quantities of ceramic waste materials at suspected sites of manufacture may indicate



Figure 3. Jewell South and Ellen Demmy reconstruct an oil jar from fragments recovered during excavations at Russellborough (N50). This vessel is now on display at the Brunswick Town State Historic Site Visitor's Center and Museum. Courtesy of the North Carolina Division of Archives and History.

that imperfect jars commonly entered the system with little regard for aesthetics (Marken 1994:48).

Oil jars are large coarse earthenware shipping and storage vessels that stand approximately 32 inches in height and weigh over 100 pounds each (Figure 3). Oil jar fragments are frequently recorded finds on British colonial sites in North America that date to the third quarter of the eighteenth century, asserting the widespread popularity of this form (Noël Hume 1994:307). Like the olive jar, no sites of manufacture have been discovered; therefore, the origin of the oil jar form is somewhat enigmatic. Originally, Noël Hume (1969:143–144) attributed their place of origin to the Iberian peninsula. Charles Fairbanks (1975:34) noted this form is not reported in Spanish colonial contexts, but is frequently recovered on British and French colonial sites. This fact led Fairbanks to speculate the vessels were not of Spanish or Portuguese origin. Similar vessel forms recovered in Quebec were found to have been made in Biot, located in southern France (Marcel Moussette, personal communication 1996).



Figure 4. This detail of the 1762 engraving *Le Port de Marseille* shows large ceramic shipping jars on the dock with other cargo. These are very similar in form to the oil jars recovered from archaeological excavations at Brunswick Town. Courtesy of the Mariners' Museum, Newport News, Virginia.

Most recently, Taft Kiser (personal communication 1996) of Virginia Commonwealth University has noted similarities in the lip forms of oil jars and several Tuscany vessels, raising speculation that the form may be Northern Italian in origin.

Similar to the olive jar, it is likely the primary function of the oil jar was originally as a shipping container. A detail of Claude Joseph Vernet's 1762 engraving *Le Port de Marseille* clearly illustrates the presence of this large coarseware form in a port context (Figure 4). However, like the olive jar, oil jars appear to have entered secondary use as both liquid and general storage containers in private residences. This is the primary context in which they have been identified in Colonial America.

Olive Jars and Oil Jars at Brunswick Town

During his investigations at Brunswick Town State Historic Site, Stanley South excavated eight loci that yielded either olive jar or oil jar fragments: St. Philip's Church (S1); Russellborough (N50) and its Kitchen (N51); the Judge Maurice Moore House (S11), Kitchen (S15), and Well (S12); the Leach-Jobson Ruins (S9) and Well (S27); the Public House (S25) and Public Yard (S13); the James Espy House (S8); Nath Moore's Front (S10); and the Edward Scott House (S28). These eight loci together produced a total of 88 sherds of olive jars and oil jars. Further examination of these specimens reveals that six distinct forms, representing a minimum of 26 vessels, were recovered. These forms include: 12 oil jars, five unidentified olive jars, two Middle Period A olive jars, five Middle Period B olive jars, one Late Period D olive jar, and one Form III olive jar (see Table 1).

In both olive jars and oil jars, the presence of interior glazing is not uncommon. A number of the fragments from both vessel types recovered at Brunswick Town exhibited a lead-glazed interior. The interiors of five oil jars exhibit a clear lead glaze, which appears rich brown in color. In the two olive jars forms recovered with interior glazing, the lead glaze manifests itself as a pale green color. This is primarily due not to a necessarily different glaze, but to the firing of lead glaze in a reduction environment (Zug 1986:4). The oxygen-deficient environment required to achieve this effect would normally take place in a kiln, but the bulbous body and constricted neck of the olive jar also forms an oxygen-reduced environment.

The presence of glazing or slipping on the exteriors of these vessels must also be addressed. While olive jars were once thought to have a white slipped exterior, it is now believed that their appearance is a reaction from firing the vessel rather than slipping. Numerous fragments of olive jars recovered at Brunswick Town do exhibit a whitish exterior, but none are glazed or slipped. Based on the exteriors of oil jars recovered archaeologically, it appears that few are painted or slipped. Only one oil jar recovered from Brunswick Town exhibited a whitish exterior slip. Probably a zinc or tin oxide slip, this pattern was occasionally painted on oil jar forms by the potter. This painted template acted as a guide for a basketmaker, who would then make a wicker or grass (raffia) shipping harness for the vessel (Richard Coleman-Smith, personal communication 1996) (Figure 5).

There is a commonality in the presence of olive jars and oil jars and the residences of people associated with Brunswick Town's shipping and trade industry. Russellborough, one of the most prominent residences associated with the town, was owned by William Dry, the port's customs collector, at the time of its destruction. The row of former residences

Brunswick Town Loci Name and Number	Minimum Vessel Count of Forms Recovered (based on Goggin [1960] unless noted)	Notes
St. Philip's Church (S1)	1 Middle Period A olive jar	Fragments of a similar olive jar were found at an eighteenth-century church in St. Mary's City, Maryland (Frank & Hurry 1997).
Russellborough House (N50) and Kitchen (N51)	1 Middle Period B olive jar 1 Late Period D olive jar 1 unidentified olive jar form 2 oil jars	Both oil jars have a cartouche with the letters "I.F." The reconstructed oil jar on display at the Brunswick Town Visitors' Center is from the house site.
Leach-Jobson House (S9) and Well (S27)	1 Middle Period A olive jar 1 Middle Period B olive jar 2 oil jars	-
James Espy House (S8)	1 oil jar	Oil jar has a lead-glazed interior.
Nath Moore's Front (S10)	1 unidentified olive jar form	Olive jar has a lead-glazed interior.
Maurice Moore House (S11), Kitchen (S15), and Well (S12)	1 Middle Period B olive jar 2 unidentified olive jar forms 3 oil jars	One oil jar has a lead-glazed interior.
Public House & Tailor Shop (S25) and Public Yard (S13)	2 Middle Period B olive jars 1 Form III olive jar* 1 unidentified olive jar form 3 oil jars	One Middle Period B olive jar form and two oil jars have lead-glazed interiors.
Edward Scott House (S28)	1 oil jar	Oil jar has a lead glaze on its interior and a white slip pattern painted on its exterior.

Table 1. Olive Jars and Oil Jars recovered at Brunswick Town.

* From James (1988).

along Front Street, including the Maurice Moore house (S11), Nath Moore's Front (S10), the Leach-Jobson ruins (S9), the Edward Scott house (S28), and the James Espy house (S8), were all owned one or more times by merchants. Based on the structures' positions in the Brunswick



Figure 5. The pattern on this sherd was occasionally painted on oil jar forms by the potter for a basketmaker, who would then make a wicker or grass (raffia) shipping harness for the vessel.

Town landscape, these residences are in a prominent position overlooking the Cape Fear River, and they would likely be owned by individuals of high status. Persons associated with coastal trade and shipping would most likely be familiar with olive jars and oil jars, and would be able to acquire these coarseware forms easier than persons living further inland.

However, it is important to note that the structures chosen for excavation may have resulted in a biased sample. South's excavations focused primarily on visible stone foundations, and based on the construction, size, and prominence of location, it is extremely probablethat the residences excavated represent high-status lifestyles. To date, no scientific archaeological investigations have been undertaken in what could be considered the industrial or lower class residential quarters of the city. Considering the loci of these two areas near the port facilities, the potential for the recovery and recordation of additional olive jar and

oil jar fragments could be very high, and should be taken into consideration if future excavations are considered.

Olive Jars and Oil Jars in Contact-Period and Colonial-Period North Carolina

As noted previously, the presence of olive jars has traditionally served as a marker for sustained Spanish occupation. While possible Spanish artifacts have been recovered at the Nelson Triangle site in Caldwell County, the only occurrence of olive jars associated with the Spanish colonial presence in North Carolina has been at the Berry site, located in Burke County (Moore and Beck 1994). Archaeological investigations undertaken at the Berry site, a multi-component Woodland and contact-period site located in the Upper Catawba River valley, resulted in the identification of a number of olive jar sherds representing three distinct Early Period style vessels and one Middle Period style vessel (Robin Beck, personal communication 1997). According to archaeologist Robin Beck, these vessels are probably associated with the Juan Pardo expedition of 1566–1568 (personal communication 1997). While olive jars are relatively common finds on Spanish colonial sites, it is very unusual to note sherds situated so far in the interior of the Southeast and attests to the durability of the form by surviving overland transport.

The olive jar is recognized as a vessel form not only indicative of the Spanish presence, but as a shipping container that occasionally transcended the Spanish colonial empire. To better understand the olive jars and oil jars recovered at Brunswick Town, a search was conducted for the presence of either vessel form on North Carolina terrestrial sites with recorded British colonial-period components. Only four archaeological sites—the Fort Raleigh National Historic Site on Roanoke Island, the Charles Towne site in Brunswick County, the Eden House site in Bertie County, and the United Carolina Bank site in New Bern—were found to contain comparative examples. However, this is not intended to be a conclusive comparative study, as reevaluations of collections from other sites may reveal olive jar and oil jar fragments that were originally misidentified.

The first attempt at colonizing mainland North America by the British was in 1585 on Roanoke Island. Two settlement attempts were made in 1585 and 1587, the latter of which resulted in the mysterious disappearance of the colonists who were left on the island. Excavations at

Fort Raleigh National Historic Site have yielded a total of 27 olive jar fragments (Luccketti 1996:21; Skowronek and Walker 1993:60). Excavations at the site of the reconstructed fort by J. C. Harrington between 1947 and 1953 yielded 22 of the fragments, which were identified as a single, unglazed, Middle Period B style vessel (Harrington 1962:22). It is possible, though doubtful, that the remaining five sherds are from the same vessel identified by Harrington.

The second site where olive jar fragments have been identified is from Charles Towne, the first European settlement in the Cape Fear Region. Located approximately five miles north of Brunswick at the confluence of the Cape Fear River and Town Creek, the site was settled in 1663 by William Hilton and colonists from Barbados and New England, and was abandoned by 1667. Excavations were conducted in the late 1980s at the site of Charles Towne by Dr. Thomas C. Loftfield of the University of North Carolina at Wilmington. Of the European ceramics recovered, approximately 23% were identified as Iberian in origin, and include fragments of majolica, olive jars, and redwares (Loftfield 1989; personal communication 1996). Sherds of olive jars were recovered primarily from the plowzone and fill from the construction of defensive earthworks, but were too fragmented to identify vessel forms or counts. None of the olive jar fragments recovered at the Charles Towne site were glazed on the interior.

Recent excavations at the Eden House Site (31Br52), located west of Edenton across the Chowan River, yielded olive jar fragments. The site is located on the land that was at one time the estate of Proprietary Governors Charles Eden and Gabriel Johnson (Robinson 1994). Analysis of the Eden House artifacts is being conducted by Coastal Carolina Research, Inc., and specific information on minimum vessel numbers and forms was not yet available (Loretta Lautzenheiser, personal communication 1997).

Eleven fragments of an oil jar were unearthed in New Bern by archaeologists of Coastal Carolina Research, Inc., during data recovery excavations at the United Carolina Bank site. These sherds, representing a minimum of one unglazed vessel, were recovered from a midden layer that formed gradually between 1750 and 1820 (Lautzenheiser et al. 1994:61). Lack of information on property ownership or lot functions resulted in the speculation that this midden layer resulted from the household debris of one or more properties or lots in the second half of the eighteenth century and into the early nineteenth century (Lautzenheiser et al. 1994:61).

Given the artifacts found in association with these oil jar fragments, it is almost certain this vessel was from a domestic context.

Invaded or Traded?

While oil jars are relatively common on British colonial sites, the presence of olive jars at Brunswick Town and other British colonial sites from the sixteenth, seventeenth, and eighteenth centuries is most likely the result of a large and complex global network of trade. Whether arriving directly or indirectly to British ports either on British ships or on shipping vessels of other colonial powers, the occurrence of these Iberian forms on British colonial sites in North America is not a unique phenomenon. However, it is also important to consider the material ramifications of the brief Spanish occupation of Brunswick Town in 1748.

It is possible that olive jars arrived at British ports as a result of trade, either on British ships or from shipping vessels of other colonial powers. However, due primarily to trade with other colonial powers and the perceived loss of revenue to British merchants as a result of this increasing interaction, numerous acts governing the British mercantile trade were instituted by Parliament in the eighteenth century. These legislative actions, which included the Navigation Acts, Stamp Act, the Intercourse Act, and other "Intolerance Acts," functioned primarily to regulate, and in some cases prohibit, trade with other colonial powers. Provincial law also varied from colony to colony, each with its own trade regulations.

In some ports, both Parliamentary and provincial regulations were often loosely enforced or, in some cases, virtually ignored. This may be the case with Brunswick Town, as the import register kept by William Dry notes several shipping vessels which originated from Spanish colonies, such as Florida and Hispaniola. Even if carrying only stones for ballast, these ships may have had olive jars aboard that were traded informally to dock workers or town residents for fresh supplies. Another possibility of these coarseware forms entering the British colonial trade network through lax regulations is through inter-island trade in the Caribbean, as suggested by Dr. Thomas Loftfield (1989). The olive jars could then enter British ports in North America on British shipping vessels, thereby providing an easy avenue for the forms to be recycled into domestic use.

Stanley South originally attributed the origins and occurrence of olive jar fragments recovered at Brunswick Town to the Spanish attack

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and brief occupation of the city in 1748 (South 1960:32). In the following skirmish to retake the city, one of the Spanish ships, the *Fortuna*, was sunk in the Cape Fear River off of Brunswick Town. Contemporary accounts of the incident confirm that a number of goods were salvaged by citizens of Brunswick Town from the *Fortuna*, and it is probable that any salvaged olive jars were recycled into domestic use at that time. It is interesting to note that the remains of the *Fortuna* have never been located in the Cape Fear River (Overton 1995:18).

Conclusions

This study has investigated the occurrence of olive jar and oil jar vessel forms at Brunswick Town, providing data for the analysis and comparison of both types of ceramics recovered on other British colonial sites in North Carolina. Based on their recorded provenience from Brunswick Town and other sites, these vessel forms appear to function as domestic storage containers. This differs from the primary function of the same forms on Spanish colonial sites, where their appearance is directly linked to their use as containers for the transporting of foodstuff and other materials.

Given the currently available data from Brunswick Town, no discernible choice of vessel forms by consumers can be ascertained. While it appears that olive jars generally are smaller and more transportable than oil jars, they both occur in approximately equal numbers (14 olive jar forms versus 12 oil jar forms). This lack of definitive consumer preference is most likely the result of limited vessel forms available. Future investigations into unexplored areas of Brunswick Town may yield additional data on available vessel form, function, and origin.

Notes

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Collections. The fragments of olive jars and oil jars from Brunswick Town are in storage at the Historic Sites Section artifact repository at the Charlotte Hawkins Brown State Historic Site in Greensboro. Representative pieces are in the artifact study collection at the Historic Sites Section, Archaeology Branch, Raleigh.

Disclaimer. The authors assume full responsibility for any factual errors and the interpretations presented in this article.

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PORT BRUNSWICK AND THE COLONIAL NAVAL STORES INDUSTRY: HISTORICAL AND ARCHAEOLOGICAL OBSERVATIONS

by Kenneth W. Robinson

Abstract

Within a few years of its founding, the colonial port of Brunswick was exporting substantial amounts of pitch, tar, and raw turpentine—items collectively referred to as naval stores. The Cape Fear region became the largest supplier of naval stores to the British empire by the mid-eighteenth century. This article reviews how naval stores products were produced and shipped from colonial Brunswick, and considers the arrangement and construction of the town's eighteenth-century port facilities. The potential of the site to yield additional archaeological evidence of waterfront loading and industrial facilities is discussed.

Entering the Cape Fear River from the Atlantic was not an easy task for eighteenth-century seamen. The mouth of the river was marked by a narrow channel and treacherous shoals. Once past these obstacles, however, the Cape Fear River was readily navigable (Lee 1965; Sprunt 1974). The location of Brunswick, some 12 miles upstream from the mouth of the Cape Fear River, was well suited for a port. Here the river was wide, with few hidden sand bars, and deep enough to harbor heavily laden seagoing vessels. The town occupied the western shore of the river. At the water's edge was a steep cut bank, and skirting the base of the bank was a strip of shallow, marshy tidal flat. Ships were required to anchor in deep water away from the shore, but docks and wharves were easily extended to deep water for unloading and loading ships.

It is the waterfront area of Brunswick Town that is the focus of this article. What did the eighteenth-century port facilities and waterfront area of the town look like and how were these facilities utilized? To begin to answer these basic questions, this paper considers the port facilities in light of the town's largest class of exports—naval stores. Naval stores—tar, pitch and turpentine—were the impetus for the development of Brunswick's port facilities and the basis of the town's economy (Lee 1951). There were other important exports from Brunswick, including wood products (lumber, staves, and shingles) and agricultural products,

but none were comparable in sheer quantity to that of naval stores. As early as 1730, Brunswick was a functioning port, and by the 1760s, the lower Cape Fear region had developed into the largest supplier of naval stores to the British empire (Crittenden 1936; Lee 1965; Perry 1968; Williams 1935). In return, the port provided a gateway for immigration into southeastern North Carolina and a minor, though promising, market for consumer goods and products (Mintz and Beaman 1997).

Where were the wharves, docks, warehouses, and other storage facilities that most certainly occupied the waterfront? Were other structures or industrial activity areas, including naval stores processing facilities, present along the waterfront? Preliminary information relating to these questions can be gleaned from a study of the 1769 Sauthier Map of Brunswick (Figure 1), and from the historical and archaeological observations of Lawrence Lee and Stanley South compiled in the 1950s and 1960s (Figure 2). This information is summarized and the potential of the site to yield additional archaeological evidence of the waterfront is considered in this paper.

Naval Stores

Naval stores is a term used to describe products produced from the gum of coniferous trees. The primary products are raw turpentine (gum), tar, pitch, distilled spirits of turpentine, and rosin. These products have a long history of use in the marine and shipbuilding industries, thus their designation as "naval stores." While several types of pines and other conifers can be used to make naval stores, the primary source in the Carolinas and most of the southern United States was the longleaf pine (*Pinus palustris* Miller). When Europeans first encountered the New World, the Coastal Plain from the Chesapeake southward to the Gulf Coast contained huge expanses of longleaf forests (Gray 1933; Perry 1947). These forests were especially suited to the sandy soils and subtropical climate of the lower Cape Fear region (Pinchot and Ashe 1897).

Gum

Gum, also called raw turpentine or crude turpentine, is the basic raw material of naval stores products (Brown 1919). Pine wood with high concentrations of gum, such as heart pine, is especially flammable, and longleaf pine wood is often referred to as "lightwood" or "fat lighter."







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Gum was obtained from the living longleaf pine by scraping, cutting, or scoring the trunk. Gum exuding from the wound could be collected in cavities cut into the side of the tree trunk (also called "boxes") or into containers hung on the side of the tree. Gum can be used as a crude waterproofing agent, although it was more common to render tar, rosin, or spirits of turpentine from it. Historical records which mention "turpentine" being exported from Brunswick and North Carolina in the eighteenth century generally refer to crude or raw turpentine. The gum was packed in barrels or casks, and distilled or otherwise processed at facilities in England or the West Indies. A standard barrel contained approximately 31-1/2 gallons (Harmon and Snedeker 1993:101).

Large tracts of piney woods were needed to obtain adequate gum for the market. Sections of longleaf forests were systematically worked by semi-skilled crews who boxed the trees, scraped the trunks, and collected the gum. Many eighteenth-century turpentine crews in the Carolinas were comprised of slaves. Crews were housed in workers' camps set up in the forests where they worked. Once a section of forest was depleted of gum, usually after five to seven years, crews moved on to new sections of forest.

Tar

Tar was produced by heating or burning pine wood, thus driving the gum residue from the wood. Deadwood collected from the forest floor was usually used to make tar, although felled turpentine trees which no longer vielded gum, or other cut wood, was sometimes used. Tar was traditionally produced in "tar kilns" (Figure 3). The construction of a kiln involved stacking lengths of lightwood in large circular piles, with the ends inclined toward the center of the pile. These kilns sometimes reached 50 ft in diameter, although archaeological evidence indicates 20 to 30 ft was more typical (Harmon and Snedeker 1993:105). The load of stacked wood was then covered with earth and vegetation (pine needles, leaves), and fired. The fire was maintained with as little flame as possible by limiting the air supply available to the flame. When more air was needed, the outer covering of the kiln was penetrated with sticks. Heat from the smoldering wood liquified the gum, rendering it from the wood and converting it into a blackened, liquid tar. The flowing tar was channeled through a pipe or conduit in the bottom of the kiln to the kiln's edge (Figure 3). There, it was collected in barrels or casks set into the



Figure 3. Schematic views of traditional tar kiln construction and ruins (from Robinson 1991:15).

ground. The tar was then sealed in the collecting barrel or poured into new containers for shipment.

Tar kilns were usually constructed in the forests close to the wood source. Keeping a distance from habitations and towns also was a safety precaution, since kilns could, and often did, explode into flames if not properly maintained. The labor force used to prepare and maintain kilns was also usually comprised of slaves. Kilns could be constructed and

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fired in the winter months, thus keeping workers busy at times of the year when gum was not readily available for collection and workers were not needed in agricultural activities. The extensive production of tar and pitch throughout the eighteenth and nineteenth centuries in North Carolina led to Carolinians being called "Tar Heels."

Pitch

Pitch was produced by evaporating or burning-off the more volatile fractions of the collected tar and reducing it to a thicker consistency. Tar could be burned or boiled in iron pots, or as was more common in the eighteenth century, in pitch pits. These were clay-lined holes dug into the ground, two to five feet in diameter and several feet deep (Robinson 1988:9). Pitch was used extensively in shipbuilding and waterproofing. Like tar, pitch was typically packed in barrels or casks for shipment.

Spirits of Turpentine and Rosin

Raw turpentine (gum) could be processed by distillation into two important products: spirits of turpentine and rosin (Robinson 1991:12–21). Before 1800, naval stores distilleries were rare in North Carolina. Distillation, which in the eighteenth century was still a crude process, typically took place in England or in other intermediate facilities, such as those in the West Indies. It was not until the early nineteenth century that distillers were common at North Carolina ports. Spirits of turpentine was distilled into a variety of grades, depending on the quality of the gum and how the gum was treated in the distillation process. The distilled liquid was, and continues to be, used as a cleaner and solvent, and in medicines. Rosin is the gum by-product left in the distiller after distillation. This substance is sticky, water resistant, and often used for waterproofing.

Brunswick Commerce and the Naval Stores Industry

Land to develop the town of Brunswick was set aside in 1726. By this time, major British American trade centers were already established to the south and north of the Cape Fear region. To the south was Charleston. Operating since the 1670s, this important port had developed a thriving economy centered on the export of a variety of products, including rice and naval stores (McCusker and Menard 1991:179). North of the Carolinas were Virginia and Maryland, both with strong eighteenth-

century economies based in tobacco production. While some production of naval stores took place in the Upper South, the production levels were never great during the late seventeenth and early eighteenth centuries (McCusker and Menard 1991:128n; Williams 1935).

The production of naval stores in South Carolina during the early eighteenth century was encouraged by the passage of the Naval Stores Act in 1705 (Lee 1951:5). The act placed a bounty on the production of naval stores, making colonial production quite profitable and competitive with production in the Baltic countries and Sweden in particular. The impetus for this act was the disruption of supply from the Baltic countries due to war with France, which led to an increase in pricing by Swedish merchants (McCusker and Menard:179). England sought a more reliable source of naval stores, and it turned to the colonies for this. By 1718, exports from Charleston surpassed 50,000 barrels and the total exceeded 60,000 barrels a decade later (McCusker and Menard 1991:181). By 1724, roughly 94% of England's naval stores imports originated in the colonies (Lee 1958:6).

England's support of naval stores bounties began to weaken in the early 1720s. The Admiralty had received numerous complaints about the inferior quality of naval stores being made in the Carolinas when compared to its Baltic competitors (Crittenden 1936:180). One reason for the difference in quality was that Carolina tar was made from wood collected from the forest floor. This deadwood burned hotter than freshly felled trees, typically used in Sweden, and the higher temperatures yielded an inferior "burned" tar or "hot" tar, as it was called (Lee 1958:6; Merrens 1977:70). The bounties were allowed to expire in 1725, slowing colonial production for a time.

In 1729, Britain reestablished the bounties on naval stores produced in the Americas (Crittenden 1936:180; Williams 1935), again creating a demand for naval stores from the colonies. Producers in and around Charleston by this time had shifted their labor forces to more profitable undertakings such as the production of rice, thereby pushing low-value naval stores production to the margins of established plantation settlement areas or into relatively unsettled backcountry such as the Cape Fear. Although Brunswick Town was only a few years old, merchants and landowners quickly responded to the favorable market and began shipping naval stores from the town in ever-increasing amounts. With the town situated in the midst of huge expanses of untapped pine forests, naval stores soon became the region's leading export product. In 1731, the Cape Fear region was designated as Port Brunswick by the

Place of Export	Number of Barrels
Port of Brunswick	255,576
Other North Carolina Ports	95,909
Total North Carolina Ports	351,485
New England	51,274
Middle Colonies (including Maryland)	40,412
Virginia	105,194
South Carolina	61,751
Other Colonial Ports	2,677
Total	612,793

Table 1. Naval Stores Exports, 1768–1773 (from Lee 1951:65).

Commissioners of Custom, becoming one of five official ports in North Carolina. Port Brunswick incorporated the towns of Brunswick and Newton (later Wilmington), located farther upstream. The manufacture and export of naval stores expanded in the ensuing decades and by the 1750s Brunswick had become the largest supplier of tar, pitch and turpentine in the world (Lee 1951; Crittenden 1936; Merrens 1964).

Other areas of eastern North Carolina farther north, such as the Albemarle and the Tar-Neuse River regions, also became strong naval stores-producing areas. However, these regions lacked ports, like Brunswick, that were readily accessible to the sea. Brunswick also could accommodate large ships, in addition to being situated near vast tracts of unexploited long leaf forests. These situational factors insured that Port Brunswick and the Cape Fear region would lead in naval stores production for most of the eighteenth century.

The quantities of naval stores leaving Port Brunswick in the eighteenth century is indeed impressive. For example, using data from the British Customs Records, Lawrence Lee (1951:65) found that for a five-year period ending in January 1773, the American Colonies shipped 612,793 barrels of tar, pitch, and turpentine to Great Britian (Table 1). Of this quantity, North Carolina produced 57%, and of this total from North Carolina, Port Brunswick sent 73%. Port Brunswick alone was exporting almost three times the amount of all of Virginia, four times that from all of South Carolina, and five times that of either New England or the Middle Colonies, including Maryland.

Brunswick also exported more than naval stores. It was a major supplier of wood products such as lumber, shingles, and staves. By 1767, over 50 sawmills were in operation along the Cape Fear (Lee 1951:67). Many of these products went to the West Indies. The manufacture of staves, used in barrels and casks, was an industry that complemented the naval stores industry. Literally hundreds of thousands of containers were produced in the eighteenth century just to ship tar, pitch, and turpentine. Barrels and casks also had many other uses, and these were especially needed in the West Indies and elsewhere, where wood resources had been reduced dramatically since the arrival of Europeans (McCusker and Menard 1991:315).

Brunswick Port Facilities: Archaeological Perspective and Prospects

The sheer quantity of naval stores and other products being shipped out of Brunswick certainly required extensive port and waterfront facilities, including docks, wharves, storage buildings, and possibly other ancillary structures such as customs houses and inspection stations. The loading and unloading of ships also would have required a substantial work force, and there must have been housing for these workers. It is also possible that limited naval stores or other industrial production facilities, such as pitch houses, might have operated within the town of Brunswick. Does archaeological evidence for these types of facilities survive at Brunswick? To begin to answer this question, two important sources of information are reviewed: Sauthier's 1769 map of Brunswick, and the observations and notes made by historian Lawrence Lee and archaeologist Stanley South during their investigations in the 1950s and 1960s.

Sauthier's 1769 Map and South's Site Plan

Claude Joseph Sauthier was a surveyor and cartographer commissioned by North Carolina's Governor Tryon to make maps of the major towns in the colony (Carnes-McNaughton 1992). Between 1768 and 1771, he mapped 10 towns and one battlefield, including Brunswick in 1769 (see Figure 1). Sauthier's maps are relatively detailed and accurate, although they sometimes impose regularity not true to the setting, and some omissions of structures and features do occur. Sauthier's map of Brunswick provides an excellent overview of the town as it looked in the 1760s. The layout of the town can be classified as a

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modified port plan common to colonial town planning (Carnes-McNaughton 1992:11), and the waterfront is shown in considerable detail (Sauthier 1769). Many items on the Sauthier map have been shown to be accurate and were confirmed by archaeological testing in the 1960s (South 1960).

Lawrence Lee and Stanley South compiled extensive information about Brunswick during their years of historical and archaeological research at Brunswick. Lee produced a map of the town using historical information and his own field observations (Lee 1951). South followed with an even more comprehensive plan map of Brunswick showing the locations of archaeological ruins, streets, and other landscape features (including the locations of Civil War earthworks built as part of Fort Anderson) (see Figure 2). South's map also provides some detail about the waterfront at Brunswick (South 1960). Utilizing data from the Sauthier and South maps, it is possible to make some statements about certain waterfront facilities.

Wharves and Docks

At some point in Brunswick Town's development, a street was established roughly parallel with and close to the shoreline. This was called Front Street in the northern part of town and Bay Street in the southern part of town (Lee 1951). House and commercial lots were laid out west of the street. The narrow strip of land from the street eastward toward the water was where port facilities were built. Sauthier's map illustrates several waterfront features or structures in this area (indicated by circled Roman numerals in Figure 1). Two large features and one small protruding feature (Features I, II, and III) are present along the northern waterfront. Given that all of these features extend into the water, they are interpreted as docks or wharves. Two prominent, though narrow, docklike features also can be seen in the southern side of town (Features IV and V). The southernmost of these (Feature V) actually overlaps the bank of the shoreline, apparently indicating the docks extended well back from the river bank. The Sauthier map clearly shows that Brunswick had at least five major docking and loading areas.

Stanley South's map plots the locations of several pilings and ballast stone accumulations (indicated by circled Roman numerals in Figure 2). South identified three of the features as wharf or dock areas. Features I and II are located at points of low marshy land, well away from the cut

bank. Feature I was interpreted as "Ballast Stone from [a] 1748 Wharf." Feature II was identified as "Ballast Stone from a pre-1769 Wharf." Feature III marks the location of a modern catwalk (c. 1958) and a set of wood pilings in the water, all situated at the point of a protruding piece of high ground within the tidal flat. South identified these pilings as "Colonial Wharf Pilings." South also plotted the approximate location of the two southernmost docks that were shown on Sauthier's map (Roman numeral IV in Figure 2). These did not correspond to any recorded archaeological remains though it is likely the area, now under water, has never been intensively investigated. From South's observations, we can assume that Brunswick had at least four docking areas.

South correlated his on-the-ground findings with the Sauthier map. Interestingly, two of the three wharves he identified (Figure 2, Features I and II), closely correspond with Sauthier's two largest wharf features (Figure 1, Features II and III). This certainly confirms the general accuracy of Sauthier's map. South's third observed feature (Figure 2, Feature III) does not correspond with a feature on the Sauthier map. Perhaps this wharf area was not being used when Sauthier visited in 1769, or perhaps it is an unintentional omission on the part of the cartographer. Whatever the case, for those who have worked with Sauthier's maps, it is not unexpected to find certain omissions, even though the maps are generally accurate. The documented presence of South's Feature III clearly demonstrates the utility of archaeological research in documenting the site. We could expect that additional archaeological research would add a great deal of information about the site not available from maps or other historical sources.

Now that the presence of four, possibly five, wharves or docking areas have been identified, what can be said about how these were constructed? There is clear evidence that ballast stone was utilized in some of the constructions. While the stone may have just been piled around existing wooden docks extending into the water, a more likely possibility is that wharves or docking structures were made by building wooden cribs or gabion structures and filling them with the stone.

South's Feature III also indicates the use of wood piling construction. It would be expected that the long docks and catwalks extending from docking areas to the shore or warehouses would utilize piling construction. Since wet environments such as the marsh zone can be favorable for the preservation of wood, and durable wood (cypress or heart pine) was typically used in dock construction, it is possible that

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many piling features are preserved within the site. To find and record these features would require the skills of underwater archaeologists.

Warehouses and Other Waterfront Structures

Illustrated on Sauthier's map are several one-story, square or rectangular waterfront structures that could be interpreted as storehouses or warehouses (Figure 1). These are located along the east side of Front and Bay streets, on or over the low ground which is presumed to have been within the tidal zone or along the river bank. Many of these structures appear small on the map, but some are equivalent in size to houses along residential streets. Exactly how these structures were constructed cannot be determined from the Sauthier map, but it would not be surprising to find that those closest to the water were built on wooden piers to avoid inundation during high tide and others were built with (ballast) stone or brick foundations.

Sauthier's map shows a cluster of large structures in the far southern section of the waterfront, very near the docks labeled Features IV and V (Figure 1). Two of the structures are quite large, and the largest one exceeds St. Philips Church (labeled A on the Sauthier map) in size. The two large structures are oriented the same direction, with the length parallel to the shore. Based on size and proximity to the docks, both of these are tentatively interpreted as warehouse facilities.

Lee and South documented and tested several archaeological features close to the water's edge (east of Front and Bay streets) during their investigations (Figure 2). Immediately west of Roman numeral I on South's map, at the river bank, is an archaeological anomaly described as a concentration of loose stone (identified by South as ruin N37). Along the river bank between Roman numerals I and II is another loose stone feature (N16). These stone concentrations may be ballast stone dumps, possibly designed to shore-up wet areas or prepare the land surface for utilization.

Immediately west of Roman numeral II on South's map are structural remains (N40). Preliminary testing showed this to be a "brick bat floor" associated with china and other artifacts (National Register Nomination Form 1971:11). The function of this structure remains unknown. In the area of Roman numeral IV on South's map are the ruins of another structure (S17) (immediately north of the large rectangular warehouse). Preliminary excavation showed this to be a stone and brick foundation

associated with a ground depression along the east edge of the foundation. The function of this building has not been determined, although its location on the waterfront suggests some port association, possibly a warehouse.

Other Structures

Sauthier illustrates another group of structures which, though not close to the waterfront, may be related to the commercial and industrial functions of the town. This group includes five small structures and three larger structures located at the south margin of town, along the road entering Brunswick from the south (Figure 1, far right side). The road is labeled on the Sauthier map as the "Road to Point Plenty." These structures are positioned well outside the mapped residential blocks, but there is no indication on the map as to their function. No excavations have been conducted in the area of these structures. Because they are located along the margin of the town, these structures could be interpreted as storage facilities. The smaller structures, appropriately sized for habitations, could be workers' houses. While these interpretations presently are purely speculative, they are mentioned to raise the question about where laborers employed in the storage and port facilities might have been housed.

Naval Stores and Other Industrial Evidence

Is there archaeological evidence for the naval stores industry within Brunswick Town? Except for the general indications of port facilities which would have been used for the loading of naval stores, no specific evidence has been identified. It would be an important contribution to our understanding of the site of Brunswick, and archaeology of North Carolina in general, if evidence for colonial naval stores processing were found, for such sites are exceedingly rare (Robinson 1988:14). One must first consider, however, what type of evidence for naval stores might be expected. As mentioned previously, most naval stores gum-collecting activities and production (using tar kilns and pitch pits) would have taken place in the forests well away from town. However, examples of evidence that could be preserved within the site include tar and pitch spillage, pitch houses where pitch was heated for ship maintenance and repairs, and distiller sites.

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At this point, no mention of a naval stores distillery at Brunswick has been found in the historic records, and it is considered unlikely that a distiller was in operation there, especially during the early years. If one existed, it likely would have been located outside of the town, where the danger from fire could be minimized and the inconvenience of smoke and smell would be lessened.

Coopering is another industrial activity that was important to naval stores production. Barrels and casks were essential for naval stores shipping. Much of the sawing and stave manufacturing would have taken place outside of town within the forests close to the wood sources. But it might be expected that fairly large coopering facilities were set up close to the waterfront to repair broken barrels and provide containers for other commodities passing through the port. The archaeological evidence for these facilities could be difficult to trace, depending on how substantial the operations were. Smithing localities also would be expected near the waterfront or along the margins of town. Blacksmiths would have been needed for ship repairs and the usual functions around town.

Conclusions

Taking advantage of the rich and abundant natural resources of the lower Cape Fear, the residents and merchants of eighteenth-century Brunswick developed a thriving economy based on the export of tar, pitch, and raw turpentine. By the mid-eighteenth century, Brunswick was the largest supplier of naval stores to the British empire. The commercial activities at Brunswick would have required substantial physical facilities to accommodate the storing, loading, and unloading of commodities such as naval stores. Archaeological and map data suggest that there were at least five wharf areas in Brunswick during the 1760s. Whether the number of docking areas varied greatly over time has yet to be determined. Archaeological traces of some of these waterfront facilities exist (South 1960), and there appears to be considerable potential for the site to yield even more archaeological evidence.

It is hoped that this brief summary will stimulate additional questions about the configuration of waterfront commercial areas and industrial localities within Brunswick Town. With a research design incorporating both terrestrial and underwater archaeological techniques, it should be possible begin documentation of many aspects of the town's port and commercial facilities.

Notes

Acknowledgments. My research into the history and archaeology of Brunswick over the past year or two has led me on a journey of rediscovery through the historical and archaeological notes, research manuscripts, and publications on Brunswick Town. As a result of this journey, I have newfound respect and admiration for two very special people: Mr. Lawrence Lee and Mr. Stanley South. Their pioneering research efforts at Brunswick Town represent not only outstanding scholarship, but exemplify extraordinary levels of dedication and commitment to the study of North Carolina's past. I am greatly indebted to the work of these two researchers for most of the data presented in this paper, although any errors in interpretation and presentation are mine alone.

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RETURN TO THE PORT OF BRUNSWICK: AN ANALYSIS OF TWO EIGHTEENTH-CENTURY NORTH CAROLINA SITES

by Anna L. Gray

In the spring of 1731 a visitor to the lower Cape Fear described Brunswick as being "a poor, hungry, unprovided Place, consisting of not above 10 or 12 scattering mean houses, hardly worth the name of a Village" (Lee 1965:119). However, with the opening of the Port of Brunswick, it was optimistically predicted that "no doubt but it will be very considerable in a short time, by its great Trade, the Number of Merchants, and rich Planters, that are settled upon its Banks within these few Years." So too did the settlement and establishment of trade develop in another coastal region to the north of the lower Cape Fear—the Albermarle Sound.

The purpose of this study was to examine two eighteenth-century archaeological sites in the separate regions of North Carolina mentioned above. This study had four primary goals: (1) to use the Carolina Artifact Pattern to compare and contrast the artifact assemblages from two eighteenth-century North Carolina sites; (2) to extend the research beyond pattern recognition in order to delineate the functional differences between the household assemblages of the two sites; (3) to compare and contrast a rural farmstead and an urban townhouse; and (4) to distinguish the functions of the households as a private residence versus a semi-public or commercial property. One of these sites, Nath Moore's Front, is located within Brunswick Town. It was studied and used extensively by Stanley South in the development of his pattern recognition studies which have been applied in historical archaeology since their inception in the 1970s. The other site used in the analysis was 31Pk8, the Reid site, located in southeastern Pasquotank County, North Carolina in the vicinity of Nixonton. This site was first identified in 1985 by the property owner. who unearthed several ballast stones and bricks in the middle of a field which was being cleared for agricultural use. Douglas Reid contacted the North Carolina Office of State Archaeology and consulted with staff archaeologist John Clauser, who conducted a cursory examination of the site

Methodology

Three major methods were used in the comparative study of Nath Moore's Front and the Reid site (Gray 1989). The first method involved the comparison of each site's artifact assemblage and investigation of their similar background histories.

The second method used was the comparison of these sites' material culture by applying South's pattern recognition analysis and artifact frequency ratios. With their development, pattern recognition studies were intended to provide a more quantitative approach to historical archaeology with less emphasis on the particularistic description of the data. According to South (1977:86), "This method of quantification of data was accomplished by a formation of artifact patterns which in turn would reveal certain broad regularities or pulsations of culture process against which any deviation from such regularity can be contrasted as reflecting behavior somewhat different from expected margins."

Criticism of South's pattern recognition applications stems from the fact that it primarily only allows "a synchronic, functional analysis of an archaeological site" (Orser 1989). Other critics of South's pattern recognition studies point out that they do not take into consideration any environmental adaptations which may influence the structure of the pattern. For example, South's patterns assume that "each household in an eighteenth century British colonial society represents a system within a much larger system imposing on each household a degree of uniformity in the relationships among its behavioral parts. This uniformity is expected to be revealed in various classes of cultural remains" (South 1977:86). Essentially, South infers that a hypothetical British colonial family in America "would bring a basic set of behavioral modes, attitudes, and associated artifacts that would not vary regardless of whether their ship landed at Charleston, Savannah or Philadelphia" (South 1977:86). South's pattern recognition model does not account for the very real possibility that these settlers in different areas "would encounter a variety of different social and physical environmental factors that would substantially alter the nature of eighteenth century British-American adaptations and subsequently affect the expected similarity of cultural deposits" (Warfel 1983:268).

In this study, rather than relying solely on pattern recognition of the artifact assemblage, historical and ethnographic accounts, if available, should be used. Otherwise, as Warfel (1983) notes, the use of pattern

recognition in historical archaeology will be little more than a mass of interesting data that in the long run will not contribute to any unified theme. Despite these criticisms, pattern recognition analysis was employed to help provide a means for systematically examining the archaeological data from two historical sites and allowing an orderly technique for comparative analysis. For this study, emphasis was placed on the analysis of eighteenth-century ceramics due to their abundance at each site.

The third method used was an examination of the archival record. Although certainly not complete, the available historical records were incorporated to hopefully provide important information which may not be readily apparent from the archaeological data. The historical information was indeed helpful in discerning the cultural and socio-economic variations between the two sites.

Historical Background

The initial settlement of the Albermarle region and the lower Cape Fear did not begin until the late seventeenth-early eighteenth century. Although there was an abundance of land available in coastal North Carolina, the attempts at permanent occupation were slow to start. The Albermarle region was attractive due to many influential factors, including a mild climate, plentiful fish and game, and fertile soil suited to yielding large crops. The inhabitants of the Albermarle area were a fairly homogeneous group who moved south, primarily from Virginia, and were small to middling farmers. The society of the Albermarle during the late seventeenth and early eighteenth centuries did not include many wealthy land owners but rather farmers who possessed a moderate amount of land, generally owning 200 acres more or less (Ekirch 1981). Another factor influencing settlement in the Albermarle region was the guarantee of religious freedom. Many Quakers, among other religious dissenter groups, left the Virginia tidewater in hopes of freely practicing their religions elsewhere. At the start of the eighteenth century, the Anglican Church had not been firmly established in North Carolina, thus encouraging dissenter groups to come to this area to live. By the time most settlement of North Carolina's tidewater region was well underway, governing officials were reluctant to make religion a barrier to further development.

The settlement of the lower Cape Fear did not officially begin until after the Tuscarora Indian War of the early 1700s. After the threat of

hostile Indians had been removed, the area below the Albermarle Sound opened for settlement almost immediately. In the early 1720s, Colonel Maurice Moore, a native South Carolinian who had first come to North Carolina during the Tuscorora Indian War, was very impressed with the potential resources of the lower Cape Fear region. Despite governmental restrictions on settlement in this area, Governor George Burrington began issuing land patents for the Cape Fear region in 1724. In 1725, Moore purchased 1,500 acres of land on the west side of the Cape Fear River. It was on this low bluff that the town of Brunswick was established. Moore divided the town into lots and began selling property to fellow South Carolinians interested in the development of Brunswick Town and to other land speculators moving to the area from the Albermarle region, Virginia, and the New England colonies (Lee 1965).

Unlike the Albermarle region, the Brunswick society could be distinguished in terms of its gradual stratification and an emergence of a truly wealthy elite. Settled by English, Irish, Germans, Scots, and colonists from the West Indies, Brunswick's culture quickly became very diverse. By the 1730s, Brunswick's settlement had attracted many different groups who were intent on recouping losses suffered during economic depressions of the early eighteenth century (Ekirch 1981). The Cape Fear residents were also distinguished from those of the Albermarle in that they tended to own larger tracts of land and had sufficient slave labor to work plantation crops. By the mid-eighteenth century, the wellestablished communities of the Albermarle and the newly developed town of Brunswick on the Cape Fear reflected a North Carolina society which was gradually becoming more stratified and differentiated.

Settlement along North Carolina's coast during the eighteenth century was influenced and hindered primarily by the factors of available trade and commerce. The lack of an accessible port and the treacherous coastline prevented trade and shipping from becoming as extensive as that of North Carolina's neighboring colonies of Virginia (the Chesapeake region) and South Carolina (Charleston). By the very nature of its coastline, only small sloops could bring in goods and travel from river to river distributing them. Their return cargoes generally were items such as produce which was not conveniently transported over land. Smuggling of goods was virtually inevitable because the coastline offered the opportunity for ships to unload goods before they saw the customs collectors and to take in goods before they were cleared (Saunders 1896). Therefore, by the early eighteenth century efforts were made to establish five major ports in order to regulate trade. British collectors were located at each of these ports and were responsible for regulating the trade activity. By far, the two most important and active ports were Brunswick and Roanoke in the town of Edenton. Due to the location and accessibility of these ports to farmers living further inland, not only was the best agricultural land important but the best water frontage was essential to this colonial trade. A well-developed road system had yet to be established in the early eighteenth century.

Not unlike other inhabitants within the Albermarle and Cape Fear regions, the owners of the two households used in this study were indicative of the people who were settling in these two areas. Based on the available archival information and the chain of title conducted on the property on which the Reid site was located, the first eighteenth-century owner was Solomon Pool. The earliest deed records indicate land transactions in which Pool owned approximately 300 acres of land on the east side of the Little River (Pasquotank County Deed Book n.d.) (Figure 1). Solomon Pool appears in some of the Quaker Monthly Meeting minutes for Pasquotank County for the early 1700s, as well as in other county records for the eighteenth century. Pool died in 1739, leaving his estate to his wife and their four children. Pool's youngest son, Jacob, received the family's plantation and one of Pool's slaves. Jacob Pool apparently died before reaching legal age and his portion of his father's estate went to his brother Solomon. Based on the land records and some reasonable assumptions, it appears that the Pool family continued to own this property until the latter half of the eighteenth century. After the 1780s, a precise line of ownership is somewhat vague.

Solomon Pool, as previously noted, was a fairly typical farmer of the Albermarle region. The 1740 estate records of Pool lists many items which were considered chattel property. As defined by Carr and Walsh (1980) in their study of Chesapeake societies, chattel property included all "moveables" or items which could be stolen or hidden from creditors or heirs if not listed in the public record. These moveables included such things as household items, furniture, clothing, tools, and any type of personal belonging. According to the estate inventory of Solomon Pool, he possessed many of these moveable items listed above as well as five slaves.

Nathaniel Moore, a brother of Roger and Maurice Moore, purchased a lot at Brunswick in the 1720s which had river frontage and was at the intersection of Front and Cross Streets (Figure 2). Nathaniel Moore also owned a larger plantation, York, further inland up the Cape Fear River (Lee 1965). By 1733 Nathaniel Moore had sold his Brunswick Town lot



Figure 1. Portion of Collett's 1770 map showing the Little River locality where the Reid site is located.

to Edward Scott, a mariner, who operated the ferry from Brunswick across the river to the "haulover" (New Hanover Deed Book n.d.). The house on the corner of Front and Cross Streets continued to be referred to as Nath Moore's Front despite the change in ownership. According to the court minutes in 1737, Edward Scott resigned as the ferry keeper and was issued a license to operate an ordinary in the basement portion of his home. Following Scott's death in 1744, the ownership of this lot was transferred



Figure 2. Close-up of Sauthier's 1769 map of Brunswick Town showing the location of Lot 29, known as Nath Moore's Front. Courtesy of Historic Sites Section, North Carolina Department of Cultural Resources.

several times. Unfortunately, the land records do not provide information regarding these later eighteenth-century transactions. Written accounts from the time suggest that Brunswick Town was practically deserted by the late 1770s when the British burned it. Only a few houses were occupied and for the most part the population of the lower Cape Fear had dispersed inland or had moved to the newly settled town of Wilmington further up the Cape Fear River.

Although extensive court and land records do not exist for Nathaniel Moore and subsequent land owners of lot 29 in Brunswick Town, some tentative assumptions may be made concerning the occupants' socioeconomic status. Nathaniel Moore, a member of the wealthy South Carolina family who first purchased and developed property along the lower Cape Fear, was part of this slowly emerging elite who settled this

section of the Cape Fear. Their primary interest in this small seaport was the potential business and export opportunities that could be generated.

The presence of the port and an unlimited supply of exports, especially the profitable naval stores industry, kept Brunswick Town a viable community until the mid-eighteenth century. While a great deal of Brunswick's trade was lost to Wilmington after it was founded in the 1730s, it prospered as a busy seaport on the Cape Fear during the first half of the eighteenth century. Scott's ordinary at Brunswick no doubt served as a place for socializing, food and drink, gaming, gambling, exchanging news, and generally conducting business transactions.

Previous Archaeological Research and Reevaluation

The Reid Site

Following an inspection of the Reid site in the spring of 1985, Clauser's initial findings prompted a brief week-long excavation of the site, including an intensive surface collection in the area of a brick concentration and probing to define the limits of this feature. Although the area had been extensively disturbed by plowing, the remains of a sizeable intact feature were found at the base of the plowzone. The feature consisted of a ballast-stone foundation with an intact brick floor. The dimensions of this structure were 10 ft by 16 ft. Contained within the feature was a 6-inch layer of intact archaeological deposits. The initial dating of this site seemed to indicate a very short time span between 1720 and 1750. The clay pipe stems which were recovered suggested a mean occupation date of 1746.9. The mean date for the ceramic assemblage indicated a somewhat later date of 1773. Stylistic dating of some of the pewter objects indicated a temporal span of 1700–1790.

Due to the relatively undisturbed condition of the Reid site, the eighteenth-century material was easily isolated. Except for three pieces of later ceramics (i.e., pearlware and whiteware), all of the ceramic material in the cellar fill and burn layer dated to the eighteenth century. A mean ceramic date for these layers was calculated to be 1775.6, corresponding with Clauser's mean ceramic date of 1773. Tobacco pipe-stem dates were reanalyzed using both the Harrington (1954) and Binford (1962) formulas. A mean pipe-stem date of 1765.8 was obtained, varying somewhat from Clauser's date of 1746.9. This variation could perhaps be based on different measurements taken.

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Based on the artifact assemblage from this site, it appears that the structure was destroyed and/or abandoned when it burned, sometime in the last quarter of the eighteenth century. The historical accounts also support this interpretation. Following the death of Solomon Pool in 1739, the house may have been occupied by his heirs until it burned in the later eighteenth century. Although the property may have stayed in the Pool family, an adjacent structure was most likely built in the vicinity of this house. Further testing would be able to confirm this possibility.

Nath Moore's Front

During the excavation of Nath Moore's Front in 1958, South identified a total of 16 individual features within structure S10, Nath Moore's Front (Figure 3). The structure measured approximately 21.5 ft by 30 ft and was divided into two rooms by a partition wall which was partially bricked. A consistent ash layer was noted throughout the structure, which indicated that the house had burned. For the most part, this ash layer sealed the intact eighteenth-century deposits of this house. Structure S10 was hit in 1865 by Union troops during the bombardment of Fort Anderson.

Based on the artifact assemblage, preliminary interpretations of this site were developed. The ceramics ranged from early-eighteenth-century types to late-nineteenth-century types. As a whole, the mean ceramic date for this site was 1794. South noted during his analysis that the site had probably been used as a dump as early as 1800, based on the low percentage of nineteenth-century ceramics found in the ash layer. The pipe-stem date of S10 was 1750 (South 1958).

The study of material from Nath Moore's Front was somewhat more difficult because of the extensive disturbances. Due to the "bomb burst effect" at this site (South 1958), much of the artifact assemblage was widely scattered. For the purposes of this study, only the ceramic assemblage from the intact eighteenth-century occupation layers was examined. The mean ceramic date for Nath Moore's Front was 1767.8, different from South's 1794 original mean ceramic date. The pipe-stem date of 1762 for Nath Moore's Front also differed from the original date of 1750 calculated by South. Nath Moore's Front may have been unoccupied for as many as 25 years prior to its destruction by fire in 1776 (South 1958). Features intrusive into the intact early to mid-eighteenth century deposits indicate the house and remains were being used as a secondary refuse dump possibly before the Revolutionary War.



Figure 3. Archaeological plan of Nath Moore's Front as drawn by Stanley South in 1960. Courtesy of Historic Sites Section, North Carolina Department of Cultural Resources.

Analysis and Results

As noted earlier, the Reid site assemblage was easily identifiable because it had been relatively undisturbed. The total site minimum vessel count of the Reid site represents a much larger number of eighteenthcentury ceramics, although there was a noticeable amount of later pearlware present. Of the 94 vessels, 54 (57.4%) were eighteenth-century ceramics. Of the isolated burn layer, 34 of the 43 vessels (86%) were of

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eighteenth-century manufacture. Various vessel forms of white salt-glaze stoneware, lead-glaze earthenware, tin-enameled earthenware, and slipware were represented. A very low percentage (5.5%) of porcelain was recovered. Most of the vessel forms were typical household or utilitarian objects; however, the presence of some of the more refined white salt-glazed stoneware, tin-enameled earthenware, and slipware may indicate access to an eighteenth-century market where popular or fashionable ceramics were available to those with the means to afford them.

Identifying the disturbance received by Nath Moore's Front presented more of a challenge in distinguishing the intact deposits. However, like the Reid site, an effort was made to determine the overall site vessel assemblage as well as that from the burned or ash layer. The total minimum vessel count for Nath Moore's Front includes a wide variety of ceramics of the eighteenth century. The minimum vessel count for the ash layer and yard showed a high percentage (59%) of refined eighteenthcentury ceramics, including diverse items such as teapots, candlesticks, and various other forms. The eighteenth-century ceramic assemblage of Nath Moore's Front reflects a somewhat more affluent socio-economic status of the occupant. Refined ceramics of English manufacture were present, as were more utilitarian vessels needed for daily use.

The artifact assemblage ratios from both the Reid site and Nath Moore's Front were compared to the artifact class frequency range of the Carolina Artifact Pattern (Table 1). Although there were some deviations from the mean average of the artifact assemblages, generally both sites' artifact class frequency ratios were within the range of the pattern.

Summary and Conclusions

The purpose of this study was to compare the artifact assemblages of two eighteenth-century households located in distinct regions of North Carolina's coast. Although there were many similarities in these two sites, their separate functions provided distinct differences in their assemblages. The Reid site represented a small, rural, isolated farmstead of the Albermarle region. Solomon Pool was a Quaker farmer of modest means who apparently could afford some extravagant purchases from time to time, as reflected in his estate inventory and the artifact assemblage. Nath Moore's Front at Brunswick Town represented a prosperous town residence in one of North Carolina's first coastal ports where trade and

Group	Reid Site (%)	Moore's Front (%)	Carolina Artifact Pattern Percent Range
Kitchen	58.6	67.5	51.8-69.2
Architecture	31.5	8.3	19.7-31.4
Furniture	0.2	1.4	0.1-0.6
Arms	0.7	1.6	0.1-1.2
Clothing	1.4	1.8	0.6-5.4
Personal	0.3	1.1	0.1-0.5
Tobacco	5.8	8.3	1.8-13.9
Activities	1.5	1.6	0.9-2.7

Table 1. Comparison of artifact class frequencies for the Reid site and Nath Moore's Front, using South's (1977) Carolina Artifact Pattern.

commerce were slowly emerging. Nathaniel Moore, and subsequently Edward Scott, were early tradesmen or entrepreneurs of the lower Cape Fear. Scott was certainly interested in the commercial or business opportunities which may have been realized in the newly established seaport community of Brunswick. Therefore, it would have been advantageous to maintain the best accommodations for the guests staying at his ordinary in order to succeed in this business enterprise. These accommodations most certainly would have included material goods which were of the recent, fashionable English export market.

The Reid site, on the other hand, may at first reflect the possessions of a less affluent, rural farmer in the relatively isolated Albermarle region. Although this may have been the case, other factors should certainly be considered before any final conclusions are made. Comparatively speaking, the structure at the Reid site was noticeably smaller, yet typical for this type of structure in the North Carolina tidewater area. Despite its size, it reflected a small but impressive hall and parlor type of structure (Clauser, personal communication 1989). Nevertheless, the material culture assemblage and probate inventories from the Reid site represent a middling farmer of moderate means who obviously had occasional opportunities to purchase imported goods of the time period.

Despite their geographical and cultural differences, both Pool and Scott were representatives of the newly emerging middling class that settled the Carolina coast and who would certainly establish themselves



Figure 4. Time range comparison of the Reid site with Nath Moore's Front. MSD indicates mean ceramic date; MSD indicates mean pipe-stem date.

by the latter half of the eighteenth century (Figure 4). The socio-economic differences of each site were no doubt closely related to their geographical and cultural variations. For example, based on the location of the structure and its convenient access to the port, Nath Moore's Front could be considered a well-built house of a typical middling person in one of North Carolina's first coastal towns. This house served as a private residence as well as an ordinary within an urban setting. In order to attract commercial business and remain competitive, this establishment no doubt maintained a wide range of material goods, especially those of English manufacture which would serve the clientele. This may have indeed reflected the easy access to the port and the continual import/export trade conducted at that locale.

Although the pattern recognition study proved to be useful in the analysis of these two sites' artifact assemblages, it was apparent that it can by no means be the sole basis for the comparison of the two sites.

Historical information certainly was important in providing insight into the function and analysis of both of these sites.

This research shows that for this type of study to be most useful, an even larger sample of similar household assemblages should be examined and a larger, more comparative approach would be much more useful. Other households at Brunswick Town and the lower Cape Fear could be examined, as well as house sites from the Albermarle region (if they exist) of the same time period.

Once these additional household assemblages have been analyzed for the two respective geographical regions, a third area—the section of the coast between the Albermarle and the Cape Fear—may be studied. Recommendations for studies on rural and urban eighteenth-century households from each distinct coastal area could be suggested. To that end, hopefully a better understanding of the settlement and development of the eighteenth-century coastal North Carolina society could be realized and documented. The Reid site and Nath Moore's Front at Brunswick Town are only two examples of typical households which were settled in the eighteenth century. No doubt a larger, comprehensive, intra-regional approach would contribute to a better understanding of North Carolina's eighteenth-century coastal development.

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THE ONCE AND FUTURE RESEARCH PROJECT: THE ROLE OF BRUNSWICK TOWN IN HISTORICAL ARCHAEOLOGY

by

Charles R. Ewen

Brunswick Town conjures up many fond memories of graduate school, even though I'd never been to North Carolina until taking my current position at East Carolina University. As a graduate student in Florida during the late 1970s and early 1980s it seemed that most of the theoretical works we read that dealt with pattern recognition made reference to Brunswick Town or emulated the work that had been done there. Little did I know that nearly 20 years later I would be involved in renewed research at the site.

The story of early archaeology at Brunswick Town is as interesting a tale as the history it worked to uncover. Much of the early fieldwork was done prior to the Cultural Resource Management (CRM) mandates that drive much of the archaeology in the country today. We are fortunate that this colonial city had been essentially abandoned and forgotten for two centuries and that the individuals that rediscovered and explored the town were well qualified to do so.

Unlike much of the nation, where state archaeology programs didn't arise until the passage of the National Historic Preservation Act in 1966, North Carolina's state archaeology program has been very active for the past 40 years. Besides handling the tedious CRM-oriented compliance duties, the staff archaeologists find time to actually *do* fieldwork and even publish their findings from time to time (an heroic feat for most state employees). But most commendable is the breadth of archaeological topics encompassed, specifically historical archaeology.

Historical archaeology did not gain respect as a legitimate subfield of archaeology until the American Bicentennial. Before this time, many states required that little, if any, attention be paid to historic properties during CRM-funded surveys. Sad to say, some states are still writing off historic sites or are only interested in their above-ground component.

However, as my colleague Hester Davis (Arkansas' State Archaeologist) used to tell me, "Every historic structure rests on an historical archaeological site" (I've since found this to not be entirely true; half the historic structures in New Bern have been moved to another lot). The early archaeologists in North Carolina apparently already realized the merit in Davis' statement and had been pursuing historical archaeology from a very early date.

Nowhere is the interest in historical archaeology in North Carolina more apparent than in the legacy of Stanley South. From the late 1950s to the early 1970s, South was very active all over the state, from the mountains to the coastal plain. Since I have been here, I have not investigated an historic site without having found that South had been there before me.

I have heard mutterings by people working on some of the various sites Stan visited that they wish he had published more and I'm sure no one would agree with that sentiment more than Stan himself. Given the nature of his job with the state, however, he *has* published an astonishing amount and continues to do so (e.g., *Wachovia Archaeology* is now at Plenum Press). Indeed, his publishing record is enviable to the extent that I often wonder when he found time to dig!

My first acquaintance with the work of Stanley South was through the excavations at Brunswick Town. His *Method and Theory in Historical Archaeology* (1977), which is largely based on his work at Brunswick Town, was required reading in graduate school. The data from this site form the basis of his now-famous artifact pattern recognition studies (e.g., the Brunswick Pattern and the Carolina Pattern). Unfortunately, most of the basic site-report type of information was never published outside of inhouse reports for the Historic Sites Section.

Current Research at Brunswick Town

Historical archaeology came of age during the push for a scientific, processual archaeology. South's work at Brunswick Town certainly reflects this archaeological paradigm. Artifacts were sorted and quantified into various functional categories, then numbers were crunched, and patterns were delineated. It seemed to me at the time that the story of Brunswick Town had been told and that the hypotheses formulated there should be tested elsewhere. Whether or not this was the reason, little archaeology was conducted at the site after South's decade of investigation. As the preceding articles indicate, however, after a nearly 30-year hiatus, there is renewed archaeological interest in the site and its vast collection of artifacts.

The present revival of interest in the archaeology of Brunswick Town does not include new fieldwork, though this surely is the next step.

Rather, this renewed interest begins with a reexamination of some of the previously excavated data in light of new archaeological questions. The articles in the recent Brunswick Town symposium (and published here) can be divided into two themes: artifact studies and processual studies.

Artifact Studies

Loftfield and Stoner's reexamination of the Brunswick Town colonowares is a timely study that reflects current archaeological concerns with historically disenfranchised groups. It clearly demonstrates the reason why we bother to curate collections after they've been analyzed and reported. We actually do need to go back and reexamine material in light of later discoveries!

Based upon a reanalysis of formal, stylistic, and technical attributes (cf. Wheaton & Garrow 1985) and correlating this information within the context of discovery, Loftfield and Stoner propose that the Brunswick wares were most likely manufactured and used by enslaved African-Americans rather than the local Indian population (as previously hypothesized). This comes as no great surprise as the presence of African-American pottery on colonial sites is now generally accepted (see Ferguson 1992 for more examples).

Next, the focus should shift from form to function. We know who made this pottery, but what was its purpose? If it was being made on plantations, how did it get into town and why? With some of the basic descriptive issues in hand, we can now pursue questions of a social and economic nature as they pertain to these wares and their use.

Beaman's examination of delft tiles from Brunswick Town further demonstrates that basic description is a necessary first step before considering how artifacts reflect socioeconomic issues. A more intersite comprehensive study of these tiles is currently lacking but sorely needed as more and more are discovered at other early colonial sites in North Carolina and elsewhere (i.e., Virginia). As Beaman notes, a few tile fragments were discovered at the Eden House site (Lautzenheizer 1997), and a thorough analysis of the material remains uncovered during the 1950s reconstruction of Tryon's Palace in New Bern may yield evidence of more tiles.

Again, the compilation of this kind of baseline data must precede a more comprehensive look at status differentiation and consumer choice. Future archaeological work at Brunswick Town will add to this database and help refine the interpretations of class variability and possibly the ideology reflected in the choice of decorative themes. Comparison with other sites in North Carolina and elsewhere should test the applicability of the Brunswick Town-derived models.

Mintz and Beaman's olive and oil jar study has important implications for detecting Spanish interactions with the British colonies. Having spent much of my professional career digging on Spanish colonial sites (see Ewen 1991, n.d.), I have seen more olive jar sherds than I care to remember. Excavations at Brunswick Town have yielded a small amount (<100 sherds) of confirmed Spanish olive jars. The interesting question here is how does this type of ceramic get into British sites? English ceramics were considered superior in almost every respect to their Spanish-made counterparts. They were more readily available, especially in light of the restrictions on trade between the Spanish and British colonies, and cheaper to boot. So what were these ceramics doing in Brunswick Town?

South's hypothesis that the olive jar sherds are remains from the brief Spanish occupation of Brunswick Town in 1748 seems most likely, as pointed out by Mintz and Beaman. This would better account for the small number of this type of ceramic, although further excavations may yield greater quantities of olive jar and force a reassessment of this hypothesis. The fact that these vessels, especially the terra cotta-like, large variety, are almost never encountered on Spanish sites seems to belie their Iberian roots, as suggested by Noël Hume in his *A Guide to Artifacts of Colonial America* (1978). Perhaps there is no single answer, but the question prompts further investigation into the role of the Spanish in early colonial North Carolina.

Processual Studies

The remainder of the contributions to the Brunswick Town symposium fall into the category that, for want of a better term, I have called processual studies. My intent was to distinguish them from the artifact studies, but the choice of terms may be unfortunate since those topics which are often called post-processual would fall into this category as well. In any event, these investigations move beyond baseline descriptions of artifacts and examine the larger socioeconomic issues relating to Brunswick Town.

Robinson's examination of the naval stores industry in North Carolina puts Brunswick Town into a global perspective. The origin of the tar, pitch, and turpentine industry is not a particularly sexy topic, but it is important to understanding Brunswick Town's *raison d'etre*. In fact, the archaeology of the naval stores industry is crucial to understanding the early coastal history of North Carolina.

The specific contributions that future archaeological work can make to understanding Brunswick Town's role in this global economy *is* exciting to contemplate. The questions that Robinson is asking concerning the commercial waterfront facilities can also be applied to other eighteenth-century North Carolina port towns such as New Bern and Edenton. They would also complement the research in New Bern concerning the accuracy of the 1769 Sauthier maps and their reliability as a research tool. Their accuracy has been unchallenged to date and only archaeology can confirm or deny this belief.

Anna Gray's contribution is, no doubt, what South had in mind when he started developing his archaeological patterns. Although pattern recognition studies are not as popular in the literature as they were in the 1970s, her article clearly demonstrates their utility. Her suggestion that the coast between the Albemarle and Cape Fear would nicely complement her comparisons of the Reid Site and Nath Moore's Front, would seem to make East Carolina University's archaeological program at New Bern a likely place to pursue further testing of the Carolina Pattern.

What is Left to Learn?

The fact that Stanley South dug for a decade at Brunswick Town and uncovered nearly half of the known foundations (23 out of 60) from the 1769 Sauthier map, would prompt some to question the viability of further research there. Surely Stan got all the good stuff. What's left is only the mopping-up operation that is routinely assigned to graduate students. However, only a moment's reflection is necessary to deny this assumption.

The "new" archaeologists of the 1960s and 1970s felt that an objective, scientific archaeology produced interpretations that would be free of investigator bias. However, as Bruce Trigger (1989:13) observed more recently, "Other archaeologists believe that, because their discipline's findings concerning the past are consciously or unconsciously seen to have implications for the present or about human nature generally,

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changing social conditions influence not only the questions archaeologist ask but also the answers they are predisposed to find acceptable." Archaeology today is looking more at "the people without history" such as the enslaved and the lower classes. Community studies are becoming possible as sufficient data from single localities are amassed. Brunswick Town, far from being tapped-out archaeologically, is in an ideal position to pursue some of these current themes.

Although our knowledge of material culture has come a long way in the past three decades, the papers in this volume indicate that we still have a long way to go. These studies go beyond the merely descriptive and attempt to place the artifact in its historical context. The functional and social information derived from these artifacts are pivotal to a better understanding of the people who actually used them.

The reexamination of the early work at Brunswick Town should remind us that there is still a place for the scientific approach in this postprocessual world. In fact, the two approaches are more complementary than contradictory. Most archaeologists who talk post-processual in terms of theory actually do processual archaeology in terms of methodology. Hypothesis testing is as popular as it ever was.

Having said that, it should be noted, in terms of Brunswick Town, that South's ideas are not etched in stone. Testing and disproving hypotheses is how science advances. South (1977:35–39), himself, set out a procedure of how to proceed with a testing program or pattern recognition process. This basically involves inductively arriving at hypotheses and deductively testing them. Eventually, nomothetic paradigms (law-like generalizations) are derived and predictions can be made about what we will find in the archaeological record.

So, South's work is not the last word in pattern recognition, rather it should inspire more such pattern delineation. These patterns should be tested and refined at sites of similar chronological and ethnic nature. After the patterns have withstood repeated testing, they can be applied to sites occupied by different peoples and different time periods. Thus, eighteenth-century British sites can be compared to eighteenth-century Spanish sites or patterns developed on eighteenth-century British sites can be tested on seventeenth-century British sites. This is something that historical archaeologists have been calling for for a long time, but the specialization of researchers into various regions and time periods often precludes the implementation of such research.

In the positivistic euphoria of the 1970s, South (1977:39) boldly predicted that, "By the mid-1980s, it is hoped, many such [pattern recognition] studies will have been published, studies defining the patterned regularity of the empirical record with the goal of explaining the law-like regularities and variability in terms of the cultural processes responsible." The publications were not as numerous as predicted, and many anthropologists today seriously doubt whether human behavior can be explained in terms of general laws. Who knows what the millennium will bring? No matter what the current paradigm, there will always be a place for sound archaeological research at a productive site. Brunswick Town has only begun to be mined for the wealth of data it contains.

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LIMESTONE- OR MARL-TEMPERED CERAMICS

LIMESTONE- OR MARL-TEMPERED CERAMICS FROM THE LOWER CAPE FEAR RIVER REGION, NEW HANOVER COUNTY, NORTH CAROLINA

by Thomas Hargrove and Jane M. Eastman

In 1992 and 1993, Archaeological Research Consultants, Inc., conducted excavations for archaeological data recovery at 31NH142 (Hamp's Landing) on the east bank of the Cape Fear River between Wilmington and Carolina Beach (Figure 1). "Hamp's Landing," the locally recognized name for this point of land on the Cape Fear River, derives its name from Hamp Sanders, a freedman who owned the landing and an adjacent house (no longer standing) in the late nineteenth century. The data recovery focused on Woodland components in areas scheduled for construction of a public park and boat landing by the New Hanover County Department of Parks and Recreation, which also sponsored the archaeological excavations. Archaeologists from the University of North Carolina at Wilmington had tested the site in 1992 and reported the presence of prehistoric shell-filled features and vertical separation of Woodland components in some sections of the site (Legg and Loftfield 1992). In June 1992, the North Carolina State Historic Preservation Officer (SHPO) agreed that the site appeared to be eligible for nomination to the National Register of Historic Places under Criterion D (the potential to provide information on prehistory, specifically the Late Archaic and Woodland occupations of coastal North Carolina). The SHPO called for a program of data recovery through excavation of eight square meters in site Area B (a higher area in the eastern part of the site) and 24 square meters in Area C (an area in the lower, western part of the site, closer to the riverbank and the landing).

In December 1992 and January 1993, Archaeological Research Consultants, Inc. conducted excavations in Areas B and C of the site (Hargrove 1993). Jane Eastman (Research Laboratories of Archaeology, University of North Carolina at Chapel Hill) identified the prehistoric pottery and recognized a type previously undefined for the lower Cape Fear River basin. Area B yielded 96 sherds of an unusual, limestonetempered pottery with plain or faintly thong-marked surfaces. Almost all of these limestone-tempered sherds came from Level 3 of squares B5, B7, and B12. In Area C, the excavators found concentrations of Middle



Figure 1. The southern coast of North Carolina, with reported locations of marl- or limestone-tempered sherds.

Woodland Hanover and Cape Fear sherds in upper and intermediate levels and limestone-tempered sherds and Early Woodland Thom's Creek sherds in the lower levels. In some cases, the lower distributions of Middle Woodland sherds overlapped with the upper distributions of the Thom's Creek and limestone-tempered sherds. In Area C, the 105 limestonetempered sherds with recognizable surfaces fell into three categories: cordmarked, fabric-impressed, and irregularly punctated.

The limestone-tempered sherds found in the lower levels of the site appear to represent a so-far undefined type in coastal North Carolina (Figure 2). We suggest that this ceramic type, which we call "Hamp's Landing," preceded the Middle Woodland Cape Fear and Hanover ceramic series, and may succeed, or be contemporary with, the Early Woodland Thom's Creek ceramic series.

Description of the Hamp's Landing Ceramic Series

Sample Size

The description of the Hamps Landing ceramic series is based on the analysis of 201 potsherds.

LIMESTONE- OR MARL-TEMPERED CERAMICS



Figure 2. Hamp's Landing limestone-tempered sherds from 31NH142: (*a*) plain; (*b*) faint thong-marked; (*c*-*d*) cord-marked; and (*e*) fabric-impressed.

Paste and Temper

The angular, blocky voids that stand in for the now-leached-out temper particles (possibly local marl) are definitely not the flat, plate-like voids created when crushed shell leaches out of Late Woodland shelltempered sherds. (For descriptions of Oak Island and White Oak shell-

tempered series, see South 1976 and Loftfield 1976, respectively. For a recent re-assessment of shell-tempered ceramic series on the southern coast of North Carolina, see Herbert and Mathis 1996.) A few Hamp's Landing sherds from 31CR218 (the Broad Reach site in Carteret County, North Carolina) still had unleached particles of marl or limestone (Herbert and Mathis 1996:145). The Hamp's Landing temper voids at 31NH142 range in size from 4 mm down to pinholes, but the average void is about 1 mm in diameter. The density of the former tempering agent in the paste varies greatly, suggesting incomplete mixing of the inclusions. In some sherds, the voids create an effect like Swiss cheese, with 20 or more voids per square centimeter of sherd surface. The sherds tend to be quite fragile and friable. This friability may explain why over half of the limestone- or marl-tempered sherds have surfaces too eroded or otherwise too damaged for identification. The sherds tend to be well oxidized throughout the fabric, with colors of reddish yellow or light brown.

Calcareous marl is widely distributed in eastern North Carolina. In the first half of the nineteenth century, farmers in the region commonly mined small outcrops of marl for use as agricultural lime. By the midtwentieth century, many of the recorded outcrops of marl had disappeared as a result of mining or river bank erosion, although some major outcrops have survived at places like Neils Eddy Landing on the bank of the Cape Fear River in Columbus and Brunswick counties (Richards 1950). The Hamp's Landing potters could have selected the temper from nearby outcrops in the lower Cape Fear River basin, including outcrops of Pleistocene coquina or shell limestone on the ocean shoreline at Fort Fisher or at Snow's Cut, only a short walk south of the Hamp's Landing site (Mark Wilde-Ramsing, personal communication; Carter 1988:42; Gallagher 1989:9).

Thickness

The body sherds range from 4.5 mm to 8 mm in thickness, with a median thickness of 5.5 mm.

Surface Treatments

The exterior surface treatments on the 96 sherds from Area B include surfaces that are very faintly thong-marked (about 52%), plain (21.8%),

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and cord-marked (2%). Almost one-quarter (23.9%) of the limestonetempered sherds from Area B were too badly damaged or too small for surface identification. The thong-marking is a fainter example of the thong-marking technique also used on Hamp's Landing sherds from the Riegelwood sites in Columbus County (Lautzenheiser et al. 1997). The "thongs" used for making the impressions appear to have been flattened bands of unidentified material, approximately 2 to 3 mm wide, arranged in closely spaced, occasionally overlapping rows. In Area C, the surface treatments include cord-marked (26.9%), fabric-impressed (11.5%), irregularly punctated (5.7%), and plain (less than 1%). Sherds with unidentifiable, eroded surfaces made up almost 55% of the limestonetempered sherds from Area C. If we group the limestone-tempered sherds from both areas together, the frequency distribution of surface treatments is as follows: faintly thong-marked (24.8%), cord-marking (14.9%), fabricimpressed (5.9%), irregularly punctated (2.9%), plain (10.9%), and too eroded for surface identification (40.6%). The cord impressions represent both Z-twisted and S-twisted cordage, with cord diameters ranging from 1 mm to 2.5 mm.

Table 1 provides a comparison of surface treatments on Hamp's Landing limestone-tempered ceramics and ceramics described as shelltempered from the southern coast of North Carolina (Coe et al. 1980; Loftfield 1976). The clearest difference is in the common use of cordmarking and thong-marking on Hamp's Landing ceramics and the rarity of those surface treatments on shell-tempered ceramics reported from the southern coast of North Carolina.

Decoration

Decorative devices are very rare in this sample. One small sherd had possible incisions on its exterior.

Lip and Rim Forms

Rim and lip forms tend to be quite simple, with straight-sided rims and rounded lips (occasionally slightly flattened). One cord-marked rim sherd had a flattened lip with V-shaped notches on the rim interior. Another cord-marked rim sherd had U-shaped notches on the rim interior.

Table 1.	Percentage	Distribution	of Surface	Treatments	on Hamp's
Landing,	Oak Island.	, and White (Dak Series	Ceramics.	

Collection	Cord	Fabric	Net Thon		Thong	Irregularly	
	Marked	Impressed	Impressed	Plain	Marked	Punctated	Unknown
Hamp's Landing	14.9	5.9	0	10.9	24.8	2.9	40.2
Oak Island ¹	2.2	0	0	88.5	0	0	9.3
White Oak ²	1.2	81.5	0.2	16.5	0.5	0	0

¹ as reported from 31NH28 (Coe et al. 1980). ² as reported by Loftfield (1976).

Vessel Size and Shape

Overall vessel size and shape cannot be determined from available sherd samples; however, one sherd from a vessel with a conical base was found

Geographical Range

The geographical range of the Hamp's Landing series is still uncertain, since limestone- or marl-tempered pottery does not seem to have been formally recognized on the North Carolina coast until recently. It is possible that specimens have been collected in coastal North Carolina but have been classified as Late Woodland shell-tempered pottery, because both types have a "hole-tempered" appearance after the temper leaches out of the sherds. (For further discussion of the problem of classifying limestone-tempered sherds versus shell-tempered sherds, see Herbert and Mathis 1996:151–152). Examples of cord-marked and simple-stamped sherds with marl or limestone temper recently have been found as far north as the Broad Reach site (31CR218) on Bogue Sound in Carteret County, North Carolina (Mark Mathis, personal communication), about 65 miles northeast of the lower Cape Fear River. Marl- or limestone-tempered sherds with cord-marked, thong-marked, net-impressed, plain, fabricimpressed, and brushed exteriors also have recently been identified at 31CB84, 31CB99, and 31CB114 near the Cape Fear River below Riegelwood, North Carolina (Lautzenheiser et al. 1997), about 30 miles northwest of Hamp's Landing. Finally, recent excavations at 31ON190 on Topsail Island in Onslow County, North Carolina have

recovered limestone- or marl-tempered, fabric-impressed sherds (Jones et al. 1997; see below).

In the Wando River basin of South Carolina, Adams and Trinkley (1993) have identified a cord-marked and check-stamped pottery with limestone temper, which they have named "Wando," but its temporal position and possible relationship with the Hamp's Landing series are unknown. Wando is discussed further under "Regional Comparisons" (below).

Stratigraphic and Chronological Position

In common with other areas of the tidewater coastal plain, the sandy soils at Hamp's Landing retain little or no evidence of naturally stratified levels in the soil, so we relied heavily on post-excavation analysis of the ceramics to establish stratigraphic relationships. In the absence of natural stratigraphy, each of the 32 one-meter squares was excavated in 10-cm levels. Identification of the sherds within each 10-cm level led to an identification of stratified cultural deposits (with some overlapping) containing a predictable sequence from Early Woodland Thom's Creek sherds in the lowest levels to Middle Woodland Hanover and Cape Fear sherds in the upper levels. The excavations unexpectedly provided a bonus in the unpredicted appearance of limestone-tempered sherds in a level between or slightly overlapping the levels containing the recognized Early Woodland and Middle Woodland types.

Other Ceramics Identified at Hamp's Landing

Since the identification of previously recognized coastal ceramic types is crucial for the interpretation of the Hamp's Landing series, we have included a discussion of the other ceramics identified by Jane Eastman from the 1993 excavations at Hamp's Landing.

Thom's Creek Ceramics

Early Woodland Thom's Creek pottery (2200–900 B.C.) is tempered with sand or is untempered. The surface finish is usually smoothed. Decorations can include incising, simple stamping, punctations, and finger-pinching (Trinkley 1989:73–74). The 31NH142 examples were chiefly punctated with reeds, dowels, or fingernails. The sand temper ranged from fine sand to 1-mm particles. Thom's Creek sherds made up

16% of the 1,088 sherds from Area C, where the type was largely restricted to the lowest cultural levels. The most common Thom's Creek surface treatment was fingernail punctate (75.3% of the Thom's Creek group), followed by reed or dowel punctations (20%), square dowel punctations (3.5%), and U-shaped punctations (1.18%).

Cape Fear Ceramics

Middle Woodland Cape Fear pottery has sand-and-grit temper and exterior surfaces marked with fabric impressions, cord marks, net impressions, incisions, or smoothed surfaces (South 1976). A similar variety found north of the Neuse River basin has been named "Mount Pleasant" (Phelps 1983). Cape Fear sherds made up the second-largest percentage of the ceramics recovered during the recent excavations (23% of the 371 sherds from Area B and 17% of the 1,088 sherds from Area C). Cord-marking (76.75%) and fabric impressions (22.9%) were the most common surface treatments on Cape Fear ceramics from 31NH142. The temper was coarse sand (1 to 2 mm particles, with a few grains up to 4 mm).

Some archaeologists have expressed misgivings about the Cape Fear type. The highly variable temper type is much too broad, they say, and can actually encompass Early Woodland Deep Creek types as well as Middle Woodland Cape Fear types (Coe et al. 1980:29; Legg and Loftfield 1992:16; Trinkley 1989:79). Based on late radiocarbon and thermoluminescence (TL) dates for Cape Fear ceramics, one archaeologist has expressed doubts about regarding Cape Fear solely as a Middle Woodland series (Herbert 1997:30). To add more confusion to the problem, we should also point out that temper types, which we often use as cultural and temporal markers in ceramics, are also heavily influenced by technological and use factors. An individual potter may vary temper types, sizes, or density from pot to pot or even in a single vessel, depending on the workability of the clay or the intended purpose of a particular vessel. Temper size, type, and density can vary, depending on whether a potter wants thermal shock resistance for cooking, mechanical shock resistance for serving or storage, or porosity for some types of liquid storage (Steponaitis 1983:33-45).

Radiocarbon dates for Cape Fear ceramics are scarce. One Cape Fear phase site (31CD1) in Cumberland County, North Carolina provided a calibrated radiocarbon date of A.D. 1028 (with a one-sigma range of A.D. 976–1212) (Eastman 1994:21), considerably later than the date of A.D.

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800 suggested by Phelps (1983) for the conclusion of the Middle Woodland period on the coastal plain. A recent thermoluminescence analysis of a Cape Fear sherd from the Papanow site on the lower Cape Fear River yielded another post-Middle Woodland date of A.D. 1319 ± 192 years (Herbert 1997).

Hanover Ceramics

Middle Woodland Hanover pottery is cord-marked or fabricimpressed and tempered with clay or broken potsherds ("grog") (South 1976). Hanover sherds made up the largest percentage of sherds from Area B (41% of 371 sherds) and Area C (30% of 1,088 sherds). As with other large Hanover collections from the southern coast of North Carolina (Coe et al. 1980; Loftfield 1976; South 1976), the 31NH142 Hanover sherds were dominated by fabric-impressed surfaces (about 65%), with cord-marked surfaces a distant second (about 14%), reversing the relative frequencies of cord-marked and fabric-impressed surfaces seen in the definition of the Cape Fear series.

Radiocarbon dates for Hanover and other clay-tempered ceramics from coastal Carolina (including Wilmington ceramics from the southern coast of South Carolina) range widely. Hanover sherds in South Carolina have been dated as early as 280 B.C. (Eastman 1991:10), and Wilmington sherds have been dated as late as A.D. 1120. Two radiocarbon dates associated with clay-tempered pottery in North Carolina have recently been calibrated to A.D. 538 (Wilde-Ramsing 1982) and A.D. 445 (Mathis 1993). One radiocarbon date associated with Hanover sherds from 31NH142 (calibrated to A.D. 646 with a one-sigma range of A.D. 604-666; Beta-63183) tends to confirm this estimate. A second, much later, date from the Hanover component at 31NH142 (calibrated to A.D. 1222 with a one-sigma range of A.D. 1162–1278; Beta-63184) may be anomalous (Hargrove 1993). Thermoluminescence analyses on Hanover sherds from two lower Cape Fear River sites yielded dates of A.D. $173 \pm$ 228 years and A.D. 680 ± 145 years (Herbert 1997). Another recent thermoluminescence test of a Hanover sherd from Camp LeJeune in Onslow County, North Carolina, yielded a date of A.D. 621 ± 246 years (Reid and Simpson 1997).

Sand-tempered Ceramics

Sand-tempered pottery was found during the 1993 excavations at 31NH142, but its cultural association is uncertain. These sherds made up 10.5% of the sherds from Area B and 24% of the sherds from Area C. They were found throughout the excavated levels, but they tended to be more abundant in the lowest levels in Area C, possibly contemporary with the Early Woodland Thom's Creek component. Some of these sandtempered sherds may fall in the Early Woodland New River series, which (as defined by Loftfield 1976) features sand tempering with cord-marked, fabric-impressed, plain, simple-stamped, and net-impressed types. Some of these sand-tempered sherds in the upper levels may also represent types that could be classified as later Cape Fear ceramics, pointing up the difficulties of applying the definition of the sand-and-grit tempered type. Most (45.8%) of the sand-tempered ceramics have exteriors too eroded or otherwise too damaged for identification. An almost equal percentage (45.5%) have plain exteriors. Very small numbers are cord-marked (3.3%), brushed (2.2%), fabric-impressed (1.66%), or burnished (1.38%).

Discussion

Table 2 and Figure 3 show the stratigraphic relationship of the ceramics from the five one-meter squares in Area B where Hamp's Landing sherds were found. (The three eastern squares in Area B produced no Hamp's Landing sherds.) Tables 3 and 4 and Figures 4 and 5 show the stratigraphic relationship of the ceramics from four one-meter squares in Area C where Hamp's Landing sherds were found.

Hamp's Landing pottery is probably not a variant of the Late Woodland shell-tempered types, since the stratigraphic position of the sherds suggests that they fall chronologically between Early Woodland Thom's Creek ceramics and Middle Woodland ceramics (Hanover and Cape Fear). The Hamp's Landing sherds were not found in association with any organic remains that might produce radiocarbon dates; however, the Hanover sherds in Area C were associated with small, shell-filled features, providing radiocarbon dates helpful for relative dating. Oyster shells from a small, shallow feature in Square C4 produced a calibrated radiocarbon date of A.D. 646 (with a one-sigma range of A.D. 604–666; Beta-63183), which falls within the predicted range for Middle Woodland Hanover sherds. This feature was found in the square's Level 2 and appeared to intrude into Level 3. Although the feature did not contain any

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Level No.	Hanover (MW)	Cape Fear (MW)	Thom's Creek (EW)	Hamp's Landing	Sand Tempered	Other
Level 1	16 (72.7)	3 (13.6)	0	2 (9.1)	1 (4.5)	0
Level 2	56 (55.4)	35 (34.7)	0	0	7 (6.9)	3 (2.9)
Level 3	14 (12.6)	38 (34.2)	0	52 (46.8)	6 (5.4)	1 (0.9)
Level 4	1 (3.4)	4 (13.8)	0	14 (48.3)	6 (20.7)	4 (13.8)

Table 2. Stratigraphic relationships of ceramic types in Area B, with numbers of sherds and percentages (in parentheses) within levels.



Figure 3. Stratigraphic relationships of ceramic types in Area B, presented as a Fordean diagram.

sherds, it seemed to be associated with the Hanover sherds that dominated Level 2 and made up a large percentage of the sherds in Level 3. If this interpretation is accurate, the marl- or limestone-tempered Hamp's Landing sherds in Levels 3, 4, and 5 pre-date the Middle Woodland Hanover component and its seventh century A.D. date. A second radiocarbon date from the site complicates the picture, however. Another small, shell-filled feature in Squares C6 and C9 contained 10 Hanover sherds, but the calibrated radiocarbon date (Beta-63184) from oyster shells in the feature is A.D. 1222 (with a one-sigma range of A.D. 1162–1278). This date is considerably too late for the currently accepted time range for Hanover ceramics.

Archaeological excavations recently conducted at 31ON190 on Topsail Island in Onslow County, North Carolina (Jones et al. 1997) recovered a number of Hamp's Landing sherds, including several from a dated feature. The calibrated radiocarbon date intercept is 1945 B.C., with a one-sigma range of 1855–2030 B.C. (Beta-104165). The 31ON190 excavators expressed misgivings about the early age of the date

Table 3. Stratigraphic relationships of ceramic types in adjoining Squares C4 and C10, with numbers of sherds and percentages (in parentheses) within levels.

Level No.	Hanover (MW)	Cape Fear (MW)	Thom's Creek (EW)	Hamp's Landing	Sand Tempered	Other
Level 1	4 (57.1)	0	0	0	2 (28.6)	1 (14.3)
Level 2	14 (73.7)	2 (10.5)	0	0	2 (10.5)	1 (5.3)
Level 3	6 (35.3)	0	0	6 (35.3)	4 (23.5)	1 (5.9)
Level 4	0	0	2 (8.3)	14 (58.3)	8 (33.3)	0
Level 5	0	2 (14.3)	1 (7.1)	5 (35.7)	0	6 (42.9)
Level 6	0	0	2 (33.3)	0	4 (66.7)	0



Figure 4. Stratigraphic relationships of ceramic types in adjoining squares C4 and C10, presented as a Fordean diagram.

for Hamp's Landing ceramics and suggested that the date was more appropriate for a posited Late Archaic component at the site. Given the earlier dates for Thom's Creek ceramics, however (see above), this radiocarbon date does not seem out of line.

Regional Comparisons

Limestone-tempered ceramics have been found as minority wares in coastal South Carolina, chiefly in Horry (M. Mathis, personal communication), Charleston, and Berkeley counties. The surface treatments include simple stamping, check stamping, cord marking, and fabric impressions. This pottery may be contemporary in South Carolina with Deptford ceramics (C. Espenshade, personal communication).
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Table 4. Stratigraphic relationships of ceramic types in adjoining Squares C6 and C9, with numbers of sherds and percentages (in parentheses) within levels.

Level No.	Hanover (MW)	Cape Fear (MW)	Thom's Creek (EW)	Hamp's Landing	Sand Tempered	Other
Level 1	4 (36.4)	3 (22.3)	0	2 (18.2)	2 (18.2)	0
Level 2	8 (61.5)	2 (15.4)	1 (7.7)	0	2 (15.4)	0
Level 3	33 (78.6)	0	1 (2.4)	2 (4.8)	1 (2.4)	5 (15.6)
Level 4	11 (19.6)	0	17 (30.4)	14 (25.0)	0	14 (25.0)
Level 5	0	0	44 (41.1)	4 (3.7)	15 (14.0)	44 (41.1)
Level 6	1 (7.7)	0	2 (15.4)	0	7 (53.8)	3 (23.1)



Figure 5. Stratigraphic relationships of ceramic types in adjoining squares C6 and C9, presented as a Fordean diagram.

Deptford ceramics have been dated in South Carolina as early as about 1045 B.C. and in Georgia as late as about A.D. 935, although a narrower time span of 500 B.C. to A.D. 600 has also been proposed (Trinkley 1989:79). A range of about 600 B.C. to A.D. 500 has also been proposed for Deptford (Anderson 1996).

A type of coastal limestone-tempered pottery was reported in South Carolina from Charleston County's Wando River basin by Adams and Trinkley (1993:56,64–68), who called their examples "Wando." The Wando cord-marked and check-stamped types contain large amounts of crushed limestone particles, ranging from 0.5 mm to 6 mm. The type appears to be restricted to the Wando River basin in South Carolina. No dates are available for Wando pottery so far. Espenshade has suggested that "In all attributes except for aplastic type, the Wando series parallels

the Deptford series. . . . [T]his is distinct from Hamp's Landing and much more recent" (C. Espenshade, personal communication).

Discussion

The identification of the Hamp's Landing ceramic series may require some re-working of the current prehistoric ceramic chronology for southeastern North Carolina. The sequence no longer looks like a mirrorimage of the chronology for northeastern North Carolina, but the significance of this difference is unclear. If we assume that Hamp's Landing ceramics are a true chronological and regional marker (and not just the result of an occasional, opportunistic use of easily crushed marl outcrops), then what are the wider implications for coastal prehistory? Do Hamp's Landing ceramics represent a distinct Woodland phase with cultural significance or only a minority type within the larger scheme? Did the crushed marl or limestone serve a function that sand, crushed quartz, or clay did not?

One possible functional explanation for the Hamp's Landing temper type is that the limestone might have been used for vessels with a specialized technological purpose, differing from the more common quartz- or clay-tempered vessels of the Early and Middle Woodland periods on the North Carolina coast. A study of changing temper types in the prehistoric pottery of the lower Illinois River Valley led David Braun (1983) to suggest that changes in temper were related to changes in the types of foods cooked in the vessels. Seedy foods require longer cooking times, leading to greater thermal shock and higher breakage of cooking vessels, especially pots with quartz-based tempers, which have a higher rate of heat expansion than the surrounding clay. To adjust for this tendency, a potter may add smaller grains of quartz or sand to her clay, or she may use crushed shell, which has a rate of thermal expansion similar to clay and causes less stress during heating. Crushed limestone may have the same thermal expansion characteristics as shell. We might want to keep in mind that marl or limestone additives in clay might imply a specialized technological choice, rather than a stylistic one. At a time in coastal prehistory when most vessels were tempered with sand or grit, was the "Hamp's Landing" pottery perhaps a specialized type of cooking vessel? Does the later appearance of shell-tempered vessels in Late Woodland coastal settlements imply a new reliance on seedy foods (e.g., maize), requiring longer cooking times? Espenshade (personal communication) has noted that the marl or limestone temper in Hamp's

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Landing vessels could be a function of temper size rather than chemistry, with very coarse limestone grains filling the functional equivalent of grog in Hanover ceramics and quartz particles in Yadkin ceramics (and implying the contemporaneity of the three types in the Middle Woodland period, rather than the Early Woodland period).

Limestone and shell tempers have other technological characteristics as well. During the firing of vessels with deliberate or accidental inclusions of calcium carbonate in the form of limestone or shell, the calcite decomposes and forms lime at temperatures around 870° C (or according to various sources, as low as 650° and as high as 900°). When the vessel cools, the lime absorbs moisture from the atmosphere, expands, and causes cracking and spalling of the vessel wall. This damage can occur weeks or months after the firing. The potter's solutions can include crushing the temper into very fine particles, adding salt to the clay, or firing the vessel in a reducing atmosphere or at relatively low temperatures below 700° C (Bronitsky 1986:218; Rice 1987:98; Rye 1981:114). How did the Hamp's Landing potters and the later creators of shell-tempered pottery deal with these problems? The temper particles in limestonetempered and especially shell-tempered vessels tend to be coarse, so finely crushing the particles was probably not one of the solutions. On prehistoric coastal vessels, oxidizing rather than reducing atmospheric conditions seem to have been more commonly used during firing, but low firing temperatures might have been an option. Finally, salt would have been an easily obtained additive on the coast. These questions about production techniques and the behavior of variously-tempered coastal wares during exposure to thermal and mechanical stresses will remain speculative, however, until archaeologists can replicate, test, and compare the range of possible production and use techniques under controlled conditions.

Notes

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A RE-EVALUATION OF CERAMICS FROM THE TOWER HILL SITE (31LR1), LENOIR COUNTY, NORTH CAROLINA

by

Jane M. Eastman, Loretta Lautzenheiser, and Mary Ann Holm

While conducting research for the proposed Global TransPark, archaeologists from Coastal Carolina Research, Inc., reviewed the previous investigations in the Lenoir County area. Among these was a survey of Lenoir County conducted by Robert Crawford, a graduate student at the University of Florida.

In the early 1960s, Crawford conducted an archaeological survey of Lenoir County and identified 53 sites. He later created a preliminary typology for the ceramics he recovered and defined three new ceramic types—the Lenoir, Grifton, and Tower Hill series (Crawford 1966). During the course of his research, Crawford excavated test units at the Tower Hill site (31LR1), that contained a number of intact features. The Tower Hill site is located on the first terrace north of the Neuse River, east of Kinston (Figure 1). The site covers an area of 15–20 acres and is bordered on three sides by the river and two small streams. In addition to both Archaic and Woodland components, the site includes a Civil War component consisting of earthen mounds, trenchworks, and gun platforms. The largest component of the site appears to date to the Late Woodland period.

Crawford excavated two 10-ft by 10-ft squares containing 34 cultural features, including post holes and circular trash pits. Feature 20, which measured 4.8 ft by 3.5 ft in plan view and 1.1 ft deep, was one of the largest features excavated. In addition to ceramics, the feature contained one Clarksville Small Triangular projectile point, eight unidentified small, well-made projectile points, 11 other lithic artifacts, 10 bone awls, and a broken conch shell (Crawford 1966).

Feature 20 contained a sample of charred hickory nutshells in addition to over 200 sherds tempered with fine sand. Crawford defined the Lenoir and Tower Hill series to describe this pottery; however, Crawford's typology has not been used by regional ceramic analysts. Since prehistoric artifacts from excavated feature contexts at sites in the inner coastal plain are not plentiful, archaeologists at Coastal Carolina Research wished to study the artifacts.

Coastal Carolina Research, Inc., borrowed the ceramic artifacts from the Research Laboratories of Anthropology at the University of North



Figure 1. Location of the Tower Hill site, Lenoir County, North Carolina.

Carolina at Chapel Hill, and obtained permission to process the carbon sample. The charcoal sample was sent to Beta Analytic, Inc. for radiocarbon dating. Recently, ceramics from the feature were re-examined by Jane M. Eastman, of Coastal Carolina Research, and Crawford's series definitions re-evaluated. The pottery was resorted into Crawford's categories and these were compared to type collections of pottery at the Phelps Archaeology Laboratories at East Carolina University in Greenville, North Carolina.

Crawford's type definitions, as originally defined, are presented below. Crawford interpreted the Lenoir series, which includes Lenoir Cord Marked, Lenoir Fabric Impressed, and Lenoir Simple Stamped, as belonging to the Middle Woodland period and thought that the pottery was related to the Vincent series. He described the Lenoir pottery as "having a fairly compact paste, [with] coarse sand or crushed quartz temper, and fired upright in an oxidizing atmosphere." Crawford further

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noted that exterior surface finish was variable, and he used it to define individual types within the series (Crawford (1966:33–41).

The Tower Hill series was described as being "composed of types having a compact paste, fine sand temper, and fired in an inverted position in a poorly controlled fire" (Crawford 1966:50). Tower Hill ceramics exhibit three exterior surface finishes: plain, fabric impressed, and simple stamped. Sherds with plain exteriors were rare, and no type description has been published for Tower Hill Plain. The descriptions presented below of the Tower Hill Fabric Impressed and Tower Hill Simple Stamped types are derived from Crawford (1966:50–53).

Lenoir Cord Marked

The Lenoir Cord Marked type was established based on the analysis of 908 potsherds (Figure 2a-b).

Paste

Method of Manufacture. Vessels were manufactured by coiling. Potsherds frequently break along coil lines, and in a few, poorly annealed examples, hairline fractures occur along the coil lines.

Temper. Liberal amounts of angular quartz sand are present within the paste. Occasionally, a prepared temper of crushed quartz is present. In these cases particle size is larger and ranges up to 3–4 mm; however, the overall ratio of temper to paste decreases.

Texture. Potsherd texture is gritty and sandy to the feel. Temper is thoroughly mixed with the paste, which is well-kneaded and homogenous throughout.

Color. Color ranges from a buff to a dull red with most sherds falling within the buff range. Interior and exterior colors are usually the same. In approximately 50 percent of the sherds there is a darker core, frequently black. The remainder are homogeneous in color.

Firing. Vessels were fired upright in an oxidizing atmosphere. Fire clouds are present but infrequent.

Hardness. Paste hardness ranges from 2.5 to 3.5.

Surface Color

Exterior. Sherd exteriors usually are buff with occasional orange-red surfaces.



Figure 2. Pottery from the Tower Hill site: (a-b) Lenoir Cord Marked; (c-e) Lenoir Fabric Impressed; (f-g) Lenoir Simple Stamped; and (h) Tower Hill Simple Stamped.

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Interior. Exterior and interior colors are the same on about 90 percent of the sherds; the remaining 10 percent have slightly darker interiors. This is usually the case on sherds with an orange or red exterior.

Surface Treatment

Exterior. The exterior surface was beaten with a cord-wrapped paddle while the paste was still relatively wet. Impressions are deep and usually vertical to the rim but may be slightly diagonal to right or left. Overlapping occurs but appears to have been accidental. Cords are thick, 2–3 mm in diameter, and wound closely around the paddle with less than 2 mm between strands. Rarely a sherd is found with cord spacing as much as 5 mm.

Interior. Vessel interiors were smoothed. Apparently a smooth tool was held against the interior while the exterior was beaten. Temper particles are pushed into the paste.

Decoration

Lenoir Cord Marked vessels apparently were not decorated.

Vessel Form

Rim and Lip. Rims taper to a rounded or flat lip. Occasionally there is a slight flare to the rim. Rim sherds are 2–3 mm thinner than those from the body. Flat lips frequently have cord markings which are absent on rounded ones. Mouth diameters range from 17 cm to 30 cm with most falling within 20–24 cm.

Body Diameter. The little data available suggest the vessel body diameter is 3–4 cm larger than the mouth.

Basal Shape. Vessel bases were conoidal.

Vessel Shape. The very little data available indicate that globular jars are present.

Lenoir Fabric Impressed

The Lenoir Fabric Impressed type was established based on the analysis of 463 potsherds (Figure 2c-e).

Paste

Method of Manufacture. The method of manufacture was by coiling. *Temper*. Temper is the same as for Lenoir Cord Marked, except that a higher percentage of the sherds have a prepared temper of crushed quartz.

Texture. Surface texture is more sandy and less gritty than occurs on Lenoir Cord Marked sherds.

Color. Sherd color is the same as Lenoir Cord Marked.

Firing. Vessels were fired in the same manner as Lenoir Cord Marked.

Hardness. Paste hardness is the same as Lenoir Cord Marked.

Surface Color

Lenoir Fabric Impressed sherds exhibit the same colors as Lenoir Cord Marked sherds.

Surface Treatment

Exterior. The exterior surface was impressed with a plain plaited fabric. Weft is a closely placed, 1-2 mm twisted twine, with an average diameter of 2 mm. The warp averages 4-5 mm in diameter. With one exception in which the warp was perpendicular to the rim, impressions are parallel to the rim. Pots apparently were impressed while still wet since impressions are deep and occasionally the paste "runs."

Interior. Same as Lenoir Cord Marked with impressions overlapping the lip and extending 2 cm into the interior on 30 percent of the sherds.

Decoration. None of the sherds are decorated.

Vessel Form

Rim and Lip. Vessels have straight rims with thin, rounded lips and slightly outcurving rims with rounded or flattened lips. Mouth diameters are the same as Lenoir Cord Marked.

Body Wall Thickness. Same as Lenoir Cord Marked. *Body Diameter*. Same as Lenoir Cord Marked. *Basal Shape*. Same as Lenoir Cord Marked. *Vessel Shape*. Same as Lenoir Cord Marked.

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Lenoir Simple Stamped

The Lenoir Simple Stamped type was established based on the analysis of 298 potsherds (Figure 2f-g).

Paste

All paste attributes, including method of manufacture, temper, texture, color, firing, and hardness, are the same as Lenoir Cord Marked.

Surface Color

Lenoir Simple Stamped sherds exhibit the same colors as Lenoir Cord Marked sherds.

Surface Treatment

Exterior. Exterior vessel surfaces were beaten with a wooden paddle with carved parallel grooves. Impressions are irregular and deep. No pattern was followed; consequently, there is much overlapping and cross stamping. Grooves vary in diameter and even within the same groove, width diminishes or increases.

Interior. Same as Lenoir Cord Marked.

Decoration

Lenoir Simple Stamped vessels typically were not decorated, but one sherd had a zoned punctate design applied to the shoulder of the vessel.

Vessel Form

Rim and Lip. Thickened, rounded, thinned, and flattened lips occur on straight rims.

Body Wall Thickness. Same as Lenoir Cord Marked. *Body Diameter*. Same as Lenoir Cord Marked. *Basal Shape*. Same as Lenoir Cord Marked. *Vessel Shape*. Same as Lenoir Cord Marked.

Tower Hill Fabric Impressed

The Tower Hill Fabric Impressed type was established based on the analysis of 911 potsherds (Figure 3).

Paste

Method of Manufacture. Vessels were made by coiling, with annular segments built upon a modeled basal disc.

Temper. Sand, which is finer and in much lesser quantities than that of the Lenoir series, was used as temper. Occasionally, sherds occur with a prepared temper of crushed quartz; however, in these cases the quantity of temper is much less than that of the Lenoir series.

Texture. Potsherds are sandy to the feel. The paste is compact and well kneaded.

Color. Potsherd colors range from dark tan to black.

Firing. Vessels were fired in a reducing atmosphere and numerous fire clouds are present.

Hardness. Paste hardness ranges from 2.5 to 3.5.

Surface Color

Exterior. Sherd exteriors are colored dark tan, which fades into a black core that extends to the interior surface. Black sherds occur as a result of fire clouds.

Interior. Sherd interiors are black.

Surface Treatment

Exterior. Exterior surfaces are impressed with a relatively fine, plain plaited fabric. Weft elements average 1–2 mm in diameter and are closely placed on the warp. Warp elements average 3–4 mm in width. Impressions are arranged with the warp element either perpendicular, diagonal, or parallel to the rim. Impressions are distinct but not as deep as those of Lenoir Fabric Impressed.

Interior. Interior surfaces exhibit varying degrees of smoothness. On some sherds there is evidence of floating; on others the surface is merely hand smoothed or scraped.

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Figure 3. Reconstructed section of a Tower Hill Fabric Impressed vessel from the Tower Hill site.

Decoration

Cord-wrapped stick impressions sometimes are present on the interior rim. They are arranged either perpendicular or slightly diagonal to the lip.

Vessel Form

Rim and Lip. Rim profiles are straight or outsloping. Some lips are rounded, but the majority are flattened. Cord impressions sometimes occur on flattened lips.

Body Wall Thickness. Vessel wall thickness ranges from 4 mm to 7 mm, with an average of 6 mm.

Body Diameter. Vessel diameters range from 18 cm to 34 cm, with an average of 28–30 cm.

Basal Shape. Vessel bases are subconoidal.

Vessel Shape. Tower Hill sherds represent open bowls with slightly constricted mouths and globular jars with insloping shoulders and straight rims.

Tower Hill Simple Stamped

The Tower Hill Simple Stamped type was established based on the analysis of 64 potsherds (Figure 2h).

Paste

Method of Manufacture. Same as Tower Hill Fabric Impressed.

Temper. Crushed quartz is the most frequently used additive although in some sherds sand was used instead of quartz.

Texture. Same as Tower Hill Fabric Impressed.

Color. Same as Tower Hill Fabric Impressed.

Firing. Same as Tower Hill Fabric Impressed.

Hardness. Same as Tower Hill Fabric Impressed.

Surface Color

Tower Hill Simple Stamped sherds exhibit the same colors as Tower Hill Fabric Impressed sherds.

Surface Treatment

Exterior. Vessel exteriors were stamped with a wooden paddle with finely carved parallel grooves. Grooves are 1-2 mm wide with lands about half as wide as grooves. Impressions were applied either vertically or horizontally to the rim, but in some cases, stamping is haphazard, criss-crosses, and overlaps.

Interior. Same as Tower Hill Fabric Impressed.

Decoration

None of the Tower Hill Simple Stamped sherds are decorated.

Vessel Form

Rim and Lip. One straight rim thickens to a flat lip. Stamping impressions occur on the flattened lip.

Body Wall Thickness. Vessel walls are 6-7 mm thick.

Body Diameter. No data are available.

Basal Shape. No data are available.

Vessel Shape. No data are available.

Discussion

Eastman's examination indicates that sherds of the Lenoir and Tower Hill series are consistent with the Late Woodland Cashie type that was developed by Phelps (cf. Phelps 1980, 1983). The calibrated date obtained from the hickory nutshell from Feature 20 provides support for this reinterpretation of Crawford's Lenoir and Tower Hill series. The radiocarbon age of the charcoal sample was cal A.D. 786 with a one-sigma range of cal A.D. 673 to 958 (Eastman 1994). This date indicates that the Tower Hill pottery was made during the early part of the A.D. 800 to 1715 temporal range Phelps (1983:43) proposed for the Cashie series. The Lenoir and Tower Hill series should therefore be subsumed within the widely-used Cashie series, and the Tower Hill site should be considered a Late Woodland, rather than a Middle Woodland, occupation.

Notes

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BOOK REVIEW

William Bartram on the Southeastern Indians, edited by Gregory A. Waselkov and Kathryn E. Holland Braund. Lincoln, University of Nebraska Press, Lincoln, 1995. xviii + 341 pp., illus., biblio., index. \$46.50 (cloth).

Reviewed by Christopher B. Rodning

The journals and essays of William Bartram are a window upon native landscapes of the American South during the late eighteenth century. His descriptions of native Southeastern communities and environments have contributed considerably to understanding the archaeology of the late eighteenth and earlier centuries. Bartram traveled across the coastal plain of Georgia and Florida, through the river valleys and mountains of western Carolina, across the Piedmont of Georgia and Alabama, and even up the Lower Mississippi Valley. His writings represent major contributions to the fields of anthropology, botany, geography, and natural history of the Southeast, and to the ethnology of Creeks, Seminoles, and Cherokees. His travel journal has helped archaeologists establish the locations of different native groups and towns, and an essay reflecting on the traditions of native people Bartram met distills some comparative insights about native architecture, foodways, social organization, political institutions, and the relationship between the eighteenth-century Southeastern Indians and earlier archaeological sites then visible across the landscape. Recently, Gregory Waselkov and Kathryn Holland Braund have edited and annotated Bartram's writings and have presented them in a book that adeptly relates his comments from the late eighteenth century to archaeological and ethnohistorical investigations of the twentieth century.

The book excerpts sections of Bartram's writings that speak specifically about Native Americans and their environments. The introductory chapter gives a biographical sketch of William Bartram, a Quaker gardener, philosopher, and natural historian. The second chapter draws from Bartram's *Travels Through North and South Carolina, Georgia, East and West Florida*, originally published in 1791 as the memoirs of his journey from 1773 to 1776 across much of the American South. The third chapter reprints Bartram's essay, *Observations on the Creek and Cherokee Indians*, written in 1789 as a response to a set of

questions from Benjamin Smith Barton about native peoples of the South and published in 1853 by the American Ethnological Society. The fourth chapter includes Bartram's essay, Some Hints and Observations, Concerning the Civilization of the Indians, or Aborigines of America, written sometime after 1787 to outline a model for European interaction with Native American communities, for whom Bartram was an inveterate advocate. The original Bartram passages are complemented by his own sketches of native artifacts and architecture, and with copious notes by Waselkov and Braund that direct the reader to related books and essays in the literature on Southeastern archaeology, ethnohistory, and ecology. The editors introduce each chapter by reviewing the circumstances and motivations underlying the publication of the original manuscripts. These essays, and the commentary well interspersed throughout the book, add a valuable dimension to the raw material of the original writing. A fitting concluding chapter considers Bartram's place in the annals of Southeastern archaeology and ethnohistory, crediting him with perspectives that have gained considerable momentum in anthropology since his lifetime, a point to which I shall return later.

The first chapter of the book is an essay by the editors about Bartram's biography as a gardener, traveler, author, and correspondent. William was not the only Bartram to write about the eighteenth-century Southeast, as his father John published a journal of his own journey through Florida, Georgia, and the Carolinas from 1765 to 1766 as a botanist appointed by the king of England. William himself traveled with his father on that expedition, met several prominent colonial statesmen and cartographers, secured himself an estate in Florida in 1766, and then abandoned his failed farm to participate in a survey of Florida as a draftsman. William returned home to Philadelphia in 1767 and began a correspondence with a prominent London horticulturalist named John Fothergill. Fothergill became his patron in 1772 for another botanical survey of the South, contracting the artistically talented William to send him drawings of southern plants. Against the advice of his sponsor to narrow the breadth of his travels, Bartram chose to tour a broad swath of the Southeastern colonial frontier. Drawing from his travels, Bartram not only described and illustrated plant communities but commented upon native Southeastern farming, foodways, government, architecture, and gender roles, and the participation of native communities in the deerskin trade.

The second chapter introduces Bartram's *Travels*, which is a notebook about natural history, an ethnographic study, and an editorial

advocating the rights of Native American peoples. The excerpts from his journal reprinted in this chapter are those which concentrate specifically on native communities and their living spaces. For a variety of reasons, the dates noted in his published diary are not always accurate, and the editors clarify these discrepancies through annotations and endnotes. After sailing from Charleston to Savannah, Bartram began his overland travels and visited ancient and contemporary native settlements, and colonial trading posts, along the Altamaha, Ogeechee, Ocmulgee, and St. Marys rivers. Then Bartram sailed to Florida, noting shell mounds and sand mounds along the coast, and journeved up the St. Johns River. From a trading post on the St. Johns owned by James Spalding, Bartram traveled overland to visit native settlements along the Cuscowilla and Suwanee rivers. Later Bartram returned to Charleston and visited a trading post along the Savannah River. Along the Savannah, as along other Southeastern rivers, he saw abundant evidence of old mounds, old fields, and abandoned villages. From forts James and Charlotte near the confluence of the Savannah and Broad rivers, he launched his overland travels to the Cherokee towns in the southern Appalachians and to the Muskogean towns along the Chattahoochee, Tallapoosa, Coosa, and Alabama rivers. After traveling through Alabama, Bartram rested at Mobile. From there he traveled north to explore the Tensaw River by canoe and to tour the Tombigbee River. He stayed for awhile at Pensacola in the Florida panhandle and then sailed along the gulf coast and up the Mississippi River to Manchac and the former homeland of the Natchez. Bartram returned to Mobile and crossed Creek territory in Alabama again, revisited some parts of Georgia, and then returned to his Philadelphia home.

His descriptions of native lifeways are vivid portraits of Seminole, Creek, and Cherokee communities, and his lists of Cherokee and Creek towns are valuable resources for archaeologists and other scholars. It is likely that Bartram visited the Rembert, Shinholser, Shoulderbone, and other archaeological sites in Georgia; sites near Mount Royal, Lake George, Tick Island, and Lake Beresford in Florida; several Upper Creek towns represented by sites in Alabama; and several Cherokee sites in the Carolinas. Besides his journal, Bartram's *Travels* includes essays about: native habits and personalities; forms of government; clothing, feasting, and sports; farming, hunting, architecture, and crafts; marital and mortuary rituals; and language.

The third chapter introduces and reprints Bartram's *Observations*, a topical essay about Native American traditions responding to inquiries

from his friend and correspondent, Benjamin Smith Barton. The physician and professor Barton had put forth a series of questions about the origins, aesthetics, language, religion, ceremonialism, government, gender relations, notions of property, health and healing, foodways, and other dimensions of native Southeastern cultures. In his essay, Bartram responds to these questions with comparative reflections upon the diversity of native Southeastern communities whom Bartram visited. As a postscript, Bartram adds several illustrations, plan views, and descriptions of the architecture of the Creeks and Cherokees. Although it was published in the nineteenth century and is widely known to Southeastern archaeologists, this essay has not been readily accessible to readers until now. Like his travel journal, Bartram's Observations demonstrates some keen anthropological insights, including comments about the multilingual and multiethnic nature of many Native American communities, the nature of native leadership roles, and the changes in native cultures attributable to interaction with Europeans through the deerskin trade.

The fourth chapter presents Bartram's *Hints*, an essay advocating that American policymakers negotiate peaceably and fairly with Native American peoples. The tone of this essay clearly reflects his Quaker background. Bartram wrote in *Travels* that enlightened people should be stationed among Native American communities not only as agents of European American culture but as students of native languages and lifeways. Bartram further noted in *Travels* that Native American peoples did not need to adopt a European model of civilization, as their concepts of civilization and aesthetics were well developed already. Citing the value of preserving Native American culture and community, Bartram's *Hints* argues that the newly formed United States should fully embrace Native American people who, like the American colonists during the revolutionary period, had weathered dramatic changes.

In the fifth chapter, Waselkov and Braund reflect upon the contributions of William Bartram to our knowledge about Southeastern environments and native cultures of the eighteenth century. The last section of the chapter makes some insightful points about his place in the intellectual development of natural history and American anthropology. As an eighteenth-century natural historian, Bartram developed a broad perspective on Southeastern landscapes that included not only the natural environment but also the people native to its many ecological and cultural provinces. His perspective on ecology resembles that of current anthropological thinking. Furthermore, Bartram was not trapped by the ethnographic present but rather recognized a variety of archaeological and ethnographic evidence for cultural change among native Southeastern peoples. This insight led Bartram to acknowledge both the differences and continuities between ancient mounds and contemporary settlements of native Southeastern groups, and it has granted him a prominent place in the history of American archaeology.

This book is best read by consistently consulting the endnotes and a map. The endnotes are a compendium of bibliographic references and comments that indicate what archaeological sites Bartram visited and give additional details about these sites. Some endnotes comment upon the ethnographic evidence of such topics as native Southeastern foodways, rituals, languages, gardening, and practices of burning pine and mast woodlands to enhance habitats for foraging and farming. Many endnotes link the Bartram journey to known archaeological sites and geographic placenames. Since Bartram covered such a broad swath of the Southeast, readers might want to follow along with a map. The second chapter, which contains portions of his travel journal, is accompanied by a series of modern maps that illustrate his path relative to settlements, waterways, and other landmarks, and a pair of maps that Bartram drew himself.

Anyone interested in the archaeology of the past millennium in the Carolinas and elsewhere in the Southeast should read this book. Scholars interested in the archaeology and ethnohistory of Creeks and Cherokees will find the book a valuable guide not only to what Bartram himself wrote but also to subsequent archaeological investigations that have shed light on his experiences. Archaeologists studying native Southeastern peoples in general will find much helpful material for reconstructing past lifeways from archaeological evidence. Not only have the notes and commentaries by Waselkov and Braund built valuable connections between Bartram's original writings and recent scholarship by American archaeologists and ethnohistorians, but, perhaps more importantly, this book makes Bartram's journal and essays vividly accessible to readers interested in Southeastern Indians.

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