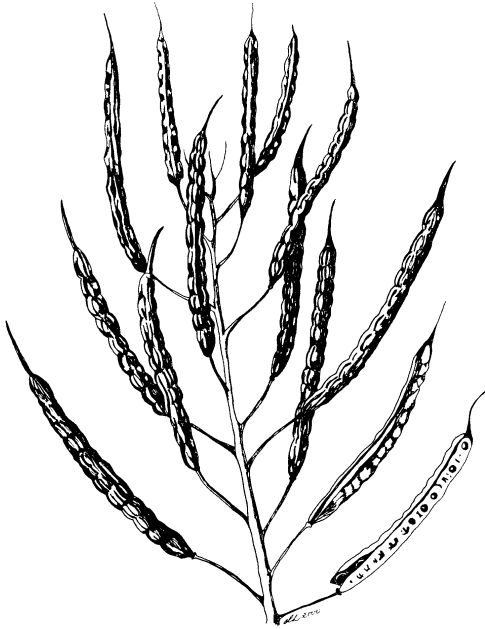


ARCHAEOLOGY AT AN EIGHTEENTH CENTURY SLAVE SETTLEMENT IN GOOSE CREEK, SOUTH CAROLINA



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**ARCHAEOLOGY AT AN EIGHTEENTH CENTURY
SLAVE SETTLEMENT IN GOOSE CREEK,
SOUTH CAROLINA**

Research Series 57

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Making plans is often the occupation of an opulent and boastful mind, which thus obtains the reputation of a creative genius by demanding what it cannot itself supply, by censuring what it cannot improve, and by proposing what it knows not where to find.

-- Immanuel Kant, 1783

ABSTRACT

Crowfield Plantation, best known for its elaborate gardens and home of William Middleton during the first half of the eighteenth century, is situated in the Goose Creek area of lower Berkeley County, South Carolina. About 12 miles northwest of Charleston, it was in an area of South Carolina as well known for its wealth and social elite as it was for its rice.

This study explores two different areas of the plantation – part of the main settlement (38BK103) and the slave settlement (38BK1011). Both were about to be impacted by development activities and this work was conducted to help preserve part of the unique history of this exceptional plantation.

Much of the main settlement area is in an area of a golf course, although the main house, flankers, and portions of the gardens have been preserved. That portion of the main settlement to the southwest of the mansion is the focus of the current examination. It encompasses what appears to be an agricultural storage or activity area and included the archaeological remains of three buildings: two large, brick storehouses and a much smaller brick utility building.

The slave settlement area is situated even further to the southwest of the main settlement, clustered on one side of what historically was probably a pond or low wet area. The remains of at least six slave houses have been identified – all but one of which were wall trench structures consisting of upright posts set into a wall trench. Stick and vine wattle was likely woven between these uprights and then plastered with clay. This settlement lacks the rigid orientations typical of later eighteenth and early nineteenth century slave compounds and instead seems to at least partially encircle the low ponded area.

At the far southern end of the slave settlement a series of curved several fence lines, likely intended as animal pens, were identified. This appears to represent the southern edge of the plantation settlement and beyond were likely agricultural fields and woods.

The examination of these portions of Crowfield found relatively few English ceramics, but large quantities of a low fired earthenware often called Colono ware. The study of the material remains at 38BK103 and 38BK1011 therefore focused on this pottery, including a typological study, examining paste, rim forms, vessel size, and evidence of use.

Some tentative study has been conducted, using gas chromatography and spectrographic analysis, of the carbonized remains within these Colono ware vessels. This is the first example of lipid research on these African American used vessels.

The remainder of the study incorporated analysis of both pollen and phytolith remains identified in various features at the site, as well as analysis of the faunal collection recovered from the slave settlement. Also examined and included in this research is the ethnobotanical material recovered from flotation of several features at the sites.

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INTRODUCTION

The Crowfield settlement is situated in the lower western section of Berkeley County about 6 miles east of Summerville and 12 miles north of Charleston (Figures 1 and 2). The bulk of the historic settlement is found on about 15 acres within Westvaco Development's Crowfield Plantation tract.

In many respects the tract is isolated. Although historically wooded, the site is today surrounded by single-family homes, a golf course, and additional planned development – all of which isolate it culturally. The site is found on primarily Norfolk loams and Goldsboro loamy sands, soils that are moderately well to well drained. Yet the plantation's main house and slave settlements are surrounded by much more poorly drained soils, creating an island of settlement around which were once lush agricultural fields. From a much broader, political and historical perspective, Goose Creek was once a very wealthy island of Barbadian elite, transplanted to South Carolina and surrounded by planters of lesser means.

The investigations at the Crowfield plantation included two plantation areas: an area of the main settlement characterized by storage and utilitarian buildings and the slave settlement. Both areas were almost certainly lived and worked in by African Americans – slaves brought to Carolina to plant rice and generate wealth for their white owners. This study attempts to explore some of the remains found in these two areas and reconstruct the lifeways of the African Americans during the first half of the eighteenth century.

The Natural Setting

Crowfield was situated in the St. James Goose Creek Parish of South Carolina. Established by the Church Act of 1706, the parishes of South Carolina were units of social,

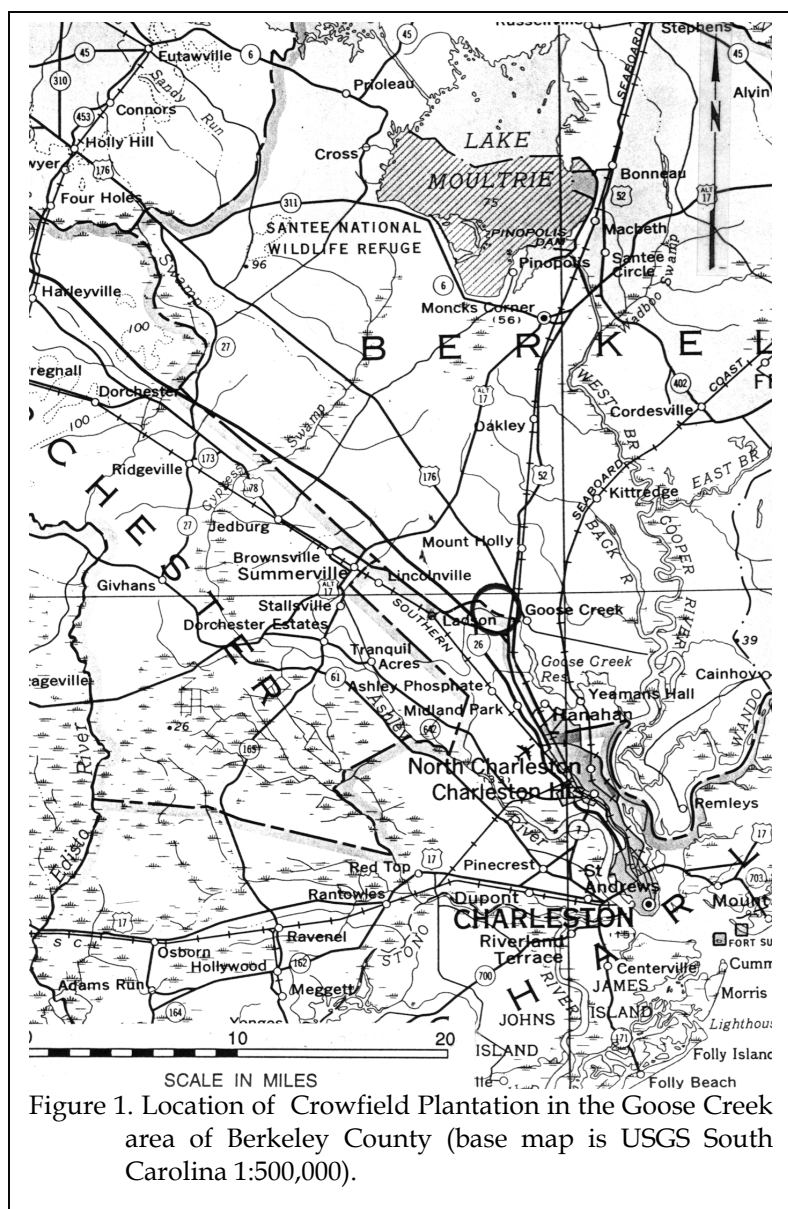


Figure 1. Location of Crowfield Plantation in the Goose Creek area of Berkeley County (base map is USGS South Carolina 1:500,000).

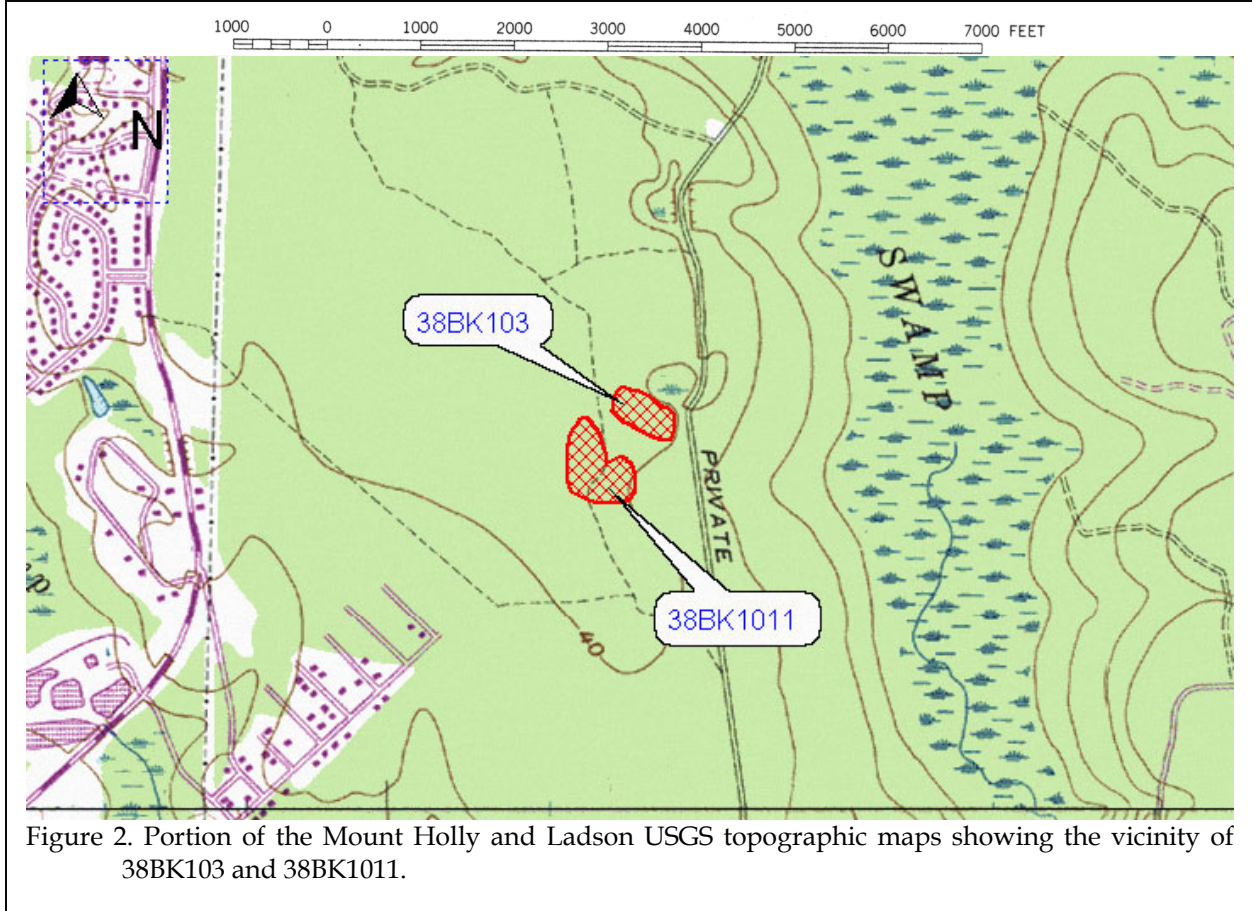


Figure 2. Portion of the Mount Holly and Ladson USGS topographic maps showing the vicinity of 38BK103 and 38BK1011.

civil, political, as well as religious, importance. St. James (Goose Creek is added to distinguish it from St. James Santee at the mouth of the Santee River) included part of the Charleston Neck and was bounded on the east by Cooper River, extending north to the Back River. From the point where the Back River branches from the Cooper, the parish line follows the Back River to its source, then runs west, from south of Pimlico, Fairlawn Barony, to what was the unsettled Carolina frontier. The southern boundary, at the Charleston Neck, runs west-northwest parallel to the west-northwest boundary to the frontier. The western boundary was not defined at the time and the parish extended indefinitely into the frontier. Today most of the parish is subsumed by Berkeley County, although portions are also found in Charleston and Dorchester counties and Orangeburg County includes the unstated western boundary.

Today while some areas remains rural, dominated by farms and wooded acreage, much of the parish has been overtaken by suburban “bedroom communities” for Charleston and its once prosperous naval bases on the Cooper River.

Topography, Geology, and Soils

Berkeley County is in the southeastern part of South Carolina on the Atlantic Coastal Plain, in the area called the Atlantic Coast Flatwoods. Most of the county (and previously, the St. James Goose Creek Parish) consists of broad areas of nearly level to gently sloping, dominantly loamy and clayey soils. Soils adjacent to creeks, in the flood plains of the rivers, and in low areas are subject to frequent flooding. Most are sedimentary and were transported from other areas by the ocean or streams.

The lower part of St. James Goose Creek Parish is dominated by Goose Creek, which runs northwesterly through the middle of the parish and flows into the Cooper River. At the headwaters of Goose Creek is the Goose Creek Swamp, which is derived from Ancrum Swamp to the west and Huckhole Swamp that forms a more easterly branch. It is apparent on topographic maps that Huckhole Swamp has rather arbitrary boundaries, flowing into Goose Creek Swamp or what is sometimes called Bluehouse Swamp, and coming from King Branch, Daisy Swamp, and Laurel Swamp to the north. Bordering the swamps and creeks are relatively high, steep bluffs to the east and west. It was on these bluffs that plantations such as Crowfield, Persimmon Hill, and Broom Hall were situated (Figure 2).

Elevations throughout the county range from sea level in the vicinity of what is today Daniel's Island to a high of about 105 feet above mean sea level (AMSL) in the western section of the county. Around Crowfield, at a gross level, the topography is level. Huckhole Swamp is found to the east, with a generally steep slope to the west from about 10 feet AMSL to 40 feet AMSL. At a more localized scale, Crowfield exhibits a very complex topography reflecting an interaction of natural and man-made features.

For example, there are a number of small natural springs on the bluff edge overlooking the swamp. At least one of these was integrated into an upland rice impoundment. In the vicinity of the main house the topography has been significantly altered (even before the construction of the modern golf course) by the addition of several holding ponds and elaborate gardens. To the southwest of the main house, in the vicinity of the slave settlement, there are a series of low ridges or islands of better drained soils, 2 to 6 feet higher than the surrounding landforms with elevations of about 40 feet AMSL. To the southeast there is a drop to elevations of between 34 and 36 feet. The higher elevations seem to have been taken

advantage of for settlement areas, while the use of lower elevations was limited to agriculture or forest land.

Within the immediate area of Crowfield are six different soil series: Goldsboro loamy fine sands, Lenoir fine sandy loams, Lynchburg fine sandy loams, Meggett loams, Norfolk sandy loams, and Ocilla loamy fine sands (Long 1980:Map 86). Of these soils, all but the Goldsboro and Norfolk Series are somewhat poorly to poorly drained and have seasonal high water tables within the upper 3.5 feet (the Meggett soils, for example, have a water table within the upper foot for most of the year and the Lynchburg soils have water within the upper 1.5 feet for six out of 12 months (Long 1980:Table 13). Beyond the complex the area is dominated by swampland and poorly drained upland soils.

It probably isn't surprising that the main settlement was placed on the better drained Goldsboro and Norfolk soils. What is more surprising is that the utilitarian buildings of the main plantation (38BK103) and about half of the slave settlement (38BK1011) were also placed on well drained Norfolk soils, although a portion of the slave settlement did extend northward onto poorly drained Lynchburg soils.

The Norfolk soils have an Ap horizon of dark grayish brown (10YR4/2) loamy sand, overlying a B horizon of dark yellowish brown (10YR4/4) sandy loam. Although not common, clay is occasionally found in these soils below about a foot. The Lynchburg soils, in contrast, have a thin A horizon of black (10YR2/1) fine sandy loam overlying light yellowish brown (2.5YR6/4) fine sand loam. The underlying B horizon is a yellowish brown (10YR5/4) fine sandy loam. Sandy clay, at depths of a foot or lower, are also occasionally found in these soils.

In the mid-nineteenth century Edmund Ruffin remarked that the soils of the area were generally poor, "& very sandy, & mostly on sandy subsoil. Some, however, has a sandy clay

subsoil" (Mathew 1992:60). Closer to the river Ruffin found an increase in clays, at times "clay so much predominated in the soil as to be objectionable, the high land being very stiff & intractable under tillage." Ruffin describes a variety of tidal rice fields: "nearly all the inland swamp lands formerly were under it [rice cultivation] - but have been thrown out, & are now under water" (Mathew 1992:64).

Period historian David Ramsay noted that the soils of South Carolina could be divided into six broad categories: tide swamp, inland swamp, high river swamp, salt marsh, oak and hickory high ground and the pine barren. He noted that the tide swamp and inland swamp were suitable for rice; the high river swamps (such as those at Crowfield) were best suited to hemp, corn, and indigo; while the oak and hickory high grounds were excellent for provision crops, indigo, and cotton. While the Pine Barrens were the least productive, they were recognized as the healthiest and an "indispensably necessary appendage to a swamp plantation" (Ramsay 1858:158).

Health and Climate

Promotional pamphlets of the late seventeenth and early eighteenth century were nearly all equally glowing in their accounts of Carolina. The reputed author of the 1710 *A Letter from South Carolina*, Thomas Nairne, described South Carolina as a vast "champaign Country," complete with a "well stock'd" forest and a sea coast "full of Island, Sounds, Bays, Marshes" (Greene 1989:37). Nairne explains that the "air of Carolina is generally very clear and fine, even when the greatest Rains fall, the Weather does not continue long cloudy, for the sun soon dissipates the Fogs, and restores the Air to its usual Serenity" (Greene 1989:42).

While less well known, John Norris offered similar recommendations in his *Profitable Advice for Rich and Poor*, commenting that:

The greatest Part of the Year round seems very pleasant and delightful, and is generally Healthful to most People that live Temperate. . . . Although the Summer Months seem burdensome to some People, yet the Conveniency of shady Groves, open Air, Arbours, Summer-Houses, and frequent cool Bathings makes amends sufficiently for the Inconveny (Greene 1989:89).

John Duffy (1952) counters these accounts of Carolina's health. He observes that the average European could expect to live to the age of about 30 in South Carolina during the first quarter of the eighteenth century. Yellow fever, smallpox, diphtheria, scarlet fever, malaria, dysentery all were at home in Carolina. Using the Society for the Propagation of the Gospel (SPG) records, Duffy found that from 1700 to 1750, 38% of the missionaries either died or were compelled to resign because of serious illness within the five years of their arrival. Within 10 years of arrival, 52% died or resigned because of health problems. After 15 years in the colonies, the combined death toll and resignations from sickness reached 68% - two out of every three missionaries. Frank Klingberg (1941:154), using the SPG records, found that in a single four month period over 400 African Americans died of "distemper." More recently, William Dusenberre (1996:80) recounts that two-thirds - or perhaps even more - of the slave children on rice plantations died by the age of 15 years. The causes varied, but were largely malaria and enteric diseases.

Roy Merrens and George Terry (1984) note that during the early period of Carolina's settlement its climate was "perceived and portrayed as a terrestrial paradise" (Merrens and Terry 1984:534). Often the descriptions are even more glowing than those given by Nairne and Norris quoted earlier. Consistently the climate is portrayed as healthful, the land fertile, the soil

inviting, and the native plants and animals all beneficial to English exploitation. It is no wonder that the early colony existed on, in the words of Coclanis, "activities which included not only mixed agriculture but rudimentary extraction and plunder – the stuff of Marxian primitive accumulation" (Coclanis 1989:58).

Yet, it is clear that there was a dark side to the Carolina climate. Merrens and Terry describe many of the accounts, noting that no less a notable physician and natural historian as Alexander Garden complained that, "Our long & hot summers enervate & unbrace the whole System" (Merrens and Terry 1984:539). As late as 1805, F.A. Michaux, whose father had established a plantation midway between Charleston and Goose Creek, observed:

on my return to Charleston in month of October 1802, . . . I did not meet, on the most populous road, for the space of three hundred miles, a single traveler that was either going to town or returning from it; and in the houses where I stopped there was not a person who conceived his business of that importance to oblige him to go there where the season lasted. . . . from the 1st of November till the month of May the country affords a picture widely different; every thing resumes new life; trade is re-animated; the suspended communications re-commence; the roads are covered in wagons (Thwaites 1904:119-120)

Merrens and Terry observe that in Christ Church Parish along the coast north of Charleston 86% of all those whose births and deaths are recorded in the parish register died before the age of twenty. A similar mortality pattern was found in St. Johns Berkeley, adjacent to St. James Goose Creek, in the interior of South Carolina.

Beginning in the last third of the eighteenth century the life expectancy (of whites) began to increase. Merrens and Terry suggest that this was the result of the occupants beginning to understand the causes of malaria:

During the middle of the eighteenth century South Carolinians' perception of the wholesome environment of the lowcountry swamps began to change. People no longer preferred these areas on the score of health as a place of summer residence. Instead, residents began to view the lowcountry as fostering both mosquitoes and death (Merrens and Terry 1984:547).

The cultivation of indigo and rice, as well as the swamp lands – all common to the Goose Creek area – were recognized as contributing factors.

The climate, however, not only affected the health and well-being of the settlers (white and black alike), it also affected the politics of Carolina. The summer climate of Carolina, while causing the Barbadian immigrants to feel that they had resettled in the tropics, also convinced most Carolinians that slavery was inevitable. Not only was slavery the accepted order to the planters from Barbados, Jamaica, Antigua, and St. Kitts, it was thought impossible for white Englishmen to work in the torrid heat – African American slaves were therefore essential (Donnan 1928). Alexander Hewatt observed that:

the introduction of rice planting into this country . . . the necessity of employing Africans for the purpose of cultivation was doubled. So laborious is the task . . . that though it had been possible to obtain European servants in numbers sufficient for attacking the thick forest and clearing grounds for the

purpose, thousands and ten thousands must have perished in the arduous attempt . . . white servants would have exhausted their strength in clearing a spot of land for digging their own graves, and every rice plantation would have served no other purpose than a burying ground to its European cultivators. The low lands of Carolina, which are unquestionably the richest grounds in the country, must long have remained a wilderness, had not Africans, whose natural constitutions were suited to the clime and work, been employed in cultivating (Hewatt 1971:I:120 [1779]).

The importance of blacks to Goose Creek can hardly be overstated. As early as 1720 there were 80 white families in the parish, with over 1,500 African-American slaves (Klingberg 1941:54).

Another aspect of the climate not yet mentioned were the hurricanes that frequented the coast. Hewatt noted that, "hurricanes have also often visited the country, and through such low and flat lands have spread their desolation far and wide" (Hewatt 1971:I:83 [1779]). He describes the August 1728 hurricane which, "levelled many thousand trees in the maritime parts" (Hewatt 1971:I:317 [1779]), as well as the 1752 storm, which was so fierce that, "almost all the tiled and slated houses were uncovered . . . The fortifications and wharfs were almost entirely demolished: the provisions in the field, in the maritime parts, were destroyed, and numbers of cattle and hogs perished in the waters" (Hewatt 1971:II:181 [1779]). Concerning this storm, Ramsay quotes one eye witness who remarked that "one foot less in the height of the land, or one foot more in the height of the water"

would have inundated every spot of ground in Charleston (Ramsay 1858:41-42).

One hundred sixty nine storms have been documented from 1686 to 1972, or about one every two years (Mathews et al. 1980:56). These storms seemed capricious in occurrence to the early settlers:

in such a case between the dread of pestilence in the city, of common fever in the country, and of an unexpected hurricane on the island, the inhabitants . . . are at the close of every warm season in a painful state of anxiety, not knowing what course to pursue, not what is best to be done (Ramsay 1858, quoted in Calhoun 1983:2).

Table 1 lists the major storms of the seventeenth, eighteenth, and early nineteenth centuries that may have affected the Crowfield area.

Vegetation

Just as the early explorers described the climate as healthful, the Carolina vegetation was usually described as bountiful and fruitful. Catesby described the swamp lands, typical of the Goose Creek area in the first decade of the eighteenth century:

before they are prepared for rice, are thick, over-grown with underwood and lofty trees of mighty bulk, which by excluding the sun's beams, and preventing the exhalation of these stagnating waters, occasions the land to be always wet, but by cutting down the wood is partly evaporated, and the earth better adapted to the culture of rice (Catesby, quoted in Merrens 1977:93).

Table 1.
Major Charleston Hurricanes Through the Early Nineteenth Century

Date	Class	Damage
August 25, 1686	Major	Flooding, wind damage
September 14/16, 1700	Great	Flooding, at least 97 deaths
September 5/6, 1713	Major	Flooding, perhaps 70 deaths
September 13/14, 1728	Major	23 ships damaged or lost, forests leveled
September 15, 1752	Extreme	Extensive flooding, damage, death
October 1784	Major (?)	Flooding, extensive property loss
October 19/20, 1797	Major	Property damage, 1 death
September 1804	Major	Property damage, loss of ships, several deaths
August 27, 1813	Great	Severe winds, tides, crop losses
September 27, 1822	Major	Extensive crop losses, 300 deaths

He also mentions that these swamps, filled with "a profusion of fragrant and beautiful plants give a most pleasing entertainment to the senses, therein excelling other parts of the country, and by their closeness and warmth in winter are a recess to many of the wading and water-fowls" (Catesby, quoted in Merrens 1977:93).

Early naturalists, such as Catesby and Bartram, provided detailed lists of the vegetation. Mills (1972 [1826]:66-93) provided a detailed list of native plants known by the 1820s. The swamp lands included what today are known as Cypress-Tupelo Swamps and upland swamps. In both cases vegetation is affected by the wet, acidic soils and understory, shrub species, and herbaceous species are very similar. Upland swamps, however, contain pond cypress (*Taxodium ascendens*), pond pine (*Pinus serotina*), Atlantic white cedar (*Chamaecyparis thyoides*), and slash pine (*Pinus elliottii*) as the canopy species. Cypress-Tupelo swamps tend to contain black cypress (*Taxodium distichum*) and water tupelo (*Nyssa aquatica*). Present are also water ash (*Fraxinus carolinianus*), red maple (*Acer rubrum*), black willow (*Salix nigra*), water elm (*Planera aquatica*), and swamp tupelo (*Nyssa biflora*). They may border areas dominated by water hickory (*Carya aquatica*), overcup oak (*Quercus lyrata*), and swamp chestnut oak (*Quercus michauxii*).

Understory vegetation may include red bay, sweet-bay magnolia, American elm. Shrubs may include viburnums, hollies, and Virginia

willow. Herbaceous species, because of the flooding, are rather limited, but those present, such as poison ivy, arrowhead, and false nettle, are usually found in very dense stands (Barry 1980:147-151).

The Agricultural Basis of Crowfield Plantation

Rice and indigo both competed for the attention of Carolina planters. Although introduced at least by the 1690s, rice did not become a significant staple crop until the early eighteenth century. At that time it not only provided the proprietors with the economic base the mercantile system required, but it was also to form the basis of South Carolina's plantation system – slavery.

Trinkley et al. (2003) recently have explored the origin and activities associated with eighteenth rice cultivation and that study should be examined for more information and details.

While many see the role African Americans played in the introduction of rice cultivation in the eighteenth century as a central question (see, for example, Carney 2001), we believe that this detracts from other significant issues, such as the role of seed improvement and the role of mechanized processing. In addition, while it is perhaps intriguing to speculate on the role the enslaved played in this commercialization of this crop, there has yet to be any thorough research on cultivation techniques already well understood by Europeans from Portugal, Spain, or Italy. Until these antecedents are carefully documented, it is gratuitous to attribute rice cultivation techniques to African Americans. Research time

could be far better spent researching and proving, or disproving, European origins.

Another significant, but often overlooked issue, is the late eighteenth century evolution from inland swamps with reservoirs – such as found at Crowfield – to the use of tidal irrigation. While previous researchers have well described the technology, there has been little interest in understanding why, or how, this change took place. We have found that Chaplin (1993) provides an imminently reasonable explanation, explaining that the social and economic upheaval of the American Revolution provided a springboard for the abandonment of old processes and the adoption of new ideas. In essence Chaplin explains that change in Carolina’s well established and conservative planting community took place only in the face of crisis. And it was the crisis of the Revolution, taking its toll on established rice plantations, that turned ambitious rice planters away from their moderately successful inland fields to vast new uncleared tidal tracts.

This process first involved the wealthiest planters, not because they were any more forward thinking, but rather because they had the capital – enslaved African Americans – against which to borrow the funds necessary to enter this era. For many the choice came down to either rebuilding inland plantations, where the limits of profitability were well known and the process well understood, or building new plantations where the possibilities appeared boundless.

Chaplin (1993) notes that with each step of the process, each expansion from dry to swamp and from swamp to tidal, there was the requirement for a greater infusion of labor, and that required more investment of capital in African American slaves. This demand created, and then maintained, the black majority along the Carolina coast. But it had other affects as well. For example, with each advancement the working conditions deteriorated, causing more slaves to run-off, persistently eroding whites’

authority over their property. Further authority was given up with the development of the task system. And with the task system came questions of fairness and equality of the tasks assigned – causing yet further erosion in the power of white masters over their black slaves. Even as the system expanded, became more productive, and created greater wealth, the seeds of its own destruction had already been sown. Moreover, as the economic discussion reveals, while some made great fortunes, by the second quarter of the nineteenth century rice had entered an economic slump from which it would never recover.

Nevertheless, rice brought incredible wealth to planters during the eighteenth and early nineteenth centuries. During eighteenth century rice prices fluctuated from a low of 2.24 shillings sterling per hundredweight in 1746 to over 12 shillings sterling per hundredweight in 1772. In 1722 rice prices were at 5.17 shillings or about \$38.64 per hundred pounds of cleaned rice in 2002 dollars. By 1734 the price had jumped to \$64.60 (again in 2002 dollars per hundredweight), only to fall to about \$47.02 by 1742 (Coclanis 1989:106).

During this same period African American male slaves typically sold for £250 currency, or about \$5,295 in 2002 dollars (Donnan 1928:820). While there were fluctuations, this figure seems relatively stable for much of the colonial period. Even considering the very high prices paid for slave labor, during the period from 1740 through 1770, the annual net rates of return on investment in rice agriculture ranged from a low of about 13.5% to a high of 33.5% (Coclanis 1989:141).

These observations are sufficient to illustrate that rice and slaves were inseparable. And with rice and slavery came, to many, unbelievable wealth. Coclanis notes that:

on the eve of the American
Revolution, the white

population of the low country was by far the richest single group in British North America. With the area's wealth based largely on the expropriation by whites of the golden rice and blue dye produced by black slaves, the Carolina low country had by 1774 reached a level of aggregate wealth greater than that in many parts of the world even today. The evolution of Charleston, the center of the low-country civilization, reflected not only the growing wealth of the area but also its spirit and soul (Coclanis 1989:7).

The History of Crowfield Plantation

The Early Years

The English established the first permanent settlement in what is today South Carolina in 1670 on the west bank of the Ashley River. Like other European powers, the English were lured to "new World" for reasons other than the acquisitions of land and promotion of agriculture. The Lords Proprietors, who owned the colony until 1719-1720, intended to discover a staple crop whose marketing would provide great wealth through the mercantile system. This philosophy dates at least to the sixteenth century and the works of Richard Hakluyt, which provided the economic theory for the colonization of the Caribbean Islands and southern mainland of America. Within the theory of Mercantilism colonies existed only for the benefit of England (and the owners). The colonies provided markets for British manufactured goods, increased the employment opportunities of the lower classes, and supplied Britain with the raw materials that she would have had otherwise to import from her rivals (see Clowse 1971).

Coupled with this economic system was a political system based on landholding wealth. South Carolina was divided into three 480,000

acre counties. These counties were subdivided into eight seignories, eight baronies, and 24 colonies. Political power was then dependent on the size and type of landholding or nobility (see Weir 1983:55-56). While never completely realized, this system was intended to support the mercantile interests of the Lords Proprietors.

By 1680 the settlers of Albermarle Point had moved their village across the bay to the tip of the peninsula formed by the Ashley and Cooper rivers. This new settlement at Oyster Point would become modern-day Charleston. The move provided not only a more healthful climate and an area of better defense, but:

the situation of this Town is so convenient for public Commerce that it rather seems to be the design of some skillful Artist than the accidental position of nature (Mathews 1954:153).

The early settlers of the Carolina colony came from other mainland colonies, England, and the European continent. But the large number of colonists from the English West Indies primarily directed the future of Carolina. This Caribbean connection has been discussed by Waterhouse (1975), who argues that the Caribbean immigrants were largely from old families of economic and political prominence that formed the Barbados élite. Waterhouse observes that while elsewhere in the American colonies the early settled families were displaced from their established positions of power and economic superiority by newcomers, this did not occur in South Carolina. In Carolina:

a relatively large proportion of those who, in the middle of the eighteenth century, were among the wealthier inhabitants, were descended from those families who had arrived in the colony during the first twenty years of

its settlement (Waterhouse 1975:280).

This immigration turned out to be a significant factor in the stability and longevity of South Carolina's colonial élite. It also helped firmly established the foundations of slavery and cash crop plantations. One such Barbadian immigrant was Arthur Middleton, the father of William and Henry Middleton who eventually established Crowfield and Middleton Place.

Many of these Barbadian immigrants settled in the Goose Creek area, forming one of the most influential political and economic groups in the colony (Stoney 1938:19). The "Goose Creek Men" included individuals such as Maurice Mathews, James Moore, and John Boone. They favored increased Indian slavery, trade with the pirates (or privateers, as they were called so long as they were raiding Spanish vessels) that sailed the Carolina coast, and generally ignored the efforts of the Lords Proprietors to control the Colony's economic and political future. While the political power of the Goose Creek faction peaked in the 1720s, it continued to evidence considerable economic power well into the late 1740s (see Morgan 1980; Sirmans 1966).

The first owner of what would become Crowfield was John Berringer, a Barbadian immigrant whose association with the Goose Creek area appears short-lived. He was granted 1,800 acres of the Crowfield tract on May 17, 1701 (Proprietary Grants, vol. 38, pg. 393; Smith 1988:329). There is some evidence that his father, John Berringer, may also have had some personal property on the tract. Smith (1988:330) enticingly observes, "it may be supposed from the administration on his father's estate that he had made a settlement on the property," but provides no additional details. Regardless, John Berringer enjoyed the property for only a short period, being killed during Col. James Moore's expedition against the Appalachian Indians in 1704. Berringer's will left his South Carolina property to his sister, Mary Berringer. She, in

turn, married Robert Bishop on Barbados. Robert and Mary Bishop then conveyed the 1800 acres to Col. John Gibbes in 1709 (Smith 1988:330).

John Gibbes was a man of considerable wealth and power in Barbados and he moved to South Carolina, living on the estate and, upon his death in 1711, being buried in the nearby St. James Goose Creek churchyard (Smith 1988:330). At Gibbes' death the property passed to his son, John Gibbes, who married Anne Broughton (daughter of Thomas Broughton, who settled Mulberry Plantation on the Cooper River). They apparently held the property until 1720 when 132 acres were conveyed to Peter Bacot (Charleston County RMC, DB L, p. 260) and 230 acres were sold to Benjamin Marion (Smith 1988:330). The bulk of the tract, 1440 acres, were sold to Arthur Middleton on July 12, 1722 (Charleston County RMC, DB E, pg. 280).

Other researchers, such as Webb and Gantt (1991:53) suggest that Crowfield was not settled prior to the Middleton purchase. Certainly the historical evidence for occupation is far from conclusive, but so too is the evidence to support the notion that the plantation was held only as an investment. We are inclined to believe that at least by Gibbes ownership in 1709 some settlement was made on the tract and that there were likely slaves on the plantation.

Early agricultural experiments that involved olives, grapes, silkworms, and oranges were less than successful. While the Indian trade was profitable to many of the Carolina colonies, it did not provide the Proprietors with the wealth they expected from the new colony. This trade was also limited since the Indian population was so dramatically reduced by European disease, the sale of alcohol, and slavery.

Cattle raising also was an easy way to exploit the region's land and resources, offering a relatively secure return for very little capital investment. Few slaves were necessary to

manage the herd. The mild climate of the low country made winter forage more abundant and winter shelters unnecessary. The salt marshes on the coast, useless for other purposes, provided excellent grazing and eliminated the need to provide salt licks. More interior swamps found similar vegetation and provided a constant water supply (Coon 1972; Dunbar 1961). Production of cattle, hogs, and sheep quickly outstripped local consumption and by the early eighteenth century beef and pork were principal exports of the Colony to the West Indies (Ver Steeg 1975:114-116). This allowed the ties between Carolina and the Caribbean to remain strong, and provided essential provisions to the large scale, single crop plantations.

Some evidence of this cattle raising in the Goose Creek area, as well as the introduction of upland swamp rice, is offered by the 1716 Herbert plat of the nearby Elms Plantation. This early, almost stylized, plat shows features such as the Elms main house, various roads, as well as cattle roaming through the countryside. To one side is the additional notation of rice lands.

As Coclanis goes to lengths to illustrate, the shift from "pioneer" (i.e., grazing) to "plantation," (cash crops) was not a change in *mentalité* or ends, just a change in the means to the end. He observes that:

early land-intensive activities, activities which included not only mixed agriculture but rudimentary extraction and plunder - the stuff of Marxian primitive accumulation - as well, gradually gave way to economic activities requiring relatively greater inputs of labor and capital (Coclanis 1989:58).

South Carolina's economic development during the pre-Revolutionary War period involved a complex web of interactions between slaves, planters, and merchants. By 1710 slaves were starting to be concentrated on a few, large

slave-holding plantations. By the close of the eighteenth century some South Carolina plantations had a ratio of slaves to whites that was 27:1 (Morgan 1977). And by the end of the century over half of eastern South Carolina's white population held slaves.

It is unknown what was happening on Arthur Middleton's plantation during this period, although it is likely that he was planting rice like his neighbors. Middleton's primary residence, however, was The Oaks plantation, several miles southeast of what was to become Crowfield. The son of Edward Middleton from Barbados, Arthur was born in South Carolina in 1681. He was educated in England, returning to Carolina in 1704 to serve as a member of the Commons in that year. During the period of 1711-1717 he was a member of the Council and later was Speaker of the Commons. In 1718 he was the Speaker of the House and was outspoken in his desire to overthrow the rule of the Lords Proprietors. During the period of his purchase of the Gibbes property he was a member of the Council. When Governor Nicholson left Carolina, Middleton was left in charge of the colony. His tenure was rocked by disagreements and he dissolved the House six times between 1725 and 1729. With the arrival of Governor Johnson in 1729, Middleton stepped down continuing only as the President of the Council (Kaminer 1926:56-57).

During this period he did succeed in repurchasing 103 of the 132 acres Gibbes had sold to Bascot (Smith 1988:331). In 1729 Arthur Middleton conveyed the tracts of 1,440 and 103 acres to his eldest son, William Middleton. William had been born in Carolina in 1710, but was sent to England for his education (Kaminer 1926:58). Apparently the gift was intended to establish William as a gentleman planter.

William Middleton is consistently cited as the architect or builder of the Crowfield house in a variety of secondary sources. Smith, for example, remarks:

but certain it is that William Middleton when he acquired it built the fine "Capital Brick Mansion" upon it which he surrounded with the beautiful grounds and gardens (Smith 1988:331).

Although no citations or clear reasons are offered for this speculation, it seems likely that William Middleton did, in fact, build the extant dwelling about 1730. Not only is it architecturally appropriate for the period, but also it seems unlikely, when the historic documentation is surveyed, that any previous owner would have had the interest and/or financial capability to make the improvements. And as will be seen, the mansion certainly existed by the time William Middleton left the colony in 1755.

Smith also observed that Crowfield became the common name of the plantation either during the ownership of William, or his father, Arthur Middleton, the term apparently derived from Crowfield Hall in County Suffolk in England. The ancestral Crowfield was owned at the time by Mrs. Hester Browning, the aunt of Arthur Middleton and by her devised cousin, Henry Harwood (see Smith 1988:331). Eventually, Smith (1988:331) suggests, Crowfield in England passed to Arthur Middleton. English sources, however, suggest that the Suffolk Crowfield was purchased outright by Harwood, who dying on December 10, 1738, left it to William Middleton (Copinger n.d.:295).

Shortly before Harwood's death in 1738, William Middleton added 186 acres to his Charleston Crowfield, purchasing the tract from Isaac Perronneau. Although it is uncertain whether the English Crowfield went through the hands of his father, Arthur, or directly to William, it seems almost certain that William knew the English property was about to become his since a month before Harwood's death,

William began advertising his own property in South Carolina:

To be Sold by Wm. Middleton, a large Dwelling-house, divided into 4 commodious Tenements, fronting on Queen-Street in Charleston, with 2 good Cellars, Kitchen, Yard and Ground back for a garden to each tenement. Whoever has a mind to purchase, may meet with me at my Plantation in Goose Creek.

And whereas the said Middleton intends for England early in the Spring, this is to desire all those indebted to him either by Bond, Note or otherwise, to discharge the same by the first of January next (*South Carolina Gazette*, November 9, 1738).

Middleton, however, was not successful in finding a buyer for his Charleston house - it continued to be advertised for rent in January 1741, March 1742 and again in 1749 (*South Carolina Gazette*, January 15, 1741, March 13, 1742, March 20, 1749). In addition, during this interval he apparently went about his other business, farming. On several occasions he reported horses "strayed or stolen" from his Goose Creek plantation. The only mention of Middleton in Robert Pringle's letterbooks occurred on September 17, 1742, when Pringle was complaining about the commissioning habits of local planters and noted, "Mr. Middleton in particular is a Miser like his Father, & believe won't Ship any" (Edgar 1972:I:418). Although this may be a reference to either William or Henry, since both had large rice plantations, the higher social visibility of William suggests that Pringle may have singled him out for comment.

Middleton also served on the St. James Goose Creek Road Commission, the Vestry of St.

James Goose Creek, and even as a trustee for the Society for the Propagation of the Gospel.

In May 1742 Eliza Lucas provided the only first-hand account of the house and gardens of Crowfield. Described as "somewhat ecstatic" by Stoney (1938:54), most researchers have given Lucas' account high credibility. Her account is quoted at length:

the first we arrived at was Crowfield, Mr. Wm. Middleton's seat, where we spent a most agreeable week. The house stands a mile from but in sight of the road [0.95 mile by today's calculations], and makes a very handsome appearance; as you draw nearer new beauties discover themselves; first the beautiful vine mantling the wall, laden with delicious clusters, next a large pond in the midst of a spacious green presents itself as you enter the gate. The house is well furnished, the rooms well contrived and elegantly furnished. From the back door is a wide walk a thousand feet long [nearly exact by measurements today], each side of which nearest the house is a grass plat ornamented in a serpentine manner with flowers; next to that on the right hand [east] is what immediately struck my rural taste, a thicket of young, tall live oaks, where a variety of airy choristers poured forth their melody – and my darling the mocking-bird, joined in the concert, enchanted me with his harmony. Opposite on the left hand [west] is a large square bowling green, sunk a little below the level of the rest of the garden, with a walk quite

round bordered by a double row of fine large flowering Laurel and Catalpas -- which afford both shade and beauty. My letter will be of unreasonable length if I don't pass over the mounts, wilderness, etc., and come to the boundary of this charming spot, where is a large fish pond with a mount rising out of the middle of the top of which is level with the dwelling house, and upon it is a Roman temple. On each side are other large fish pond, properly disposed which form a fine prospect of water from the house -- beyond this are the smiling fields dressed in vivid green. Here Ceres and Pomona joyn hand in hand to crown the hospitable board (quoted in Leiding 1921:24-25).

This description provides an essential commentary for understanding the Crowfield landscape (see Trinkley et al. 1992). Eliza Lucas provided nearly exact measurements where they were offered, increasing the confidence of her description. She mentions, in order, the main road and the road to the site, eventually a vine-covered wall representing what may have been a fence line for the plantation or alternatively the wall of kitchen garden (see Dargan and Dargan 1989:21), the round reflecting pond just within the gate (indicating a second fence line) and surrounded by green lawn or pasture. Walking through the house (she does not mention any of the Palladian out-buildings) the next landscape is the garden.

A central, wide walkway 1000 feet in length, bisected the entire garden landscape. On either side of this walk, near the house, were grassed areas highlighted by flowering plants laid out in a serpentine fashion. This area may have been a parterre (Dargan and Dargan 1989:21). Just beyond the grassed area to the east

was a wooded thicket, natural area, or bosquet, while to the west was a square, sunken bowling green. Around this square bowling green was a path, outlined by a double row of trees. Eliza quickly passes over the central part of the garden, mentioning only mounts (plural) and the wilderness. At the north end of the garden, the terminal point, she observed the central, large fish pond with an island at the same elevation of the main house. On this island was a structure, described as a temple. On each side of the central pond were smaller ponds, apparently visible from the main house.

Dargan and Dargan observe that, "in the early picturesque ideal she [Lucas] complemented the bounty of the fields with an allegorical reference to the ancients" (Dargan and Dargan 1989:22). Ceres was the Roman goddess of agriculture, while Pomona was the goddess of fruit trees.

During his tenure at Crowfield William Middleton appears to have been successful, amassing considerable additional wealth. A 1745 tax return for the Parish of St. James Goose Creek shows William Middleton owning 2,433 acres in the parish and 100 slaves. He paid taxes of just over £247. The parish, as a whole, was also wealthy. Almost 30% of the households owned 50 or more slaves and the average number per household was 43. Clearly Middleton exceeded this average (Morgan 1980).

Middleton advertised in August 1753 that since he:

designed to go for England with his family early the next spring he intends to dispose of his plantation at Goose Creek (and to be entered on the 1 day of Jany next) containing about 1800 acres of land (the most of it good for either rice, corn or Indigo) whereon is a large brick dwelling house with many convenient out-houses and a

neat regular garden (*Gazette of South Carolina*, August 6, 1753).

On January 15, 1754, apparently after receiving no serious inquiries, Middleton advertised:

on Monday 25 February [1754] will be sold by the subscriber at his Plantation in Goose Creek the said plantation of 1800 acres (150 of which are in good rice lands) also furniture, china, plate and between 200 and 300 books as the Subscriber intends to Embark for Great Britain some time in March next (*Gazette of South Carolina*, January 15, 1754).

The plantation, as well as its furnishings and fixtures, was purchased by William Walter (Memorial Book, vol. 7, pg. 398). Walter also owned Millbrook Plantation on the Ashley, as well as Wampee Plantation. While uncertain, it seems unlikely that he spent any considerable time at Crowfield. At Walter's death in 1767 the property passed to his daughter, Elizabeth, who was residing in England (Charleston County Probate Court, Will Book 1761-1766, page 88).

Late Eighteenth Century Decline

By 1730 the majority of the population of the colony, both rural and urban, was black (Wood 1974). During the eighteenth century the profits to be gained from rice were extraordinary, ranging from a 12% to nearly 28% net return on the investment, well exceeding other cash crops, such as tobacco or indigo (see Coclanis 1989:141). Charleston was the mecca around which the economic, political, and social world of Carolina revolved. Charleston provided the essential opportunity for conspicuous consumption, a mechanism that allowed the display of wealth accumulated from the plantation system. Certainly the Middleton's of Crowfield were participants in this system,

exhibiting the wealth of rice in the imposing structures and well designed gardens.

By the end of the eighteenth century, beginning of the nineteenth century, the rate of return on rice had been reduced, at best, to about 2%, and many years the rate of return was a staggering -3% to -7%. In 1859, just before the Civil War, the return is reported to have been -28%. As Coclanis observes:

the economy of the South Carolina low country collapsed in the nineteenth century. Collapse did not come suddenly – many feel, for example, that the area's "golden age" lasted until about 1820 – but come it did nonetheless. By the late nineteenth century it was clear that the forces responsible for the area's earlier dynamism had been routed, the dark victory of economic stagnation virtually complete (Coclanis 1989:111).

During this period it is likely that Crowfield gradually stagnated, eventually to be abandoned by owners and guests.

Elizabeth Walters married William Haggatt in London, arriving in Charleston in September 1767. Smith suggests that William and Elizabeth Haggatt, through a series of transfers, passed title to Crowfield to William Haggatt (Smith 1988:332). Haggatt also acquired a 1,300 acre plantation on the Ashley River and made it his principle place of residence. The Haggatts returned to England about 1772. William Haggatt died and Elizabeth married James Marshall. Together they sold Crowfield and its slaves, in 1774, to Samuel Carne of London (Charleston County RMC, DB O-4, p. 360). Smith (1988:333) notes that this is the first use of the term "Crowfield" to describe the property.

Although "of London," this was the same Carne who was a druggist and apothecary who partnered first with Dr. Robert Wilson in Charleston from 1759 to 1770 and then with Dr. Elisha Poinsett from 1770 to 1775 (Hamer 1970:212). Although Carne left Carolina in 1764, he maintained the relationship with Wilson, shipping supplies and drugs from England – apparently in the effort to recover his debts and other losses. After his partnership with Wilson expired, he apparently began a fresh agreement with Poinsett, but this seems to have worked no better. In 1774 Carne returned to Carolina in an effort to salvage his financial affairs (Rogers et al. 1980:141).

It's unclear if the purchase of Crowfield was to be an investment – if so, it seems to have been a poor one since he clearly did not see any profit in the sale. But, the remaining evidence of the transaction reveals that there were at least 100 slaves at Crowfield and the second property, on the Ashley River, which Carne acquired (Rogers et al. 1981:184). Carnes sided with the English during the American Revolution, returning to England in 1782 (Hamer 1970:212).

Just prior to the sale of Crowfield to Carne, the site was visited by William Dillwyn, who found the gardens decaying, but remarked:

S.F. and myself with a Negroe Boy for our guide went to the next Plantation at which has been as much money expended in Improvements as I believe has been the Case anywhere in America. The Gardens, Fishponds, & Walks occupy about 20 acres which has been well planned (Salley 1935:109-110).

The decay present, the use of a guide, and the failure to "call on" the owner all suggest that the plantation was unoccupied, although it is likely that it was still farmed.

Carne held the tract for less than two years, then selling it at auction:

to be sold at Publick outcry Tuesday next the 31 day of Jany. at Mr. Stricklands on Charles Town Neck at ten o'clock in the forenoon all that plantation or tract of land called Crowfield containing 1440 acres or thereabout formerly belonging to William Middleton Esq. afterwards to William Walter Esquire deceased and situated in the Parish of Goose Creek on which plantation are a large Brick Capital MANSION HOUSE elegant GARDENS and other improvements so well known as not to require a more particular description Samuel Carne (*S.C. American General Gazette*, January 20, 1775).

Apparently as a result of this advertised auction, Crowfield was sold to Rawlins Lowndes in 1776 (Charleston County RMC DB E-5, p. 197). The use of "capital" to describe the mansion is probably a reference to a citadel on the top of a hill, often used in the context of Roman temples. This is part of the overall concept of the picturesque landscape.

This new ownership of Crowfield brought the site back full circle in the Caribbean connection since Lowndes was born at St. Kitts, British West Indies in 1721 — just a year before Crowfield was sold by Gibbes to Arthur Middleton. Lowndes moved to Charleston about 1730 and began studying law. He eventually became Provost Marshall Deputy in 1745, holding that position until 1754. He began his long service in the Commons in 1751 and was made an assistant Justice of South Carolina in 1766. He was a member of the Provincial Congress the year before he purchased Crowfield. He assisted in the drafting of the new

State Constitution and in 1778 was elected President of the state. In spite of his fierce patriotic stand, he strongly opposed the adoption of the United States constitution and died in August 1800 (Kaminer 1926:49-50).

Vipperman (1978:197) suggests that Lowndes' purchase of Crowfield was the result of his marriage to Sarah Jones three years earlier and his desire to obtain "a country seat befitting a Carolinian of his public standing and material success." It is suggested that upon his departure as President in 1779 he retired to Crowfield (Vipperman 1978:222). It seems unlikely, however, that Lowndes found Crowfield any better an investment than Carne — there is evidence that additional slaves were sold off to pay debts. With the fall of Charleston to the British during the Revolution, Lowndes sent his family to Crowfield for safety. A letter from Sarah Lowndes to her husband indicates that even in the interior there was only limited safety:

there are vast numbers of plunderers up this way, a large party came here yesterday, they said with orders to plunder, but told them I was convinced they had no such orders, and they should have nothing from me but what I gave them willingly, which was breakfast and a plenty of drink, and so I dismissed them (quoted in Vipperman 1978:226).

In spite of this, Crowfield apparently was stripped of stock and Lowndes explained to a colleague his economic reversals:

for several years before the troubles I annually made, at least, 1000 barrels of Rice, worth £15,000 Currency; I had as much Money at Interest as yielded £8,000 Currency more. My Houses in Town, exclusive of

Repairs & the one I inhabited, brought in £3,000, so that my Annual income was £26,000 Currency, upwards of £3,799 Sterling, which I was sure to have punctually paid. But upon an Average for the last four years, my Plantations have not produced upwards of £250 Sterling a Year; my Houses have been taken from me for public Uses, and are gone so much to decay they are not fit to be let, And my Money at Interest hath been paid into the public Treasury; add to which I have from various Causes lost upwards of 80 of my best Slaves (quoted in Vipperman 1978:227).

It appears from these accounts that Crowfield was a retreat (both before and during the Revolution) for Lowndes and his family, with most of their time spent in Charleston, probably at their house at 63 Broad Street. Crowfield was apparently abandoned by Lowndes between 1781 and 1782 and his family moved south to their Beaufort plantation called the Horseshoe. Eventually, Lowndes and his family moved back to Charleston after the British surrendered the city.

Smith (1988:334) briefly mentions the possibility that Lowndes leased Crowfield to Thomas Middleton, the son of William Middleton, although support for this hinges on a single uncited letter. Regardless, it is clear that Lowndes maintained ownership since in 1783 he advertised the sale of the plantation:

to be sold, that elegant much admired seat called Crowfield in the Parish of St. James Goose Creek four miles from the church of the said Parish and seven from that of Dorchester, it contains upwards of 1400 acres

of land, has on it a very commodious dwelling house of excellent brick work, having twelve good rooms with fire places, in each besides four in the cellar with fire places also and wants very little repair. The gardens are extensive, laid out in good taste and are in tolerable order. The Fish Ponds and canals are superior to anything of the kind in the State and abound with excellent fish. The pleasantness of the Situation, the good quality of the land the improvements and the vicinity to the Metropolis render Crowfield a most desirable abode where profit and pleasure may be as well combined as at any one place in the State at the same distance from Charleston (*S.C. Gazette*, September 23, 1783).

Lowndes sold Crowfield on March 16, 1784 to John Middleton, the youngest son of William Middleton, the former owner of the plantation (Charleston County RMC, DB K-5, p. 392). Vipperman notes that the sale of Crowfield allowed Lowndes to purchase fresh plantation lands west of the Edisto for cash, thereby avoiding the exorbitant postwar interest rates, which were often as high as 50%. The sale of Crowfield, seven years after its purchase, provided financial flexibility at a time of acute economic depression. Vipperman suggests, however:

viewed in a larger perspective, the sale of Crowfield seems to have had a deeper meaning for Lowndes. While it cannot be denied that the transaction had very practical results, he owned several other properties whose sale would have served that purpose. It seems no less true

that the appearance of a buyer who had reason to prefer that particular piece of property was a fortunate happenstance, for Middleton probably paid more out of sentiment for the old family seat than another buyer would have given. Nevertheless it seems clear that Crowfield represented to Rawlins Lowndes the realization of a persistent dream of his earlier years, one that he would not likely have given up for mere financial gain unless the dream had somehow become hollow. Considered in this light the sale of Crowfield may be taken as evidence that Lowndes no longer felt the need of such an impressive symbol of aristocratic status. Nor did he fully embrace the conservative Goose Creek attitude toward government as the citadel of propertied interests represented by the Rutledge-Pinckney faction now emerging as the dominant force in state politics (Vipperman 1978:238-239).

John Middleton died only a few months after his purchase of the tract. Leaving no will the property passed to his only son, John II. This John Middleton retained the property until his death in 1826. At his death John Middleton (II) owned at least two other plantations besides Crowfield – Washo and The Cape, both on the Santee. These plantations were reserved in his will, while the remainder of his estate was to be sold. Since the will was filed in the parish of St. James Santee it seems likely that Middleton continued to reside at least occasionally at Crowfield (although see below), even though we have been unable to document any agricultural activity on the tract.

Middleton's will, however, does mention the two elderly slaves, Salley and Phoebe, who were to be allowed "residence and maintenance on my plantation, to receive at the expense of my estate such allowance in diet and cloathing as they are accustomed to," suggesting that they were perhaps the remnant of his house staff (Charleston County Wills, vol. 37, pg. 60).

In the great hurricane of September 1822 there is a record that his home and two rice mills were destroyed – although it is unclear, it seems more likely that this "home" was in Charleston. Looking through the Charleston City Directories John Middleton isn't listed until 1816, at which time he was living at 41 George Street. By 1819 his residence was at the corner of Society and Anson streets. In 1822 Middleton was living at 42 Bull Street. In 1824 he paid \$17.70 in tax on his 1,180 acres of Crowfield, valued at \$4,720. No slaves were reported. In contrast, his 5,970 acres at the Washo and The Cape in St. James Santee was valued at \$12,948 – far less per acre – yet there were also 420 slaves at these two tract (Moore 1992:183).

In 1840, years after John Middleton's death in 1826, his executors conveyed the plantation to Henry A. Middleton (Charleston County RMC, DB D-11, p. 478). Perhaps the delay was related to the settlement of the estate – Middleton named six children and his wife in the will. The executors may also have waited to sell Crowfield until the two elderly slaves, Salley and Phoebe, had died.

Regardless, it seems likely that by the middle of the 1840s the plantation was no longer active. The land was exhausted, the "capital mansion" was likely in decay, and the tract probably had no resident slave population. The earlier of the two plats found for Crowfield dates to 1854 (Elliott 1987:Figure 7). It reveals the moon reflecting pond, main house, and what are perhaps the two flankers. To the south is a bank, at about the same location of archaeological site 38BK1012. The area of the slave settlement, 38BK1011, situated just north

of a drainage, is shown only as "old fields." The drainage, however, is clearly shown on the plat.

The next plat isn't until 1872 and it reveals even less about the plantation, showing only the "old settlement." No longer are any drainages, banks, ditches, or fields shown on the plat. By this time the entire tract had been converted into woods.

An appropriate summary is provided by Zierden and Calhoun:

the economic decline of Charleston occurred as the city was growing increasingly defensive of its "peculiar institution." The city sullenly withdrew into itself, eschewing the present and glorifying its past. The great fire of 1861 devastated much of downtown Charleston. The War Between the States . . . set the seal on a social and economic era (Zierden and Calhoun 1984:54).

Coclanis, quoting Henry James' description of Charleston as a "flower-crowned waste," remarks that the economic events which gave rise to great power in Charleston, also gave rise to its eventual downfall.

Twentieth Century Stagnation

Shortly before the twentieth century H.A.M Smith, a Middleton descendent, visited Crowfield, observing:

When the Crowfield property was first seen by the writer say 40 years ago [ca. 1880s] the walls of the "Capital Brick Mansion" were still standing intact to the eaves of the old roof. The roof of course was gone and so were all the floors and all the staircases, but the

old walls both exterior and interior were in such condition that the beams and floors and roof could have been replaced so as to practically present the house as it originally stood. Very considerable remains of the old gardens and grounds remains [sic]. The mound still stood and stands and [sic] in the pond or lake at the end of the lane to the rear of the house on the little island in the middle could still be seen the remnants of the old "Grotto" or Summer house which stood upon it. The "natives" around had long cut the dam of the pond so as to get at the fish in it (Smith 1988:335).

It is uncertain whether this visit was before, or after, the 1886 earthquake, but other commentaries suggest that Crowfield may have suffered extensive damage. Sloan remarked that at the nearby Ladson station on the South Carolina Railroad Line, chimneys collapsed and wells filled with sand. At the St. James Church the east and west gables of the massive brick building were destroyed, the side walls were severely cracked, and the northeast corner was severely damaged. At the Oaks Plantation, about 2 miles south-southeast of Crowfield a massive brick building, and a brick stable were destroyed (Peters and Herrmann 1986:56-58, Figure 62).

In 1913 the plantation was visited by Langdon Cheves III, who sketched the main house ruins and noted:

N. wall 66 feet wide (about) wide spaces of double windows. East wall 43 feet (about). Window frames in front South wall still there. Also over N. door -- Also laths in part of ceiling. Walls up to 2nd story. That is basement & first story a

few feet of 2nd story in places (Langdon Cheves III Collection, Land Records, South Carolina Historical Society).

A July 19, 1936 *Charleston News and Courier* article by H.R. Dwight recounted the history of the site and briefly described the remains still present. While difficult to determine whether the account comes from a first-hand visit, or from the comments of others, Dwight stated:

where were once fields, rich with abundant harvests, are now thick growths of towering pines This [southern] lake is in general shape octagonal, about two hundred feet between parallel sides and about five feet deep. The driveway of the avenue is about sixty feet wide, and the distance between the trees, measured across it, about seventy feet.

Several hundred feet to the north of the house is a mound about ten feet high. Beyond this and about one thousand feet from the house, are the fish ponds, which still bear evidence of the enormous amount of labor which their construction must have required. These ponds form a rectangle, possibly four hundred and fifty feet long and two hundred and fifty feet wide, the smaller ponds being formed by cross banks about sixty feet from each end. These banks are about fifteen feet wide at the bottom, and ten or twelve feet high. The small ponds are eight feet deep, and the large one ten or twelve feet. In the center of the latter are the

remains of the mound, upon which Eliza Lucas states there was a "roman temple."

The house has a frontage of fifty-four feet, and is forty feet wide, with the corners handsomely quoined for sixteen feet, which appears to have been the original and full height of the walls. These are two feet, four inches thick below the coping, which is four feet above the ground, and two feet thick above. The front and back doors are four by six feet; the front windows three and one-half feet by six, and those on the sides two feet ten inches by six feet. The large fireplace in what was apparently the main living room, measures six feet in the back and four feet above the hearth. The other fire places measure about four feet each way. Upon entering the ruins, one finds a condition of utter dilapidation; all of the interior walls have been removed and the whole area is filled with irregular heaps of broken brick and mortar. West of the house are the foundation walls of a building eighteen by thirty-four feet, and another smaller ruin at the corner of the terrace at the northeast. On the east are the remains of terraces and brick walls. Behind the house, along one of the terraces are four or five very large magnolia trees ("Crowfield Today Crumbling Ruins," *Charleston, S.C. News and Courier*, July 19, 1936).

The 1938 *Plantations of the Carolina Low Country* by Samuel Gailard Stoney provides a brief account of the main house:

Enough of the "capital mansion" remains to show that its front and rear walls were laid up in Flemish bonding with light red stretchers and glazed headers of a purple blue (the other walls being of English bond with unglazed headers) and the house further enriched with quoinings, belt courses and voussiors in a soft yellow stucco. Within the house the plan can still be discerned and the parlor chimney still shows the scars of its tile lining, all now plucked off and carried away.

The restoration here of the garden (page 119), although accurate as to the still discernible earthworks and buildings, is of necessity somewhat free in detail. The fish ponds, which seem to have furnished water for the rice fields below them, have long since been drained for the sake of their fish. Other adventurers have dug down through the mount in the garden hunting treasure. What remains of the avenue still contains some of the finest live oaks for shape in the Low Country, but they are badly overgrown with holly and dogwood (Stoney 1938:55).

Stoney's drawing of the Crowfield garden (reproduced here as Figure 3) incorporates his own observations, his extensive knowledge of art and architecture, and at least the account of Eliza Lucas. The result is perhaps somewhat fanciful, but yet amazingly accurate. Stoney apparently saw, and recorded the placement of the two flankers, as well as the small eastern garden structure. He showed no interest, however, in any of the outbuildings on the

plantation and his drawing cuts off the area of the slave settlements to the southwest of the main house.

Published the following year, Shafer's *Carolina Gardens* provides a somewhat romanticized account of Crowfield:

Today I found sad change, the brick walls shattered and broken and the details of the ancient garden so hidden in a jungle as to be traced with great difficulty. However, it would be possible to accomplish here, as at Cedar Grove on the Ashley, a glorious restoration of the gardens Without any warning we came on the large, tree bordered circle of an ornamental lake Then, pushing through a heavy wood we came to the ruins of Crowfield house, heavy brick and cement walls intact to the second story. What seemed to have been a raised path or mall, similar to that I discovered at Cedar Grove on the Ashley, extends from the front of the house, facing Goose Creek on the Ashley [i.e., to the north], terminating in a high mound, evidently once a mount, dominating the lakes and garden. Beyond this I was astonished at the lofty and extensive embankments that once held the great lake. The space inside, long ago drained by a deep canal cut through the bank, has grown up dense with gum and cypress so that I could not locate the islet that once supported the garden temple. . . . The oaks of the park and avenues seem to have nearly all vanished The entire garden

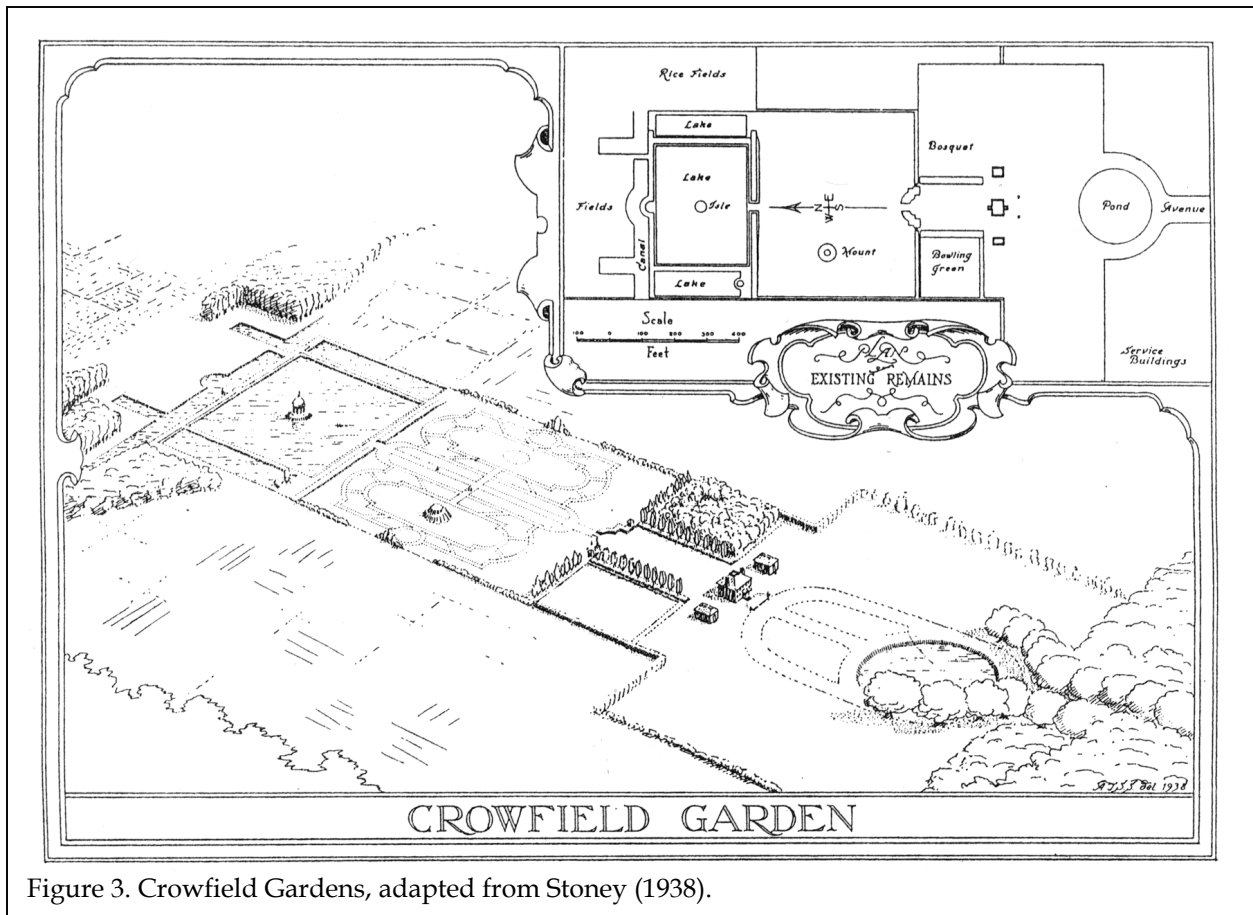


Figure 3. Crowfield Gardens, adapted from Stoney (1938).

site is now covered with enormous forest trees (Shafer 1939:43-44).

In 1940 the Crowfield ruins were investigated by the Historic American Building Survey. At that time the building was in relatively good condition with about half of the south elevation existing to the roof line, the east facade largely intact, the north elevation intact except for damage around the paired windows, with the west elevation having suffered the greatest damage. The damage noted is consistent with observations of other structures damaged in the 1886 earthquake by McGee:

the most seriously cracked walls are those facing east; those facing west are nearly as seriously injured; those facing south follow in order of injury

but are much less injured than the two former categories; and finally those facing north are least injured but only slightly less than the southerly walls (Peters and Herrmann 1986:14).

A series of five drawings, 11 photographs, and three pages of notes were made by the field party (LC catalog number SC, 8-GOOCR.V, 1-, HABS Number SC-6). Figure 4 shows the basic floor plan of the building.

In 1968 Crowfield was again the focus of a newspaper article. In the article W.H.J. Thomas mentioned that the remains of the house and garden were part of a 3,100 acre tract owned by the West Virginia Pulp and Paper Company that would be "developed into 250 home sites" ("Crowfield: Lowcountry History

Hidden From View," Charleston, S.C. *News and Courier*, June 10, 1968).

Some additional oral history accounts supplement what is known about the late history of the plantation. One account, for example, is from an individual who, during the 1950s, had a deer stand just northeast of the main house. Close by were the remains of several graves, one of which was described as of a young child who died in the early 1800s. The gravestone, based on the informant's description, was made of gray slate. This is the first mention of a cemetery located in the vicinity of the gardens.

Another informant tells the story of coming to the site during his childhood to swim in the reflecting pond south of the main house. He remembered that many of the youngsters would find nearly intact ceramics, and particularly wine bottles, at the bottom of the pond. These items, once recovered, were thrown up against the nearby main house walls for "sport."

Previous Investigations at Crowfield

Early Survey Level Research

Crowfield was initially recorded as an archaeological site in 1974 by Travis Bianchi with the South Carolina Institute of Archaeology and Anthropology. A small assortment of historic artifacts were collected and the site form also mentioned the brick house ruins, the two flanker ruins, and two outlying brick foundation ruins (38BK103 site form, S.C. Institute of Archaeology and Anthropology).

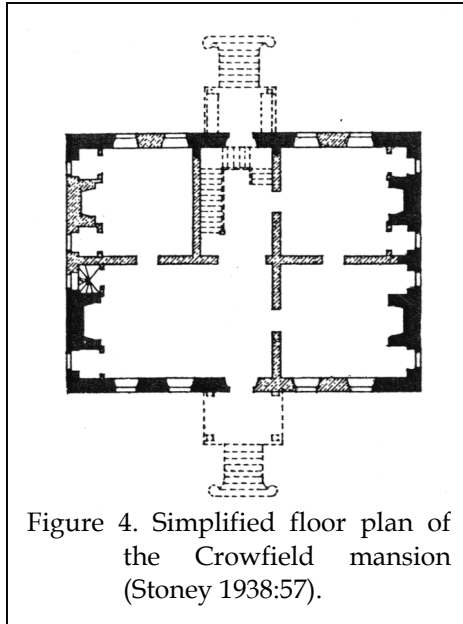


Figure 4. Simplified floor plan of the Crowfield mansion (Stoney 1938:57).

The site was revisited as part of a reconnaissance level survey in 1978 (Poplin et al. 1978). Another small collection was made from limited shovel testing and the authors briefly noted the main house and associated gardens.

As was typical for the time period, these early studies focused on the obvious - the brick ruins - which also happened to be associated with the plantation owner. The examination of slavery and African Americans was only

beginning to be considered an appropriate scholarly study. In addition, without an intensive archaeological survey - without actually looking for the slave settlement - it was lost in the forest, almost completely "invisible."

In 1987 the 2,372 acre Crowfield Tract was subjected to an intensive survey by Garrow and Associates (Elliott 1987). Elliott remarks that logging, conducted in 1985, had dramatically changed the appearance of the site:

Log skidder paths, varying in depth, criss-cross the site. Vandalism had occurred to portions of the site, and consisted of indiscriminately placed shovel holes scattered over the site and systematic mining of two areas along the flankers (Elliott 1987:70).

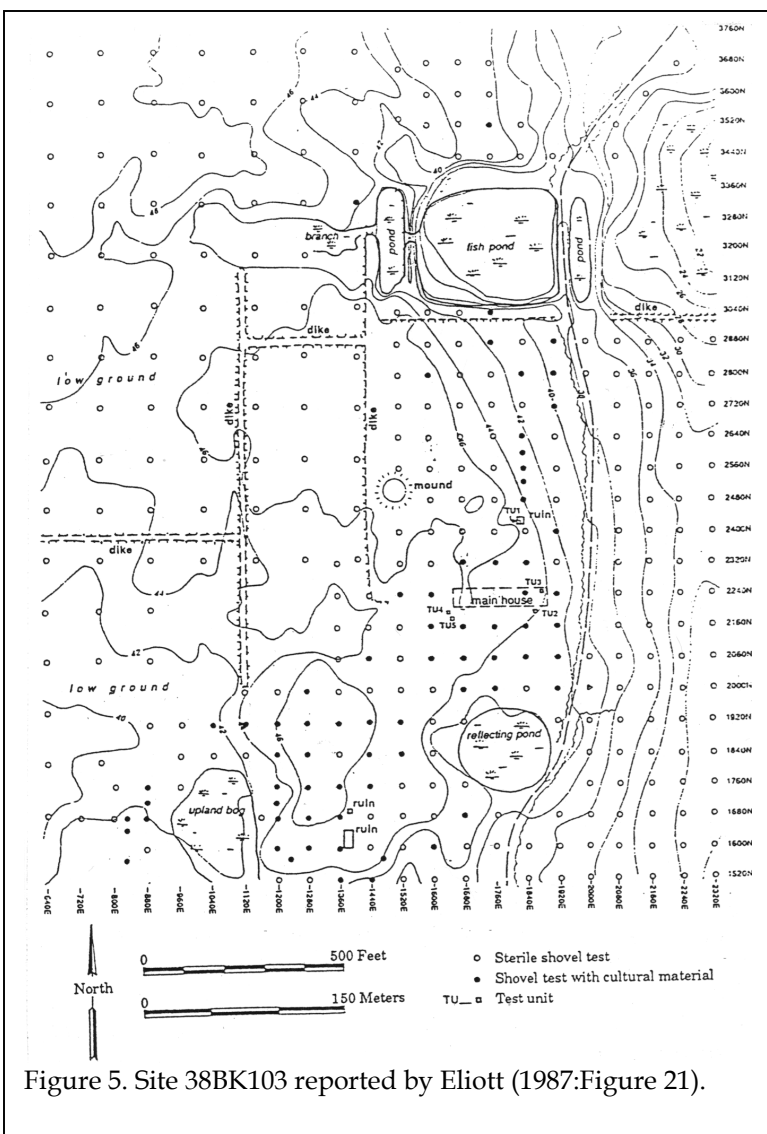


Figure 5. Site 38BK103 reported by Elliott (1987:Figure 21).

He established a site grid (the same one used today) and excavated approximately 330 shovel tests at 80 foot intervals in the vicinity of the Crowfield settlement (Figure 5). Five 2-foot tests were excavated at 38BK103, revealing an assemblage dominated by Colono wares (which accounted for 77.3% of the Kitchen assemblage). In addition, Elliott found that fewer than five of his artifacts clearly post-dated the eighteenth century. He defined the site as encompassing an area measuring about 1,760 feet north-south by 1,200 feet east-west or about 48 acres (Elliott 1987:71).

In addition, Elliott encountered what he described as another site, "immediately south and west of 38BK103." Provisionally called Site 31, this is now known as 38BK1011, although the boundaries have changed with subsequent investigations. Shovel tests were excavated at 80 foot intervals, revealing a site measuring 488 feet north-south by 894 feet east-west, or about 10 acres (Elliott 1987:79; see Figure 6).

In essence, Elliott extended 38BK103 to just south of the two brick ruins and westward across the upland bog, creating a straight (and arbitrary) east-west boundary with 38BK1011. At this site the Colono wares were even more common, representing 96.6% of the ceramic collection (Elliott 1987:83).

Slightly removed from 38BK1011, about 2000 feet to the southeast on the edge of Huckhole Swamp, was Elliott's Site 32 (38BK1012) (Figure 7). Here the survey found two distinct areas. One consisted of the remains of a large inland rice reservoir, identified through the discovery of two "unusually high dikes intersecting at

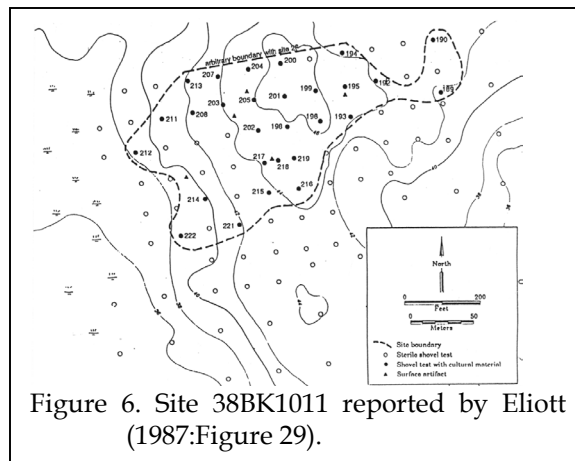
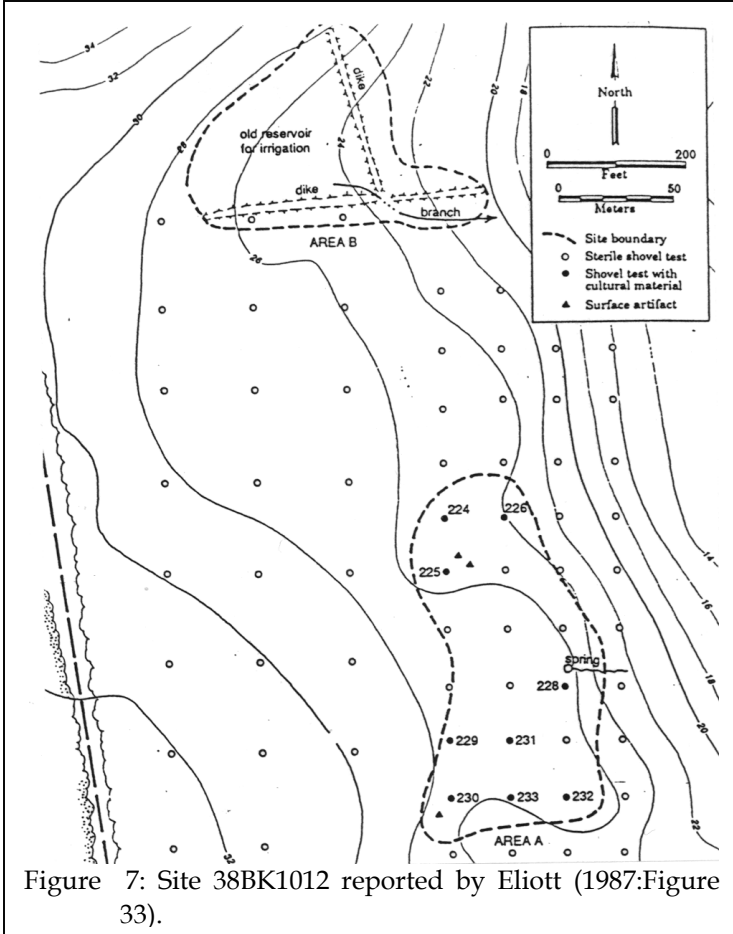


Figure 6. Site 38BK1011 reported by Elliott (1987:Figure 29).



right angles." Flowing from this area was a fresh water spring, which perhaps provided the source of the impounded water.

The other area at Site 32 consisted of a dense scatter of eighteenth century ceramics, again dominated by Colono wares, accompanied by a scatter of brick. Also present on the site was a ditched spring, which perhaps served as the water source for what was thought to be a second slave settlement area (Elliott 1987:89).

This site was recommended as potentially eligible and Elliott suggested additional testing in the vicinity of the posited settlement. While no excavations were recommended for the reservoir area, he did suggest that it be mapped, since it would assist in better understanding the dynamics and operation of these inland rice impoundments.

Preparation of an MOA

Elliott suggested that the Crowfield settlement was very large and exceedingly complex, describing it as:

the main house complex (38Bk103), eighteenth-century slave quarters (Site 31 [38BK1011] and Site 32 [38BK1012]), a complex eighteenth-century irrigation system (exemplifying distinctive features on Site[s] 26, 28, and 32), early eighteenth-century naval stores industrial sites (Site[s] 18 and 35), nineteenth-century settlements (Sites 10 and 34), late nineteenth- and early twentieth-century tenant farm sites (Sites 7, 9, 17, and 25), and other disturbed sites (Site 4). All were part of, or derived from, a single plantation system (Elliott 1987:49, 69).

A Memorandum of Agreement (MOA), dated March 29, 1988, was developed between the Department of Housing and Urban Development (HUD), the S.C. State Historic Preservation Officer (S.C. SHPO), and the Advisory Council on Historic Preservation (ACHP), with the concurrence of the U.S. Army Corps of Engineers (COE) and Westvaco Development Corporation (the owner of the property). As a result of this MOA both the main house area (38BK103) and the associated slave settlement (38BK1011) were specified for either preservation in place or data recovery. The MOA offered little additional guidance and it did not include the other portions of the Crowfield settlement, especially the one identified as Site 32 (38BK1012). As a practical matter, the other sites, including the rich landscape features, were ignored by preservation efforts.

Additional Testing of a Portion of the Crowfield Site and Slave Settlement

In 1990 Westvaco requested that Law Environmental conduct test excavations at sites 38BK103 and 38BK1011. The goals of this work were apparently to once again evaluate the eligibility of the two properties, determine more precise boundaries, and examine preservation and data recovery options. A draft report of the work was provided to Westvaco in early 1991 (Webb and Gantt 1991). This draft report has formed the basis of our recommendations and technical proposal for data recovery excavations.

The initial phase of the Law Environmental study was additional archival research for the Crowfield Plantation. Webb and Gantt remark that:

One unfortunate aspect of the archival research was that the Principal Investigator was not able to add an appreciable amount of information to Elliott's (1987) literature review. This is both a tribute to Elliott's thoroughness and the limited reference to Crowfield in the archival collections (Webb and Gantt 1991:50).

The scarce historical information concerning Crowfield has also been noted in our examination of adjacent Broom Hall Plantation (Trinkley et al. 1995). Regardless, the draft report does provide a detailed, and very thorough, overview of the plantation and, especially, a land-use history appropriate to archaeological research.

At the two sites, which are essentially contiguous, 1,038 shovel test points were laid in at 20 foot intervals. Of these 757 could actually be excavated (the remainder were inaccessible, either because of construction activities or Hugo treefall). Of the 757 that were excavated, 567 were identified as positive (this, however,

included tests with brick or mortar, as well as tests with more "diagnostic" materials).

Five different loci were suggested for the southern end of the main plantation complex (38BK103), but the figure illustrating these areas was not included in the available copy of the draft report. Nevertheless, they can be generally reconstructed in Figure 8 based on verbal descriptions and the location of subsequent test units. Webb and Gantt describe the areas as:

Locus No. 11, which is along the northern edge of a large brick structural foundation (Structure No. 1) and about 45 ft southeast of a small brick foundation (Structure No. 2). Locus No. 12 is about 45 ft northwest of Structure No. 2. Locus No. 13 could not be specifically linked to a brick foundation, but the exceptionally high brick/mortar yield suggests that this locus is within or proximate to structural remains. Locus No. 14 could be related to Locus Nos. 12 and/or 13. . . . At present, Locus No. 10 can not be readily explained except that it probably represents a structure (Webb and Gantt 1991:92).

They also note that the 38BK103 areas:

contain brick/mortar artifacts almost exclusively. The overall lack of household-related artifacts indicates that some of the structures along the southern edge of Site 38BK103 may have been used for storage rather than habitation (Webb and Gantt 1991:93).

This, of course, is a very reasonable interpretation of the near absence of domestic remains and is consistent with what we know

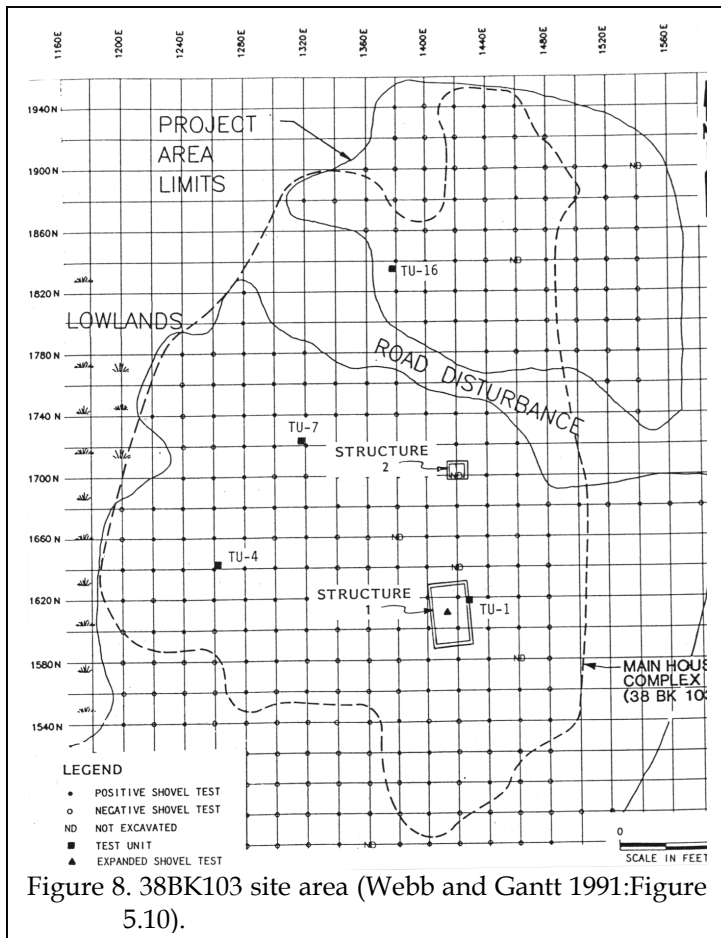


Figure 8. 38BK103 site area (Webb and Gantt 1991:Figure 5.10).

about plantation landscapes. These findings will be more critically evaluated in a following section.

Based on their tests, Law Environmental identified nine different loci at the slave settlement (38BK1011). It is suggested that their Areas 3, 4, 5, and 6 represent the core of the slave settlement. Areas 1 and 7 are thought to perhaps represent discard areas near structures, while Areas 2 and 8 perhaps represent peripheral structures. These different areas are graphically illustrated in the Law Environmental draft report (Webb and Gantt 1991:Figure 5.7, reproduced here as Figure 9). Like those at 38BK103, we will return to these findings in a following section.

At the conclusion of the shovel tests, Law Environmental then proceeded to excavate

a series of 16 five-foot test units — 12 at 38BK1011 and four at 38BK103. These served to supplement the artifact assemblages and offer additional information for the site interpretation. Their findings will be briefly discussed in the following section.

At the conclusion of the draft report, the various areas were largely combined to create "sensitive areas" which were recommended for additional investigation (Webb and Gantt 1991:Figure 7.1). The five areas at 38BK103 were combined to form three "sensitive areas" and the nine areas at 38BK1011 were combined to form one "sensitive area." This resulted in relatively little additional boundary definition.

Evaluation of this Additional Testing Data

Using the tabulations of artifacts provided by Law Environmental (Webb and Gantt 1991:Table 5.1) two computer generated density plots were quickly developed. One (Figure 10) illustrates artifacts (with each contour representing two specimens), while the other (Figure 11) illustrates brick density (with each contour representing 50 fragments of brick). The two artifact contour interval was chosen to maximize the definition of different areas, while keeping the map readable. The 50 fragment interval for brick was chosen based on our field experience with brick rubble and its potential for dispersion through either brick salvage or by agricultural or silvacultural operations. In order to designate structural remains, relatively dense brick rubble is essential.

At 38BK103 there is a dearth of domestic material. Only three "concentrations" (if they can really be called that) are found and each incorporates only a single shovel test. There is also only one concentration of brick rubble, although it does include multiple shovel tests. At one level these data serve to confirm the

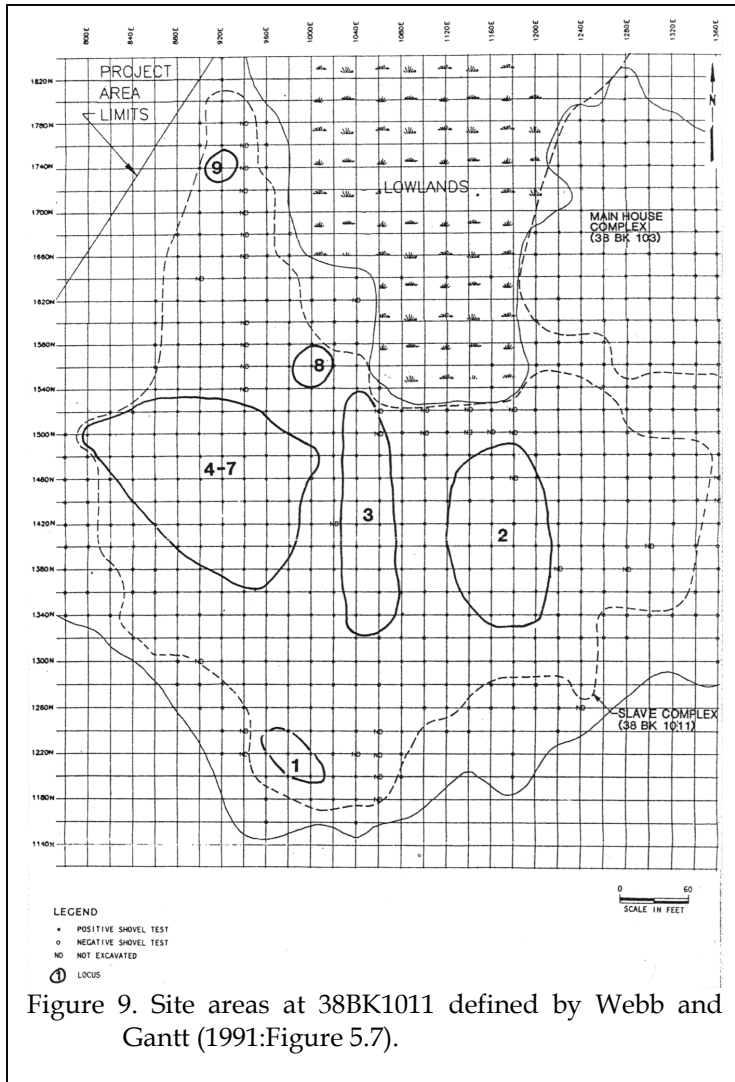


Figure 9. Site areas at 38BK1011 defined by Webb and Gantt (1991:Figure 5.7).

remarks offered by Webb and Gantt, identifying this portion of 38BK103 as serving primarily for storage. Yet, there seems to be little evidence in the general survey data for the multiple loci they identify. It is therefore appropriate to also examine the four test units excavated in this portion of the site.

Unit 1 was placed on the outside of a brick foundation (measuring 44 by 25 feet) identified as Structure 1. A builder's trench was identified and excavated. Artifacts were very scarce and the structure was tentatively interpreted to represent a rice barn (Webb and Gantt 1991:99-111).

Unit 4 was laid in at an area of reported high brick density (11 pieces). Again, very few domestic artifacts were found and only 36 ounces of brick were recovered in the unit excavations. The authors identify what they believe to be two somewhat parallel features and speculate that they represent "structural trenches." A small "window" was excavated into one, while the other was not further examined (Webb and Gantt 1991:115-122). It is not possible to determine what these represent, but there seems to be very little evidence to support the structural interpretation. For example, there seems to be no evidence of daub or post holes (such as would be found with a wall trench structure) in the one supposed trench that was examined. Alternative interpretations range from plow or silvacultural scars to agricultural ditches.

Unit 7 was also laid in an area of reported high brick density (29 pieces). After excavating a few inches, they came down on what was described as "brick and mortar aggregate" which had been "dispersed by silvacultural activities." The excavation into this zone continued for an additional few inches and was terminated prior to reaching subsoil (it is difficult to reconcile the verbal

description which notes that excavation proceeded to a depth of 10 inches and the profile drawing which indicates that the excavation was terminated at about 6 inches). In the process of this excavation two features were reported penetrating the brick and mortar rubble (and hence post-dating this rubble lens and, presumably, its dispersion by forestry activities) (Webb and Gantt 1992:122-126). The dense brick rubble noted in this excavation is also that revealed by the computer density plot (Figure 11).

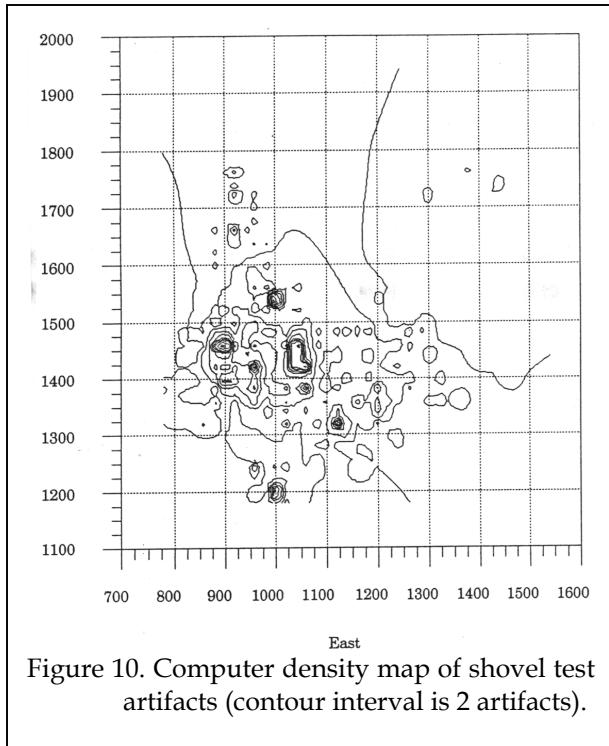


Figure 10. Computer density map of shovel test artifacts (contour interval is 2 artifacts).

The last unit, Unit 16, was also laid in at a location of posited dense remains (presumably the 17 pieces found in the shovel test at 1820N/1400E). In spite of dense roots, a structural trench was claimed to be found, forming an intersection in the southeast corner of the five-foot unit. Only a small "window" was again excavated in the feature, and no evidence of daub or posts was reported (Webb and Gantt 1991:126-133).

In addition to these tests, Webb and Gantt speculate on the nature of Structure 2, a second intact brick foundation. Measuring about 11 by 10 feet, this particular structure appears to have been heavily impacted by site looters. Webb and Gantt report piles of backfill, as well as brick and mortar rubble. Their study was limited to sampling the looted spoil piles. This structure produced a small quantity of European ceramics and a comparatively large collection of Colono wares (109 specimens). In fact, this is the most domestic assemblage recovered from the portion of 38BK103 being investigated. Curiously, Webb and Gantt ignore the possibility of this representing a domestic

structure. After suggesting that it might be a privy, well, or kitchen, they finally speculate instead, based on the presence of "charred bones," that it represents a "smokehouse" (Webb and Gantt 1991:115).

At the slave settlement nine units were excavated in eight of the nine areas and four additional units were excavated in non-defined areas (described as exploratory).

Units 6 and 10 were excavated in Area 1. Unit 6 was placed to explore the deposits at the "southern edge" of the area and Unit 10 was located to examine an area of dense Colono ware remains (18 sherds recovered from the associated shovel test). Unit 6 produced a trench, interpreted to be structural (although no clear structural evidence, such as daub or posts, was identified). The "window" excavated into the feature produced a very amorphous "cluster" of Colono ware sherds variously interpreted by Webb and Gantt as a "post hole" or as simply a "cluster" (Webb and Gantt 1991:134-146). Unit 10 produced no convincing features, although two post holes were reported (Webb and Gantt

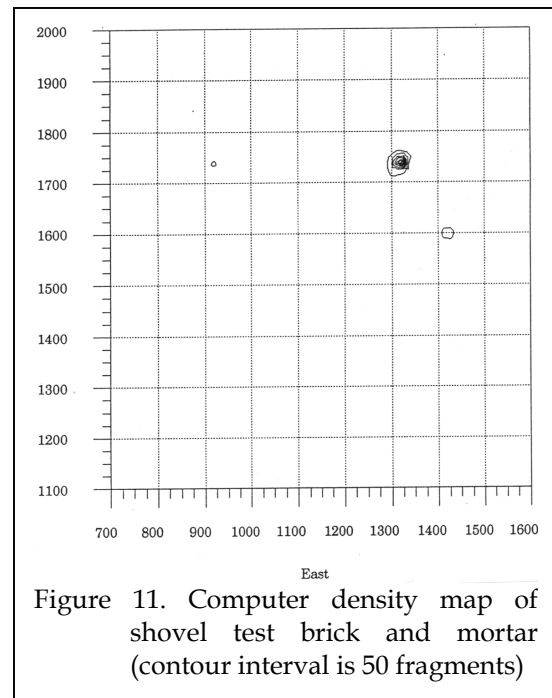


Figure 11. Computer density map of shovel test brick and mortar (contour interval is 50 fragments)

1991:146-154). Nevertheless, artifacts were relatively dense, supporting a near structural location.

Units 2, 5, and 9 were excavated in Area 2. Unit 2 was placed on the east edge of the area, Unit 5 was placed on the southeast edge in an area of dense kitchen remains, and Unit 9 was excavated at the northeastern edge, also in an area described as "moderately dense." While Unit 2 did produce relatively dense remains, no features were encountered (Webb and Gantt 1991:154-160). Likewise, Unit 5 produced no features, but yielded a large quantity of low-status material, including abundant Colono wares (Webb and Gantt 1991:160-168). Unit 9 was also relatively "clean," although an "enigmatic" feature, perhaps a "natural soil anomaly," was identified (Webb and Gantt 1991:160-174).

Unit 8 was excavated in the northern portion of Area 3 to explore a high density of kitchen artifact remains. Like those in Area 2, no features were encountered, but a relatively dense artifactual assemblage was identified. Webb and Gantt (1991:182) frequently associate the sparse architectural remains (such as found in Unit 8) with a midden area. We suggest a more cautious interpretation. Wall and trench structures typical of early eighteenth slave settlements lack glassed windows, frame construction, and architectural hardware. Consequently, they frequently produce almost no architectural remains. Based on the shovel testing and excavation it is very difficult to distinguish midden from structural areas.

Units 3 and 11 were excavated in combined Areas 4, 5, 6, and 7. Both units were placed in dense areas of kitchen remains. Unit 3 produced two features, only briefly examined using the "window" approach. Comparing the drawing illustrated by Webb and Gantt (1991:Figure 5.27) with their photograph of the unit (Webb and Gantt 1991:Plate 5.36) reveals considerable similarity, although the feature in many ways seems much more distinct than is

suggested by the drawing. Regardless, Webb and Gantt remark that, "the relative position of Feature 1 to Feature 2 indicates that Feature 1 is probably the interior wall of a double bay structure" (Webb and Gantt 1991:186). Later they remark that:

Test Unit 3 was placed on the remnants of a slave cabin at the juncture between the exterior wall and what appears to be an interior wall that divided the structure into two bays. Two exterior wall trenches with supporting posts were identified. The fact that the interior wall does not appear to have been rebuilt, suggests that house form may have changed over the structure's occupational span (Webb and Gantt 1991:192).

We were less convinced than they that the very limited "window" actually provided good evidence of rebuilding. Regardless, even if this were revealed to be the case, the interior wall may never have been rebuilt since it would not have been load bearing. As only a partition wall, its structural integrity would have been of minor concern. Moving on, Unit 11 produced what Webb and Gantt describe as "two feature-like areas," one of which was thought to be a very shallow post hole and the other to be "soil anomalies" (Webb and Gantt 1991:192-198).

Unit 15 was excavated in Area 9 to explore an area found during shovel testing to exhibit dense brick remains (30 pieces). This unit revealed what was interpreted to be a wall trench along its eastern and northern edges. Webb and Gantt remark that the unit "was placed just inside the wall of a dwelling" (Webb and Gantt 1991:207). The photograph provided, however, reveals that the trench originates very high up in the profile, almost at ground level (Webb and Gantt 1991:Plate 5.43). Since there has been some degree of cultivation and

silvicultural activity, this might suggest that the feature is relatively recent. The fact that the feature contains an assemblage almost identical to the unit fill would only be expected if it was a modern intrusion backfilled with the original soils.

Three units – 12, 13, and 14 – were used to explore different areas of the site. Unit 12 was placed at the southern boundary of the settlement, based on the shovel test data. Given its location it should come as no surprise that it yielded few artifacts and no features (Webb and Gantt 1991:207-209). Unit 13 was placed between Areas 3 and 4-7 "to examine the nature of inter-locus cultural deposits" (Webb and Gantt 1991:209). Again, it should come as no surprise that few artifacts and no features were encountered. Webb and Gantt observe that, "the scarcity of artifacts and lack of structural features in Test Unit 13 supports the contention that the area sampled by this unit was between occupational clusters" (Webb and Gantt 1991:213).

Finally, Unit 14 was placed in the northwestern edge of the settlement, "in an area producing less than 10 artifacts per shovel test" (Webb and Gantt 1991:213). Here the artifact density was greater, although it averages out to only 9.2 specimens per square foot – essentially identical to that found in the shovel tests. A possible pit or post hole feature was found along the south wall of the unit. Basin-shaped upon excavation, it produced no artifacts.

Testing at the Main Plantation and Gardens

While Webb and Gantt were busy with the testing at the slave settlement and outlying portions of 38BK103, Westvaco requested that Chicora Foundation and Hugh Dargan and Associates conducted investigations of the main house and garden area in order to assist in the long-range preservation of that portion of the site. George Fore and Associates (1990) had previously examined the ruins of the main house and made recommendations concerning

its architectural stabilization. In 1992 Chicora conducted limited archaeological testing of the garden designed to "feed into" the landscape preservation plan.

These investigations revealed the carefully arranged buildings forming the main settlement, including the mansion, two flankers connected to the mansion by a screening wall, and a privy. Laid out in a very common Palladian style, the mansion and flankers begin to establish the symmetrical landscape. The screening wall was perhaps intended to serve as a boundary for the garden, or perhaps was intended to connect the various structures, forming one immense facade as visitors rode down the mile-long avenue to the house. Such an interpretation would suggest an effort to add mass and scale to the relatively small Crowfield mansion, considerably improving its appearance.

The avenue, unfortunately, no longer exists, having been incorporated into the Crowfield development and golf course. The gardens, however, were not isolated from the house, but rather encompassed the house, making the dwelling a part of the total experience.

The first evidence of the gardens was likely the "moon" pond found south of the main house and still preserved. Carefully designed to serve as a reflecting pool, it served to set the stage, forecasting the remainder of the garden. There is also some evidence that this pond may have served as a repository for plantation trash, although this can no longer be confirmed since it was dredged as part of the development program.¹

¹ If the oral history is correct, it suggests that the slaves, responsible for discarding plantation trash, viewed the ponds and gardens quite differently than did the white occupants. To the slaves the pond was a convenient receptacle for trash. To the owner and his visitors, it was part of garden experience. The same landscape feature, therefore, meant very different things to very different groups of people.

Entering the garden from the house there was the parterre, artificially raised about a foot from the surrounding elevation and encompassed by earthen berms on the eastern, western, and northern sides. To the south the brick screening wall served to isolate the garden from outside world. This main portion of the interior terrace garden was filled with up to a foot of spoil coming from the excavation of the ponds and canals during the initial garden construction. More fill was used to create the berms. The central garden area and the associated earthworks were found to have received only a shallow dressing of top soil, sufficient to support grass. The one exception to this was along the interior edge of the berm where there was a linear planting bed several feet deep (designated Feature 1), perhaps constructed to allow larger shrubs adequate root penetration.

At the northern corners of the interior terrace were two small brick structures. The one remaining in good condition measures about 10 feet square and was originally plastered and finished with a blue pigment.

The excavation of the privy at the western edge of the site revealed little. The structure measured about 6 feet square (OD), with an interior space about 4.5 feet square. Artifacts were common, but fragmented, in the one foot of soil found within the structure (designated Feature 2). The excavation came down on a mottled yellow sandy subsoil about 1.2 feet below ground surface. Although still tentatively identified as a privy, the depth and construction of the structure is not replicated by other plantation privies (see, for example, Haskell 1981).²

² This suggests that the plantation landscape was far more complex than might otherwise be imagined. Was this a privy that wasn't intended to be used much (or to be cleaned frequently), or was it simply a garden shed, or might it have served no real function except to provide balance for some other architectural or landscape feature no longer recognized? The point is that as we learn more about Crowfield, its

Synthesis Based on Survey and Testing Data

Both sites 38BK103 and 38BK1011 were determined to be eligible for inclusion on the National Register prior to the Law Environmental study. That is, of course, why they were included in the MOA. Nevertheless, the study by Webb and Gantt revealed even more clearly the diversity, integrity, and research potential of the two sites.

While the work also determined very accurate site boundaries, of greater significance was the development of a solid research base guiding future investigations. Although we were not in total agreement with the interpretations offered by Webb and Gantt, they did provide exceptional testing level information.

The use of shovel testing at 20 foot intervals is, as previously mentioned, minimally appropriate. We have used this approach ourselves at Broom Hall, Crowfield, Lower House, and recently at Crawl. It provides what might best be described as a "gross" overview of the site.³ To obtain better information you must drop down to testing at 10 foot intervals. This so greatly increases the time involved it has been used in relatively few situations (we, for example, have compared data using both techniques, but have never adopted a 10-foot interval). Likewise, the use of 5-foot tests is appropriate, although one might argue over the number of tests or their placement.

Webb and Gantt attempted to do a great deal with very limited data. Many of their

complexities – and our inability to fully understand its development – become more painfully clear.

³ Recently Bennie Keel and his colleagues at the National Park Service have carefully demonstrated the advantage of using 25-foot interval testing for identification of structure location compared to more conventional (and far less accurate) 50-foot intervals (Keel et al. 1999).

"conclusions" would be better characterized as "speculations." Testing of this nature is typically very good at establishing boundaries, characterizing sites in a general fashion, and assisting in eligibility determinations. Testing of this nature is typically not very good at addressing significant research questions. There is simply too much left unexplored.

This is an important caution, since Westvaco repeatedly asked if additional work could actually tell us more than had already been "discovered" by this very limited testing. This is a very reasonable question when the results of limited testing are presented as so conclusive. We believed, however, that what we "knew" about these two sites based on the testing was considerably less than had been interpreted. Webb and Gantt offered a range of very limited data and made the best of it by offering very tentative speculations. While we understand the motivation, it often makes more sense to suggest a range of different scenarios that might explain the data.

We also drew somewhat different conclusions from the survey data than did Webb and Gantt. The two most striking differences have to do with the slave settlement, 38BK1011. We were not convinced that (1) the site was as intact as had been thought and (2) that the identified features were all what they were presented as being. Our skepticism was based on the report descriptions and our earlier experience at Broom Hall and Crowfield (Trinkley et al. 1992; Trinkley et al. 1995).

We were struck with how similar the condition of the Crowfield slave settlement were to what we found at Broom Hall. There we discovered about a foot (in some cases more) of very homogenized soil overlying subsoil. Features were badly disturbed and the artifacts, while very numerous, were largely plow zone size. Webb and Gantt understandably focused their interpretations of the features and individual post holes on structural remains. Yet, we know that slave settlements can evidence

lots of different "things" going on. These can include drainage ditches, cultivation trenches, and activity areas in yards. Attempting to discern one from another on the basis of a five-foot unit is tenuous at best.

In spite of this difference in professional interpretation, there was ample data on which to develop a detailed mitigation plan. Further, we believed that although there were some legitimate difference of opinion regarding the nature of 38BK1011, sufficient evidence had been presented to suggest that at least some structural remains were present.

The testing data also provided a very thorough overview of occupation range. The ceramics suggested a mean date from as early as 1732 to as late as 1791, while the tobacco pipe stem bore diameters yielded mean dates of 1738 and 1743 (Webb and Gantt 1991:228). The cumulative date range was about 1730 to 1800, consistent with the historical research. This range was also consistent with the findings at Broom Hall (Trinkley et al. 1995) and offered the potential to explore a period for which there is very little complementary information available in South Carolina.

Preparation of a Data Recovery Plan

At the request of Westvaco Development Corporation, Chicora Foundation prepared a data recovery plan for the portions of 38BK103 to be affected by proposed development along with the entirety of 38BK1011. This plan, dated September 24, 1995, was reviewed by the S.C. State Historic Preservation Office (SHPO), the U.S. Housing and Urban Development (HUD), the Army Corps of Engineers, and the Advisory Council on Historic Preservation (ACHP). While the plan was being reviewed by the MOA parties, Westvaco Development Corporation entered into an agreement with Chicora Foundation on October 6, 1995 to conduct the necessary work.

The SHPO approved the plan in early October, offering only technical comments (letter from Mr. Lee Tippett to Dr. Michael Trinkley, dated October 2, 1995), which were subsequently addressed (letter from Dr. Michael Trinkley to Mr. Lee Tippett, dated October 4, 1995). The ACHP likewise offered only technical observations (letter from Mr. Don Klima to Dr. Michael Trinkley, dated November 13, 1995), which were addressed in a responding letter (letter from Dr. Michael Trinkley to Mr. Don Klima, dated November 20, 1995). Further information concerning the project was provided to Ms. Laura Henley Dean with the ACHP on December 1, 1995 (teletype from Dr. Michael Trinkley to Ms. Laura Henley Dean, dated December 1, 1995).

The Corps of Engineers approved the plan without comment on October 17, 1995 (email from Mr. Dean Herndon to Dr. Michael Trinkley, dated October 17, 1995). HUD likewise approved the plan without comment on October 30, 1995 (letter from Mr. David Bell to Dr. Michael Trinkley, dated October 30, 1995).

Research Goals

Webb and Gantt (1991) discuss a range of research questions that were deemed worthy of additional consideration during data recovery excavations. These research topics include:

1. What is the functional time span of both 38BK103 and 38BK1011? Although we have been provided with a general range for the slave settlement, there was some indication that the main settlement continued to be active up to perhaps 1845. Yet the slave settlement seems to reveal little activity after about 1800. While excavation at these limited sites will not confirm that the slave settlement changed location, additional research can confirm that this initial assessment of dating is correct. The movement of the slave settlement may be associated with the changing function of the plantation, obsolescence of the settlement area, or perhaps other factors not yet identified. Consequently, one research goal was to determine the occupation date range for the two settlements and compare this data with that obtained from excavations around the main house (Trinkley et al. 1992), as well as with the historical documentation.
2. What is the intra-site patterning of the slave settlement? Absent plans or verbal accounts, only archaeological investigation can help us understand what this settlement looked like and how it was organized. Webb and Gantt have offered a tentative reconstruction of the orientation, but this is based on no structural excavations. Would the findings at 38BK1011 compare with those from the Crawl Plantation slave settlement (which dates from the same time period) and the Yaughan/Curriboo slave settlement (which dates slightly later)? If so, we anticipated finding evidence of extensive yard activities, including open-air hearths and trash disposal in pits. Structures, during this very early period, tentatively appear to have been used only for limited activities, primarily in poor weather. Otherwise, many activities took place in the yards. How was the southern end of the main settlement organized? We know from other excavations and few well drawn plans that plantations were not nearly as simple as we might imagine. A wide variety of both functional structures and "follies" were likely present on large plantations like Crowfield. We also

- know that slave hierarchy is not nearly as simplistic as the field–house slave dichotomy might suggest. It may be that Structure 2 at 38BK103 represents a domestic structure for specialized slaves. Such structures have been found at Cotton Hope and Seabrook plantations.
3. What is the variability of early colonial and late eighteenth century slave diets? Increasingly our examinations of plantation subsistence remains is revealing considerably more complexity than Elizabeth Reitz's early plantation work would suggest. For example, we have found that the diet of slaves will vary by the wealth and status of the owner, that it will vary by their status within the plantation, and that it will vary through time. The slave settlement at 38BK1011 offers a unique opportunity to examine the diet of a very early settlement. This exploration, of course, focused on a wide range of remains and it attempted to include a range of techniques to explore faunal remains, carbonized plant remains, pollen, phytoliths, and even carbonized food residues.
 4. Could evidence of social stratification among the slaves be found? This would be a particularly valid line of inquiry should Structure 2 at 38BK103 be identified through more investigation as a specialized slave structure. It would then be possible to compare the remains present in the slave village (38BK1011) with the remains from this one structure. It might also be possible to identify some differences in the main settlement, although plowing and other post-depositional disturbances might make this impossible.
 5. What did the structures at 38BK103 and 38BK1011 look like? There are very few sites that have produced structural remains pre-dating the American Revolution. It is essential that we begin to better understand the range of variation typical of early eighteenth slave settlements. Only by exploring a broad range of architectural remains from these villages will it be possible to understand the influence that Africa had, or did not have, on black culture. It is increasingly clear that we have far too few data to truly understand the African-American contribution to plantation architecture. This is a critical need identified by historians and archaeologists alike.
 6. Webb and Gantt note that their work found "the Crowfield slave population was not endowed with significant quantities of European-made goods" (Webb and Gantt 1991:234). An identical observation was made concerning the Broom Hall slaves. The assemblage at both plantations is dominated by Colono wares. European goods of any description are so rare as to almost be unique. The diversity of the remains is equally limited, with ceramics and tobacco pipe remains accounting for the vast bulk of the European material found in the slave assemblage. Webb and Gantt, somewhat naively, note that, "it appears that the Crowfield planter/overseer classes severely deprived the slave population through neglect, absence, poor management and/or ignorance" (Webb and Gantt 1991:214). Perhaps

more appropriately, the Crowfield assemblage provides a view of the operation of power and alienation in the early Colonial period. This represents a period when black and whites were still "working" to establish their respective roles in plantation society. The presence of intact features at Crowfield might assist in further, and more successfully, exploring this interaction than was possible at Broom Hall, which exhibited rather severe plowing and post-depositional damage.

7. The Crowfield slave settlement also offered the potential to examine Colono ware ceramics in much greater detail than was possible at Broom Hall. It is especially significant that the two sites are both spatially and temporally related. This would, we felt, significantly help to control possible variables in the analyses. Typological examination would help refine our previous observations at Broom Hall that Colono and River Burnished wares could not consistently be identified and that they must be seen as varieties of the same type, not as two distinct types. Crowfield might also help to further evaluate the range of potential variation due to idiosyncratic factors, primarily different potters.

In order to effectuate the study of these topics, we realized that it was essential to focus on carefully controlled excavations that could produce data of very high quality. Some aspects of the proposed research would also require that as much, or more, attention is devoted to analysis than to data acquisition.

We conceived of this project focusing primarily on the known or anticipated architectural remains at 38BK103, the collection of comparative data from posited specialized domestic quarters at 38BK103, the examination of several posited structural areas at 38BK1011, and the examination of associated yard areas at 38BK1011, coupled with very detailed analyses which involve a broad range of expertise.

Curation

The field notes, photographic materials, and artifacts resulting from Chicora Foundation's investigations have been curated at the South Carolina Institute of Archaeology and Anthropology (SCIAA). This facility was chosen for curation of this collection since all of the earlier archaeological collections from Crowfield are housed there and it is appropriate that the materials remain at one facility.

The specimens have been cleaned and have received conservation treatments, consisting primarily of electrolytic reduction of iron and copper specimens (these treatments are discussed in a later section of this study).

All original records and copies have been provided to the facility on pH neutral, alkaline buffered paper. Black and white photographic materials have been processed to archival permanence. Color slides, while not considered archivally stable, consist primarily of Kodachrome material, which exhibits the least color fading of any transparency film in dark storage conditions.

EXCAVATIONS

Field Strategy and Methodology

Webb and Gantt (1991) recommended broad stripping for the recovery of features as their preferred data recovery technique. Consequently, some modest discussion of this technique is in order.

Certainly there are times and places for stripping. An appropriate time is when the archaeologist is confronted with the necessity of conducting salvage archaeology and there is no other option. Curiously, some in the discipline have expanded this to include sites where hand excavation would be “too” costly. While Chicora, as a public non-profit foundation, strongly advocates accountability and cost-effectiveness we also believe that there are times when less data, carefully gathered, are better than more data gathered under hurried conditions that are considerably less than ideal. In addition, the issue of cost, when confronted by the loss of a unique historic site, is difficult to reconcile. What value is placed on our past and who, or what entity, is up to that task?

Likewise, the place for stripping is on large agricultural fields where the sandy loam soil can be easily removed, allowing relatively clean expanses for the recordation of features. A place where stripping does not work well is in wooded tracts. This is especially the case where the subsoil is clayey or dries out quickly, requiring especially quick cleaning and recordation of features before soil colors are lost.

We believe that it is also important to emphasize that stripping may also be inappropriate when features contain relatively few artifacts suitable for dating and functional interpretation – which seems to be the case at Crowfield according to Webb and Gantt's report. If the artifacts which can provide

information about the function of a structure or site area, can provide dating, and can provide information on other research questions, are in the upper foot, there is relatively little left once the site is stripped. It may be possible to identify and record seven or eight times the number of features (such as houses), and this may help explore the settlement pattern, but it will likely be impossible to date the various structures, or distinguish social status between occupants, or perhaps even determine function, since most of the artifacts, being found in the upper foot of the soil, have been stripped off the site.

So, stripping is often less expensive than controlled excavations, but we question its use at a general level. By this we mean that stripping may not be the *only* acceptable methodology at this particular site (or others).

It is also very difficult to strip a wooded tract. You must identify equipment small enough to work around trees but big enough to do the job (in particular, able to cut through roots without spinning its wheels or tracks and digging into the subsoil). You must constantly move the stripped soil off the site, locating a suitable place for stockpiling. Afterwards you are faced with a massive task of restoration, necessary so the property can be shown to prospective buyers – which after all was why the work was undertaken in the first place. And finally, someone must assume the liability for trees left standing but which may die two to three years later because of the induced stress. At Crowfield all of these would be major issues.

To these problems, it would also be appropriate to add the concern that an expert operator is consistently available, that the soil can be quickly cleaned up and the features plotted before the soil dries out, that the area

can be protected from looters, and that the site can be kept from flooding during rain.

It seems that the only possible way to strip these sites, and deal with the majority of these concerns, would be to strip a small portion – only what could be dealt with that day. The cost of this approach quickly equals the cost of more traditional hand excavation as operators and equipment are kept on standby for long periods of time.

A more appropriate technique for data recovery at these two sites was through hand excavation – a technique that has also been advocated by Webb and Gantt (1991:256-258). Based on our review of the project report, the available mapping, and our computer density maps, we offered some modification to their recommended scope (discussed in the following section).

Excavation Methodology

Although we anticipated conducting this research in the winter, when the Crowfield vegetation is at its lowest point, we also realized from previous work at Broom Hall that vegetation was a serious concern. Consequently, Westvaco bush hogged both sites prior to our work. This was adequate to open the site to better understand spatial relationships, allow accurate mapping, and permit field vehicles access with equipment. We also had Westvaco remove a number of trees that would otherwise interfere with our proposed excavations. While there were still problems with some trees, these concerns were dramatically reduced by this selective thinning.

At both sites, Westvaco re-established the Garrow and Associates grid (which was also used by Webb and Gantt), establishing wooden stakes with survey tacks at no greater than 50 foot intervals. This was thought to be minimally adequate for maintaining horizontal control of site excavations. In general, we found this to be correct. What we also discovered were a series

of errors in the grids and the previous excavations.

Relatively minor errors, in the range of 0.1 to 0.3 foot were found in the grid used during these excavations and the grid from previous work. It appears that these errors were introduced depending on the hub or station used by Westvaco to restore the grid. Based on discussions with the Westvaco survey crew, it is likely that the current grid is more accurate than the one they previously established for the Law Engineering study.

In addition, we found a number of errors in the layout of Webb and Gantt's units, often by distances of several feet. In other cases, units were reported to be at one grid location in the report, but were actually excavated at another location. Since the errors are not consistent (and some units were perfectly located), it is unlikely that these problems are related to the technique used by Westvaco to relocate the grid points. Instead, these problems appear related to either inaccuracies in measuring or to incorrect unit designations in the field.

At least three vertical control points were established by Westvaco (one at 38BK103 and two at 38BK1011) with mean sea level (MSL) designations. These were expanded as necessary to cover all areas of the sites. This was an important modification of previous work at the site by both Elliott (1987) and Webb and Gantt (1991), both of whom used the existing ground level to designate depths. The existing ground level is subject to considerable change and even interpretation. Moreover, it cannot be accurately reproduced by later researchers and cannot be compared between units.

Excavations at the sites used the previously established grid coordinates, although for ease of our staff we express the coordinates as 1000R2000, rather than 1000N/2000E. In addition, units were consistently designated by their southeast

corner grid point (Webb and Gantt designated units by various corners).

Excavations at the sites were conducted by hand, using mechanical sifters typically fitted with ¼-inch inserts for standardized recovery of artifacts. Excavation was conducted by natural soil zone with all materials except brick and mortar retained by provenience. Brick and mortar were weighed and discarded on-site (except for small samples retained for analysis and curation). A one-quart soil sample was retained from each zone. Some colleagues retain much smaller samples (often no larger than an ounce), in order to minimize the size of the collection for curation. Such small samples severely restrict the type of future analyses possible. This seems to be a false economy at sites where development will preclude the ability to return and collect undisturbed soil samples.

Where appropriate the excavation proveniences also distinguished between structural interiors and exteriors. Munsell soil color notations were made during the course of excavations, typically on moist soils freshly exposed.

Units were troweled and photographed using black and white negative and color transparency film at the base of the excavations. Each unit was drawn at a scale of 1 inch to 2 feet. Features were designated by consecutive numbers (beginning, at 38BK103, with Feature 3 since Features 1 and 2 were used at our previous excavations [Trinkley et al. 1992] and beginning with Feature 1 at 38BK1011). Postholes were consecutively numbered by specific unit. Features, depending on the evaluation of the field director, were either completely excavated, bisected (i.e., partially excavated), or not excavated (if thought to be redundant). Feature fill was screened through ¼-inch mesh and features, upon completion of their excavation, were also photographed using black and white negative film and color transparencies. One quart soil samples were obtained from all

features. Features with dark, organic fill also had flotation samples (minimally 5 gallons in volume) collected for subsequent water flotation. Features with relatively light sandy fill rarely produce adequate ethnobotanical samples and their flotation was not considered cost-effective based on our experience at nearby Broom Hall plantation (see Trinkley et al. 1995:253-258).

In addition to flotation samples, we also collected pollen and phytolith samples. These were collected from areas of moist soils (which we hoped would maximize pollen preservation) or from areas of special interest, especially with identifiable contexts. For example, collection of samples in the vicinity of Structure 8¹ at 38BK103 were hoped to assist us in determining the function of this building.

Near the conclusion of the hand excavations at both 38BK103 and 38BK1011 a decision was made to strip some areas in search of specific information. At 38BK103 our interest was the recovery of additional wall features associated with Structures 7 and 9. At 38BK1011 our interest was to determine the existence of additional ephemeral structures, as well as to further expose structures identified in hand excavations. Stripping was conducted using equipment and operators provided by Westvaco. In both cases a small bulldozer was used. It was sufficiently small to be able to maneuver around trees, yet sufficiently large to

¹ A variety of designations have been used for the structures at 38BK103. The designations used in this study incorporate those previously identified at the main complex (see Trinkley et al. 1992). Structure 1 is the main Crowfield House, Structure 2 is the east flanker of the main house, Structure 3 is the east flanker, Structure 4 is the east garden structure, Structure 5 is the west garden building, and Structure 6 is the privy west of the main house. Structure 7 is the smaller (and earlier) of the two posited rice barns in the southern portion of 38BK103. Structure 8 is the utility building in this same area. Structure 9 is the larger (and most recent) of the two posited rice barns.

be able to cut through roots without losing traction.²

Stripped areas were shovel skimmed and identified features were then photographed and mapped. In several cases the stripped areas were roughly troweled to help distinguish the features from the surrounding matrix. No effort was made to excavate these features since the work was conducted at the end of the project.

At the conclusion of the excavations the areas were covered in plastic and the profiles were backfilled, but all units were left open for final backfilling by Westvaco.

Results at 38BK103

We recommended approximately 2,700 square feet of excavation at the southern end of the main house complex. Coupled with this we also suggested that small areas might be stripped for exposure of features. A total of 656 person hours were devoted to work at 38BK103. A total of 785.5 cubic feet of primary excavation was conducted between January 25, 1996 and February 12, 1996.

The work actually conducted at 38BK103 was less than originally proposed, with only 1,000 square feet of controlled excavation and 200 square feet of stripping undertaken. We anticipated some fluctuation or difference between the projected square footage and the realized excavations, primarily because of unknowns such as soil conditions, artifact density, and site access. And, in fact, a week of rain prior to our work, combined with loamy soils, resulted in a reduction in screening speed. The dense brick remains encountered at Structures 7, 8, and 9, further reduced our productivity. Some reduction in coverage was also caused by problems we encountered relocating the previously investigated units and attempting to correlate often disparate findings.

² Since that time we have learned that a tracked backhoe with a cutting bar welded across the bucket teeth does a far superior job.

Most of the reduction, however, was the result of the Advisory Council of Historic Preservation's (ACHP) recommendation that work focus not on 38BK103 but on the associated slave settlement (38BK1011).

In order to minimize the impact this reduction had in the research design we attempted to place our units very judiciously, based on the initial shovel test survey, previous test unit results, topographic setting, and our experience at similar sites. Clearly this reflects a compromise between the ideal and the need for cost-effective investigations. While additional investigations, especially in the vicinity of Structure 8 and unit 1830R1380, would have been desirable, we believe that we have obtained adequate comparative data and are able to address our research questions.

As previously mentioned, the structures encountered at 38BK103 have been given a variety of designations and it is important to at least briefly remind the reader of those used in this study:

- Structure 1 is the main Crowfield mansion;
- Structure 2 is the east flanker of the main house;
- Structure 3 is the west flanker of the main house;
- Structure 4 is the east garden building;
- Structure 5 is the west garden building;
- Structure 6 is the privy west of the main house;
- Structure 7 is the smaller of the two barns in the southern portion of 38BK103;
- Structure 8 is the utility building in the southern portion of 38BK103; and
- Structure 9 is the larger of the two posited barns.



Figure 12. View of 38BK103 after selective tree and brush removal.

These designations are used throughout these discussions. Additional information concerning Structures 1 through 6 can be found in Trinkley et al. (1992).

Structures 7 and 9

Webb and Gantt (1991:256) recommended a 50 by 30 foot block excavation at what they called Structure 1, which they suggest to be a rice barn measuring about 44 by 25 feet (Webb and Gantt 1991:99). They explain that its features, including "its linear construction, exterior brick foundation capable of bearing heavy loads and the lack of kitchen-related artifacts within and around it," are adequate to support the interpretation of a barn (Webb and Gantt 1991:230).

While we were not as certain of its specific function, we did agree that it was a utility building producing very few artifacts. Consequently, we did not believe that total excavation is necessary. Rather, we proposed sampling the interior with one to two 10-foot units and exploring the immediate yard area with several additional units. Coupled with this,

we recommended excavations along the wall to further explore the builder's trench in the hope of recovering sufficient materials to provide a firmer construction date. We recommended a maximum of approximately 800 square feet of excavation at this structure.

Our initial approach was to clear the overlying vegetation and rubble in an effort to determine the exact size of the structure (Figure 12). Although it was reported to be 44 by 25 feet, we found it actually measures 51.0 feet

north-south by 25.8 feet east-west, with its orientation being due north-south.



Figure 13. Excavation in 1590R1400-1405, view to the southeast.

We began excavations at the southern end, opening one 10-foot square and one 5 by 10 foot unit at 1590R1400-1405 (Figures 13 and 14) and two 10-foot squares at 1590-1600R1440 (Figure 15). These were followed by the excavation of another 10-foot unit at 1655R1440, on the northeast corner of the structure (Figure 16).

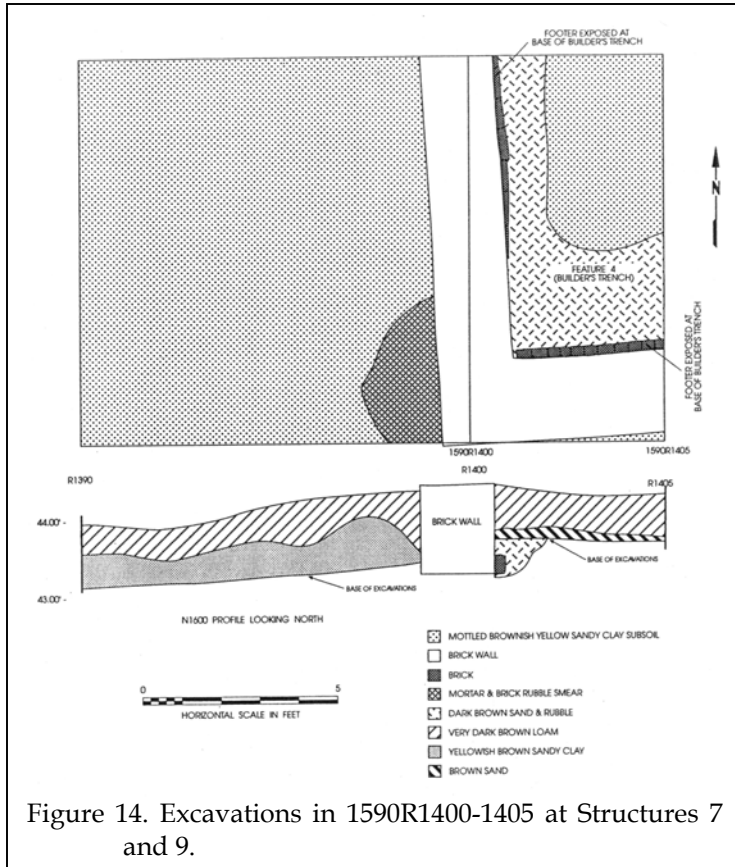


Figure 14. Excavations in 1590R1400-1405 at Structures 7 and 9.

These excavations revealed a mottled brownish-yellow (10YR6/6) sandy clay subsoil outside the structure. On the inside the subsoil varied from this same brownish-yellow sandy clay to a light yellowish brown (10YR6/4) sand. Above was a very dark brown (7.5YR2.5/2) loam with relatively large amounts of brick and mortar rubble (2,643 pounds of brick and rubble were collected from the 450 square feet of excavation). The quantity of brick rubble was consistently greater outside the structure than within, probably indicative of intentional demolition and scavenging of brick.³

³ When structures are simply demolished, rubble is usually densest inside the structure, creating a mound. When the brick is salvaged we often see a

The excavations at the southern end of the structure revealed a distinct builder's trench, designated Feature 4, varying from about 0.8 to nearly 2.0 feet in width on the interior of the structure. Along the eastern edge of the structure there was a second builder's trench, designated Feature 5, which was only about 0.4 to 0.6 foot in width.

These features revealed that the wall was very poorly constructed, with a poorly executed footer a single brick in depth along the interior of the western wall. Much of the footer in this area consisted of a single brick mortared up against the wall, some as stretchers and some as even bull stretchers. In effect there was no footer to spread the weight of the wall. Along the western portion of the southern wall there was a somewhat better laid footer, again only one brick in depth. This footer, however, does not extend to the southeastern corner. Along the outside of the eastern wall there is a more uniformly constructed footer, with the bricks originating under the wall and forming a conventional footer to disperse the dead weight of the wall.

Table 2.
Barn Sizes

Location	Size	Ft. ²	Construction
Crowfield, Struct. 7	71.5 x 41.5	2494	Brick, rice storage
Crowfield, Struct. 9	51 x 25.8	1500	Brick, rice storage
Richmond Hill	80 x 34	2464	Wood, brick foundation, windows
Shulbred	44 x 32	1189	Brick, cotton storage
SCG, 1751	42 x 22	924	Brick

greater density of rubble, including fragmentary, discarded bricks outside the building. Also present are quantities of mortar, from cleaning the brick for reuse.

EXCAVATIONS

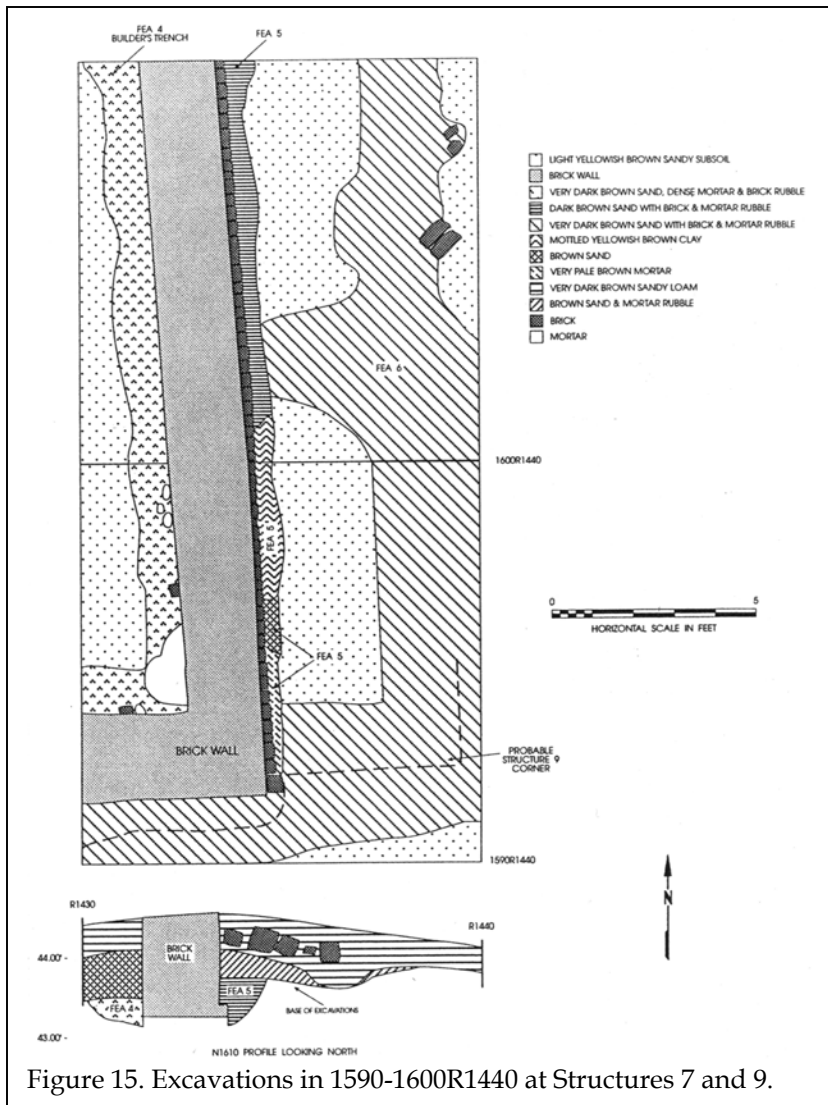


Figure 15. Excavations in 1590-1600R1440 at Structures 7 and 9.

Of even greater interest was our discovery of a second, and earlier wall, just to the east. This earlier wall, designated Feature 6, had been entirely robbed out in this portion of the building. Further north, in 1655R1440, small portions of the wall were intact, although even here most of the wall had been entirely removed.

A stripped area, measuring about 200 square feet, was opened where we anticipated the northwest corner would be found. This work revealed an intact wall that had fallen or pancaked outward (Figure 17).

Our work, therefore, revealed the presence of two structures. The first, revealed by the robbed Feature 6, measured 71.5 by 41.5 feet, for a total floor area of nearly 2,494 square feet. This has been designated Structure 9. Much, although not all, of this building had been cleaned up, probably in anticipation of replacing it. Those areas not cleaned up were at the far north end where they probably wouldn't impede construction or use of the new building. The southern two-thirds of the building, however, had to be cleaned up since the replacement structure was to be built directly over the old one.

There is no evidence that the earlier building burned. In fact, the presence of a relatively intact wall at the northwest corner suggests either intentional demolition or perhaps building failure through hurricane.

The later building, designated Structure 7, was the one best preserved, measuring 51 feet by 25.8 feet (representing a floor area of about 1,500 square feet, or about 40% smaller than the original building). Its western and southern walls were rebuilt directly over the earlier building, although it appears that none of the original foundation was incorporated into this later building. In addition, the earlier building was oriented just a few inches to the east of the second, and later, structure.

Although little can be said about the construction techniques of the first building, the

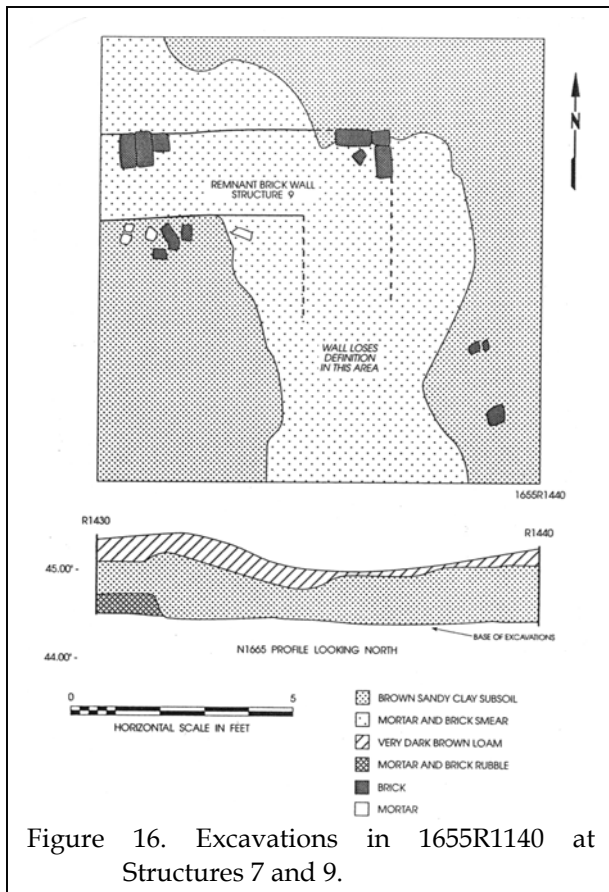


Figure 16. Excavations in 1655R1140 at Structures 7 and 9.

replacement structure was poorly put up,⁴ suggesting the lack of a skilled mason, a lack of oversight, or a building which warranted little attention to details. The latter seems unlikely considering its size and mass. The wall was 1½ bricks thick (about 1.1 foot or 13-inches) and probably laid in English or common bond – alternating courses of stretchers and headers. McKee (1973:48) notes that this bonding system produced a strong wall while requiring that only those bricks near the corners be cut. This style is typical of the eighteenth century (Lounsbury 1994:38; McKee 1973:48), rarely extending into the nineteenth century.

⁴ It is clearly substandard, not only because the footer was, at best, only one course (representing but two bricks), but also because there is no skim coat of mortar on which the footer was laid (Lynch 1994:II:20-21).

Webb and Gantt (1991:230) point to Michie's (1987:101) Richmond Hill barn as a similar structure. This Waccamaw Neck example measured about 34 by 80 feet, with a floor area of 2,464 square feet, just slightly smaller than Structure 9 at Crowfield. Its differences seem relatively minor, confined to the level of construction techniques (such as the narrower walls and reinforced corners). Other differences, however, may be more significant. The Richmond Hill barn apparently included windows (based on Michie's recovery of "relatively high number of window [glass] fragments" (Michie 1987:101). The abundance of nails also suggests a wood frame set on the brick piers. Although it is suggested to be a rice barn, even rice plantations required a variety of storage facilities and one might question whether so valuable a commodity would be stored in such a flammable building.

A somewhat similar building was excavated at the Shulbreed Plantation on Kiawah Island. There a brick building measuring 44 by 32 feet was encountered and interpreted to represent a barn (Trinkley 1993:213). Representing 1,189 square feet of interior space, this building is smaller than even



Figure 17. Northwest corner of Structure 9, view to the east.

Structure 7 at Crowfield. Nevertheless, it did have equally massive brick walls, rather than a wood superstory. Because of this, and the perceived value of cotton, it is thought to represent a cotton barn.

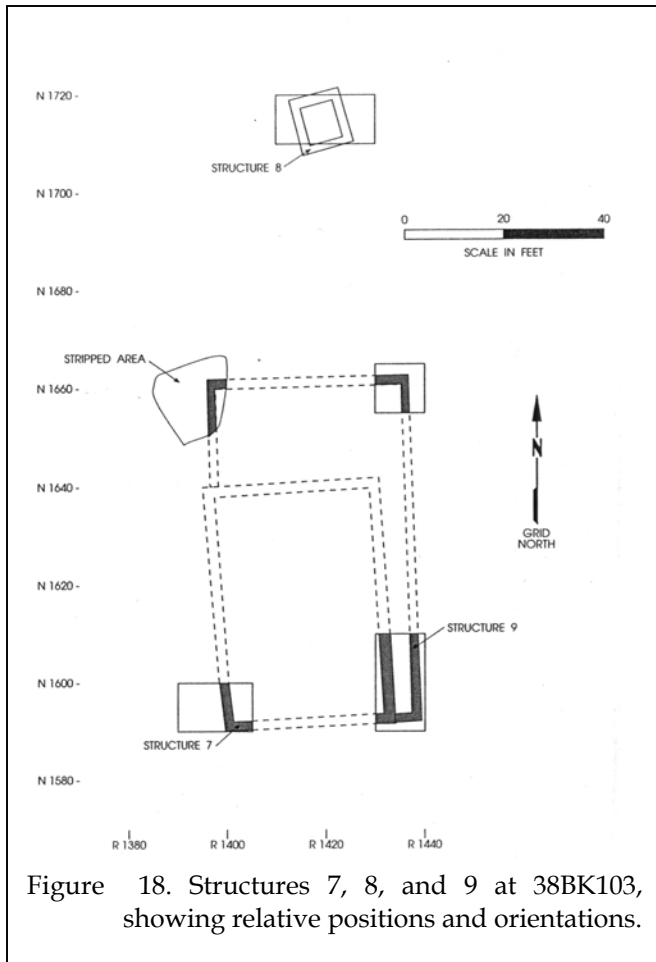


Figure 18. Structures 7, 8, and 9 at 38BK103, showing relative positions and orientations.

Review of the *South Carolina Gazette* did reveal one reference to "a very good brick barn, 42 feet by 22," suggesting both a considerable range in sizes and also that all-brick barns were important enough to merit a special mention (*South Carolina Gazette*, December 6, 1751, p. 3).

In sum, we anticipated the excavation of as much as 800 square feet at this structure. A total of 450 square feet of formal excavations were undertaken, along with 200 square feet of stripping (Figure 18). Our work revealed two buildings, with the larger one (Structure 9) being replaced by a smaller version (Structure 7). The replacement of the building was probably

necessitated by some natural event, the most likely being a hurricane.⁵

Although the artifacts will be discussed in greater detail in a following section of this study, it is worthwhile to note that the assemblage most closely resembles what is known as the Georgia Slave Artifact Pattern, where the collection is dominated by architectural items and kitchen items account for only 20 to 25% of the assemblage. The similarity between this pattern and that for nineteenth century slave sites is almost certainly spurious. Instead, what we are seeing in the archaeological record is a largely non-domestic building site, dominated by architectural materials and accompanied by a thin wash of domestic trash from other areas of the plantation.

The architectural remains, which consist almost entirely of nails, are dominated by sizes probably associated with the buildings' roofs. The nails, coupled with the absence of slate, suggest that the building was roofed in wood shingles. Given the flammability of this roofing, perhaps the building wasn't built of brick so much to be fireproof, as to discourage rodents and theft.

The buildings' bricks were hand made and averaged about $8\frac{3}{4}$ inches in length by $4\frac{1}{4}$ inches in width by 3 inches in height. There was, however, considerable variation in size.

Based on purely technological grounds, there is good reason to believe this is a rice barn, probably used to store milled rice before it was sold. We anticipate that access was probably on its east elevation, which faced the Crowfield avenue.⁶

⁵ A Great (Class 4) or Extreme (Class 5) Hurricane hit Charleston on September 15, 1752 causing extensive damage to low-lying structures and to ships. An unknown number of individuals were also drowned.

⁶ There is a steep slope to the west and particularly the southwest, where there is low, wet ground. It



Figure 19. Structure 8, after vegetation removal, view to the north-northeast.

Structure 8

Webb and Gantt (1991:256) recommended a 15 by 15 foot block excavation at what they called Structure 2, situated at the north edge of that portion of 38BK103 being explored. They comment that it measures about 11 by 10 feet and has been extensively looted. They consider the possibility that it represents a cistern, well, or privy, before concluding that it was most likely a smokehouse, based on "the relatively high frequency of burned animal bones" (Webb and Gantt 1991:231).

Not knowing exactly how the grid would encompass Structure 8, we initially recommended up to a 20 foot block excavation, coupled with some yard excavations. As the work was undertaken this was scaled back.

We discovered that units 1710R1420-1430 encompassed the structure, which measured 10.3 feet north-south by 10.0 feet east-west (Figures 19 and 20). The extent of looting

seems unlikely that access was achieved from either the south or west. We cannot, however, rule out access along the north elevation.

was immediately revealed once the overlying vegetation was removed. The interior of the structure was excavated to a depth of about 2 feet below the normal ground level, while what appeared to be spoil was heaped up around the exterior walls. The looters, however, had clearly been interested only in whole, saleable artifacts since the spoil piles contained abundant materials.

Excavation zones included spoil, which was found on the interior and exterior of the structure, overlying a Zone 1 soil similar to that found at Structures 7 and 9 – a very dark brown

Table 3.
Artifact Density Associated with Structure 8

Unit	Spoil		Zone 1
	Exterior	Interior	
1710R1420	174	448	103
1710R1430	168	557	29

(7.5YR2.5/2) loam. Here, however, the brick rubble was almost exclusively confined to the spoil, which yielded 3,851 pounds of rubble. Although difficult to verify, it appears that what was excavated as spoil actually consisted of two distinct levels – a demolition level consisting primarily of brick rubble and an upper looter's spoil level consisting of soil and less brick. These, however, have become homogenized (probably through continued episodes of looting), making a clear distinction impossible. If this stratigraphic analysis is correct, it is likely that the building was demolished at some time prior to its looting.

Zone 1, in contrast, produced only 86 pounds of rubble. This was found only outside



Figure 21. Interior of Structure 8 after excavation. View is to the north-northeast.

elevation (along with the northwestern corner) has been extensively damaged, probably by logging in the last decade or so. This makes the identification of a opening impossible. Troubling is the apparent depth of the building, although we believe that much of the interior has been artificially lowered by looting efforts. The original floor was likely at the level of, or just above, the footer.

Since no joist sockets have been found on any of the remaining walls, there are two flooring possibilities. One, given the impressive construction features of the building, is that the footer ledge carried a plate that, in turn, supported the floor joists. An alternate explanation - equally valid - is that the structure had an earthen or perhaps mortar floor.

The presence of window glass and two pintles indicates that at least one window opening (probably glazed, with exterior

shutters) was present. No other hardware was identified, although the extensive looting of the structure has possibly removed some artifacts from the archaeological record.

While this architectural evidence may not reveal the building's function, it does help us exclude some possibilities. For example, there is no stucco or parging on the brick walls, so it is unlikely that Structure 8 served as a cistern. The solid subsoil floor, at a relatively high elevation, precludes a well or privy (although we suspect the extensive looting was in anticipation of privy fill). Neither the internal brick walls nor the buried brick rubble provide evidence of smoke blackening, characteristic of a smokehouse. There is also no evidence of a buried flue to provide ventilation. Further, smokehouses smoke meat, they do not

cook or burn the meat and associated bones.

Table 4.
Outbuildings Similar to Structure 8 at Crowfield

Site/Structure	Size	Ft. ²	Construction
Crowfield, Struct. 8	10 x 10.3	103	Brick
Sanders	12.75 x 10.25	131	Brick, no windows
38CH456 ruins	11.45 x 11.45	131	Tabby, no windows
Youghal ruins	7 x 7	49	Brick, "ice house"
Oakland (1) standing	12 x 12	144	Wood, windows, "dairy"
Oakland (2) standing	12 x 12	144	Wood, "smokehouse"

cook or burn the meat and associated bones.

The absence of a chimney on such an otherwise well made building argues that it was not originally intended to be a domestic structure. Yet, as will be clear from the artifact discussions, the building had domestic trash both in and around it. In fact, the artifact pattern

analysis for this building is almost an exact match to the Carolina Slave Pattern – characteristic of slave settlements of the eighteenth century.



Figure 22. 1720-1740R1320, east profile, view to the northeast.

The most convincing explanation is that Structure 8 represents another utility building. When it was no longer needed, or collapsed (perhaps from the same event which destroyed Structure 9), it began to be a convenient repository for plantation trash. This is consistent with the bulk of the artifacts being found in the spoil, and relatively few materials being found in the intact Zone 1 soils. Unfortunately, the looting makes it impossible to separate what was discarded during the use of this building from those materials discarded there after abandonment.

Similar examples are found at the Sanders Plantation (Trinkley 1985:37) and at 38CH456 in the Cape Romain vicinity. Another has recently been encountered at Youghal Plantation in Christ Church Parish (Trinkley et al. 2003). There are also two standing structures

on the Oakland property, although both are wood frame, rather than brick or tabby.

Although a precise function (i.e., garden shed, tool shed, etc.) can't be offered for this structure, its identification once again warns us that the plantation landscape was far more varied, and complex, than many archaeological studies would lead us to believe. Plantations consisted of more than the "main house" and the "slave settlement." A variety of buildings were interspersed across the landscape and it is a shame that more aren't

recognized, and explored, in the course of archaeological investigations.

1720-1740R1320

This was the location of Webb and Gantt's Unit 7, which produced a trench they interpreted to be structural (Webb and Gantt 1991:231). Based on this they recommended a 20 by 20 foot block excavation. Our assessment, however, suggested that no more than 200 square feet of excavation was warranted.

Three 5 by 10-foot units, 1720-1740R1320, were excavated forming a 5 by 30 foot trench in the general area of Webb and Gantt's Unit 7 (which could not be precisely located). Although the upper 0.8 to 0.9 foot of soil was removed as Zone 1, terminating on a mottled yellowish brown (10YR5/8) clay or a

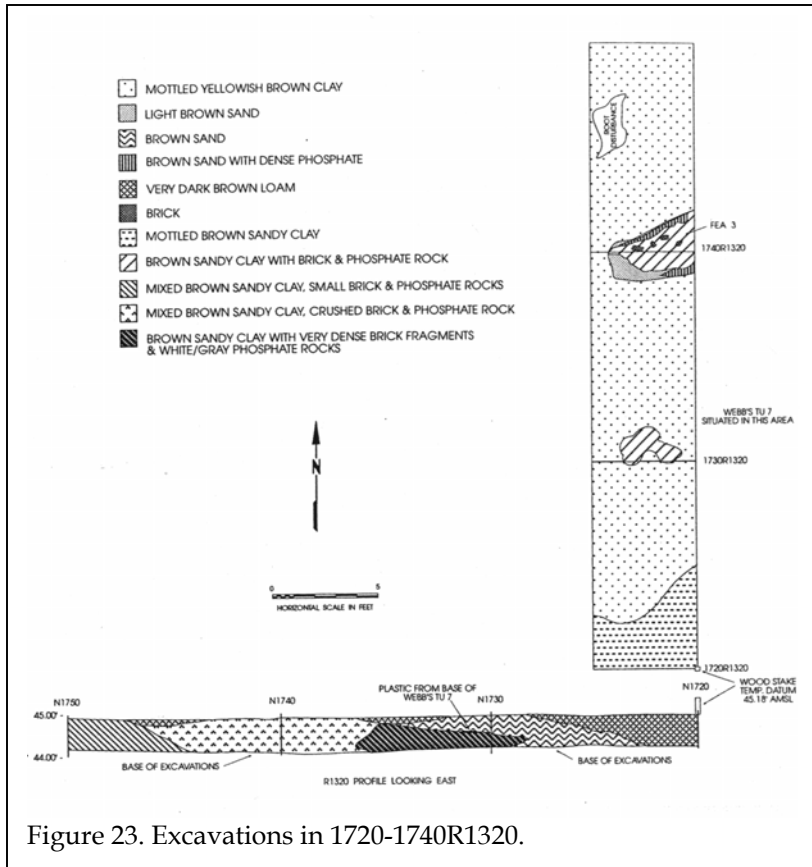


Figure 23. Excavations in 1720-1740R1320.

mottled brown (10YR5/3) sandy clay subsoil, the profile revealed considerable complexity (Figures 22 and 23).

At the south end of the trench Zone 1 consisted of either brown (10YR4/3) sand or very dark brown (10YR2/2) loam. Underlying this in the central portion of the excavations was a pile of dense brick fragments mixed with phosphate rock in a matrix of brown sandy clay. Moving to the north the brick became crushed and decreased in density. At the north end of the trench Zone 1 consisted of very small fragments of brick mixed with phosphate rocks, all in a brown (7.5YR4/3) sand matrix.

Artifacts were sparse in the excavations and bricks are the most common objects. The 150 square feet of excavation yielded 961 pounds of brick rubble and phosphate rock. The brick was all clean, evidencing no adhering mortar or use. Nor was any mortar found loose.

These bricks appear to represent discards never used for construction.

At the base of the excavations, in the central portion of the excavation, the dense concentration of brick and phosphate rock penetrated the subsoil. This was designated Feature 3. The exposed portion, which extends into the east profile, was centered at 1740.2R1318.6. Its maximum exposed length was 4.2 feet and the width was 2.7 feet. Although almost no artifacts were recovered in the feature it did contain 34 pounds of rubble (including brick and phosphate rock). It appears to represent an intentionally filled drainage ditch excavated about a foot into the subsoil.

Although the few ceramics and other artifacts recovered from this location are eighteenth century and reflect a thin veneer, or smear, of plantation materials in the area, the brick and rock debris at this location most likely date from the postbellum, when phosphate mining was common in the Summerville area. These materials are suggestive of mining elsewhere, with discard on this portion of the site. In general, the soil and phosphate rock are consistent with excavated phosphate spoil. The brick, as previously mentioned, appears unused, although its origin cannot be determined.

Webb and Gantt's unit was terminated within the upper half of Zone 1. Subsoil was never reached and the structural trench they reported was likely only a lens of disturbed soil from the phosphate spoil. This unit very clearly demonstrates the danger of attempting to interpret too much from small excavations.

1640R1250

Webb and Gantt report that their Unit 7 was located at 1640R1245, although it is shown on their maps at 1640R1265 (Webb and Gantt 1991:115; Figure 5.10). We were finally able to locate this unit at 1645R1251. Based on their reported recovery of two features and two post holes, they recommended a 20 by 20 foot block excavation. Although we were concerned about their interpretations, we also believed that upwards of 200 square feet might be necessary to fully explore this area.

Once we were able to identify a sunken depression that might represent their previous excavation, we laid in a 10-foot unit at 1640R1250. This unit revealed a thin A horizon, measuring only 0.2 foot in thickness. These soils, dark brown (10YR3/3) loams, overlaid a dark yellowish brown (10YR4/4) sandy clay subsoil. The thin A horizon, coupled with the dark subsoil resulted in our excavation intruding about 0.3 foot into the subsoil (Figure 24). This revealed the floor of the Webb and Gantt unit.

In the northwest corner, at 1649.5R1245.5, was a mass of brick in a dark yellowish brown (10YR4/4) sand matrix. Designated Feature 7, it measured 0.75 foot in width and the exposed length was 2.0 feet. No corresponding stain could be identified in the profile of the excavations. Upon excavation Feature 7 was found to have a depth of 2.01 feet with straight walls and a rounded base. The feature produced a total of 169 pounds of brick rubble. No mortar was found in the fill, nor was any adhering to the brick. Further confounding interpretation, this feature produced no artifacts.

This appears to be Webb and Gantt's Feature 1, although their feature was reported to run across much of the north profile of the unit. In addition, while they confirm that the feature was filled with brick, they report the presence of mortar, which was absent in our investigations. Further, they terminated the feature after about 0.4 foot of excavation, while it was clear from

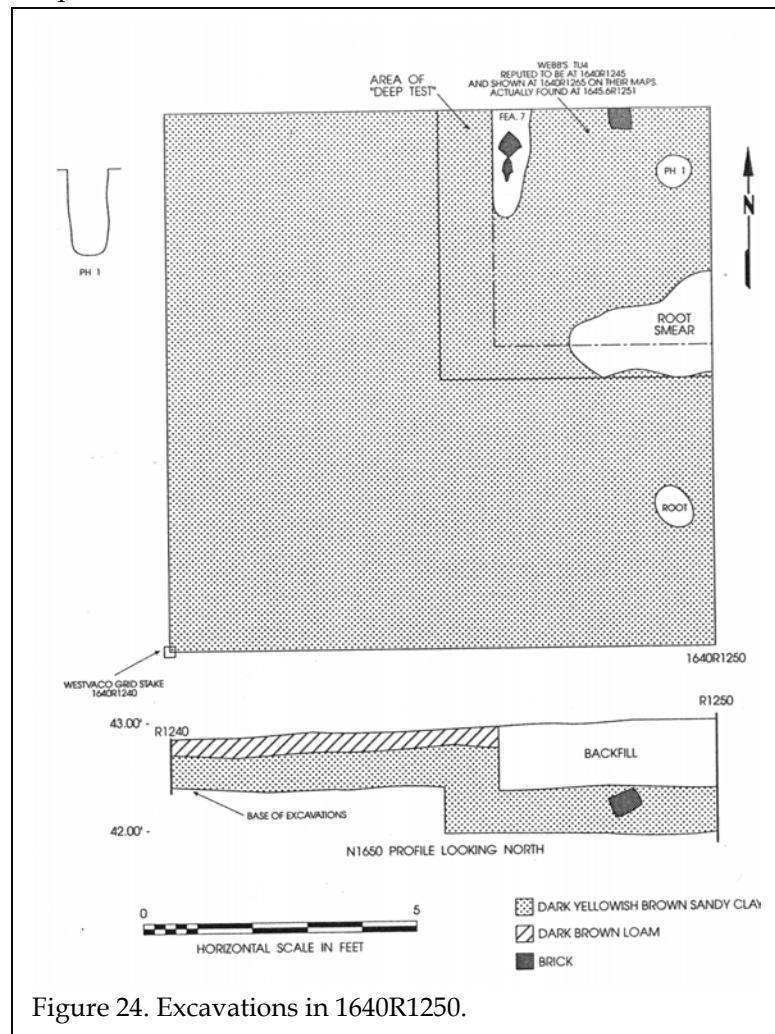


Figure 24. Excavations in 1640R1250.

our work that the feature actually extended much deeper (with brick rubble extending to the base). Although they interpreted this feature as a "structural trench," this seems highly unlikely given the depth, the presence of unarticulated and unmortared brick, and the absence of artifacts.

Although this feature might well have made more sense with additional exposure and excavation, this did not seem cost-effective. We are inclined to believe that the feature represents a portion of a filled-in drainage ditch – consistent with the recovery of a similar feature in 1730-1740R1320. As such, no further excavation was deemed appropriate.

Webb and Gantt's Feature 2, found along the south profile and identified as "a section of a structural trench," was found to represent root smear.

Feature 1," although neither was excavated. Our excavations failed to identify these stains and we are inclined to believe that they were probably root mottles. Our work did, however, reveal the presence of one post hole, at 1648.8R1249.4. This corresponds to a brown sand stain which Webb and Gantt noted, but attributed to an unusual elongation or beak associated with their Feature 1. Upon excavation this post hole was found to be circular, about 0.6 foot in diameter, and to extend 0.8 foot in depth, evidencing a rounded bottom. Unfortunately, the only material present in this post hole was carbonized wood.

Webb and Gantt understandably had difficulty interpreting this unit since the subsoil was heavily mottled. Features and root stains were at best indistinct and difficult to interpret. We were more successful in our efforts primarily because of a larger excavation unit and our effort in scraping down the unit and evaluating the stains. We may also have been helped by extending the northeast quadrant of 1640R1250 deeper than the remainder of the unit, allowing better definition of features.

Otherwise, this excavation area produced a very low density of artifacts and no further investigations were undertaken.

1830R1380

Webb and Gantt's Unit 16 (situated at 1831R1380) was placed "in an area of brick and mortar concentration" (Webb and Gantt 1991:126). The excavation produced a stain they interpreted to be two

intersecting wall trenches. They also report that the unit produced the "highest quantity and diversity of artifacts within the sampled portion

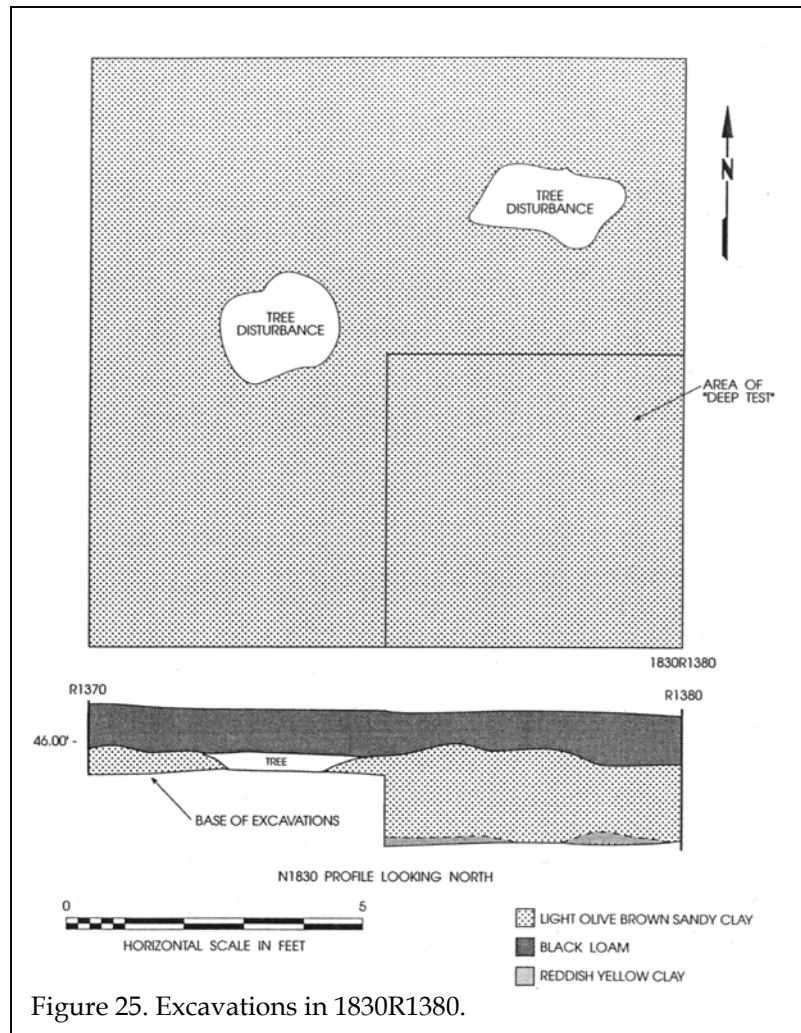


Figure 25. Excavations in 1830R1380.

Webb and Gantt also reported two round post holes "just north and south of

of 38BK103," although the vast majority of the collection consisted of only Colono ware sherds and "black" bottle glass (Webb and Gantt 1991:130, Table 5.7). Nevertheless, Webb and Gantt (1991:256) recommend a 20 by 20 foot block excavation. Based on the material recovered, we recommend a total of no more than 200 square feet.

An extensive search for their Unit 16 proved fruitless. We were unable to identify any sunken area, backfill, or black plastic sheeting. We laid in a 10-foot unit at 1830R1380, which should have incorporated at least a portion of their unit, but no evidence was found even during excavation.

What we did discover was about 0.3 to 0.4 foot of black (5YR2.5/1) loam overlying a mottled light olive brown (2.5Y5/4) sandy clay subsoil (Figure 25). A deep test excavated in the southeast quadrant of the unit revealed that this soil graded into a reddish yellow (7.5YR6/8) clay at a depth of about 1.2 feet (45.15 feet AMSL).

Excavations in this area of the site yielded only 8 pounds of brick rubble, so we would not consider this much of a concentration. Regardless, artifact density did increase very slightly with a variety of ceramics being recovered, including single examples of delft, lead glazed slipware, white salt glazed stoneware, and pearlware. A total of 107 specimens were recovered.

In spite of this very modest increase in density and diversity, no features were identified. The relatively dark subsoils coupled with an abundance of root and tree disturbances suggest that the structural trenches Webb and Gantt observed may have been natural. However, not being able to relocate their original test unit, we cannot preclude that some structural remains were present somewhere in this vicinity. We decided that additional investigation in this area, absent a clear

direction, would not be profitable and no further work was conducted.

Results at 38BK1011

We recommended approximately 2,800 square feet of excavation at the slave settlement designated 38BK1011. Coupled with this we also suggested that small areas might be stripped for exposure of features. A total of 836 person hours were devoted to work at 38BK1011. A total of 2075.5 cubic feet of primary excavation was conducted between February 12, 1996 and March 6, 1996. The controlled excavations exposed 2,600 square feet of site, while mechanical stripping exposed an additional 2,139 square feet, for a total exposure at 38BK1011 of 4,739 square feet.

Unlike 38BK103, we had not conducted previous work at 38BK1011 and both features and structures were numbered sequentially beginning with the number one. Our discussion of the excavation areas, however, is organized by grid designations, from south to north and west to east (i.e., 100R100 is discussed before 200R100 and 100R200 follows the discussion of 100R100). Figure 26 will help place these different excavation areas in perspective.

1210-1220R960, 1220-1230R970

These four 10-foot units were placed in the vicinity of Webb and Gantt's Unit 6, a 5 by 8 foot test pit situated at 1213R968. They remark that the unit produced a rather large quantity of artifacts (20.9 artifacts/ft³), although here (like elsewhere at the site) Colono ware pottery dominates the collection. They also identified what they called a "structural trench," although they curiously chose not to screen the excavated fill, commenting that they had a sufficiently large collection from the unit excavation (Webb and Gantt 1991:139). They conclude that:

The presence of Feature 1 indicates . . . Test Unit 6 was placed on an exterior wall of a domestic structure. The high

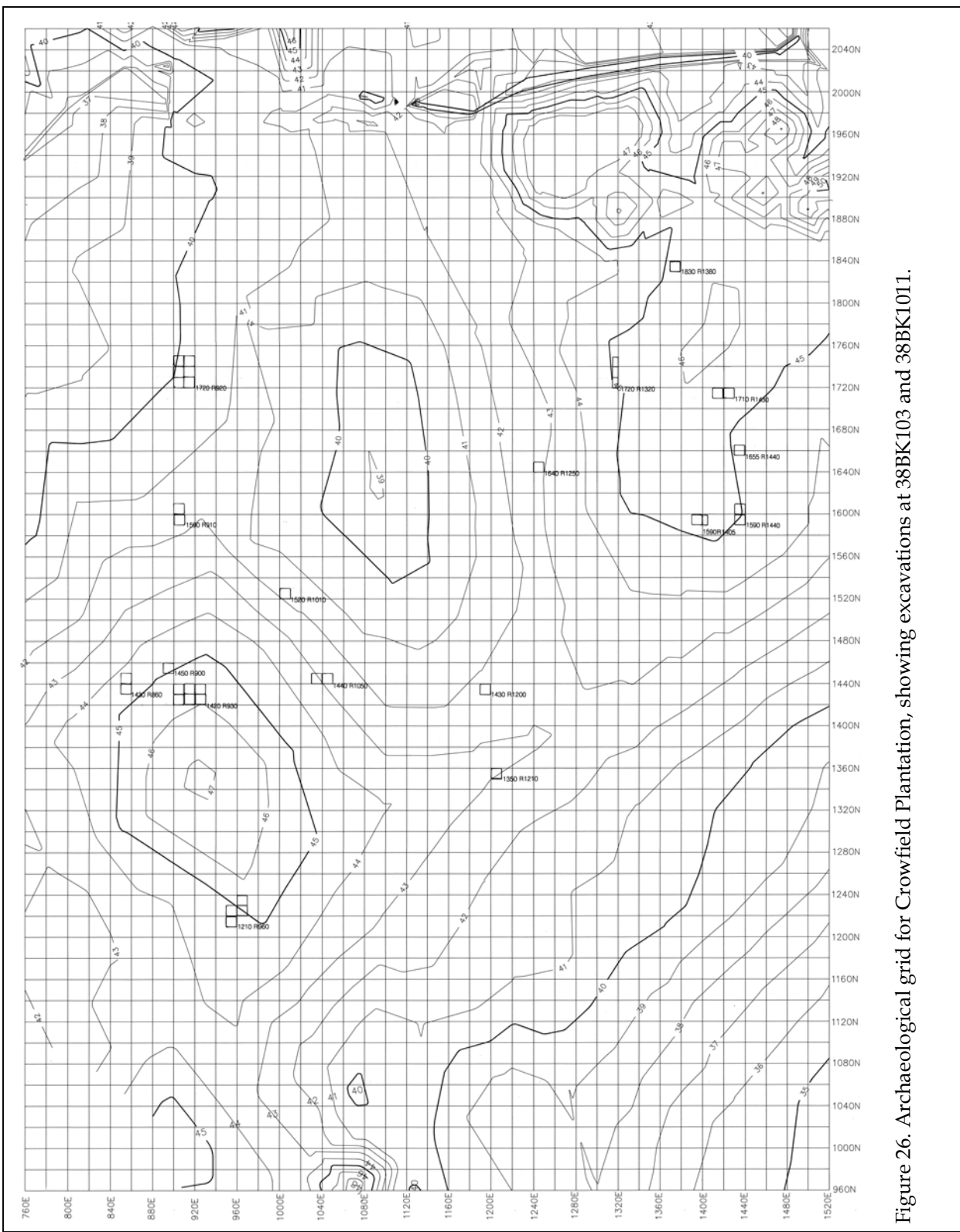


Figure 26. Archaeological grid for Crowfield Plantation, showing excavations at 38BK103 and 38BK1011.

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artifact yield suggests that a discard area adjacent top the wall was also sampled. Based on the test unit plan view . . . the orientation of this structural trench is not clear, nor could it be determined if the trench is linear. It is possible that the trench underwent several rebuilding episodes, during which time the orientation and

nature of the trench was obscured (Webb and Gantt 1991:146).

As a result of this extraordinary interpretative leap they recommended the excavation of 400 square feet to expose the reputed structure. Our excavations in this area were based on that recommendation and while little of their reconstruction proved correct, the unusual findings nevertheless justified the level of effort.

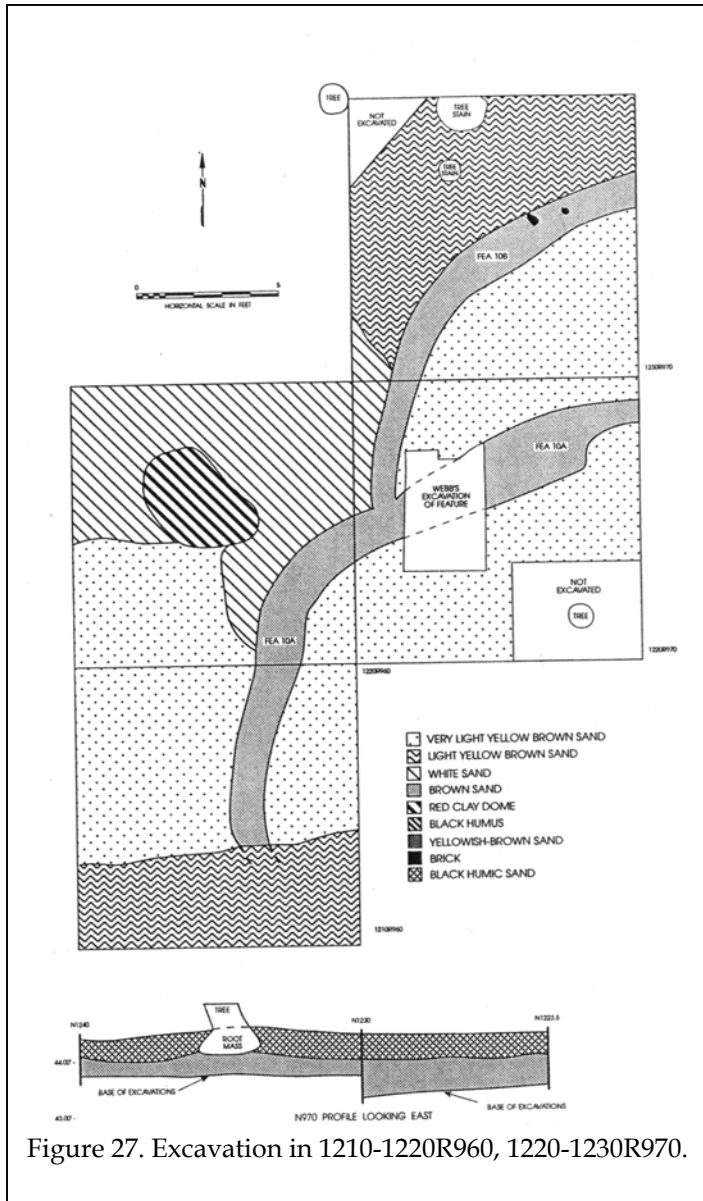


Figure 27. Excavation in 1210-1220R960, 1220-1230R970.

Excavations in this area (Figure 27) revealed a black (5YR2.5/1) humic sand about 0.4 foot in depth (excavated as Zone 1) overlying a brown (7.5YR4/3) sand (excavated as Zone 1a). This, in turn, graded into either light yellowish brown (10YR6/4) or white to pale yellow (2.5YR8/1.5) subsoil. Artifact density was noticed to decline dramatically from Zone 1 into Zone 1a, with most of the specimens from Zone 1a likely associated with the upper fill of the feature cutting through the four units. Brick was very sparse, accounting for less than 2 pounds in the four units.

Feature 10 likely originated in Zone 1a, although the relatively dark soils precluded its definition until the lighter subsoil was reached. For this same reason, it was impossible to follow the feature southward to the N1210 profile – the soils were simply too dark to allow delineation.

Feature 10, as mentioned, extends through all four units as two arcs of brown (7.5YR4/3) sand. That portion designated Feature 10a begins in 1210R960 and arcs northward into 1220R960 where it begins to curve eastward, terminating at the northeast corner of 1220R970. Feature 10b arcs out of Feature 10a just inside unit 1220R970 and terminates in the east central wall of 1230R970 (Figure 28).

Excavation found the trench to be



Figure 28. Excavation of Feature 10, view to the east.

distinct smell and proscribed use, would have been used for the discard of domestic trash, just as marsh and swamp land is known to have been used for the same purpose.

Estimating the circumference of the arc, the southern pen may have enclosed an area about 40 feet in diameter. The northern arc, represented by Feature 10b, appears to be a repair, or perhaps an enlargement of the original pen.

highly variable in depth, ranging from 0.4 to 0.75 foot. Of course, to these should be added perhaps an additional 0.3 foot representing that portion of the feature contained within Zone 1a. The width of the trench similarly varies, ranging from 0.9 foot to 1.5 feet. In general the feature exhibited straight sides and a flat, regular bottom. Only at the southern end of Feature 10a were the sides sloping.

The feature fill produced relatively few artifacts, suggesting that at the time the trenches were excavated, and backfilled, few artifacts were present on the surface of the ground. Moreover, this suggests that the two "arms" or arcs are either roughly contemporaneous or that few artifacts were deposited between episodes.

Although there are no post holes evident at the base of the trench, we believe the feature represents some type of fence, probably an animal pen. The shape is entirely inappropriate for a domestic structure. In addition, the stratigraphy suggests a function with little domestic activity at the time of construction, but increasing discard behavior afterwards. The rich, black humus found in this area of the site indicates an artificially nourished soil. It seems likely that a pen area, with its own

While little studied, there is a characteristic wood fence found associated with black communities all along the Carolina coast, from the Beaufort area northward to Sandy Island in Georgetown County. Consisting of upright slats nailed to supports, it extends from below the soil surface upwards four or so feet. Curiously, this fence form shows clear historic antecedents in West Africa and may represent yet another "Africanism" brought to this area by African slaves (Hamer and Trinkley 1997). It seems likely that the archaeological feature evidenced at 38BK1011 may represent this type of fencing. Although we have been able to document its use only around structures, there seems to be no reason that it would not also be used to pen animals.

1350R1210

This 10-foot unit was laid in to investigate Webb and Gantt's Unit 5, supposedly situated at 1350R1205. It was found at 1357.8R1205 (Figure 29). Webb and Gantt reported a wide variety of artifacts from this location, including the presence of a higher than

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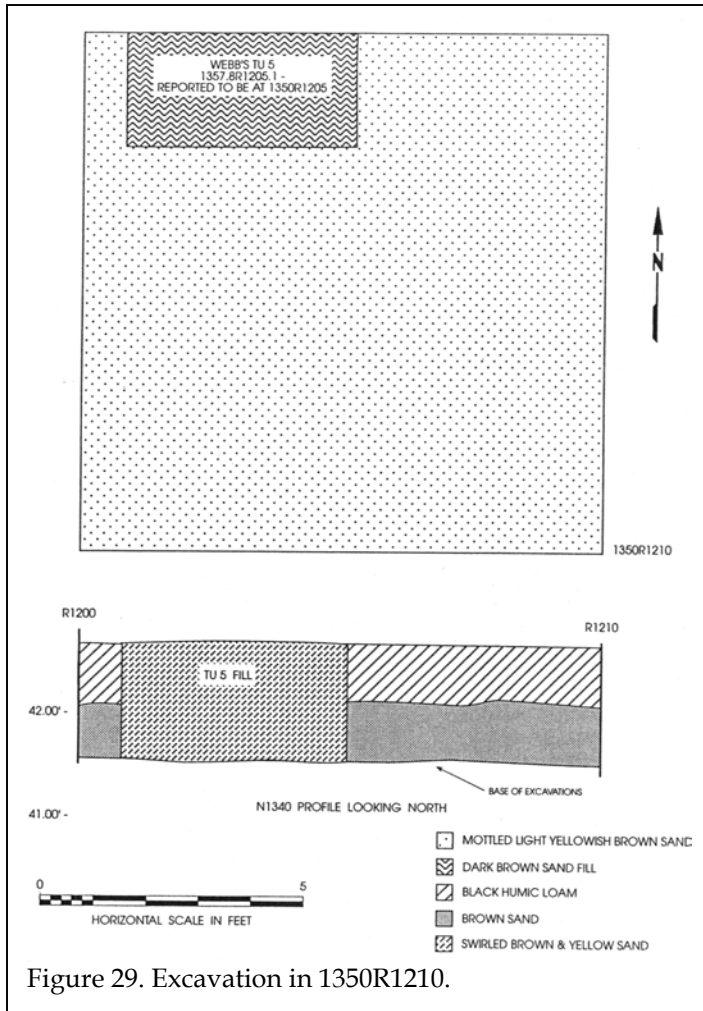


Figure 29. Excavation in 1350R1210.

average assemblage of European wares. They observed that this high frequency:

suggests that the inhabitants of this structure [thought to located in the vicinity of the domestic refuse] might have been high in the Crowfield slave social hierarchy (Webb and Gantt 1991:168).

It was for this reason that they recommended the excavation of 400 square feet. We proposed to reduce this to a maximum of 200 square feet.

Our excavations revealed a black (5YR2.5/1) humic loam about 0.5 to 0.6 foot in depth overlying a brown (7.5YR4/3) sandy loam

Table 5.
Artifact Density of Yard Units

Unit	Artifacts/ft ³
1350R1200	4.2
1430R1200	3.8
1520R1010	5.0
1590R910	3.0
1600R910	4.9

about the same depth. The subsoil in this area is a mottled light yellowish brown (10YR6/4) sand. No features were encountered in the excavation and the artifact density or variety did not impress us as appreciably different from other site areas. In fact, as Table 5 reveals, the artifact density in this area is about the mean for the yard area units. Based on this, and the lack of features, we chose to limit our excavation in this area to the one unit.

1420-1430R910-930

Webb and Gantt excavated their Unit 3 at 1426R925 in "an area that yielded large quantities of kitchen group artifacts during shovel testing" (Webb and Gantt 1991:182). Their excavations yielded a plan view of highly mottled soil (see, for example, Webb and Gantt 1991:Figure 5.27). In fact, their level 2 was removed "to clarify features obscured by mottling," with the result that they identified two trench-like features that were interpreted to represent the remains of a "double bay structure" (Webb and Gantt 1991:186). Also present were three post holes. In addition, they reported a "large and varied artifact assemblage," with most being kitchen-related, including Colono ware, ceramics, and bottle glass. They conclude that:

Test Unit 3 was placed on the remains of a slave cabin at the juncture between the exterior wall and what appears to be an interior wall that divided the

structure into two bays. Two exterior wall trenches with supporting posts were identified. The fact that the interior wall does not appear to have been rebuilt, suggests that the house form may have changed over the structure's occupational span (Webb and Gantt 1991:192).

Based on this, they recommended the excavation of a 40 by 20 foot block to fully expose the structure (Webb and Gantt 1991:257).

In an attempt to follow this recommendation we first sought to relocate their test unit. No evidence of the unit could be found on the surface, or during the subsequent excavations. In comparing the plan view provided by Webb and Gantt to Figure 30, there

Table 6.
Artifact and Brick Density in 1420-1430R910-930

Unit	Artifact/ft ³	Brick (lbs.)
1420R910	19.0	1
1420R920	14.4	11
1420R930	11.2	3
1430R910	12.3	6 </td
1430R920	8.5	14
1430R930	4.6	7

is a very similar stain in the vicinity of 1431R925 – the approximate location of their Unit 3. Their features, however, were revealed to be plowscars. In spite of this, the excavations were very productive, revealing seven features and four post holes.

The six 10-foot units we excavated in

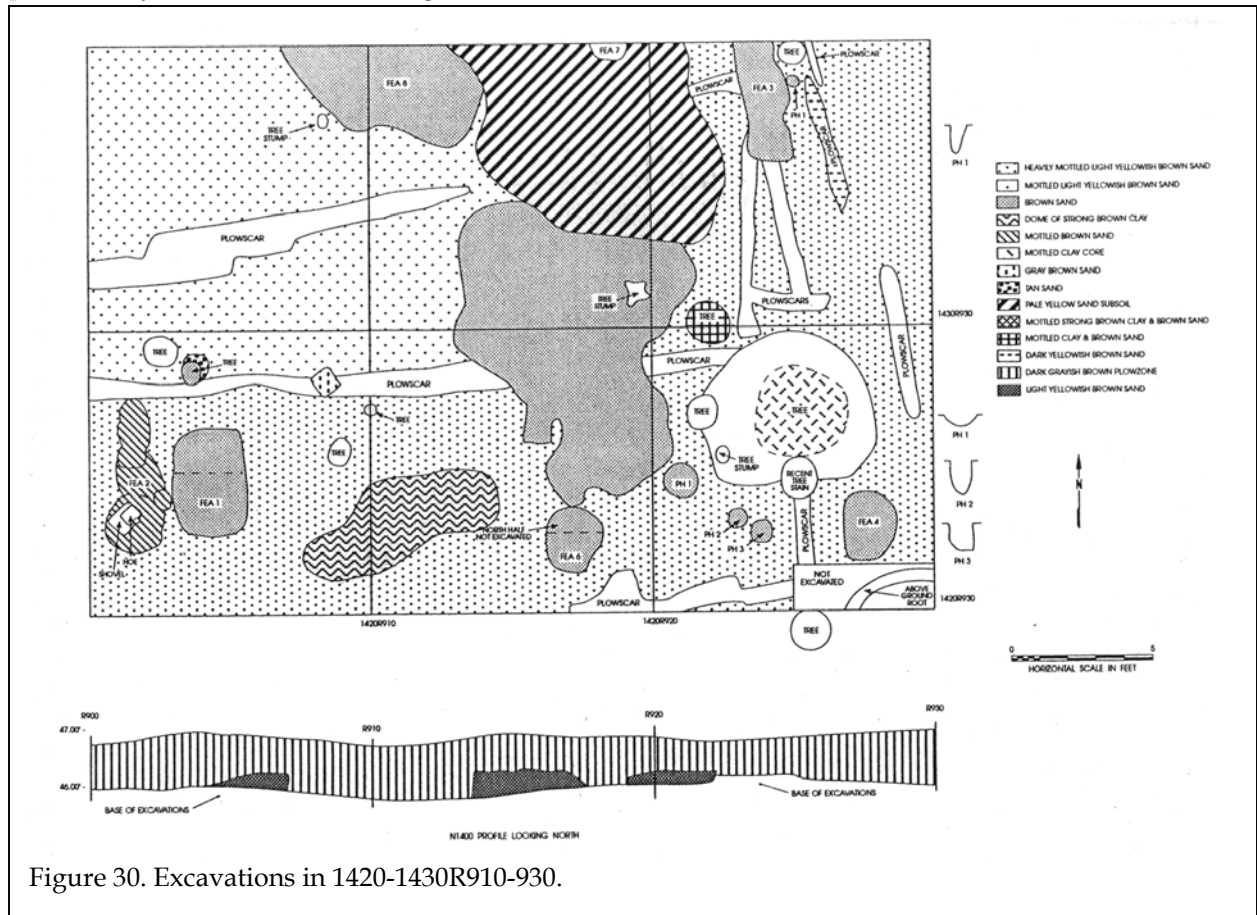


Figure 30. Excavations in 1420-1430R910-930.

EXCAVATIONS

this area revealed a dark grayish-brown (10YR4/2) sand plowzone about a foot in depth. At the base we found light yellowish-brown (10YR6/4) sands with areas of darker sand and, in units 1420R910-920, a dome of strong brown (7/5YR5/8) clay. Another similar clay dome, in 1430R910-920, was apparently mined by Feature 8 (discussed below). As Figures 30 and 31 reveal, these units presented a very complex picture and considerable effort was spent attempting to understand these remains.



Figure 31. 1420-1430R910-930, view to the southwest.

Artifacts, while relatively dense in this area, were dominated by Colono ware pottery. A total of 42 pounds of brick was recovered from the block (Table 6). Table 6 also reveals that while the brick appears densest in the center of the excavations, artifacts were more abundant to the west, declining as excavations were extended to the east.

Five of the features (Features 1, 3, 4, 6, and 7) represent large post supports for a building at this location. Designated Structure 1, Feature 1 formed the southwest corner, Features 4 and 6 were along the south wall, and Features 3 and 7 were along the north wall. The

northwestern corner was outside the excavation area, as was the eastern end of the structure. This is consistent with the artifact density – artifacts were found more commonly outside the structure, with their numbers declining inside the structure area.

Features 1, 4, and 6, supporting the south side of the structure, were all filled with brown sand with mottles of clay. Feature 1, at 1424.5R904.5, was rectangular in shape with straight sides and a flat bottom. It measured 3.8 by 2.5 feet and was 0.55 foot in depth. The feature evidenced sparse remains – a few Colono ware sherds, several nails, and fragments of "black" glass. Feature 4, found at 1423R928, was also rectangular in form, measuring 2.6 by 1.8 feet. It also had straight sides and a flat bottom, although its depth, 0.82 foot, was greater than that of Feature 1. Artifacts

were similarly sparse. Feature 6 was situated at 1422.5R917.2 and measured 2.6 by 2.0 feet. This feature represented an oval basin about 0.3 foot deep, with a post hole penetrating its southeast quadrant, to a depth of 1.4 feet. At the base of the post hole charcoal was very abundant, suggesting that the post may have been charred to reduce insect attack and decay.⁷ It appears

⁷ An 1825 building guide commented that, "the most effectual mode of preserving timber from decay is to char it; . . . charcoal being the greatest anti-putrescent known, and no moisture within the influence of its action will become putrid or decomposed: (quoted in Fitchen 1986:133).

that when the initial support weakened or was compromised, a charred post was set in a hole about 0.8 foot in diameter just beside the original support. This sort of repair would help to support a sagging sill plate.

Features 3 and 7 are found along the north wall of the building at 1430R924 and 1439.8R918.2 respectively. Feature 3 is a rectangular pit measuring about 3.0 by 1.3 feet with sloping sides and a rounded bottom. Unlike the other supports for Structure 1, this feature is deep, excavated to a depth of 1.15 feet, although artifacts continue to be sparse, consisting of what appears to be yard debris or "sweepings." Only a portion of Feature 7 was exposed by the block excavation, so the length could not be determined. The width, however, is about 1.8 feet and the depth is 0.7 foot. The sides were relatively straight and the floor of the pit was flat.

of single slave houses during either the eighteenth or nineteenth centuries (see, for example, Hamer and Trinkley 1997). In reviewing all of the excavation data, we have become convinced that the large mass of brown sand in the center of the block excavation, at 1430R917, represents some form of internal chimney, dividing the space into two bays, each probably represented by a slave family. Reference to Table 6 also reveals that brick was densest in the central area of the excavations, declining in frequency to the east and west – consistent with an internal chimney in this area. This would reduce the individual living areas to about 18 by 18.5 or about 333 square feet – much more in line with expected square footage of slave quarters.

Originally this stained area was interpreted to a slightly low pot, filled in with plowzone soils. However, not only is the brown

soil stain in the central portion of the structure, but it consists of the same friable brown sandy loam found as fill in all five features. The shape is vaguely rectangular or linear, measuring about 9 by 6 feet, about that necessary for a central chimney support. Artifacts continued to be found in this matrix, which might indicate either feature fill or, as originally



Figure 32. Feature 2, south half excavated, view to the north .

These features reveal that Structure 1 was 18 feet in width and no more than about 37 feet in length, with a total floor area of upwards of 670 square feet. This, of course, is far in excess

suspected, Zone 1 soils. Careful analysis of the drawings and photographs, however, reveals that the stain is bisected by a plowscar,

suggesting a slight difference in color and texture between the two.

Other pits found in this block excavation include Features 2 and 8. Feature 2 is situated in the western third of 1420R910 at the base of Zone 1. It was initially recognized by the presence of a hoe discovered during unit excavations (Figure 32). Although this tool was left in situ, we were unable to discern well defined edges. Instead, the hoe seemed to be situated in a rather amorphous mass of highly mottled brown sand. Feature excavation began to the south of the hoe and we were able to discover a well defined base and better defined pit edges which were carried up to the base of Zone 1. Upon excavation we discovered that the hoe was laying on top of a shovel, as though both had been discarded (or "stashed") together



Figure 33. Feature 8. west half removed, view to the south.

in the pit. The north-south profile, 5.4 feet in length, revealed that the feature consisted of at least two features - one to the north and the other to the south - that have blurred together. The width of the pits, while not uniform, averaged about 2.0 feet. Both pits were the same depth, about 0.75 foot, although the central portion (where the two are assumed to bleed together) was only about 0.5 foot in depth.

In the southern pit, along its eastern edge, were many large (0.2 to 0.4 foot in

diameter) lumps of what appeared to be swamp clay, gray to yellow in color with many organic root-like inclusions. Neither type of clay was found elsewhere on the site. Artifacts, besides the shovel and hoe, included Colono ware, bottle glass, and nails. These pits, designated Feature 2, have no clear function, although they be characterized as having received trash after they were open. Situated the way they are at the southwest corner of the structure, they may represent animal "wallows," which had yard sweepings and other trash dumped in them afterwards. Or they may reflect storage areas - one for tools and another for pottery clay.

Feature 8 (Figure 33) is found in the northeast quadrant of 1430R910 and the northwest quadrant of 1430R920 at the base of Zone 1. The exposed portion of the feature,

which measures 6.5 by 3.5 feet, is entirely situated under Structure 1. Given its size, this pit must have been excavated, and likely backfilled, prior to the construction of the house. The feature fill is a homogenous brown (10YR3/2) fine sandy loam. Toward the base of the pit there were several lenses of strong brown (7.5YR4/6), reddish yellow (7.5YR6/6) and very dark gray (10YR3/1) fine sandy clay. Also present in the fill were small brick fragments (these were typically small, under 1-inch

in diameter, and their total weight was just 1 pound). Artifacts, while common, were all very small - as might be expected with yard trash being swept or thrown into an open hole. The absence of water lensing suggests that the hole was rapidly filled, although its original function is less clear.

Although such features are often called "trash pits" by archaeologists, this phrase reflects their final use. Relatively few people dig holes

with the specific and sole intent to use them to dispose of trash. Most holes are dug for some other purpose and, once open, become convenient receptacles for trash. On rural plantations there are far too many other places that trash can be disposed of to warrant digging holes. For example, at 38BK1011, not only were the adjacent woods likely available to receive trash, but there were several swamp or low areas nearby.

While indeed under the structure and in a corner, Feature 8 does not really bear much resemblance to the well defined “root cellars” of seventeenth and early eighteenth century Virginia slave houses (see, for example, Mouer 1993:149). Moreover, while these pits might serve as “hiding or storage” spaces for wall trench or mud-sill houses, this structure appears to of post and beam construction, raised above the ground on wood piers.

In several areas the walls of Feature 8 reveal dense clay, suggesting that the pit may have been opened to mine clay, perhaps for

daub, clay mortar, or pottery use. The lenses at the base of the pit, in fact, may represent the dregs or remnant spoil from clay extraction.

In sum, these block excavations begin to provide a detailed, and complex, picture of life at Crowfield's slave settlement. Structure 1 represents what might be called a fairly late structural type - probably frame built up on a sill laid over probably wood piers. The posited central hearth, which served to divide the structure into two bays, was probably brick, while the chimney itself may have been built of wattle and daub, since the quantities of brick and mortar are very small.

Around the structure are several features that reveal activities at the site both before, and after, this building was constructed. Whether these pits have the same level of

significance at Crowfield as they have been ascribed elsewhere, we can't be sure; some do, however, appear to have served secondary

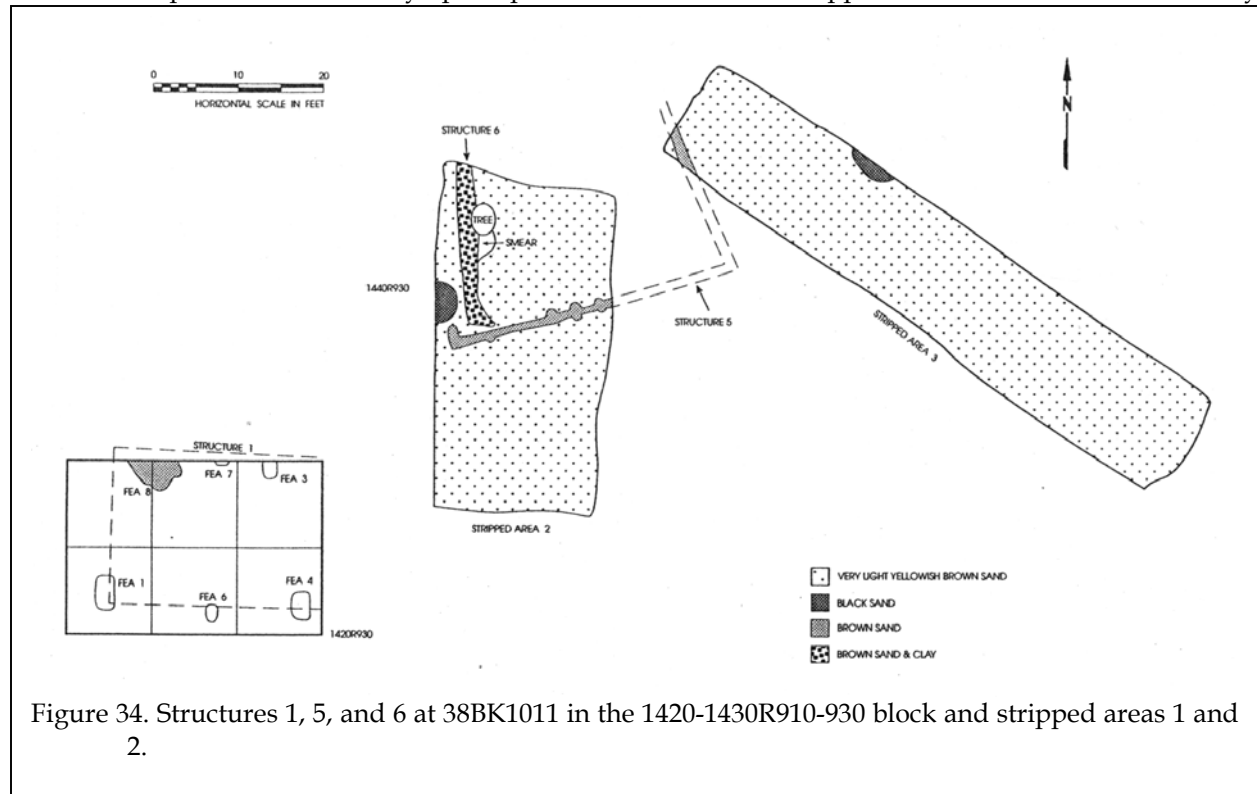


Figure 34. Structures 1, 5, and 6 at 38BK1011 in the 1420-1430R910-930 block and stripped areas 1 and 2.

storage functions.

Stripped Areas 2 and 3

Toward the end of our work at 38BK1011 we stripped two areas just east of 1420-1430R910-930. Our goal in both was to better understand the density of remains in what appeared to be the site core. The first area, measuring 18 by 38 feet, exposed 684 square feet (Figures 34 and 35). The second, measuring 71 by 13 feet, exposed a total of 923 square feet. Both areas were flat shoveled, with features cleaned and photographed, but not further excavated.



Figure 35. Stripped areas 2 and 3, view to the southeast.

Exposed by the mechanical stripping were two structures, designated Structure 6 (found entirely in Stripped Area 2) and Structure 5 (found in Stripped Areas 2 and 3). Structure 6 was revealed by a trench of brown sand and clay about 2.5 feet wide. This trench was 20 feet in length, which what appeared to be a partial corner, turning to the east, at its southern end. Structure 5 consisted of a brown sand trench feature about 1.5 feet in width. The southwestern corner was identified in Stripped Area 2 and the southern wall was 35 feet in length. Along this trench were four clearly

defined post holes. Although the southeast corner was not exposed, a portion of the eastern wall was found in Stripped area 3, revealing a wall length of at about 18 feet.

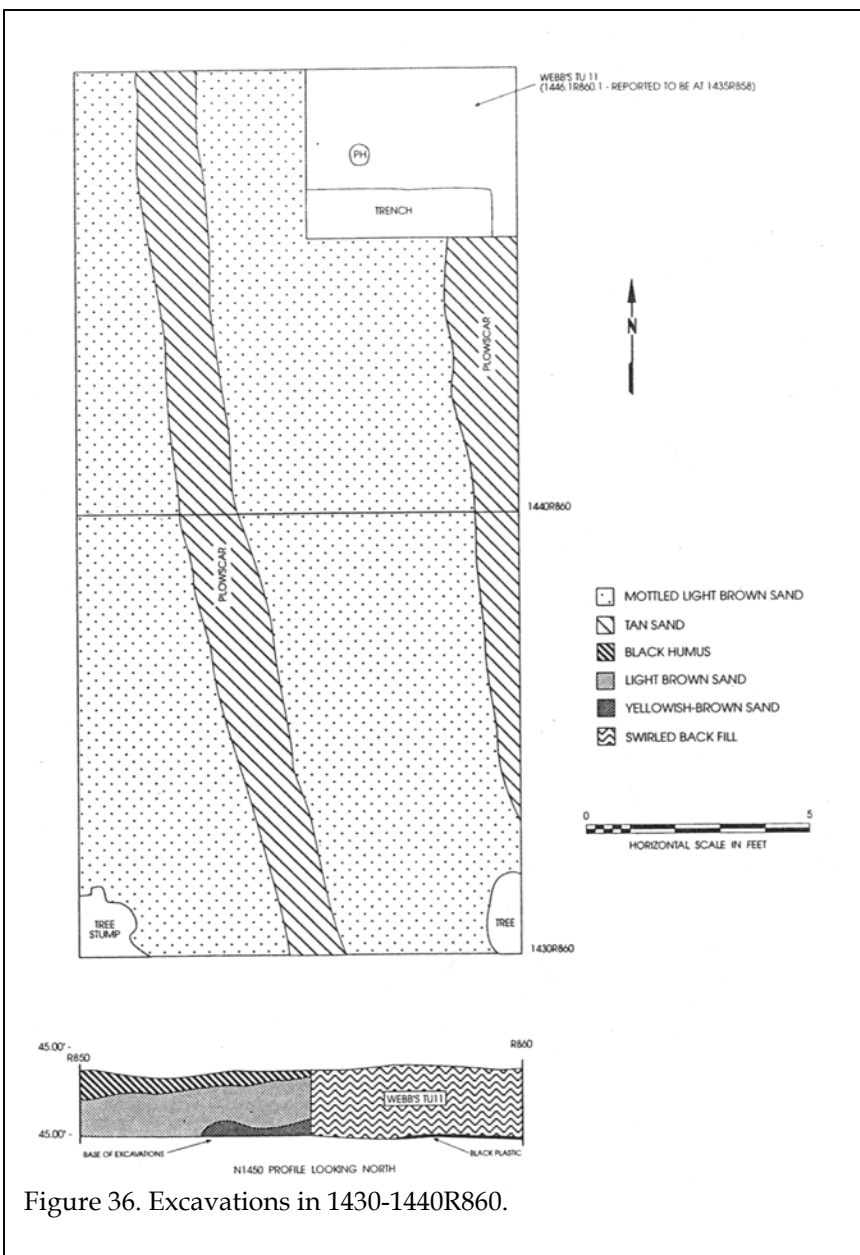
These two structures, in contrast to Structure 1, are characteristic of what others have called thatched, wattle and daub, or wall trench.⁸ Although of different construction, Structure 5 is curiously about the same size as Structure 1, suggesting that double bay structures may not have been unusual at Crowfield. In addition, all three of these structures have different orientations, revealing that there were no orderly rows of slave houses at Crowfield during the early eighteenth century.

1430-1440R860

Webb and Gantt (1991:192) excavated their Unit 11 in an area reputed to have a high density of kitchen-group artifacts. It was reported to have been placed at 1435R858, although our work found it at 1446.1R860.1. Other details concerning the excavation are equally unclear. For example, while the text reports that the unit was excavated to a depth of 16 inches, their

drawing reveals a depth of only 12 inches. Upon uncovering the unit, which had black plastic at

⁸ Thatching usually entails attaching brush such as palmetto to horizontal posts. Wattling involves placing a series of primary support posts in a trench and "basket weaving" vines or other brush between the primary support posts and secondary support posts that are held upright in the weaving processes. Sometimes these structures are plastered over with a clay mixture known as daub, and are then called "wattle and daub" houses. Sometimes these types of structures are also called "wall-trench" houses.



its base, we found that its depth was actually 0.8 foot (or 9½-inches).

They reported two features. One was a post hole about an inch in depth. A shallow hole corresponding to this post hole (and to their drawing of the unit) was found at the base of this square. The other "feature" was a "somewhat linear area extending north to south in the eastern half of the unit" (Webb and Gantt

1991:193). Once investigated they reported this to be a tree root. Nevertheless, once their unit was uncovered, we found that the excavated tree root was at the south, not east, edge of the unit and that it had been "excavated" using a 1 by 4.2 foot trench. It appears that Webb and Gantt's photograph of the unit (Webb and Gantt 1991:Figure 5.40) shows the root (before excavation) at the southern edge of the unit, with the post hole located as drawn and recovered by our work, so somehow the root was drawn on the wrong side of the unit, while the post hole was correctly located.

They conclude that the unit was at the western edge of the slave village, "probably along the periphery of a domestic discard area" (Webb and Gantt 1991:198). Regardless, they recommended that a 20 by 20 foot block be excavated in this general area. Based on the nature of the finds, we reduced that recommendation to a maximum of 200 square feet.

Our excavations revealed a black humus, probably representing a modern A horizon, overlying a light brown sand, which probably reflects the old Ap horizon. At the base of the excavation, about 0.7 to 0.8 foot in depth, we found a mottled light brown sand representing the subsoil. In this subsoil were two distinct plowscars running north-south (Figure 36).

Artifact density in these units was low, much lower than found in the nearby 1420-1430R910-930 block excavation. Brick density was likewise reduced, with only 7 pounds recovered from the two units.

1430R1200

This unit was placed immediately west of Webb and Gantt's Unit 2, situated at 1430R1205. They observe that:

ceramic/glass yield and the lack of structure-related subsurface features suggest that Test Unit 2 was probably placed along the edge of a slave cabin, perhaps within an associated discard area (Webb and Gantt 1991:157).

They recommended that this general area, which also includes their Unit 5 (our 1350R1210), be further explored. We selected to place our unit to the west of theirs since the shovel test data suggest that the concentration is to west. The unit revealed a very dark gray (10YR3/1) humic sand about 0.2 foot in depth overlying a brown (10YR5/3) sand about 0.5 foot in depth. This graded into a light yellowish-brown (10YR6/4) subsoil (Figure 37). No evidence of plowing (other than the small size of the recovered artifacts) was found and the unit was barren of features.

The findings from this unit were modest. Artifact density was nominal and those materials present were highly fragmented. No features were recovered and only 2 pounds of brick were recovered (a significantly lower density than anticipated, based on Webb and Gantt's Unit 2).

1440R1040-1050

Webb and Gantt excavated their Unit 8 at 1450R1040 in order to explore an area of posited high kitchen artifact density. They found that the number of artifacts was quite high (30.4 ft³), although very few were architectural. In addition, no

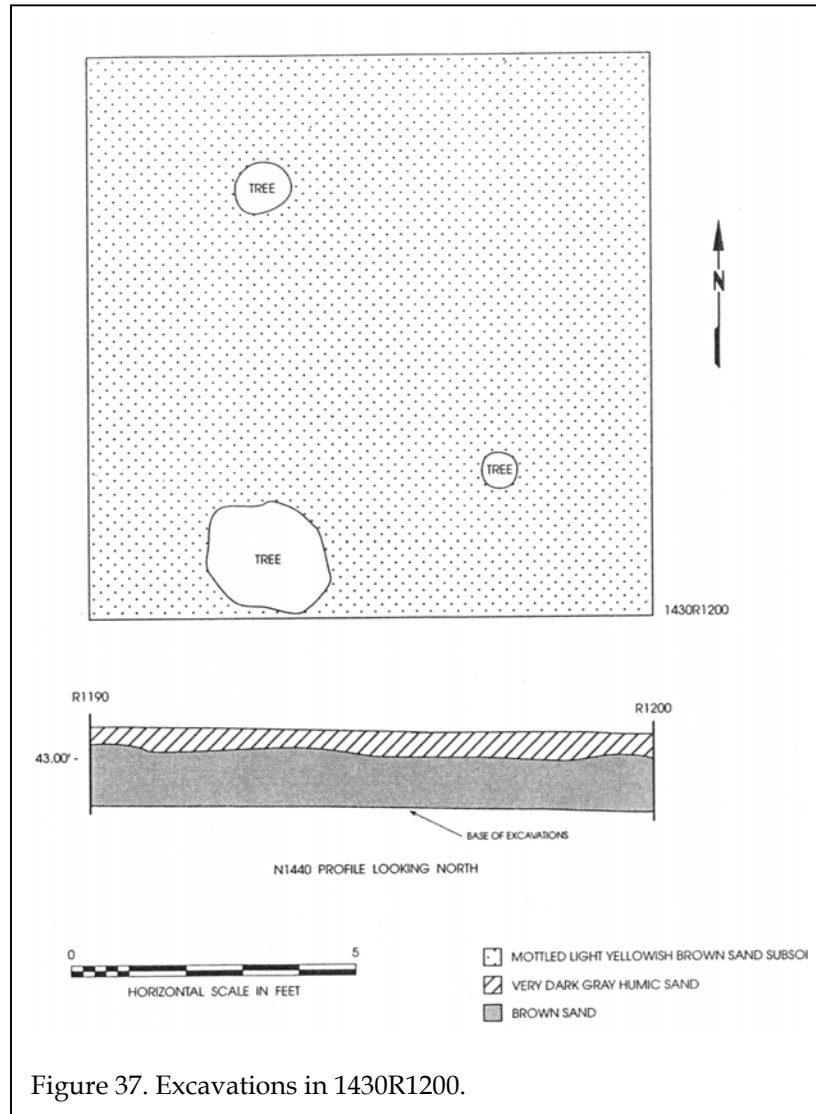


Figure 37. Excavations in 1430R1200.

the recovery of 1.4 lbs. of brick, nail fragments, the high

features were recorded in the unit. These findings led Webb and Gantt to comment that the unit:

was located in a discard area, probably near a slave cabin. The low frequencies of European wares, food bone and durable architectural artifacts suggest a generally poor socio-economic condition (Webb and Gantt 1991:182).

southeast corner of our 1440R1040, we found no evidence of backfill or the black plastic supposedly at the base of the unit (and, in fact, a tree in this quadrant would have made the excavation of the unit impossible).

We found a very dark grayish brown (10YR3/2) sand about a foot in depth overlying either a heavily mottled yellowish brown (10YR6/4) or a light red (10R6/6) sand subsoil (Figure 38). We also observed a red (2.5YR6/6) clay dome in the northwest quadrant of

1440R1040, similar to the one observed in 1420R910 - 920. Zone 1 was clearly a plow-zone, with north-south plow scars and ridges plainly visible at the base of the excavations. A single post hole, with a black (7.5YR2.5/1) sand fill was found in the center of 1440R1040.

In addition, we found remnants of what appeared to be an intermittent wall trench running east-west through the center of both units (see Figure 39). The fill was a

dark brown (7.5YR3/3) sand and the trench averaged about 0.4 foot in width. It was not excavated and no feature number was assigned. This is referred to as Structure 7. There seems to be equal mottling north and south of this feature, so it is not possible to speculate on which side may have been within the structure.

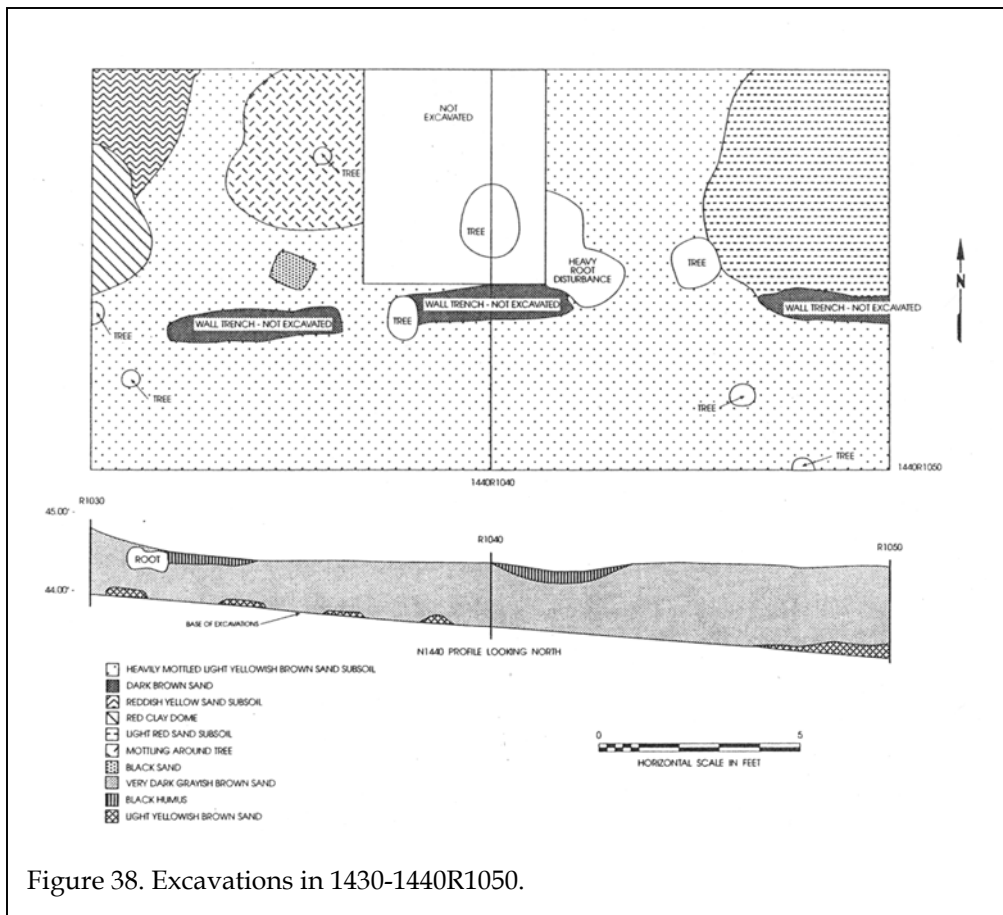


Figure 38. Excavations in 1430-1440R1050.

This was another area where they recommended the excavation of a 20 by 20 foot block, while our assessment was that about half that work would be adequate to sample the remains. Consequently, we opened two 10-foot squares, 1440R1040 and 1440R1050. Although Webb and Gantt's test unit should have been situated in the

There did not seem to be any difference in artifact density from north to south, probably because plowing (perpendicular to the wall trench) had homogenized the associated artifacts.

1450R900

Although this 10-foot unit was excavated in Webb and Gantt's Area 4-7, it was not placed in the immediate vicinity of any of their test pits. Situated just northwest of the

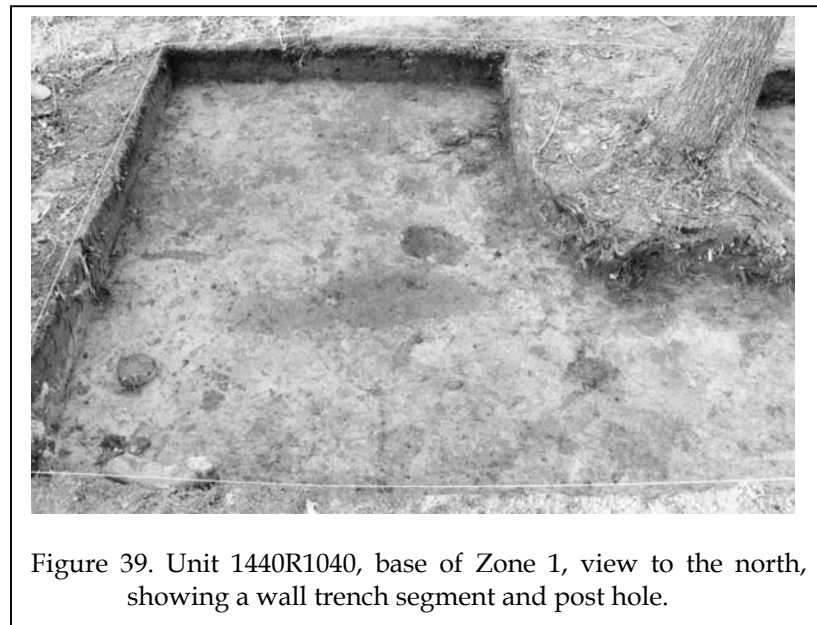


Figure 39. Unit 1440R1040, base of Zone 1, view to the north, showing a wall trench segment and post hole.

1420-1430R910-930 block and Structure 1, it was intended to explore artifact density in a yard area associated with a known structure. We hoped that the unit would not only reveal some evidence of yard activities (which were generally missing from Stripped Areas 2 and 3 to the east), but that it would provide an indication of artifact density in near yard areas.

The unit revealed about 0.2 foot of recent very dark brown (10YR2/2) humic loam overlying 0.7 foot of dark yellowish brown (10YR3/4) sandy loam plowzone. At the base of the unit was a heavily mottled brownish yellow (10YR6/6) sandy clay subsoil (Figure 40). Several plowscars were found running east-west through the unit, although no features were

present. Artifact density was appreciably lower than at the nearby block excavation, although the excavation did produce 4 pounds of brick rubble. In addition, as 7 reveals, this unit had the highest artifact density of the three units excavated to explore the yard areas of Structure 1. In general these near yard artifact levels are lower than immediately adjacent to the structure, but higher than those tests placed at further distances from structures (see Table 4).

The only real indication of possible yard activities was the exceedingly heavy mottling at the base of the plowzone, perhaps an indication of the activities that may have taken place in the yard of the slave settlement. Unfortunately, plowing was sufficiently intensive at this site to preclude or affect some research efforts — and a clear understanding of yard areas and yard use is difficult.

1520R1010

This 10-foot unit was situated in Webb and Gantt's Area 8, which was based on dense remains recovered from a shovel test at 1540R1000 (where 42 artifacts, including 37 Colono ware sherds, were recovered). Webb and Gantt had not investigated this area, which is on a north-facing slope. We hoped that it might reveal evidence of dumping activities, perhaps accounting for the high density found in the shovel test.

Unit	Artifacts/ft ³
1430R860	9.9
1440R860	9.4
1450R800	11.2

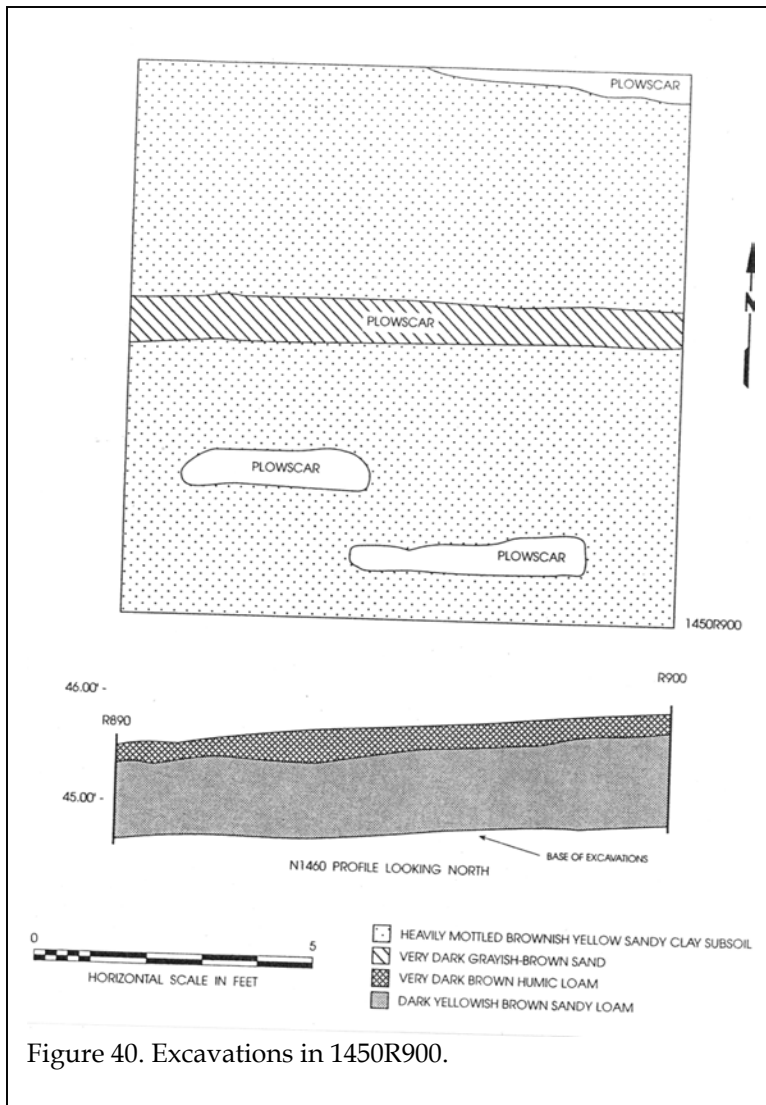


Figure 40. Excavations in 1450R900.

We found 0.2 to 0.3 feet of dark brown (7.5YR3/2) sand, probably reflecting a recent humus development, overlying brown (7.5YR5/3) sand. This lower zone, only 0.4 to 0.5 foot in thickness, probably represents an eroded plowzone remaining on the slope. At the base of the excavation was a yellowish-brown (10YR5/4) sandy subsoil (Figure 41).

Although 5 pounds of brick were recovered from this unit, artifact density was exceedingly low – 5 artifacts/ft³ – much lower than anticipated based on the nearby shovel test. No features were encountered and we can only conclude that the shovel test was either an

anomaly or that it hit a feature (which we did not recover).

1590-1600R910

Webb and Gantt excavated their Unit 14 about five feet north of this block at 1615R905. We were unable to find the unit because of extensive clearing and grubbing damage. Our excavations were placed in the least damaged portion of the general area.

Webb and Gantt placed their unit to explore the edge of the slave settlement, in an area of relatively low artifact density (less than 10 specimens per shovel test). In the south wall of the unit they excavated what they described as a probable post hole. They also found what was described as "a linear area of dark brown (10YR3/3) sand with charcoal flecks extending from the west wall and covering almost two-thirds of the test unit" (Webb and Gantt 1991:217). They excavated a 1.5 foot wide "window" along the entire north wall. Afterwards they concluded that this was "root disturbance." Artifact density was low (10.7/ft³), but Webb and Gantt nevertheless comment that the unit was "located proximate to a

slave dwelling" and that, "it is possible that Feature 1 [the post hole] represents the northern end of a structural trench within a slave dwelling" (Webb and Gantt 1991:220). As a result, they recommended 400 square feet of excavation in this general area, which we proposed to reduce by half.

Unable to relocate their Unit 14 because of construction disturbance, we established our excavation to the south by about 5 feet. Since they postulated that the slave house ran to the south, this was not seen as compromising the research effort.

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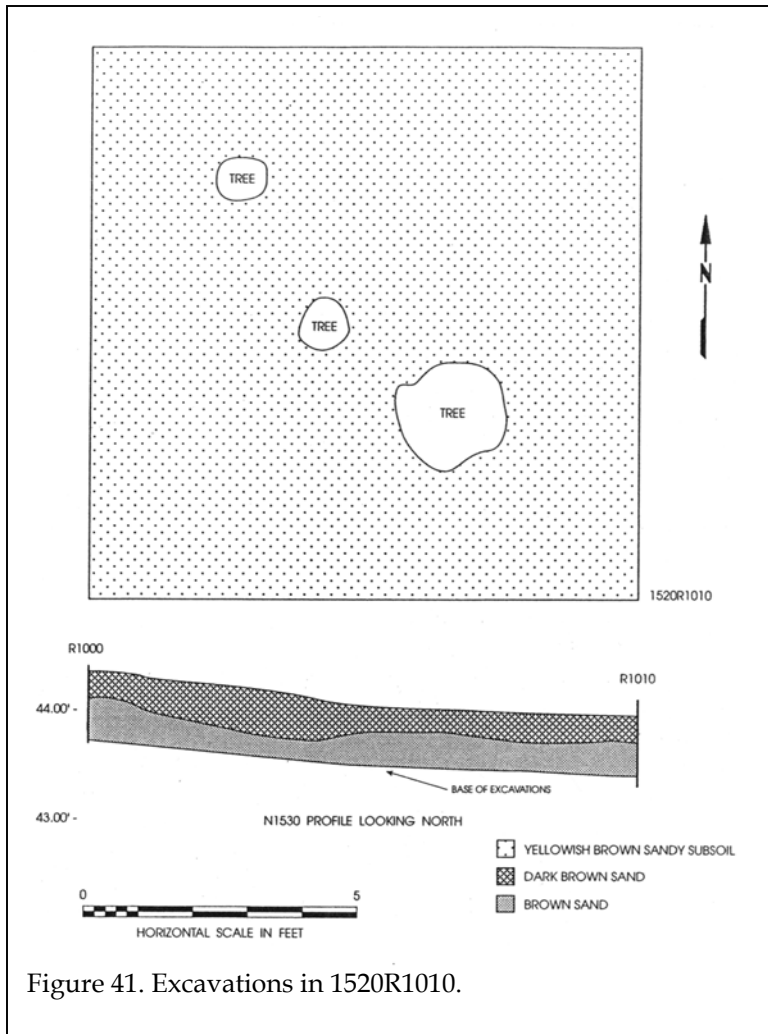


Figure 41. Excavations in 1520R1010.

The excavations revealed a black (10YR2/1) humic loam between 0.1 and 0.4 foot in depth overlying a brown (10YR4/3) sand about 0.3 to 0.7 foot in depth. The subsoil in this area of the site was a light yellowish brown (10YR6/4) sand, although there were areas of pale yellow (2.5Y7/3) sand commingled with extensive tree disturbances (Figure 42). Both the plan view and profile drawings reveal some of the disturbance the area had suffered a few months prior to our work.

Although a number of artifacts were found in the excavations, including a total of 18 pounds of brick rubble, no features were

present. In addition, these excavations, on the western edge of a large low area, produced very wet soils. Although we can't discount the possibility that structural remains may have been found in this area, by the time of our work there had been sufficient disturbance to make their investigation problematic. Consequently, no further research was undertaken in this area.

1720-1740R910-920

Webb and Gantt excavated their Unit 15 in what was called Locus 9 to investigate a high density of brick recovered in shovel testing (Webb and Gantt 1991:198). Among the numerous root stains they also identified what was thought to be the northeast corner of a wall trench structure. This feature was found to be about 1.5 feet in width and 1.0 foot in depth. The trench had a flat base and angled sides (Webb and Gantt 1991:202).

Artifact density in this area was relatively low - only 7.3/ft³. Webb and Gantt, however, note that the unit, compared to others they explored, produced "a significant amount" of architectural items, primarily nails. As a result, they recommended that this area receive a 40 by 20 foot block excavation. We concurred that this was likely a unit and deserved to be fully explored.

As a result, we began by laying in six 10-foot squares, 1720-1740R910-920 in the general area of the posited structure, although construction activities in this area (as in the vicinity of 1590-1600R910) prevented us from initially identifying Webb and Gantt's unit.

We encountered a black (2.5YR2.5/1) humic loam about 0.3 foot in depth overlying

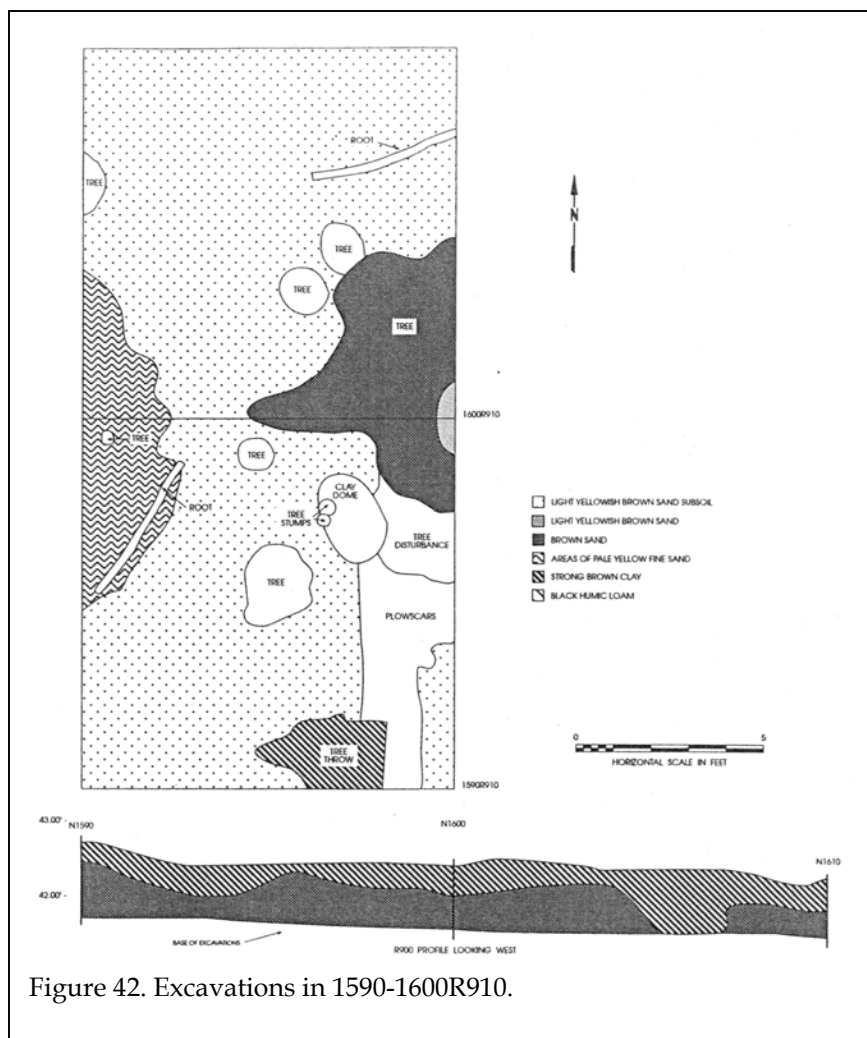


Figure 42. Excavations in 1590-1600R910.

about 0.6 foot of very dark gray (10YR3/1) sandy plowzone soils. At the base of the excavations was a mottled light yellowish-brown (2.5YR6/4) sandy subsoil. The only significant variations were found in the northern units. Square 1740R920 revealed an area producing dense red (2.5YR5/8) iron concretions and units 1740R910-920 bisected an area of brownish-yellow (10YR5/4) clay surrounded by a mottled pale brown (10YR6/3) sand ().

The units revealed several tree stains or smears, as well as several plowscars tending northwest-southeast. In addition, we found evidence of two different structural wall trenches, designated Feature 5a and 5b. The fill

was a brown (10YR5/3) sand that was well-defined against the lighter subsoil in all areas except in 1720R910 where the two features and a plowscar commingled. That area was gradually interpreted as the different stains were excavated. The trench varied from about 1.0 to 1.6 feet in width and generally has straight sides and a flat bottom. The depth varied from 0.45 to 0.55 foot. Only one distinct post hole was encountered in the trench, at 1731R913. It was 0.8 foot square with a flat bottom and was excavated 0.4 foot below the base of the trench

The bulk of the trench is associated with Structure 2 and only a short segment of trench is present from what we have identified as Structure 4 (see Figure 44).

Stripped Area 1

Unable to fully expose Structures 2 and 4 in the previously discussed block excavation, we decided to mechanically strip an area adjacent to the excavations in order to expose at least the northeast corner. This would allow us to determine the length and width of at least Structure 2 and might assist in identifying additional sections of Structure 4.

An area measuring 13 by 39 feet (507 ft²) was opened using a small bulldozer (Figure 44). During this stripping we encountered a mass of brick in the northern half the open area. This necessitated suspending the mechanical excavation and the rest of the work was accomplish by hand. In the process of this work

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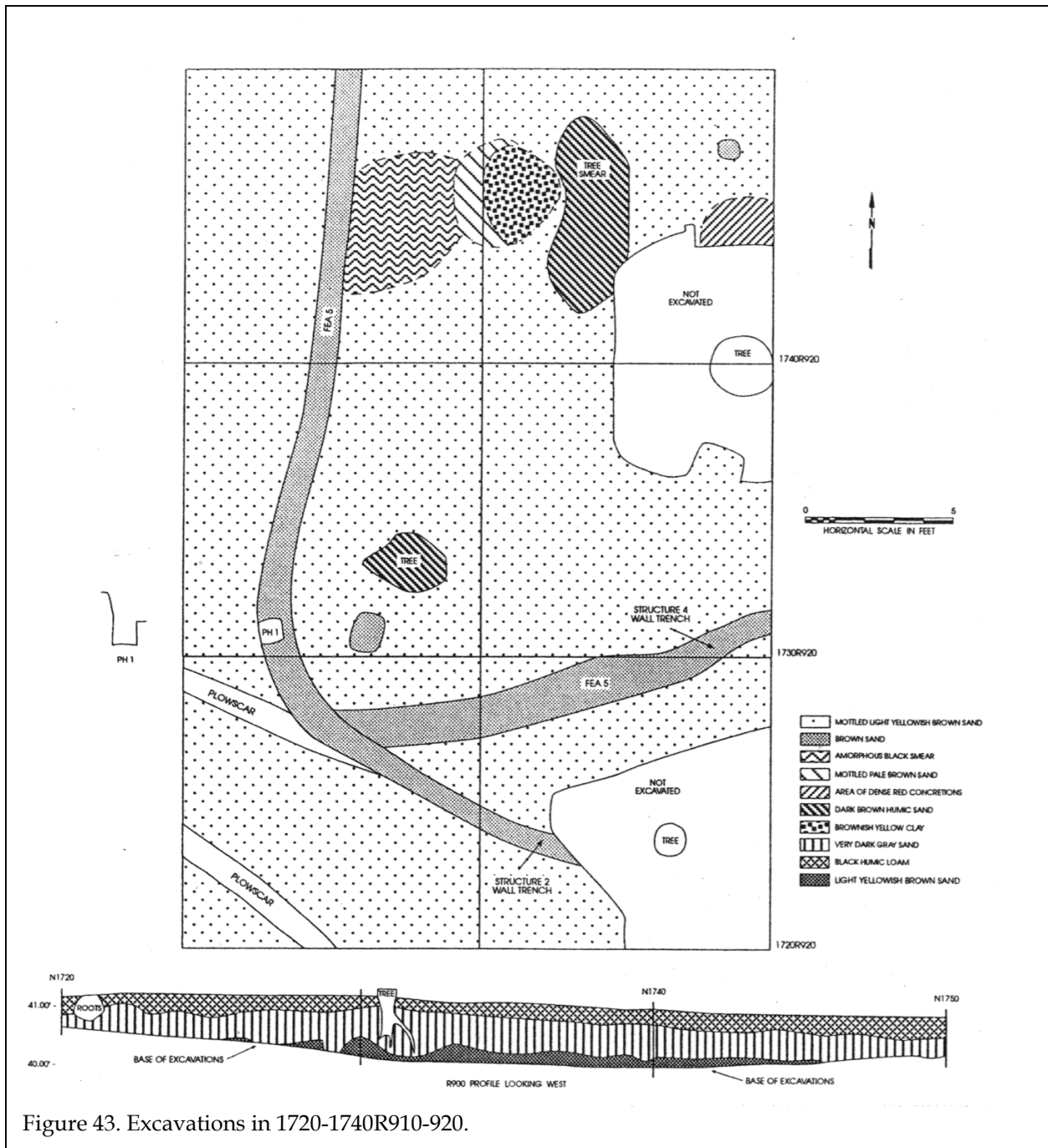


Figure 43. Excavations in 1720-1740R910-920.

we also discovered Webb and Gantt's Unit 15, which was actually located at 1752R924.2. This area was incorporated to the stripped section, resulting in a total of 532 ft².

We were confronted with a number of stains, as well as the brick mass. Beginning with

Webb and Gantt's original unit we determined that the posited corner they encountered actually represented two different structures (see Figure 44). Toward the north wall of their unit they had identified a portion of the northern wall for Structure 2, while along the eastern side of the unit the stain they found was

actually a wall trench associated with another building, which we have designated as Structure 3.

The stripped area did expose a small portion of the eastern wall for Structure 2, allowing us to determine that it measured 33 feet in length and 20 feet in width. Figure 44 reveals that the structure is slightly misshapen or out of square. This suggests that only minor care was taken to lay out and build the house. There is also no indication of a chimney and, typical of such structures, we imagine that

far less substantial than the exterior walls), creating two rooms, each about 330 ft². Although the dimensions are different from previous structures, this floor area is similar to that of the Lesesne house (Zierden et al. 1986).

The stripped area failed to reveal any further evidence of the wall trench comprising Structure 4. It did, however, reveal the northwest corner, a portion of the north wall, and the south wall for Structure 3. This, too, was a wall trench building. The southern trench, 2.5 feet in width, consisted of dark brown (10YR3/3) sand with charcoal. Also present was an area of yellow (10YR7/8) clay, perhaps representing a portion of a clay dome disturbed by the trench construction. The northern and northwestern trenches ranged from 1.5 to 3.0 feet in width and consisted of very dark brown (7.5YR2.5/2) sand.

The measurements for Structure 3, 17 by 24 feet, are large for a wall trench building and there is no evidence that it had a dividing partition. In fact, the presence of a brick hearth (designated Feature 9) at the north end strongly suggests that it was intended to be occupied by a single family.

Feature 9 (Figure 45) measured 5.0 feet in length and 2.5 feet in width and was oriented N12°E. It was constructed almost entirely of brick fragments, typically half

bricks. We found evidence of mortar on only one brick, suggesting that these bricks were not salvaged from other construction, but were probably construction debris – bricks broken in

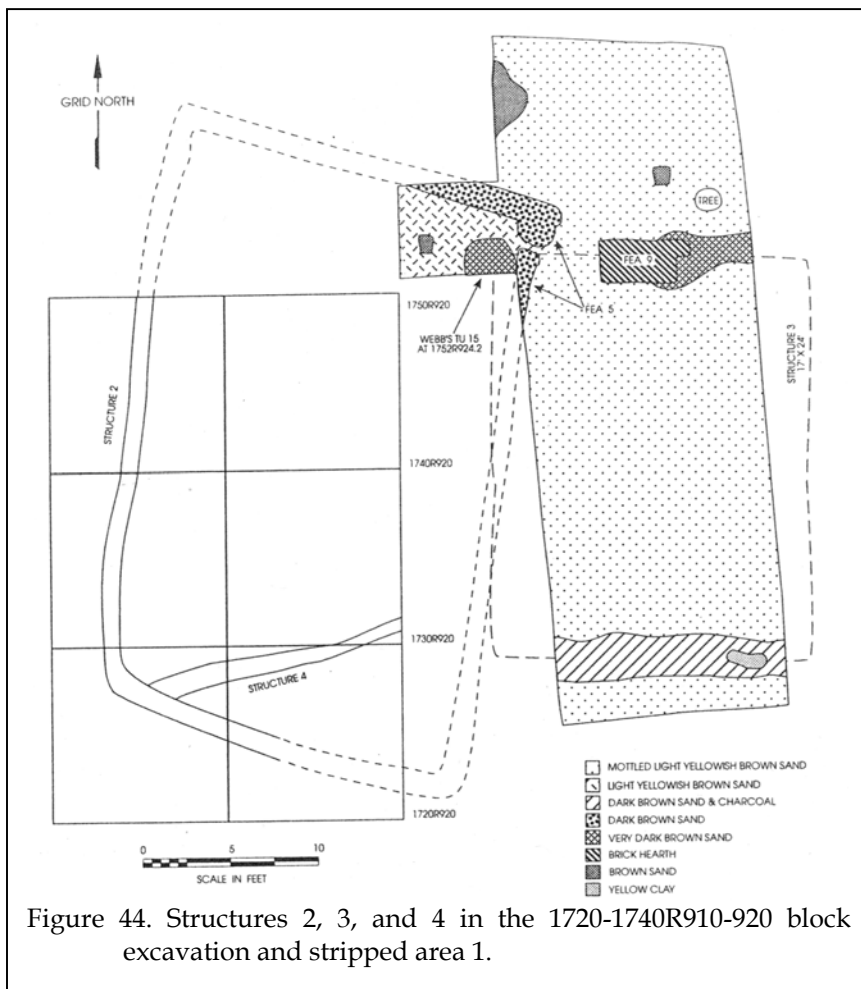


Figure 44. Structures 2, 3, and 4 in the 1720-1740R910-920 block excavation and stripped area 1.

cooking activities were conducted in the yard. Curiously, this structure is significantly larger than those previously reported, providing 660 ft² of living space. We imagine that it was divided with a central partition (which apparently was



Figure 45. Stripped area 1, view of the Structure 3 hearth (Feature 9), a portion of the Structure 3 wall trench (in the background), and the corner of the wall trench for Structure 2 (in the foreground of the hearth).

the process of forming corners and which would otherwise have been discarded. They were set into a thick gray-brown clay, similar that found in the swamps around Crowfield (and very dissimilar to any of the clay domes or clay subsoil revealed by these excavations).

Structure 3 is an interesting "hybridized" building representing a combination of traditional African wall trench (or wattle and daub) construction into which a European hearth and chimney had been cast. This structure may reveal the transition from primarily African building techniques to primarily European techniques.

Summary

Intra-site Patterning and the Crowfield Landscape

One of more significant research topics involved recovery of intra-site patterning at 38BK1011, with specific interest in understanding structure orientation and

patterning, as well as yard activities. In addition, an interest was expressed in exploring the main plantation settlement at 38BK103, since this was one of the few studies incorporating a main complex distinct from the area around the main house.

Our research in this area is especially valuable. At 38BK1011 we found that while the structures did *tend* to follow the natural topography of the project area, there were a variety of structural orientations. There does not appear to any organized pattern

and certainly nothing approaching the organized rows of the nineteenth century.

The apparent absence of pattern, however, must be cautiously interpreted. We also observed several instances of rebuilding and in virtually every case this rebuilding was on top of a previously existing structure. The failure to move away from previously occupied areas, of course, may be related to a number of factors - new areas might have required greater clearing efforts (although every rebuilding would have required some effort to remove the previous structure), expansion of the settlement into new areas may have been prohibited by the master or his overseer (assuming the master's dominance extended this far into the lives of his slaves), or expansion of the settlement might have disrupted bonds within the community. This last explanation may prove to be the most interesting, since it focuses on the slaves as people and on their settlement as a cohesive, self-integrating community.

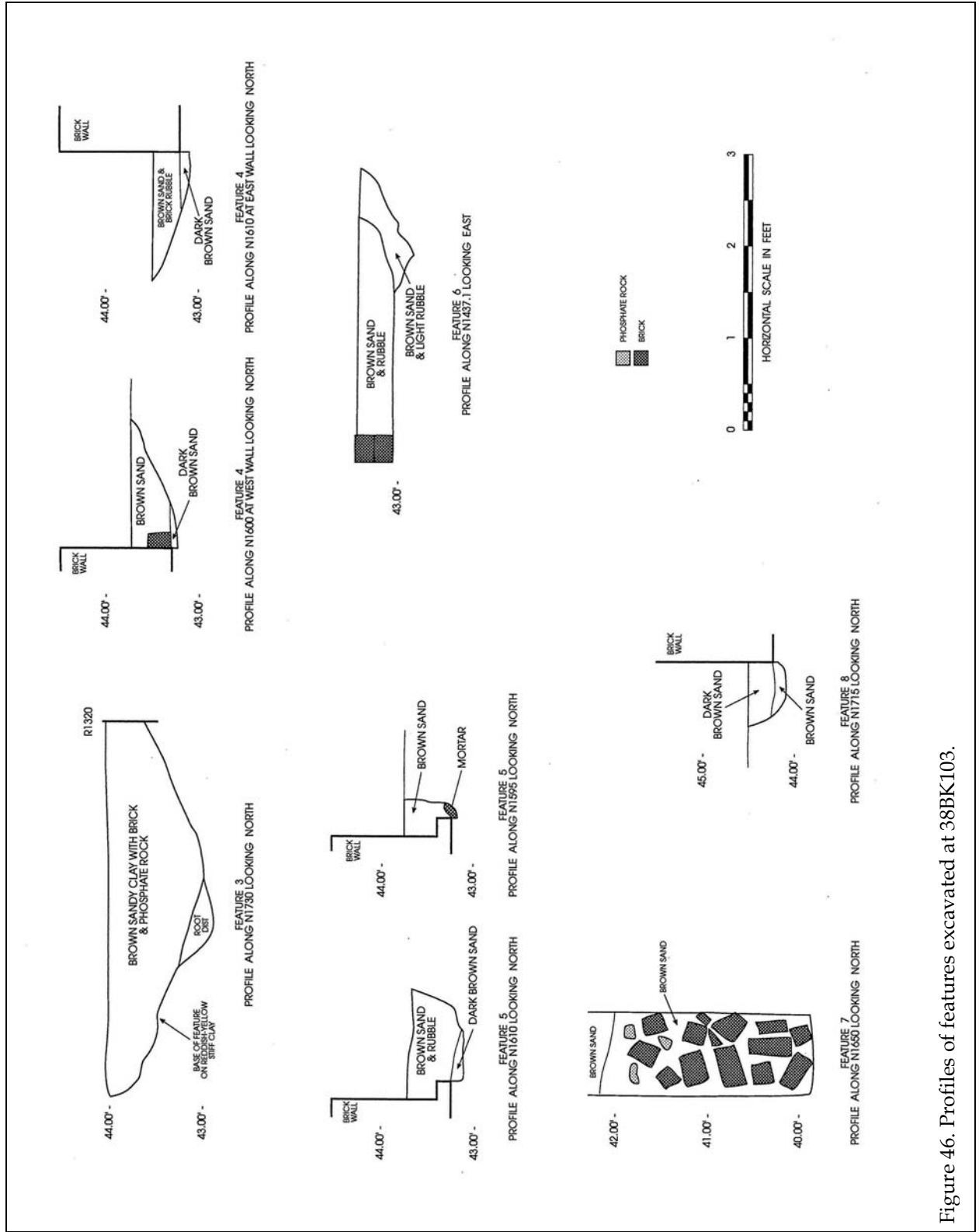


Figure 46. Profiles of features excavated at 38BK103.

EXCAVATIONS

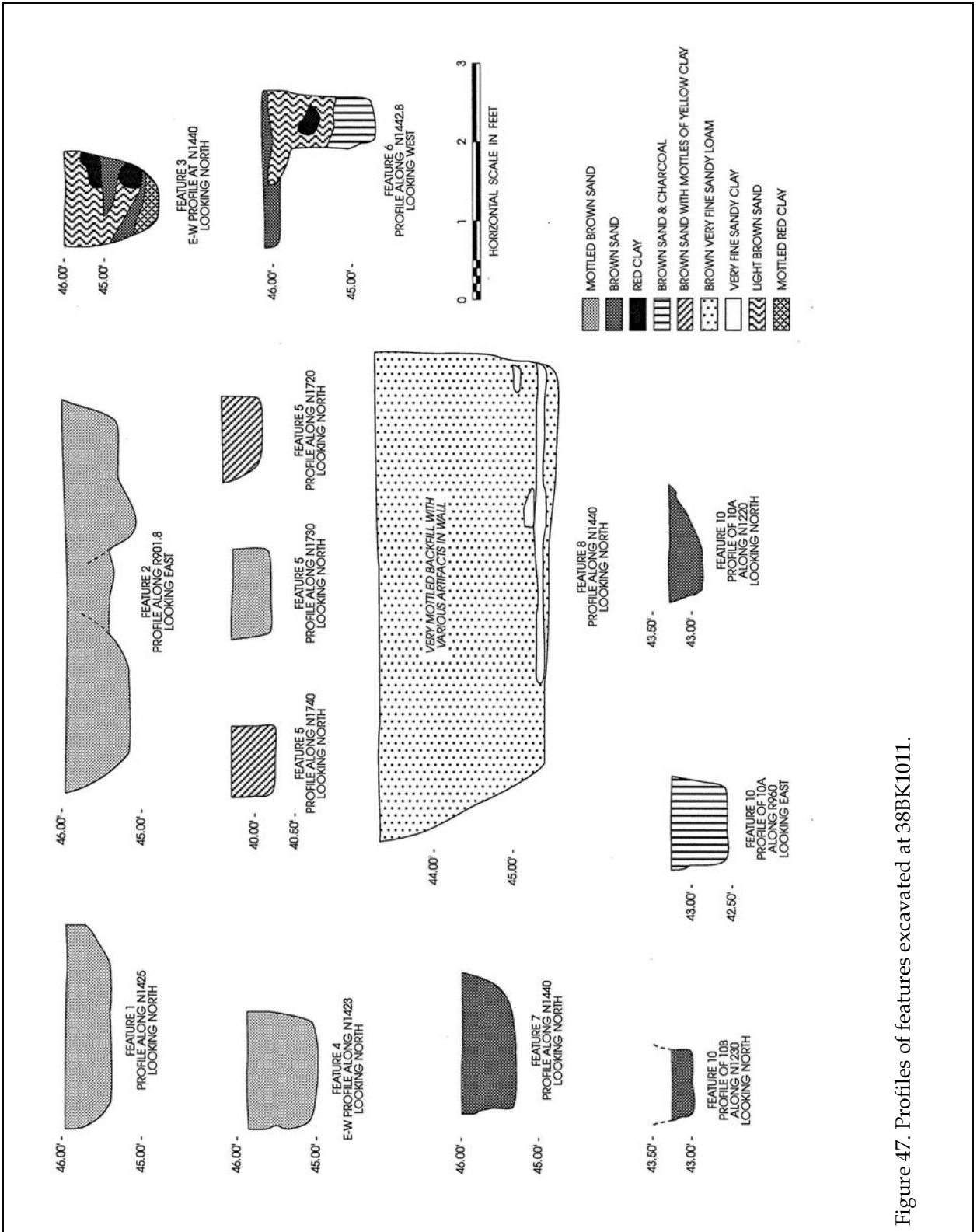


Figure 47. Profiles of features excavated at 38BK1011.

Whatever the reason, the slaves at Crowfield tended to build, and rebuild, within a fairly circumscribed village area.

We were somewhat less successful in our quest for evidence of yard use. The features we encountered were almost exclusively situated in near proximity to structures. Where we exposed large areas through stripping we found no evidence of hearths or other activities. We did encounter what appears to be an animal pen at the extreme southern end of the settlement, and this may represent some internal arrangement within the village as a whole.

Its likely, of course, that the yard use data has been extensively compromised by agricultural activities at Crowfield. Many of the excavated units reveal plow scars. Since the area has not been in cultivation in the twentieth century, it seems likely that the cultivation dates from the first half of the nineteenth century, when the plantation's focus on rice had declined and the slave population was gradually being reduced (by 1854 a plat of the tract showed the settlement area as "old field").

Another aspect of yard use was the recovery of several pits at the edge of, or just under, the only post and beam house identified. Although not entirely consistent with the "root cellars" of Virginia, these pits are certainly reminiscent of these features. It is curious, of course, that the earth-fast wall-trench structures do not have similar pits.

At 38BK103 we also found a tendency to rebuild on top of older buildings. Like the slave settlement, it seems that space would not have been at a premium on the plantation and rebuilding would have moved to new locations in order to minimize the cost of cleaning up old structures. Here there may have been a functional reason for use of existing space, perhaps the road network would also have required changing if the barn location were varied or perhaps the plantation organization was more important than any minor savings in

slave labor effort. Regardless, the consistent re-use of space may help us better understand plantation development.

It is also informative to examine Crowfield in its entirety (Figure 48). Several features are immediately obvious. The first is that with some minor variation, the entire complex is oriented north-south. The main house and flankers, the gardens, the water devices, the main entrance road, the barns, all of the small subsidiary structures, and the slave houses are oriented somewhere between due north-south and about 5° west or east of north.

Assuming that this consistency in orientation is not a fluke, how do we explain the variation? The techniques of the time certainly allowed for greater accuracy, but was improved accuracy necessary? Probably not. The casual viewer of Crowfield likely walked away with an impression of order and consistency. Any greater planning efforts would likely have been overkill.

Another immediate observation is that the main settlement is situated on lower topography than the slave settlement. In effect, it is not the house on the hill overlooking the slaves, it was slaves who overlooked the main house – by as much as 12 feet. This reversal of the posited norm may imply that the norm is faulty or that other factors directed the design of Crowfield. We believe the latter is more likely the correct explanation.

Water was an important – even essential – ingredient in the Crowfield main plantation setting. It is found in the Moon Pond, as well as in the rectangular lake and holding ponds at the rear of the formal gardens. It is also likely that on the east side of the garden there were at least a few vistas that incorporated the vast inland rice fields of the plantation. The planter associated himself with the power of the water, and his ability to control that water reaffirmed his power. This, of course, was not

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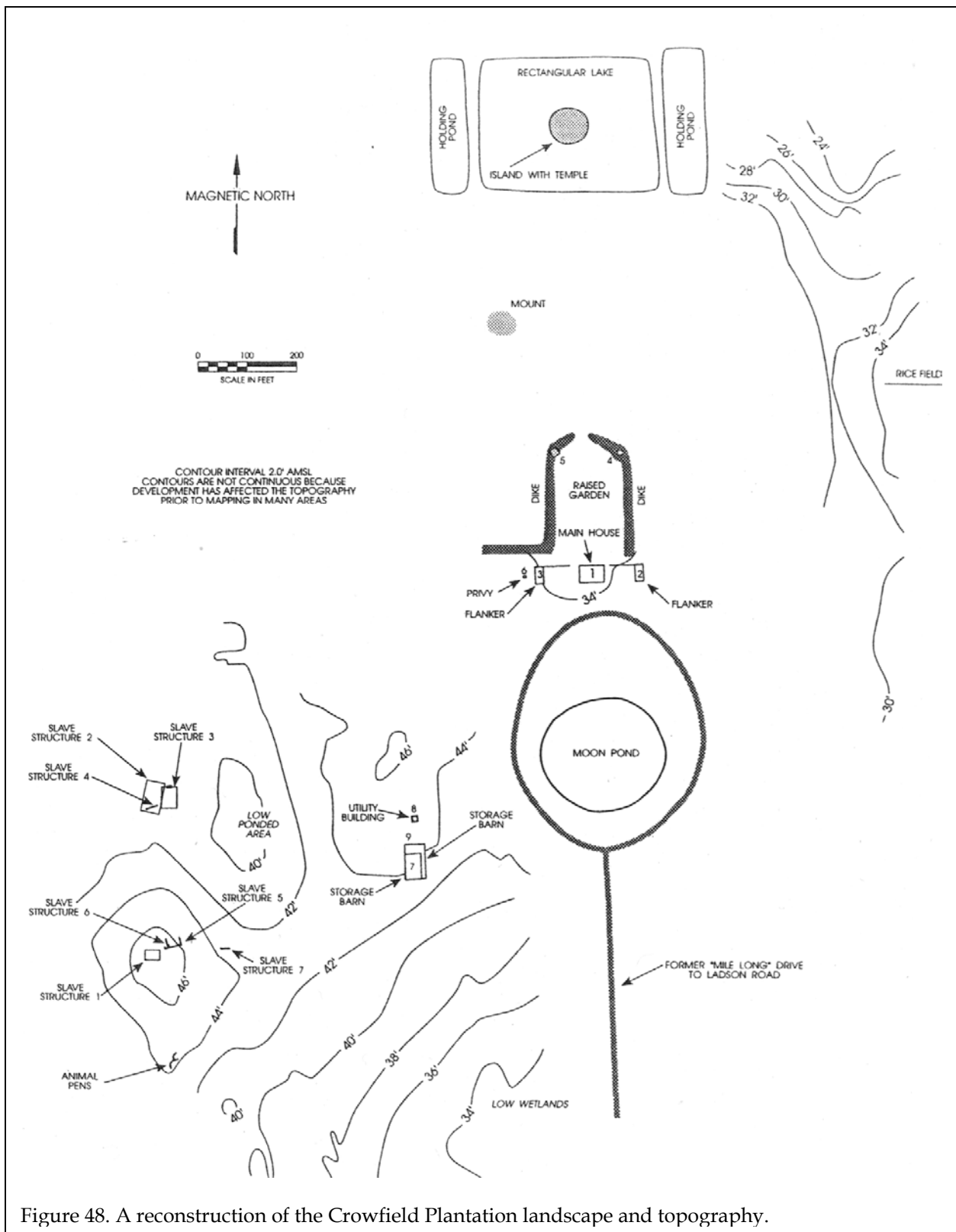


Figure 48. A reconstruction of the Crowfield Plantation landscape and topography.

possible at the higher elevation. In a strange twist, therefore, Crowfield's main settlement occupies some of the less desirable and less healthy land, while the slave settlement is far better situated.

Another observation is that the highest point of ground - 46 feet AMSL - seems to anchor the southwest corner of the slave settlement. The settlement extends down the eastern slope and down the northern slope. It does not, however, extend to west. And to the south there seems only to have been the animal pens.

This arrangement seems to bracket the low ponded area separating the slave settlement from the main house. If we are correct, even the slave settlement was oriented to take into account a water feature. Although its purpose is not as clear as with the main settlement, we believe that there is a landscape association.

Even this brief overview, we believe, reveals some of the complexity of the Crowfield plantation landscape. It also clearly reveals the importance of exploring, and understanding, the entire plantation landscape.

Structural Reconstructions

The goal of exploring the nature of the slave structures at Crowfield can easily be met by the available data. We have found portions of seven different structures in three different site areas and of these all can be identified to construction technique and three can provide dimensional information.

Perhaps most importantly, Crowfield has provided us with a significantly increased range of building styles and sizes associated with eighteenth century slavery. We no longer can view "wall trench" or "wattle and daub" structures only in the context of the formative work at Yaughan and Curriboo. Just as that early work revealed new and unexpected

architectural styles, Crowfield has revealed that the range is much greater than anticipated.

Structure 3 at 38BK1011 may also represent the transition from African-dominated slave architecture to European-dominated slave architecture. The presence of traditional wattle and daub construction techniques incorporating a rudely constructed hearth suggests that the change was slow and incorporated some degree of experimentation.

This work is also cautionary, since it should demonstrate to other researchers that they must be attentive to a wide range of features and contexts. It also reveals that wide spread use of site stripping as a data recovery technique may prevent us from understanding the complexities of the archaeological record.

Methodological Concerns

Several methodological issues became clearer as a result of this work. Although issues of methodology are often not considered fashionable for discussion, we should remember that without good methodology there can be no solid foundation for lifeway reconstructions.

One observation involves the nature of testing projects. Webb and Gantt (1991) no doubt made every effort to conduct detailed, careful studies. Yet some might criticize their research as flawed by inaccurately located units, incorrectly drawn plans and profiles, curious field methodologies (such as not screening excavated feature fill), poorly interpreted features, and a general lack of knowledge concerning similar sites.

Perhaps of even greater concern was how Webb and Gantt seemed predestined to interpret every stain as a feature and every feature as a structure. Beyond that, a tremendous amount of interpretation was drawn from very limited testing. Many of their "conclusions" would be better characterized as "speculations." By failing to explore all the

different scenarios that might explain the data, Webb and Gantt create a false sense of certainty that may be misleading to other researchers, regulatory agencies, and even the client.

Testing such as was conducted at Crowfield can be very useful in evaluating site boundaries, identifying structural areas, and guiding future work. It is not, however, particularly useful in answering substantive research questions. In fact, such testing usually creates far more questions than it answers. Trying to “do more with less” is not always a good – or even appropriate – undertaking.

In sum, our experience comparing testing data with excavation data from Crowfield suggests that testing should be conducted with as much rigor as data recovery and every effort should be made to ensure the highest professional standards. To do less is to seriously compromise our ability to understand the past.

This research also made it obvious that our initial reluctance to engage in large scale site stripping was appropriate. Certainly we wish that we had been able to open additional ground, to more completely explore the seven structures at 38BK1011, and to find additional structural evidence. But while stripping *might* have allowed additional exposure, it would have been at a tremendous cost – the loss of essential archaeological data.

At 38BK1011 stripping would have removed at least 90% of the collection. The general paucity of yard features, combined with the low density of remains in the structural features, would have resulted in a rather meager report. In fact, of the posited research questions only two – site patterning and structural reconstructions – could be addressed. And even here our research would be hindered. For example, the brick hearth at Structure 3 would have been stripped away, leaving only a smear of brick that might be interpreted as just about anything (or totally ignored). Many of the

features are so ephemeral that they might even have been lost in a careless stripping effort.

Stripping is cheap, but researchers should remember that as a general rule, you get what you pay for. While stripping may be appropriate under some circumstances, it seems hardly ever appropriate for data recovery at a plantation. We can imagine that this will certainly be disputed, but recent research at Crowfield, combined with studies at other plantations, such as Whitesides (Trinkley and Hacker 1996), reaffirms our belief that only hand excavations are appropriate for most studies.

Finally, the last observation is that our understanding of Crowfield is much better for having the ability to explore the settlement in detail. The combination of the main house, near house landscape, utility buildings area, and slave settlement provides a perspective that would likely be missed if only one or two areas received study – or if the studies were done in isolation of an overall perspective.

The plantation operated as an integral whole. To understand its place in eighteenth and nineteenth century society, it seems obvious that it should be studied as a whole. Yet there are far too many studies that focus only on the obvious, or fail to fully explore the plantation complex. We first expressed this concern nearly a decade ago (Brooker and Trinkley 1991), yet there are still many studies that mention main houses or a few slave houses as though that was all the plantation consisted of. Such casual research is stifling our ability to truly understand the complexities of Carolina plantations.

ARTIFACTS

Introduction

This section is intended to provide an overview of the material culture present at Crowfield, excluding the Colono wares and the "smoothing stones" which are each discussed in subsequent chapters.¹ Although the excavations were conducted by designated blocks at both the main plantation (38BK103) and the slave settlement (38BK1011), we have lumped many of the excavation units into more manageable, and we believe more informative, groups for the sake of these discussions.

Laboratory Processing, Conservation, and Analysis

The cleaning of artifacts was conducted in Columbia, after the conclusion of the excavations. Cataloging of the specimens was conducted intermittently during November and December 1996. Conservation treatments have been conducted by Chicora personnel at the Columbia laboratory intermittently from November 1996 through late 1999.

Brass items, if they exhibited active bronze disease, were subjected to electrolytic reduction in a sodium carbonate solution with up to 4.5 volts for periods of up to 72 hours. Hand cleaning with soft brass brushes or fine-

¹ The rationale for this is two-fold. First, the Colono wares and "smoothing stones" were each materials largely acquired and/or made by the African Americans for their own use, while the items discussed in this section have a decidedly more Euro-American flavor (although we don't intend to imply that enslaved African Americans played no role in selecting or acquiring these materials). Second, the two excluded items, we feel, are best discussed at length and such discussions would bog down this chapter.

grade bronze wool followed the electrolysis. Afterwards, the surface chlorides were removed with deionized water baths (until a chloride level of no greater than 1 ppm or 18 $\mu\text{mhos/cm}$ was achieved using a conductivity meter) and the items were dried in an acetone bath. The conserved cuprous items were coated with a 20% solution (w/v) of acryloid B-72 in toluene.

Ferrous objects were subjected to electrolytic reduction in a bath of sodium carbonate solution in currents no greater than 5 volts for a period of 5 to 40 days. When all visible corrosion was removed, the artifacts were wire brushed and placed in a series of deionized water soaks, identical to those described above, for the removal of soluble chlorides. When the artifacts tested free of chlorides (at a level less than 0.1 ppm, or 2 $\mu\text{mhos/cm}$), they were dried in acetone baths. A series of phosphoric (10% v/v) and tannic (20% w/v) acid solutions were applied.

As previously discussed, the materials have been accepted for curation by The South Carolina Institute of Archaeology and Anthropology under the site numbers 38BK103 and 38BK1011. The collection has been cataloged using this institution's accessioning practices. Specimens were packed in plastic bags and boxed. Field notes were prepared on pH neutral, alkaline buffered paper and photographic materials were processed to archival standards. All original field notes, with archival copies, are also curated with these facilities. All materials have been delivered to the curatorial facility.

Analysis of the collections followed professionally accepted standards with a level of intensity suitable to the quantity and quality of the remains. Prehistoric pottery was so uncommon in these investigations (and outside the scope of the research plan) that it is not

included in the study. The temporal, cultural, and typological classifications of the historic remains follow such authors as Cushion (1976), Godden (1964, 1985), Miller (1980, 1991), Noël Hume (1978), Norman-Wilcox (1965), Peirce (1988), Price (1970), South (1977), and Walton (1976). Glass artifacts were identified using sources such as Jones (1986), Jones and Sullivan (1985), McKearin and McKearin (1972), McNally (1982), Smith (1981), Vose (1975), and Warren (1970). Additional references, especially for the porcelains and Colono wares will be discussed in the following sections.

The analysis system used South's (1977) functional groups as an effort to subdivide historic assemblages into groups that could reflect behavioral categories. Initially developed for eighteenth-century British colonial assemblages, this approach appears to be an excellent choice for the Crowfield collection. Although criticized for problems in sample comparability (see, for example, Joseph 1989), even the system's detractors note that:

whatever its flaws, the value of artifact patterning lies in the fact that it is a universally recognized method for organizing large collections of artifactual data in a manner which can be easily understood and which can be used for comparative purposes (Joseph 1989:65).

The functional categories of Kitchen, Architecture, Furniture, Personal, Clothing, Arms, Tobacco, and Activities provide not only the range necessary for describing and characterizing most collections, but also allow typically consistent comparison with other collections.

Another important analytical technique used in this study is the minimum vessel count, as both an alternative to the more traditional

count of ceramics² and also as a prerequisite to the application of Miller's cost indices. The most common approach for the calculation of minimum number of vessels (MNV) is to lay out all of the ceramics from a particular analytic unit (such as a feature), grouping the sherds by ware, type, and variety (e.g., floral motif vs. pastoral). All possible mends are then made. Body sherds are, from this point on, considered residual and not further considered. Remaining rim sherds, which fail to provide mends, are examined for matches in design, rim form, colors, and other attributes that would indicate matches with previously defined vessels. Those that fail to match either mended vessels or other rims are counted as additional vessels. Where there were multiple units or proveniences from a block, all were combined for this analysis, using a minimum distinction method for the MNV, which tends to provide a relatively conservative count. This also seems appropriate since all of the block excavations were relatively dispersed and there seems to be little likelihood that frequent cross-mends would occur over large portions of the site.

Although no cross mend analyses were conducted on the glass artifacts, these materials were examined in a similar fashion to the

² Although counts are used in this, and virtually every study of historic wares, we know that they are biased as measures of the proportions of types. Simply put, the proportion by number of sherds of a particular type reflects two things – first, the proportion of that type in the population, and second, the average number of sherds into which vessels of that type have broken (known among some researchers as their brokenness) in comparison with the brokenness of other types. In general, however, brokenness will vary from one type to another and also from one size vessel of a particular type to another size vessel of the same type. Usually, types with a high brokenness will be over-represented in comparison to those with a low brokenness. More importantly, this bias not only affects the study of a single assemblage, but also may affect the study, or comparison, of different assemblages that may have a different level of brokenness.

ceramics to define minimum number of vessel counts, with the number of vessel bases in a given assemblage being used to define the MNV. Attempts were made to mend and match vessel bases in order to ensure the accuracy of the count. If a glass artifact exhibited a different color and/or form not represented by the counted bases, then it was designated a separate vessel or container.

Two methods were used to determine the occupation span of the various excavation areas at Crowfield. The first method is South's (1977) bracketing technique. This method consists of creating a time line where the manufacturing span of the various ceramics are placed. The left bracket is placed by determining where at least half of the ceramic type bars touch. The right bracket is placed the same way, however, it is placed far enough to the right to at least touch the beginning of the latest type present (South 1977:214). We have chosen to alter South's bracketing technique slightly by placing the left bar at the earliest ending date when that ending date does not overlap with the rest of the ceramic type bars.

Since South's method only uses ceramic types to determine approximate period of occupation, Salwen and Bridges (1977) argue that ceramic types that have high counts are poorly represented in the ceramic assemblage. Because of this valid complaint a second method was used to determine occupation spans for assemblages with over 100 ceramics.³ The second method used is a ceramic probability contribution chart. Albert Bartovics (1981) advocates the calculation of probability distributions for ceramic types within an assemblage. Using this technique an approximation of the probability of a ceramic type contribution to the site's occupation is derived. This formula is expressed:

$$P_j/\text{yr.} = \frac{f_j}{F \times D_j} \quad \text{where}$$

P_j = partial probability contribution

f_j = number of sherds in type j

F = number of sherds in sample

D_j = duration in range of years

The observant reader will also note that both metric and English units of measurement have been used in the analysis. We recognize that this departure from consistency may be troubling, and may require some conversion back and forth. We have, however, tried to ensure an internal consistency. Where the artifact was likely described by its maker or user in English measurements, they have been retained. The only exception to this is when there has been extensive research on the artifact class that uses metric measures (one example being the work on English "wine" bottles by Olive Jones). When the maker or user of the object probably had no reason to refer to a specific measurement (such as the length or diameter of a pencil), we have used metric units.

In the following discussions, the first time a particular artifact type, or class, is encountered, it will be discussed in greater detail than it is when found in subsequent contexts. While this may cause some difficulty for those interested in only one particular area of the site, it will reduce the sheer volume of text and will make these discussion flow in a more readable fashion.

38BK103

Structures 7 and 9

Structures 7 and 9 (Units 1590R1400-1440, 1600R1440, 1655R1440, and Feature 4-6) were excavated to explore Structures 7 and 9, both interpreted to be rice barns. Structure 9 was the first, and largest, of the two. It was replaced by Structure 7. These structures produced 470 artifacts from nearly 650 square feet, yielding an artifact density of 0.7 artifact per square foot.

³ This is a relatively arbitrary cut-off, but we felt it unlikely that assemblages with 20 or 30 ceramics could provide meaningful information on the occupation span, while those with 100 or more were more likely to be representative.

Kitchen Group Artifacts

A total of 71 Kitchen Group artifacts was recovered, most representing Colono ceramics (n=42 or 59.1%) or glass (n=26 or 36.6%). No European ceramics were recovered at this structure. As previously mentioned, the Colono ware will be discussed in more detail in a following section. Since no European wares were found, dating is problematical.

The second most common Kitchen Group artifact was container glass that accounts for 26 fragments or about 37% of the total Kitchen Group. The most prevalent glass type is that commonly called "black," which is actually olive green in transmitted light, comprising 84.6% of the glass found in this portion of the settlement (n=22). These represent "wine" bottles commonly used in Europe and North America. Olive Jones (1986) has conducted extensive research on this bottle style, discovering that the cylindrical "wine" bottle represents four distinct styles – two for wine and two for beer – linked to their size and intended contents. These four styles, however, were not just used for wines and beers. Other products, such as cider, distilled liquors, vinegar, and mineral waters might also have been sold in these bottle styles. In addition, they would have been used by private individuals as containers for decanting, storing, and serving beverages either bought in barrels or made at home.

In spite of the numbers, only one "black" bottle can be identified in the assemblage. The bottle has a blown base of about 11.3 cm in diameter – probably what Jones describes as beer styles dating from about 1750 through 1810.

Only four additional glass fragments were found at these structures – two aqua, one brown, and one manganese. While manganese glass typically dates from the last quarter of the nineteenth century through the beginning of World War I, it may also be found from early

eighteenth century contexts (Jones and Sullivan 1985:13).

Only one tableware item was recovered from Structures 7 and 9, representing 1.4% of the Kitchen Group artifacts. This is an iron knife blade with a 1.0 inch blade width.

The two kitchenware artifacts were kettle fragments. One is a kettle rim, with a diameter of 16 inches, and the other is a kettle leg. Iron kettles were designed to either hang over the fire, or if the weight could be supported, to actually sit in the coals of the hearth (Feild 1984:93). By the eighteenth century the kettle was firmly established in kitchens and, being costly, would be "passed down from generation to generation and were highly valued" (Lantz 1970:15). By the late nineteenth century kettles, at least in urban areas, were on their way out of fashion, being replaced by the iron stove and more manageable pots (Lantz 1970:31). This decline is clearly evidenced when period catalogs are examined. For example in the mid-nineteenth century there were two full pages of different types of iron kettles (Russel and Erwin 1980 [1865]:392-393), but by the end of the century, they had been reduced to but one entry with seven different sizes (Israel 1968:130). In spite of this gradual decline in popularity, the kettle fragments from these structures offer no real assistance in dating since it is clear that kettles, in rural South Carolina, were used well into the first several decades of the twentieth century.

Architecture Group Artifacts

A total of 396 architectural fragments was recovered from Structures 7 and 9, representing about 84.3% of the total artifact assemblage.

The single largest category is that of nails, with 395 specimens accounting for 99.7% of the collection. Of these 104, or 26.3%, can be discounted since they could not be either measured or identified by type. About 286 nails

were identified as hand wrought (41 of these were fragments), meaning they were individually forged by blacksmiths, either in America or England.⁴ The wrought nail shank can be distinguished from machine cut nails (introduced about 1780) by their taper on all four sides, instead of only two (see Howard 1989:54; Nelson 1968). These nails, while largely replaced by machine cut nails at the beginning of the nineteenth century, continued in specialized use far longer. Two head styles are present in the collection. Rose heads (accounting for 204 of the 245 intact nails) have a distinctive head created by four strikes of a hammer, giving it the form of a four-leaf clover. Lounsbury (1994:412) notes that this style was most commonly used in rough framing and attaching exterior cladding. The other style present at these structures is a clasp head (sometimes called a "T-head"), accounting for 41 (16.7% of the whole wrought nails). This style was produced like the rose head, but was struck two additional times on either side of the head, to form the characteristic T-shape. These nails were usually used in trim work where the holding power of the larger head was not needed and the head would distract from the appearance (Lounsbury 1994:412).

Two cut nails (accounting for 0.5% of the nail collections) were also found at Structures 7 and 9. These were produced by a machine that cut each shaft from a sheet of iron, tapering the nail along its length on only two, instead of all four, sides. Although this machinery was invented in the 1780s, nails produced by machine were slow to reach the South, not becoming widely available until the first quarter of the nineteenth century. Lounsbury (1994:107) suggests that the most widely available variety from the 1790s through the early 1820s were those whose heads were

⁴Lounsbury (1994:239) notes that while nails were certainly manufactured locally in the South, "a sizable proportion of the nails used in buildings through the late 18th century were imported from England."

still hand forged (that is, a machine cut nail with a hand forged head). After about 1815 machines capable of both cutting and heading the nails were introduced and hand forged heads gradually declined in significance.

In addition to the wrought and machine cut nails, three wire cut nails (accounting for 0.8% of the total nail collection). Post-dating 1850 (and perhaps not introduced until as late as the 1890s), these are more than likely intrusive into the assemblage.

Because different size nails served different self-limited functions, it is possible to use the relative frequencies of nail sizes⁵ to indicate building construction details. Nails range from 2d to 16d, with the majority of nails being 2 to 3d. This size range would be typical of use in small timber or shingles.

The only other Architecture Group artifact is a single piece of flat window glass. The rarity of this material strongly supports the contention that the structure did not have glassed openings (although shuttered openings are possible).

Tobacco Group Artifacts

Structures 7 and 9 produced two tobacco artifacts (representing 0.4% of the total assemblage), including one pipe stem fragment and one pipe bowl fragment.

⁵Nails were not only sold by shape, but also by size, the lengths being designated by *d* (pence). This nomenclature developed from the medieval English practice of describing the size according to the price per thousand (Lounsbury 1994:239). Nelson (1968:2) provides the same interpretation, although the price was per hundred. Common sizes include 2d-6d, 8d, 10d, 12d, 20d, 30d, and 40d. It was not, however, until the late nineteenth century that penny weights were standardized.

The diameter of the pipestem is 5/64-inch with no designs. The pipe bowl is also plain.

Activities Group Artifacts

This final artifact group includes only one specimen (or 0.2% of the total assemblage) -- a brick fragment that appears to be used as a hone (sometimes called a "rubbing brick").

Structure 8

Structure 8 (Units 1710R1420-1430 and Feature 8) produced 1,740 artifacts from 103 square feet, yielding an artifact density of about 17 artifacts per square foot.

Kitchen Group Artifacts

A total of 1,375 Kitchen Group artifacts was recovered, most representing ceramics (n=1,235 or 89.8%) or glass (n=136 or 9.9%). By far, Colono ware dominated the ceramics (n=1,112 or 80.9%). Otherwise, recovered were a wide range of mid-eighteenth through early nineteenth century ceramics, including porcelains, Nottingham and white salt glazed stonewares, lead glazed slipwares, delft, creamwares, and pearlwares. Also present were ceramics typically considered to be early eighteenth century wares, such as Westerwald.

Tablewares, such as the porcelains, white salt glazed stonewares, delft, creamwares, and pearlwares, account for 49.6% of the ceramics. Utilitarian wares,⁶ such as the brown and blue/white stonewares, account for about 50.4% of the collection.

The most common eighteenth century ware is lead glazed slipware, accounting for 33

examples. Slipware was a traditional eighteenth century form of pottery decoration in which a white or cream-colored slip is trailed over a buff or red earthenware body. A clear lead glazed slip is then applied before firing. Cushion observes that most slipware potters, "were primarily concerned with producing the everyday necessities for the more humble table" (Cushion 1976:79).

During the eighteenth century utilitarian slipwares made in Staffordshire and other parts of England were exported to the colonies in huge numbers. These were often offered for sale in newspapers and while no examples are immediately available from the South Carolina Low Country, Miller cites several examples from elsewhere:

A New York merchant offered for sale ". . . Crates Common yellow Wares both cups and Dishes . . ." Another New York vendor, in 1768, advertised "yellow Dishes by the Crates" (Miller 1974:2).⁷

It seems likely, therefore, that the slipwares were a common, and very inexpensive, commodity imported into the colonies.

The collection of slipwares included one bowl with a 4½ inch base, two cups with 2½ to 3½ inch rims, and three plates or pans with 8 to 13 inch rims.

The next most common ceramic found at Structure 8 are the coarse red earthenwares with 22 specimens represented. A variety of lead glazed were found including black, brown, and clear. Two examples contained no glaze. While not datable, the collection yielded two

⁶Utilitarian wares are those used in food preparation and storage. They typically include stonewares and coarse earthenwares, but exclude Colono ware, because of the possible ethnic differences in food preparation and consumption practices.

⁷Pringle, on several occasions, does mention crates of hogsheads of "earthenwares," although he doesn't specify the type (Edgar 1972:I:147,403).

plates. One had a 14 inch rim, while the other was slightly larger with a 16 inch rim.

Salt glazed stonewares were the next most common European ceramic at Structure 8. Like the coarse red earthenwares, the brown and gray stonewares do not have a mean ceramic date. The white salt glaze stoneware, however has a mean date of 1758. This white variety was more durable than the earlier style delft, which they replaced, and the intricate relief patterns as "dot, diaper and basket" and "barley." One plate with a 10 inch rim was found using this stoneware.

Some other datable stonewares were also found at Structure 8 including 10 fragments of Nottingham and one specimen of Westerwald. Nottingham is a type of red and brown stoneware that has a metallic-looking, semi-matte surface comprised of an iron oxide and salt glaze yielding a faintly metallic luster (Feild 1987:53,90). Although some quite strange designs were produced, far more common in America are the posset-pots, mugs, jugs, and bowls (Blacker 1980:244). Westerwald is a gray salt glazed stoneware with incised, stamped, sprigged, and cobalt painted decorations. Although mugs and jugs are most common, there are examples of chamber pots (Noël Hume 1978:280-285).

Canton porcelain was the next most common pottery. Until the early nineteenth century Chinese porcelain was an expensive, very fine, thin ware usually associated with the tea ritual (and therefore most commonly found in tea forms).⁸ Its presence is considered an

indicator of high status (Lewis 1985; Stone 1970:88). During the nineteenth century the quantity exported into the United States increased and the quality declined dramatically, making it a poor indicator of status or wealth during later periods. It is likely that this, along with other more expensive wares, such as the white salt glazed stoneware, had originally been purchased for use by the owners of Crowfield and subsequently found their way into slave houses – perhaps as styles changed and the owner acquired new sets, or as the individual pieces were damaged, or perhaps as theft.

The forms recovered include part of a serving vessel, a plate, and a saucer. The plate has a rim measuring 8½ inches and the saucer has a rim measuring 4½ inches.

Both decorated and plain tin-glazed delft was found at Structure 8, accounting for seven specimens. The recovered delftware includes two bowls with 5 to 6 inch diameters and one cup with a 3½ inch rim. Only the cup was decorated with a poly hand-painted motif.

Only three pieces of creamware, or 2.4% of the ceramics, were found. Creamware is well known at sites spanning the eighteenth and nineteenth centuries. Developed in the 1750s by Josiah Wedgwood, this cream colored earthenware was considered a revolution in ceramic production. It provided a fine glazed ware at a relatively inexpensive cost, and came in sets with a wide variety of vessel forms and styles. All three of the specimens recovered at Structure 8 were undecorated. The creamwares represent one plate with a 4½ foot ring and one

⁸James Deetz (1977:60-61) observes that at least by 1780 the porcelain found in colonial inventories is largely limited to "tea sets, and probably demonstrates the adoption of the full-blown English tea ceremony for the first time. This custom can be considered a good indicator of the re-Anglicization process that was at work at the time." He points out that porcelain is therefore a socio-technic artifact and therefore less likely to be broken, and enter the archaeological record, than more technomic artifacts.

Henry Hobhouse (1987) describes this ritual, as well as the ceramics associated with it, "The eighteenth century Europeans, like the Japanese but unlike the Chinese or the Russians, regarded tea making as a ceremony. There was the boiling water, not boiled for too long. There was the specially warmed pot. There was the infusion time. there was the pouring, a little bit of a ceremony all on its own" (Hobhouse 1987:111).

Table 8.
Mean Ceramic Date for Structure 8

Ceramic	Date Range	Mean		
		Date (xi)	(fi)	fi x xi
Underglazed blue porc	1660-1800	1730	8	13840
Nottingham stoneware	1700-1810	1755	10	17550
Westerwald	1700-1775	1738	1	1738
White salt glazed stoneware	1740-1775	1758	7	12306
Lead glazed slipware	1670-1795	1733	33	57189
Decorated delft	1600-1802	1750	2	3500
Plain delft	1640-1800	1720	5	8600
Creamware, undecorated	1762-1820	1791	3	5373
Pearlware, edged	1780-1830	1805	2	3610
Pearlware, undecorated	1780-1830	1805	1	1805
Total			72	125511
Mean Ceramic Date	1743.2			

Vessel forms may provide a clue to wealth and status. Plates and more complex pieces tend to be associated with more wealthy individuals and bowls tend to be found in greater frequencies on slave sites. While seven bowls are documented, 10 plates were found (as well as one hollow ware serving vessel). While seeming to suggest a somewhat higher status, when the vessel decorations are examined most of these plates represent low status forms. Regardless, this is a very small assemblage, likely from secondary trash deposits, and is probably not a reliable indicator.

cup with a base measuring 1½ inches in diameter.

As potters continued to experiment with creamware, in an effort to imitate the Chinese porcelains, pearlware was eventually produced. By 1779 Wedgwood had produced pearlware, what he called an “improvement” on creamware (Walton 1976:77; see also Noël Hume 1978:129-132). By 1790 the ware was further “improved” by Spode who added a small trace of cobalt to the formula to serve as a “blue whitener” (Feild 1987:54). Today pearlwares are recognized by the blue puddling of the glaze and over-all bluish cast.

Structure 8 yielded three fragments (2.4% of the total ceramic assemblage) of pearlware - one undecorated and two blue edged. Plain (after its initial introduction), annular/cable, and edged are the least expensive of the wares, while other decorations like hand painted and transfer print tended to be more expensive (and hence assuming they are used by individuals of greater wealth).

Only one pearlware vessel was identified, which was a blue edged plate with a rim measuring 7½ inches.

The datable ceramics found at Structure 8 give a mean ceramic date of 1743 (Table 8). South’s bracketing technique suggests occupation between at least 1700 and 1780, while Bartovic’s formula indicates an occupation span ranging from about 1675 to 1830. Both Bartovic and the bracketing technique are, in general, consistent with the mean date. Bartovic’s technique suggests that disposal activities at this location ceased prior to the ownership of the tract by Henry A. Middleton in 1840, with the area being used at least by the earliest known occupant, John Berringer. The bracketing technique indicates that much of the disposal occurred during the combined ownership of John Gibbes/John Gibbes (II) and Arthur Middleton/William Middleton (1709-1767).

Container glass accounts for 136 fragments or 9.9% of the Kitchen Group total. The most prevalent glass type is that commonly called “black,” comprising 95.6% of the glass found. The two identifiable vessels had blown bases measuring 9 and 11.5 cm. The former may represent a wine bottle from the period 1790-

1850, while the latter may be a beer style from about 1750 through 1810 (see Jones 1986).

Clear glass accounts for four fragments or 2.9% of the total glassware assemblage. Aqua glass accounts for two specimens or 1.5% of the glass.

Four tableware items were recovered from Structure 8, representing 0.3% of the Kitchen Group artifacts. Included are one goblet stem, one goblet foot, one ribbed body sherd, and one knife blade fragment.

The goblet stem fragment contained air-twists (called "wormed" in the period) as decoration. This decoration was more common than molded stems, especially from about 1740 through 1750 or 1760. After that time the stems became more elaborate and color began to be added to the twists (Noël Hume 1969:20).⁹ The example from Structure 8 is rather complex, consisting of ten-ply spirals.

The goblet foot measures 2½ inches in diameter, but it is uncertain that the foot connects with the stem previously discussed.

Architecture Group Artifacts

A total of 278 architectural fragments was recovered from Structure 8, representing about 16% of the total artifact assemblage.

The single largest category is that of nails, with the 236 specimens accounting for 84.9% of the collection. Of these 208, or 88.1%, can be discounted since they could not be either measured or identified by type. The remaining nails were identified as hand wrought, with 22 whole specimens and 6 fragments.

Only two rose head nails were found, both 3d sizes. The remaining nails contained a clasp head (also called a "T-head"). These ranged in size from 4d to 12d with the 7d and 9d sizes being most common. The 7d sizes are more commonly used for sheathing and siding while 9d are used for framing.

The next most common Architecture Group artifact is that of flat glass (all of which appears to represent window glass), accounting for 14% of the group (n=39). Until the modern period window glass was either crown or cylinder, with crown glass dominating the eighteenth and early nineteenth century market. Regardless, it is usually difficult to distinguish the two unless certain, usually large, parts of the glass are present (Jones and Sullivan 1985:171).

The three additional architectural items include construction hardware. One pintle fragment, one pintle, and one marble paving stone are included in this group, representing 1.1% of the Architecture Group. Pintles (called a "hook" during the period) are used for doors or as supports for window shutters. While typically used in eighteenth century construction there seem to be many examples of them continuing well into the first quarter of the nineteenth century, especially in more rural areas.

Arms Group Artifacts

Arms artifacts are uncommon at Structure 8 with only two being recovered (accounting for 0.1% of the total artifact assemblage). These include two burnt gunflint fragments.

A review of research concerning gunflints is provided by Davis (1986). In general, however, both Emery (1979:37-48) and Noël Hume (1978:220) agree that English flints tend to be gray or black, while French flints tend to be brown or honey-colored, with the majority of flints found on colonial sites coming from France because of their superior quality.

⁹Some authors, such as McNally (1982) suggest dates one to two decades later than Noël Hume, bringing popularity of the air-twists just to the last quarter of the eighteenth century.

Unfortunately, these two samples are so badly burned that no color remains.

Tobacco Group Artifacts

Structure 8 produced 63 tobacco artifacts (representing 3.6% of the total assemblage), including 47 pipe stems and 15 pipe bowls -- all undecorated. One of the pipe stems, however, showed evidence of chewing.

The most common diameter pipestem is 5/64-inch, accounting for 62.5% of the stems in the collection (n=30), followed by 4/64-inch (n=17 or 35.4%), and one 6/64-inch (2.1%) stem.

Clothing Group Artifacts

This category contained three items, comprising 0.2% of the total artifact assemblage. Included is one brass button, one brass buckle, and one brass shoe plate.

Although South (1964) classifies button types spanning the mid-eighteenth through the mid-nineteenth century, this button could not be classified in any of the 35 types. Its diameter was measured at 17 mm.

The brass buckle measures 3/4 inch by 5/8 inch and contains the remnants of an iron tongue. The brass shoe plate (the portion nailed to the bottom sole of the shoe) is fragmentary, but measured from 1 to 1 13/16 inch in width. Two small nail holes are present.

Activities Group Artifacts

This final artifact group includes 19 specimens (or 1.1% of the total artifact assemblage). The category is broken down into a variety of classes, but only the tools, storage items, and "other" category are present.

The tools include six smoothing stones, which will be examined closer in a following section of this report. Briefly, these stones were

used to smooth or burnish Colono ware pottery prior to firing. Also found was a hoe fragment.

The storage category contained one barrel strap fragment. This strap metal is typical of barrels and boxes and tends to be more common on nineteenth century sites. The width of the strap is 1¼ inches.

The "other" category contains eleven pieces of unidentifiable iron.

Plantation Work Areas

This area of 38BK103 (Units 1640R1250, 1720R1320, 1730R1320, 1740R1320, 1830R1380, Feature 3 and 7), produced 170 artifacts from about 350 square feet, yielding an artifact density of 0.5 artifacts per square foot.

Kitchen Group Artifacts

A total of 140 (82.4% of the total artifact assemblage) Kitchen Group artifacts was recovered, all representing ceramics (n=67 or 47.9%) or glass (n=73 or 52.1%). While most of the ceramics were slave-made Colono wares, examples of porcelain, stonewares, slipware, delft, pearlware, and tortoiseshell were also present.

Colono ware accounts for 83.6% of all the ceramics (n=56) and will be discussed in the following section of this study. The most common European ceramic is Chinese porcelain, accounting for three examples. All three were blue hand painted and represent a single cup.

The stonewares comprise 30% of the ceramics found in the area, but the only tableware was a single white salt glaze sherd representing a plate form. The remaining stonewares are utilitarian, such as the brown and gray salt glazed stonewares. One sherd of Nottingham was also recovered - a red and brown stoneware with a metallic-looking, semi-matte surface.

Table 9.
Mean Ceramic Date for the Work Areas at 38BK103

Ceramic	Date Range	Mean		
		Date (xi)	(fi)	fi x xi
Underglazed blue porc	1660-1800	1730	3	5190
Nottingham stoneware	1700-1810	1755	1	1755
White salt glazed stoneware	1740-1775	1758	1	1758
Lead glazed slipware	1670-1795	1733	1	1733
Decorated delft	1600-1802	1750	1	1750
Pearlware, blue hand painted	1780-1820	1800	1	1800
Total			8	13986
Mean Ceramic Date	1748.3			

The remaining four ceramics are earthenware and include one lead glazed slipware, one delft, one blue hand painted pearlware, and one tortoiseshell sherd. Tortoiseshell (also called Whieldon ware) is a buff or whitish earthenware with a mottled manganese-brown glaze created about 1750 by Whieldon in Staffordshire, England (Hughes n.d.:62).

The mean ceramic date for the European ceramics is 1748 - only 5 years later than that identified for Structure 8. South's bracketing technique suggests a date range of 1700 through 1780 - identical to that determined for Structure 8. This suggests that there are little, if any, temporal differences in the various areas explored at 38BK103.

Container glass accounts for 73 fragments or 52.1% of the Kitchen Group total. The most prevalent is the "black" glass, accounting for 91.8% of the glass found (n=67). Only one vessel could be identified - a blown base bottle with a 13 cm diameter. This represents an undersized beer bottle, dating from 1730 into the 1770s (see Jones 1986).

Also found were four examples of green glass, all from a blown bottle with basal diameter of 2 inches, and two fragments of clear glass.

Architecture Group Artifacts

A total of 24 architectural fragments was recovered from this area of 38BK103, representing 14.1% of the total artifact assemblage.

The single largest category is that of nails, with 16 specimens accounting for 66.7% of the collection. Of these 8, or 50%, can be discounted since they could not be either measured or identified by type. The remaining eight nails were identified as hand wrought.

Only one of these hand wrought nails could be measured, and it was a 12d with a clasp head. This size nail would be used for framing (Lounsbury 1994:412). Of the other fragmentary hand wrought nails, three had T-heads and one had a rose head.

The only other Architecture Group artifact is flat glass (all of which appears to be window glass). This represents 33.3% of the group (n=8).

Tobacco Group Artifacts

The work areas of 38BK103 produced only one tobacco artifact (representing 0.6% of the total assemblage) - a single pipe stem fragment.

The pipestem was 5/64-inch in diameter and contained no decoration on the exterior.

Clothing Group Artifacts

This category includes only one item - an iron buckle - representing 0.6% of the total artifact assemblage. The buckle measures 1¼-inch by 1½-inch and appears to be associated with clothing, perhaps a belt.

Table 10.
Previously Published Artifact Patterns Compared to 38BK103

	Revised Carolina Artifact Pattern ^a	Carolina Slave Artifact Pattern ^a	Georgia Slave Artifact Pattern ^b	Struct 7 & 9	Struct 8	Work Areas
Kitchen	51.8-65.0	70.9-84.2	20.0-25.8	79	82.4	15.1
Architecture	25.2-31.4	11.8-24.8	67.9-73.2	16	14.1	84.3
Furniture	0.2-0.6	0.0-0.1	0.0-0.1	0	0	0
Arms	0.1-0.3	0.1-0.3	0.0-0.2	0.1	0	0
Tobacco	1.9-13.9	2.4-5.4	0.3-9.7	3.6	0.6	0.4
Clothing	0.6-5.4	0.3-0.8	0.3-1.7	0.2	0.6	0
Personal	0.2-0.5	0.0-0.1	0.1-0.2	0	0	0
Activities	0.9-1.7	0.2-0.9	0.2-0.4	1.1	2.3	0.2

^a Garrow 1982

^b Singleton 1980

used at the same time, from at least the time of John Berringer (who acquired the property in 1701) until the death of John Middleton II in 1826. This suggests that whatever activities might have been taking place in the main settlement, the work areas continued to be used throughout the site occupation.

It is useful to examine these three areas using what archaeologists call the artifact pattern – a way of arranging the collection of artifacts in

Activities Group Artifacts

This final group includes four specimens (or 2.3% of the total artifact assemblage). While the category is broken down into a variety of classes, only tools, storage, and “other” classes are present in this assemblage (see South 1977:96).

The tools include two smoothing stones. The storage category includes one barbed wire fragment, likely intrusive from the twentieth century. The “other” category produced one piece of unidentifiable iron.

Overview of 38BK103

The three areas defined as 38BK103 include a rice barn with at least two construction phases, a utility building of uncertain function, and general work or yard areas. In all three areas dateable European ceramics are uncommon (and entirely absent in the rice barn area). Where mean ceramic dates are possible they have been within a few years of each other: 1743 and 1748. The occupational span of the areas seems identical, suggesting that all were part of the Crowfield landscape and were being

various categories. These patterns also help compare sites and have resulted in the definition of several broad or defining patterns. There are patterns representative of planters throughout the eighteenth and most of the nineteenth century (called the Revised Carolina Artifact Pattern), as well as eighteenth century slaves (the Carolina Slave Artifact Pattern), and nineteenth century slaves (Georgia Slave Artifact Pattern). The pattern resulting from an excavation depends, quite naturally, on the part of the plantation being examined. Understanding this is very important when we begin to compare and contrast patterns. The various comparative patterns, as well as those from these three site areas at 38BK103, are shown in Table 10.

The data from Structures 7, 8, and 9 all generally fit what is expected for eighteenth century slave settlements – very high kitchen remains (largely the result of Colono ware pottery) and low architectural remains (since the structures from that time period were ephemeral). The only areas of concern might be the seemingly high Activities Group, although this can perhaps be explained by the functional and non-domestic nature of the structures. Yet

this same explanation should result in patterns that are distinctly different from domestic slave dwellings. We believe that there are two, perhaps related, explanations. The first is that the utility buildings were convenient locations for the disposal of domestic trash. Out of the sight, and perhaps control, of plantation whites, these areas were extensions of the slave world and, as a result, received trash from a variety of sources. The other explanation – closely related to the first – is that since these areas were part of the slave’s world, there were a number of domestic activities that took place outside, away from domestic structures – and all of these activities have left their mark on the archaeological pattern.

More curious, at least to us, are the work areas where we see not an eighteenth century domestic pattern, but rather a nineteenth century domestic pattern – high in architectural remains and low in kitchen goods such as ceramics. We are something at a loss for a simple explanation. However unsatisfying, we much recognize that these areas exhibited extensive nineteenth century disturbance, not the least of which was phosphate mining. It seems that the pattern resulting is likely spurious and not reflective of any plantation activity.

What is perhaps most interesting is that the vicinity of Structures 7, 8, and 9 failed to yield any distinct “plantation work area or utility building” pattern. This strongly supports our belief that what we are seeing is how African Americans used their landscape.

38BK1011

Slave Structure 1

Slave Structure 1 (Units 1420R910-930, 1430R910-930, Feature 1-4, and Feature 6-8) produced 7,679 artifacts from over 600 square feet, yielding an artifact density of 12.8 artifacts per square foot. This falls midway between the two slave artifact densities of 18.6 and 9.9 per square foot from Broom Hall (Trinkley et al.

1995:163, 168) and is close to the density found from a posited white early eighteenth century overseer at Liberty Hall (Trinkley et al 2003:68). It is, however, far higher than the 0.8 specimens per square foot recovered from the early eighteenth century slave settlement at Liberty Hall (Trinkley et al. 2003:75).

Kitchen Group Artifacts

A total of 6,633 (or 86.4%) Kitchen Group artifacts was recovered, most representing ceramics (n=5,882 or 88.7%) or glass (n=744 or 11.2%). Recovered were a wide range of early eighteenth through mid-nineteenth century ceramics, including porcelains, white salt glaze stonewares, lead glazed slipwares, delft, creamwares, and even whiteware. Also present were a few ceramics typically considered to be early eighteenth century wares, such as Westerwald.

The major types of ceramics reveal that tablewares, such as the porcelains, white salt glazed stonewares, delft, and creamware, account for 91.6% of the ceramics. Utilitarian wares, such as the brown and blue/white stonewares, account for about 8.4% of the collection. Utilitarian wares ranged from 6.5 to 9.9% of the Broom Hall slave collection (Trinkley et al. 1995:163, 169).

The most common ceramic found at Slave Structure 1 was Colono ware, accounting for 5,654 examples (96.1% of the ceramics). Colono wares will be discussed in more detail in a following section of the report.

The most common European ceramic is lead glazed slipware, accounting for 155 (or 2.6% of the total ceramic) examples. As previously explained, slipware was a traditional eighteenth century form designed for the “humble table” (Cushion 1976:79).

A total of 12 slipware vessels were identified. Five of the vessels were pans or plates measuring from 8 inches to 16 inches in

diameter. Each also exhibited a pie crust rim. The prevalence of this rim form is a little surprising, but we haven't been able to locate any research into how common the different forms were, or exactly how each tended to be used during the period. Nevertheless, we assume that the pie pan form, being somewhat midway between a bowl and a plate, was useful in serving up the spoon meals that comprised the bulk of the African American diet. Five vessels were bases of bowls measuring from 3 to 5 inches in diameter. Two mugs were also encountered, with rims from 2 to 32 inches.

usually associated with the tea ritual. Its presence is considered an indicator of high status (Lewis 1985; Stone 1970:88). During the nineteenth century the quantity exported into the United States increased and the quality declined, making it a poor indicator of status or wealth during the later period. It is likely that this, along with other more expensive wares, such as the white salt glazed stoneware, had originally been purchased for use by the owners of Crowfield and subsequently found their way into slave houses - perhaps as styles changed and the owner acquired new sets, as the

individual pieces were damaged, or perhaps even as theft. Four forms are found: one plate with a 5 inch foot ring, one saucer with a 5½ inch rim diameter, one bowl with a 3 inch foot ring, and one cup with a 1½ inch foot ring.

White salt glazed stoneware accounts for seven fragments. These wares, more durable than the earlier style of delft that they replaced, allowed the use of intricate relief patterns. One bowl with a 3½ inch foot ring was found.

In addition, the collection included one scratch blue sherd. Scratch blue is white salt glazed stoneware that was incised and filled with cobalt prior to firing, resulting in a white body with thin blue lines. These examples are typical of early (i.e. prior to ca. 1760) specimens where the lines ornament cups, saucers, and bowls. Later the style expanded onto chamber pots and mugs, in an effort by the English potters to take the market held by German utilitarian wares. Other stonewares in the collection included brown salt glazed (n=6), Nottingham (n=1), and Westerwald (n=2) stoneware.

Table 11.
Mean Ceramic Date for Structure 1 at 38BK1011

Ceramic	Date Range	Mean		
		Date (xi)	(fi)	fi x xi
Overglazed enamelled porc	1660-1800	1730	1	1730
Underglazed blue porc	1660-1800	1730	14	24220
Nottingham stoneware	1700-1810	1755	1	1755
Westerwald	1700-1775	1738	2	3476
White salt glazed stoneware	1740-1775	1758	7	12306
White sg sw, scratch blue	1744-1775	1760	1	1760
Lead glazed slipware	1670-1795	1733	155	268615
Decorated delft	1600-1802	1750	2	3500
Plain delft	1640-1800	1720	3	5160
Creamware, undecorated	1762-1820	1791	24	42984
Whiteware, undecorated	1813-1900	1860	1	1860
Total			211	367366
Mean Ceramic Date	1741.1			

Creamware is the next most common ceramic with 24 specimens or 0.4% of the total ceramic. All of these examples were undecorated. Three vessels were identified, two plates, measuring 8 to 9 inches in diameter, and a cup with a 3-inch rim.

The next most common eighteenth century pottery was Chinese porcelain. Of the 15 fragments identified, one was an overglazed enameled, while the rest were blue on white porcelain. As previously mentioned, Chinese porcelain was an expensive, very fine, thin ware

Coarse red earthenware consists of seven samples in the collection. One vessel, a bowl with a 3 inch base, was identified. Also found were two sherds of red earthenware with a black lead glaze.

Five sherds of delft, a tin-glazed ceramic common in the eighteenth century, were encountered. Three were plain, while two blue handpainted. Cushion indicates that, like slipware, the bulk of the delft until sometime in the eighteenth century was utilitarian, intended for the table (Cushion 1976).

Finally, one sherd of whiteware was found in the collection. Whitewares were created after creamwares and pearlwares in an effort to produce a truly white ceramic. Whiteware is a fine bodied earthenware developed by C.J. Mason in 1813.

The mean ceramic date (Table 11) is 1741. If the one whiteware ceramic is ignored, this mean date changes only one year - to 1740. South's bracket dates are 1700 and 1813 (or 1762 if the whiteware is ignored). While Bartovic's dating technique suggests that occupation may have begun as early as 1600 (probably representing a time lag on the ceramics), there was a significant jump in occupation about 1670 with a modest drop about 1775, although occupation continued to 1830. All of these dating techniques suggest some longevity for the dwelling area, if not the actual structure. Occupation appears to have spanned the entire history of Crowfield, from its initial acquisition by John Berringer until the death of John Middleton II in 1826. The slight disruption that is evidenced about 1775 may be the American Revolution, or it may reflect the death of John Middleton in 1784.

The collection of European ceramics reveals the presence of nine flatwares (plates and saucers) and 12 hollow wares (bowls and cups). Only one utilitarian or storage ware (jug) is present in the collection.

Container glass accounts for 744 fragments or 11.2% of the Kitchen Group total. The most prevalent glass type is "black" or dark olive green glass that makes up 97.2% of all the glass (n=723). These represent "wine" bottles commonly used in Europe and North America.

Eight "black" bottles were identified at Slave Structure 1, one is a case bottle base and lip, while the rest are blown bases. The case bottle is square because they were frequently packed in cases or "cellars," according to Noël Hume (1978:62). Frequently ascribed to the Dutch, these bottles were likely produced by any number of different countries, including Great Britain. This style was most popular in the seventeenth and early eighteenth centuries.

Free-blown bottles, especially the so-called "wine bottles," were common prior to 1730. After this date a demand for greater standardization began the transition to bottled blown inside contact molds (Jones and Sullivan 1985:21-23). Only free blown bottles were identified at Slave Structure 1. The bases range from 9.0 to about 16.0 cm in diameter. Those over about 12.6 cm were likely non-cylindrical styles from the seventeenth century that Jones (1986) did not study. Two vessels were over this size with one basal diameter of about 15.0 cm and one just over 16.0 cm. There is one example of bottles with a basal diameter of 9.0 cm, probably representing wine bottles from the period 1790 to 1850; two with diameters of 11.6 cm, identified as beer styles and dating from about 1750 through 1810; and two bottles with a diameter of 12.6 cm which probably represents an undersized beer bottle, dating from 1730 into the 1770s.

However these bottles began their lives, it seems likely that containers were valuable enough to be reused for relatively long periods of time. It doesn't seem to be until the mid-nineteenth century that bottle glass became inexpensive enough to be considered a consumable or disposable commodity.

The next most common container glass is clear, which accounts for 13 fragments or 1.7% of the glassware assemblage. Next most common is green glass with six fragments or 0.8% of the glass assemblage. Three small bottles were identified that have blown bases ranging from 1 to 2 inches in diameter. Finally, two fragments of light green glass were also found.

Seven tableware items were recovered from Slave Structure 1, representing 0.1% of the total Kitchen Group artifacts. Included are two goblet stems, two goblet bodies, one bowl rim, and two unidentifiable vessels. All the artifacts are made from clear glass, although the two unidentifiable sherds use a molded net pattern. The bowl rim is 5 inches in diameter.

Finally, four kettle fragments were also found at the site.

Architecture Group Artifacts

A total of 761 architectural fragments was recovered from Slave Structure 1, representing 9.9% of the total artifact assemblage.

The single largest category is that of nails with the 758 specimens accounting for 99.6% of the collection. Of these, 734 or 96.8% of the nails, can be discounted since they could not be either measured or identified by type. Twenty-four nails were identified as hand wrought, meaning they were individually forged by blacksmiths. Two head styles are present in the collection. Rose heads account for six of the wrought nails while clasp head or "T-heads" account for the remaining 18 hand wrought nails.

Different size nails serve different functions, so it is possible to use the relative frequencies of nail sizes to indicate building construction details. Unfortunately the number of measurable specimens is relatively small with the highest number of nails for one size only

five. The nails, however, range from 3d to 9d with one 16d nail also recovered. These sizes are most commonly associated with shingles and siding, although their small numbers suggests an ephemeral structure.

The only other Architecture Group artifact is that of window glass (n=3 or 0.4%). This small quantity was almost certainly not associated with glassed windows, but probably saw some alternative use in the slave settlement. Trinkley and Hacker (199:177) suggest a possible religious context .

Furniture Group Artifacts

The only furniture artifact recovered from Slave Structure 1 is a brass hinge measuring 7/8-inch in length and 13/16-inch in width.

Arms Group Artifacts

Three arms group artifacts were found representing 0.04% of the total artifact assemblage. These include one brown gunflint , likely French, and two gray gunflints, probably English.

Tobacco Group Artifacts

Slave Structure 1 produced 194 tobacco artifacts representing 2.5% of the total assemblage. These include 142 pipe stem fragments and 52 pipe bowl fragments.

Of the 52 bowls, 47 were plain, one had leaves on a seam, one had a floral design, one had a skull and crossbones, one had swirls, and one was the "TD" bowl. The "TD" pipes have been discussed by Hopkins (1937), Humphrey (1969), and Walker (1966). Originating in the eighteenth century, this pipe style continued to be made well into the mid-nineteenth century.

The most common diameter pipestem is 5/64-inch, accounting for 64.8% of all the stems (n=92), followed by 4/64-inch (n=47 or 33.1%).

Only three (2.1%) of the stems were 6/64-inch diameter. No decorations were found on any of the pipe stems, although three specimens exhibited feet.

Clothing Group Artifacts

This category includes eight buttons and one part of a buckle, accounting for 0.1% of the total assemblage from Slave Structure 1. These buttons are classified by South's (1964) types. These styles span the mid-eighteenth through the mid-nineteenth centuries. All the buttons are brass, with the most common button Type 7 (n=4), a spun brass type with eye cast in place. Two Type 31 buttons were found that have a spun back and a drilled eye. Also found were a Type 11 which is one piece cast metal and Type 17 that is a cast pierced brass with casting plugs.

The other clothing item includes a brass ring that was part of a buckle. It measures 1 3/16-inch by 1 7/16-inch.

Personal Group Artifacts

The three artifacts comprising the Personal Group represent 0.04% of the total assemblage. Recovered were two iron key fragments and one bead.

The surviving portions of the iron keys are too degraded to determine overall measurements. The remaining stem portion of one key, however, was measured at about 6.0 cm. A portion of the bow was also present which measured about 4.0 cm in height. These measurements are adequate to estimate the length of the key at somewhere around 12.0 cm originally.

The bead is green glass (variety WI1b1, using the Kidd and Kidd (1970) typology) and measures about 12.9 mm in diameter and 5.7 mm in width. The hole is approximately 3.2 mm wide. Beads are frequently associated with slave settlements.

Activities Group Artifacts

This final artifact group includes a total of 75 specimens (or 0.98% of the total from Slave Structure 1). The category is broken down by South's (1977:96) classes, with tools, fishing gear, storage items, miscellaneous hardware, and the general class "other" producing specimens. The collection includes 42 smoothing stones, one spade blade, one hoe blade, one brass ruler joint, one iron froe, two lead weights, one padlock arm, one strap iron, one lead washer, 17 unidentifiable iron fragments, four chert flakes, two pieces of melted lead, and one worked stone.

The tools include smoothing stones, which will be discussed in a later section of this report, but were used in the pre-firing treatment of Colono ware. The spade blade measures 12½ inches in height and 8½ inches in width. The hoe blade is what is commonly known as a "planters hoe" and measures with the eye 8 inches in height and 9 inches in width. The brass ruler joint, which is a higher status item, may show indirect evidence that carpentry was taking place or that theft was occurring. It has also been suggested that the shiny objects, such as brass, were used in a more religious context (see Trinkley and Hacker 1999:177). The froe, which is a wedge shape tool used for cleaving, was too degraded to obtain any measurements.

The fishing category included two round, lead weights. Fishing weights are common at slave settlements. These may have been used as line weights or as net weights.

The storage artifacts include one padlock arm and one strap iron with a width of 1½ inches. The strap fragment indicates barrels or boxes being brought onto the plantation, although considering the short lengths recovered, the collection doesn't actually imply any great number of materials.

The hardware item is common - a lead washer. The washer measures 5/8-inch on the

exterior diameter and ¼ -inch on the interior diameter.

Four historic chert flakes were found and one historic worked (ground) stone. The stone may have some religious significance or may just represent idle or idiosyncratic behavior. A somewhat similar, although more intricate, example has recently been identified from Roupelmond Plantation in Beaufort County (Trinkley and Hacker 1999:116).

Yard of Slave Structure 1

The yard of Slave Structure 1 (Units 1430-1440R860 and 1450R900) produced 2,321 artifacts from about 300 square feet, yielding an artifact density of 7.7 artifacts per square foot. While lower than that found within and immediately adjacent to Structure 1, it is still within the range identified at the Broom Hall slave settlements and well above the range found at Liberty Hall.

Table 12.
Mean Ceramic Date for the Yard Area of Structure 1,
38BK1011.

Ceramic	Date Range	Mean Date (xi)	(fi)	fi x xi
Underglazed blue porc	1660-1800	1730	1	1730
Westerwald	1700-1775	1738	1	1738
White salt glazed stoneware	1740-1775	1758	3	5274
Lead glazed slipware	1670-1795	1733	36	62388
Decorated delft	1600-1802	1750	2	3500
Plain delft	1640-1800	1720	1	1720
Creamware, undecorated	1762-1820	1791	2	3582
Total			46	79932
Mean Ceramic Date	1737.7			

This suggests that while the artifact density may decline in the yard area, there is still much trash widely spread over the open areas around eighteenth century slave settlements. The higher density from within the structure may be partially the result of in situ loss and decay, but it may also reflect yard

sweeping and disposal of the sweepings under the house or in pits found in close proximity to the structure.

Kitchen Group Artifacts

A total of 2,070 Kitchen Group artifacts was recovered, all representing ceramics (1,888 or 91.2%) or glass (182 or 8.8%). Most of the ceramics collected were mid-eighteenth century, although some early nineteenth century ceramics were also found. Tablewares, such as porcelains, white salt glaze stonewares, delft, creamwares, and slipwares, account for 90% of the European ceramics. This leaves utilitarian wares accounting for 10% of the collection. While this is a slightly higher proportion than found in the immediate house area, the difference is likely not significant and remains very close to what has been documented at nearby Broom Hall.

Colono wares were far more common than European wares, accounting for 97.4% (n=1,838) of all ceramics - this is nearly identical to what was found in the structure area.

The most common European ceramic is slipware with the 36 sherds accounting for 72% of the European ceramics. Four vessels were identified, including three serving pans/plates with diameters from 8½ to 11 inches and one handled cup.

Stonewares were next most common, with three fragments of white salt glaze stoneware, one Westerwald, one gray salt glaze stoneware, and one brown salt glaze stoneware fragment. The white salt glaze stoneware produced one vessel, a cup with a 3½ inch rim. The Westerwald represented a mug with 4 inch basal diameter.

Two refined earthenware sherds were collected, one tortoiseshell and one red with

black lead glaze. The red earthenware was the handle from a tea pot. Three fragments of tin-glazed delft were also recovered. These include one plain sherd and two sherds with poly hand painted decoration.

Two sherds of creamware, both undecorated, were found but no vessels could be identified from these remains.

Finally, one piece of porcelain was identified. The sherd was undecorated, but was part of a saucer with a 3½ inch foot ring.

While sparse, this collection reveals four flatware forms – one saucer and three pans or plates – and three hollow ware items – two cups and one mug. Also present was the remains of a teapot.

This assemblage produces a mean ceramic date of 1738 – only three years younger than the date for the structure itself (Table 12).

Container glass accounts for 182 fragments or nearly 11.4% of the Kitchen Group total. The most prevalent glass type is “black” or dark olive green that comprises 96.2% of the glass total (n=175). Only one vessel was identified from this glass, a blown base bottle with a 12.5 cm basal diameter. This bottle probably represents an undersized beer bottle, dating from 1730 into the 1770s (Jones 1986).

The next most common container glass was green with four fragments or 2.2% of the glass. Also found were two pieces of aqua glass and one piece of clear glass.

Architecture Group Artifacts

A total of 160 architectural fragments was recovered from the yard of Slave Structure 1, representing about 6.9% of the total artifact assemblage.

The single largest category is that of nails, with 152 specimens accounting for 95% of

the collection. None of the nails recovered could be measured or identified by type.

Seven pieces of window glass were found, accounting for 4.4% of the architecture collection. While more glass than was found in and adjacent to the structure itself, this is still too small a quantity to represent glass lights. The openings were probably shuttered and the glass represents material salvaged from elsewhere on the plantation.

One strap hinge fragment, with a width of 1¼ inches, was recovered. This is likely from a door or possibly a window shutter.

Arms Group Artifacts

Only one arms related item, a lead shot, accounts for 0.04% of the total artifact assemblage in the yard of Slave Structure 1. The specimen is 15mm (about 0.59 inch) in diameter and was flattened on one side. This may be attributed to an eighteenth century musket with a caliber of .60 to .63.

Tobacco Group Artifacts

The yard of Slave Structure 1 produced 54 artifacts (representing 2.3% of the total assemblage), including 43 pipe stem fragments and 11 pipe bowl fragments.

Of the 11 bowls, all were plain with no designs. The pipe stems were also undecorated, although one foot was found.

The majority of pipe stems measured 5/64-inch (n=35) in diameter while six had a diameter of 4/64-inch and two had a diameter of 6/64-inch.

Clothing Group Artifacts

This category includes only one item, a brass buckle, which makes up 0.04% of the total artifact assemblage. The buckle measures 1 1/8 by 1 3/8-inch.

Personal Group Artifacts

One artifact was found, a bead, which accounts for 0.04% of the total artifact assemblage from the yard of Slave Structure 1. The bead is a cobalt blue glass and is type Wic (Kidd and Kidd 1970).

Activities Group Artifacts

This final artifact group includes a total of 34 specimens that make up 1.5% of the total artifact assemblage. Only two categories (see South 1977:96) are present - tools and "other."

The tools category included 25 smoothing stones, which will be discussed in further detail in a following section of this report. These stones are thought to have been used by slaves in the production of Colono ware. Also found is a brass handle, thought to be part of a razor or some other blade. Its length is 3 1/8-inch with the width at the base 5/8-inch. While there is no blade, there is a pivot where the blade would have been turned out from the handle.

The "other" category contains a brass strip, a piece of melted lead, a 1.0 by 7/8-inch iron ring, and five pieces of unidentified iron.

Slave Structures 2-4

Slave Structures 2-4 (Units 1720-1740R910-920, Feature 5 and 9, and Stripped Area #1) produced 1,975 artifacts from 1,132 square feet, yielding an artifact density of 1.7 artifacts per square foot.

This is dramatically lower than that recovered from Structure 1 or any of areas at Broom Hall Plantation. This density, however, is very similar to that recovered from the early eighteenth century slave settlement at Liberty Hall, where 0.8 artifacts per square foot were recovered.

Kitchen Group Artifacts

A total of 1,511 Kitchen Group artifacts was recovered, most representing ceramics (n=1359 or 89.9%) or glass (n=147 or 9.6%). The ceramics reveal a range from the mid-eighteenth to the early nineteenth century.

Colono ware was the most common ceramic with 1,307 sherds (96.2% of all ceramics), but this ware will be discussed in greater detail in a following section of this report.

Of the remaining European wares, the large majority were lead glazed slipware (n=36 or 69.2%). Of these, five vessels were identified - two bowls with 3 to 3½ -inch bases and three plates with diameters ranging from 7 to 11 inches.

The next most common ceramic is creamware with five (9.6%) specimens. All five were undecorated and no vessels were identified from these sherds.

Three fragments of Chinese porcelain were found with one sherd having a blue hand painted decoration, one exhibiting an overglazed decoration, and one having blue paint with a red hand painted overglaze. The specimen with blue hand painting was a lid to an unidentified vessel. The lid had an exterior diameter of 2½ inches.

Also found were three pieces of pearlware, which was created after creamware and is recognized by the blue puddling of the glaze and over-all bluish cast. One sherd was undecorated, one was blue hand painted, and one was a blue transfer printed design. This latter specimen is a fragment of a bowl with a 3 inch foot ring.

The remaining fragments include one coarse red earthenware and one undecorated delft.

ARTIFACTS

Taken together, the assemblage produced three flatwares, all plates, and three hollow wares, all bowls. Also recovered was the one lid, likely from a teaware item.

The mean ceramic date of all the European ceramics is 1743 - only two years more recent than that for Structure 1, suggesting

Two tableware specimens were recovered, representing 0.1% of the Kitchen Group assemblage. Included is a goblet foot and a tumbler base. Both are made of clear glass with the goblet foot measuring 2½ inches in diameter.

A total of six kitchenware items - all kettle fragments - were recovered (0.4% of the Kitchen Group assemblage).

Table 13.
Mean Ceramic Date for Structures 2, 3, and 4, 38BK1011

Ceramic	Date Range	Mean		
		Date (xi)	(fi)	fi x xi
Overglazed enamelled porc	1660-1800	1730	2	3460
Underglazed blue porc	1660-1800	1730	1	1730
Lead glazed slipware	1670-1795	1733	36	62388
Plain delft	1640-1800	1720	1	1720
Creamware, undecorated	1762-1820	1791	5	8955
Pearlware, blue hand painted	1780-1820	1800	1	1800
Pearlware, blue trans printed	1795-1840	1818	1	1818
Pearlware, undecorated	1780-1830	1805	1	1805
Total			48	83676
Mean Ceramic Date	1743.3			

Architecture Group Artifacts

A total of 400 architectural fragments was recovered from Structures 2-4, representing about 20.3% of the total artifact assemblage.

The single largest category is that of nails, with the 397 specimens accounting for 99.3% of the collection. Of these all must be discounted since they could not be either measured or identified by type.

that the two are contemporaneous.

Container glass accounts for 147 fragments or 9.7% of the Kitchen Group total. The most prevalent glass type is "black" or dark olive green that comprises 95.9% of the glass found. Of these fragments, five bottles were identified including one case bottle and four round, blown bases. The blown bases range from 7.5 cm to 15 cm. The smallest is not identified by Jones (1986). Two bottles with basal diameters of 12.5 cm were likely undersized beer bottles dating from 1730 into the 1770s. The final bottle, 15 cm in diameter, was probably a non-cylindrical style from the seventeenth century, which Jones also did not study.

Also found were three clear glass fragments, one green, one light green, and one aqua - all were too small to allow definition of vessel form.

The only other architectural group artifact is that of flat window glass, accounting for 0.7% of the group (n=3). As with the other collections from 38BK1011, this probably reflects salvage and reuse, rather than window lights from the slave dwelling.

Tobacco Group Artifacts

These structures produced 33 tobacco artifacts (representing 1.7% of the total assemblage), including 31 pipe stems and two pipe bowls.

Of the 31 pipe stems, 16 measured 4/64-inch (51.6%), 14 measured 5/64-inch (45.2%), and one (3.2%) was split so no measure was taken. Two 4/64-inch stems contained designs including one with rouletted circles and another with "T/D" impressed on the foot.

The remaining pipe stems contained no decoration. None of the pipe bowls were decorated

folded lead (possibly a flint wrap), and four unidentifiable pieces of iron.

Clothing Group Artifacts

Slave Structures 5 and 6

This category includes one button and two buckles accounting for 0.2% of the total artifact assemblage for Structures 2-4. The button is South's (1964) brass Type #10, with a diameter of 28.5 mm.

Slave Structures 5 and 6 (Stripped Area 2 and 3) produced 66 artifacts from about 1,607 square feet, yielding an artifact density of 0.04 artifacts per square foot. This data is skewed since the soil was not screened. There seems, however, to be relatively low density of remains, similar to that found at Structures 2-4.

The two buckles include one iron, measuring 1 by 7/8-inch, and one brass buckle measuring 17/8 by 1¼ inches.

Kitchen Group Artifacts

Ceramic	Date Range	Mean Date (xi)	(fi)	fi x xi
Underglazed blue porc	1660-1800	1730	3	5190
Lead glazed slipware	1670-1795	1733	2	3466
Plain delft	1640-1800	1720	1	1720
Total			6	10376
Mean Ceramic Date	1729.3			

A total of 46 Kitchen Group artifacts was collected, accounting for 69.7% of the total artifact assemblage. All the artifacts represent ceramics (n=29 or 63%) or glass (n=17 or 37%).

The majority of the ceramics were Colono ware with 22 or 75.9% of all the ceramics collected. These wares will be discussed in more detail in a later section of this report

Activities Group Artifacts

This final artifact group includes a total of 28 specimens or 1.4% of the total artifact assemblage. Using South's (1977:96) classification system, the artifacts fit into three categories: tools, storage, and "other."

Of the European ceramics, the most common eighteenth century pottery found was Chinese porcelain (42.9% of the ceramic). Two of these sherds had blue hand painted decoration and one was plain with no decoration.

The tools include 16 smoothing stones, which will be discussed in more detail in a later section of this report.

The next most common eighteenth century pottery is lead glazed slipware, accounting for two specimens (28.6% of the ceramic).

Both of the two storage items are iron strap typical of barrels and boxes. One measures about 1.0 inch in width and the other measures about ¾ inch in width.

One piece of undecorated delft and one piece of red earthenware with black lead glaze was also found.

The "other" category includes ten items, including five lead fragments, one piece of

While of dubious reliability, the mean ceramic date for this assemblage is among the earliest found at the site - 1729 (Table 14). Other

artifacts found in the collection do not support a date appreciably earlier than any of the other structures at 38BK1011. While the recovery of these structures increases our inventory of early eighteenth century dwellings, our inability to place a very precise date on the structure demonstrates one of our greatest reservations concerning mechanical stripping.

Container glass accounts for 17 fragments or 37% of the Kitchen Group total. The most common glass is "black" or olive green in transmitted light and comprises about 82.4% of the glass recovered from Structures 5 and 6. However, no vessels were identified from the fragments.

Three additional pieces of glass were found including one green, one aqua, and one clear fragment. The green glass is a lip pieces from a small bottle. The aqua glass is a blown base of about 2½ inches that is not discussed by Jones (1986), although free-blown bottles were common prior to 1730. The clear glass is a blown base of about 1½ inches and is part of a small bottle. Both were likely pharmaceutical or medicinal in nature.

Architecture Group Artifacts

A total of 20 architectural fragments was recovered, representing 29.9% of the total artifact assemblage from these two structures. The only category is that of nails with 20 specimens recovered. None of the 20 nails were identifiable by type or able to be measured.

Activities Group Artifacts

Only one artifact was recovered, a smoothing stone, which represents about 1.5% of the total assemblage.

Slave Structure 7

Slave Structure 7 (Units 1440R1040-1050) produced 3,743 artifacts in 200 square feet, yielding an artifact density of 18.7 artifacts per

square foot. This is in excess of the density found at Structure 1 (12.8/ft²), but still within the range found at Broom Hall (9.9 to 18.6/ft²). It is also close to the white overseer at Liberty Hall (10.7/ft²).

Kitchen Group Artifacts

A total of 3,136 Kitchen Group artifacts was recovered, most representing ceramics (n=2,825 or 90.1%) and glass (n=309 or 9.9%). Excavations revealed a range of early eighteenth to early nineteenth century ceramics.

Like the previous structures, Structure 7 was dominated by Colono ware with 2,719 sherds or 96.4% of all the ceramics recovered. This slave-made pottery will be discussed in more detail in a later section of this report.

Of the European ceramics, lead-glaze slipware represents the majority with 46 sherds (43.4% of the European ceramics). Of these sherds, four vessels were identified including two plates with diameters from 9 to 11 inches with pie crust rims and two mugs/bowls with 2½ to 4.0 inch diameters.

The red coarse earthenwares were the next most common ceramic including specimen with clear lead glaze (n=2) and black lead glaze (n=21). Two vessels were identified, both with black lead glaze. These include two mugs/bowls with 4 to 5-inch bases.

Thirteenth specimens of refined earthenware were recovered, including three agateware, seven tortoiseshell, and three Portobello ware sherds. One tortoiseshell vessel was identified, a mug/bowl with 3- inch base. Agateware is an earthenware that uses streaks and curls of yellow, reddish brown, and chocolate colored enamel in a marbling pattern to resemble the stone agate (Hughes n.d.:60). These wares are attributed to Thomas Wedgwood in about 1730. Due to the tedious process and high cost of production, manufacture declined from the early 1790s and

Table 15.
Mean Ceramic Date for Structure 7, 38BK1011

Ceramic	Date Range	Mean		
		Date (xi)	(fi)	fi x xi
Underglazed blue porc	1660-1800	1730	8	13840
Nottingham stoneware	1700-1810	1755	4	7020
Westerwald	1700-1775	1738	3	5214
White salt glazed stoneware	1740-1775	1758	1	1758
Lead glazed slipware	1670-1795	1733	46	79718
Plain delft	1640-1800	1720	3	5160
Creamware, undecorated	1762-1820	1791	3	5373
Total			68	118083
Mean Ceramic Date	1736.5			

are mugs or bowls). This is the first dwelling where the hollow wares are noticeably more common than flatwares.

The mean ceramic date for this site is 1736 – similar to the yard area for Structure 1, but otherwise the oldest slave settlement with seemingly secure dating. South’s bracket dates are 1700 through 1762 – the same as for Structure 1 if the whiteware is ignored. Likewise, Bartovic’s date range is about 1770 through 1830 – again very similar to previous examples. Thus, while the mean date is somewhat earlier, there

had stopped by about 1820 (Hughes n.d.:61-62). One agateware bowl/mug with a 3½ inch base was identified in the collection. Portobello ware, a Scottish ceramic made by the Scott brothers, was made between 1795 and 1825 (Hughes n.d.: 205-210). This ceramic is a dark red earthenware covered with a film of cream or chocolate colored paint and painted with yellow designs over which a lead glaze is applied.

really doesn’t seem to be much reason to place this site significantly earlier than other slave dwellings encountered at 38BK1011.

Ten stoneware sherds were recovered with one fragment of white salt glaze, two gray salt glaze, three Westerwald, and four Nottingham sherds. One vessel was noted from the Westerwald sherd, a bowl with 8- inch rim. The Nottingham, the red and brown stoneware, produced one vessel, a bowl with 5- inch rim.

Container glass accounts for 309 fragments or 9.9% of the Kitchen Group total. The most prevalent glass type is “black” or dark green in transmitted light. A total of 298 fragments were found, comprising 96.4% of all the glass found at Slave Structure 7. Of these 298 fragments, four necks were found along with two blown bases. One base, measuring about 10 cm in diameter, is classified by Jones (1986) as an Imperial wine bottle, post-dating about 1825 – placing it somewhat outside the ceramics recovered from the settlement. The other bottle, measuring about 11.6 cm in diameter, is identified as a beer style dating from about 1750 through 1810 (Jones 1986).

The next most common ceramic is Chinese porcelain. Out of the eight specimens, seven are blue hand painted while one is undecorated. Three porcelain vessels were identified – two plates, one with a 6- inch foot ring and one with a 5½ inch foot ring, and one bowl with a 4½ inch foot ring.

The next most common glass color is clear with seven fragments or 2.3% of the glass assemblage at Structure 7. Of these fragments, one small lip was recovered along with one blown base of about 2.0 inches. Two light green fragments were recovered with one lip identified. Also found were one green and one aqua glass fragments.

The remaining ceramics include three fragments of delft and three creamware, all undecorated.

A total of two artifacts were found in the kitchenware group, both kettle fragments.

This assemblage includes four flatwares (all plates) and nine hollow wares (all of which

Architecture Group Artifacts

A total of 473 architectural fragments was recovered from Structure 7, representing 12.6% of the total artifact assemblage. As with the previous areas of Crowfield, the largest category is nails. Structure 7 produced 463 nails, but none could be measured or identified by type.

Nine pieces of flat window glass, accounting for 1.9% of the Architecture Group total, were found. Again, no use of glazed windows is assumed and these remains were likely salvaged from elsewhere on the plantation for some function other than glazing.

In addition, one spike measuring 5½ inches in length was recovered. Spikes are generally used in the framing of large timbers.

Furniture Group Artifacts

One furniture artifact was recovered, representing 0.1% of the total artifact assemblage for Structure 7. The artifact is a brass escutcheon measuring about ¾ inch in width and about 1 3/8 inch in length.

Tobacco Group Artifacts

Structure 7 produced 105 tobacco artifacts (representing 2.8% of the total assemblage), including 64 pipe stem fragments and 41 pipe bowls.

Of the 41 bowls, 38 were undecorated, one had a geometric floral design on the seam, one had a seal with an animal on the right side, and one was the "TD" bowl that originated in the eighteenth century and was made into the mid-nineteenth century (see Hopkins 1937; Humphrey 1969; Walker 1966).

The most common diameter pipestem is 5/64-inch, accounting for 62.5% of the pipe stems (n=40), followed by 4/64-inch (n=24 or 37.5%). One of the 5/64-inch pipe stems had a

foot marked "M/W." Also found on a 5/64-inch pipestem are the impressed letters "SA_/RO_/D_."

Clothing Group Artifacts

This category includes one button and one other clothing item, accounting for 0.1% of the total artifact assemblage. The button is made of cast lead and is a South (1964) Type #29 having a diameter of 27.3 mm. The other item is decorative brass and probably meant to attach to a belt, hat, or bag.

Personal Group Artifacts

Only one item was found in this group, a brass finger ring. The ring, a size 7, has three settings, a large square with two small circles on either side which once held stones or gems. The ring is slightly twisted to one side signifying that it was worn regularly. Since no stones were found in context, it is possible that the ring was salvaged.

Activities Group Artifacts

A total of 25 artifacts (or 0.6% of the total artifact assemblage) were collected representing the categories of tools, storage, and "other" (see South 1977:96).

The tools included 17 smoothing stones that were probably used by slaves in the smoothing or burnishing of Colono ware. These will be explored further in a later section of this report. Also found is a triangle file fragment and a brass tool handle which measures about 2¼ inches in length.

The storage category include a lead seal and a padlock hasp. The lead seal is about 1 5/8 inches in diameter. While it evidences writing and figures, these are largely illegible. Seals were usually used to identify mercantile items, so the use by African Americans is uncertain. The padlock hasp is about 2 inches by 1½ inches.

The “other” objects include three iron fragments and one lead fragment..

Yard Units

Yard Units (Units 1350R1210, 1430R1200, 1520R1010, 1590R910, and 1600R910), or probable dump sites, produced 2,376 artifacts from 500 square feet, yielding an artifact density of 4.8 artifacts per square foot. This stands midway between the structures with a low density of archaeological remains and those with a relatively high density. It is also about two-thirds of the density of the yard area identified for Structure 1.

Kitchen Group Artifacts

A total of 1,942 Kitchen Group artifacts was recovered, most representing ceramics (n=1,750 or 90.1%) or glass (n=185 or 9.5%). Excavations in these units revealed a range of artifacts from the early eighteenth through early nineteenth centuries. As with all the other units around the Crowfield slave settlement, Colono ware dominates the ceramics with 1,627 sherds (93% of the ceramics).

Of the European ceramics, lead glazed slipware dominates with 48 (39% of the European ceramics) sherds. Six vessels were identified including one cup with a 3½ inch rim, one mug with a 4 inch rim, and four pans or plates (with pie crust rims) ranging in diameter from 6 to 10 inches.

The next most common artifact type is the coarse red earthenware (n=23). Three of the sherds contained clear lead glaze, while the remaining 20 contained black lead glaze. One vessel was identified with the black lead glaze, a milk pan with 17 inch rim.

Chinese porcelains are next most common at the yard units (n=15). Twelve of the sherds had blue hand painted decoration, one was hand painted overglaze, with a bird as decoration, and the remaining two sherds were undecorated. Four vessels were identified including one plate with a 9 inch rim diameter, one plate with a 5 inch rim diameter, one saucer with a 5 inch rim diameter, and one cup with a 3½ inch rim diameter.

A total of 20 stoneware fragments were excavated with six white salt glaze, six brown salt glaze, seven Westerwald, and one Nottingham. The more expensive, white salt glaze stoneware, produced three vessels, one bowl with a 4½ inch foot ring, one cup with a 2 inch foot ring, and one tea pot lid with a 2½ inch diameter. One vessel was identified from the Westerwald sherds, a bowl with 6 inch rim and one vessel from the Nottingham sherd was found, a bowl with a 5 inch base.

Eleven sherds of delft ware were recovered including eight plain and two decorated – one blue hand painted and one poly hand painted. Only one vessel was identifiable, a cup with a 1½ inch base.

Table 16.
Mean Ceramic Date for the Yard Units, 38BK1011

Ceramic	Date Range	Mean Date (xi)	(fi)	fi x xi
Overglazed enamelled porc	1660-1800	1730	1	1730
Underglazed blue porc	1660-1800	1730	14	24220
Nottingham stoneware	1700-1810	1755	1	1755
Westerwald	1700-1775	1738	7	12166
White salt glazed stoneware	1740-1775	1758	6	10548
Lead glazed slipware	1670-1795	1733	48	83184
Decorated delft	1600-1802	1750	2	3500
Plain delft	1640-1800	1720	8	13760
Creamware, undecorated	1762-1820	1791	1	1791
Pearlware, annular/cable	1790-1820	1805	3	5415
Total			91	158069
Mean Ceramic Date	1737.0			

Also recovered were three annular pearlwares, one undecorated creamware, one unglazed red earthenware, and one fragment of agateware.

This rather amorphous collection represents six flatware forms, eight hollow wares, and two serving vessels (the milk pan and a tea pot).

The mean ceramic date for these European ceramics is 1737. This places the yard debris in good agreement with the various structures, which range from 1729 through 1743. Also like other collections, Bartovic's dating suggests a rise in occupation about 1670, terminating in 1830.

Container glass accounts for 185 fragments or nearly 9.5% of the Kitchen Group total. The most prevalent glass type is "black" or dark green in transmitted light, comprising 97.3% of the glass found (n=180). These fragments represent at least three blown base bottles. Two measure 11.6 cm in diameter and are likely beer styles dating from about 1750 (Jones 1986). The other bottle base measures 12.6 cm and probably represents an undersized beer bottle, dating from 1730 into the 1770s (Jones 1986).

The other glass fragments include three clear and two aqua. No vessels were identified from these remains.

Three tableware items were also recovered including a utensil handle, one goblet foot, and clear glass representing an unidentified vessel. The utensil handle is made of a white metal, possibly pewter, and measures 2 1/8 inches long and between 3/8 and 3/4 inch in width. These metal handles are typical of the eighteenth century. The goblet foot is clear glass and measures 2 1/2 inches in diameter. The clear glass of the unidentified vessel contains a molded decoration of scalloped ribs.

The only kitchenware artifacts consist of four kettle fragments.

Architecture Group Artifacts

A total of 354 architectural fragments was recovered from the yard units, representing 14.9% of the total artifact assemblage.

As with the other areas around the settlement, nails make up the largest category within the Architecture Group with 350 specimen accounting for 98.9% of the collection. None could be measured or identified by type.

The remaining four artifacts are window glass fragments

Arms Group Artifacts

Two artifacts were recovered from this group, representing 0.08% of the total artifact assemblage for the yard units. These include two gun flints, one brown (likely French) and one burnt.

Tobacco Group Artifacts

The yard units produced a total of 51 tobacco artifacts (representing 2.1% of the total assemblage), including 39 pipe stem fragments and 12 pipe bowl fragments.

Of the 12 pipe bowls, all were undecorated. The most popular pipestem diameter is 5/64-inch (n=24) with 15 measuring 4/64-inch. Two of the 5/64-inch pipe stems also contained a bowl. Of those two one was plain with no foot and the other had fancy leaves on the mold seam and a crown on the body.

Clothing Group Artifacts

This category includes one button and one buckle, accounting for 0.08% of the total artifact assemblage. The button, South's brass Type #7, has a diameter of 16.6 mm. The iron buckle measures 1 3/8 inches square. This

buckle might have been found on cartridge boxes or even saddle harnesses. By the nineteenth century they were common on leggings and a variety of accouterments. They are included in the clothing group since there is no way to determine their precise function.

Activities Group Artifacts

The Activities Group includes 25 artifacts accounting for 1.1% of the total assemblage. The tool category includes 17 smoothing stones and one ruler hinge. The storage category includes two iron strap fragments. The "other" category includes one unidentified iron fragment and four pieces of melted lead.

The smoothing stones will be discussed in more detail in a later section, but they were likely used to smooth or burnish the Colono ware. The brass ruler hinge is similar to the item recovered at Structure 1 and may provide evidence that one or more of the African Americans were carpenters.

The strap irons appear to be fairly common around the slave settlement. Boxes and barrels would have been brought onto the plantation and either given to or salvaged by the slaves.

Animal Pens

The animal pens (units 1210-1220R960, 1220-1230R970, Feature 10a and 10b), also areas of trash deposits, produced 1,384 artifacts in 400 square feet, yielding an artifact density of 3.5 artifacts per square foot.

Kitchen Group Artifacts

A total of 1,132 Kitchen Group artifacts was recovered, all representing ceramics (n=1081 or 95.5%) and glass (n=51 or 4.5%).

Colono wares make up the majority of ceramics representing 1,046 specimens or 96.8% of the ceramics.

The most common European ceramic is the coarse red earthenware with 23 specimens or 65.7% of the European ceramics. Three of the sherds have clear lead glaze, while the remaining 20 sherds have no glaze and may represent flower pots (seemingly a very large proportion). Only one vessel was identified by the clear lead glazed coarse red earthenware, a bowl with a 5½ inch rim.

Table 17.
Mean Ceramic Date for the Animal Pen Area, 38BK1011

Ceramic	Date Range	Mean		
		Date (xi)	(fi)	fi x xi
Westerwald	1700-1775	1738	1	1738
White salt glazed stoneware	1740-1775	1758	1	1758
Lead glazed slipware	1670-1795	1733	1	1733
Decorated delft	1600-1802	1750	3	5250
Plain delft	1640-1800	1720	1	1720
Total			7	12199
Mean Ceramic Date	1742.7			

Stonewares make up 17.1% of the European pottery with three fragments of brown salt glaze, one specimen of gray salt glaze, one white salt glaze, and one Westerwald.

Four delft were recovered including one plain and three blue hand painted. One lead glaze slipware ceramic was also recovered along with a fragment of burnt earthenware.

The mean ceramic date for this site area is about 1743 - continuing to fall within the fairly tight dating for the entire slave settlement.

A total of 51 fragments of container glass or 4.5% of the Kitchen Group total were recovered. The most prevalent type is "black" or dark olive green in transmitted light, comprising of 98% of the glass found in this portion of Crowfield (n=50). Two bottles were

identified from these fragments. Both are blown bottles, one with a basal diameter of 12.6 cm and another with a diameter of 15 cm. The smaller bottle probably represents an undersized beer, dating from 1730 into the 1770s, while the larger, not discussed by Jones (1986), is likely a non-cylindrical style from the seventeenth century.

The other fragment of glass is clear, but no vessel was identified from this sherd.

Architecture Group Artifacts

A total of 188 architectural fragments was recovered, representing about 13.6% of the total artifact assemblage from the animal pens.

The only artifact type found was nails. Out of the 188 specimens, 186 can be discounted since they could not be either measured or identified by type. The remaining two nails are hand wrought with sizes 6d and 9d. Both nails also have T-heads.

Arms Group Artifacts

One artifact was recovered from this group, a gray (probably English) gunflint.

Tobacco Group Artifacts

A total of 54 tobacco items (3.9% of the total artifact assemblage) were recovered including nine pipe bowl fragments and 45 pipe stem fragments.

All of the specimens are plain, although one foot was identified on a 6/64-inch stem. The most common stem size is 5/64-inch with 34 specimens followed by 11 with bore diameters of 6/64-inch.

Clothing Group Artifacts

One artifact was recovered, a scissor handle fragment. This specimen was in very poor condition so no other details could be determined.

Personal Group Artifacts

One bead was recovered from animal pen area. The specimen is a red opaque glass variety (Type IVa, tube, using the Kidd and Kidd [1970] typology) measuring 6.92 mm by 7.47 mm. The red or "redwood" glass covers a black glass.

Activities Group Artifacts

A total of seven artifacts were recovered from this final artifact group, representing 0.5% of the total artifact assemblage. Collected were five smoothing stones and two unidentified iron fragments.

Overview of 38BK1011

The seven areas defined as 38BK1011 include seven structures in three areas, one yard area clearly associated with a specific structure, combined generic yard areas, and an animal pen area. In all of these areas the dateable European ceramics, while not nearly as common as Colono ware, are adequate to provide some idea of the general date range. They extend from 1729.6 (at Structures 5-6) through 1742.7 (at the animal pens), reflecting a just over a 13 year spread (Table 18). This occupational spread is slightly greater than is found in 38BK103, but still indicates that all of the Crowfield landscape was being used at the same time - from at least the

Table 18.
Mean Ceramic Dating for Various
Proveniences

38BK103	Structure 8	1743.2
	Work Areas	1748.3
38BK1011	Structure 1	1741.1
	Structure 1 yard	1737.7
	Structures 2 - 4	1743.3
	Structures 5- 6	1729.6
	Structure 7	1736.5
	Yard Units	1737.0
	Animal Pens	1742.7

Table 19.
Previously Published Artifact Patterns Compared to 38BK1011

	Carolina Slave		Georgia Slave	Struct 1	Struct 1 Yard	Struct 2-4	Struct 5-6	Struct 7	Yard Units	Animal Pen
	Revised Carolina Artifact Pattern ^a	Artifact Pattern ^a	Artifact Pattern ^b							
Kitchen	51.8-65.0	70.9-84.2	20.0-25.8	86.4	89.2	76.5	68.7	83.7	81.7	81.8
Architecture	25.2-31.4	11.8-24.8	67.9-73.2	9.9	14.1	20.3	29.8	12.7	14.9	13.6
Furniture	0.2-0.6	0.0-0.1	0.0-0.1	t	0	0	0	t	0	0
Arms	0.1-0.3	0.1-0.3	0.0-0.2	0.1	t	0	0	0	0.1	0.1
Tobacco	1.9-13.9	2.4-5.4	0.3-9.7	2.5	2.3	1.7	0	2.8	2.1	3.9
Clothing	0.6-5.4	0.3-0.8	0.3-1.7	0.1	t	0.1	0	0.1	0.1	0.1
Personal	0.2-0.5	0.0-0.1	0.1-0.2	0.1	t	0	0	t	0	0.1
Activities	0.9-1.7	0.2-0.9	0.2-0.4	0.9	1.4	1.4	1.5	0.7	1.1	0.4

^a Garrow 1982
^b Singleton 1980

time of John Berringer (who acquired the property in 1701) until the death of John Middleton II in 1826. This suggests that whatever activities might have been taking place in the main settlement, the slave settlement was relatively unaffected.

Pattern Analysis

As with the settlement at 38BK103, it is useful to examine these seven areas using what archaeologists call the artifact pattern – a way of arranging the collection of artifacts in various categories. As previously explained, these patterns help compare sites and have resulted in the definition of several broad or defining patterns. There are patterns representative of planters throughout the eighteenth and most of the nineteenth century (called the Revised Carolina Artifact Pattern), as well as eighteenth century slaves (the Carolina Slave Artifact Pattern), and nineteenth century slaves (Georgia Slave Artifact Pattern). The pattern resulting from an excavation depends, quite naturally, on the part of the plantation being examined. Understanding this is very important when we begin to compare and contrast patterns. The various comparative patterns, as well as those from these seven site areas at 38BK1011, are

shown in Table 19 (Table 20 provides an overview of all artifacts found at both 38BK103 and 38BK1011).

The data from Structures 2-4, Structure 7, the various yard units, and the animal pen all generally fit what is expected for eighteenth century slave settlements – very high kitchen remains (largely the result of Colono ware pottery) and low architectural remains (since the structures from that time period were ephemeral). The only areas of concern might be the seemingly high Activities Group for Structures 2-4, although this can perhaps be explained by the inclusion of the smoothing stones (which have not generally been recognized or tabulated on eighteenth century slave settlements).

What may be a little more troubling are the results from Structure 1 and the associated yard. There the kitchen artifacts are higher than would be expected. Given the thorough and nearly complete excavation of Structure 1 we believe that the results are very accurate and certainly representative of this particular dwelling. It is, however, a somewhat more substantial dwelling than others found and this

ARTIFACTS

Table 20.
Artifacts Recovered from 38BK103 and 38BK1011

	38BK103			Yard of Slave			38BK1011			Animal Pens	TOTAL
	Struct 7 and 9	Struct 8	Plant Work Areas	Slave Struct 1	Slave Struct 1	Slave Struct 2-4	Slave Struct 5 and 6	Slave Struct 7	Yard Units		
Kitchen Group	71	1376	140	6638	2070	1510	46	3134	1942	1132	18,059
Colono ware	42	1112	56	5654	1838	1307	22	2719	1627	1046	15,423
Porcelain, blue hand paint		13	3	10		2	2	7	12		49
Porcelain, undecorated		2		4	1		1	1	2		11
Porcelain, hand paint over glaze				1		1			1		3
Stoneware, brown salt glaze		11	1	5	1				6	3	27
Stoneware, gray salt glaze		5	1		1			2		1	10
Stoneware, Nottingham		10	1	1				4	1		17
Stoneware, Westerdale		1		2	1			3	7	1	15
Stoneware, Astbury		1									1
Stoneware, white salt glaze		7	1	7	3			1	6	1	26
Stoneware, Scratch Blue				1							1
Stoneware, burnt				2							2
Slipware, lead glaze buff body		18	1	126	28	21	1	38	29	1	263
Slipware, lead glaze red body		16		29	8	14	1	8	19		95
Delft, poly hand paint		1		1	1				1		3
Delft, plain		5		3	2	1	1	1	9	1	23
Delft, blue hand paint		1	1	2					1	3	8
Creamware, undecorated		3		16	2	5		3	1		30
Creamware, molded				8							8
Pearlware, blue edge		2									2
Pearlware, blue transfer print						1					1
Pearlware, blue hand paint						1					2
Pearlware, annular			1						3		3
Pearlware, undecorated		1				1					2
Whiteware, undecorated				1							1
Earthenware, coarse red		22		7		1		23	23	23	99
Earthenware, red		2		2	1		1		1		7
Earthenware, tortoiseshell			1		1			7			9
Earthenware, agateware								3	1		4
Earthenware, portobello ware								3			3
Earthenware, burnt		10								1	11
Glass, "black"	22	123	67	723	175	141	14	298	180	50	1793
Glass, brown	1										1
Glass, green			4	6	4	1	1	1			17
Glass, light green				2	1			2			5
Glass, manganese	1										1
Glass, clear		4	2	13	1	3	1	7	3	1	35
Glass, aqua	2	2		3	2	1	1	1	2		14
Goblet fragments		2		4	1				1		8
Bowl rim				1							1
Tumbler base						1					1
UID glass vessel		1		1					1		3
Knife blade	1	1									2
Utensil handle									1		1
Kettle fragments	2			4		6		2	4		18
Architecture Group	396	278	24	761	160	401	20	474	354	188	3056
Window glass	1	39	8	3	7	3		9	4		74
Paving stone		1									1
Pintle		2				1					3
Strap hinge											1
Spike						1			1		1
UID nail fragments	104	208	8	734	152	397	20	464	350	186	2623
Hand wrought nails	286	28	8	24						2	348
Machine cut nails	2										2
Wire cut nails	3										3
Furniture Group	0	0	0	1	0	0	0	1	0	0	2
Hinge, brass				1							1
Escutcheon, brass								1			1
Arms Group	0	2	0	3	1	0	0	0	2	1	9
Gunflints		2		3					2	1	8
Lead shot					1						1
Tobacco Group	2	62	1	194	54	33	0	105	51	54	556
Pipe stem	1	47	1	142	43	31		64	39	45	413
Pipe bowl	1	15		52	11	2		41	12	9	143
Clothing Group	0	3	1	9	1	3	0	2	2	1	22
Buttons		1		8		1		1	1		12
Buckle		1	1	1	1	2			1		7
Brass hat decoration								1			1
Shoe plate		1									1
Scissor fragment										1	1
Personal Group	0	0	0	3	1	0	0	1	0	1	6
Key fragment				2							2
Ring								1			1
Bead				1	1					1	3
Activities Group	1	19	4	70	34	28	1	1	26	25	7
Smoothing stones		7	2	42	25	16	1	19	18	5	135
Tools		1		4	1			2	1		9
Fishing weights, lead				2							2
Barbed wire fragment			1								1
Padlock fragment				1				1			2
Strap iron		1		1		2			2		6
Seal, lead								1			1
Washer, lead				1							1
Misc.	1	10	1	18	8	10		3	4	2	57
Worked stone				1							1
TOTAL	470	1740	170	7679	2321	1975	67	3743	2376	1384	21,925

difference, for reasons we can't explain, may be reflected in the artifact pattern. Just as these structures exhibit slightly elevated kitchen remains, Structures 5-6 reveal slightly depressed quantities of kitchen remains (in nearly equal proportions). It may be that we are seeing individual variation within a slave settlement – something that has not previously been documented.

even if forced to be used, would provide reliable results.

There are, however, alternative approaches to exploring what the ceramic assemblage can tell us about the status of the Crowfield ceramic collection. Table 21 compares the form of the ceramics, broken into categories of tableware, teaware, and utilitarian ware. We

Table 21.
Shape and Function of Ceramic Vessels at Crowfield (number, percent in parenthesis)

Shape	Struct 1	Struct 1 Yard	Struct 2-4	Struct 5-6	Struct 7	Yard Areas	Animal Pen	Totals
Tablewares	21	7	6	1	13	15	1	64 (94.1)
Flatwares	8	3	3		4	5		23 (35.9)
Hollow wares	12	3	3		9	8	1	36 (56.3)
Serving	1	1		1		2		5 (7.8)
Teaware		1	1			1		3 (4.4)
Utilitarian	1							1 (1.5)

While the yard areas failed to reveal pits or features that are suggestive of heaths or other work areas, the thin yard middens all very closely resemble the pattern of nearby structures – suggesting that trash was widely dispersed across the slave settlement (with undoubtedly some assistance from subsequent plowing).

find, first, that the number of vessels in any one area is small (most of the collection consists of Colono ware), but the totals for the entire site may be revealing, especially if compared to the Broom Hall assemblage.

Ceramics and Status

Tablewares are the common ceramic form, followed by teawares. Utilitarian vessels are the least common – perhaps because the Crowfield slaves had little to store or, alternatively, because that function was handled better by Colono wares. Within the tablewares

One of the most powerful tools for analysis of the economic value of archaeological ceramic assemblages is George Miller's (1980, 1991) CC Indices. The technique provides a rough approximation of the economic position of the plantation owner (or his slaves) depositing the discarded ceramics. Unfortunately, the indices are only appropriate on collections that date from the last two or three decades of the eighteenth century through the mid-nineteenth century. The indices have not been developed to deal with early eighteenth century collections such as those from Crowfield. Moreover, the quantities of creamware and pearlware are very low in the assemblage, so it is unlikely that the approach,

Table 22.
Comparison of Vessel Form (by %) from the Crowfield and Broom Hall Slave Settlements

Shape	Crowfield	Broom Hall
Tablewares	94.1	93.7
Flatwares	35.9	50.8
Hollow wares	56.3	49.2
Serving	7.8	-
Teaware	4.4	4.8
Utilitarian	1.5	1.5

the most common vessel form were hollow wares, accounting for 56.3% of the tablewares,

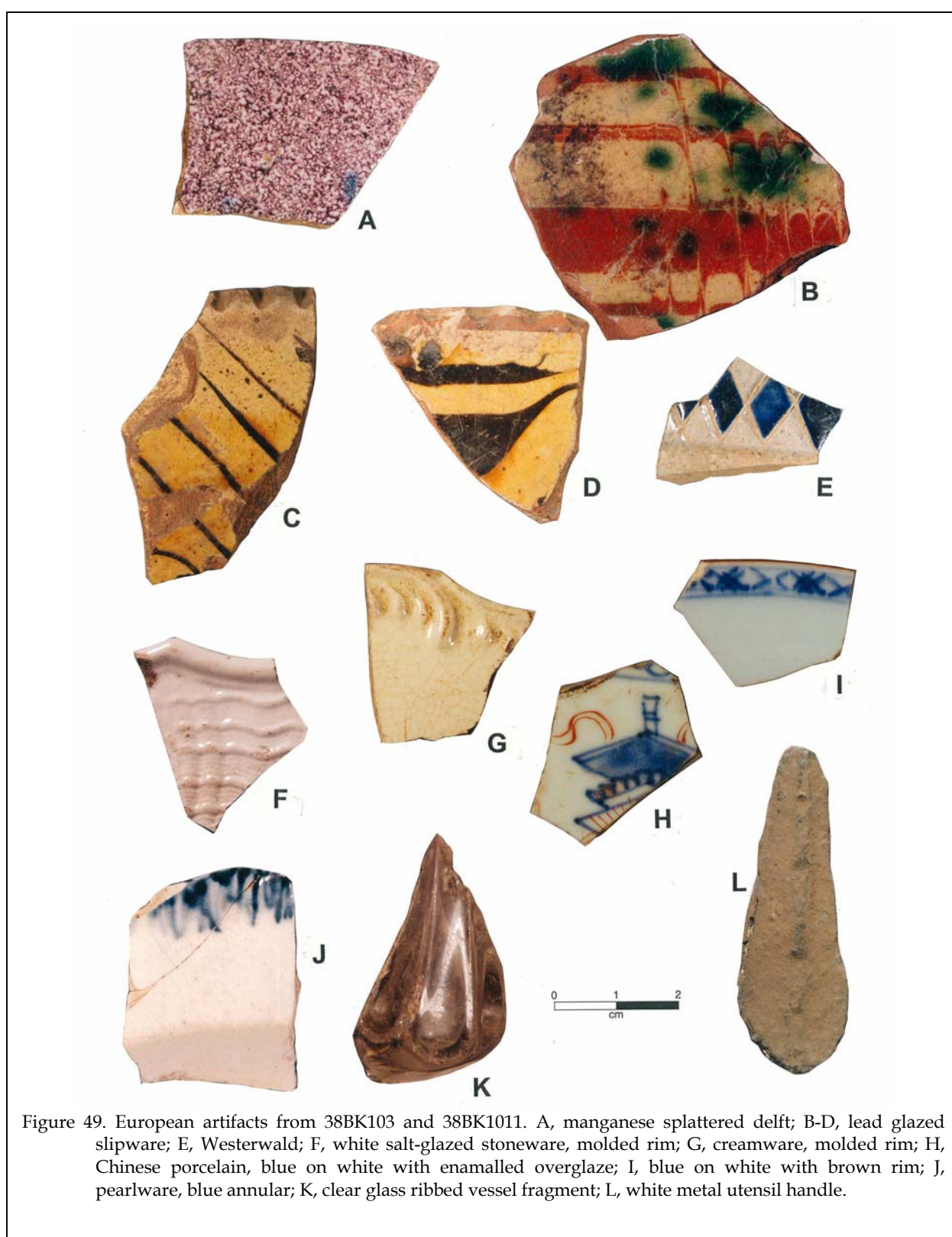


Figure 49. European artifacts from 38BK103 and 38BK1011. A, manganese splattered delft; B-D, lead glazed slipware; E, Westerwald; F, white salt-glazed stoneware, molded rim; G, creamware, molded rim; H, Chinese porcelain, blue on white with enamelled overglaze; I, blue on white with brown rim; J, pearlware, blue annular; K, clear glass ribbed vessel fragment; L, white metal utensil handle.



Figure 50. European artifacts from 38BK103 and 38BK1011. A, brass furniture hinge; B, gray gunflint; C, lead, possible flint wrap; D, "TD" pipe bowl; E, plain pipe bowl; F, brass button, South's Type 17; G, decorative brass button, South's Type 31; H, brass buckle; I, decorative brass object; J, cobalt blue opaque glass bead, Type W1c, oval, wire wound; K, red opaque over clear black glass bead, Type IVa, round, tube bead; L, green translucent glass bead, Type WIIb1, flat disc, wire wound; M, brass finger ring, jewels missing; N, brass tool handle; O, brass hinge for folding carpenter's scale; P, lead seal, impression not identified.

followed by flatwares and serving vessels, entirely comprised of large diameter serving plates. Since these may have functioned, for the slaves, as flatware their addition to the flatware category would increase it to 43.7%.

In many regards these findings are similar to those determined for the Broom Hall collection (see Table 22) that is in close physical proximity and reveals very similar dates. For example, teawares at both sites comprise between 4 and 5%, while utilitarian wares comprise 1.5%.

Curiously, the majority of the Broom Hall collection consists of flatwares (at 50.8%), while at Crowfield hollow wares are the dominant vessel form (at 56.3%). We have previously noted (see Trinkley et al. 1995:180) that some slave settlements from the eighteenth century have a much greater reliance on hollow ware. The difference can probably be attributed to the very large proportion of Colono ware (consisting entirely of bowl forms). The dominance of hollow ware, of course, is related to the dietary patterns of slaves, reflecting the importance of stews, soups, and similar one-pot meals. This difference between Crowfield and Broom Hall, therefore, may be an issue of the Colono vessels available. Or it may reflect a more fundamental difference in the two sites.

COLONO WARE

Introduction

While analysis of Colono ware has been attempted in many plantation settlements, often the number of sherds is too small to be able to examine the different aspects of the pottery. For consistent investigation analysis of Colono wares, Broom Hall Plantation (Trinkley et al. 1995) and Whitesides (Trinkley and Hacker 1996) also provide a detailed explanation.

A conventional definition for Colono wares, commonly called Yaughan, is a low fired earthenware created by slaves for their own use. River Burnished pottery, or Catawba, is thought to have been produced by Native Americans for sale or trade. Several studies have attempted to separate these two wares with thickness and surface treatment used as the primary distinguisher between the two types (see Wheaton et al. 1983).

There still remains disagreement in that the two wares, even when consistently sorted and examined, appear to reveal some degree of overlap (see Trinkley and Hacker 1999). The addition of different types has yet to aide in the understanding of the cultural context of the two wares.

For purposes of this study, we have chosen to use the term “River Burnished” instead of Catawba because we feel, as does Ferguson (1989), that enough research has not been conducted which would fully aide in our understanding of the influences and development of the pottery. The term “Yaughan” is used to refer to the locally slave-made pottery. When the two wares are discussed together, they are referred to as Colono ware.

Research Questions

Several questions were posed during the analysis of the Yaughan and River Burnished wares. The first question will examine the differences between 38BK103, structures found in a work area at the edge of the main Crowfield settlement, and 38BK1011, the Crowfield slave settlement.

Secondly, 38BK1011 will be compared to another slave settlement in Berkeley County, Broom Hall Plantation (38BK985), which was also dominated by Colono wares. We will examine the similarities and differences of Colono wares from the two sites since these two sites are spatially and temporally related.

Finally, we will evaluate the variations between Yaughan and River Burnished wares and determine if the two types can be consistently separated or be identified as varieties of the same type.

Analytical Methods

The Colono wares from Crowfield (38BK1011) were analyzed using the following variables:

- Sand Temper Size, based on the U.S.D.A. standard sizes for sand grains, defined as very fine (up to 0.1 mm), fine (0.1 to 0.25 mm), medium (0.25 to 0.5 mm), coarse (0.5 to 1.0 mm), and very coarse (1.0 to 2.0 mm);
- Sand Temper Shape, also known as degree of rounding, defined as angular (convex shape and sharp corners), subangular (convex shape with rounded-off corners), and rounded (convex shape and no corners);

- Frequency of Sand Inclusions, using a six point scale from 3%, being sparse to 50% being very abundant;
- Temper type: mica, quartz, shell, clay inclusions, and bone;
- Surface treatments: smoothing, identified when the sherds had a regular but not glossy surface, and burnishing, identified when the sherds had a semi-glossy finish;
- Core Cross-Sections, consisting of a visual observation of a freshly broken edge. Sherds were characterized as (1) oxidized with no core, (2) oxidized with an interior core margin, (3) reduced, being dark throughout with no core, (4) oxidized core with reduced interior and exterior, (5) reduced interior, and (6) reduced exterior;
- Rim diameter, measured in inches when a reliable arc was present;
- Rim form;
- Thickness, measured in millimeters and taken 3 cm below the lip of the rim. When this portion of the vessel was not present sherd thickness was taken as a distinct measurement;
- Presence of charring or sooting;
- Evidence of use (i.e. cutlery marks or spoon scrapes);
- Decoration; and
- Appendages.

After the physical attributes were analyzed, rim sherds were examined to determine the shape of vessels present.

Results of Traditional Analytical Techniques for 38BK103 and 38BK1011

The Colono ware sherds from the Crowfield slave settlement, 38BK1011, were 118

compared to those found at buildings associated with the Crowfield work area, 38BK103. Site 38BK1011 contained the highest number of Colono wares (n=1323) with 735 (56%) Yaughan sherds and 588 (44%) River Burnished sherds. Site 38BK103, however, yielded fewer specimens (n=328), but revealed a higher volume of River Burnished sherds (n=191 or 58.2%) than Yaughan sherds (n=137 or 41.8%). Using a simple chi square test we can determine that χ^2 is 47.881, this means that it is extremely unlikely that the differences in Yaughan and River Burnished pottery between these two areas is nothing more than the vagaries of sampling. It leaves unaddressed, however, the more vexing question of whether there is, in fact, any real difference between the two wares.

Temper

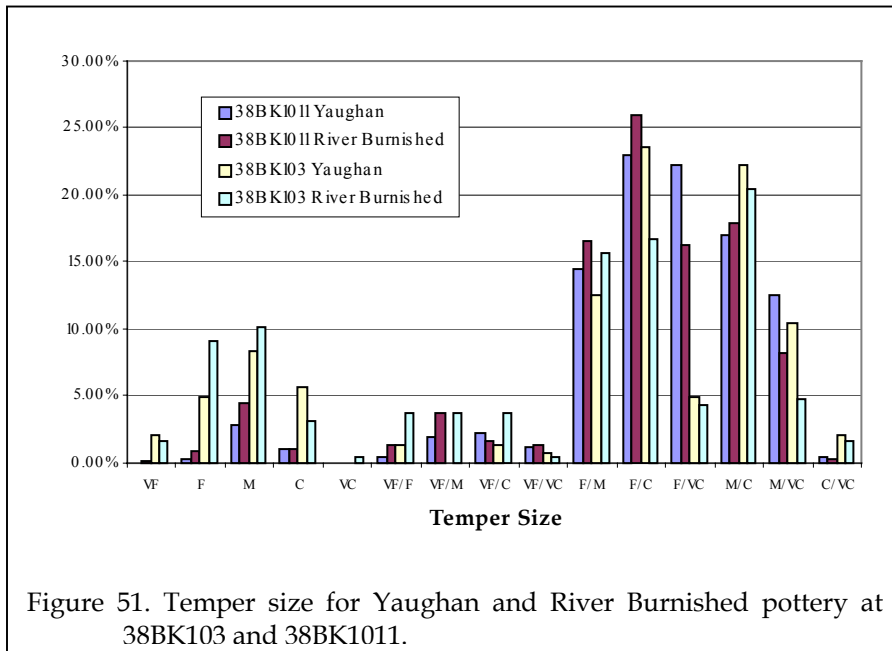
Macroscopic examination of both pottery types revealed that at site 38BK1011, 98% of the sherds used quartz in the temper along with other types of temper. Site 38BK103 showed similar results with 98.2% of the temper mixtures containing some degree of quartz. However, the number of combinations of temper types used in the Colono ware at 38BK1011 is higher, producing 13 different mixtures as opposed to six different mixtures used at 38BK103. We are inclined to attribute this difference to the sample sizes available for study.

A closer look at the temper from Yaughan and River Burnished wares at each site reveals similar results. At site 38BK1011, both types contain quartz alone as the temper found most commonly in the sherds. In addition, the second most common temper for both Yaughan and River Burnished wares consisted of quartz mixed with what appears to be argillaceous (ACF) clay clots. Also found in both types are pieces of a black material, shell, and bone. The only differences include one River Burnished sherd containing vegetation used as temper (or at least incorporated into the clay) and one

Yaughan sherd with a powder substance used for temper.

The majority of sherds found at 38BK103, even with fewer specimens represented, revealed similar results. The majority of both types used only quartz as temper with the second most common usage of quartz and argillaceous (ACF) clay clots. The differences in these two types at 38BK103 include one Yaughan sherd with quartz and chert as temper and one Yaughan sherd with quartz and the black substance, while none of the River Burnished sherds contained either chert or the black material.

River Burnished wares tended to contain more of the finer sizes while the Yaughan wares contained more of the coarser grains. The vessels at 38BK103 reveal similar results. Yaughan wares tended to contain more coarse grains than the River Burnished wares. However, both wares at this site contained more sherds with only a single size grain (most were fine or medium size grains). While the majority of the Yaughan sherds at site 38BK103, like at site 38BK1011, contained fine to coarse size grains, significantly fewer vessels contained fine to very coarse grains. The River Burnished sherds also contained slightly more medium to coarse size grains at site 38BK103.



Temper shapes in both types of sherds at 38BK1011 reveal mostly sub-angular grains. About 91% the Yaughan sherds used sub-angular grains with 96% of the River Burnished sherds revealing sub-angular grains. A small percentage of each type also contained some rounded shaped temper, but surprisingly it was the Yaughan sherds which contained the higher number of rounded grains with 9% of the total compared to only 4% of the River Burnished sherds which tend to be collected

from more riverine sources (Trinkley et al. 1995).

When comparing sites 38BK103 and 38BK1011, the only shared tempers are quartz, the red argillaceous clay clots, and the black substance. In addition, both sites produced sherds with no temper.

Likewise, the majority of the Colono ware collected at 38BK103 contained sub-angular shaped temper. However, all the Yaughan sherds (100%) used sub-angular grains with no evidence of angular or rounded grains. The River Burnished sherds also exhibited similar results with 99% of the sherds using only sub-angular sherds. Only 1% of the River Burnished sherds used angular or rounded temper grains (Figure 52).

Figure 51 illustrates the distribution of temper size in the vessels found at each site. The Yaughan and River Burnished wares from site 38BK1011 revealed similar results consisting of fine to coarse sand sizes. However, a closer look at the individual grains shows that the

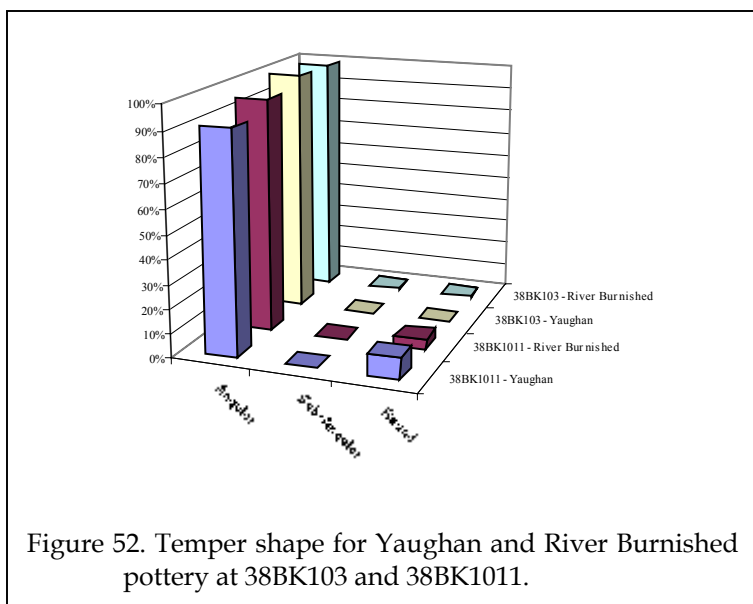


Figure 52. Temper shape for Yaughan and River Burnished pottery at 38BK103 and 38BK1011.

sherds at 38BK1011 were completely reduced (38%) or completely oxidized (21%).

The data at 38BK103 are somewhat different, revealing the majority was completely oxidized in both the Yaughan (53.3%) and River Burnished samples (40.8%). The second most common core type was completely reduced with 20.4% of the Yaughan sherds and 25.7% of the River Burnished revealing this type.

Sherd thickness was measured on all examples regardless of what portion of the vessel they represented (this change from the methods proposed is a result of the very small sample of rims). The thickness of Colono ware at both sites 38BK1011 and 38BK103 are fairly

The frequency of sandy inclusions in the two pottery types (Figure 53) at site 38BK1011 shows similar profiles. Both types have a majority of from 5 to 15% of inclusions. However, the River Burnished wares tended to have a slightly higher percentage of sherds that had 25 to 40% inclusions. The majority of both Yaughan and River Burnished sherds at 38BK103 had 3% inclusions. At this site, the higher the number of inclusions, the fewer sherds that were found.

Manufacture

While both the Yaughan and River Burnished wares at 38BK1011 had a large number of sherds with either completely oxidized or completely reduced cores, the majority of the Yaughan sherds (29%) were reduced on the interior with the core and exterior remaining oxidized. The majority of River Burnished

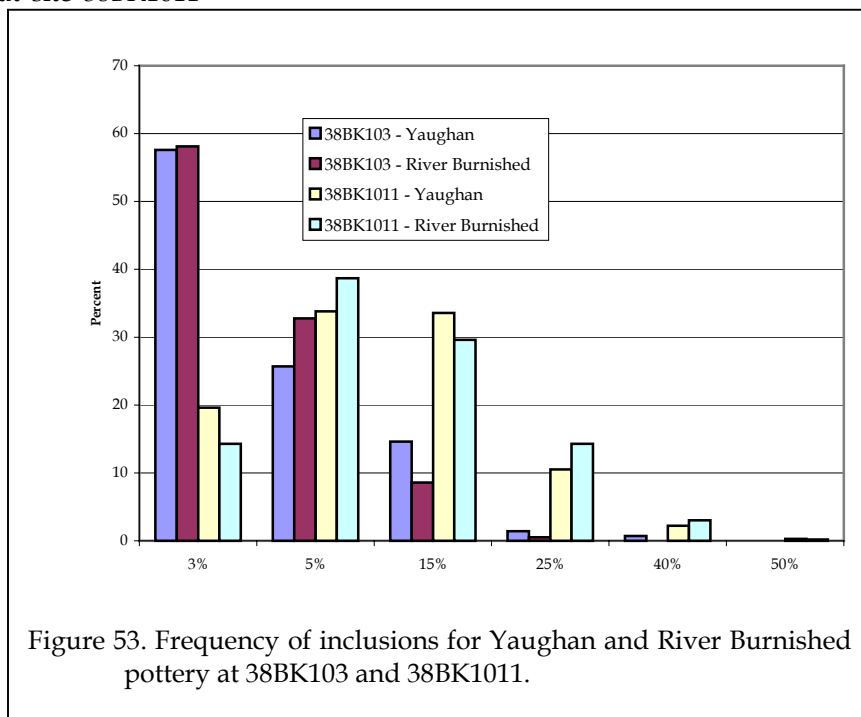


Figure 53. Frequency of inclusions for Yaughan and River Burnished pottery at 38BK103 and 38BK1011.

consistent for each pottery type. At site 38BK1011 the mean thickness of Yaughan ware is 8.17 mm while at 38BK103 the thickness is slightly less at 8.05 mm. The River Burnished sherds, which are generally thinner than

COLONO WARE

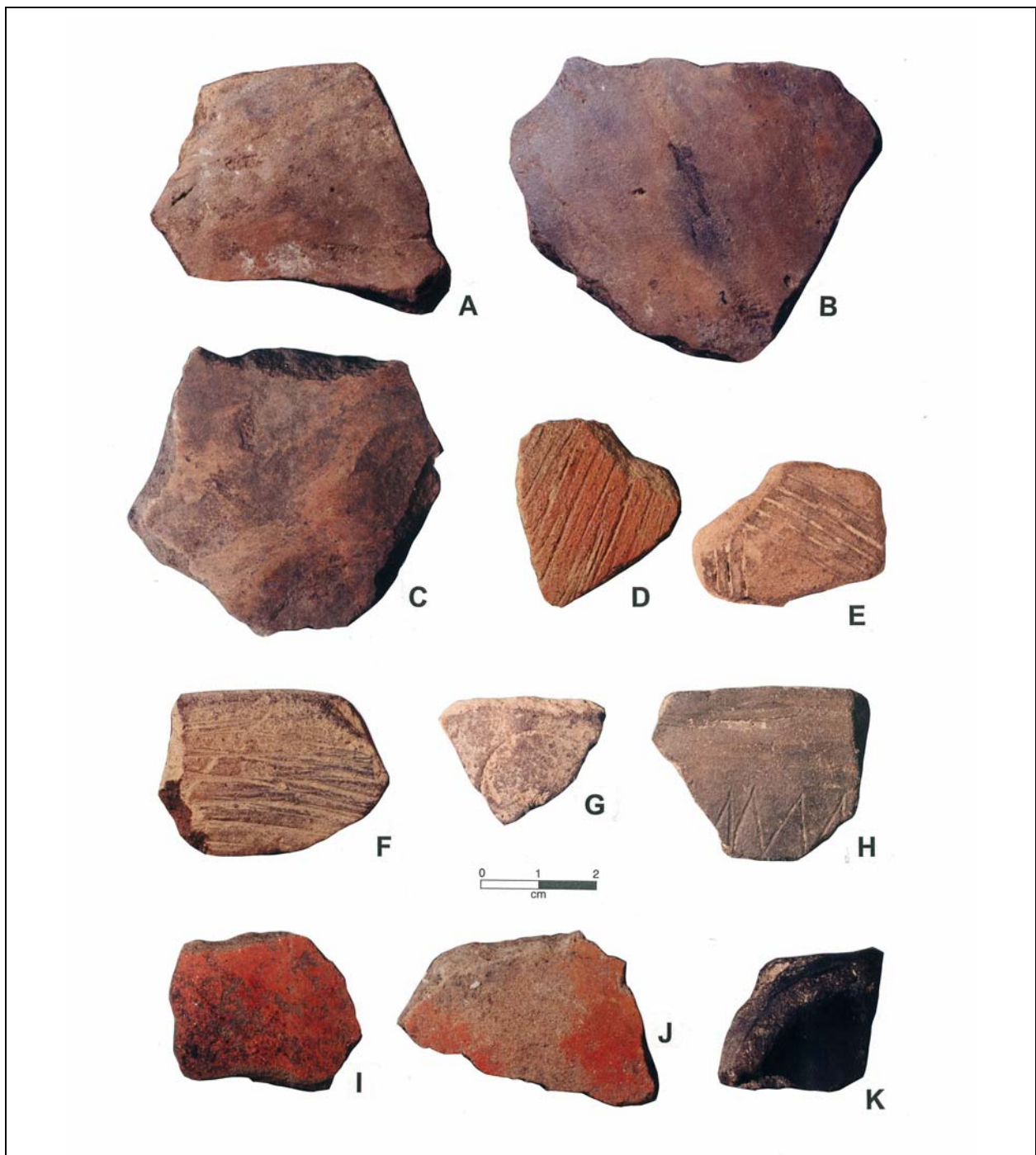


Figure 54. Colono pottery from Crowfield. A-C, examples of Colono showing burnishing facets; D-F, Colono sherds with parallel incisions; G, Colono with circular incision below flattened rim; H, Colono with triangles formed along rounded rim; I-J, examples of red film on Colono; K, Colono with foot ring.

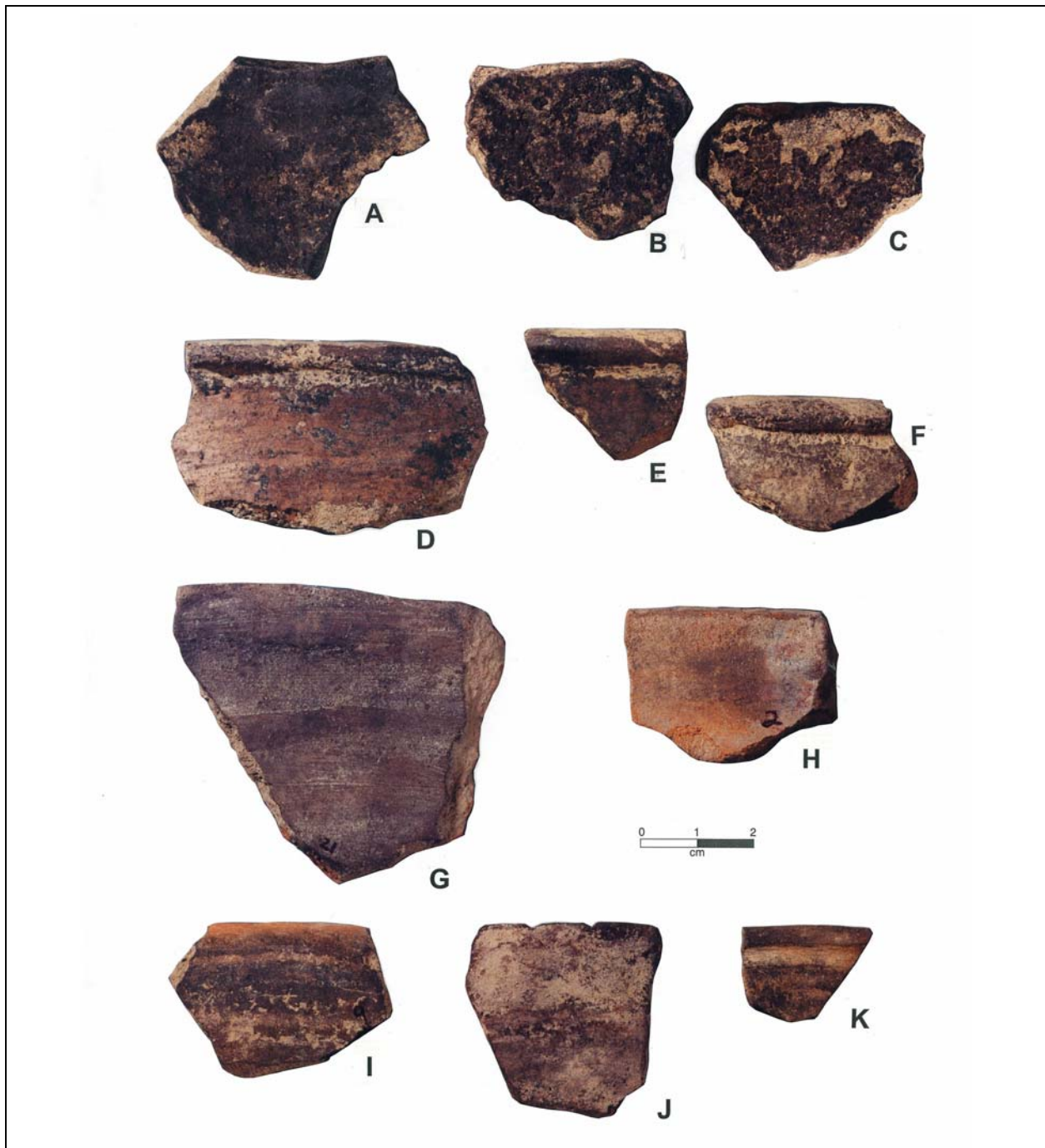


Figure 55. Colono ware pottery from Crowfield. A-C, charred material on the interior of Colono sherds; D-F, Colono with folded over rims and exterior scrape just below the fold (D also exhibits charred material on the exterior of the sher); G, abrasive wear on interior of Colono sherd at several heights parallel to the rim; H-K, wear on the interior of Colono sherds from another vessel being used to create a cover.

Yaughan sherds, measured 5.71 mm at 38BK1101 and 5.99 mm at 38BK103.

Use and Wear

Sooting or charring is sometimes evident on vessels used for cooking. At site 38BK1101, the River Burnished pottery evidenced more charring (found on 9.5% of the vessels), compared to the Yaughan specimens (where only 4.2% of the sherds show sooting). The vessels at 38BK103, however, produced fewer sooted sherds - 3.1% of the River Burnished and of the 2.8%.

Other evidence of use on the vessels, such as stirring or scraping marks, the use of cutlery, or a worn exterior from the vessel being placed on a hard surface, however, appeared more often at 38BK103 where 6.8% of the River Burnished wares showed signs of use compared to only 2.1% of Yaughan wares. The vessels at 38BK1011 showed fewer signs of use with 1.8% of the Yaughan and 1.5% of the River Burnished wares evidencing wear or use marks.

Surface Treatment and Vessel Decoration

Smoothing of the vessels at both sites tended to be fairly consistent. The Yaughan wares at site 38BK103 were more moderately smoothed (97.1%) on the interior and exterior with no highly smoothed specimens. Similarly, the River Burnished sherds were moderately smoothed (92.7%) on the interior and exterior, but with a higher percentage of highly smoothed (5.2%).

The smoothing of vessels from 38BK1011 shows similar results with the majority of Yaughan sherds being moderately smoothed (96.4%) and only 3.6% of the sherds highly smoothed. The River Burnished sherds, although containing a majority of moderately smoothed sherds (68.2%), contained more highly smoothed vessels (31.8%) than 38BK103.

Burnished surfaces were found on both the interior and exterior of both types of pottery. The majority of Yaughan wares at site 38BK1011, however, contained no burnishing on the interior or exterior of the sherd (78.6%). The same was true for the River Burnished pottery with 65.9% of the sherds evidencing no burnishing. However, the number of specimens with some burnishing, either on the interior, exterior, or both, was slightly higher in the River Burnished wares.

The vessels found at 38BK103 show slightly different results. The Yaughan sherds were equally likely to have both the interior and exterior unburnished (35.8%) or both the interior and exterior burnished (35.8%). River Burnished wares at this site were more likely to have both the interior and exterior burnished (34.0%) with only slightly fewer with the interior and exterior unburnished (30.9%).

Several types of decorations were found on the Colono wares at 38BK1011. The Yaughan sherds did not have as wide a range of decorative motifs as did the River Burnished wares, but even with the four different types of decoration that were found, this represented only 1% of the total number of Yaughan sherds.

Exterior striations were the most common decoration, but decorations of interior striations, incised lines, and an exterior red film were also encountered. The River Burnished wares at this site contained nine different decorative motifs that represent 3% of the specimens. The most common decoration was a red film interior, although vertical striations were also found in several sherds. Some of the River Burnished wares also contained the same decorations as the Yaughan, including interior and exterior striations and incised lines. The few other decorated sherds contained motifs of finger facets, horizontal lines, or punctate marks.

The data for site 38BK103 is entirely different. No Yaughan wares evidence any type of decoration. Only 1.6% of the River Burnished

wares had decoration and all those specimens consist of a red slip on the interior and exterior.

Rim/Lip Types and Appendages

At site 38BK1011, the percentage of rim forms between Yaughan and River Burnished wares were similar. Lips tended to be rounded, flattened to the exterior, flattened to the interior, or flattened. Both types of wares had a majority of rounded rims, with slightly fewer flattened rims. The rims at site 38BK103 were opposite from 38BK1011 with the majority of rims being flattened and slightly fewer rounded. Site 38BK103 also had slightly more rims that were flattened to the exterior than 38BK1011.

The mean rim diameters for the Yaughan wares were 6.98 inches at 38BK1011 and 6.88 inches at 38BK103. The River Burnished specimens reveal more variation between the two sites, with those from 38BK1011 averaging 6.80 inches, while those from 38BK103 had an average diameter of 7.29 inches.

Few appendages - all handles - were noted at either site. Handles represent 1.5% of the collection of River Burnished wares at 38BK1011 and 0.5% of the River Burnished collection at 38BK103. In contrast, only 0.4% of the Yaughan collections revealed handles at 38BK1011 and only 0.7% of the collection at 38BK103 were handles.

The size of the handles that were found varied more in the Yaughan wares at both sites than the River Burnished wares. The average size of the handles of the Yaughan wares at 38BK1011 was 18.83 mm, but at site 38BK103, the handles are much larger with an average of 30.5 mm. The size of the River Burnished handles was more consistent with the average at 38BK1011 about 21.0 mm and the average at 38BK103 about 17.8 mm. The data from 38BK103, however, is recognized as unreliable, since there were only two handles in the collection.

Vessel Forms

Site 38BK1011 produced 37 identifiable River Burnished vessels that were all bowls. Only one of those bowls had straight sides closely resembling a jar. Bowl diameters ranges from 4 to 10 inches. Yaughan vessels included 43 bowls and one jar. Bowls ranged from 5 to 10 inches in diameter.

At site 38BK103 there were 12 identifiable River Burnished vessels including eight bowls and four jars. The bowls ranged from 5 to 10 inches in. Yaughan vessels had four bowls and three jars. Bowl diameters ranged from 5 to 9 inches.

Comparison of the Colono Ware from the Crowfield and Broom Hall Slave Settlements

An effort has been made to compare the Colono wares at Crowfield (using primarily the larger collection available from the slave settlement, 38BK1011) to those previously reported from the Broom Hall slave settlement (38BK985, Trinkley et al. 1995:210) - a site that also dates to the early eighteenth century and that is found in close proximity to Crowfield.

Temper

The nature of temper material at the two sites is nearly identical - both exhibit "varying degrees of quartz." Also present, albeit in somewhat small quantities are either mica (at 38BK985) or black material, that may be a mica, from the current study. Temper size at each site also produced similar results with a broad range of temper size.

Temper shape, however, differs significantly. By far, the Yaughan and River Burnished wares from 38BK1011 are angular with very few rounded grains and almost no sub-angular material. The results at 38BK985 are very different with the majority of both Yaughan and River Burnished wares containing rounded grains (Trinkley et al. 1995:211). This

strongly suggests that different sand sources were being used at the two sites.

Similarly, the frequency of sand inclusions found at the two sites also differs. The majority of the Colono from Crowfield exhibits sparse inclusions. In contrast, at Broom Hall inclusions varied by ware, with River Burnished more likely to have sparse inclusions and Yaughan pottery more likely to have abundant inclusions (Trinkley et al. 1995:211). Since we have little sense that the paste was particularly well prepared by the Colono potters, this is also suggestive of differences in the clay sources themselves.

Manufacture

There seem to be generally strong similarities between manufacturing techniques at the two sites. At both Crowfield and Broom Hall the majority of the Colono wares were incompletely oxidized. Some differences, however, were noted. Both the River Burnished and the Yaughan pottery tended to be more completely oxidized at Broom Hall than at Crowfield. This is likely idiosyncratic behavior on the part of the potters themselves.

Sherd thickness at both sites was similar. River Burnished sherds at Broom Hall averaged 5.5 mm while at Crowfield the average is 5.7 mm. The Yaughan pottery from Broom Hall averaged 8.3 mm in rim thickness while that from Crowfield measured about 8.2 mm.

Use and Wear

Charring or sooting of vessels was found at both sites. A higher percentage of Colono vessels showed evidence of charring at Broom Hall (15.5%) than at Crowfield (5.3%), although we are uncertain what to make of this difference given the importance of post-depositional conditions. Sooting at Broom Hall was mostly found on the exterior of vessels, while at Crowfield both exteriors and interiors were sooted about equally.

Evidence of other types of use was also found on the vessels at both sites. More Broom Hall vessels showed evidence of use (25.2%) than those at Crowfield (1.3%), although we again believe that post-depositional conditions may be a factor in these findings.

Surface Treatment and Vessel Decoration

Smoothing of vessel walls was found at both sites. Most Yaughan pottery at both sites was moderately smooth. The bulk of the River Burnished pottery at Broom Hall was highly smoothed. At Crowfield most was moderately smoothed, although there were a small number that were highly smoothed.

These findings may be extended to burnishing facets. The Broom Hall River Burnished pottery produced extensive evidence of burnishing, while at Crowfield, with the lesser quantity of highly smoothed vessels, burnishing was less common.

Decorations found on the vessels at both sites tended to vary. Only one motif - incising - was found at Broom Hall and it was found only on the Yaughan pottery. In contrast, ten different motifs are found at Crowfield, with both Yaughan and River Burnished being decorated.

Rim/Lip Types and Appendages

Rims from both sites were generally rounded and flattened, but the rims from Broom Hall also contained other decorative designs such as "pie crust," punctuated, and "Queen's Ware" - generally reflecting influences from European wares.

Both sites produced handles from both River Burnished and Yaughan wares, although Broom Hall Yaughan pottery also exhibited leg and lid fragments.

Vessel Forms

Crowfield produced only two vessel forms – shallow bowls with gently sloping sides and jar forms. The two wares provide generally identical size ranges for the bowls – 4 to 10 inches for the River Burnished and 5 to 10 inches for the Yaughan pottery.

Broom Hall exhibits identical vessel forms – shallow bowls probably used for cooking and eating and taller jar forms that were probably used for storage. At Broom Hall the River Burnished bowls ranged in size from 5 to 12 inches, while the Yaughan bowls were slightly larger, ranging from 7 to 15 inches. The Yaughan jar forms ranged from 6 to 7 inches in mouth diameter, indicating that they lacked constricted necks. Another difference is that the River Burnished wares also included at least one plate, 16 inches in diameter.

Summary

This brief comparison reveals that there are recognizable differences between the low-fired earthenwares at the two slave settlements. Some differences, such as the temper, may reflect the available clay sources. Other differences, such as the decorations and vessel forms, almost certainly reflect differences in artistic intent. Other differences may simply be idiosyncratic. And of course some differences, such as the variation in vessel size, may only reflect sampling bias.

While temper at the two sites was similar, there seem to be significant variations in tempers, temper size ranges, temper shape, and frequency of inclusions – suggesting different clay sources, with the possibility of less uniformity of clay sources at Crowfield.

While the thickness of the pots at the two sites is nearly identical, other production activities varied between the two sites. There are noticeable differences in the degree of smoothing and presence of careful burnishing. Decoration of vessels at the two sites was very

different. And rim treatments also varied between the two slave settlements. Finally, firing seems to have been better controlled at Broom Hall than at Crowfield.

Even use of the wares may have been somewhat different. Sooting is more common on the Colono vessels at Broom Hall with charring normally found on the exterior of the vessel. The vessels that were sooted at Crowfield were equally likely to have deposits on the interior as the exterior. Broom Hall vessels were also more likely to show heavy use wear, such as stirring or scraping marks.

Although the two sites are relatively close, located across Huckhole Swamp from each other, and are from the same time period, operating in the eighteenth century, the physical attributes of the Colono ware are consistently different. The plantations do not appear to be isolated from each other, but there must have been enough distance to keep the flow of ideas between slaves contained within their designated plantation.

Conclusions

Just as we have seen differences – perhaps significant differences – between the Colono wares at Crowfield and Broom Hall, there seem to also be differences between the Colono pottery at the Crowfield slave settlement and that found in the vicinity of the various utility buildings. Interpretations, however, must be guarded since the sample size at the utility structures is far lower. Moreover, since there was no domestic occupation clearly documented at the utility structures, we are inclined to believe that much of the Colono found in this area has been redeposited from elsewhere on the site – resulting in much mixing of materials from different structures and uses.

More importantly, however, is the lingering research question concerning the validity of the River Burnished and Yaughan typologies. Research with a very large Colono assemblage at Broom Hall suggested that in

spite of very detailed analyses, it was impossible to consistently sort the two wares (Trinkley et al. 1995). The same analytical techniques have since been used with several smaller Colono collections, with the same results (Trinkley and Hacker 1996, 2001).

This study was an opportunity to again use a very large collection in the hope of being able to distinguish African American-made pottery from Native American-made wares. This effort, too, appears to have been unsuccessful. We are unable to obtain consistent and replicable differences between the two wares, beyond sherd thickness. While that trait does appear to be distinct at virtually every site, it is also an illusion of the methodology.

Sherd thickness (as well as care in finishing and the “feel” of the paste) is used as a sorting criteria. With the sherds sorted into two piles based on thickness it is no wonder that the two piles exhibit a consistent difference. This only serves to demonstrate that the sorter can effectively evaluate “thin” verses “thick” sherds. That doesn’t, however, indicate that there is a cultural difference between the two piles. And when we begin to look more closely at the piles we find that there is significant overlap in other areas, such as paste inclusions, size range, and frequency of inclusion.

While there can be no doubt, based on the historic records, that Native Americans produced some amount of what we call Colono ware (Simms 1847) we have been thus far unable to separate it from what we believe is likely to have been the much larger African American contribution. A similar conclusion was reached by Crane (1995) after exploring a large assemblage of Colono from the Heyward-Washington House in Charleston, South Carolina. He found a very heterogeneous assemblage that seems to defy classification. Although at least part of this diversity may be the result of vessels from wide ranging locations being brought into Charleston, he notes that there was a correlation between burnishing and

thin vessels, other attributes such as chemistry, number and size of inclusions, and vessel construction techniques did not correlate.

There remains considerable debate in the field of Colono ware with some arguing that the need is to split, not lump, Colono. The problem remains, however, that we have been unable after multiple efforts to find a consistent and replicable way of distinguishing various Colono varieties.

It is our belief that, as Singleton and Bograd (2000:9) have suggested, it may be time to look not at who made the pot, but rather how that pot was used. A following section on the analysis of charred materials found in Colono pots begins this process.

COLONO WARE SMOOTHING STONES

Michael Trinkley and Kerri S. Barile

Introduction

The previous section has examined the Colono ware from Crowfield and has briefly commented on the issues surrounding the ware's varieties and uses. In spite of the efforts to better understand the pottery, little has been done in the study of Colono manufacturing techniques and, especially, pre-firing preparation. This section examines 123 small smooth stones and speculates on their use in Colono ware production.

The Nature of Smoothing Stones

The coast is a stone poor area and lithics that are found in the region have generally been brought from other areas. The smoothing stones at Crowfield are all of three extralocal materials: quartz (62%, n=76), quartzite (31%, n=38) and sandstone (7%, n=9). Since no natural deposits of similar were found on the site, it is likely that all have been brought in from elsewhere, although this study did not attempt to identify source areas.

Just over half (52%) of the stones are broken. While this may be associated with use, given that the Crowfield site was cultivated throughout the nineteenth and first half of the twentieth century, it seems just as likely that the breakage is a result of post-depositional plow damage and other taphonomic factors.

When the stones are examined, without regard to the raw material the mean length is 32.06 mm, with a range of 10.12 to 86.59 mm and a standard deviation of 14.23 mm. The mean width is 23.86 mm, with a range of 8.97 to 47.18 mm and a standard deviation of 8.51 mm. The thickness of the stones ranges from 3.18 to 41.26

mm, with a mean of 8.91 mm and a standard deviation of 5.14 mm. These measurements fall into the USDA category of coarse gravel. The weight ranges from 0.55 to 185.00 g, with a mean of 16.14 g and a standard deviation of 27.42 g. The "typical" smoothing stone, therefore, is an oval about 1¼ inches by 7/8 inches and just under 3/8 inch in thickness. Table 23 illustrates the mean measurements for the stones when they are classified by raw material. This reveals that while quartzite and sandstone are very similar to one another in size, they are distinct from quartz. Yet in terms of weight the

Table 23.
Comparison of quartz, quartzite, and sandstone smoothing stones

Material	Mean Length (mm)	Mean Width (mm)	Mean Thickness (mm)	Mean Weight (g)
Quartz	29.79	22.17	8.07	15.43
Quartzite	36.68	26.70	10.23	17.95
Sandstone	31.28	25.60	10.74	14.58

sandstone specimens are actually most closely resemble the quartz specimens. Since there are only nine sandstone specimens relatively little can be made of these variations. It is more useful to note that the quartzite specimens are slightly larger, on average, than the quartz stones and, as a result, the quartzite material is slightly heavier. It is very unlikely that this difference is the result of sampling.

A sample of these stones is illustrated in Figure 56. This reveals that there are otherwise no distinctive characteristics. There is no evidence that the stones have been used for grinding, chipping, or hammering. There are no

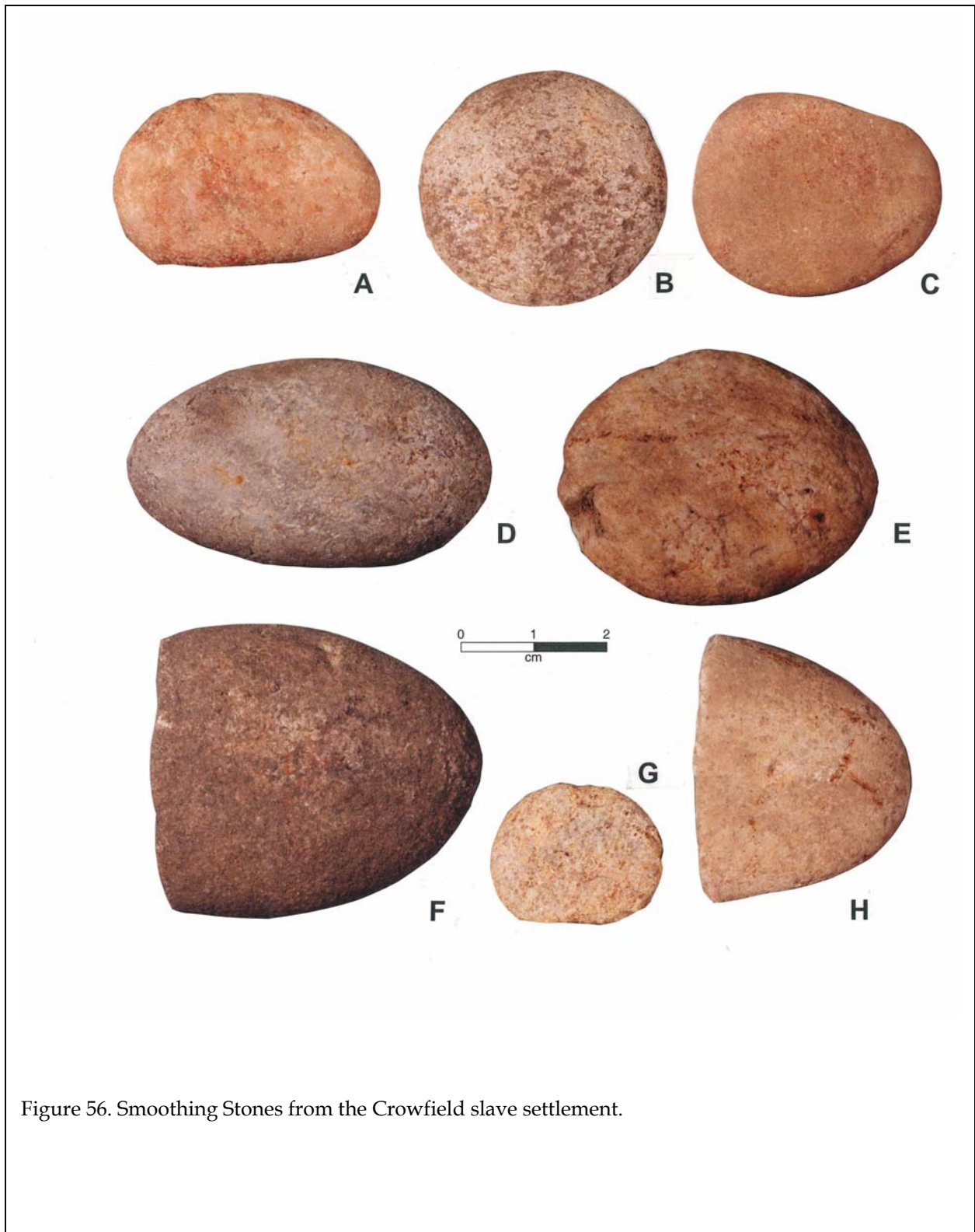


Figure 56. Smoothing Stones from the Crowfield slave settlement.

distinctive wear patterns and all appear simply water worn.

Function

It is unlikely that the stones are native to the Crowfield site - there is no mention of coarse gravel in any of applicable soil descriptions (Long 1980). Most significantly, in non-site areas there is no evidence of similar stones. In fact, these items seem to be closely associated with Colono pottery. Of the Colono found at the Crowfield slave settlement (38BK1011), 13,115 sherds (92%) were found in units that also contained smoothing stones (n=123).

The only excavation at the slave settlement not directly associated with domestic occupation was in the vicinity of the animal pen. This area (explored with 13.8% of the excavation units) produced only 4% of the smoothing stones. And at nearby 38BK103, which likely represents the location of utility - not domestic - structures, only eight smoothing stones were found. These two situations suggest that smoothing stones are not commonly found in non-domestic areas, even if the areas were used for the secondary disposal of trash. Smoothing stones appear to be items used and discarded or lost in close proximity to the slave living quarters.

We believe that the stones were used by the enslaved potter as a tool to smooth the pot during the manufacturing process. Shepard (1974:191) observes that a hard tool may be used either when the vessel is partially dry or while still wet and she notes that one possible tool is the "waterworn" pebble (Shepard 1974:66). Similar accounts are provided by Rice, who notes that "in burnishing a surface is finished by rubbing back and forth with a smooth, hard object such as a pebble . . ." (Rice 1987:138). While not specific to African pottery production, about which we know very little, there is an account of the historic Catawba that reveals the use of smooth pebbles were used for polishing (Fewkes 1944).

We acknowledge that even with strong domestic association and the nearly identical size and form when compared to other documented pottery smoothing tools the function of the stones is not certain. For example, one reviewer has suggested that in Ghana - in a region where no pottery is made - similar stones are used for plastering and smoothing floors. The stones are reported to be common items in a women's tool kit and to be found discarded across the site.

While such use is possible, it does not seem to us to be probable. First, the size of the stones seems entirely too small to provide any effective smoothing of large wall or floor surfaces. Moreover, we have not seen evidence, either at Crowfield or any other low country African American slave settlement, of prepared floors. In addition, this alternate explanation fails to explain as fully the association of the stones with areas of heavy Colono ware pottery.

Of course, the function of these stones is not certain - although we believe this analysis makes a strong case. Thus far only investigations by Chicora have noted the presence of these stones in slave settlements, although they have been found in varying numbers from Beaufort to Charleston. Additional research may help to better expand the range and further our understanding of these materials.

ANALYSIS OF CHARRED REMAINS ON COLONO WARE SHERDS

Introduction

In the introduction to the 1990 MASCA publication, *Organic Contents of Ancient Vessels: Materials Analysis and Archaeological Investigations*, the English researcher John Evans proudly announces that “potential problems” in such studies “have been largely overcome” (Evans 1990:7). Review of the publication reveals one article that has direct relevance to the relatively abundant deposits of carbonized material on the interior of Colono sherds at eighteenth century slave settlements.

Rolf C.A. Rottländer (1990) explores how lipid analysis can address questions concerning residue analysis. In brief he explains that lipids are found in virtually all human food – both plant and animal – and that these lipids, in particular fatty acids, tend to be “well preserved.” Using simple chromatographic procedures the lipids can be extracted and can then be identified by comparing the results to a “library” of known lipid profiles.

The extractive process has been adopted from food chemistry and consists of extracting the fat, hydrolysis of the glycerol ester, preparation of methyl esters, and separation of these esters by gas chromatography (Rottländer 1990:38).

An earlier study by Rottländer (1983) made the process appear even simpler. In that study he provided several convincing profiles, including one for pork fat – which is characterized by 25-30% oleic acid, 25-30% palmitic acid, and 10% myristic acid.

Tracing the research back even further, Rottländer and Schlichtherle (1978) provide a seminal work that also helps to explain how these charred masses were deposited:

The formation of these crusts is a very simple daily [sic] cooking process. During cooking water evaporates from a pulp creating a continual thickening and a decreasing movement of the liquid contents in the vessel. At the point when the liquid becomes too viscous, temperature surpasses 100° C [212°F] and the contents begin to burn onto the bottom of the pot. The end of the process is a completely charred mass (Rottländer and Schlichtherle 1978:261-262).

The authors go on to explain that while starch decomposes at about 200° C (392°F), fats are stable up to 300° C (572°F), making them an excellent target for analysis. In this early article the authors recount that, for example, a high proportion of oleic acid is an indicator of bone oil.

The enthusiasm of these early accounts suggested that the analysis of the charred remains from Crowfield sherds would be an easy – and almost certainly rewarding – task. In fact, given the simplicity and promise of exciting data we were a little confused why other researchers hadn't already done this research using other African American collections.

Table 24.
Major fatty acids and their sources

Acid	Carbon Atoms	Source
Caproic	C6:0	Milk fats, coconut, palm kernel oils
Palmitic	C16:0	Virtually all animal and vegetable fats, major component of lard
Stearic	C18:0	Animal body fats, e.g. lard
Lignoceric	C24:0	Widely distributed, but not in quantities
Oleic	C18:1	All animal and vegetable fats, pecan oil
Erucic	C22:1	Cruciferae (mustard family)
Linoleic	C18:2	Linseed oil, other drying oils, vegetable oils

Source: Swern 1979:1

unambiguous conclusions are rare (Roelf Beukens, personal communication 1999).

In spite of seemingly insurmountable obstacles we did eventually identify a commercial laboratory capable of running the tests and willing to provide their best judgment on the interpretation. Anresco, Inc. is a private California laboratory with more than 50 years of experience performing a broad spectrum of analytical and consulting laboratory

We soon discovered, however, that the task would be far from simple. The first task was to locate a lab able and willing to conduct the research. Inquiries to a broad range of research laboratories, including those at the Canadian Conservation Institute, the Smithsonian, the Research Triangle in North Carolina, and institutions in both England and Europe resulted in suggestions of other researchers to contact, polite responses that they were not (or no longer) set up to do this type of research, or no response at all.

studies. One of their specialties is food technology.

Understanding Lipids

Carbohydrates, fats, and proteins are all used by the body as sources of energy. Amounts ingested over the caloric requirements will generally be stored as fat and will remain available for later use (Wing and Brown 1979:47-50).

During these inquiries we also began to learn that lipid analysis had what might be described as a “checked” past. While lipids (as well as proteins) are very specific to their lifeforms, the breakdown products (fatty acids, glycerins, sterols, and amino acids) are not necessarily specific. In food research it is relatively easy to develop a library and correlate findings with probable foods. Quantitative analyses, however, begin to unravel when archaeological materials are involved because with these “ancient” materials the findings now depend not only on the original lipid, but also on the type of decay and the rate of decay. Moreover, archaeological materials are often contaminated by soil organics. These factors are hard to mimic in the lab and it is difficult to establish “libraries” of know origin. As a result,

Carbohydrates are found primarily in grains, fruit, and vegetables, while meat, fish, and dairy products contain few carbohydrates. It is likely that African American slaves had diets high in carbohydrates, largely due to their consumption of large quantities of grain (rice or corn) and tubers (sweet potatoes).

While proteins can be metabolized and converted into calories, if there is sufficient caloric intake from carbohydrates and lipids, proteins are broken down into amino acids and converted into body tissue. Proteins are found in both animal and vegetable material, with very high amounts found in meat, fish, dairy products, and beans. It is likely that slave diets contained low levels of protein, largely meat and perhaps beans.

ANALYSIS OF CHARRED REMAINS

Table 25.
Fatty acid profile and sterol analyses

Constituent	8-11-193		10-11-43		10-11-33		8-11-142	
	mg	%	mg	%	mg	%	mg	%
Caproic	53.406	13.8	38.160	7.2	Absent	-	Absent	-
Pamlitic	52.632	13.6	107.590	20.3	0.004	27.0	0.004	15.3
Stearic	32.508	8.4	172.780	32.6	0.005	33.9	0.003	10.6
Oleic	25.542	6.6	24.910	4.7	0.002	13.5	0.007	24.1
Gondoic	30.960	8.0	Absent	-	Absent	-	Absent	-
C21:0	26.316	6.8	36.570	6.9	Absent	-	Absent	-
Erucic	165.636	42.8	149.990	28.3	0.004	25.6	0.012	43.8
Lignoceric	Absent	-	Absent	-	Absent	-	0.001	3.6
Nervonic	Absent	-	Absent	-	Absent	-	0.001	2.7
Total Fatty acids (mg)	387.00	100.0	530.00	100.0	0.015	100.0	0.028	100.0
Cholesterol	NT		NT		0.007		0.009	
Beta-sitosterol	NT		NT		0.009		ND	

ND - not determined; NT - not tested

Lipids, including both fats and oils, are found in plant and animal sources. They are the most concentrated source of food energy, as well as carrying the fat soluble vitamins A, D, K, and E. In addition, lipids include the essential fatty acids - polyunsaturated fats that are necessary for normal nutrition. The three included in this category are linoleic acid, linolenic acid, and arachidonic acid. It is likely that the slave diet obtained most of its fat from cereals, vegetables, and the small rations of meat provided. Relatively little probably came from isolated fat products, fish, fruits, or dairy products (see Swern 1979:I:235-236).

Of particular importance to our analyses are fatty acids - components of the fat. These may be divided into saturated and unsaturated and some of the more significant are shown in Table 24. While there are 10 oil groups defined, only three are likely to be found in an eighteenth century slave food context in South Carolina. The Animal Fats Group consists of body fats such as lard and tallow of domestic land animals. These fats are characterized by a high content of palmitic and stearic (C16:0 and C18:0) fatty acids. The Oleic-Linoleic Acid Group includes oils of vegetable origin. The primary unsaturated acids are oleic and linoleic. Linoleic acid or fatty acids more unsaturated are present

in only small quantities or absent. The Erucic Acid Group includes mustard, ravisson, and rape oils that are dominated by erucic acid with small amounts of linolenic and eicosenoic acid. A fourth group that might be found in some contexts is the Marine Animal Oil Group, which is distinguished by the diversity of their unsaturated fatty acids. This group contains large proportions of Palmitic, Arachidic, and Behenic acids (Swern 1979:I:282-287).

Brief mention should also be made of the sterols - crystalline, neutral, unsaponifiable alcohols. The predominate, and characteristic, sterol of animal fat is cholesterol. The recovery of this is a clear indicator that animal fats are present, regardless of the fatty acids identified.

The Crowfield Analysis

Four sherds were sent to Anresco for study, two in February 1999 (catalog numbers 38BK1011-8-11-193 and 38BK1011-10-11-43) and two additional samples in January 2000 (catalog numbers 38BK1011-10-11-33 and 38BK1011-8-11-142). All four samples were from Slave Structure 1. The first two were among the best, meaning that the carbonized material was thick and was found over the interior surface of large sherds. The second two samples, sent to further explore

and confirm results obtained from the first samples, were not as large – therefore the extracted fatty acids are smaller in quantity. These second two samples, however, were also subjected to sterol analysis for the identification of cholesterol. If present, this would indicate that animal fats were present in the samples.

The analytical technique was very straight forward. The carbonized material on the sherd interior was scraped off. Samples from this residue were solvent extracted using mixed ethers. Extracted material was then subjected to fatty acids methyl ester and sterols analysis using capillary column GLC-FID (gas-liquid chromatography with flame ionization detection).

The results of this study are provided in Table 25. Perhaps most striking is that the quantities of fatty acids extracted from the initial two samples are much greater than the second set of samples – 387 and 530 mg compared to 0.015 and 0.028 mg. As mentioned earlier, the best samples had been sent during the first round of testing and the second samples – while far more representative of what is typically found – were smaller and had thinner deposits of charred material.

Beyond this, the next most interesting observation is that both of the second tier samples contained cholesterol, indicating that a fat of animal origin is present in the samples. Also present in one sample was a quantity of beta-sitosterol. This is one of the most common phytosterols, or plant fats, that are similar in structure to cholesterol, except they have an extra ethyl group on the side chain. All plants, including fruits, vegetables, grains, spices, seeds and nuts contain these sterol compounds or sterolins. Beta-sitosterol is most abundantly found in rice bran, wheat germ, corn oils, and soybeans. Of these, the most likely plant at Crowfield, of course, is rice bran – indicative of rice that has been only partially milled, allowing the bran to remain.

Otherwise, a comparison of Table 25 to Table 24 reveals that many of the fatty acids present in the samples are present in a wide range of animals and plants. The one fatty acid found in all four samples that does stand out as unusual is erucic acid. Ranging from 25.6 to 43.8% of the samples, it is found in significant quantities only in plants of the Cruciferae (or mustard) family. Although Miller et al. (1965) identify a wide range of Cruciferae that have been tested for their erucic acid, only three are common in South Carolina – *Brassica napus* or *B. campestris* (Radford et al. 1968:497), *Arabidopsis thaliana* (Radford et al. 1968:499), and *Lepidium perfoliatum* (Radford et al. 492). Of these three, we believe the most likely candidate is rape (*Brassica napus* or *B. campestris*) since they have very high erucic acid levels and are also very common plants.

Rape is an annual or biennial, generally as a winter crop in subtropical climates such as South Carolina. Characteristic features are four yellow petals in the form of a cross. Its black, brown, or sometimes yellow seeds are found in a pod-like fruit. *Brassica napus* is a much branched plant, growing to about 3½ feet in height, with lobed or toothed, succulent leaves (Vaughan and Geissler 1997:28-29). Seeds are produced, of course, only if the plant is allowed to mature.

Historically the plant has had many uses. Gray (1941:I:58) reveals that rape was a plant of minor commercial importance in Colonial America, apparently being traded as “greens.” As leaves are picked new ones grow, so the “greens” can be harvested over a relatively long season. We understand that the leaves have a somewhat bitter taste, but are generally like collards (Brian Siegel, personal communication 2000).

It also appears that Thomas Jefferson was familiar with *Brassica*, although perhaps as either mustard or turnips and, apparently, primarily as animal feed (Baron 1987:330, 508).



Figure 57. The rape plant, *Brassica napus*, from Grieve (1931).

The plant's use as a manure or forage crop is also documented by Grieve (1931).

The highest erucic acid content, however, is found in the seeds. The oil, which can be cold pressed from the seeds, is dark yellow or amber and has a pungent, mustard odor. While the oil contains a variety of fatty acids, most notable is the presence of 40-55% erucic acid (Swern 1979:I:416). Today the oil is recognized as having physiological effects, retarding growth, and having a low digestibility (Rocquelin et al. 1971). Nevertheless, it has historically been used for cooking. It may also have been used for lamps, although at least one source indicates that the oil burns poorly unless

it is significantly preheated (Olle Norén, personal communication 2003).

There are no similar findings from archaeological sites elsewhere in South Carolina. The closest approximation is the recovery of seeds from the Cruciferae family at a number of archaeological sites in downtown Charleston, South Carolina (see, for example, Trinkley 1983a:93 and Trinkley 1983b:117). These samples were generally dismissed as weedy intrusions into the urban environment. It may be that they reveal the collection and processing of rape seeds for oil.

Nevertheless, the profile shown in Table 25 does not precisely (or even generally) match that for rapeseed oil – clearly there is a mixture of foods and, likely, there have been changes through deterioration. The presence of cholesterol indicates an animal source as well. Table 26 shows a few primary fatty acid profiles for a small quantity of the fats that might be found in a slave settlement. We believe that this is almost certainly a mixture of rapeseed and animal fats from pig.

Summary

While this study is far from conclusive, the examination of the charred material on the interior of four Colono sherds did reveal that for only moderate expense and a turn-around time of only a few weeks, the identification of fatty acids and sterols was possible.

Interpretation, admittedly, is the more difficult challenge. While critics could argue that the results tell us only what is already known –

Table 26.
Fatty acid profiles for common fats

Fatty Acid	Pig Liver	Lard	Beef Liver	Beef Tallow	Rapeseed	Maize Oil	Rice Bran
Myristic (14:0)	-	0.5-2.5	1.3	1.4-6.3	0.8	0-0.3	0.4-1
Palmitic (16:0)	12.1	20-32	28.2	20-37	8.3	10.7-16.5	12-18
Stearic (18:0)	15.4	5-24	14.4	6-40	-	1.6-3.3	1-3
Oleic (18:1)	39.9	35-62	31.5	26-50	22.4	24.6-42.2	40-50
Erucic (22:1)	-	-	-	-	22.7	-	-

Source: Swern 1979:I

that the Crowfield slaves were eating a diet consisting of both plant and animal material – we believe the study has more significant implications. First, we cannot ignore the questions raised by the presence of the erucic acid *in all four samples* – clearly the source for this lipid was common in the diet of at least this particular household. We believe the source was the use of rapeseed oil in cooking. Was this oil processed from plants on the plantation (perhaps from crops grown primarily as forage), or was it purchased specifically for the slaves? And if the oil saw wide-spread use among African Americans what might be the epidemiological consequences?

Second, one sample documents the presence of at least animal fat and another reveals that both animal and plant fats are present. While this might be assumed, there are questions surrounding the diet of eighteenth century slaves that can't be convincingly addressed using available sources, either documentary or physical. The analysis of food residues offers another avenue for research.

In addition, as we have more samples – and we hope that this research spurs others to undertake similar work – we believe that a “library” may gradually develop, helping to better interpret the results.

ANALYSIS OF FAUNNAL REMAINS

Suzanne Coyle

Introduction

The vertebrate faunal collection from the Crowfield site was analyzed for this study. The faunal collection consists of 260 bones and bone fragments weighing 453.7 grams. Material was recovered by dry screening soil through 1/4-inch mesh.

This investigation includes those remains recovered from two separate areas of the Crowfield site. The first (38CH103) are two utility buildings likely receiving trash from the nearby plantation settlement. The second (38BK1011) is entirely an eighteenth century slave settlement.

As previously discussed, Crowfield is situated in the lower western portion of Berkeley County along the South Carolina coast. The two identified sites are overlooking Huckhole Swamp to the east and the site environs are dominated by this swamp-edge setting and the cultivation of rice during the eighteenth century.

This section provides details concerning this faunal material, including specific taxa recovered, the use and habitat preference for each species, and a comparison between the two identified areas of the Crowfield site. Comparisons with other sites similar in both time and location will also be discussed.

Analytical Techniques for Faunal Remains

The faunal collection from Crowfield was analyzed using standard zooarchaeological procedures. Where possible, the material was sorted according to class, order, genus, and species, and individual elements were

identified. The bones of each taxa were weighed and counted. Due to the extremely small size of the sample, MNI and Biomass estimates were not computed. This sample was highly fragmented (mean fragment weight=1.7 grams), with only 24 of the 260 fragments being identifiable to genera (less than 10 % of the site total).

Identified Fauna

Mammals

The most common identified species was domestic cattle (*Bos taurus*) (See Tables 27 and 28). Cattle have long been an important meat source in the history of the southeastern United States. However, while hides and other products made from the cow such as milk, cheese, butter, and buttermilk are valued, raising cattle as a meat source is relatively burdensome, especially when compared to raising pigs. Cattle must feed on a specific diet (grains and grasses), they store only 11% of the calories they consume, and yield only 50-60% dressed meat (Wilson 1995:98).

Maag explains that early Carolina cattle were a mix of Spanish and English stock, and were "distinguished by their color, size, and horns" (Maag 1961:9). To this he adds that most were either black Irish or red or reddish-tan from England. This account is largely repeated by Allen, although he also notes that cattle were also being imported from the West Indies (Allen 1868:34). Although we know nothing of the color and little concerning their size, the Liberty Hall collection does provide several examples of their horns. All are typical of short-horn cattle.

Table 27.
Crowfield Faunal Inventory

Site	Unit	Taxon	# of frags	Weight (g)
38BK103	1590R1400 Zone 1	<i>Malaclemys terrapin</i> carapace	4	12.4
38BK103	1600R1440 Zone 1 int.	<i>Bubo virginianus</i> , right tibiotarsus	1	4.7
38BK103	1710R1420 spoil-ext.	UID burned (brown and black)	27	44.9
38BK103	1710R1420 spoil-ext.	<i>Sciurus</i> left innominate	1	0.8
38BK103	1710R1420 spoil-ext.	<i>Sciurus</i> atlas vertebra	1	0.4
38BK103	1710R1420 Zone 1 ext.	UID mammal	2	9
38BK103	1710R1420 spoil-int.	UID mammal	3	6.9
38BK103	1710R1420 spoil-int.	UID burned (brown and black)	36	47.2
38BK103	1710R1420 spoil-int.	<i>Malaclemys terrapin</i> carapace	1	0.3
38BK103	1710R1430 spoil-ext.	UID mammal	3	6.6
38BK103	1710R1430 spoil-ext.	UID burned (brown and black)	17	14.1
38BK103	1710R1430 spoil-ext.	UID turtle carapace (burned brn)	2	2.2
38BK103	1710R1430 spoil-ext.	<i>Ovis/Capra</i> teeth	2	0.9
38BK103	1710R1430 spoil-ext.	<i>Bos taurus</i> , distal tibia fragments?	3	15.7
38BK103	1710R1430 zone 1	UID burned blk, wht	2	0.9
38BK103	1710R1430 zone 1	<i>Bos taurus</i> proximal phalange	1	6.5
38BK103	1710R1430 zone 1	UID mammal	4	6.9
38BK103	1710R1430 spoil-int.	UID mammal	3	12
38BK103	1710R1430 spoil-int.	UID burned brwn, blk, wht, blue	71	140.5
38BK103	1710R1430 spoil-int.	<i>Malaclemys terrapin</i> carapace, burr	2	1.8
38BK103	1710R1430 spoil-int.	<i>Bos taurus</i> distal phalange	1	22.2
38BK103	1730R1320 Zone 1	<i>Bos taurus</i> calcaneum fragment	1	26.1
38BK103	Feature 3	UID mammal	1	1.9
38BK103	Feature 4	UID mammal	1	0.7
38BK103	Feature 8	UID mammal	1	0.7
38BK103	Feature 8	UID burned brwn, blk, blue	11	13
38BK1011	1220R970 Zone 1	UID mammal	1	2.3
38BK1011	1420R910 Zone 1	UID (<i>Odocoileus</i>)	1	14.7
38BK1011	1420R930 Zone 1	UID mammal	2	2.3
38BK1011	1420R930 Zone 1	<i>Bos taurus</i> tooth enamel	3	3.1
38BK1011	1430R930 Zone 1	UID burned (black)	2	3.8
38BK1011	1430R930 PH 1	<i>Ovis/Capra</i> tooth enamel	1	0.2
38BK1011	Feature 7	UID mammal	3	0.6
38BK1011	Feature 8 W 1/2	UID mammal	34	22.1
38BK1011	Feature 8 E 1/2	UID mammal	10	4.8
38BK1011	Feature 8 E 1/2	<i>Ovis/Capra</i> tooth enamel	1	0.5
TOTAL			260	453.7

excellent grazing and provided a consistent water supply (Coon 1972, Dunbar 1961). Production of cattle quickly outstripped low consumption and by the early eighteenth century -- the time indicated by the previous artifact analysis -- beef was a principal export of the Colony to the West Indies (Ver Steeg 1975:114-116). This allowed the ties between Carolina and the Caribbean to remain strong and provided essential provisions to the large scale sugar plantations. The importance of cattle in Goose Creek area is suggested by the 1716 plat of the Elms plantation, which shows cattle roaming through the countryside.

Also recovered from the Crowfield site were the remains of white-tailed deer (*Odocoileus virginianus*). In general, the deer's preferred habitat is the edge of deciduous forests and open woods, although they will move to mudflats to feed on

Cattle raising was an easy way to exploit the region's land and resources, offering a relatively secure return for very little capital investment. Few slaves were necessary to manage the herd. The mild climate of the low country made winter forage more abundant and winter shelters unnecessary. The marshes, useless or difficult to make productive, provided

the grasses found there. Besides being valuable wild meat sources, deer also provided hides for leather.

Minor amounts of domestic sheep/goat (*Ovis/Capra*) remains were recovered as well. Compared to cow, pig, and deer, sheep were a

Table 28.
Crowfield Site Totals

Taxon	# of Fragments	Weight (g)	Frequency for Site (%)
UID burned mammal	166	264.4	58.28
UID mammal	68	76.8	16.93
Cattle, <i>Bos taurus</i>	9	73.6	16.22
Deer, <i>Odocoileus virginianus</i>	1	14.7	3.24
Terrapin, <i>Malaclemys terrapin</i>	7	14.5	3.2
Great Horned Owl, <i>Bubo virginianus</i>	1	4.7	1.04
UID Testudine	2	2.2	0.48
Sheep/Goat, <i>Ovis/Capra</i>	4	1.6	0.35
Squirrel, <i>Sciurus carolinensis</i>	2	1.2	0.26
TOTAL	260	453.7	100

relatively minor feature of American diet during the eighteenth century and declined further in the nineteenth century. Sheep would have provided wool for clothing and other household items.

Sheep meat (usually lamb) is an excellent source of protein, phosphorus, iron, zinc and vitamin B-12. Goats, most likely utilized for their milk rather than meat, are good sources of protein, calcium, and iron and are less fatty than lamb (Ensminger and Parker 1986).

Testudines

One turtle species was identified in the Crowfield collection - the Carolina diamondback terrapin (*Malaclemys terrapin*). This turtle is found along the coasts of North and South Carolina down to central coastal Florida. It thrives in estuarine environment and feeds on the marine mollusks of this setting. This species was an important food resource in the southeast and became quite a delicacy during the nineteenth and early twentieth centuries. The flavor was so popular that it took a protective legislative act in the mid-1950's to prevent the extinction of this species (Wilson and Wilson 1986:289).

Other turtles likely to be found in this environment include the mud turtle (*Kinosternon* sp.), snapping turtle (*Chelydra serpentina*),

softshell (*Amyda* sp.), musk turtle (*Sternotherus odoratus*), box turtle (*Terrapene carolina*), and cooter (*Pseudemys floridana*).

Commensal Species

Commensal species are those animals found near human habitations but which are not generally consumed by humans. Two commensal species were identified in the Crowfield sample: gray squirrel (*Sciurus carolinensis*) and great horned owl (*Bubo virginiana*).

The eastern gray squirrel prefers heavily forested habitats but it also lives in mixed forests and in city parks and other similar urban areas (Wilson 1995). The squirrel is sometimes classified as a wild mammal food resource for southeastern archaeofaunal investigations. However, due to this specimen's high quality of preservation, it was considered a recent commensal species in this instance.

The great horned owl is a large and powerful bird ranging over almost all of North America. This species can be seen in most environments in the southeastern United States, but especially in wooded areas where it will use hollowed trees or abandoned squirrel or crow nests to roost (Heintzelman 1979:99-101).

Analysis and Interpretation of the Faunal Remains

The Crowfield collection contains 260 bones and bone fragments weighing 453.7 grams (yielding a mean fragment weight of only 1.7 grams). This is an extremely small sample for zooarchaeological research and thus, any interpretations should be very carefully explored.

Reasons for such low recovery rates of faunal material from this site are may be related to the disposal practices of the inhabitants, in addition to the active plowing that has occurred since abandonment of the houses. Animal bones

Table 29.
Crowfield Faunal Remains by Site

Taxon - 38BK103	# of frags	Weight (g)	Frequency (%)
UID burned mammal	164	260.6	65.26
Cattle, <i>Bos taurus</i>	6	70.5	17.66
UID mammal	18	44.7	11.19
Terrapin, <i>Malaclemys terrapin</i>	7	14.5	3.63
Great horned owl, <i>Bubo virginianus</i>	1	4.7	1.18
UID Testudines	2	2.2	0.55
Squirrel, <i>Sciurus</i>	2	1.2	0.3
Sheep/Goat, (<i>Ovis/Capra</i>)	2	0.9	0.22
TOTAL	202	399.3	99.99

Taxon - 38BK1011	# of frags	Weight (g)	Frequency (%)
UID mammal	50	32.1	59.01
Deer, <i>Odocoileus virginianus</i>	1	18.12	33.31
Cattle, <i>Bos taurus</i>	3	3.1	5.7
Sheep/Goat, (<i>Ovis/Capra</i>)	2	0.7	1.29
UID burned mammal	2	0.38	0.7
TOTAL	58	54.4	100.01

remains from 38BK103 are burned while 38BK1011 has less than 1% burned. Burned and charred bones may be evidence for cooking meat while it was still on the bone. No longitudinal or transverse cracks could be seen on the small fragments which would have provided information on whether the bone was actually covered with meat or not (longitudinal cracks indicate that the bone was not fleshed during cooking, while transverse cracks indicate that flesh was present). Other activities may have produced the burned remains, such as accidental fire or intentional burning of defleshed bones, and thus should be considered when examining burned bones.

Nevertheless, this strong difference in burning may suggest that the faunal remains at 38BK103 came from a higher status table, where the meat was cooked on the bone, while the remains at 38BK1011 are more representative of one-pot or stew meats. With such a small sample size, however, this cannot be stated with any degree of certainty. Burned remains make up over 58% of the site total, thus constituting a large proportion of the total sample, and so are important in some regard.

One specimen (38BK103-11-7, unidentified mammal) exhibited what at first appeared to be 2 parallel cut marks. The marks are small - 6 millimeters in length and 2 millimeters in width, with less than a millimeter between the 2 marks. The exposed cortex appears lighter in color in relation to the surrounding bone, however, which may indicate that the bone had been cut more recently. The cut marks are not very deep nor sharp-edged which also suggest that they may have originated from a taphonomic source - in this case, probably being in close proximity to abrasive or rough objects. Since this specimen was recovered from a plowzone context, accidental marking seems the most reasonable

simply were not going into trash piles or sheet middens around the houses. They must have been discarded in more remote locations, perhaps in one of the several ponds, ricefields, or low swampy areas around the site. Alternatively, we must be willing to consider the possibility that the Crowfield slaves were not provided with much freshly butchered meat and had relatively few opportunities to acquire fresh meat.

As seen in Table 29, both areas are dominated by mammal remains - they constitute over 94% (n=192) of the 38BK103 sub-sample and 100% (n=58) of the 38BK1011 sub-sample.

An idea of how fragmented the sample actually is can be seen by observing the unidentified mammal remains separate from the other identified species: unidentified mammal makes up over 76% of 38BK103 and over 59% of the 38BK1011 sample.

Another observation is the marked difference in the proportion of burned mammal remains between the two areas. Over 65% of the

Table 30.
Comparison of the Crowfield Fauna to Similar Sites by Relative Frequency Percentages of the Site Total

Taxon	Crowfield 38BK103/11 01	Bonny Shore* 38BU791	Wappoo** 38CH1199/12 00	Liberty Hall*** 38BK1900
Cattle, <i>Bos taurus</i>	3.41	2.2	5.1	79.5
Deer, <i>Odocoileus virginianus</i>	0.38	0	1.2	0
Sheep/Goat, <i>Ovis/Capra</i>	1.52	0	0	0
Turtle, Testudine	3.41	0.8	2.13	0.1

* Kennedy 1993:97-101

** Kennedy 1992:D1-D14

***Trinkley et al. 2003

therefore not directly comparable to the Crowfield collection.

As seen in Table 30, cattle (and unidentified mammals, not shown) are the taxon of highest frequency for all three sites. Following are turtles, which also seem to be an important group for these riverine/estuarine sites.

explanation - although the absence of butchering marks is unexpected.

Besides the amount of burned material and this one mark, no other evidence of modification was observed.

Comparisons to Other Sites

Comparing the Crowfield faunal material to other sites similar in both time and location may help elucidate features of the sample (Table 30).

Bonny Shore Slave Row (38BU791), Spring Island, Beaufort County, South Carolina, is an early nineteenth century slave row located on the southern portion of Spring Island. Occupied from ca. 1810 to the start of the Civil War, it exhibits unusually low in frequencies of wild foods, although fish were abundant.

Wappoo Plantation (38CH1199/1200) is an eighteenth and early nineteenth century site located on the Stono River in Charleston County, South Carolina. It is a site heavy with mammals with additional high frequencies of birds and fishes.

Liberty Hall, also situated in the Goose Creek area, was unusual in its very heavy reliance on cattle to the near absence of other faunal remains. These remains, however, are thought to represent an overseer's diet and are

While the frequency percentages do not match clearly or entirely, there does seem to be a pattern among the four sites (even including the overseer's diet) with regard to the basic percentages of taxa recovered - identifiable large mammals such as cattle, deer, and sheep/goat tend to make up the bulk of the mammal resources, even if they contribute small overall frequency percentages.

Conclusion

The faunal material recovered from 38BK103/1011 is a small representative sample from an 18th century slave plantation located on the edge of Huckhole Swamp overlooking the extraordinary rice fields of Goose Creek. Large domestic mammals (cattle and sheep/goat) and a large wild mammal species (deer) were the most common taxa followed in frequency by turtles (terrapin). A relatively large proportion of unidentified burned mammal remains in the sample indicates that the collection (especially area 103) may be the discard of some kind of kitchen activity.

PHYTOLITH ANALYSES OF SELECTED SOIL SAMPLES

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Introduction

Phytolith analysis was conducted on four soil samples collected at the Crowfield Plantation site, 38BK1011, South Carolina. The samples were taken from two features associated with slave residences and activity areas. In addition to general observation of the paleobotany and floral landscape, the question of the presence of rice residues was a specific target of the study. Rice is a well-known Panicoid silica accumulator, indeed one of the most highly siliceous grasses. However, no reference work on the phytolith content on rice varieties compared to other panicoid grasses of the region has been conducted. Rice is a producer of lobate forms, but there is as yet no basis for confident identification of rice for this region. Nevertheless, frequency and context suggest that rice was present in two of the samples tested, both from Feature 8.

One significant historical trend that stands out in the phytolith record is the contrast between prehistoric and historic period assemblages. Specifically, the appearance and development of ethnically European settlements in the eastern United States stands out like the proverbial wounded digit. The general pattern is no surprise. European land use strategies and metal axes wreak havoc with the forests and a host of alien flora is introduced, some intentionally, some unintentionally. These, along with far more subtle aspects of this intrusion, are readily evident in the phytolith record.

Europeans introduced several taxa of festucoid grasses, including cereal grains, such

as wheat, barley, rye and oats; as well as fodder and meadow grasses for livestock and others as lawn ornamentals. In many parts of the eastern woodland, particularly farther to the south and along coastal zones, festucoids increase at the expense of native panicoid and chloridoid grasses. At Historic Morven, NJ, Piperno notes:

Festucoid grasses dominate the phytolith profiles, accounting for over 60% and higher of all [sic, i.e., grass) silica bodies. I have never before encountered grass assemblages like these. At other sites in the Mid-Atlantic region . . ., Festucoid grasses account for up to only 10% of the record, which is dominated by Panicoid and Chloridoid types. It is reasonable to conclude that Festucoid grasses at Morven are the remains of lawn grasses planted at the site. (Piperno, in Miller and Yientsch, 1987).

Actually, I have noted that virtually all early colonial period sites exhibit a similar effect. Festucoid grasses dominated the phytolith assemblage at Harpers Ferry, at Jefferson's Monticello Plantation, VA, the Moravian settlement at Bethabara, NC and at Colonial Hampton, VA.

Inasmuch as grasses are a major component of the flora of the region, both natural and ethnobotanical, the term Eastern Woodlands is misleading. Thus, phytolith assemblages can provide a wealth of significant

data even given current limits to interpretation of these assemblages. Significantly, Feature 8 is a marked exception to the rule showing a panicoid dominance. Such an "aberration" is itself a strong indicator of a specific domesticated grass dominating the assemblage.

Methods

Analyses conducted included 1. phytolith extraction from soil samples; 2. microscope scanning of extracted phytolith assemblages for identification, recording and image storage on videotape; and 3. compilation and interpretation of data. Videotape images were made by mounting a TV camera in the photo ocular to record significant, characteristic and/or interesting phytoliths observed. This also provides a convenient record to review in conjunction with development of a phytolith reference database for the region in the future.

Phase 1: Phytolith Extraction from Soil

Conventional soil extraction procedures for all soil samples were initially used with modifications employed as required by the nature of specific samples. Standard procedures generally followed that found in Rovner (1971, 1983). The soil was initially "cleaned" to promote disaggregation of all particles - inorganic, organic and biolitic - as follows:

1. About 20 ml volume of soil placed into clean beaker.
2. Distilled water added, stirred, and either placed in a centrifuge at moderate speed for 20 to 30 minutes, or let settle for a minimum of 4 hours. Piperno (1988) suggests one hour is sufficient for tropical soils. The additional time provided here was an arbitrary caution procedure given possible factors of soil differences. Only small to very small amounts of macrobotanical fragments, fibers or particles were observed.
3. The aliquot with suspended fine particles and very light fraction material, e.g. floating rootlets,

fibers, charcoal, etc., was decanted and discarded.

4. To oxidize and eliminate (sticky) organic residues, the soil was treated with 5.25% sodium hypochlorite solution (i.e. commercial household bleach). This was successful in precluding use of concentrated hydrogen peroxide or nitric acid solutions which are more difficult to handle and far less environmentally benign (with respect to disposal, for example.)

5. Following oxidation, soil samples were rinsed 2-3 times with distilled water, stirred, settled or centrifuged and decanted.

6. Dilute HCL (20 ml) was added to each sample to remove carbonates. Samples were allowed to settle, the aliquot decanted and discarded.

7. Each sample was rinsed 3 times with distilled water.

8. The soil was re-suspended in distilled water to which a deflocculant (i.e. Calgon) was added to suspend very fine silt particles. After centrifuging or settling overnight, the aliquots with suspended fine particles were decanted and discarded. Step 8 was repeated as necessary, until aliquot was clean.

9. Soil was placed in a drying oven set at 90°C until dry.

10. Heavy liquid for flotation separation was prepared by dissolving zinc bromide powder in slightly acidified distilled water until a specific gravity between 2.3 and 2.4 was achieved. This was easily determined using a commercially-made calibrated hydrometer.

11. A 5 ml, approximately, volume of dry soil was added to heavy liquid in a bent, clear tygon tube that was squeezed gently to "wet" the soil. The bent tube was inserted into a (lightly greased) centrifuge shell and centrifuged at moderate speed for 30 minutes to float phytoliths.

12. After centrifugation, clamps were placed on both vertical arms of the bent tube just below the floatant surface in the tube. A wash bottle stream of water was used to rinse the floatant from the tygon tube into a 50 ml centrifuge tube.

13. Distilled water was added to the centrifuge tube to about 40 ml level. Centrifugation precipitated the phytoliths. The aliquot was decanted. This step was then repeated.

14. Phytoliths were then decanted to a shell vial and placed in a drying oven to remove excess liquid.

Phase 2: Microscope scanning

The phytolith extracts were quick-mounted in distilled water and viewed in an optical microscope at 400X. Mounts were prepared by pressing a slide over the mouth of an open vial that was then inverted. The extract was allowed to settle on the slide and then reverted to its original orientation, the slide quickly removed retaining a drop of fluid with a portion of extract included.

Whole slides were scanned at 100X to find clusters of particles that were then scanned at 400X to determine the character of individual particles. Particles of interest, especially those of morphological and taxonomic significance, were recorded on videotape using a hi-resolution CCD television minicamera mounted on the microscope. While Canada Balsam is used to mask inorganic silica while viewing, past experience indicated that this also has the apparent negative effect of decreasing the contrast between particle and background. For purposes of contrast with background, distilled water mounts appeared superior.

Representative and especially taxonomically significant phytoliths and other biosilica bodies (e.g. diatoms and sponge spicules) in each slide mount were noted and recorded on videotape. This makes assemblages of particles used in the current study available

for re-study when local taxonomic reference work is conducted.

Phase 3: Compilation and interpretation of data

No phytolith reference database developed from phytolith extracts of living plants in the site's region was available or specifically prepared for this study. This severely limits taxonomic specificity in interpreting phytoliths present and, predictably, leaves a substantial number of morphologically distinctive (and sometimes frequent) phytolith types in the category of "unknown". However, recent publications, especially Rapp and Mulholland 1992, provide substantial verification for both general and specific taxonomic assignments of phytoliths.

In the absence of a regional phytolith database, published typological information was employed for classification of phytolith types. For grasses, the three tribe classification of Twiss, et al. (1969) into festucoid (wet, cool habitat), panicoid (wet, warm habitat) and chloridoid (dry, warm habitat) phytolith classes is the conventional standard, along with elaborations by Brown (1984).

For angiosperms (e.g. deciduous trees and shrubs) and conifers, Rovner (1971), Geis (1973), Klein and Geis (1978) provide some guidance for eastern woodland flora content. The most elaborate work to date in these taxa has been done by Japanese experts (Kondo 1974, 1976, 1977; Kondo and Peason 1981; Kondo and Sase 1986; Kondo et al. 1987) primarily on Asian flora. However, considerable similarity of illustrated phytolith forms at the genus level between American and Japanese plants provide confident guidance in the taxonomic assignment of distinctive phytoliths in these categories. Most recently studies by Cummings (1992) and Bozarth (1992) have confirmed and refined the typology and taxonomy of phytoliths in dicotyledonous taxa. Distinctive material can now be attributed specifically to Asteraceae (Compositae) - a dicotyledonous group well

represented and ethnobotanically significant in the eastern United States. While soil phytolith studies in the general region of the mid-Appalachians and Atlantic seaboard are few in number, general comparisons can be drawn from studies at such eastern historic period sites as Monticello, VA (Rovner 1988b); Hampton, VA (Rovner 1989); Harpers Ferry, WV (Rovner 1994); Jordan Site (31NH256), NC (Rovner 1984); and 31MK683, NC (Rovner 1995). Moreover, the number of sites tested in this region is increasing and recent reports (Rovner 1997, Owens and Rovner, 1997) provided a basis for general patterns of land use and botanical history for the historic period, seventeenth through nineteenth centuries, in conjunction with archaeological history.

Results

General Conditions

All four samples provided rich and diverse assemblages of phytoliths. While a significant frequency of non-grass occurred in every samples, continuous forest canopy is not indicated. Non-grass, does not necessarily mean trees, as weedy forbs and shrubs may be contributors. Grass phytoliths are frequent indicating significant open canopy. Palmetto is present but weakly represented. The consistent presence of sponge spicules, diatoms, and grass bulliforms indicate rather wet conditions, if not the presence of open water nearby. This is obviously consistent with a rice producing plantation.

Feature 8 and Feature 9 Samples

A significant pattern of differences occurred between the pairs of samples from the two features, respectively in grass short cell categories indicating a reversal of dominant grass phytolith classes present. As seen in Table

31, both Feature 9 samples are dominated by Chloridoid short cells followed by Festucoid short cells while Panicoids have the lowest frequency. This is the "typical" grass profile encountered by in a detailed study of phytolith assemblages on Skidaway Island, GA. Owens and Rovner 1997). It is interesting that chloridoids, probably *Spartina*, prefer warm, dry conditions, while festucoids dominate in cool, wet conditions. Thus, the extremes are well represented while the intermediate panicoids are a clear minority. It is likely that strong seasonality is represented, i.e., the festucoids representing cool, wet season grasses (winter, spring) while chloridoids dominate during hot, dry summer and fall seasons.

On the other hand, both Feature 8 samples show a clear dominance of panicoid shot cells. It seems likely that ethnobotanical uses of panicoid grass are the contributing factor. Two panicoid domesticates are viable candidates, maize and rice, although the history of rice production provides strong support for the later. Both maize and rice are heavy silica accumulators and both produce large numbers of lobate panicoid short cells. Rice from this region has not been tested for its phytolith content, but maize phytoliths have been

Table 31.
Frequency Counts of Selected Phytolith Types
(n= population county of short cell grass phytoliths only)

Sample	n=	Palm	Panic	Chlor	Festu	Elong	Bullif	Trich	Nongr	Diatom	Spong
Fea 8 top	70	4	34	18	14	pres	19	8	freg	7	5
Fea 8 bottom	100	2	48	26	26	comm	freg	freg	freg	4	14
p	100	1	25	44	31	comm	freg	comm	freg	14	5
Fea 9 bottom	100	3	19	56	25	comm	freg	freg	freg	0	3

recognized at a number of sites in the region.

Two factors in the phytolith assemblage suggest rice, by default. First, maize typical produces a significant number of quadrilaterally symmetrical lobate forms termed, cross-bodies. There were rare to absent. Secondly, many of the lobates were asymmetric, with split (i.e. "extra") lobes at the ends. Complex or polylobates are common in panicoid grasses, but

the extra lobes usually occur along the narrow central waist of the lobate. Thus, many of the polylobates are not typical of native panicoid grasses suggesting the possibility of a introduced grass, e.g. domestic rice.

In sum, while verification through systematic classification of phytoliths in relevant reference grasses, it seems very likely that the increase in panicoid grass in Feature 8 results from the presence of rice.

Conclusions

Phytolith data suggests that the area around Features 8 and 9 was partially forested, but with significant open spaces including wet marsh or open water, e.g. rice plots. Both local grasses were present in both features while Feature 8 shows a strong indication of the presence of domestic rice.

POLLEN ANALYSES OF THREE CROWFIELD FEATURES

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Introduction

Three samples were submitted for study. The first was from 38BK103, Feature 3, identified as a ditch. It is thought to date to the postbellum since it was filled with phosphate rock debris. The second sample is also from 38BK103 and came from Feature 4. This is a builder's trench associated with the rice barn. The final sample came from 38BK1011, Feature 8. This is a pit associated with a slave structure and was thought to be for clay extraction and later used for refuse disposal.

38BK103-Feature 3

Samples were macerated for pollen and ten slides were scanned completely to identify pollen types and percentages and palynofacies characteristics. This sample contained no pollen grains, but did contain a few fungal spores and hyphae. Some *Riccia* type fungal spores were found. These are often indicative of farming activities.

The palynofacies debris consisted of fine grained, highly degraded, granular debris with no discernible charcoal, or woody tissues. Plant fragments consisted of a few cell wall fragments and some cell fillings but no intact tissues.

38BK103-Feature 4

Samples were macerated for pollen and ten slides were scanned completely to identify pollen types and percentages and palynofacies characteristics. Only a few pollen were found (3 *Pinus* and 1 *Alnus*). Several *Riccia*-type fungal

spores and a few other unidentified fungal spores and hyphae were encountered.

The palynofacies debris consisted predominantly of fine-grained, highly degraded, granular debris with no discernible charcoal, or woody tissues. A few more intact tissue fragments were encountered in this sample than in 38BK103-Feature 3 above, but all were still highly degraded.

38BK1011- Feature 8

Samples were macerated for pollen and ten slides were scanned completely to identify pollen types and percentages and palynofacies characteristics. Pollen and spores, fungal remains, and tissue fragments were considerably more common than in either of the other two samples from this site. The palynomorph types identified are indicated in Table 32.

Palynofacies debris consisted dominantly of angular to rounded, intact to partially degraded, tissues and tissue fragments, ranging in size from a few micrometers to a about 1000 micrometers, with a lesser amounts of finer grained debris. The presence of numerous "agglutinated" fecal pellets, composed of fragmented tissues (and, in one case, an intact cluster of pollen) rather than fine-grained, digested debris suggests the possibility of insects foraging on above-surface parts of plants (such as, leaves, stems, flowers, fruits, etc.) rather than reworking of organics within the soil zone by soil bioturbators. Although maceration for pollen would normally be expected to destroy fecal pellets, intact fecal pellets have

been noticed by others in pollen extractions prepared from crop foraging insects (such as corn worm beetles and larvae). Also present in this sample were leaf cuticles and numerous dispersed epidermal stomate guard cells from unidentified leaves, plus a few unidentified wood fragments, and a few fragments of charcoal.

Table 32.
Pollen Identified from the Crowfield
Feature 8 Sample

Types Identified	No. Found/10 slides
Arboreal	
<i>Pinus</i> (pine)	9
<i>Liquidambar</i> (sweet gum)	2
<i>Myrica</i> (wax myrtle)	7
<i>Carya</i> (hickory)	2
Nonarboreal	
Compositae (composites)	2
Cyperaceae (sedges)	1
Gramineae (large, rice?)	5
Bryophytes (mosses)	3
Nonpollen	
UID fungal spores	25
Riccia-type fungal spores	10
Algae - Zygnemetacese	1
Algae - <i>Pseudoschizae</i>	9

The presence of large gramineae pollen (of the cultivated cereal grain type), abundant fungal spores (including *Riccia* type common in farm fields), and the above-mentioned agglutinated fecal pellets would be consistent with rice storage either in this feature or nearby. The arboreal pollen present (pine, sweet gum, wax myrtle, and hickory are typical windblown genera from the surrounding southern coastal plain forest. Sedges and composites are also natural from the surrounding area. The presence of the mosses and two types of algae might indicate ephemeral wet conditions at the site (consistent with a depression or ditch that occasionally was moist long enough to support these types).

ETHNOBOTANICAL ANALYSIS

Introduction

Ethnobotanical remains were recovered from a small number of excavation proveniences associated with both the slave settlement (38BK1011) and main plantation area (38BK103), including handpicked samples from ¼-inch dry screening, as well as water floated samples from features. All of the hand picked materials (14 samples, all from 38BK1011) and five samples of the floated collections (four from 38BK1011 and one from 38BK103) were incorporated into this analysis to ensure that a broad range of materials associated with both the two settlements were examined.

Flotation samples, offering the best potential to recover very small seeds and other food remains, are expected to provide the most reliable and sensitive subsistence information. Samples of 10 to 20 grams are usually considered adequate, if no bias was introduced in the field (we have found that samples of 20-30 grams often have a better range of remains present). Popper (1988) explores the "cumulative stages" of patterning, or potential bias, in ethnobotanical data. She notes that the first potential source of bias includes the worldview and patterned behavior of the site occupants -- how were the plants used, processed, and discarded, for example. Added to this are the preservation potentials of both the plant itself and the site's depositional history. Of the materials used and actually preserved, additional potential biases are introduced in the collection and processing of the samples. For example, there may be differences between deposits sampled and not sampled, between the materials recovered through flotation and those lost or broken, and even between those that are considered identifiable and those that are not. In the case of Crowfield the soil samples were each

5 gallons in volume and were water floated (using a machine assisted system) after the completion of the excavations at the Chicora labs in Columbia.

Handpicked samples may produce little information on subsistence since they often represent primarily wood charcoal large enough to be readily collected during either excavation or screening. Such handpicked samples are perhaps most useful for providing ecological information through examination of the wood species present. Such studies assume that charcoal from different species tends to burn, fragment, and be preserved similarly so that no species naturally produce smaller, or less common, pieces of charcoal and is less likely than others to be represented - an assumption that is dangerous at best. Such studies also assume that the charcoal was being collected in the same proportions by the site occupants as found in the archaeological record - likely, but very difficult to examine in any detail. And finally, an examination of wood species may also assume that the species present represent woods intentionally selected by the site occupants for use as fuel - probably the easiest assumption to accept if due care is used to exclude the results of natural fires, rotted trees, and other contaminants. While this method probably gives a fair indication of the trees in the site area at the time of occupation, there are several factors which may bias any environmental reconstruction based solely on charcoal evidence, including selective gathering by site occupants (perhaps selecting better burning woods, while excluding others) and differential self-pruning of the trees (providing greater availability of some species other others). These factors are of particular concern at historic sites where there is evidence of wood selection being guided by heat production,

quality of the fire, ease of igniting, and a whole range of other factors (for a brief review from an urban perspective, see Zierden and Trinkley 1984). There are occasional historical accounts of plantation owners planting specific trees either for the wood they produce or for their edible fruits or nuts. Consequently, at historic sites hand picked charcoal may tell us more about cultural factors than it does about the natural environment. Smart and Hoffman (1988) provide an excellent review of environment interpretation using charcoal which should be consulted by those particularly interested in this aspect of the study.

Procedures and Results

The six flotation samples were prepared in a manner similar to that described by Yarnell (1974:113-114) and were examined under low magnification (7 to 30x) to identify carbonized plant foods and food remains. Remains were identified on the basis of gross morphological features and seed identification relied on Schopmeyer (1974), United States Department of Agriculture (1971), Martin and Barkley (1961), and Montgomery (1977). All float samples consisted of the charcoal obtained from 5 gallons of soil (by volume). The entire sample from this floated amount was examined. The results of this analysis are provided in Table 33. While all of the float samples are over the 10 gram threshold, none exceed about 19 grams.

In only one sample does wood charcoal comprise the majority (by weight in grams) of the remains. Uncarbonized remains, primarily rootlets and similar "trash," is the second most abundant material in that one sample and is the most abundant material in the remaining four samples. Bone is present in all of the samples, but only as very small, fragmentary remains, all apparently commensal species, such as rodents or snakes. Hickory nutshell (*Carya* sp.) is found in three samples, from Features 2, 8, and 9, although in no case does it comprise more than 2% of the sample – suggesting a minor dietary

contribution. Disappointingly, no seed remains were found.

There are four hickories common to the Berkeley area -- bitternut (*Carya cordiformis*), water (*C. aquatica*), mockernut (*C. ovalis*), and pignut (*C. glabra*). These species occur on a variety of soil types, from dry woods to rich or low woods to swamp lands. In South Carolina they fruit in October, although seeds are dispersed from October through December (Radford et al. 1968:363-366). Good crops of all species are produced at intervals of up to three years when up to about 16,000 nuts may be produced per tree (Bonner and Maisenhelder 1974:271). Complicating this simple seasonality is the ability of the nuts to be stored for up to six months.

While hickory nuts commonly supplemented the prehistoric diet, their use during the historic period appears limited. In the seventeenth century John Lawson (Lefler 1967:105) remarked on the tastiness of soup made from hickories. He also mentioned some hickories tasted "as well as any Almond." Yet a review of period cookbooks (see, for example, Crump 1986) fails to suggest that hickories were any more integrated into planned meals in the eighteenth century than they are today. It is likely that they provided incidental, gathered food, but were not significant to the typical diet, even of the Crowfield slaves.

The absence of seeds in the flotation collections likely speaks more to the process of preservation than it does to either the presence or absence of seeds in the vicinity of the various proveniences (the lipid analysis, for example, indicates that rape seeds may have been present on the site). Opportunities for food remains, or weed seeds, to become carbonized are limited at most historic sites and it seems that Crowfield was no exception to this.

The handpicked samples were also examined under low magnification with a sample of the wood charcoal identified, where

possible, to the genus level, using comparative samples, Panshin and de Zeeuw (1970), and Koehler (1917). Wood charcoal samples were selected on the basis of sufficient size to allow the fragment to be broken in half, exposing a fresh transverse surface. A range of different sizes was examined in order to minimize bias resulting from differential preservation. The results of this analysis are shown in Table 34 as percentages.

Wood charcoal from the flotation samples was similarly examined, although none of the samples yielded materials large enough to be broken by hand and examined.

Table 33.
Analysis of flotation samples from Crowfield (weight in grams)

	Wood Charcoal		Hickory Nut		Bone		Debris		Total
	wt	%	wt	%	wt	%	wt	%	
	38BK103								
Fea 8, builder's tr	4.13	23.44	0	0.00	1.11	6.30	12.4	70.26	17.62
38BK1011									
Fea 2, pit	6.2	50.24	0.12	0.97	0.15	1.22	5.87	47.57	12.34
Fea 5, wall trench	8.33	44.28	0	0.00	0.89	4.73	9.59	50.98	18.81
Fea 8, pit	4.59	24.18	0.22	1.16	0.16	0.84	14	73.81	18.98
Fea 9, hearth	6.03	44.44	0.03	0.22	0.15	1.11	7.36	54.24	13.57

Wood charcoal, as previously mentioned, is abundant in most of the Crowfield proveniences. Pine (*Pinus* spp.) is the most common species, being found in 13 of the 14 samples and dominant in 10. The next most common is sweet gum (*Liquidambar* sp.), found in eight of the 14 samples, but dominant in only two. Oak (*Quercus* spp.) is present in five samples, hickory (*Carya* sp.) in three, and probable elm (*Ulmus* sp.) in two. Cedar is also found in two samples. Unidentifiable wood is found in eight of the samples.

While no small seeds were found in these hand picked collections, peach pit (*Prunus persica*) was identified from Feature 6, a probable pier. Hickory nut shell, also found in the flotation samples, is recovered from three of the

hand picked collections, including Features 1, 7, 8, a shallow pit, a pier, and a clay extraction pit respectively.

Discussion

Both the flotation and handpicked samples are dominated by wood charcoal, primarily pine and sweet gum. Plant food remains are limited to peach pits and hickory nutshell. While this study can help us understand how the occupants of Crowfield lived, it offers relatively little information concerning the preparation and consumption of plant foods. Likewise, it provides little direct information on the natural environment of slave settlement, failing to include weed seeds that might indicate a disturbed habitat or cultivar seeds from plants of economic importance.

The charcoal represents woods that could reasonably be associated with a rather broad area of upland forest near a swamp. The sweet gum may be found with oaks and hickories in mesic mixed hardwoods. Elms may be found on terrace ridges, as well as wet flats and bottoms, evidencing tremendous variability (Fowells 1965:726, 740). Pine, while suggestive of a disturbed habitat, is present naturally in the mesic fine sand ridges of many hardwood forests (Barry 1980:138). The abundance of pine, however, might also suggest a fire sub-climax pine forest – perhaps fields allowed to go into second growth.

While a number of different wood species have been identified in this collection, indicating that the occupants collected and/or used woods from relatively dry upland soils, more mesic soils, and even some wetland areas

Table 34.
Analysis of Hand Picked Charcoal Samples from Crowfield (by % of weight)

	Pinus	Liquidambar	Quercus	Carya	Ulmus	Juniperus	UID	Peach Pit	Hickory Nut
38BK1011									
1420R910, 1	18	59	5			12	6		
1420R920, 1	80	10					10		
11420R930, PH1	100								
1430R930, 1	45	49		6					
1450R900, 1	69			12			19		
1590R910, 1	85		15						
Fea 1, S 1/2	61	6		8	5		12		8
Fea 2, S 1/2	37		30		3		30		
Fea 3	82	18							
Fea 6	75							25	
Fea 7	69	12	5				2		12
Fea 8 W 1/2	74					18	8		
Fea 8 E 1/2	59	18					12		11
Fea 10		88	12						

bordering on swamps, two species appear most significant – pine and sweet gum. Both are species frequently found mentioned as either boundary trees or as components of broad acreage on the plats of Goose Creek plantations. Commenting on the prevalence of pines, found usually with "only a very few black-jack oaks," Edmund Ruffin observed that they were found on "the driest [sic] land" whose surface is "sandy & dry" (Mathew 1992:74). Ruffin also noted that some tracts in the Goose Creek area, by the late antebellum, were held "merely as a resource for timber" for use on other plantations (Mathew 1992:62).

It may be significant that pine is frequently used as a fuel wood. On the average, a cord of air dried pine provides about 80% of the heat value of a short-ton of coal, while sweet gum and elm both provide about 68%. Oak is far better, providing about 84% of the heat value of coal and the hickories (which are relatively uncommon in the area) consistently provided very high heat values, averaging about 97% that

of coal.¹ The choice of wood for fuel did not, however, depend entirely on its calorific power. Other factors likely included freedom from smoke, completeness of combustion, and rapidity of burning. Pine, for instance, gives a quicker, hotter fire, and is easier to ignite, but is consumed in less time than many other woods. Oaks provide a more steady fire and heat than pine, but are difficult to ignite and not as easy to split (Graves 1919; Reynolds and Pierson 1942). In combination they form an almost perfect union.

The examination of the wood charcoal also reveals the use of heart pine for posts (1420R930, post hole 1), probably because of the decay resistance of this species. Scheffer and

¹ The varying quality of fire wood has long been recognized. For example, Reese notes: "The heavy and dense woods give the greatest heat, burn the longest, and have the densest charcoal. To the dense woods belong the oak, beech, alder, hazel, birch, and elm: to the soft, the fir, the pine of different sorts, larch, linden, willow, and poplar" (Reese 1847:116).

Cowling (1966) note that the toxic extractable substances deposited during the formation of pine heartwood provide it with good decay resistance. Fitchen (1986:133) notes that the common practice of charring posts, which would increase their resistance to decay, would also help ensure that charcoal was present for analysis.

The occurrence of peach is likely an indicator of the plantation's orchard.² The peach fruits, in the lower coastal plain, from April through June. Sam Hilliard observes that:

The peach was the favorite fruit in most of the South and was prized as food either fresh, dried, or preserved.³ If sufficient quantities were produced, the surplus was fermented to wine and distilled into brandy. Many farmers fed them to hogs, as they were considered very nutritious, and often were encouraged to plant orchards to serve specifically for animal feed (Hilliard 1972:180-181).

Ann Leighton (1976:237) also notes the popularity of peaches. In 1629 there were 21 named peaches. By 1768 there were at least 31. And by 1850 over 250 named peach varieties were published. Regardless, all belonged to one of two groups, generally described as the freestones or melting-peaches in which the pulp

or flesh separates easily from the stone and the clingstones in which the flesh clings or adheres to the stone.

The Crowfield collection, when compared to other plantation assemblages, is rather barren. Paul Gardner (1983) found the eighteenth century slave assemblages at Yaughan and Curriboo dominated by wood charcoal (almost exclusively pine), although a variety of food materials were also represented, such as corn, rice, hickory and walnut, peach, hawthorn, bramble, and beans. A number of weed seeds, such as *Polygonum*, goosegrass, and possibly *Setaria*, *Paspalum*, *Panicum*, and *Digitaria* were also recovered, although they were found in small quantities and were often very eroded. At the early antebellum Lesesne and Fairbank plantations, Gardner remarked finding, "an impressive variety of plant remains" (1986:F-9). These included corn, rice, peach, watermelon, peanuts, cotton, chinaberry, spurge, *Iva*, hickory, acorn, pecan, blackberry, grape, blueberry, hackberry, plum or cherry, persimmon, and maypop. While few were present as more than a few examples, the variety is, indeed, impressive. Contributing to this variety, however, was the excavation of a well, which produced a number of species not found elsewhere on the plantation, such as watermelon, peanuts, cotton, pecan, plum or cherry, and maypops. Regardless, Crowfield appears almost sterile in comparison with these other plantations.

The reasons for this difference are uncertain. Yaughan, Curriboo, Lesesne, and Fairbanks were all very active working plantations, often with large contingents of slaves – a situation almost identical to the portions of Crowfield investigated by this study. Nevertheless, we note that the nearby Broom Hall settlement (Trinkley et al. 1995) produced very few ethnobotanical remains. This was initially attributed to Broom Hall being a country seat, rather than a working plantation. This no longer seems to be an adequate explanation. Certainly there could be differences in site specific preservation or sampling. Yet it

² It is likely that peaches, a fruit of the temperate zone, were on the edge of their natural range in the Berkeley area. Though they prefer relatively warmer areas, they also require a resting period of winter cold for at least two months, during which time they gather strength for producing leaves and flowers in the spring.

³ One source also documents that peach pits themselves were roasted, salted, and eaten in rural black areas, such as on John's Island and in Berkeley County (Morton 1974:118).

seems that we should consider more fundamental differences among plantation operations as one possible cause. It may simply be that the activities that might contribute to the charring and subsequent preservation of plant foods were not taking place in the areas investigated at Crowfield.

While Gardner identified relatively few wood taxa from Lesesne and Fairbanks, they are among the same species that dominate the Crowfield collection, suggesting that plantations in the Carolina low country saw little variety in fuel wood. Even here, however, there seems to be differences at a plantation specific level. For example, at Lesesne, minor species such as bald cypress suggest the relatively limited influence of local environmental factors. In contrast, the abundance of sweet gum at Crowfield suggests the opposite - that there the African American slaves made use of the woods most commonly found on the relatively low, wet forests near their settlement.

CONCLUSIONS

Dating of the Settlements

Our first research goal was to determine the functional time span of both the utilitarian settlement associated with 38BK103 and the slave settlement identified as 38BK1011. We previously noted that while there seems to have been activity at the main settlement until at least 1845, there seems to be little activity at the slave settlement past 1800.

We found that at 38BK103 the mean ceramic dates ranged from about 1743.2 to 1748.3 – a tight five year span. At 38BK1011 the dates range from 1729.6 to 1742.7. This 13 year span is not as tight, but bracket dates and Bartovic's dating techniques indicate that the entire Crowfield landscape was being used at the same time – from at least the time of the earliest documented owner, John Berringer (who acquired the property in 1701) until the death of John Middleton II in 1826.

The main Crowfield settlement has a mean ceramic date of 1751.5 from the main house area (Trinkley et al. 1992:48). This seems to be tightly associated with the historic events surrounding that particular structure, thought to have been constructed ca. 1730 and probably not to have been used intensively after 1776 (when acquired by Rawlins Lowdnes). Consequently, while the main settlement mean ceramic date is later than the slave settlements, this seems to be explained by the slave settlements having been built prior to the grand seat being constructed.

What is perhaps most interesting is that the slave settlement dates suggest there was no relocation of the settlement during the various ownership episodes. This gives rise to the speculation that the African American slaves were largely left on their own by the various

owners. There is no indication, for example, of any major effort to rehab, improve, or relocate the slave settlement (although there is evidence of dwellings being repaired, rebuilt, or moved slightly from one location to another).

Intra-Site Patterning

A second research goal was to obtain a better understanding of how the Crowfield slave settlement (38BK1011) was organized – what it looked like while it was occupied. Previous investigations at the site suggested yard activities such as open-air hearths and trash pits. Similarly, we hoped that work at 38BK103 might reveal additional details concerning the organization of a portion of the main settlement that seems to be something of an enigma.

As a result of the investigations at 38BK103 we have found that this portion of the settlement represented utility buildings, although a considerable amount of domestic trash was discarded in the general area. We identified two buildings, a larger one (Structure 9) that failed catastrophically being replaced by a somewhat smaller structure (Structure 7). Both were built on the same footprint and with an almost identical orientation. Both were of heavy brick construction. Both have been interpreted to be rice storage buildings – heavy brick walls deterring rodents and creating a more fire-proof (and presumably theft-proof) construction.

Nearby is a small brick building (Structure 8) whose function, while not entirely clear, seems likely to have been an ice house or dairy. After abandonment, apparently in the mid-eighteenth century, it was used for the disposal of abundant domestic trash.

We also discovered that portions of the main settlement area had been affected by phosphate mining during the postbellum, with trenches and spoil encountered in some areas. While this activity fortunately did not affect significant areas, such as the rice barns or Structure 8, its presence reveals another episode in the history of Crowfield.

The slave settlement offers two immediately significant observations. The first is that the settlements were somewhat scattered with no linear - or neat - arrangement of slave houses. The second is that a variety of architectural styles are present - and these do not necessarily reveal any temporal significance.

Examination of Figure 48 (page 77) shows the organization, orientation, and dispersal of these structures across the site. We are certain that there were additional structures, but this sample provides us with important clues concerning how the Crowfield landscape was used by African Americans.

The main settlement, including Structures 7 and 9 (the two rice barns) and Structure 8 (the utility building), are all oriented just slightly off north-south. Structures 7-9 are situated on the edge of a south facing ridge nose, overlooking low wetlands to the southeast and area about 700 feet from the main house to the southwest.'

The slave settlement begins at the south on a sand ridge and is strung out to the north (with at least one to the east) on lower, more poorly drained soils. These structures do have a loose north-south orientation, although there is considerable variation (see, for example, Slave Structures 2, 4, 5, and 6). At least the northern third of this settlement overlooked a low ponded area to the east. Situated about 1,000 feet southwest of the main settlement, the slave dwellings were isolated at the western edge of the Crowfield core. While at elevations of 6 to 10 feet higher, the slave settlement was likely screened from the main house by vegetation and

the utility buildings provided something of a physical and psychological barrier. The animal pens were found at the extreme south edge of the slave settlement's sandy rise, overlooking low wetlands.

The slave structures represent two distinct architectural styles. Structures 2, 3, 4, 5, 6, and 7 are all "traditional" wall trench buildings - structures created by excavating a trench, erecting upright posts, backfilling the trench, and then weaving branches between the upright posts and perhaps plastering the structure with mud. These structures, however, do reveal differences. For example, Structure 3 contains a clearly defined interior brick hearth constructed of brick. This melding of different architectural styles may suggest some degree of evolutionary change among slave housing that has not been previously encountered, or documented.

In contrast, Structure 1, situated at the southern edge of the settlement, was constructed on piers. While this is a far more conventional European construction method, the structure dates to the same early to mid-eighteenth century period as the other slave structures and artifacts suggest slave occupation. The remains recovered, however, do suggest a potentially higher status slave - perhaps a slave driver, given the consideration of a broader range of material goods and a house of more detailed construction.

We did not, however, find the dense pits and hearths in yard areas that were anticipated. Pits were not common and, when found, appear to be associated with particular structures. This, however, may be a sampling bias, reflecting our focus on the recovery of architectural remains.

Overall, the settlement has been well documented by the investigations, revealing a broad range of structures. The organization of the two settlements is also well documented by these investigations.

Variability of Slave Diets

A third research question was how early eighteenth century slave diets might differ from those found in the nineteenth century – and more fully documented by scholars such as Elizabeth Reitz. We hoped that the incorporation of faunal and floral remains, as well as pollen and phytoliths would offer a broad range of data for interpretation.

This goal was partially met. We found disappointingly small quantities of faunal and floral remains in the slave settlement. Heavy nineteenth and twentieth century plowing had fragmented, dispersed, and eroded remains. The failure to identify yard trash pits with dense faunal or floral remains further hindered research.

The faunal remains, however, reveal a pattern heavily dependent on mammals, primarily cattle. This is consistent with findings at other plantations, such as Liberty Hall (Trinkley et al. 2003). Cattle were common in the Goose Creek area and home butchering provided a ready meat source for planter and slave alike. Supplementing cow were deer, suggesting that the slaves had at least limited access to food sources beyond those coming as rations. Similarly, terrapin remains are suggestive of efforts to supplement the diet using locally available sources. Our ability to compare this assemblage to latter slave settlements is hampered by the small size of the assemblage, but in general there seem to be no glaring inconsistencies – suggesting that slave dietary patterns may have changed little between the early eighteenth century and the later antebellum.

Floral remains also offer only very limited dietary insights. There are no food remains present in the collections, with the possible exception of the small quantities of hickory nutshell. These may represent incidentally or occasionally gathered foods by the African Americans. While hickory is a major

supplier of protein and fat, the small quantities represented suggest that they were, however, not major dietary supplements.

The ability of pollen and phytolith samples to address dietary questions was hampered by our failure to identify proveniences with good preservation. Nevertheless, the remains did contribute interesting data.

In particular, the phytolith data revealed the likely presence of rice in the slave settlement. Of course, on a rice plantation this is not unexpected news and we don't wish to overplay the results. More significant, we believe, is that this line of research – not frequently used by archaeologists – can provide potentially significant environmental reconstruction information. The pollen studies help confirm the phytolith studies, identifying cereal grain pollen consistent with rice.

A third line of research used in this study was the analysis of the charred residue on Colono sherds. The lipid analysis – which does not seem to have been previously conducted at a South Carolina site – revealed that the Colono ware was being used to cook foods. Moreover, these foods contained animal fat, as well as plant lipids – most particularly rape seed oil. While this study was tentative, we hope that these promising results will encourage other archaeologists to begin examining charred remains more frequently. The development a broader data base from South Carolina slave settlements may help to identify trends and further refine the foods that were used.

Evidence of Social Stratification

A fourth research goal was to determine if social stratification might be found at any of the Crowfield slave settlements. We believe that it has. Throughout our discussions we have periodically remarked that Slave Structure 1 seems different. It exhibits a different architectural style – with piers elevating it above

the ground while other slave dwellings were ground-fast wall trench buildings. Moreover, it is the largest structure we identified (Structure 2, which appears larger, was probably subdivided for two families). These two features alone set Structure 1 apart. When the artifacts are examined, we see that the quantity of ceramics is very high within the house and immediately around it. Likewise, the proportion of activity items is also higher than other structures. Personal items are more common and the proportion of tobacco items is high.

When the shape and function of the vessels from the various site areas are examined, Structure 1 again stands out. Flatwares account for 39% of the tablewares present – the largest proportion of any structure in the slave settlement. Moreover, Structure 1 contains the only indication (other than Colono wares) of utilitarian vessels. It may be that the relatively high proportion of flatwares means either a different dietary pattern was present or that there was differential access to European ceramics.

One of the very few historical analyses of slave privilege is that provided by Dusiinberre's (1966) careful examination of Manigault's Gowrie Plantation on the Savannah River during the early nineteenth century. While spatially and temporally remote from Crowfield, Dusiinberre reveals that at least this one master viewed privilege as cross-cutting social distinctions and, just as importantly, being a device that could (and often was) withdrawn. In other words, this limited research cautions us to be skeptical of, if not actually avoid, the concept of a slave elite that was consistently set off from the remainder of the enslaved.

In terms of material remains, Dusiinberre reveals that Manigault provided small favors – an extra allowance of food, an extra yard of cloth, 25¢ of tobacco – items of relatively little economic importance to him, but apparently of adequate importance to the African Americans to achieve at least outward subservience.

He also suggests that “the metaphor of layered social ‘stratification’” might be misleading. He compares the plantation to a single-tiered Viking war vessel with two small compartments amidships. While setting off the two groups, those in each compartment remained essentially at the same level as the remainder of the population. In one compartment would be the small number of house servants and artisans. In the other were the drivers and trunk minders who set themselves apart not by their specialized training, but rather by their leadership qualities and in their acquisition of agricultural lore.

If Dusiinberre's analysis is correct, we might expect to see relatively little in the way of material culture indicators distinguishing “important” or “special” slaves from the rest of the enslaved population. Clearly this is an area that requires additional study.

The data from Structure 1, however, suggests that it was a different type of structure and, at least to some degree, the material culture present was also different. That it was not extraordinarily different may be explained by the data from Gowrie – it may be that extreme shows of favor or privilege were unnecessary and even counterproductive. Regardless, we believe that this provides evidence of perhaps a slave driver or slave carpenter (given the nature of the tools found at the site).

There is an alternative explanation – equally plausible and equally intriguing. It may be that Structure 1 is different because the owner, at that particular phase of construction, sought to impose his power and create a more “European” style of structure. Its orientation and construction then may have nothing to do with the “status” of the slave, and everything to do with the attempt by the owner to exercise “power” over the slave.

Being forced to make a choice between these two explanations for Structure 1, we chose the first since it seems to correlate well with the

recovered artifacts – explaining not only the architecture, but also the material culture remains.

Details Concerning Slave Architecture

A fifth research goal was to be what the slave structures at Crowfield looked like. This has been partially answered – most were wall trench structures – ground-fast buildings using a wattle technique perhaps with daub applications. Lacking any indication of roofing materials or large numbers of nails, we can reasonably assume that roofing was as transitory as the structures themselves. Such ephemeral structures have been previously identified and are thought to lack any sort of chimney/hearth/fireplace, although they may be internally subdivided to create double bay structures.

But this does not fully explain the findings. For example, at Structure 3 – clearly a wall trench dwelling – we found a rustic interior hearth made of broken bricks and clay mortar. Its placement at the outer gable edge of the wall suggests that there was some sort of fire box along with chimney, although we found no direct evidence for this. This structure, we believe, documents early clay chimney construction – a feature that we see into the late nineteenth century throughout the lower South.

We also document at least one dwelling – Structure 1 – that was not earth-fast, but was set on piers. This represents an early eighteenth century slave structure that had already made the transition to more healthful conditions that wasn't seem widely until the first quarter of the nineteenth century.

Consequently, Crowfield reveals to us a range of architecture in the slave settlement – cautioning us to avoid sweeping generalizations concerning slave lifeways. We have previously indicated that there are at least two possible explanations for the nature of Slave Structure 1 – that it represents a unique structure provided as

privilege or that it represents an effort by the owner to control activities in the slave settlement. We believe that the former is more likely, given the differences also present in the artifact assemblage.

Abundance (or Absence) of European Goods

The sixth research goal surrounded the material remains at the slave settlement. In retrospect, this was the least feasible of the various research questions. There seemed, very early on, to be little question that the assemblage contained very low frequencies of European wares. The question was why this was the case. We contrasted the speculation of Webb and Gantt that the slaves were denied these items with our belief that the assemblage might be evidence of power and alienation.

As previously discussed, Dusinberre warns us that the material culture remains provided – or withheld – as privileges were small and often inconsequential. They were likely to be items that leave relatively little evidence in the archaeological record (cloth, tobacco, or the quality of shoes), were not found in great frequency (food remains), or that are likely to be a low proportion of the collection (buttons).

While we have found some differences between Structure 1 and the other slave dwellings, the cause of these differences is not readily apparent. Nor can we even be certain that the archaeological collections are representative and suitable for such comparisons.

The study of power and alienation, while making for intriguing reading, seems to offer relatively few safe and convincing avenues for practical field research. This is hinted at by Richard Affleck who in his discussions of “power and space” notes, “the archaeological implications for such a kaleidoscopic view of the slave community . . . are unclear” and later on, “the kinds of difference described . . . with a

single slave settlement may not be visible archaeologically (Affleck 1990:219, 220). Rather hopefully he suggests that some evidence may be found in the variability of Colono, different refuse disposal behavior, or ways of organizing household space. None seem especially promising, especially at sites where there has been extensive agricultural dispersion.

Consequently, while we have confirmed that European items at the slave settlement are clearly dominated by slave made Colono ware, we can provide no clear statement of why this is. To say simply that the site is early (and therefore dominated by Colono) seems to beg the question. Yes it is early, but why aren't there more lead glazed slipwares? Were the slaves unwilling to accept this pottery; was the owner unable or unwilling financially to provide the quantity needed; did the owner expect the slaves to supplement his modest (i.e., stingy ration of European materials); or is there some other explanation? We really don't know.

The Nature of Colono

The last research question posed was the status of Colono - specifically, could detailed typological study identify traits that allow Indian-made pottery to be consistently distinguished from slave-made pottery. Here, I believe we can provide a fairly convincing answer. There appears to be no way to consistently (or convincingly) sort the two. Certainly what we have been calling Indian-made (i.e., River Burnished) appears to be thinner and to have smaller inclusions than the slave-made (i.e., Yaughan) pottery. But, the two grade into one another and sorting anything except the two extremes still leaves a very large middle area.

In addition, other attributes, such as size, abundance of inclusions, and so forth do not seem to be clearly different.

While others may find some benefit in the continued effort to create typological pigeon-

holes for these two wares, we do not. It seems far more useful, as others have suggested, to get past who made the pottery and focus, instead, on how it was used.

In particular, we hope that additional work is devoted to the analysis of the charred residues on the interiors of Colono pottery. This research found that lipid analysis, while difficult and often yielding ambiguous results, can be done successfully and that it can provide useful results.

Conclusions

The examination of the slave settlement at Crowfield provides a very large and well documented assemblage from an early eighteenth century slave settlement in the Goose Creek area of South Carolina. The research originally proposed largely has been successful. What is needed, of course, are additional early eighteenth century slave settlements, perhaps other areas of the South Carolina coast, that will allow comparisons and contrasts to be identified.

SOURCES CITED

- Affleck, Richard M.
1990 *Power and Space: Settlement Pattern Change at Middleburg Plantation, Berkeley County, South Carolina*. Unpublished M.A. Thesis, Department of Anthropology, University of South Carolina, Columbia.
- Allen, Lewis F.
1868 *American Cattle: Their History, Breeding and Management*. Taintor Brothers, New York.
- Barry, John M.
1980 *Natural Vegetation of South Carolina*. University of South Carolina Press, Columbia.
- Barton, Robert C., editor
1987 *The Garden and Farm Books of Thomas Jefferson*. Fulcrum, Golden, Colorado.
- Bonner, F.T. and L.C. Maisenhelder
1974 *Carya Nutt. - Hickory*. In *Seeds of Woody Plants in the United States*, edited by C.S. Schopmeyer, pp. 269-272. Agricultural Handbook 450, U.S. Department of Agriculture, Forest Service, Washington, D.C.
- Bozarth, Stephen R.
1992 Classification of Opal Phytoliths Formed in Selected Dicotyledons Native to the Great Plains. In *Phytolith Systematics: Emerging Issues*, ed. by G. Rapp, Jr. and S.C. Mulholland, pp. 193-214. Plenum Press, New York.
- 1990 Diagnostic Opal Phytoliths from Pods of Selected Varieties of Common Beans (*Phaseolus vulgaris*). *American Antiquity* 55(1):98-104.
- 1987 Diagnostic Opal Phytoliths from Rinds of Selected Cucurbita Species. *American Antiquity* 52(3):607-15.
- Brooker, Colin and Michael Trinkley
1991 *Plantation Architecture: The Lost Artifact*. Research Contribution 58. Chicora Foundation, Inc., Columbia.
- Brown, Dwight A.
1984 Prospects and Limits of a Phytolith Key for Grasses in the Central United States. *Journal of Archaeological Science* 11:345-368.
- Calhoun, Jeanne
1983 *The Scourging Wrath of God: Early Hurricanes in Charleston, 1700-1804*. Leaflet No. 29. The Charleston Museum, Charleston, South Carolina.
- Carney, Judith A.
2001 *Black Rice: The African Origins of Rice Cultivation in the Americas*. Harvard University Press, Cambridge, Massachusetts.
- Clowse, Converse D.
1971 *Economic Beginnings in Colonial South Carolina, 1670-1730*. University of South Carolina Press, Columbia.

- Coclanis, Peter A.
1989 *The Shadow of a Dream: Economic Life and Death in the South Carolina Low Country 1670-1920*. Oxford University Press, New York.
- Cohen, Arthur
1995 Pollen Analysis. In *In the Shadow of the Big House: Domestic Slaves at Stoney/Baynard Plantation, Hilton Head Island*, edited by Natalie Adams, Michael Trinkley, and Debi Hacker, pp. 95-96. Research Series 40. Chicora Foundation, Inc., Columbia.
- Coon, David L.
1972 *The Development of Market Agriculture in South Carolina*. Ph.D. Dissertation, University of Illinois. University Microfilms, Ann Arbor.
- Copinger, W.A.
n.d. *The Manors of Suffolk*, vol. 2. Suffolk Record Office, Ipswich Branch, Reference qS9.
- Crump, Nancy Carter
1986 *Hearthside Cooking: An Introduction to Virginia Plantation Cuisine*. EPM Publications, McLean, Virginia.
- Cummings, Linda S.
1992 Illustrated Phytoliths from Assorted Food Plants. In *Phytolith Systematics: Emerging Issues*, ed. by G. Rapp, Jr. and S.C. Mulholland, pp 175-192. Plenum Press, New York.
- Dargan, Hugh and Mary Palmer Dargan
1989 *The Gardens at Crowfield in South Carolina: First Example of the Early Picturesque Landscape Movement in America, c. 1730*. Hugh Dargan Associates, Inc., Charleston, South Carolina.
- Donnan, Elizabeth
1928 The Slave Trade into South Carolina Before the Revolution. *American Historical Review* 33:804-828.
- Doolittle, W.E. and C.D. Frederick
1991 Phytoliths as Indicators of Prehistoric Maize (*Zea mays* subsp. *mays*, Poaceae) Cultivation. *Plant Systematics and Evolution* 177:175-184.
- Drayton, John
1802 *A View of South Carolina As Respects her Natural and Civil Concerns*. W.P. Young, Charleston.
- Duffy, John
1952 Eighteenth-Century Carolina Health Conditions. *Journal of Southern History* 18:289-302.
- Dunbar, Gary S.
1961 Colonial Carolina Cowpens. *Agricultural History* 35:125-130.
- Dusinberre, William
1996 *Them Dark Days: Slavery in the American Rice Swamps*. Oxford University Press, New York.
- Edgar, Walter B., editor
1972 *The Letterbook of Robert Pringle*, vol. 1. University of South Carolina Press, Columbia.
- Elliott, Daniel T.
1987 *Crowfield Archaeological Survey*. Garrow and Associates, Inc., Atlanta.
- Ensmiger, M.E. and R.O. Parker
1986 *Sheep and Goat Science*. The Interstate Printers & Publishers, Inc., Danville.

SOURCES CITED

- Evans, John
1990 Come Bach King Alfred, All is Forgiven. In *Organic Contents of Ancient Vessels: Materials Analysis and Archaeological Investigation*, edited by William R. Biers and Patrick E. McGovern, pp 7-10. The University Museum of Archaeology and Anthropology, University of Pennsylvania, Philadelphia.
- Fewkes, V.J.
1944 Catawba Pottery-Making, with Notes on Pamunkey Pottery-Making, Cherokee Pottery-Making and Coiling. *Proceedings of the American Philosophical Society* 88:69-125. Philadelphia.
- Fitchen, John
1986 *Building Construction Before Mechanization*. MIT Press, Cambridge.
- Fore, George
1990 *Crowfield Plantation Ruins, Berkeley County, South Carolina - Conservation Study*. George T. Fore and Associates, Raleigh.
- Fowells, H.A.
1965 *Silvics of Forest Trees of the United States*. Agriculture Handbook 271. United States Department of Agriculture, Washington, D.C.
- Gardner, Paul S.
1983 The Analysis and Interpretation of Plant Remains from the Yaughan and Curriboo Plantations, Berkeley County, South Carolina. In *Yaughan and Curriboo Plantations: Studies in Afro-American Archaeology*, edited by Thomas R. Wheaton, Amy Friedlander, and Patrick H. Garrow, pp. G-1 C G-20. Soil Systems, Inc., Marietta, Georgia.
- 1986 Appendix F: Analysis of Plant Remains from Lesesne and Fairbank Plantations (38BK202), Berkeley County, South Carolina. In *Home Upriver: Rural Life on Daniel's Island, Berkeley County, South Carolina*, edited by Martha Zierden, Lesley Drucker, and Jeanne Calhoun, pp. F-1 C F-23, Carolina Archaeological Services and The Charleston Museum, Columbia.
- Geis, James W.
1973 Biogenic Silica in Selected Species of Deciduous Angiosperms. *Soil Science* 116(2):113-119.
- Graves, Henry S.
1919 *The Use of Wood for Fuel*. Bulletin 753. United States Department of Agriculture, Washington, D.C.
- Gray, Lewis Cecil
1941 *History of Agriculture in the Southern United States to 1860*. vol. 1. Peter Smith, New York.
- Greene, Jack P., editor
1989 *Selling a New World: Two Colonial South Carolina Promotional Pamphlets*. University of South Carolina Press, Columbia.
- Grieve, M.
1931 *A Modern Herbal*. Harcourt, Brace & Company, New York.
- Hamer, Fritz and Michael Trinkley
1997 African Architectural Transference to the South Carolina Low County, 1700-1880. *Tennessee Anthropologist* 22(1):1-34.

- Hamer, Philip M., George C. Rogers, and Peggy J. Wehage, editors
 1970 *The Papers of Henry Laurens*, vol. 2. University of South Carolina Press, Columbia.
- Haskell, Helen Woolford
 1981 *The Middleton Place Privy House: An Archaeological View of Nineteenth Century Plantation Life*. S.C. Institute of Archaeology and Anthropology, University of South Carolina, Columbia.
- Heintzelman, Donald S.
 1979 *Hawks and Owls of North America: A Complete Guide to North American Birds of Prey*. Universe Books, New York.
- Hewett, Alexander
 1971 [1779] *An Historical Account of the Rise and Progress of the Colonies of South Carolina and Georgia*. 2 volumes. Alexander Donaldson, London. 1971 facsimile ed. The Reprint Company, Spartanburg, South Carolina.
- Heyward, Duncan Clinch
 1993 *Seed from Madagascar*. University of South Carolina Press, Columbia.
- Hilliard, Sam Bowers
 1972 *Hog Meat and Hoecake: Food Supply in the Old South, 1840-1860*. Southern Illinois University Press, Carbondale.
- Kaminer, Gulielma M.
 1926 *A Dictionary of South Carolina Biography During the Period of the Royal Government (1719-1776)*. Unpublished M.A. thesis, Department of History, University of South Carolina, Columbia.
- Keel, Bennie C., Christina E. Miller, and Marc A. Tiemann
 1999 *A Comprehensive Subsurface Investigation at Magnolia Plantation, 16NA295, Cane River Creole National Historical Park, Natchitoches, Louisiana*.
- Kennedy, Linda
 1992 Faunal Remains Recovered From 38CH1199/1200. In *Wappoo Plantation (38CH1199/1200): Data Recovery at and Eighteenth Century Stono River Plantation, in Charleston County, South Carolina*. Brockington and Associates, Inc., Charleston.
 1993 Faunal Analysis Results. In *Data Recovery Investigations of 38BU791, Bonny Shore Slave Row, Spring Island, Beaufort County, South Carolina*. Brockington and Associates, Inc., Charleston.
- Klein, Robert L. and James. W. Geis
 1978 Biogenic Silica in the Pinaceae. *Soil Science* 126(3):145-156.
- Klingberg, Frank J.
 1941 *An Appraisal of the Negro in Colonial South Carolina*. Associated Publishers, Washington, D.C.
- Koehler, Arthur
 1917 *Guidebook for the Identification of Woods Used for Ties and Timber*. U.S. Department of Agriculture, Forest Service, Washington, D.C.
- Kondo, Renzo
 1977 Opal Phytoliths, inorganic, Biogenic Particles in Plants and Soils. *Japan Agricultural Research Quarterly* 11(4):198-203.

SOURCES CITED

- 1976 On the Opal Phytoliths of Tree Origins. *Pedorojisuto* (Pedologist) 20:176-90.
- 1974 Opal Phytoliths - the Relations Between the Morphological Features of Opal Phytoliths and the Taxonomic Groups of Gramineous Plants. *Pedorojisuto* (Pedologist) 18:2-10.
- Kondo, Renzo and Tomoko Peason
1981 Opal Phytoliths in Tree Leaves (Part 2): Opal Phytoliths in Dicotyledonous Angiosperm Tree Leaves. *Research Bulletin of Obihiro University, Series 1*, 12(3):217-30.
- Kondo, Renzo and Takahashi Sase
1986 Opal Phytoliths, Their Nature and Application. *Daiyonki Kenkyu* (Quaternary Research) 25(1):31-63.
- Kondo, Renzo, Takahashi Sase and Y. Kato
1987 Opal Phytolith Analysis of Andisols with Regard to Interpretation of Paleovegetation. In *Proceedings of the Ninth International Soil Classification Workshop, Japan*, ed. by D.I. Kinloch, pp. 520-534.
- Kondo, Renzo and T. Sumida
1978 The Study of Opal Phytoliths of Tree Leaves. I. Opal Phytoliths in Gymnosperm and Monocotyledonous Angiosperm Tree Leaves. *Journal of the Science of Soil and Manure* 49(2):138-44.
- Lefler, Hugh Talmage
1967 *A New Voyage to Carolina*. University of North Carolina Press, Chapel Hill.
- Leiding, Harriet Kershaw
1921 *Historic Houses of South Carolina*. J.A. Lippincott, Philadelphia.
- Leighton, Ann
1976 *American Gardens in the Eighteenth Century: "For Use or For Delight."* University of Massachusetts Press, Amherst.
- Livingstone, D.A. and W.D. Clayton
1980 An Altitudinal Cline in Tropical African Grass Floras and its Paleoeological Significance. *Quaternary Research* 13(3):392-402.
- Long, Bobby
1980 *Soil Survey of Berkeley County, South Carolina*. U.S. Department of Agriculture, Soil Conservation Service, Washington, D.C.
- Lounsbury, Carl R.
1994 *An Illustrated Glossary of Early Southern Architecture and Landscape*. Oxford University Press, New York.
- Lynch, Gerard
1994 *Brickwork: History, Technology and Practice*. 2 vols. Donhead, London.
- Maag, James S.
1961 *Cattle Raising in Colonial South Carolina*. Unpublished M.A. thesis, Department of History, University of Kansas, Lawrence.
- Martin, Alexander C. and William D. Barkley
1961 *Seed Identification Manual*. University of California Press, Berkeley.
- Mathew, William M.
1992 *Agriculture, Geology, and Society in Antebellum South Carolina: The*

- Private Diary of Edmund Ruffin, 1843.* University of Georgia Press, Athens.
- Mathews, Maurice
1954 A Contemporary View of Carolina in 1680. *South Carolina Historical and Genealogical Magazine* 55:153-159.
- Mathews, Thomas D., Frank W. Stapor, Jr., Charles R. Richter, John V. Miglarese, Michael D. McKenzie, and Lee A. Barclay
1980 *Ecological Characterization of the Sea Island Coastal Region of South Carolina and Georgia. Vol I: Physical Features of the Characterization Area.* Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C.
- McKee, Harley J.
1973 *Introduction to Early American Masonry.* National Trust for Historic Preservation, Washington, D.C.
- Meriwether, Robert L.
1940 *The Expansion of South Carolina 1729-1765.* Southern Publishers, Kingsport, Tennessee.
- Merrens, H. Roy, editor
1977 *The Colonial South Carolina Scene – Contemporary Views, 1697-1774.* University of South Carolina Press, Columbia.
- Merrens, H. Roy and George D. Terry
1984 Dying in Paradise: Malaria, Mortality, and the Perceptual Environment in Colonial South Carolina. *Journal of Southern History* 50:533-550.
- McKee, Harley J.
1973 *Introduction to Early American Masonry.* National Trust for
- Historic Preservation, Washington, D.C.
- Michie, James L.
1987 *Richmond Hill and Wachesaw: An Archaeological Study of Two Rice Plantations on the Waccamaw River, Georgetown County, South Carolina.* Research Manuscript Series 203. S.C. Institute of Archaeology and Anthropology, University of South Carolina, Columbia.
- Miller, Roger Wayne, F.R. Earle, and I.A. Wolfe
1965 Search for New Industrial Oils. XIII. Oils from 102 Species of Cruciferae. *Journal of the American Oil Chemists' Society* 42(7):817-821.
- Mills, Robert
1972 [1826] *Statistics of South Carolina.* Hurlbut and Lloyd, Charleston. 1972 facsimile ed. The Reprint Company, Spartanburg, South Carolina.
- Montgomery, F.H.
1977 *Seeds and Fruits of Eastern Canada and Northeastern United States.* University of Toronto Press, Toronto.
- Moore, Alexander
1992 *Biographical Directory of the South Carolina House of Representatives,* vol. 5. South Carolina Department of Archives and History, Columbia.
- Morgan, Philip D.
1977 *The Development of Slave Culture in Eighteenth Century Plantation America.* Unpublished Ph.D. dissertation, University College, London.

SOURCES CITED

- 1980 A Profile of a Mid-Eighteenth Century South Carolina Parish: The Tax Return of St. James', Goose Creek. *South Carolina Historical Magazine* 81:51-65.
- Morgan, Philip D., editor
 1980 Profile of a Mid-eighteenth Century South Carolina Parish: The Tax Return of Saint James', Goose Creek. *South Carolina Historical Magazine* 81: 51-65.
- Mouer, L. Daniel
 1993 Chesapeake Creoles: The Creation of Folk Culture in Colonial Virginia. In *The Archaeology of 17th-Century Virginia*, edited by Theodore R. Reinhart and Dennis J. Pogue, pp 105-166. Special Publication 30. Archaeological Society of Virginia, Courtland, Virginia.
- Owens, Daphne and Irwin Rovner
 1997 Phytoliths from Historic and Prehistoric Contexts at Scull Shoals, Oconee National Forest, and Skidaway Island, Georgia. Paper presented in Symposium Phytolith Analysis for Archaeologists, Annual meeting of the Society for American Archaeology, Nashville, TN, April.
- Panshin, A.J. and Carl de Zeeuw
 1970 *Textbook of Wood Technology*, vol. I. McGraw-Hill, New York.
- Peters, Kenneth E. and Robert B. Herrmann
 1986 *First-Hand Observations of the Charleston Earthquake of August 31, 1866, and Other Earthquake Materials*. Bulletin 41. South Carolina Geological Survey, Columbia.
- Piperno, Dolores R.
 1988 Phytoliths analysis. In *Archaeobotanical Results from the 1987 Excavation at Morven*, ed. by N. F. Miller and A. Yentsch, pp. 50-55. Morven Interim Report No. 2, New Jersey State Museum, Trenton.
- Poplin, Eric, Paul Brockington, and Robert Stephenson
 1978 *Archaeological Reconnaissance of the Crowfield Development Area, Goose Creek, South Carolina*. Letter report on file, South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.
- Popper, Virginia S.
 1988 Selecting Quantitative Measurements in Paleoethnobotany. In *Current Paleoethnobotany: Analytical Methods and Cultural Interpretations of Archaeological Plant Remains*, edited by Christine A. Hastorf and Virginia S. Popper, pp. 53-71. University of Chicago Press, Chicago.
- Radford, Albert E., Harry E. Ahles, and C. Ritchie Bell
 1968 *Manual of the Vascular Flora of the Carolinas*. University of North Carolina Press, Chapel Hill.
- Ramsay, David
 1858 *Ramsay's History of South Carolina*. W.J. Duffie, Newberry, South Carolina.
- Renyolds, R.V. and Albert H. Pierson
 1942 *Fuel Wood Used in the United States, 1630-1930*. Circular 641. United States Department of Agriculture, Washington, D.C.

- Rice, Prudence M.
 1987 *Pottery Analysis: A Sourcebook*.
 University of Chicago Press,
 Chicago.
- Rocquelin, G, J.P. Sergiel, B. Martin, J. Leclerc,
 and R. Cluzan
 1971 The Nutritive Value of Refined
 Rapeseed Oils: A Review.
*Journal of the American Oil
 Chemists' Society* 48(7):728-732.
- Rogers, George C., David R. Chesnutt, Peggy J.
 Clark, editors
 1980 *The Papers of Henry Laurens*, vol.
 8. University of South Carolina
 Press, Columbia.
- Rogers, George C., David R. Chesnutt, Peggy J.
 Clark, and C. James Taylor, editors
 1981 *The Papers of Henry Laurens*, vol.
 9. University of South Carolina
 Press, Columbia.
- Rovner, Irwin
 1971 Potential of Opal Phytoliths for
 Use in Paleoecological
 Reconstruction. *Quaternary
 Research* 1(3): 225-266.
- 1983a Preliminary Phytolith
 Assessment of Four
 Archaeological Sites in
 Tishomingo County,
 Mississippi. Submitted to
 Environmental Consultants,
 Inc., Dallas, TX.
- 1983b Major Advances in
 Archaeobotany: Archaeological
 Uses of Opal Phytolith Analysis.
 In *Advances in Archaeological
 Method and Theory*, Vol. 6, ed. by
 M. Schiffer, pp.345-359.
 Academic Press, New York.
- 1984 Assessment of Phytolith
 Assemblages from Selected Soil
 Samples of the Jordan Site
 (31NH256), New Hanover
 County, NC,. Submitted to
 Archaeological Research
 Consultants, Inc., Chapel Hill,
 NC.
- 1986 Vertical Movement of
 Phytoliths in Stable Soil: A
 Non-Issue. In *Plant Opal
 Phytolith Analysis in Archaeology
 and Paleocology, Proceedings of
 the 1984 Phytolith Research
 Workshop*, ed. by I. Rovner,
 pp.23-30. Occasional Papers No.
 1 of The Phytolitharien, North
 Carolina State University,
 Raleigh.
- 1988a Micro- and Macro-
 Environmental Reconstruction
 Using Plant Opal Phytolith Data
 from Archaeological Sediments.
Geoarchaeology 3(2):155-165.
- 1988b Quick-scan Phytolith Analysis
 of Selected Soil Samples from
 Suggested Fodder Plots at
 Monticello, VA. Ms. on file,
 Monticello Foundation,
 Charlottesville, VA.
- 1989 Quick-Scan Phytolith
 Assessment of Selected Soil
 Samples from 18th and 19th
 Century Cultural Deposits in
 the City of Hampton, Virginia,
 Ms. on file Archaeology Project
 Center, The College of William
 and Mary, Williamsburg, VA.
- 1990 Fine-Tuning Floral History with
 Opal Phytolith Analysis. In
*Earth Patterns, Essays in
 Landscape Archaeology*, ed. by W.
 Kelso and R. Most, pp. 297-308.
 The University Press of
 Virginia, Charlottesville.

SOURCES CITED

- 1994 Floral History by the Back Door: Phytolith Analysis of Two Residential Yards at Harpers Ferry. *Historical Archaeology*, 28(4):37-48.
- 1995a Phytolith Analysis of Selected Soil Samples from Site 31MK683, North Carolina. Submitted to R.S. Webb and Associates. Ms on file, Office of State Archaeologist, North Carolina Division of Archives and History, Raleigh.
- 1995b Phytolith Analysis of Two Additional Soil Samples from Site 31MK683, North Carolina. Submitted to R.S. Webb and Associates. Ms. on file, Office of State Archaeologist, North Carolina Division of Archives and History, Raleigh.
- 1995c Mien, Mean and Meaning: The Limits of Typology in Phytolith Analysis. Paper presented at the Society for American Archaeology Meetings, Phytolith Research Symposium, Minneapolis, May.
- 1997 The British Are Coming! Phytolith Signatures of Euro-American Land Use in Colonial America. Paper presented at Symposium Phytolith Analysis for Archaeologists, Annual meeting of the Society for American Archaeology, Nashville, April.
- Rottländer, Rolf C.A.
1983 New Results of Food Identification by Fat Analysis. *Proceedings of the 22nd Symposium on Archaeometry*, edited by A. Aspinall and S.E. Warren, pp. 218-223. University of Bradford, Bradford, U.K.
- 1990 Lipid Analysis in the Identification of Vessel Contents. In *Organic Contents of Ancient Vessels: Materials Analysis and Archaeological Investigation*, edited by William R. Biers and Patrick E. McGovern, pp 37-40. The University Museum of Archaeology and Anthropology, University of Pennsylvania, Philadelphia.
- Rottländer, Rolf C.A. and H. Schlichtherle
1978 Food Identification by Analysis of Samples from Archaeological Sites. *Archaeophysika* 10:260-267.
- Russ, John C. and Irwin Rovner
1989 Stereological Identification of Opal Phytolith Populations from Wild and Cultivated *Zea mays*. *American Antiquity* 54(3):784-792.
- Salley, A.S., Jr., editor
1935 Diary of William Dillwyn in 1772. *South Carolina Historical and Genealogical Magazine* 36(4):108-109.
- Scheffer, Theodore and Elias B. Cowling
1966 Natural Resistance of Wood to Microbial Deterioration. *Annual Review of Phytopathology* 4:147-170.
- Schopmeyer, C.S., editor
1974 *Seeds of Woody Plants in the United States*. Agricultural Handbook 450. U.S. Department of Agriculture, Forest Service, Washington, D.C.

- Sellers, Leilla
1934 *Charleston Business on the Eve of the American Revolution.* University of North Carolina Press, Chapel Hill.
- Shafer, E.T.H
1939 *Carolina Gardens.* University of North Carolina Press, Chapel Hill.
- Shedpard, Anna O.
1954 *Ceramics for the Archaeologist.* Carnegie Institution of Washington, Washington, D.C.
- Sirmans, M. Eugene
1966 *Colonial South Carolina: A Political History 1663-1763.* University of North Carolina Press, Chapel Hill.
- Smart, Tristine Lee and Ellen S. Hoffman
1988 *Environmental Interpretation of Archaeological Charcoal.* In *Current Ethnobotany: Analytical Methods and Cultural Interpretation of Archaeological Plant Remains*, edited by Christine A. Hastorf and Popper, pp. 167-205. University of Chicago Press, Chicago.
- Smith, Henry A. M.
1988 *Goose Creek.* In *Rivers and Regions of Early South Carolina.* Reprinted. The Reprint Press, Spartanburg, South Carolina. Originally published 1928, *South Carolina Historical and Genealogical Magazine*, Charleston, South Carolina.
- Stoney, Samuel Gaillard
1938 *Plantations of the Carolina Low Country.* Carolina Art Association, Charleston, South Carolina.
- Swern, Daniel, editor
1979 *Bailey's Industrial Oil and Fat Products*, Fourth Edition, vol. 1. John Wiley & Sons, New York.
- Thwaites, Reuben G., editor
1904 *Early Western Travels, 1748-1846*, vol. 3. Arthur H. Clark, Cleveland.
- Trinkley, Michael
1983a *Analysis of Ethnobotanical Remains, First Trident Site, City of Charleston.* In *An Archaeological Study of the First Trident Site*, edited by Martha Zierden, Jeanne Calhoun, and Elizabeth Pinckney, pp. 88-96. Archaeological Contribution 6. The Charleston Museum, Charleston, South Carolina.
- 1983b *The Lodge Alley Ethnobotanical Samples: Evidence of Plant Use from Two Urban Sites, Charleston, South Carolina.* In *Archaeological Investigations at Lodge Alley*, edited by Martha A. Zierden, Jeanne A. Calhoun, and Elizabeth A. Paysinger, pp. 112-119. The Charleston Museum, Charleston, South Carolina.
- 1985 *A Historical and Archaeological Evaluation of the Elfe (38BK207) and Sanders (38CH321) Plantations, Berkeley and Charleston Counties, South Carolina.* Research Series 5. Chicora Foundation, Inc., Columbia.
- Trinkley, Michael, editor
1993 *The History and Archaeology of Kiawah Island, Charleston County, South Carolina.* Research Series 30. Chicora Foundation, Inc., Columbia.

SOURCES CITED

- Trinkley, Michael and Debi Hacker
 1996 "With Credit and Honour:"
*Archaeological Investigations at the
 Plantation of John Whitesides, A
 Small Planter of Christ Church
 Parish, Charleston County, South
 Carolina.* Research Series 48.
 Chicora Foundation, Inc.,
 Columbia.
- 1999 *Roupelmond: An Eighteenth and
 Nineteenth Century Interior St.
 Helena Parish Plantation, Beaufort
 County, South Carolina.* Research
 Series 53. Chicora Foundation,
 Inc., Columbia.
- 2001 *Archaeological Investigations of
 Indian and Slave at the Moses
 Whitesides Plantation, Christ
 Church Parish, Charleston County,
 South Carolina.* Research Series
 60. Chicora Foundation, Inc.,
 Columbia.
- Trinkley, Michael, Debi Hacker, and Sarah Fick
 2002 *Liberty Hall: A Small Eighteenth
 Century Rice Plantation in Goose
 Creek, Berkeley County, South
 Carolina.* Research Series 61.
 Chicora Foundation, Inc.,
 Columbia.
- Trinkley, Michael, Natalie Adams, and Debi
 Hacker
 1992 *Landscape and Garden
 Archaeology at Crowfield
 Plantation: A Preliminary
 Examination.* Research Series 32.
 Chicora Foundation, Inc.,
 Columbia.
- Trinkley, Michael, Debi Hacker, and Natalie
 Adams
 1995 *Broom Hall: "A Pleasant One and
 In a Good Neighborhood.* Research
 Series 44. Chicora Foundation,
 Inc., Columbia.
- Trinkley, Michael, Nicole Southerland, and
 Sarah Fick
 2003 *National Register Evaluation of
 38CH932, Youghal Plantation,
 Charleston County, South
 Carolina.* Research Contribution
 385. Chicora Foundation, Inc.,
 Columbia.
- Twiss, Page C., Erwin Suess and Robert M.
 Smith
 1969 *Morphological Classification of
 Grass Phytoliths.* *Soil Science
 Society of America Proceedings*,
 33(1):109-115.
- U.S. Department of Agriculture
 1971 *Common Weeds of the United
 States.* Dover Publications, New
 York.
- Vaughan, J.G. and C. Geissler
 1997 *The New Oxford Book of Food
 Plants.* Oxford University Press,
 New York.
- Ver Stegg, Clarence L.
 1975 *Origins of a Southern Mosaic.*
 University of Georgia Press,
 Athens.
- Vipperman, Carl J.
 1978 *The Rise of Rawlins Lowndes.*
 University of South Carolina
 Press, Columbia,
- Waterhouse, Richard
 1975 *England, the Caribbean, and the
 Settlement of Carolina.* *Journal of
 American Studies* 9:259-281.
- Webb, Robert S. and Mary E. Gantt
 1991 *Evaluative Testing at Crowfield
 Plantation Main House Site
 (38BK103) and Slave Complex
 (38BK1011), Berkeley County,
 South Carolina.* Law
 Environmental, Inc., Kennesaw,
 Georgia.

- Weir, Robert M.
 1983 *Colonial South Carolina: A History*. KTO Press, Millwood, New York.
- Wheaton, Thomas R., Amy Friedlander, and Patrick Garrow
 1983 *Yaughan and Curriboo Plantations: Studies in Afro-American Archaeology*. Soil Systems, Inc., Atlanta.
- Wilson, Jack H.
 1995 The Vertebrate Fauna. In *In the Shadow of the Big House: Domestic Slaves at Stoney/Baynard Plantation, Hilton Head Island*. By Natalie Adams, Michael Trinkley and Debi Hacker. Research Series 40, Chicora Foundation, Inc., Columbia.
- Wilson, Jack H. And Homes Hogue Wilson
 1986 Faunal Remains. In *Indian and Freedmen Occupation at the Fish Haul Site (38BU805), Beaufort County, South Carolina*. Chicora Foundation Research Series 7. Chicora Foundation, Inc., Columbia, S.C.
- Wing, Elizabeth S. and Antoinette B. Brown
 1979 *Paleo-Nutrition: Method and Theory in Prehistoric Foodways*. Academic Press, New York.
- Wood, Peter
 1974 *Black Majority*. W.W. Norton, New York.
- Yarnell, Richard A.
 1974 Plant Food and Cultivation of the Salts Cavers. In *Archaeology of the Mammoth Cave Area*, edited by P.J. Watson, pp. 113-122. Academic Press, New York.
- Zierden, Martha and Jeanne Calhoun
 1984 *An Archaeological Preservation Plan for Charleston, South Carolina*. Archaeological Contributions 8. The Charleston Museum, Charleston.
- Zierden, Martha and Michael Trinkley
 1984 World Enough and Time: Ethnobotany and Historical Archaeology. *South Carolina Antiquities* 16:87-104.
- Zierden, Martha, Lesley M. Drucker, and Jeanne Calhoun
 1986 *Home Upriver: Rural Life on Daniel's Island, Berkeley County, South Carolina*. Carolina Archaeological Services and The Charleston Museum, Columbia. Report Submitted to the South Carolina Department of Highways and Public Transportation, Columbia.



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