Test Excavations at the Wachesaw Landing Site Georgetown County, South Carolina

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NORTH CAROLINA ARCHAEOLOGICAL COUNCIL
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EDITOR'S PREFACE

This volume, number 20 of the North Carolina Archaeological Council series, is the only report in the series of archaeological research outside of North Carolina. The research at the Wachesaw Landing Site, Georgetown County, South Carolina, is reported here by several North Carolina-trained archaeologists and colleagues. Beyond the North Carolina ties of the authors, however, this report contributes to increasing understanding of late prehistoric and early historic peoples and cultures in piedmont and coastal North Carolina and adjacent areas.

The research area, the coastal plain where the Waccamaw River empties into Winyah Bay, is part of the larger Pee Dee drainage which encompasses large parts of central and eastern North Carolina. The coastal setting of the site, including riverine, estuarine, marsh, and upland components, is similar to complex environments well represented along the North Carolina and other south Atlantic coasts; these are regions that have been heavily utilized by humans for millennia.

The major aboriginal occupation at Wachesaw Landing dates to the very late prehistoric and early historic periods. The bulk of the pottery belongs to the Pee Dee series with important affinities to a number of piedmont sites including Town Creek in Montgomery County, North Carolina, and Saura Town in Stokes County, North Carolina. The early written documents about the research area suggest that the 18th century occupants of the site were Waccamaw Indians who may have migrated from North Carolina and who had important relations with a number of other Carolina tribes including the Winyah, Santee, Sara, and Pedea.

In addition to discussions of the environment and ethnohistory of the area, and analyses of prehistoric and historic artifacts, the report includes chapters on the ecofacts and human skeletal remains from Wachesaw Landing. All of these remains provide information about human utilization of the surrounding environment. Further, the report shows the potential usefulness of archaeological material recovered accidentally or in non-systematic excavations. Some of the historic artifacts and, even more important, the human skeletal material were recovered in the past in various non-systematic diggings. However, these materials, when carefully analyzed and compared to excavated materials, provide additional useful information on past human occupation of the site.

The Wachesaw Landing report is a useful addition to our understanding of coastal adaptations of late prehistoric and early historic aboriginal populations of the Carolinas. The authors call for needed future research in the area. I hope that this report will contribute both to answering some questions about the archaeology of the region and to inspiring new questions.

Janet E. Levy
Editor

ACKNOWLEDGEMENTS

This work was conducted at the Wachesaw Plantation in Georgetown County, South Carolina through the gracious cooperation of its owner, Mrs. L. M. Kimbel. It was with great regret that we learned of Mrs. Kimbel's death on April 29, 1982, shortly after the completion of this investigation. Both she and her husband before her had shown a sincere and deep concern for the preservation of not only the archaeology at Wachesaw, but also the environmental integrity of the plantation. Both archaeology and Georgetown County have lost a friend.

We also thank Mr. and Mrs. Ed Fulton who assisted us in many matters and who provided a constant source of encouragement for our labors. They have labored with and loved the plantation for the past fifty years. The Ryans, who also live at Wachesaw, expressed constant interest in our work and showed us considerable hospitality.

Mr. Allen Liss of the Charleston Museum assisted in gathering together the previous collections and fieldnotes from the Museum's work at Wachesaw in the 1930s. Figures 17 through 20 are reproduced here with the permission of the Charleston Museum, Charleston, South Carolina.

Dr. Betsy Reitz of the University of Georgia contributed her time and expertise to the analysis of the fish remains. Dr. Ted Rathbun of the University of South Carolina offered considerable assistance and expertise in the analysis of the human skeletal material. Mr. James Poetzinger, at the University of North Carolina at Chapel Hill, contributed his time to the excavations during the University's spring break. While individual authors are primarily responsible for certain sections of this report, it should be emphasized that the ultimate product is the result of a cooperative effort with all the authors blending their individual styles, experiences, and backgrounds.

Lodging and hospitality were provided during these studies by Mr. Eddie Stroman and Ms. Martha Zierden of McClellanville, South Carolina. To all others who have assisted in time or spirit we offer our appreciation.

Finally, this work is dedicated to all "famous men" whose rebellion is unquenchable, self-damaging, deeply principled, infinitely costly, and ultimately priceless. There are still a very few such individuals in this world and I have been lucky to work with three compiling this report.

MT
November 30, 1982

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THE NATURAL SETTING

The Wachesaw Landing site is situated on the east bank of the Waccamaw River about 17 miles north of Winyah Bay and the U. S. 17 bridge at Georgetown, South Carolina. The site is opposite the northern tip of Richmond Island in the Waccamaw River and is about 2 miles west of the town of Murrells Inlet. Remnants of rice fields, now swampy marsh, border Wachesaw to the north and south while the inland terrain is relatively flat.

The Waccamaw River, which empties into Winyah Bay at Georgetown is part of the larger Pee Dee drainage, composed of the Pee Dee, Waccamaw, and Black Rivers. The Pee Dee is formed by the confluence of the Yadkin and Uwharrie Rivers in Montgomery County, North Carolina; from there the Pee Dee flows about 200 miles to Winyah Bay. The Waccamaw River, which parallels the South Carolina coast into North Carolina, is affected by tidal fluctuations of 2.3 to 3.8 feet for almost its entire length of 28 miles (Mathews et al. 1980:79). While the Waccamaw is primarily a riverine ecosystem, a salt wedge may extend up river for about 18 miles. Normally, the division between fresh and brackish water, based on vegetation types, is placed at the mouth of the Waccamaw River (National Oceanic and Atmospheric Administration and South Carolina Coastal Council 1979:L-1).

The vicinity of Wachesaw Landing is characterized by Cooke (1936:6) as belonging to the Pamlico terrace which dates from the late Pleistocene. Underlying the Pamlico terrace sediments are rocks of the Pee Dee formation (Colquhoun 1969:151). Cooke (1936) notes that small chert nodules are found in the Pee Dee formation which outcrops in several parts of Georgetown County. Fossils dating 800,000 to 1,000,000 years old have also been identified from the Pamlico formation (Mathews et al. 1980:5). Holocene sediments are relatively infrequent in the Wachesaw vicinity and are usually associated with river bottom, swamp, marsh, beach, and tidal flat environments.

The Waccamaw River, as it passes into North Carolina, leaves the strictly coastal region of the Pamlico formation and enters the more interior coastal plain characterized by the Talbot, Wicomico, Penholoway, and Okefenokee terraces (Colquhoun 1969:152). The undifferentiated Holo-Pleistocene geology is replaced, in the North Carolina Inner Coastal Plain, by the Upper Cretaceous Lumbee group (United States Department of Interior 1980). The surface soils change from well drained loamy sands on the coast to a mix of poorly drained and excessively well drained soils further inland.

The coastal region is warm and humid with long, hot summers and mild winters. Rainfall is abundant and the soils are wet or moist most of the year. These climatic factors favor rapid decay of organic materials

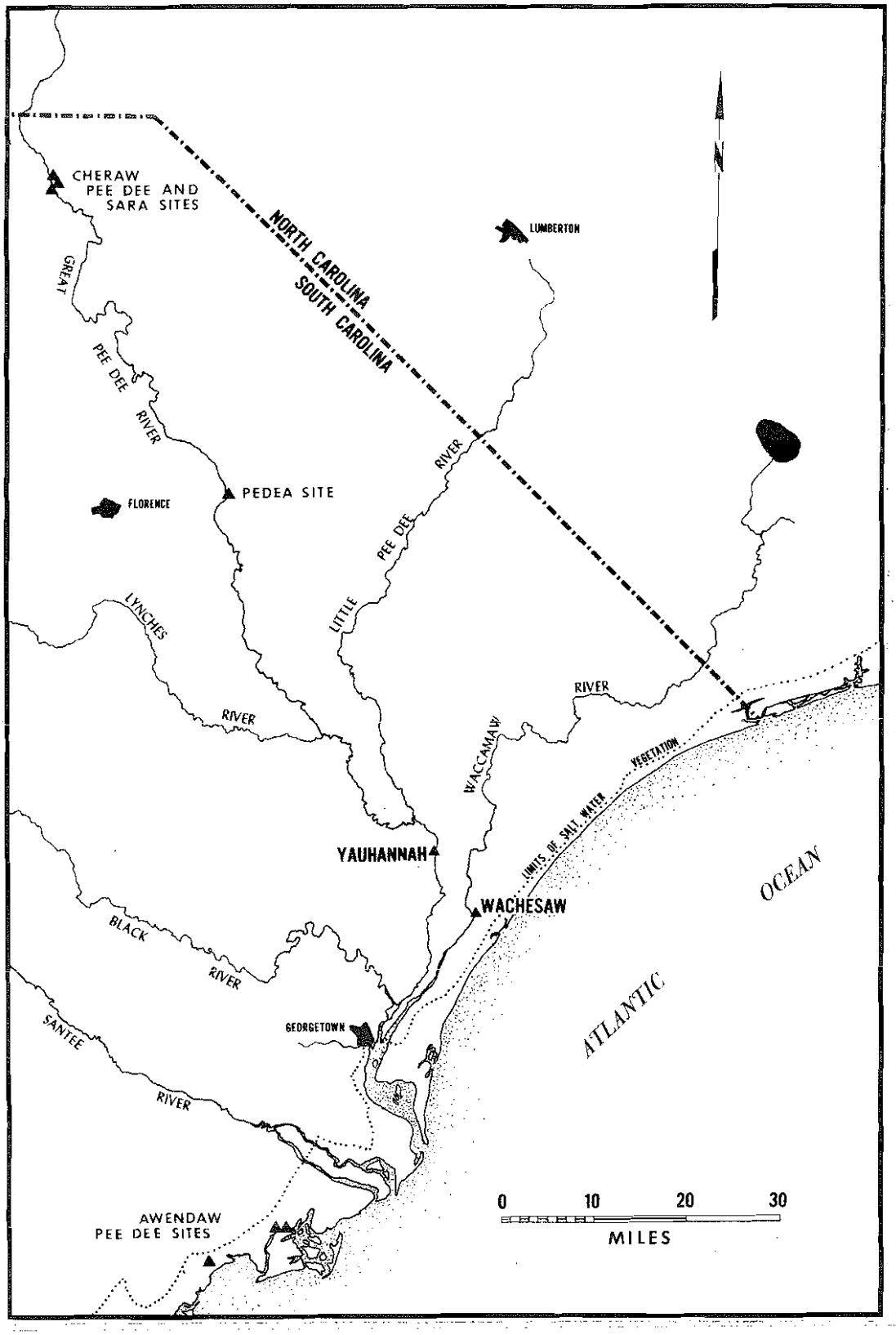

Figure 1. Northeastern coastal South Carolina, showing the vicinity of Wachesaw Landing.

and minerals as well as significant leaching. Because of the high rainfall, which leaches bases and replaces them with hydrogen ions, and because of the natural vegetation, the soils are frequently highly acidic (Mathews et al. 1980:39). The mainland soils, consisting of Pleistocene materials, usually show horizon development. Although no soil survey is available for Georgetown County, the soils generally belong to the Yamassee-Wahee-Bladen Association. The better drained soils in the vicinity of Wachesaw Landing include primarily Lakeland sands and Yauhannah loamy fine sands (Roy Todd, personal communication). Some of these soils contain pockets of a plastic, sandy clay originating 1.5 to 2.0 feet below the ground surface. The soils of Wachesaw Landing exhibit an Ap horizon of dark grayish brown loamy sand overlying a B horizon of light brownish yellow sandy clay loam. Typically these soils are moderately well drained and are strongly acid in reaction. The marsh soils found on either side of Wachesaw Landing are of Holocene origin, but overlie an older Pleistocene sand zone. The marsh sediments are fine clays, sands, and organic debris, most of which are a dark color resulting from chemical reduction in an oxygen limited environment. Most of these soils were previously diked for the production of rice.

Studies of sea level changes show that there is a general tendency for rising levels in the past 10,000 years, punctuated by a number of fluctuations. Recent work in South Carolina is beginning to provide a sea level curve, although data for the period from A.D. 1 to 1700 are generally lacking (Colquhoun et al. 1980). It is probable that the sea level about A.D. 1550 was from 0.5 to 1.0 foot lower than present and that, by A.D. 1780, the sea level had risen to within 0.3 foot of its present level (Colquhoun et al. 1980:148; Mark Brooks, personal communication).

Haag (1975:78) has suggested that "the climatic conditions in the Southeast have not changed greatly in the last 5000 or 6000 years." In spite of minor climatic changes such as those suggested by Landers (1973) it is likely that Haag is essentially correct, particularly for the protohistoric and historic periods. The mountains in northwestern South Carolina and the Bermuda high pressure system tend to retard cold air movement onto the coast, producing relatively mild, temperate winters. The Gulf Stream current, which flows parallel to the coast, is a major factor producing the sub-tropical summer climate. The summer ranges from warm and humid along the coastal zone, where sea breezes tend to moderate the climate, to hot and very humid in the interior where temperatures show considerable variation (Landers 1970; Mathews et al. 1980:46). Rainfall is usually higher from 10 to 30 miles inland than along the coastal zone and drops off noticeably in the area of the Inner Coastal Plain and Sand Hills (Landers 1959:2). Spring is normally the driest period of the year while the summer months are usually the wettest. Severe drought conditions appear usually at least once every 15 years, but may occur more frequently. The average warm season (April to September) rainfall for the Waccamaw area is 27 to 30 inches, while about 18 inches fall during June, July, and August (Reed 1936:11, 27). These observations are significant as corn requires 20 inches or more of rainfall for reasonable

success, with constant moisture during the tasseling period (June and July).

While the immediate vicinity of Wachesaw Landing may be characterized as an upland ecosystem, the area borders on a riverine ecosystem (the Waccamaw River), and several palustrine ecosystems (the old rice fields, previously fresh water marshes). Additionally, an estuarine ecosystem may be found within 3 miles to the east or 18 miles to the south. A somewhat different upland environment, called the maritime ecosystem, is found on the barrier islands in the vicinity. Consequently, Wachesaw Landing is situated in an area of extensive ecological variability.

The vascular flora of the upland ecosystem in the Wachesaw area is characterized by a mixed hardwood community. This community exhibits considerable diversity, but Kuchler (1964) suggests that the potential natural vegetation in the area is the Oak-Hickory-Pine forest containing medium tall to tall forests of broadleaf deciduous and needleleaf evergreen trees. The dominant trees are hickory, shortleaf pine, loblolly pine, white oak, and post oak. Other components would include dogwood, persimmon, sweetgum, and water tupelo. Such upland mixed hardwood communities have been selectively eliminated through logging and agriculture. Today much of the area surrounding Wachesaw is planted in pines or has been converted into live oak groves. The mixed hardwood forests provide excellent browse and cover for deer and even higher densities may be found in the edge zone between the upland zone and the palustrine zone (Moore and Bevill 1978:9). Other mammals frequently found in this zone are squirrels, opossums, raccoons, and skunks. Less common species include the black bear, fox, and bobcat (Sandifer et al. 1980:473-478). The only terrestrial turtle found in any frequency in this environment is the Eastern box turtle, although freshwater turtles may occasionally be observed (Sandifer et al. 1980:457). The turkey is especially characteristic of mixed hardwood forests where mature oaks are common (Moore and Bevill 1978:41-43).

Because Wachesaw is situated on the Waccamaw River, the riverine ecosystem is a significant factor in the site's natural setting. The riverine ecosystem is based on waters with less than 0.5% ocean-derived salts and may be characterized as freshwater. The Waccamaw River is a tidal subsystem because it is characterized by "water velocity fluctuating under tidal influence, a low gradient, a streambed composed mainly of mud, occasional oxygen deficits, and a well-developed floodplain" (Sandifer et al. 1980:9). The mud riverbed is not conducive to the survival of shellfish, although some freshwater mussels such as *Elliptio spp.* may be found in the sandier areas. Approximately 24 fish species are common in the riverine system and six species of anadromous fish are found. The more important common species include catfish, largemouth bass, black crappie, white bass, and yellow perch. Also present are spotted sucker, carp, shiner, and longnose gar. The anadromous species include shad, herring, striped bass, and sturgeon (Sandifer et al. 1980:411). Reptile species, including the river cooters, sliders, snapping turtles, and Florida cooters, are fairly common although most are found along the edges of slower

flowing streams in the palustrine ecosystem. Alligators are not uncommon today and may have been more common prior to extensive human pressure (Sandifer et al. 1980:419). Avifauna are relatively uncommon in many riverine ecosystems because of the tidal range and rate of river flow. The Waccamaw, however, has a small tidal range and weak flow. The highest numbers of birds coincide with the spring and fall migrations (Sandifer et al. 1980:420). The presence of a nearby palustrine ecosystem, however, probably attracts birds to the site vicinity.

The palustrine ecosystem in the vicinity of Wachesaw Landing includes several areas of tidal forested wetlands. These areas are dominated by oaks, sweetgums, cypress, and water tupelo with an abundant understory including swamp privet and wax myrtle (Sandifer et al. 1980:313). Adjacent tidal impoundments are the result of historic rice cultivation which diked areas of tidal emergent wetlands. These river marsh areas are dominated by brackish and freshwater plants such as giant cutgrass, wild rice, cat-tails, and saw grass. This ecosystem attracts a variety of mammals also found in the upland zone, including deer, opossum, and raccoon. The beaver is especially suited to the forested wetlands and the forested wetlands are historically the home of the black bear (Sandifer et al. 1980: 381-382). As previously suggested, this environmental zone is the most ideally suited habitat for birds in the Sea Island Coastal Region (Sandifer et al. 1980:375). Possibly significant birds to aboriginal Indians include the various wading birds such as the wood stork, egret, ibis, and heron, and the ducks, primarily the wood duck. Turtles are abundant but do not include any species not previously mentioned.

Two distinct areas of the estuarine ecosystem are found near Wachesaw -- the intertidal flats characterized primarily by the ubiquitous intertidal oyster beds and the emergent wetlands characterized by vascular flora such as *Spartina* and *Juncus*. The estuarine area is highly productive and provides an environment for a number of fish in tidal creeks. These fish may be divided into two groups. Fish such as the flounder, drum, catfish, and gar represent large predators which are found at the mouths of intertidal creeks. These fish feed on the second group of fish, such as the mumichog, spot, Atlantic menhaden, and silver perch, which commonly travel in schools and migrate in and out of the intertidal creeks with the tide (Cain 1973:76-77). While few turtles are found in the estuarine area, birds are fairly common, particularly in the area of emergent wetlands. Some of the birds, such as the ibis, found in the estuarine ecosystem are also found in the palustrine zone while others, such as the clapper rail, are usually found only in tidal marshes. While deer may graze in the high marsh, the only mammals frequently associated with the estuary are the marsh rabbit and the raccoon (Sandifer et al. 1980:259-260).

This brief discussion suggests a natural setting at Wachesaw Landing that would have been particularly attractive to aboriginal occupants. The topography of the site indicates a sandy, well drained upland bluff overlooking a freshwater river and bordered on two sides by river swamp and forested wetlands. Within a 2-mile radius of the site there would have been a variety of mammals, birds, turtles, edible plants, fresh-

water and estuarine fish, and estuarine shellfish. The uplands are well suited to corn agriculture, with 250 to 260 frost free days and adequate growing season rainfall. The site is ideally suited to take advantage of a variety of environmental zones with minimal travel. Scheduling of resource procurement would have allowed a permanent occupation with minimal disruptions. The climatological conditions in the vicinity suggest that year-round occupation would have been possible with minimal protection from the elements.

HISTORY OF THE WACCAMAW INDIANS AND WACHESAW PLANTATION

The principal secondary sources for the Indians of the South Carolina coast are Mooney (1894), Hodge (1910), and Swanton (1952). Despite considerable investigation of the recognized primary sources, we can add little to these earlier, rather sketchy, accounts of the two Indian groups known to have inhabited this area of the coast at contact, the Winyah and the Waccamaw.

The first Indians to make contact with the English settlers and explorers were the "feeble and unwarlike coast tribes" (Gregorie 1926:8) the Cuccoes, Wandos, Wineaus (Winyahs), Etiwans, and Sewees. Hodge (1910:887), using a variety of sources, places the Waccamaws along the river by the same name and Rivers (1874:14), quoting a 1715 government census, places the tribe 100 miles northeast of Charleston, South Carolina. At that same time the Waccamaws had four villages containing 210 males and 400 females. The Winyah Indians, however, are located 80 miles northeast of Charleston by this same 1715 census and are placed on the west side of the Pee Dee River near its confluence with Winyah Bay by Hodge (1910:963). The Winyah were a smaller tribe, living in one village of 36 males and 70 females in 1715 (Figure 2).

Several authors, including Lee (1963:47) and Rights (1957:39), suggest that the Woccon, an Indian group of presumed Siouan linguistic stock mentioned by Lawson (Lefler 1967:242), left North Carolina around 1711-1712 and became known as the Waccamaw in South Carolina. The only evidence for such an idea is that the Waccamaw begin to appear in South Carolina historical accounts at about the same time as the Woccon drop out of North Carolina records. Rights (1957:39), engaged in erratic speculation, suggests that the Waccamaws (once Woccons) eventually wandered back into Robeson County, North Carolina to form the Croatan group. Swanton (1952:101) repeats Right's speculation that the Waccamaw ultimately united with the "so called Croatan Indians of North Carolina." Archaeological evidence for such a theory is absent, although no intensive investigation has been undertaken in the Lower Coastal Plain of North Carolina, as mentioned by Hammond (1980:9). Swanton (1952:90) indicates that "[t]he sole claim of the Woccon to distinction is from the fact that it is the only one of the southern group of eastern Siouan tribes other than the Catawba from which a vocabulary has been preserved."

The Waccamaws and Winyahs are most often remembered in connection with the establishment of a trading post in the northern coastal area by the South Carolina Commissioners of Indian Trade. North Carolina records indicate that in 1715 the Winyah and Waccamaw were living close together and were being supplied with ammunition and encouraged in hostilities toward the English by the North Carolina Sara (Mooney 1894:77), although by the end of July 1716 the "Wawees, Wackamaws, Pedeas and others" concluded

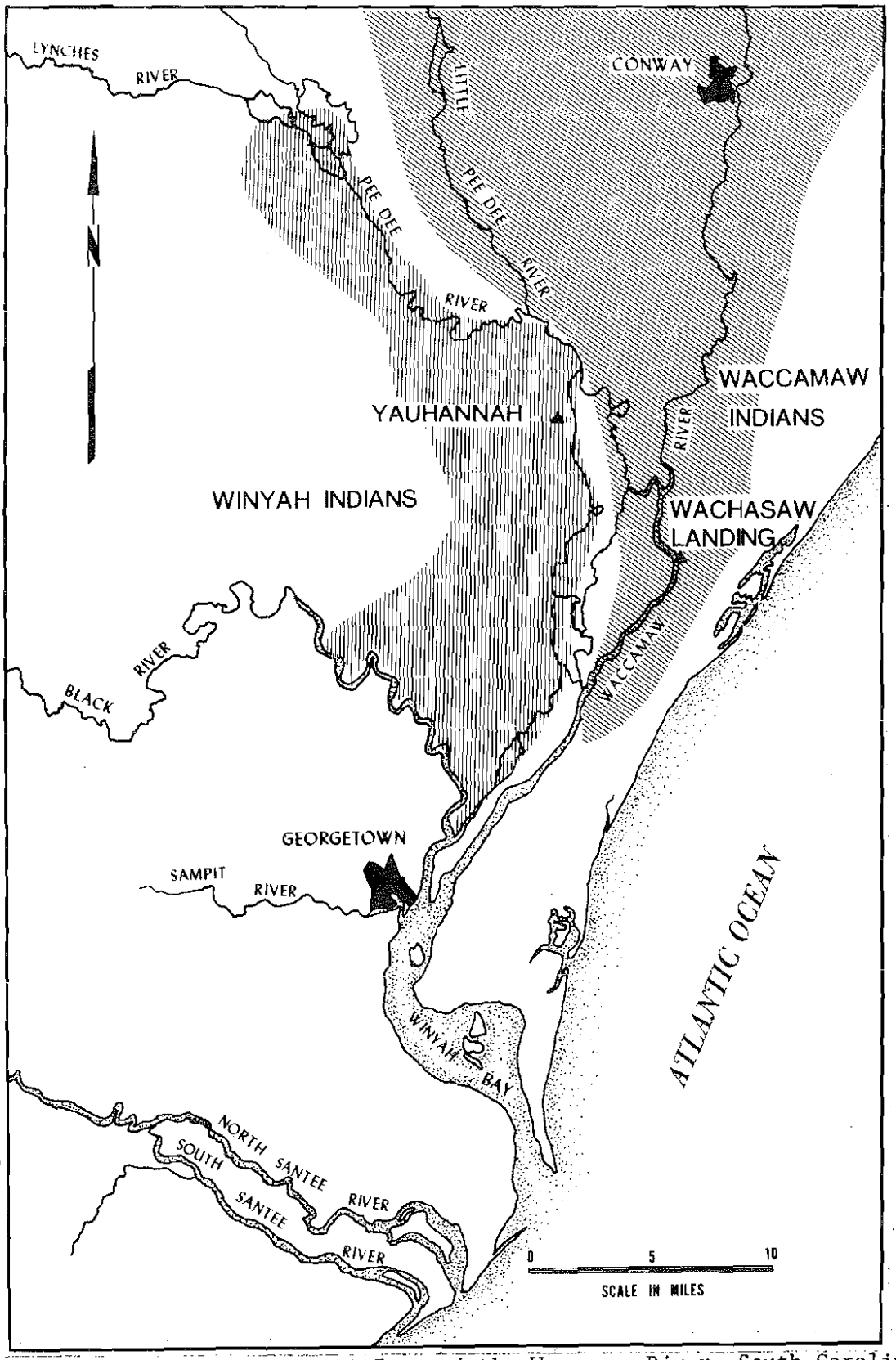

Figure 2. Vicinity of Winyah Bay and the Waccamaw River, South Carolina.

a peace accord with South Carolina (McDowell 1955:96). Meanwhile the Commissioners of Indian Trade agreed to establish a factory at Saukey (although the location of Saukey is unknown, Milling [1969:221] notes that the "Soo-kay" are a small, unidentified Siouan group in South Carolina) to allow trade with the Pedeas and Waccamaw Indians (McDowell 1955:80). William Waties, the factor of this proposed post, however, argued in September 1716 that the post ought to be established at "Uauenee (or the Great Bluff)" (Yauhannah) because of its closer proximity to English settlements, greater distance from the Sara, and close proximity to the Waccamaw. In fact Waties states that the move to Yauhannah is useful "in obliging the Wackamaws, a People of greater Consequence than the Pedeas" (McDowell 1955:111). The Commission agreed to this change and ordered that "Goods and Necessaries" valued at £ 86:15:3 be delivered. While the invoices for this post have been lost, several items are mentioned in the Commissioners' minutes, including broad hoes, blankets, muskets, salt, and rum. The early eighteenth century explorers most frequently traded beads, hoes, hatchets, bells, hollowing adzes, knives, and scissors (Gregorie 1926:23-24). The Indians also were trading for corn as the Commissioners in May 1717 told the new factor at Yauhannah, Meredith Hughes: "[y]ou must note the Corn comes very dear, so you ought to sell it accordingly" (McDowell 1955:175). Previously the Commissioners had written Hughes:

> [t]hough we gave you Caution Yesterday, of parting but sparingly from the Corn, yet it's our Will if the Indians want it very much, that you supply them and send the Periagoe for more, and we'll procure it here as well as we can, being we would not have any Clamour that the Indians are not well supplied by us (McDowell 1955:164).

The Indians traded in return skins, primarily deer, but also bear, beaver, fox, otter, raccoon, and bobcat (Gregorie 1926:72).

Apparently the Indians in this part of South Carolina were growing restless and were beginning to move around by mid-1717. Hughes notified the Commissioners and they responded saying that they "laid your Letters relating to the Indians that have shifted their Abode and plagued our People about their Cattle, before both Houses" (McDowell 1955:176). By August 1717 the Sara, Santee, Pedea, and Waccamaw had apparently forced Hughes to leave the factory at Yauhannah (McDowell 1955:202) and in September of that same year a group of Pedea, Winyah, and Waccamaw Indians appeared before the Commission. The Winyah and Waccamaw Indians desired to have Hughes stay in the area of the English settlements (on the Black River) while the Pedea "declared that his People preferred Your-henee to any other Place for Trade" (McDowell 1955:208). The Commission, probably because the trade potential of the Waccamaw was greater than that of the Pedea, decided that Hughes should stay in the Black River area (McDowell 1955:210). This factory was, according to the Commission minutes, located on "Andrew Collins's Plantation at Black-River" (McDowell 1955:232). Rogers (1970:14) notes that while there is no plat for Andrew Collins on the Black River, there is a plat for Andrew Collings on the south side of the

Pee Dee River (this plat, however, does not indicate where on the Pee Dee this plantation is located). Hughes indicated in May 1718 that he was preparing to return to Yauhannah, although this transfer appears to have never taken place because in August 1718 money was still being sent to Hughes for his "Board and Accommodations" (McDowell 1955:275, 313). Hughes also noted in April 1718 that the Waccamaw Indians had moved to the south side of the Black River (McDowell 1955:264). The Commissioners sent Hughes the Governor's "Command under his Hand and Seal to said Wackamaws, to return to their old settlements" (McDowell 1955:264), however, there are no indications whether this order had the desired effect.

The Waccamaw were effectively destroyed in a 1720 "war" with South Carolina. The entire account is contained in one paragraph:

> I am to inform you that at the same time the negroes was playing the rogue we had a small war with the Vocamas a nation on Winea river not above 100 men, but the gentlemen have paid for it for there is 60 men women and children of them taken and killed . . . and now they petition for peace, which will be granted them (B. P. R. O. quoted in Milling 1969:226-227).

Rogers (1970:14) notes that during this war the Winyahs sided with the English and survived somewhat longer. Apparently a few Waccamaw Indians were still present in the area into the 1730s (Milling 1969:227) and in April 1733 Rangers on the Northern Frontier were ordered by the Council to "Observe the behavior of the Pedee and Waccamaw Indians" (Journal of the Council, April 18, 1733). Mooney (1894:77) notes that in 1755 the Cherokee and Notchee "were reported to have killed some Pedee and Waccamaw in the white settlements." Mooney (1894:77) believes that the Waccamaw were finally incorporated with the Catawba, a view echoed by Hodge (1910: 887) and mentioned by Swanton (1952:101). We have previously mentioned several authors' idea that the Waccamaw eventually became known as the Croatan. While it is possible that the Waccamaw eventually allied themselves with the Catawba, it is also possible that they instead were simply absorbed by the English settlements. This latter view is supported by the vague references from the 1730s and 1755.

No maps have been found which document the location of the Waccamaw, although an undated Bowen map ("A New and Accurate Map of the Provinces of North and South Carolina, Georgia, etc.") does show the "Winyou" Indians southwest of the Pee Dee River. Based on the ethnohistoric documents and a reliance on the secondary sources, it appears that the Wachesaw Landing site is well within the area of presumed Waccamaw Indian control prior to their move to the Black River in 1717. A review of the colonial documents, as previously mentioned, does not indicate if the Waccamaw were ever persuaded to leave the Black River and return northward. Nor are there any indications of their movements in the period of 1720 to 1755.

Smith (1913:68) found that most grants indicate that colonial occupation of the Waccamaw Neck began about 1711, but it was not until about

1730 that the Alston (or Allston) family began to acquire land in the vicinity of Wachesaw Plantation (Smith 1913:69). Obviously, much additional historical research is necessary to document the actual historic occupations in the Wachesaw area. There are local accounts of a tavern being located on the high ground overlooking the Waccamaw River at Wachesaw Landing prior to 1730 (Ed Fulton, personal communication). This speculation, however, appears based solely on the existence of a landing at the site in the nineteenth century and the high bluff. No documentary evidence has been uncovered for a tavern prior to the Wachesaw Plantation settlement and, given the hostile nature of the Indians on this frontier, it is unlikely that a tavern would have been established in the early eighteenth century. Apart from this suggestion of a tavern, the Alstons seem to have been the original owners of the Plantation. By 1825 the Rev. James Belin had acquired the land (Lachicotte 1955; Mills' Atlas of 1825). The original plantation house, situated inland from the Indian occupation, burned in 1890, although the rice barns, located on the northern portion of the site along the river, continued to be used. A barn, situated on the bluff, is shown on a 1905 plat of Wachesaw and Hermitage Plantations, surveyed by M. F. Sarvis. Ed Fulton (personal communication) recalls that the foundations existed into the 1930s.

Hilliard (1975:65) indicates that the Santee River and Winyah Bay areas, including Wachesaw Plantation, represent the "premier rice-producing area" of South Carolina. From 1839 to 1859 rice production in Georgetown County increased from 36,360,000 to 55,805,000 pounds of rice, representing the largest source of rice in either Georgia or South Carolina (Hilliard 1975:62). Hilliard (1975:58) also notes the immense amount of labor required for successful rice production, stating, "[t]he quantity of earth moved, the amount of labor used, and the ingenuity required in the process were enormous." While most ground disturbing activities took place in the wetlands during clearing and ditching, the plantations themselves, by virture of their size and the amount of labor required, should be expected to have left abundant archaeological indications. At Wachesaw, during the eighteenth and nineteenth centuries, a road leading to a dock on the Waccamaw River was eroded to a depth of 4 to 6 feet below ground level. The bluff overlooking the Waccamaw River for a number of years was plowed as shown in Figure 3.

In May 1930, while the Kimbels were building a cabin on their newly acquired Wachesaw Plantation, workmen discovered two groups of skeletons (*Horry Herald*, May 8, 1930; Ed Fulton, personal communication). One group consisted of a single adult and a child, while the second cluster contained seven individuals (E. B. Chamberlain, Charleston Museum fieldnotes). The Charleston Museum was notified of the discoveries and removed some of the skeletal material on May 22, 1930. All of the skeletons were found "on their sides or backs with their knees drawn up" (Ed Fulton, personal communication) and the Charleston Museum fieldnotes show one drawing of a fully flexed burial. The *Horry Herald* article indicated that in addition to beads, "[a] metal bracelet and also a crudely made large spoon of metal were with the bones." This story is also apparently the source of Milling's (1969:24) account: "[i]n digging for the foundations of a chimney, thirteen

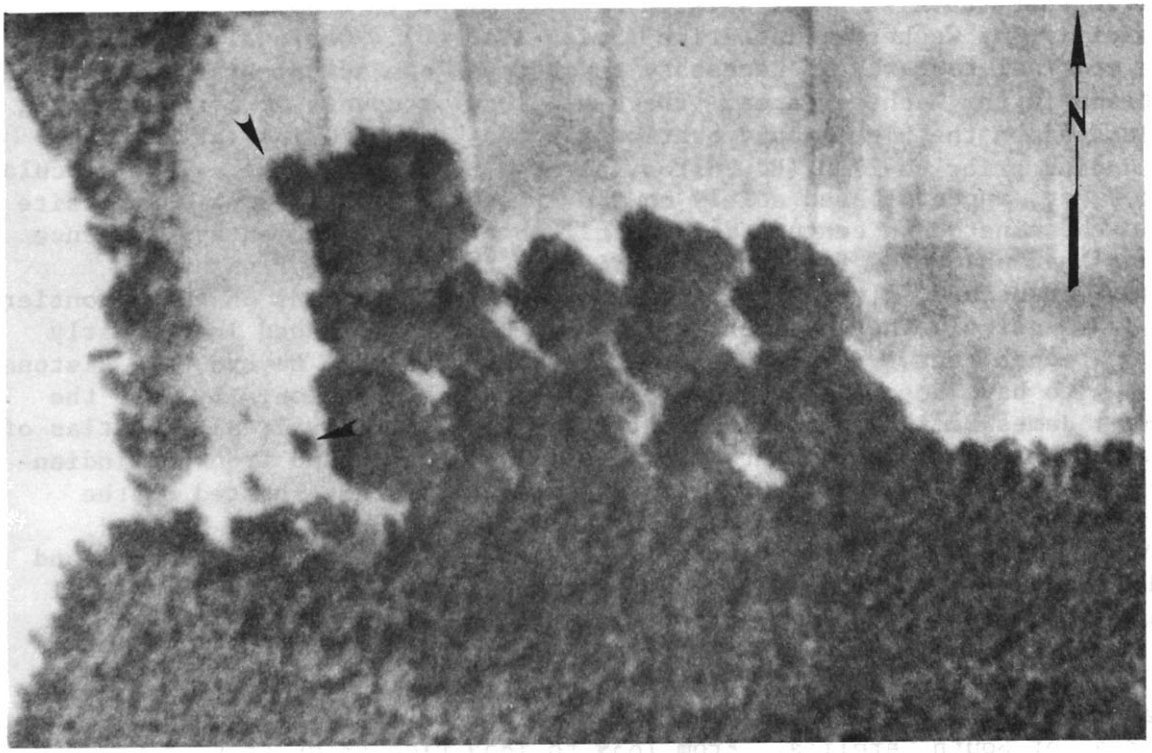

Figure 3. 1939 aerial photograph of Wachesaw Landing (CDW 1-26) at a scale of approximately 1 inch to 190 feet.

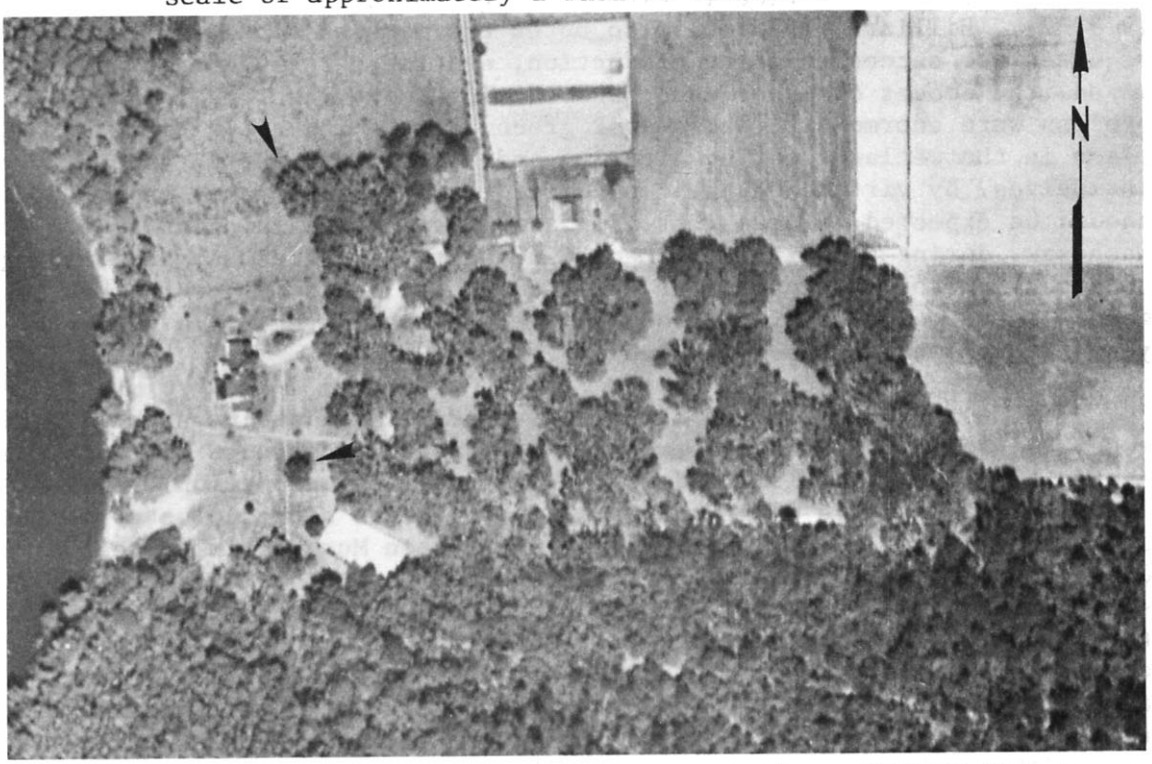

Figure 4. 1957 aerial photograph of Wachesaw Landing (CDW 1R-33) at a scale of approximately 1 inch to 190 feet. Arrows show common points for comparison.

skeletons were discovered, arranged in a radial pattern, the skulls at the center, the feet outermost."

About 1936 the plantation overseer, Mr. Ed Fulton, was filling in the previously mentioned road leading to the river by plowing adjacent to the cut. In the process the plow turned up a burial urn and cover, both in good condition, from the south side of the road. Several bone fragments from within the urn were sent to the Smithsonian Institution and Fulton (personal communication) recalls that they were identified as portions of an infant mandible although he does not remember what happened to the bone. A second urn and cover were recovered from the north side of this road slightly later. Both urns had kill holes and the two vessels and covers were donated to the Charleston Museum. Additional burials (about five individuals) were found while digging the foundations for the main house in 1941. They were badly disturbed and none was saved. Skeletal material was also recovered while digging a water line from the main house to the cabin.

During the 1930 salvage of skeletal material, the Charleston Museum fieldnotes indicate that a test unit on the north side of the road, adjacent to the Waccamaw River, yielded a quantity of pottery. The only other excavations prior to the University of North Carolina Research Laboratories of Anthropology tests were conducted by a local individual. Because the Waccamaw River continues to erode into the bank at Wachesaw, abundant material can be found along the beach (Figure 4).

The Wachesaw Landing site was visited on several occasions in November and December 1981 by Trinkley and Hogue. During these visits a small collection of artifacts was gathered from the beach and the artifacts in Mrs. Kimbel's possession (beads, brass bracelet, and the spoon mentioned in the 1930 newspaper account) were photographed. Several profile cuts along the bank were examined, with evidence of either overbank deposition or slumping noted. In addition, the skeletal material curated at the Charleston Museum was re-examined.

THE EXCAVATIONS

As a result of the available information (see also Trinkley and Hogue 1979) it was determined that test excavations should be conducted at the site. These excavations, conducted under the auspices of the Research Laboratories of Anthropology at Chapel Hill, were directed toward the recovery of a controlled sample of cultural remains (especially pottery), the identification and collection of additional human skeletal remains from a documented context, and the identification of the Siouan Waccamaw village believed to be located at Wachesaw Landing. Mrs. L. M. Kimbel and the directors of Wachesaw Plantation, Ltd. agreed to the proposed work in December 1981 and the investigations were conducted from March 6 through 13, 1982. During this period a crew of four individuals devoted 195 man hours to the project and excavated 640 cubic feet of soil. A total of three 10-foot squares, five 5-foot squares, and one 5 by 10 foot unit were excavated. All soil was screened through ¼-by-½ inch mesh.

Prior to the excavation, a north-south base line was established along the edge of the bluff. Two permanent points were set in concrete at 100R100 to the south and 300R100 to the north. The southern point was tied into the USGS Reference Mark Wachesaw 4, while the northern point was related to the USGS Triangulation Station Wachesaw 1934. The USGS Wachesaw 4 point was assigned the site datum with an assumed elevation of 100 feet (actual elevation of 16.77 feet MSL) while USGS Wachesaw 1934 has an assumed elevation of 99.63 feet and an actual elevation of 16.40 feet MSL. A contour map of the bluff area was made with a 0.5 foot contour interval. Figure 5 shows this map and the placement of the various squares. These units, designated by the southeast corner, are tied into the site grid that used the modified Chicago technique standarized by the Research Laboratories of Anthropology. The first number indicates feet north of the point 0R0, while the second number indicates feet right (or east) of this point.

Stratigraphy in the excavated areas is fairly simple, although the genesis of the stratification is not completely understood. Level 1 represents an extensively mixed plowzone varying in depth from about 0.3 to 1.5 feet. Much of this plowzone, in some site areas, is composed of plowed-through midden and is a black to dark brown loamy sand. Level 2 is either mixed plowzone and subsoil or, very occasionally, relatively undisturbed midden. In areas where no intact midden was evident, level 2 represents the removal of plow smear to obtain better feature definition. Units were troweled, photographed, and drawn at the base of level 2.

Square 160R190 was laid out in the large field midway between the main house and cabin, immediately north of the posited road to the river landing (Figure 6). The plowzone was unusually deep -- about 1.5 feet --

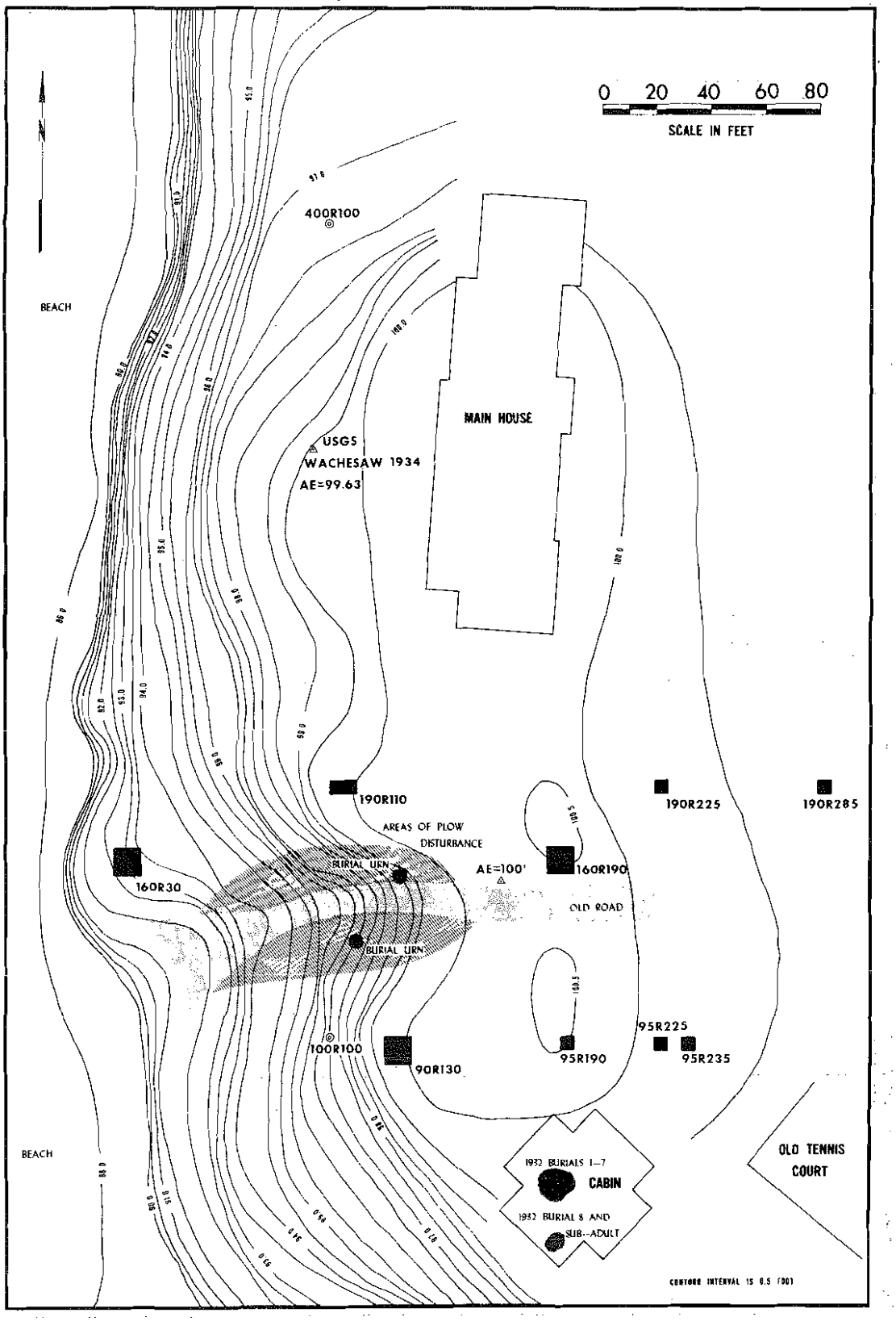

Figure 5. Contour map of the Wachesaw Landing Site.

even for a cultivated field. While the terrain gradually slopes to the river, there is also an obvious ridge of high ground running roughly parallel to the river from the main house to the cabin area which may generally correspond to the edge of the field. If this is the case, then the deposition in this square is the result of soil constantly being thrown in one direction by plow activity. Toward the bottom of the plowzone level the size of the pottery increased. Originating in the lowest portion of level 1 was a corn cob-filled pit 0.3 foot deep and 0.5 foot in diameter. Level 2 consisted of a heavily mottled dark yellow and orange sandy clay about 0.1 to 0.2 foot in thickness. Features plotted at the base of level 2 included at least four pits and 16 postholes. Only a single pit, designated Feature 1, was choosen for excavation from this square because of time limitations.

West of 160R190, at the edge of the bluff, square 160R30 was excavated. Level 1 was a 0.3 foot thick deposit of tan coarse sand which contained sparse cultural material washed downhill from the vicinity of 160R190. Although this level was disturbed (as a result of redeposition), no evidence of plowing was noted. Level 2 was a hard packed zone of tan and brown sand with large quantities of cultural material. This level was found to slope toward the river. While erosion had probably affected this zone, the material did not appear to be sorted, as would be expected with wash. It appears that level 2 represents intact midden, much of which has been eroded by the Waccamaw River. Level 2 was excavated in two relatively equal units termed levels 2a and 2b. Underlying level 2b was a yellow sandy clay similar to that found in 160R190 (Figures 7 and 8). No features were encountered and only three postholes (two of which were excavated) were plotted. This unit appears to be outside the main village area, in spite of the large quantity of aboriginal remains.

Unit 90R130 was placed to investigate the relatively flat area northwest of the cabin (between the cabin and the river). Portions of this area, according to Fulton, had been plowed down to fill in the road leading to the river. This square was found to contain a dark brown plowzone, termed level 1, about 1.0 foot thick, overlaying a mottled tan subsoil. Level 2 consisted of a transition zone and was about 0.1 foot thick. Several large orange clay mottles were observed at the base of the plowzone and upon further examination were found to be natural inclusions in the soils. They yielded a highly plastic sandy clay which may be the source of the clay used to make the pottery found at the site. Only two postholes, both of which were excavated, were plotted at the base of level 2.

A 10-foot square was originally laid out at 190R110, but unusually large roots within the upper levels resulted in this square being reduced to a 5 by 10 foot unit. This square was placed close to a low depression along the bank, although it was situated further inland than 160R130. Level 1, a highly disturbed brown sand plowzone, was found to be 1.5 feet thick and to overlie a mottled yellow sand. This unit, like 160R190, suggests an original location at the edge of the field, with a resultant buildup of plowzone. Material was generally sparse, although six postholes were

Figure 6. Excavation in square 160R190, view to the northeast.

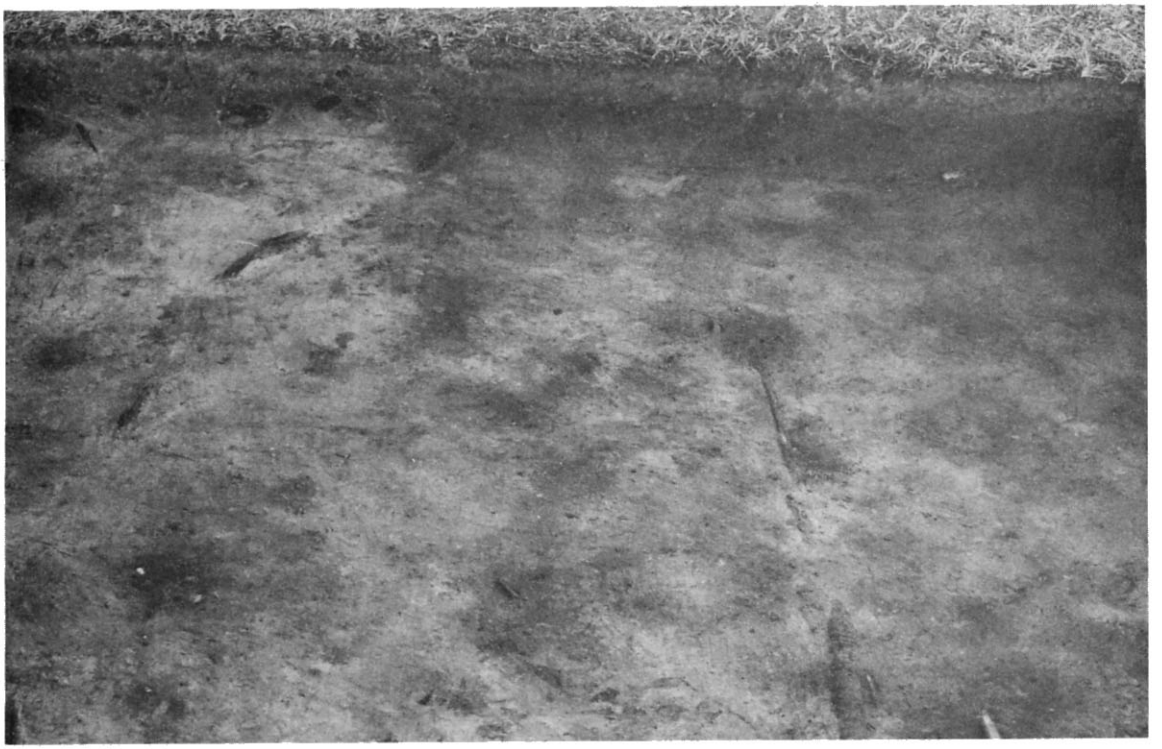

Figure 7. Square 160R30, bottom of level 2b, view to the south.

plotted at the base of level 2, one of which was excavated.

Five 5-foot squares were excavated inland along the N95 and N195 lines in an attempt to locate areas of potentially heavy village occupation, which were expected to yield dense cultural material (primarily pottery), and abundant features at the base of the plowzone or level 2. Squares 190R225 and 190R285 are both northern units located inland from the bluff edge. Square 190R225 consisted of a dark brown sandy plowzone about 1.0 foot in thickness overlying a yellow mottled sand subsoil. The plowzone profiles showed a trench about 2.0 feet wide running north-south through the square and at the base of the plowzone the upper portion of a heavily rusted water pipe was identified. Also in the same square and running north-south, but without obvious trenches were a more recent PVC pipe and an electrical cable. The iron water pipe trench bisected at least one potential feature and four postholes were plotted in the square. Square 190R285, further inland than 190R225, contained a 0.9 foot brown sandy plowzone overlying a mottled yellowish-brown sandy subsoil. A single stain (possibly a large posthole) was identified at the base of the plowzone.

Three squares, 95R190, 95R225, and 95R235, were excavated at the posited southern edge of the site, adjacent to the cabin. Square 95R190 contained a 1.5 foot deep plowzone overlying a mottled yellow and orange sandy subsoil. At least two features and three postholes were plotted. Square 95R225 contained the same PVC pipe and electrical cable identified in square 190R225. The plowzone was about 1.3 feet thick and no features were observed at the subsoil level. In square 95R235, at a depth of 0.6 foot, the rusted water pipe observed in square 190R225 was found. The heavily corroded condition of the pipe, coupled with the depth of the plowzone which would need to be removed, indicated that the potential of damage to the pipe was too great to warrant further excavation. It is probable, however, that the pipe found in 190R225 and 95R235 is in the ditch which Fulton remembers as having disturbed several burials.

The single feature excavated from Wachesaw is a large pit which was intrusive into a cluster of postholes at the northern margin, situated in the southeastern quadrant of square 160R190 (Figures 8, 9, and 10). The feature was sectioned and excavated in north and south halves. Both halves were removed by apparent natural soil zones with all soil water-screened through 1/16 inch mesh. Large soil samples (approximately 1 gallon) were retained from each soil zone for flotation. The feature was first made evident by a small, overlying cluster of carbonized corn cobs at the bottom of the plowzone. These cobs were centered at 162.2R185.5 at an elevation ranging from 98.93 to 98.63 feet AE. While this may represent a portion of the plowed-through feature, it is more likely a separate corn cob pit. The three zones identified within the underlying feature (Feature 1) were a dark brown humus/sand which overlay a mottled brown and tan sand, followed by a light tan sand. The maximum east-west dimension of Feature 1 was 3.7 feet, the maximum north-south dimension was 4.2 feet, and the pit depth was 1.59 feet. The pit rested on a firm gold clay subsoil after penetrating several tenths of a foot into a sterile

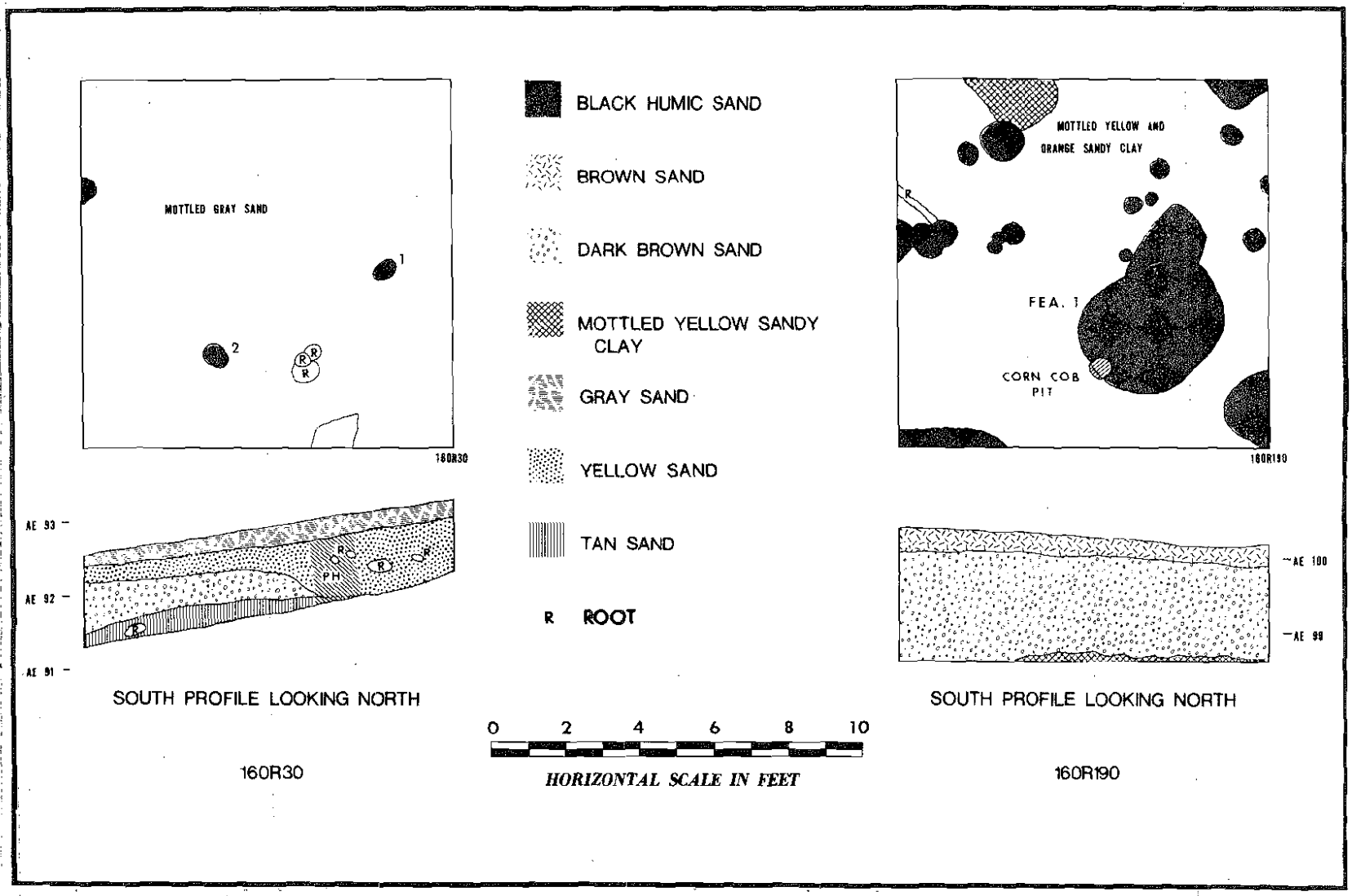

Figure 8. Plan and profile drawings of squares 160R30 and 160R190.

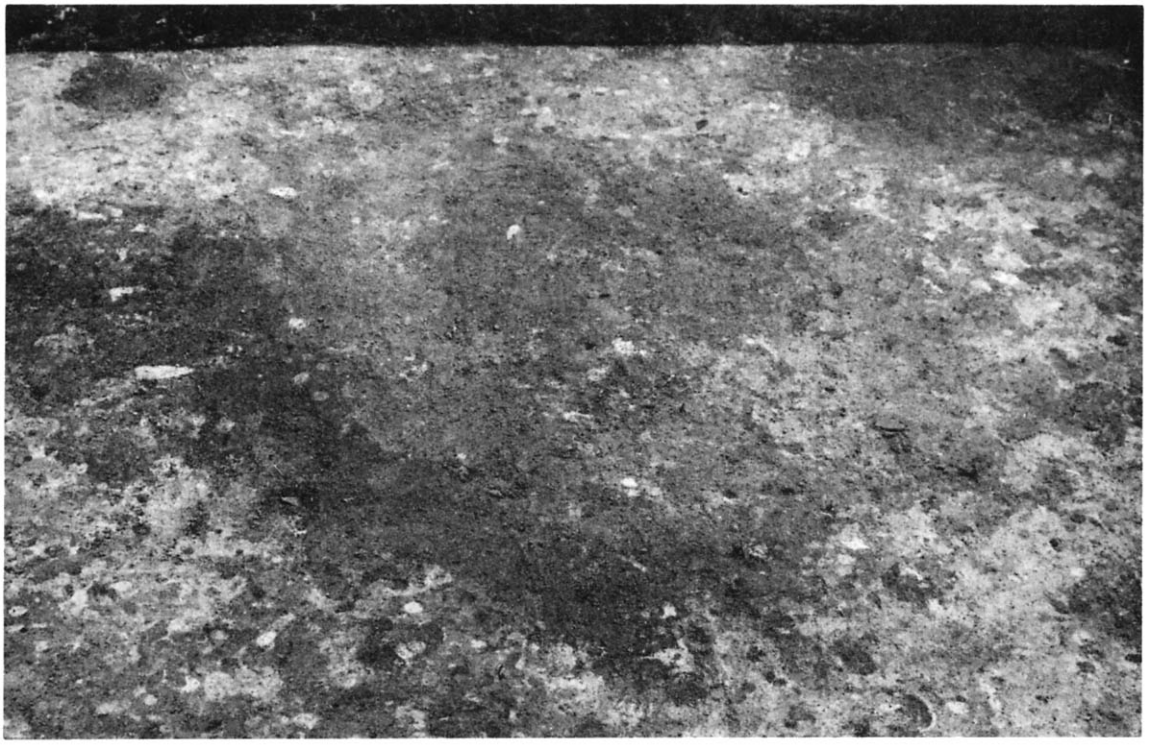

Figure 9. Feature 1 before excavation, view to the east.

Figure 10. Feature 1 after excavation, view to the east.

yellow sand overlying the clay. The pit contained only small quantities of artifacts -- nine trade beads, 172 small sherds, and less than 35g of animal bone -- evenly distributed among the three zones. Corn cobs were common throughout the fill. While the function of this pit could not be determined, it did not contain abundant refuse and the material contained in the pit appears to represent a long time span, suggestive of general midden fill. The pit did possess a quantity of very small fish bones and several salt water shellfish fragments.

These excavations, in summary, represent too small a sample of the Wachesaw bluff to answer adequately most of the questions raised prior to and during the study. No obvious extensive village areas were discovered, although square 160R190 may be the center of the occupation, based on the density of features and postholes. The artifact density, specifically pottery density, is at present confusing. The squares with both the largest number of sherds and the largest number of large sherds (over 1 inch in diameter) per cubic foot are 160R130, 95R190, and 160R190. Square 160R130 appears to represent a midden deposit away from the area of occupation (the square contains no features and only three postholes), while the other two squares are in what is thought to be the village area. Nearby squares, however, contain much lower densities of artifacts. Historic artifacts are not abundant and there is a low correlation of the spatial distributions of aboriginal and historic materials (a full discussion of the historic artifacts is contained in the following section). Squares 190R110 and 160R190 are the only areas with appreciable quantities of historic ceramics, suggesting that a historic occupation (or other source) of historic remains) is situated toward the bluff and north of the tested area.

ANALYSIS OF ARTIFACTS

Five classes of artifacts recognized from Wachesaw form the basis for the analysis of the material culture: aboriginal pottery, clay objects, lithics, beads and other obvious European trade goods, and other historic artifacts. The most abundant artifact, pottery, offers considerable potential for the study of culture change and the development of temporal control. The category of clay objects includes, other than pottery, such fired clay artifacts as discs, daub, aboriginal pipes, and coils. Lithic items at Wachesaw include only a small number of finished artifacts, but abundant debris and raw materials, many having a Piedmont origin, are present. European trade items possessed by the Indians are represented primarily by beads, although burial goods discovered in 1930 include a small sample of eighteenth century metal items. The other historic artifacts, including ceramics, metal, and glass, are discussed in detail.

These remains represent only a small, nonrandom, sample of the total assemblage present at Wachesaw Landing. Conclusions based on such a sample must, of necessity, be limited and cautious. The remains do suggest, however, considerable diversity and mixing of Protohistoric and Contact Period attributes, stressing the ability of Wachesaw Landing to provide evidence about the effects of English-Indian culture contact and the resultant rapid decline of the aboriginal population.

Pottery

Exclusive of beach surface collections, 14,102 aboriginal sherds were recovered (Table 1). Of these 12,327 (87.4%) were under 1 inch in diameter and were therefore excluded from this analysis. The remaining 1775 sherds were found to represent three major pottery series (Pee Dee, Wachesaw, and Kimbel) with very minor quantities of Early and Middle Woodland pottery (Thom's Creek, Deep Creek, Mount Pleasant, and "St. Catherines") identified from mixed levels.

Early and Middle Woodland types were found in four squares and Feature 1 and account for 1.7% of the analyzed collection. The Thom's Creek Series (Trinkley 1976) is represented by two sherds, both Thom's Creek Reed Punctate. The Deep Creek Series (Phelps 1981:vi, 77, 79, 125) is characterized by paste inclusions from the size of fine to coarse sand with occasional large particles of quartz. The surface treatments found at Wachesaw include both cord marking and fabric impressing. The Mount Pleasant Series (Phelps 1981:vi; David Phelps, personal communication) is characterized by a fine sandy paste with few inclusions. The surface treatments found at Wachesaw include plain, cord marked, fabric impressed, and simple stamped. The Thom's Creek, Deep Creek, and Mount Pleasant Series are all well within their recognized ranges at Wachesaw. The fourth series, "St. Catherines,"

	Pee Dee Series														Wachesaw Series				Kimbel Series										
	Surface Treatment								Rim Decoration																				
Unit/Level	Plain	Burnished	Comp Stamped	Simple Stamped	Incised	Textile Wrapped	Cord Marked	Eroded/Unident.	Plain	Nodes	Punctations	Rosettes	Fillet Applique	Incising	Plain	Comp Stamped	Simple Stamped	Eroded/Unident.	Plain	Comp Stamped	Simple Stamped	Thoms Creek Series	Deep Creek Series	Mount Pleasant Series	St. Catherines Series	Unidentifiable	Small Sherds*	Total**
160R130, level 1	24	5	23	15		1		11	8		3		4	2	2	6	8	9	10	1	2					23	740	140
level 2a	135	1	107	105	1	1		74	131		12	1	12	2	8	9	7	9	11							46	3270	514
level 2b	83	1	58	144		8		93	145		5	1	14		2	2	1		4	1						33	2080	430
profiles		1	5	1				1	4																		85	8
ph 1	1							1	1								3										15	5
ph 2								1																		4		5
190R110, level 1	5		3	2		1		2	4		1		2		2		2		3				3		2	22	922	47
90R130, level 1	15	1	3	3		2		18	10		5		4		2	1	2	7	1	1				1		5	720	62
level 2																		2								3	35	5
troweling	3			1																						11		15
backdirt			2	1				1																		2		6
ph 1																										2		2
ph 2			1																									1
95R190, level 1	23	2	6	19		3		15	24		1		5		2			1	5	2			2			42	880	122
troweling	3																									7		10
160R190, level 1	43	1	28	4	1	9		43	26		14	4	11	1	4	2	5	9	2			2	1	7	2	39	2190	202
level 2	4		1	1	1			3	1		1															1	60	11
profiles								5																		10		15
troweling					1			2																		4		7
cob ph																2												2
95R225, level 1	7		3	6		2		14	11		2	1	4				1	5			1					17	500	56
troweling																										3		3
190R225, level 1			5					4					1			2		2		1						5	280	19
troweling	1												1													2		3
95R235, level 1			1					4					2		1		1	1									225	8
190R285, level 1	7		2	1		2		1				1			1	1	1	3								3	200	22
Fea. 1	12	2	12		2	2	1	10			3		2		8			3	1	1				1			125	55
Total	366	14	260	303	6	31	1	303	365	0	47	8	62	5	32	25	31	51	37	7	3	2	6	9	4	284	12327	1775

*under ½-inch in diameter
**exclusive of small sherds

Table 1. Aboriginal pottery recovered from Wachesaw Landing.

is far removed from its normal distribution which extends no further north than Beaufort County, South Carolina. The St. Catherines Series (Caldwell 1971; DePratter 1979) is characterized by a fine clay grog temper and appears to be a direct development out of the Georgia Wilmington Series. Along the northern South Carolina coast, Hanover (South 1960) is recognized as the equivalent of Wilmington, but no type similar to St. Catherines has been identified. Two alternatives are possible: either these four sherds at Wachesaw represent the remains of trade vessels or, more likely, they are atypical specimens of Hanover. The surface treatment includes only a fine fabric impressed.

The two "miscellaneous" categories of unidentifiable sherds and small sherds combined account for 89.4% of the collection. As previously mentioned the small sherds are under 1 inch in diameter and because of their size they are excluded from analysis. The unidentifiable category consists of sherds too eroded or damaged to be accurately classified. This category also includes border-line sherds which may be placed in one of several categories.

The largest collection from Wachesaw consists of the Pee Dee Series (1284 sherds - 72.3% of the identifiable collection). The best typological description of Pee Dee pottery still remains Reid's (1967) description of the pottery from the mound at Town Creek, Montgomery County, North Carolina ($Mg^{o}2$). Reid's discussion began on the foundation of Coe's (1952:309) earlier outline and was based on the essentially correct belief that it was possible to isolate Pee Dee from non-Pee Dee pottery in the mound. The non-Pee Dee pottery was found to be usually tempered with crushed quartz and to have different surface treatments. It has long been recognized that the distinctions between Pee Dee and non-Pee Dee pottery at Town Creek reflect the differences between the Muskhogean invaders and the Siouan or Piedmont Hill Tribes (Coe 1952:308-309). We therefore see differences at Town Creek of pottery, culture, and physical appearance. It should be remembered, however, that Reid, for the most part, described a classic Pee Dee assemblage, dating to the fifteenth century, which contained only slight admixture of non-Pee Dee traits. Similar assemblages have been discussed from the Hollywood Mound, Georgia, the Fort Watson Mound, South Carolina (Reid 1965, 1967), and the Mulberry Mounds, South Carolina (Caldwell 1974; Stuart 1975).

The classic Pee Dee assemblage from Town Creek is tempered with quartz river sand in sufficient amounts to give the paste a "sugary appearance" (Reid 1967:42). The dominant surface treatment is complicated stamping (78.65%). There is much overstamping and the stamping is of moderate proportions with considerable variability. Minor surface treatments include a unique textile wrapped motif (2.65%), check stamped (0.40%), cord marked (0.39%), corn cob impressed (0.08%), and plain (17.78%). Decoration, confined to the area between the shoulder and the lip, is found on 7.73% of the rims. Nodes and punctations are the most common decorative element (29.47%), with rosettes accounting for 14.16% of the decorations. Pellets account for about the same percentage and rim fillet

strips account for 16.18% of the decorated rims. Reid (1967:58-59) suggests that the filfot stamp, textile wrapped, and plain surface treatments are late as are rim treatments in general. Joffre Coe (personal communication) indicates that the most recent rim decoration is the rim fillet strip which is strongly associated with the Siouan pottery in the Piedmont of North Carolina (see also Gardner 1980:43). Coe (1952:311) also indicates that punctations increase in popularity from the Dan River (Late Woodland) into Hillsboro (Historic) times.

The assemblage from Wachesaw includes sherds which may be considered classic Pee Dee in every regard, including paste, stamp, vessel form, and rim decoration. The two burial urns found at Wachesaw and now at the Charleston Museum are very similar to those found at Town Creek. There are, however, some indications that the Wachesaw Landing Pee Dee pottery represents a very late transitional stage of the Pee Dee continuum. This discussion, besides briefly describing the Pee Dee pottery from Wachesaw, will also compare the collection to the classic Pee Dee at Town Creek.

Seven identifiable surface treatments were found at Wachesaw: plain (including burnished), complicated stamped, simple stamped, incised, textile wrapped, check stamped, and cord marked (Figure 11). In addition an eighth category, consisting of sherds with Pee Dee paste but indistinct surface treatment, was created. The plain pottery accounts for 29.6% of the Pee Dee pottery, while complicated stamped sherds account for 20.2% of the total. Overstamping is quite common and it is not possible to distinquish more than three motifs: the filfot, arc-angle, and concentric circles. Of these three, the filfot motif dominates. The textile wrapped surface treatment is observed on 2.4% of the Pee Dee pottery. This assemblage contains a much larger percentage of plain pottery and a smaller proportion of complicated stamped sherds than classic Pee Dee, as represented by the assemblage from Town Creek, North Carolina. Another major difference is the large presence of simple stamped pottery in the Pee Dee assemblage (23.6%) at Wachesaw Landing. While Coe (personal communication) has noted small quantities of a simple stamped motif in the Pee Dee from North Carolina it has never been described and has never accounted for a large percentage of any collection. A description of these simple stamped sherds is presented in the Appendix. The incised sherds found at Wachesaw (6 sherds -- 0.5%) resemble those identified from Mulberry Mound, South Carolina (Caldwell 1974:92; Stuart 1975:114-115). Similar incised vessels in classic Pee Dee are rare.

About 25% of the rims in the Wachesaw collection have rim treatments (Figure 12). No nodes are observed in the excavated collections and rosettes account for only 6.6% of the rims. The dominant decorative elements are punctations (38.5%) and rim fillet strips (50.8%). The rim fillets consist of strips of clay applied at or slightly below the lip which have been punched with a hollow reed or pinched. Coe (personal communication) has suggested that when the strip is punctated with a reed the result was a sloppy imitation of the rosette decoration. Reid does not distinquish between those fillets punched with a hollow reed and those which were pinched. Only one of his illustrations (Reed 1967:

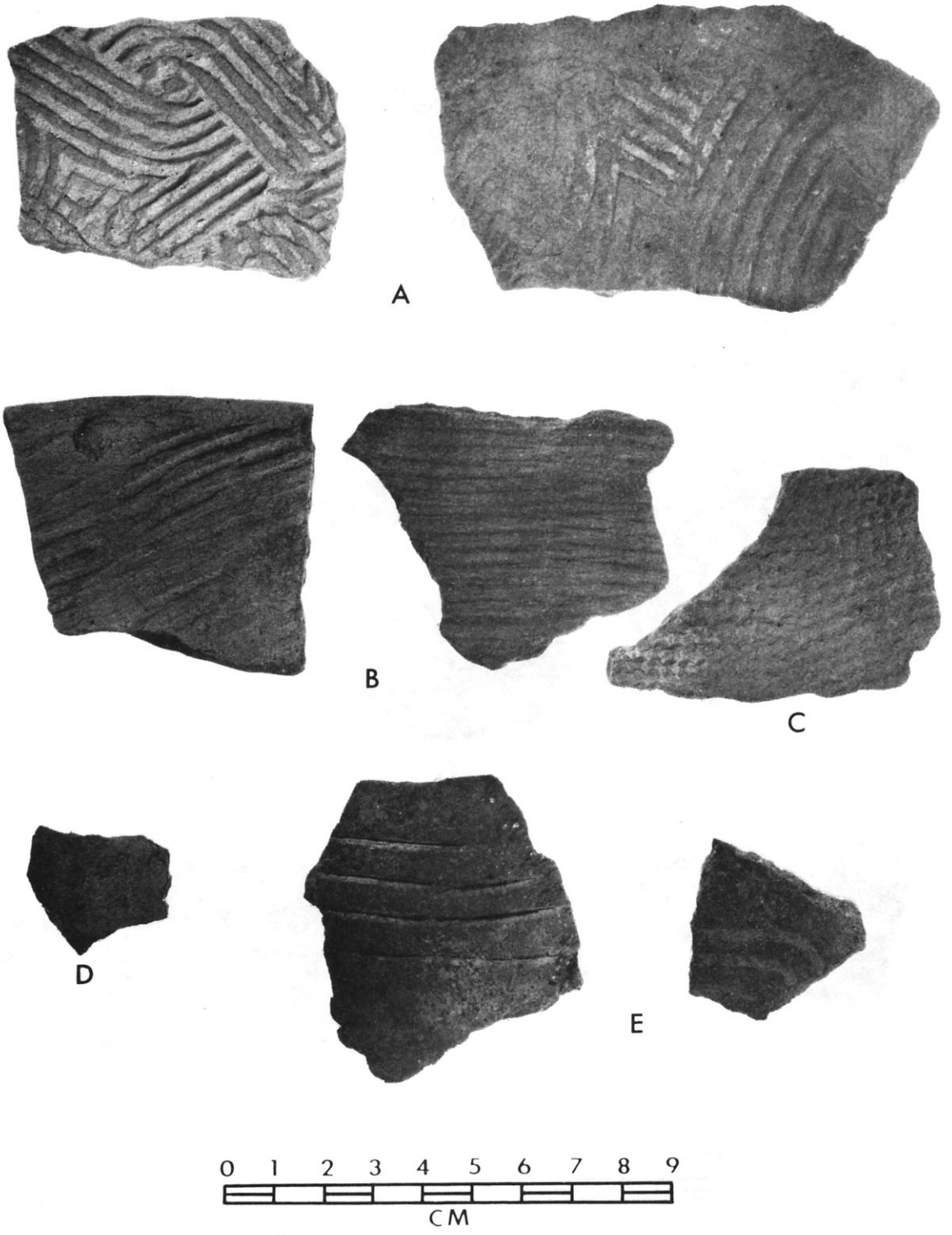

Figure 11. Pee Dee Series sherds from Wachesaw Landing. A, Pee Dee Complicated Stamped; B, Pee Dee Simple Stamped; C, Pee Dee Textile Wrapped; D, Pee Dee Check Stamped; E, "Lamar Incised".

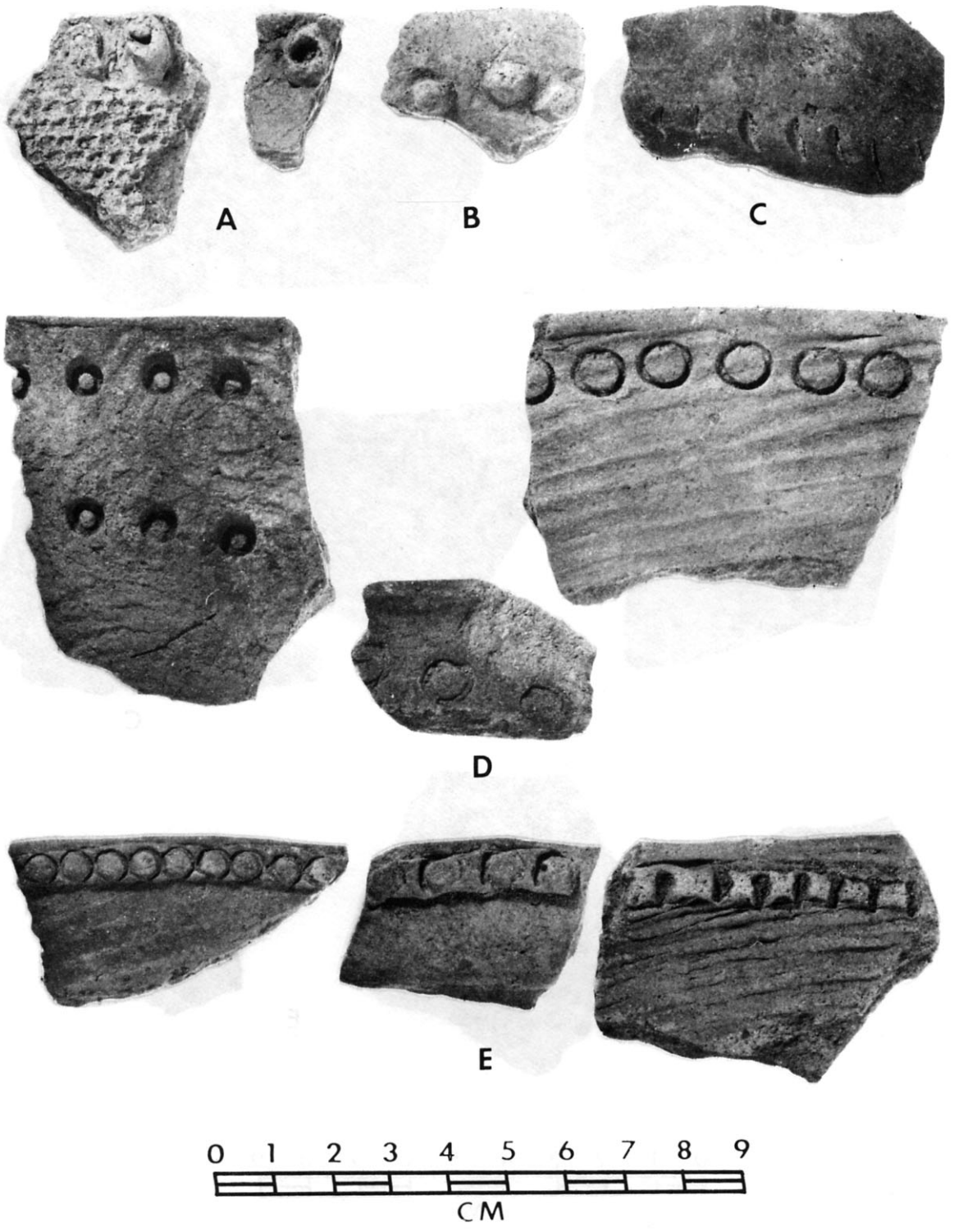

Figure 12. Pee Dee rim treatments from Wachesaw Landing. A, rosettes; B, shaped pellets; C, incising; D, reed punctations; E, reed impressed applique.

Plate XIII, bottom row, far right), however, is of a pinched strip, which suggests that this technique was uncommon at Town Creek. Only 4.1% of the sherds evidenced incising and all are similar to Reid's (1967:26) description of a "series of small incisions vertical to the vessel . . . shoulder of some carinated vessels."

The Wachesaw Landing Pee Dee collection, as previously suggested, is similar to that found at Town Creek. It does have certain differences, however, which suggest that the Pee Dee occupation at Wachesaw post-dates the fifteenth century occupation in North Carolina. The emphasis on plain and simple stamped surface treatments supports a date later than Town Creek, although the similar percentage of textile wrapped sherds suggests that either strong ties still exist with the more classic Pee Dee or that the site represents a long Pee Dee occupation. The frequent use of the rim applique is also considered a late trait that is frequently associated with the pottery of Siouan Hill Tribes such as found at Saura Town in Stokes County, North Carolina ($Sk^{V}1a$) (Joffre Coe, personal communication). The absence or rarity of generally accepted early Pee Dee traits, such as nodes and certain motifs (quartered circles, split diamonds, and concentric circles) also supports a late placement in the Pee Dee continuum.

In the attempt to understand more accurately the late placement of the Pee Dee assemblage at Wachesaw the collections from Mulberry Mound (situated in Kershaw County, South Carolina below the fall line of the Wateree River) should be considered. Caldwell (1974) indicates that the pottery changes noticeably from the early pre-mound humus (dated to 430 $\pm$ 200 radiocarbon years: A.D. 1520, based on charred corn cobs from a pit beneath Mound A [Leland Ferguson, personal communication]) to the village midden which is contemporary with or later than the mound construction. Caldwell (1974:89) remarks that:

> [i]n the premound level incidental decoration was mostly by use of a hollow reed, sometimes applied directly to the vessel wall, and sometimes pressed against an applique strip to give a beaded effect. Occasionally a row of small clay pellets had been pressed against the vessel wall with a hollow reed, resembling a row of beads or rosettes . . . . By the time [of] the later deposits . . . these styles were somewhat changed. Most rims at that time were decorated by an applique rim strip . . . .

Caldwell (1974:94) also notes that plain pottery increased later in time, at the expense of complicated stamped motifs and that the incised ware is found only in the later occupations. Stuart (1975) sees similar differences and divides the pottery from the two zones into McDowell I and II. McDowell I pottery, from the premound zone, coincides strikingly with that of the Pee Dee Series (Stuart 1975:105) while pottery from the village zone, termed McDowell II, is sloppy stamped, frequently with an applique strip below the rim (Stuart 1975:107). These distinctions are also reported by Merry and Pekrul (1981).

While there are no good dates for any of these late Pee Dee manifestations it is probable that they postdate A.D. 1600 and perhaps date from about A.D. 1650 to 1700.

The next largest collection from Wachesaw Landing consists of the Wachesaw Series, previously described in Trinkley and Hogue (1979) and Trinkley (1981a). This pottery, on circumstantial grounds, is assumed to have been produced by the historic Waccamaw Indians. From the excavations 139 sherds, representing 7.8% of the total analyzed collection, could be placed in the Wachesaw Series. This stands in contrast to the beach collection (Trinkley and Hogue 1979) where 30.7% of the recovered pottery was classified as the Wachesaw Series. The reason for this difference is not clear. One suggestion is that the portion of the site that has eroded into the Waccamaw River may have been a substantial midden containing Wachesaw pottery. The fact that the proportion of Wachesaw Series pottery varies from a high of 37.5% in 95R235 to a low of 2.3% in 95R190 suggests that there is considerable variability in the distribution of pottery over the site.

Type descriptions of the Wachesaw Series are presented in the Appendix. The type generally is characterized by annular ring construction, large quantities of rounded quartz sand grains in the paste, and bold, sloppy complicated stamping, bold simple stamping, and roughly finished plain surface treatments. The only complicated stamp motif that has been observed is the filfot scroll. The simple stamped motif is larger and bolder than the preceding Pee Dee Simple Stamped. A single sherd of Wachesaw corn cob marked pottery is identified from 190R285.

Only two Wachesaw sherds (one from the excavations, the other from the beach collection) have any form of rim decoration. One has rim slash punctations below the lip, similar to the fingernail punctations occasionally found in the Hillsboro Series from North Carolina Piedmont sites (Gardner 1980:43; Coe 1952:311). The other sherd exhibits large, poorly made, hollow reed punctations. Among all the Wachesaw sherds no evidence of rimappliques is found and the rims are usually straight. The lips are strongly beveled and often thickened, although the thickening does not take the form of a rim strip or folded rim. The typical vessel forms appear to be cylindrical jars and wide mouthed hemispherical bowls.

Of the excavated material 23.0% is plain, 18.0% is complicated stamped, 22.3% is simple stamped, and 36.7% is eroded or otherwise unidentifiable (Figure 13). While this is significantly different from the beach collection, it is probable that the collection techniques on the beach favored decorated sherds. Although there is less diversity in the Wachesaw Series than is observed in the Pee Dee collection, the proportions of surface treatments are nearly the same.

As previously mentioned, the Wachesaw Series appears to represent the pottery being produced by the Historic Period Waccamaw Indians. This conclusion is based on its apparent association with trade goods and

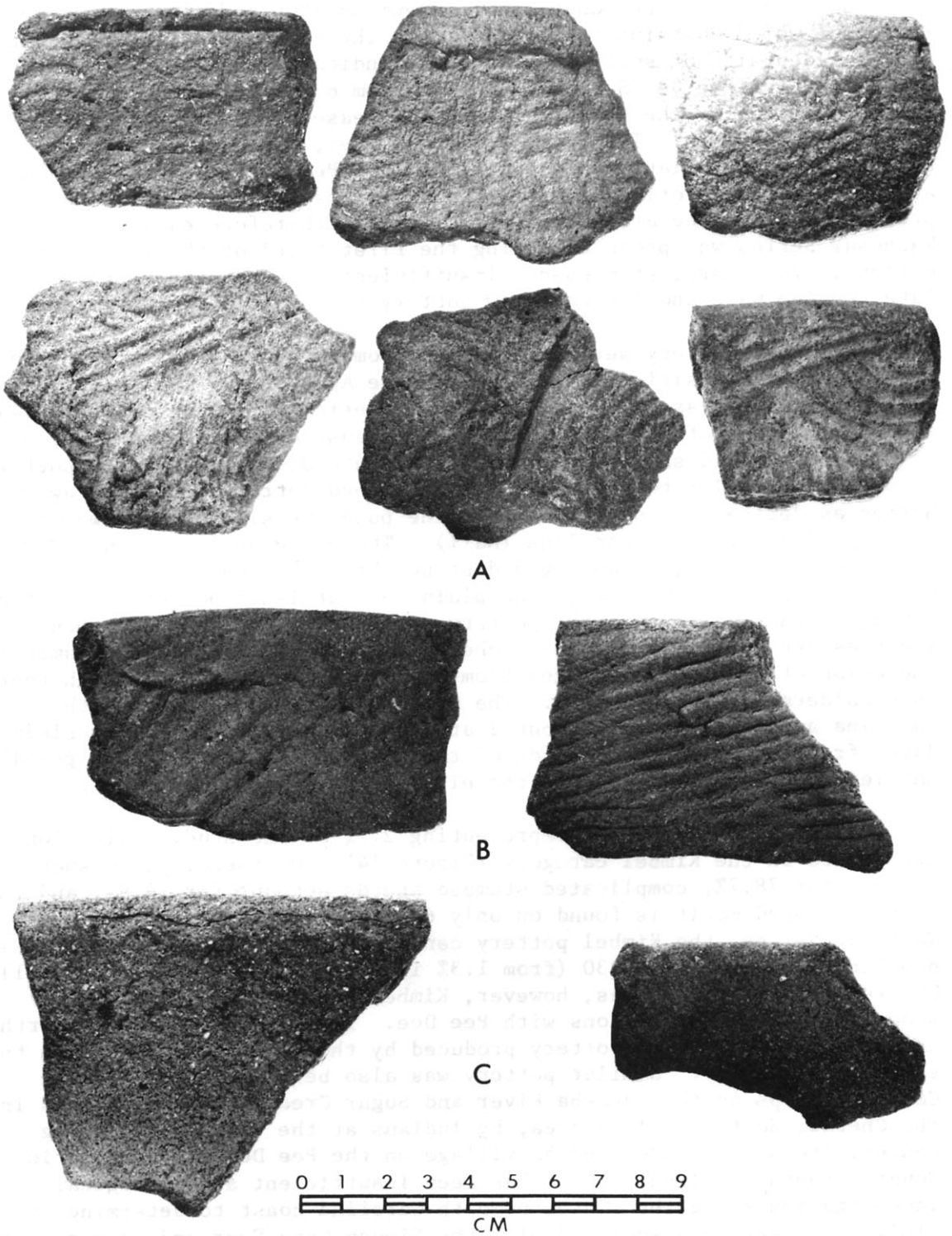

Figure 13. Wachesaw Series sherds from Wachesaw Landing. A, Wachesaw Complicated Stamped; B, Wachesaw Simple Stamped; C, Wachesaw Plain.

burials excavated by the Charleston Museum in 1930 and its context in Feature 1 which contains trade beads. In the one square (160R30) that contains deposits of sufficient depth to indicate stratigraphic separation the Pee Dee Series increases from 67.5% in level 1 to 97.5% in level 2b, while the Wachesaw Series decreased from 21.3% in level 1 to 1.2% in level 2b. The Wachesaw Series does, however, appear to have some lineal relationships with the late Pee Dee Series. Based on the available ethnohistoric data it is unlikely that the Waccamaw were present in this area after about 1730. It is therefore estimated that the Wachesaw Series was produced during the first third of the eighteenth century. There are, at present, insufficient data to determine if the late Pee Dee ware and the Wachesaw pottery were partially contemporary.

The last pottery series recovered from Wachesaw Landing has been provisionally classified as Kimbel (see the Appendix). The pottery has previously been classified as the Catawba Series (Trinkley 1981a:13-14), although the use of the term "Catawba," because of its ethnic implications, is unfortunate and should be avoided in future discussions. The pottery is somewhat similar to the plain and burnished pottery of the Caraway Series as defined by Coe (n.d.) from the putative site of Keyauwee in Randolph County, North Carolina ($Rd^{V}1$). The paste of the Caraway Series is compact and hard, producing a distinct "ring." The temper consists of very fine to fine sands, with the plain and burnished pottery consistently having a finer paste than the pottery with various surface treatments (such as net impressed, brushed, check stamped, or complicated stamped). The color of the pottery ranges from light gray to brown, although there is considerable fire clouding. The Caraway Series, which in North Carolina appears to be distributed at least in the south central Piedmont, dates from the latter two-thirds of the seventeenth century (and possibly earlier) and the first part of the eighteenth century (Coe n.d.).

A group of 47 sherds, representing 2.7% of the study collection, are placed in the Kimbel category (Figure 14). Of these, plain sherds account for 78.7%, complicated stamped sherds account for 14.9%, and the simple stamped motif is found on only 6.4% of the Kimbel sherds. Like the Wachesaw Series, the Kimbel pottery can be seen to gradually increase in popularity in square 160R30 (from 1.3% in level 2b to 11.1% in level 1). Unlike the Wachesaw Series, however, Kimbel is never as common and it shows no obvious connections with Pee Dee. The Caraway Series in North Carolina represents the pottery produced by the Siouan Hill Tribes in the eighteenth century. Similar pottery was also being produced by some Catawba groups on the Catawba River and Sugar Creek, by late Indians in the Cheraw, South Carolina area, by Indians at the Yauhannah trading center, and at the Pedea Indian village on the Pee Dee River in Marion County, South Carolina. There has been insufficient archaeological investigation along the southern North Carolina coast to determine if similar pottery is associated with the Siouan Cape Fear and Woccon. At present the latest pottery recognized from the southern North Carolina coast is the shell tempered Oak Island Series, which appears to have strong connections with the Algonkian Collington Series of northern North Carolina.

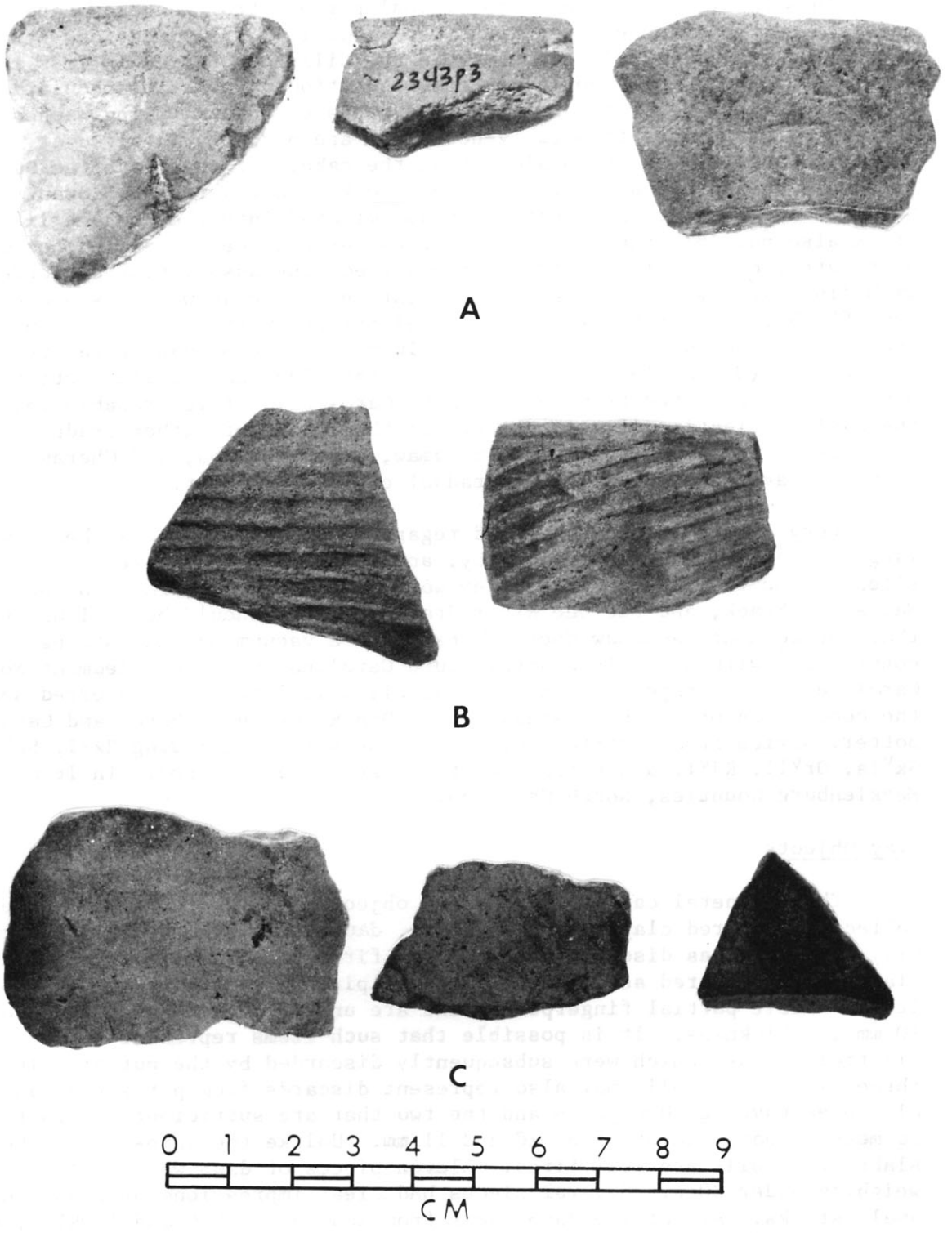

Figure 14. Kimbel Series. A, Kimbel Plain; B, Kimbel Simple Stamped; C, Caraway Plain from the Poole Site (RdVl).

This brief discussion of aboriginal pottery from Wachesaw Landing raises a number of unresolved questions. Coe (1952:311) mentions the rapid change from the Clarksville pottery to the Hillsboro Series in less than two generations. This should serve as a cautionary note in speculating on the relationship of the late Pee Dee types to the succeeding Wachesaw Series, although more than two generations are probably involved at Wachesaw Landing. It is possible that the makers of this late Pee Dee ware were Muskhogean and the makers of the Wachesaw were the Siouan Waccamaw who were at least partially assimilated into the Pee Dee lifeway. It is also possible that the similarities between Pee Dee and Wachesaw are overstated, or that (as is frequently argued) the association of pottery with linguistic groups is tenuous at best and naive at worst (see Coe 1961:58-59). The presence of the Kimbel Series on the South Carolina coast is not unexpected, given the influence of the Siouan Cheraw or Sara in the area (Wilson 1982). It is more surprising that similar pottery has not been reported from this area of Carolina. It is probable that the small collection of this pottery is the result of either trade (perhaps at Yauhannah where the Waccamaw, Winyah, Pedea, and Cheraw are known to have made contact), or gradual cultural contact.

Very little more can be said regarding the pottery at Wachesaw without larger samples, better stratigraphy, and better survey samples from other sites in the vicinity. This survey work needs to concentrate on the Waccamaw, Black, and Pee Dee River drainages. It should be obvious, however, that the work at Wachesaw does not exist in a vacuum and has strong connections with not only coastal South Carolina, but also Piedmont North Carolina. The perspective in South Carolina will be less distorted upon the completion of Wilson's study of the Dan River, Hillsboro, and Caraway pottery series from a variety of Hill Tribe sites, including $Rk^{V}1$, $Sk^{V}1$, $Sk^{V}1a$, $Or^{V}11$, $Rd^{V}1$, and sites from the Lake Norman Reservoir in Iredell and Mecklenburg Counties, North Carolina.

Clay Objects

Three general categories of clay objects are identified from the collection: fired clay lumps and coils, daub, and intentionally altered clay items such as discs and pipes. Two fired clay lumps, perhaps pottery clay, were recovered as were three small, pinched clay pieces. These latter items exhibit partial fingerprints and are under 30 mm in diameter and 10 mm in thickness. It is possible that such items represent clay plasticity tests which were subsequently discarded by the potter. The three fired clay coils may also represent discards from pottery production. All three have Pee Dee paste and the two that are sufficiently intact to measure have diameters of 10 and 11 mm. Unlike the lumps or pinched slabs, the coils are well fired. Eleven pieces of daub were collected, weighing under 20 g. Several pieces had clear impressions of grass and small sticks. All of the daub comes from squares 160R30 and 190R110, both on the bluff edge.

Twelve clay discs were recovered (Figure 15a), 11 made from Pee Dee sherds and one made from a Kimbel sherd. Further information on these

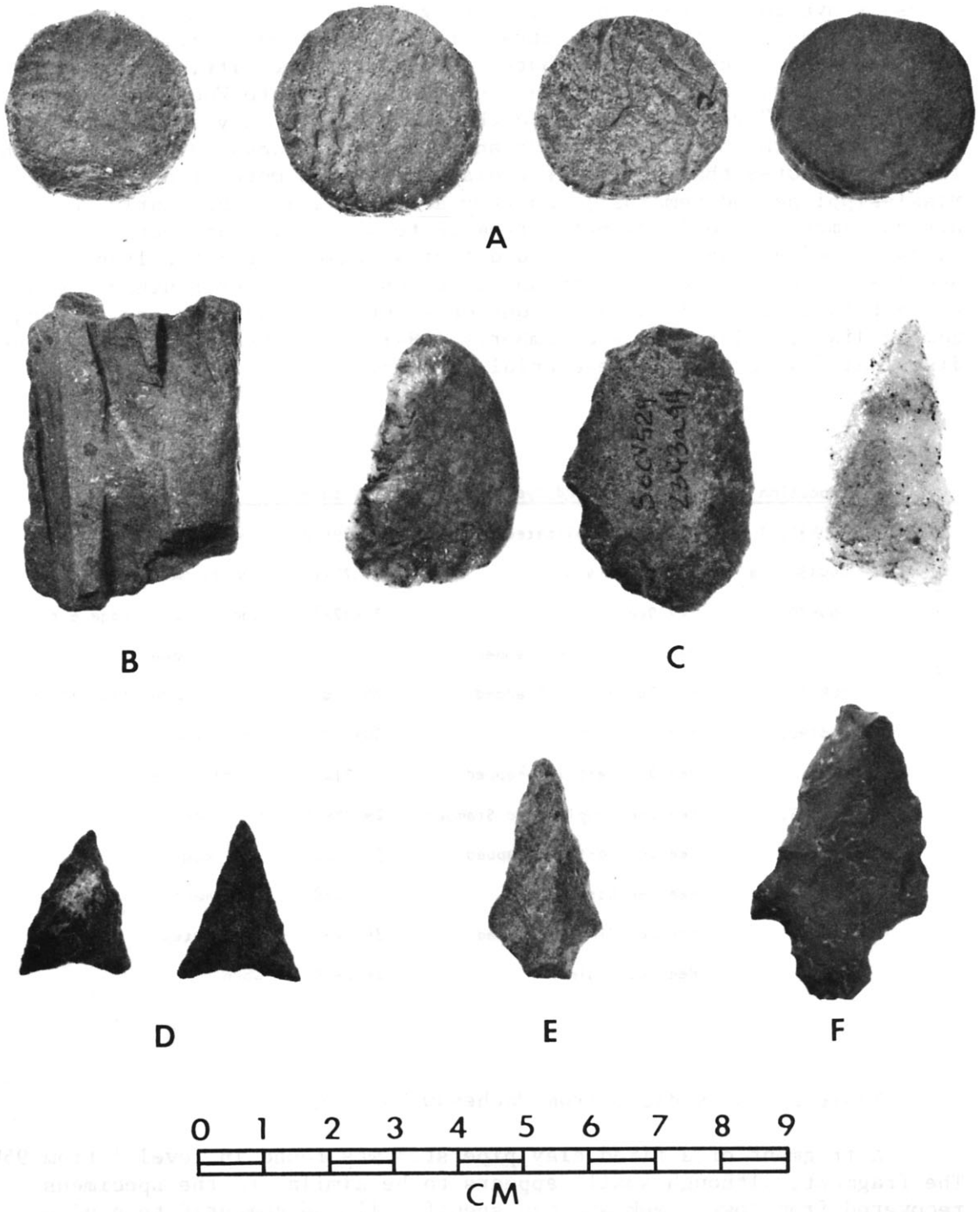

Figure 15. Miscellaneous Artifacts. A, clay disks; B, stone hone; C, bifaces; D, Caraway Triangular projectile points; E, Randolph Stemmed projectile point; F, stemmed projectile point.

discs is available from Table 2, although the general similarity in size is noteworthy and stands in contrast to the great variability of workmanship. The discs are distributed evenly over the site, both horizontally and vertically. Similar discs are common in the Late Woodland and "Mississippian" Periods of the Southeast, although they are generally described in the context of "odds and ends" (Fairbanks 1956:44). Wauchope (1966:189) notes that while these discs are "much more plentiful in Mississippi period remains [than they are] . . . in [the] Early Woodland." His specimens range in diameter from 26 to 50 mm with an average of 22 mm. Caldwell and McCann (1941:53) found that specimens from the Irene site in Georgia range from 20 to 40 mm and were "usually rather roughly finished." While this artifact is usually considered utilitarian, perhaps serving as gaming discs, DeJarnette and Wimberly (1941:76) classify "small pottery discoidals" as part of a ceremonial complex.

location	sherd type	size in mm	comments
160R30, 1	Pee Dee Complicated Stamped	31x29x10	poorly made
160R30, 2a	Pee Dee Plain	29x27x10	poorly made
160R30, 2b	Pee Dee Plain	34x32x8	considerable edgewear
	Pee Dee Simple Stamped	33x32x7	poorly made
90R130, 1	Pee Dee Simple Stamped	28x?x8	poorly made, fragmented
95R190, 1	Kimbel Plain	30x28x8	well made
	Pee Dee Textile Wrapped	23x21x7	poorly made
95R225, 1	Pee Dee Complicated Stamped	29x28x10	well made
Surface	Pee Dee Textile Wrapped	32x31x8	well made
	Pee Dee Cord Marked	30x29x8	well made
	Pee Dee Simple Stamped	34x?x9	fragmented
	Pee Dee Plain	25x25x5	worn

Table 2. Clay discs from Wachesaw Landing.

A fragment of a fired clay pipe stem was found in level 1 from 95R190. The fragment, although small, appears to be similar to the specimens recovered from Town Creek and may specifically be compared to a pipe illustrated by Coe (1952:Figure 165t). The paste is a fine clay with a compact texture and the exterior is carefully smoothed.

Lithics

Three categories of stone are recognized from Wachesaw Landing: tools,

waste flakes from the production and resharpening of the tools, and stone which has not been noticeably altered. A variety of raw materials are observed at Wachesaw, including basalt, quartz, crypto-crystalline quartzite, argillite, sandstone, felsic tuff, rhyolite, differentially crystallized tuff, and other igneous, metaigneous, and metamorphic rocks. Some of these materials are found in the Waccamaw River, apparently transported from Piedmont sources, others may have been intentionally transported from above the Fall Line, and a few may have local sources. Future research at Wachesaw Landing should investigate the sources for the great variety of stone.

Four hammerstones, all quartz cobbles, were recovered. All evidence heavy edge wear and battering, and one is fragmented. These specimens are oval, weighing less than 100 g and ranging in size from 43 x 41 x 28 mm to 67 x 49 x 30 mm. Edge wear is observed completely around the margins, but not on either of the flat faces. A single quartz chopping tool, with severe edge battering, was recovered. A soft shale or slate hone was found in square 95R190, level 1 (Figure 15b). This specimen, while broken, shows evidence of heavy use with grooves ranging from 6 to 8 mm in width and 1 to 3 mm in depth.

Bifaces are defined as "bihedral pieces of chipped stone with two faces and flake scars on both faces" (House and Wogaman 1978:60), exclusive of projectile points. Consequently this category includes blanks, preforms, and miscellaneous fragments. Eight items classified as bifaces were recovered, four made from rhyolite or tuff and four manufactured from quartz cobbles (Figure 15c). These items show considerable variation in workmanship, size, and style. The quartz specimens have been produced from small cobbles of quartz with incomplete removal of the cortex. The cobbles from which the bifaces were made were oval to egg-shaped originally, although the resultant bifaces were roughly triangular in outline with an average length of 42 mm and an average thickness of 11 mm. Basal width is about 24 mm. The rhyolite specimens are similar, although somewhat larger at the finished stage. One biface (a138) is triangular in outline, worked primarily on one face, and is similar to Coe's (1964:45) Badin Crude Triangular "type."

A small sample of five projectile points is available from Wachesaw and, as might be expected, the variation is great. Two specimens, both made from differentially crystalized tuff, generally fit the type description of Caraway Triangular (Coe 1964:49; Lewis 1951:265-267). The lengths of these specimens are 25 and 23 mm and the widths are 19 and 17 mm respectively (Figure 15d). Thickness of both specimens varies from 5 to 6 mm. These points, in North Carolina, are associated with the eighteenth century Siouan sites of Keyauwee and Saponi, but Coe (1964:49, 112) notes that they are distinct from the smaller Clarksville Small Triangular point associated with the eighteenth century Occanneechi and Saponi Hillsboro pottery. The specimens from Wachesaw fall at the low end of the size of the Caraway Triangular point, but outside the upper limits of the Clarksville point. Lewis (1951:265-266) discusses the Dan River Triangular point, which is slightly smaller than the Caraway, but larger than the Clarksville. The

Wachesaw specimens may therefore also fit Lewis' category of Dan River. In so far as there is some mixing of these styles at Town Creek, a discussion of small triangular points and their cultural affiliation may be inappropriate. We suspect that these specimens from Wachesaw represent a very generalized Siouan point of the eighteenth century and that a few millimeters' difference in size is probably not significant.

The third specimen (Figure 15e) may be classified as a Randolph Stemmed (Coe 1964:49-50). The point is made from a porphyritic rhyolite and measures 35 mm in length, the stem width is 9 mm, and the blade base width is 17.5 mm. The point, typical of Randolph specimens, is poorly flaked and is made from a flake with the striking platform visible at the base of the stem. Coe (1964:50) suggests this type was most often made during the latter half of the eighteenth century.

An unidentified stemmed point, made from rhyolite, was found in 90R130, level 1 (Figure 15f). The point has a length of 49 mm, a blade base width of 27 mm, and a stem width of 12.5 mm tapering to 11.5 mm, and a thickness of 10 mm. The final fragmented point, made from a crypto-crystalline quartzite, is also presently unidentified. The fragment appears to be a contracting stem base, tapering from 15 to 9 mm along its 17 mm length. A small portion of the blade is intact, suggesting a blade base width of at least 19 mm. Similar points are not uncommon along the Lower Coastal Plain of South Carolina, although they have not been found in a firmly dated context.

Ninety-four flakes, including two specimens of non-local chert (probably of English origin), were recovered from Wachesaw. Most represent an intermediate stage of reduction, although several flakes of bifacial retouch were recovered from the fine waterscreening of Feature 1. Three flakes exhibit the blocky appearance characteristic of bi-polar flaking. Only 14.9% of the flakes are quartz or crypto-crystalline quartzite. The bulk, 77.7%, are rhyolites, tuffs, and basalts. Five specimens (5.3%) of an apparently local, highly fossiliferous, chert are also present.

The final category of stone consists of 133 specimens which are unaltered chunks and cobbles. Fifty-one specimens (38.3%) are quartz cobbles, 17 (12.8%) are cortex fragments, one specimen is a non-local black chert cobble which probably represents ship ballast, and two specimens are fossilized marine shells, probably taken from outcrops of the Pamlico formation. The bulk of the collection consists of rhyolite, tuff, basalt, and other igneous, metaigneous, and metamorphic rocks, as is the case with the flakes.

Trade Items

The only European trade items, other than the historic ceramics discussed in the following section, discovered in these excavations are 10 glass trade beads. During the 1930 burial excavations a large quantity of beads, a spoon, and several C-bracelets were uncovered (Figure 16). This section will only briefly discuss these latter items.

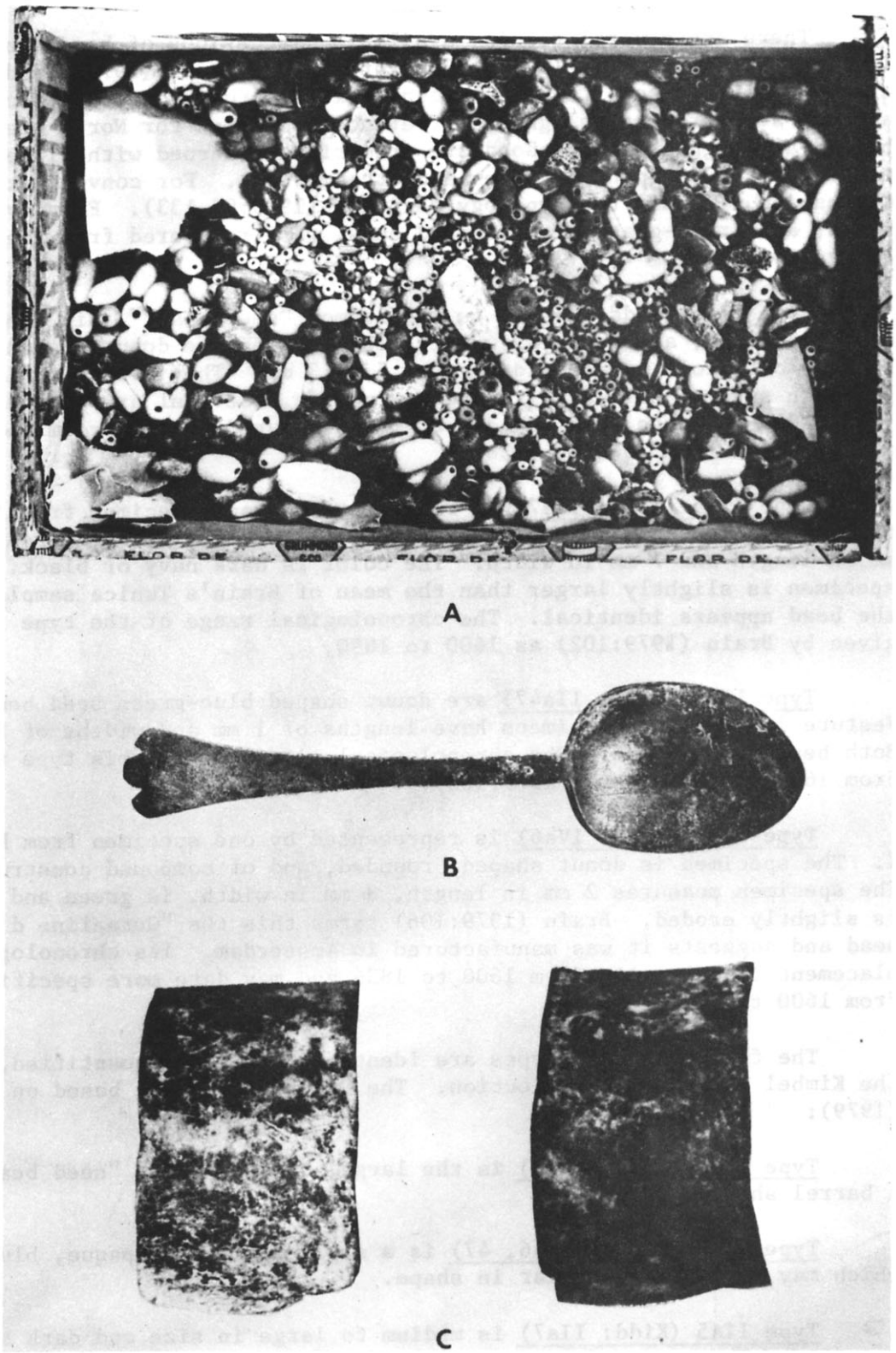

Figure 16. Trade Items from the Kimbel Collection, all recovered from the 1930 cabin burials. A, cigar box of trade beads, shell beads, and skull fragments; B, spoon; C, C-bracelet.

There are several readily available discussions of bead manufacture, including Kidd and Kidd (1970), Spector (1976), Brain (1979), and Smith and Good (1982), so little background will be provided here. Each of these authors also proposes slightly different typologies for North American beads (although Smith and Good are primarily concerned with sixteenth century beads of Spanish trade in South America). For convenience this discussion will use the typology of Brain (1979:97-133). Four types of beads, all drawn-glass with rounded ends, were recovered from the excavations.

Type IIA1 (Kidd: IIa14) is the common "seed bead." Six specimens were recovered, all from Feature 1. These beads are donut shaped and have lengths of 1 to 3 mm and widths of 2.5 to 3 mm. They are white in color, although several have a slight yellow patina. Several are eroded. Brain (1979:101) suggests these beads were manufactured in Amsterdam and have a date range from 1600 to 1836.

Type IIA5 (Kidd: IIa7) is represented by one specimen from level 1 of 90R130. The bead is barrel shaped, well tumbled, and measures 15 mm in length and 7 mm in width. The color is dark navy or black. This specimen is slightly larger than the mean of Brain's Tunica sample, although the bead appears identical. The chronological range of the type is given by Brain (1979:102) as 1600 to 1890.

Type IIA7 (Kidd: IIa47) are donut shaped blue-green seed beads from Feature 1. The two specimens have lengths of 1 mm and widths of 2.5 mm. Both beads are eroded. The chronological placement of this type is from 1600 to 1836 (Brain 1979:103).

Type IVA2 (Kidd: IVa6) is represented by one specimen from Feature 1. The specimen is donut shaped, rounded, and of compound construction. The specimen measures 2 mm in length, 3 mm in width, is green and red, and is slightly eroded. Brain (1979:106) terms this the "Cornaline d'Aleppo" bead and suggests it was manufactured in Amsterdam. Its chronological placement is generally from 1600 to 1836 and may date more specifically from 1600 to 1725.

The following bead types are identified, but not quantified, from the Kimbel 1930 burial collection. The descriptions are based on Brain (1979):

Type IIA1 (Kidd: IIa15) is the large, opaque, white "seed bead" in a barrel shape.

Type IIA4 (Kidd: IIa46, 47) is a small to large, opaque, blue bead which may be oval or tubular in shape.

Type IIA5 (Kidd: IIa7) is medium to large in size and dark burgundy in color. The common form is barrel shaped.

Type IIB1 (Kidd: IIb12) is a medium, opaque, dark burgundy bead with

longitudinal white stripes.

Type IIB2 (Kidd: IIb25) represents a medium to large, opaque, white bead with four longitudinal dark blue stripes.

Type IIB4 (Kidd: IIb31) is a large, opaque, white bead with four longitudinal stripes alternating red and blue.

Type IIB5 (Kidd: IIbb13) is a large, opaque, white bead with three inlays of compound stripes: a blue stripe between two red stripes.

Type IIB7 (Kidd: IIbb24) is a large, opaque, turquoise blue bead with three sets of compound stripes, each composed of a red stripe between two white stripes.

Type WlE1 is a large, spheroidal, wire-wound bead of translucent, clear glass.

All of these bead types have a wide temporal and geographical range and were apparently traded by the English, French, and perhaps Spanish. The type B beads, which are composite (having two or more layers of glass with inlays) have a generally earlier mean date than the type A or monochrome beads of simple construction (Brain 1979:114-115). All date from within the general period of Wachesaw Landing and all probably came from English traders out of Virginia or Charleston. Very few detailed data are available from contact sites in the Carolinas and Georgia, as shown by the fact that the only Carolina site included in Brain's (1979) geographical distribution is Peachtree, Cherokee County, North Carolina. MacCord (1977) provides some data from the Trigg site in Virginia, but only the common white seed bead (Type IIA1) is found at both Wachesaw and Trigg. Witthoft (n.d.) has provided some data on beads from Tugalo and while some seem similar to Wachesaw, without better descriptions or the actual specimens the information is of only minor use. From the site of Saura Town ($Sk^{V}1a$) on the Dan River in Stokes County, North Carolina a large variety of beads has been recovered, primarily from burial deposits. This is a late seventeenth century Hill Tribe Siouan site which primarily engaged in trade with the English in Virginia (Wilson 1982). Bead types (Tunica numbers) found during a brief inspection of the collections at the University of North Carolina Research Laboratories of Anthropology include IIA1, IIA4, IIA5, and IIA7. Also identified, but not fitting the Tunica typology, are two rounded end drawn beads of complex manufacture. The first is opaque turquoise blue with four evenly spaced white stripes, while the second is translucent dark blue with four evenly spaced white stripes. Neither of these two types has been found at Wachesaw.

Besides the beads, a spoon and a C-bracelet from the Kimbel collection were examined. The spoon, similar to Sheffield plate, has an oval bowl, trifid end, and lacks a rat tail. The base metal appears to be brass, with a silver plate. Noel Hume (1978:183) suggests that spoons of this type were most popular in the "second half of the seventeenth

century, but lost out to the pewter spoon in the early 1700's." A maker's mark is impressed in the bowl. A very similar spoon has been recovered from a burial at Saura Town, North Carolina (Joffre Coe, personal communication). The C-bracelet is thin, beaten brass or copper without any sort of decoration. Similar bracelets are found in the Tunica material and Brain (1979:193-194) classifies them as Type 7. The most common forms in the Tunica collection, however, consist of thin wire with a circular or rectangular cross section. Similar forms may also have been present at Wachesaw as there is considerable brass staining on the skeletal material. Brain (1979;193) suggests that copper or brass was provided to the Indians as raw material and the bracelets were made locally.

Historic Artifacts

A total of 463 historic artifacts were collected during the excavations. The historic assemblage is composed of ceramics, glass, and iron artifacts in abundance, with minor amounts of brass, lead, and clay materials. Artifacts were identified using standard sources, such as Noel Hume (1969), South (1977), and Price (1979), and less circulated manuscripts, including Lewis and Haskell (1981), Bartovics (1978), and Quimby (1966). The materials range in date of manufacture from the mid-seventeenth through mid-nineteenth centuries. The material are typical of those recovered on British colonial and antebellum sites; no unusual or previously undescribed items were recovered. For a complete list of materials recovered, the reader is referred to Table 3.

The assemblage was first examined as a single unit. For the purposes of organization and comparison with other assemblages, the collection was arranged by artifact categories used by South (1977) in defining the Carolina Artifact Pattern. This division is seen in Table 4.

A recent thrust of historical archaeological theory has been the recognition of site patterning based on the quantification of the materials which form the archaeological record. The underlying premise is that human behavior is patterned, non-random, and that quantification is necessary to study the regularities of culture (South 1977:88). South defined the Carolina Artifact Pattern as a general pattern of domestic discard activity, as revealed in the ratios of various classes of cultural remains. The classes are defined by artifact form and function. This pattern is based on the entire collection of artifacts from an occupational site, not selected proveniences. Deviance from the Carolina Artifact Pattern should reflect specialized site use, other than domestic activity (South 1977:83-88).

The Wachesaw assemblage generally conforms to the Carolina Artifact Pattern (Table 4), with only slight variations in the ratios. While these figures do not necessarily substantiate a totally domestic use for the site, they do not immediately suggest any other type of specialized site use. A domestic function is consistent with the documented use of the site in the nineteenth century as a plantation.

	190R110		190R225		190R285		160R30		160R190		90R130		95R190		95R225		95R235		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Lead Glazed Redware	9	8.49							6	8.57									15	7.40
Lead Glaze Coarse Earth.	10	9.43							3	4.28			1	10.0					14	6.90
N. Devon Gravel Tempered	2	1.88	1	20.0					1	1.42			1	10.0					5	2.40
Luster Glazed C. Earth.	1	.94																	1	.49
Slipware	10	9.43					1	50.0	9	12.85			2	20.0					22	10.89
Delft	2	1.88							6	8.57									8	3.90
Astbury									1	1.42									1	.49
Unglazed Earthenware	1	.94																	1	.49
Whieldon Ware									1	1.42									1	.49
Creamware, plain	20	18.86							1	1.42									21	10.39
Pearlware, plain	14	13.20	1	20.0					2	2.85	2	40.0							19	9.40
Pearlware, blue shell	2	1.88							2	2.85	1	20.0							5	2.40
Pearlware, blue hand paint	2	1.88							2	2.85									4	1.98
Pearlware, poly hand paint	7	6.60																	7	3.40
Pearlware, annular	2	1.88																	2	.99
Pearlware, transfer print	7	6.60							1	1.42									8	3.90
Whiteware, plain	6	5.66							5	7.14			5	50.0			1	100.0	17	8.40
Whiteware, transfer print	1	.94																	1	.49
Yellow ware															1	33.3			1	.49
Brown Saltglaze Stoneware	3	2.83	2	40.0					13	18.75	2	40.0			1	33.3			21	10.39
Grey Saltglaze Stoneware	1	.94							1	1.42									2	.99
White Saltglaze Stoneware									1	1.42					1	33.3			2	.99
Rhenish	1	.94							3	4.28			1	10.0					5	1.98
Nottingham									1	1.42									1	.49
Nineteenth Century Crock	1	.94	1	20.0					8	11.42									10	4.95
Blue on White Oriental Por.	3	2.83							3	4.28									6	2.97
Overglaze Oriental Porc.	1	.94																	1	.49
Canton Porcelain	1	.94																	1	.49
British Porcelain							1	50.0											1	.49
Green bottle glass	21		1		1		1		16		16									
Clear bottle glass	3								2											
Brown bottle glass									9											
Window glass	4								1		1									
Nails	11								50		7									
Nail fragments	15				2		29				3		4		1					
Tack											1									
Barrel strap	4								1											
Iron kettle	1						1		1				1							
Tool frag	1																			
Furniture hardware	2																			
Shutter pintel									1											
Coat hook									1											
Shoe buckle									1											
Brass finger ring									1											
Glass bead									1											
Lead shot									1											
4/64 pipestem													1							
5/64 pipestem	13								7		2		2		1					
6/64 pipestem	4										1		6							
7/64 pipestem	2								1											
Bowl fragments	6										2				1					

Table 3. Historic artifacts.

South's Mean Ceramic Date formula was then applied to the assemblage. This formula is based on the horizon concept, as defined by Willey and Phillips (1958:31-34), and is the product of the median date for the manufacture of each type times the frequency of each ceramic type, divided by the sum of the frequency of each ceramic type (South 1971). The result

	#	%	Carolina Artifact Pattern
Kitchen Group			
Ceramics	203	43.84	
Wine bottle	56	12.09	
Beer bottle	9	1.94	
Medicine bottle	5	1.07	
Iron kettle	4	.86	
		59.80	63.1
Clothing			
Shoe buckle	1	.21	3.0
Recreation			
Tobacco pipes	49	10.58	5.8
Personal			
Brass ring	1	.21	
Glass bead	1	.21	
		.42	.21
Arms			
Lead shot	1	.21	.5
Activities			
UID tool	1	.21	
Storage	5	1.07	
		1.28	1.7
Furniture			
Hardware	2	.43	.2
Architectural			
Nail	68	14.68	
Nail frag	54	11.66	
Tack	1	.21	
Shutter pintel	1	.21	
Coat hook	1	.21	
		26.97	25.5

Table 4. Comparison of the Wachesaw assemblage to the Carolina Artifact Pattern.

is a proposed mean date of occupation for the site. Table 5 shows the Mean Ceramic Date calculations for the site as a whole. The resulting date for the site is 1768, which is considerably earlier than the documented occupation of the site as an operating plantation. Although the area of Wachesaw Plantation may have been purchased by the Alston family as early as 1730, the area remained on the fringes of the Georgetown plantation development throughout the eighteenth century. Furthermore, the first evidence of development of Wachesaw Plantation does not appear until 1825

Artifact	xi	fi	xi·fi
Lead Glazed Redware	1700	15	25500
Lead Glazed Coarse Earthenware	1700	14	23800
N. Devon Gravel Tempered Ware	1713	5	8565
Luster-glazed Coarse Earthenware	1860	1	1860
Combed and Trailed Slipware	1733	22	38126
Delft	1700	8	13600
Unglazed Earthenware	?	1	
Astbury Ware	1738	1	1738
Whieldon Ware	1755	1	1755
Creamware, plain	1791	21	37611
Pearlware, plain	1800	19	34200
Pearlware, shell edge	1805	5	9025
Pearlware, early hand painted	1805	4	7220
Pearlware, poly hand painted	1805	7	12635
Pearlware, annular	1805	2	3610
Pearlware, transfer print	1818	8	14544
Whiteware, plain	1860	17	31620
Whiteware, transfer print	1860	1	1860
Yellow ware	1860	1	1860
Brown Saltglaze Stoneware	1733	21	36393
Grey Saltglaze Stoneware	1733	2	3466
White Saltglaze Stoneware	1753	2	3506
Rhenish, manganese	1668	1	1668
Rhenish, blue	1738	4	6952
Nottingham	1755	1	1755
Nineteenth Century Crock	1860	10	18600
Blue on White Oriental Porcelain	1730	6	10380
Overglaze Oriental Porcelain	1730	1	1730
Canton Porcelain	1815	1	1815
British Porcelain	1770	1	1770
		203	357164

$$Y = \frac{\sum_{i=1}^{n} xi \cdot fi}{\sum_{i=1}^{n} fi}$$

$Y = 1768.13$

Table 5. Mean ceramic date calculations for the Wachesaw assemblage.

(Lachicotte 1955). The conflict between the archaeological data and the documentary data led to a more detailed examination of the archaeological materials.

A closer examination of the ceramics reveals that, even though the materials span two centuries, there is not an even continuum in terms of data of manufacture. Instead, there are two distinct date clusters. A group of 99 ceramics were manufactured between 1600 and 1775 and are most often associated with late seventeenth century to early eighteenth century occupations. The Mean Ceramic Date for these materials is 1719, as shown in Table 6. Likewise, 97 ceramics were manufactured between 1760 and 1850, most often representing an early nineteenth century occupation. This was supported by a Mean Ceramic Date of 1819. In

Late 17th to early 18th century ceramics	- 99
Mid 18th century ceramics	- 6
Late 18th to early 19th century ceramics	- 97
Unknown manufacture date	- 1

Early Eighteenth Century Assemblage

xi	fi	xi·fi
1700	15	25500
1700	14	23800
1713	5	8565
1733	22	38126
1700	8	13600
1733	21	36393
1733	2	3466
1668	1	1668
1738	4	6952
1730	6	10380
1730	1	1730
	99	170180

Y = 1718.98

Early Nineteenth Century Assemblage

xi	fi	xi·fi
1791	21	37611
1800	19	34200
1805	5	9025
1805	4	7220
1805	7	12635
1805	2	3610
1818	8	14544
1860	17	31620
1860	1	1860
1860	1	1860
1860	10	18600
1815	1	1815
1860	1	1860
	97	176460

Y = 1819.18

Table 6. Mean Ceramic Dates of two suggested assemblages.

contrast, only six ceramics traditionally associated with a mid-eighteenth century occupation are present.

The data suggest that evidence of two historic occupations are represented in the mixed plowzone deposit; one dating to the late seventeenth - early eighteenth century and another beginning in the early nineteenth century. This is more in conformance with the available documentary evidence. The early nineteenth century assemblage is no doubt associated with plantation activities at Wachesaw, probably initiated by James Belin.

The association of the early eighteenth century materials is not clear,

however. They may be associated with early, undocumented plantation activity; they may reflect the rumored early tavern; or, they may be associated with the historic Indian occupation. The last explanation seems the most plausible. A Mean Ceramic Date of 1719 roughly coincides with the documented accounts of Indian trade in the area, and the suggested date of disappearance for the Waccamaw in the early 1720s. An examination of the historic assemblage further supports the suggested association of the early historic material.

South has indicated that an import function of the Carolina Artifact Pattern is to reveal contrasting patterns that reflect specialized behavioral activities. A closer examination of the artifact ratios in Table 4 indicates a difference in relative percentages in the Personal Group and in the Tobacco Group. Both categories are higher at Wachesaw than is expected, 0.42% versus 0.21% and 10.58% versus 5.8%, respectively. Both of these categories contain items commonly associated with the Indian trade, such as glass beads, brass jewelry, and kaolin tobacco pipes.

At this point, a more detailed examination of the tobacco pipe fragments was initiated. Kaolin pipes are a standard feature of historic sites, from the sixteenth through the nineteenth centuries, and pipes from all historic sites are similar. However, a general trend in their manufacture is that the bore diameter of the stem decreases through time. Binford (1962) developed a formula for dating historic sites based on the relative percentage of absolute bore diameter sizes, based on modern measurements. Binford's formula is:

$$Y = 1931.85 - 38.26x$$

where Y is the mean date for the sample and x is the mean hole diameter for the sample. Binford's formula provides a mean date of site occupation of 1725. This deviates sharply from the Mean Ceramic Date of 1768 for the site assemblage. The results of this test suggest that the majority of the kaolin pipes recovered are associated with the early occupation of the site, lending further credence to the hypothesis that the early occupation is associated with the Waccamaw Indians.

An obvious bias here is the small sample size for the pipestems. A minimum sample of about 100 or more pipestems is required to produce an accurate mean date of occupation (Noel Hume 1978:300-301; Kathleen Deagan, personal communication); only 40 examples were available from Wachesaw. The small sample size is a problem to be noted when using this tool for interpretive purposes.

Unfortunately, other items of non-ceramic material culture could not be as tightly dated as the kaolin pipes. Therefore, the collection as a unit could not be neatly divided into two separate assemblages, as could the ceramics.

In order to strengthen the suggestions made here, additional testing

will be required. Extensive excavations are needed to isolate contexts dating to the plantation period and to determine the behavior resulting in the early historic deposits. Nonetheless, examination of the historic materials of the plowzone deposit suggests two historic occupations at the site; a late seventeenth to early eighteenth century deposit, probably associated with historic Waccamaw Indian occupation, and a late eighteenth to early nineteenth century occupation, associated with Wachesaw's use as a plantation.

ANALYSIS OF ECOFACTS

Ecofacts are defined as archaeological nonartifactual data which provide information concerning human use of the environment. Four categories of ecofacts were collected during the excavations at the Wachesaw Landing site: shell samples, animal bone, soil samples, and ethnobotanical remains.

The shell remains are useful for making basic environmental comparisons between the shellfish collected aboriginally and those found in the vicinity today. The animal bone is significant primarily for the subsistence data it represents and its potential for the reconstruction of the site's economic base. Larger collections may also provide information in hunting techniques, butchering patterns, and selective use of different meat cuts. The soil samples, collected from each level except the plowzone from each excavation unit may provide data on the nature, intensity, and extent of man's occupation at the site through the identification of various macronutrients in the soil. Unfortunately, a large sample of squares would be necessary for this analysis to yield valid results; consequently, no soil studies have been undertaken at this time. The ethnobotanical remains consist primarily of the waterscreened remains from Feature 1 and the overlying corn cob pit, although hand picked charcoal from general site excavation is also included in the study. Ethnobotanical remains can provide data on the tree species used by the site occupants and may provide information on the presence of plant foods and food remains.

Shell Remains

There is no shell midden at Wachesaw Landing, although shells are not uncommon and are found scattered throughout level 1, in the midden adjacent to the bluff, in postholes, and in Feature 1. Because shells are frequently found at historic sites, only those specimens from postholes or features may, without question, be assigned to the aboriginal occupation. Consequently, while eight shell samples were gathered, only five come from known aboriginal contexts, although a sample from 160R30, level 2b, is also considered. Identified species include, in order of abundance, the quahog (*Mercenaria mercenaria*), common oyster (*Crassostrea virginica*), knobbed whelk (*Busycon carica*), ribbed mussel (*Modiolus demissus*), stout tagelus (*Tagelus plebeius*), and a small fragment of an unidentifiable freshwater mussel. The only species found in a questionable context that was not also found in a secure context is the common cockle (*Trachycardium muricatum*).

The majority of these species require a salt water environment and could not be collected in the vicinity of Wachesaw Landing. The relatively small quantities of shellfish, while indicating that the occupants of Wachesaw

Landing occasionally utilized the shellfish potential of the salt marshes, suggest that shellfish were never a significant portion of the diet. An alternative is that shellfish, while collected, were rarely brought back to the site, at least in the shell. This explanation may be more likely considering the data from Pee Dee sites in the Awendaw Creek vicinity which appear to represent seasonal shellfish collection occupations (Trinkley 1980, 1981b, 1981c).

The oysters recovered are typical tidal specimens which evidence no abnormalities in shape. Their size, however, is somewhat smaller than typical specimens today. The clam shells are likewise typical of modern specimens and range in size from 60 to 75 mm, slightly below the average size of clam shells today (Michael Castagna, personal communication). The whelk shells are too heavily fragmented to obtain information on the shell size. All of the shell, because of acidic soils, is in poor condition.

Loftfield (1979:104-106), from the Late Woodland Uniflight Site in Onslow County, North Carolina ($On^{V}33$), found a wide range of shellfish species. Clam and oyster, however, dominate the collection. These results are not readily comparable to Wachesaw because $On^{V}33$ is a seasonal site situated on the mainland shore of a salt water sound. No sites in an environmental context similar to Wachesaw have been identified from North Carolina.

Faunal Remains

The analysis of the non-fish faunal remains was conducted using the comparative faunal collections of the Research Laboratories of Anthropology at the University of North Carolina at Chapel Hill. The sample consists of 237 bone fragments from the surface, excavated squares, postholes, and Feature 1. A sample of 40 fish bones, primarily from Feature 1, was submitted to Dr. Betsy Reitz at the University of Georgia. Her analysis was conducted using the comparative collections of the Florida State Museum at Gainesville, Florida. As the sample size for the entire collection is small, this discussion will be limited to primarily descriptive statements.

The first step in this analysis consisted of the taxonomic identification of each specimen. The remains were identified at the species level whenever possible. Often, however, specimens could be identified no further than to the class. Following the taxonomic identification, the skeletal element represented was determined (for example, left or right femur). Additionally, indications of age and sex were noted for the non-fish remains.

At the species (and class) level the remains were quantified using three methods: determination of the total number of identifiable fragments from each species, calculation of the total weight of the fragments for each species, and the calculation of the minimum number of individuals (MNI) for each species. The methodology outlined by White (1953) was followed in determining the MNI for each species or class. This involves the

	Odocoileus virginianus		*Procyon lotor*		*Terrapene carolina*		Unidentified turtle		Unidentified toad/frog		Unidentified bird		Sciaenidae		*Mugil* spp.		*Parallichthyes* spp.		*Ginglymostoma cirratum*		*Archosargus probatocephalus*		Ariidae		*Ariopsis felis*		Unidentified fish		Miscellaneous fragments		Total	
	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.	#	wt.
Excavation Units	41	99.42	3	4.52	3	3.81	--		--		1	0.22	2	0.7	4	0.14	--		--		--		--		--		1	0.10	118	120.40	173	229.31
Feature 1	18	16.22	--		7	2.8	1	0.87	--		--		--		--		2	0.24	4	0.39	4	0.54	4	0.34	2	0.14	17	0.77	40	10.65	99	32.96
Surface	3	11.37	--		--		--		1	0.04	--		--		--		--		--		--		--		--		--		1	0.34	5	11.75
Total	62	127.01	3	4.52	10	6.61	1	0.87	1	0.04	1	0.22	2	0.7	4	0.14	2	0.24	4	0.39	4	0.54	4	0.34	2	0.14	18	0.87	159	131.39	277	274.02
%	22.39	46.35	1.09	1.65	3.61	2.41	0.36	0.32	0.36	0.01	0.36	0.08	0.72	0.26	1.44	0.05	0.72	0.09	1.44	0.14	1.44	0.20	1.44	0.12	0.72	0.05	6.50	0.32	57.41	47.95	100	100
MNI	3		1		1		1		1		1		1		1		1		1		1		1		1		1		--		--	

Table 7. Animal bone remains by location, number of fragments, weight (in grams), and percentage of total.

determination of the most common skeletal element for each species. The final count obtained corresponds to the MNI present in the sample. The conservative technique of ignoring excavation unit designations in determining the MNI was followed (see Grayson 1973). The faunal assemblage from Wachesaw Landing as a whole was used as the basic analytical unit.

Table 7 shows the distribution of the faunal remains from the excavation units, Feature 1, and surface provenience at Wachesaw Landing. Not surprisingly, Feature 1 contained the largest amount of bone (99 fragments) for any single excavation unit. Table 7 also illustrates the faunal remains by count and weight percentages. The relative importance of deer (*Odocoileus virginianus*) is underscored.

The species identified from the faunal material are also listed in Table 7. A total of only three species were noted among the non-fish faunal remains, including two species of mammals and one of reptiles. The other identifications could not be made below the class level.

The most common non-fish animal exploited at Wachesaw Landing was the white-tailed deer (*Odocoileus virginianus*). A minimum of 3 individuals, represented by 62 fragments of bone, are present. The individuals include two adults (sex unknown) based on attrition exhibited by the third molar and second premolar. Based on an examination of this tooth wear (see Sevringhaus 1949), the ages of these two deer are estimated to be 5.5 and 7.5 to 8.5 years, respectively. The third individual was an immature deer. Based on the lack of epiphyseal closure of the recovered two left phalanx, this immature individual was less than 14 months old (see Lewall and Cowan 1963:629-636; Runquist 1979:189, 200). No innominate fragments and no skull fragments except two left petrous processes were recovered. No further information on the age and sex characteristics of the Wachesaw deer are available, and further analyses are not possible.

The single non-deer mammal recorded is raccoon (*Procyon lotor*), represented by three bone fragments. Full epiphyseal closure is noted on all the raccoon remains, indicative of an individual more than six months old. The absence of opossum, dog, gray squirrel, and rabbit is most striking. These mammals are well represented at other archaeological sites in the Southeast, particularly those on the coast of the Carolinas (see Runquist 1980:472, 1981:95-100; Loftfield 1979:102; and Trinkley 1981a). Their absence from the collection at Wachesaw Landing is probably the result of the small sample size.

Only one other species is noted, the box turtle (*Terrapene carolina*). A total of 10 fragments, representing a minimum of one individual, are recognized. The box turtle is primarily a terrestrial species (see Ernst and Barbour 1972), whose habitat ranges from woodland areas to high, dry uplands. Their preferred habitat is the open woodland. As October through April is frequently spent in hibernation, the presence of carapace fragments and postcranial material suggests that the turtle was captured sometime between May and September.

Other than these animals, the non-fish faunal remains consist of one carapace fragment from a non-box turtle, one vertebra from an unidentified toad or frog, and one vertebra from an unidentified bird. It is noticeable that no turkey remains are identified from Wachesaw, since the turkey is usually a component of faunal assemblages in the prehistoric Southeast (Olsen 1968:107-109). This, however, may be the result of an insufficient sample size.

The fish remains include five species, two families, and the category of unidentified fish. A total of 40 specimens were identified by Reitz, all recovered from either the waterscreening of Feature 1 or various post-holes. Seven fish are represented in the collection and all are estuarine species of marine families. Reitz (personal communication) suggests that the collection may be a summer deposit, with the sharks (*Ginglymostoma cirratum*) present only in warm weather. The flounder (*Paralichthyes spp.*), sea catfish (Ariidae), and sheepshead (*Archosargus probatocephalus*) are all primarily warm weather species, most abundant from May or June through October or November. The drums (Sciaenidae), however, are most common along the South Carolina coast in September through November, but this is still not a time of cold weather. All of the species identified, except mullet (*Mugil spp.*) are bottom feeders or large predators, which are not found in the intertidal creeks, but rather at their mouths, feeding on the smaller fish (Cain 1973; John Dean, personal communication; see also Trinkley 1980:111-113). Significantly, no fresh water species are present, although the site is situated on the Waccamaw River above salt water intrusion. Certainly it should be remembered that this discussion is based on remains from only one feature and one posthole.

Many archaeological reports, especially in the past, have employed meat estimates derived from dressed weights of living specimens (see White 1953; Guilday et al. 1962; Guilday 1971). A more recent technique, reported by Fradkin (1979), uses bone weights of archaeological remains. Linear regression formulae for calculating useable meat weight used in this analysis are taken from Fradkin (1979:80), where x = body weight in kilograms, and y = skeletal weight in kilograms:

Fish	$\log y = 0.9528(\log x) - 1.3585$
Turtles	$\log y = 1.03(\log x) - 0.69897$
Birds	$\log y = 1.071(\log x) - 1.1871$
Mammals	$\log y = 1.09(\log x) - 1.2147$

Wing and Brown (1979:128) suggest a somewhat different allometric formula for turtles, but do not provide a generalized formula for fish. Although Runquist (1980:476) has noted that the regression formulae are significant underestimates of meat available to site inhabitants, she also states that "[i]f the desired information is percentage of the total [of each category contributed], then estimates based on bone weights" are more accurate than White's method which relies on MNI data (Runquist 1980:477).

The allometric formulae from Wachesaw Landing, when the entire site is considered, show mammals contributing 3.9 kg of meat (97.4% of the total), fish contributing 0.06 kg of meat (1.5%), turtle 0.04 kg (1.0%), and birds 0.005 kg of meat (0.1%). Such a comparison, however, seriously underestimates the contribution of fish because of collection bias. If only the material from Feature 1 is considered, mammals still contribute the majority of the meat (0.47 kg or 87.0%), but fish contribute 9.3% of total meat weight (0.05 kg), and turtles contribute 0.02 kg or 3.7% of the total.

The faunal sample from Wachesaw is quite small and the limited amount of excavation, especially of features, limits this analysis to a preliminary survey. The only other coastal Carolina sites for which faunal assemblage data for the Late Woodland Period exists are shell middens (Rock 1982; Runquist 1980, 1981; Trinkley 1981a, 1981b; and Loftfield 1979). At these sites only a small range of animals were apparently exploited and only small numbers of individuals are reported.

The fauna recovered from Wachesaw Landing illustrate a heavy reliance on deer, with only minor contributions made to the diet by the remainder of the available fauna. This pattern of exploitation fits the generalized terrestrial orientation illustrated by the MNI present, bone weight and count, and the linear regression analysis. This pattern is drastically different from the pattern of faunal exploitation defined for the shell midden sites of the coast prior to European contact.

Although the remains from Wachesaw represent only a small sample, the pattern of faunal exploitation is different from the Woodland coastal focus on marine resources, as illustrated by a variety of coastal studies (Rock 1982; Runquist 1980, 1981; Trinkley 1981a, 1981b; Loftfield 1979). This leads to speculation that the terminal Late Woodland or Historic Period witnessed a change from a marine resource orientation (or at least a balance between marine and terrestrial resources) to a focus on terrestrial fauna. This shift would be enhanced by the value of deer to the fur trade in Historic times. Fire drives and communal hunts are suggested in the ethnohistoric record. Lawson observed a fire drive in the vicinity of Bulls Bay, Charleston County, South Carolina:

> . . .we found it to be some *Sewee Indians* firing the Canes Swamps, which drives out the Game, then taking their particular Stands, kill great Quantities of both Bear, Deer, Tukies, and what wild Creatures the Parts afford (Lefler 1967:17).

Most species do not congregate in sufficient numbers to warrant fire drives, and Larson believes that fire drives were essentially an eighteenth century phenomenon resulting from the demands of the European fur trade (Larson 1969:248). This view is at least partially supported by the records of the London custom house (Gregorie 1926:72) which indicate the huge number of skins exported from the Carolinas in 1699. One wonders what might have happened had the slave trade not wiped out the Indians before they were

successful in depleting the natural environment.

Ethnobotanical Remains

The carbonized remains from Wachesaw consist essentially of two lots, one from the corn cob pit at the base of level 1 in square 160R190 and the other from Feature 1, also in square 160R190. Both samples were collected from the waterscreening through 1/16 inch mesh of the entire contents. Besides these two large collections there are a small number of handpicked charcoal samples, which will be briefly discussed first. Samples collected for flotation have not yet been processed.

The only species of wood charcoal identified is pine (*Pinus spp.*). Small quantities of this wood are found in the corn cob pit, level 2 of 160R190, level 2a of 160R30, and Feature 1. A single piece of diffuse porous wood (an unidentified hardwood species) is also found in the corn cob pit. Too few data are available to offer comments on the wood charcoal except to note that pine is abundant in the site vicinity today, although the low incidence of hardwood is unusual. Hickory nutshell fragment (*Carya spp.*) and single carbonized seeds of water tupelo (*Nyssa aquatica*) and sumpweed (*Iva annua*) are also recovered from the water-screenings from Feature 1.

The largest category of botanical material consists of corn cob fragments. One fragment was recovered from level 2 or square 160R190 (number 1), nine were found in the corn cob pit in 160R190 (numbers 2-10), and nine more were found in Feature 1 (numbers 11-19). In addition, an unquantified collection of carbonized cupules was observed in the waterscreening samples. A small number of kernels were also collected. The Wachesaw corn is described below in Table 8. The format of this analysis and the resulting table follows the work of Ford (1973:188-197). The first observation was the general morphology of the charred cob fragment. If it appeared mature the cob was recorded as regular (R). If, however, the cob had the skinny or irregular appearance of tiller cobs or nubbins, the code N was used. Other subjective observations include the shape of the cob in cross-section and the portion of the cob represented. As Ford notes, the presence of glumes on the cob has the potential to alter the apparent shape. Where there were problems the cob was arbitrarily recorded as circular (C). The portion of the cob represented was estimated by comparison of the carbonized specimen to a modern cob. No basal ends or butts with shanks were present and most of the collection appeared to represent the middle section (M), the tip to the middle (T-M), or the upper tapering section minus the tip (M-T). The length of the cob fragment was measured, but in no cases were the cobs intact. The three cupule attributes include an assessment of the degree of pairing between the cupule rows, the number of cupules (usually at mid-cob or as close as possible) in 10 mm of cob length, and the cupule width. Cupules were considered paired if there was only a narrow groove between the rows, strongly paired if the groove is wide, and weakly paired if the corners of the cupules overlap. No cobs were observed which had non-aligned or irregular kernels.

	Cob					Cupule		
SPEC No.	Type	Row No.	Cross Section	Length (cm)	Area Measured	Pairing	Number/ 10mm	Width
eb108 - 1	N	12	C	2.3	T	W	3.0	6.2
eb117/1 - 2	R	12	E	3.6	M	S	3.0	9.0
3	N	10	C	2.5	M-T	S	3.0	8.0
4	R	10	Q	4.3	M	S	3.0	9.0
5	R	10	C	3.6	M-T	S	3.0	10.0
6	R	12	C	4.1	M-T	+	3.5	8.0
7	R	12	Q	3.9	T	S	3.0	8.0
8	R	12	E	4.6	M-T	S	3.0	9.0
9	N	12	C	4.6	M	S	4.0	8.0
10	N	10	E	1.9	T	+	3.0	6.0
eb153 - 11	R	12	C	2.8	M	W	3.0	9.0
12	N	10	C	2.7	T	+	2.5	8.0
13	N	10	C	3.0	T-M	+	2.5	8.5
14	R	10	C	4.0	T-M	+	3.0	11.0
eb166 - 15	R	12	E	3.7	M	+	3.0	8.5
eb170 - 16	R	12	C	3.6	M	+	3.0	9.5
17	R	12	E	3.4	M-T	W	2.5	8.5
18	R	12	C	3.8	M	+	2.0	11.0
eb180 - 19	R	14	E	2.0	M	W	3.0	7.0

Key: Q = quadrangular
C = circular
E = elliptical
M = middle
T = tip
+ = paired
S = strongly paired
W = weakly paired
R = regular cob
N = nubbin or tiller

Table 8. Attributes of corn cobs from Wachesaw Landing.

It is probable that all of this corn dates from the period associated with the Wachesaw pottery, the first third of the eighteenth century. Consequently, it may represent either a late aboriginal variety or an early English type. Seven of the cobs (38.8%) are 10-row corn, 11 specimens (57.9%) represent 12-row corn, and a single cob (5.2%) is of a 14-row corn. Four of the seven 10-row cobs are nubbin ears while only two of the 12-row corn cobs are nubbins. The mean row number is 11.4, but disregarding all the nubbin ears the mean row number increases to 11.7. If we assume the sample is representative of agricultural techniques then 32% of the ears were nubbins. The ears are slender and gently tapered toward the tip. Based on the midsections, it is probable that the bases were compressed or at least were not outflaring. The kernels found in the waterscreenings are fragmented, but do not appear dented. The kernels give some tentative indication that they were wider than deep, although none were sufficiently intact to allow measurements.

There are essentially three races of corn in Eastern North America, exclusive of pop and sweet corns: Northern Flints (Eastern Complex corn), Southern Dents, and Southeastern Flints. The Northern Flints have been described by Carter and Anderson (1945), Jones (1949, 1968), and Brown and Goodman (1977). They are characterized by ears possessing eight to 10 rows of crescent-shaped kernels (i.e., kernels wider than high), short plants which are highly tillered, and ears which are frequently enlarged at the base. The cobs are large and grooves separate the cupules. While the Northern Flints are found centered in the northeast, the Southern Dents are found primarily in the Southeast. The plants are noted for their height and rarely produce nubbin ears. The rows range in number from eight to 26 and the kernels are well dented or flattened. The cob frequently has an enlarged base. This race of corn was widely grown in the Southeast during Colonial times (Brown and Goodman 1977:77; Kalm 1974). The Southern Dents also were crossed with the Northern Flints in the first half of the nineteenth century to produce the Corn Belt Dents (Brown and Goodman 1977:78). The last major race is the Southeastern Flint which has short cobs, ears of 12 to 14 rows, and an ear which is slightly compressed at the base and gently tapering to the tip. Brown and Goodman (1977:77) note that this race is "limited to historic times. Prehistoric materials from this area seem to be more closely related to the Northern Flints (Cutler and Blake, in press)."

This brief survey suggests that the Wachesaw corn shares characteristics with all three races. Although the Southern Dents have a variable row number which would fit the Wachesaw sample, the presence of dented kernels and ears with enlarged bases does not correspond well with the Wachesaw sample. Likewise, the Northern Flints have a row number that is below that observed at Wachesaw and ears which also are enlarged at the base. The race most similar to the archaeological specimens at Wachesaw is Southeastern Flint. The close affinity between the Northern Flints and the Southeastern Flints may be responsible for the row numbers observed at Wachesaw. Brown and Goodman (1977:77) note that the Southeastern Flints were never important in the United States (from a genetic standpoint), although they were grown in the Colonial Southeastern states.

One of the few detailed, early accounts of corn agriculture in the Southeast is that by Peter Kalm (1974), a member of the Swedish Academy of Sciences who toured the area in 1748. He describes two principal types of corn: one he calls "big corn" or simply "corn" and the other he calls "three months' corn," although he notes that "[t]here are more varieties of maize the more south you go . . . ." (Kalm 1974:107). The big corn is almost certainly the Southern Dent race, while the smaller is probably either Northern or Southeastern Flint. Kalm (1974:108) remarks that the big corn is most commonly planted in the Carolinas, although "[t]he Indians use much of these three-month maize." While the short corn which ripened in three months is an equivocal description of the Southeastern Flints, it is probable that both the Indians and the Colonial settlers in the Charleston area were producing a variety of corns in the early eighteenth century.

Finally, the corn cob pit at the base of level 1 in square 160R190 may be compared to similar features common to the Southeast and discussed by Binford (1967) and Munson (1969). Like these previously documented pits, the Wachesaw feature contains abundant broken corn cobs and cob fragments without attached kernels, which have been burned in a reducing or oxygen-starved atmosphere with the result that the cobs were carbonized. The pit contained no artifacts and showed no evidence of disturbance or reuse. The only aspect that does not closely correspond to the previously described archaeological samples is size. The Wachesaw pit is only 0.6 foot in diameter while the range for Binford's (1967:8) samples is 0.7 to 1.37 feet. The Wachesaw pit depth is only 0.3 foot, although similar pits range from 0.82 to 1.21 feet. Similarly small corn cob pits were observed by Bettarel and Smith (1973), and Ford (1973:192) questions if such small pits could have successfully served as hide smoking pits as suggested by Binford (1967). It is, however, possible that at Wachesaw the upper portions of the pit were removed by plow activity. Munson's (1969) alternative hypothesis, that such cob pits served to smudge the interiors of pottery, while viable for many sites, does not appear appropriate for the Pee Dee, Wachesaw, or Kimbel pottery. Regardless of the purpose for which the pit was constructed, it is obvious that the cobs were burnt in a manner which would have produced abundant smudge.

ANALYSIS OF SKELETAL MATERIAL

The known burials from Wachesaw Landing were recovered from the cabin area in 1930 (see Figure 5). These skeletal remains were quickly removed by several archaeologists from the Charleston Museum and were stored at that institution. Excavation techniques were apparently rough as much of the material shows multiple shovel hits. Considerable damage, particularly to the skulls, resulted from these techniques. In addition, the only notes available from this excavation consist of a newspaper account and a single burial sketch (reproduced here as Figure 17). The bone preservation was, however, excellent and no preservatives were used on any of the material until the collection was inventoried by Mr. Stanley Knick with the Charleston Museum in 1977. The remains, at the time of excavation, were separated into cranial and post cranial categories, with the result that individuals have been comingled. Only in one instance was a box of post cranial material labeled such as to indicate that the remains (Charleston Museum number ANP-8) belonged to the same individual.

Because of the time allocated for determining the age, sex, and stature of the individuals in the Charleston Museum collection, certain bone types were selected for analysis (Table 9). These included the (when possible, reconstructed) cranial material, which was used for aging and sexing the individual. Post-cranial estimates of sex and stature are based on observations of humeri, femora, tibias, and innominates. Insufficient time was available to attempt the reconstruction of individuals and little effort was directed to the observation of cultural or pathological skeletal alternations.

From the cranial fragments five crania could be reconstructed. By observing suture closure (Krogman 1978:76-88) and morphological traits diagnostic of the two sexes (Krogman 1978:115; Ubelaker 1978:42) the following results were established (see Tables 10 and 11): cranium 1 is a male, aged 25 to 30 years, cranium 2 is from a female aged 41+ years, crania 3 and 4 represent males aged 45+ years, and cranium 5 is from a female aged 20 to 25 years. Although the progress of suture closure has only a general relationship with age because of its erratic nature (Krogman 1978:87), in a case such as Wachesaw where the crania are separated from their respective mandibles and post-cranial remains, observations of suture closure are a useful tool for estimating general age groups. A minimum error of 10 years is acknowledged.

Six mandibles were reconstructed from the remains, half of which could be sexed according to Giles' (1964) method using discriminant function analysis. The three measurements used to determine sex of the individual include the symphyseal height, bigonial breadth, and ramus height. Comparing these measurements with those calculations provided by Giles resulted in the identification of two females and one male (Table 12).

Figure 17. Sketch of a burial from the 1930 cabin excavations (Courtesy of the Charleston Museum, Charleston, S. C.).

Cranial

5 crania

6 mandible fragments

8 maxilla fragments

Post-Cranial

	Complete	Distal	Proximal
2 right humeri	-	1	1
7 left humeri	1	5	1
6 right tibias	1	2	3
8 left tibias	2	0	6
9 right femora	1	2	6
7 left femora	3	1	3

4 right innominate fragments

4 left innominate fragments

Table 9. General inventory of cranial and post-cranial remains observed from Wachesaw.

	#1	#2	#3	#4	#5
Coronal Suture	1 1 1 1	3/4 3/4 3/4 3/4	- - - -	- - - -	2 2 3/4 3
Sagittal Suture	1 1 1 1	4 - - -	- 4 - 4	- 4 4 3/4	- 3 1 1
Lambdoid Suture	1 1 1 X	- - - X	4 3 3 X	4 3/4 3 X	0 0 0 X
Estimated Age	25-30	41+	45+	45+	20-25

0 - Suture open completely

4 - Suture closed endocranially and ectocranially

X - No observation made

— - Fragmented

Table 10. Suture closure of crania 1-5 (see Krogman 1978:73-86).

	#1	#2	#3	#4	#5
General size	medium-large	small	medium-large	large	small
Architecture	rugged	smooth	rugged	rugged	smooth
Supra-orbital ridges	small	small-medium	--	--	--
Occipital area	no muscle marking	--	muscle marking	little muscle marking	--
Frontal eminences	small	small	--	--	--
Parietal eminences	small-medium	small-medium	small	small	large
Orbits	--	rounded	--	--	--
Forehead	steep, less rounded	full, rounded	--	--	--
Result	male	female	male	male	female

Table 11. Sexing of crania using morphological traits (see Krogman 1978:115).

	Wachesaw			Giles' White Population	
	#1	#2	#3	Male	Female
Symphysis Height	31	32	33	32.387	28.467
Ramus Height	61	67	52*	68.484	60.733
Bigonial Diameter	102	108	90*	99.355	93.033
	285.63	308.23	255.67	> 287.43	< 287.43

* Estimated

Table 12. Mandible measurements, in mm (adapted from Giles 1964).

All six mandibles were observed for male or female morphological traits (Bass 1971:73). The results indicate the presence of five males (mandibles 2 through 6) and one female (mandible 1) (Figure 18).

Molar wear was observed to determine age. The Wachesaw sample was compared with Brothwell's age classification of wear on pre-medieval British teeth (Bass 1971:239). While differences in environments should be considered between the Wachesaw and British populations, a general correlation of molar wear and age may be recognized. Mandible 1 suggests an age of 25 to 35, mandibles 2 and 6 suggest ages of 35 to 45, mandible 5 indicates an age of 17 to 25, and mandibles 3 and 4 contain no molars. Maxilla 1 appears to belong to the same individual as mandible 5 and is aged at 17 to 25 years. Maxillas 2 through 6 and 8 are aged at 25 to 35 years. Maxilla 7 is from a subadult.

Whenever possible the diameter of femora and humeri heads were measured as an indicator of sex. Four humeri (three left and one right) were measured and the head diameters compared with measurements computed by Stewart (1979:99-101) for males and females. The left humerus 1 has a head diameter of 44 mm, indicative of a female. The left humerus 2 and the right humerus 8 have head diameters of 49 and 47 mm respectively, and are both indicative of males. The left humerus of ANP-8 has a head diameter of 45 mm, the midpoint for male and female separation.

Measurements from 13 femurs were compared with Pearson's estimates (Bass 1971:173) resulting in five males and one indeterminate from six left femurs and six male and two indeterminate from eight right femur heads. Perhaps the large percentage of males reflected in this population sample is the result of the great deal of overlap between the diameter of femur heads of males and females (see Stewart 1979:121).

A final attempt to sex the individuals represented in the sample from Wachesaw was made using a study designed by Dibennardo and Taylor (1979). This technique measures the circumference of the femur midshaft as an indicator of sex (measurements greater than or equal to 86 mm indicate male sex, while measurements less than or equal to 85 mm are considered indicative of female sex). In comparing the measurements of four femurs from Wachesaw, two males and two females were identified.

For estimates of stature, intact humeri, femora, and tibias were measured and stature was estimated using the equations for both males and females of white and black populations (Trotter and Gleser 1952, 1958). Fragmented bones were measured in segments (Steele 1970). These measurements were then used in formulas to produce length estimates (Steele 1970:93-96).

Stature estimation equations given by Trotter and Gleser (1952, 1958) for white and black populations of both sexes as well as formulas to determine stature for Mongoloid and Mexican populations (Bass 1971) were chosen for this sample. In general, the mean stature estimates range from 163.5 $\pm$ 5.2 cm to 171.6 $\pm$ 7.6 cm using the femora, 163.8 $\pm$ 6.5 cm to

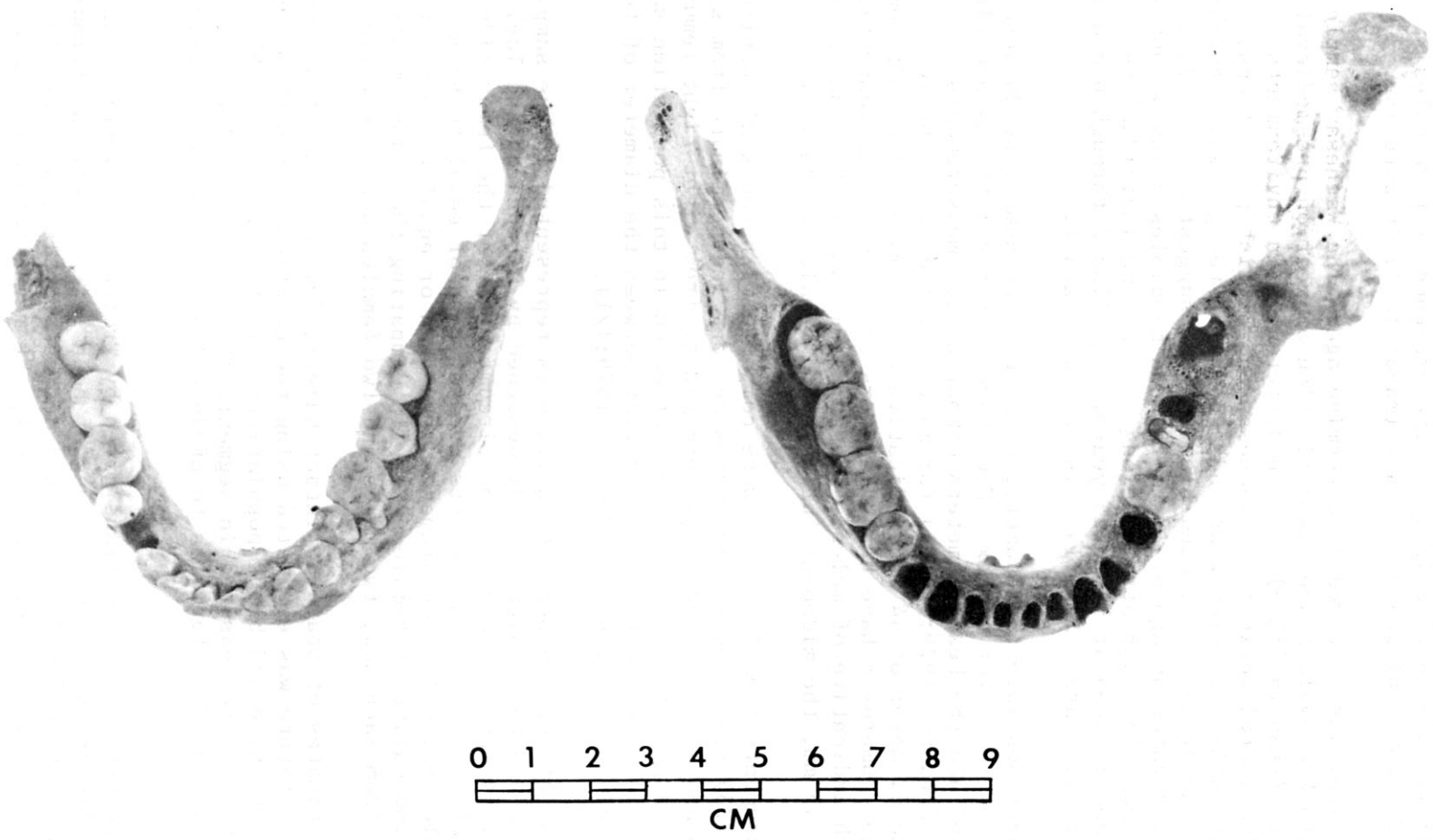

Figure 18. Mandibles 1 (right) and 2 (left) from the Wachesaw Landing cabin burials. Mandible 1 is from an adult female, mandible 2 is from an adult male.

176.4 ± 8.0 cm using tibias, and 164.9 ± 7.5 cm to 174.8 ± 8.8 cm using humeri (Table 13).

Mongoloid Formula

	White Male	Negro Male	White Female	Negro Female	Total Observations
Right Humerus	170.615 ± 8.4	174.809 ± 8.8	169.318 ± 8.0	167.504 ± 7.6	2
Left Humerus	168.946 ± 8.0	173.270 ± 8.0	168.099 ± 7.6	166.754 ± 7.1	7
Right Tibia	171.655 ± 7.2	176.484 ± 8.0	170.824 ± 6.6	172.012 ± 6.8	6
Left Tibia	166.638 ± 5.2	168.431 ± 5.6	165.287 ± 4.8	166.583 ± 4.8	8
Right Femur	169.604 ± 7.2	171.691 ± 7.6	165.375 ± 6.8	167.105 ± 6.6	9
Left Femur	169.442 ± 7.1	171.332 ± 7.5	165.247 ± 6.7	167.531 ± 6.7	7

Mexican Formula

Right Humerus	169.194 ± 8.8	173.764 ± 9.3	167.781 ± 8.3	165.804 ± 8.0	2
Left Humerus	167.377 ± 8.4	170.825 ± 8.5	166.453 ± 8.0	164.987 ± 7.5	7
Right Tibia	169.693 ± 7.7	173.461 ± 8.4	168.872 ± 4.0	170.045 ± 7.2	6
Left Tibia	168.796 ± 6.9	171.161 ± 4.1	163.866 ± 6.5	165.956 ± 6.2	8
Right Femur	164.739 ± 5.6	166.509 ± 6.0	163.510 ± 5.2	164.685 ± 5.3	9
Left Femur	168.609 ± 6.8	170.759 ± 7.2	163.839 ± 6.3	166.440 ± 6.1	7

Table 13. Mean stature estimates of long bones (see Steele 1970). Measurements are in cm.

The pelvis provides the most accurate data for determining sex. Differences between males and females are easily recognized and research confirms the differences as adequate indicators (Ubelaker 1978:42). Because of the overall poor and fragmented condition of the Wachesaw innominates, little could be observed to determine sex differences. Most of the distinctions are based on the angle of the sciatic notch and the presence or absence of a pre-auricular sulcus. The results of this limited analysis indicate one male and three females from right innominates and two males and two indeterminates from the left innominates.

Figure 19 presents an overall picture of the male-female sex ratio resulting from these various studies. The sex ratio appears almost balanced until one observes the difference from the femur hear diameter. As mentioned earlier, there is a great deal of overlap between males and females when using this technique. It should be noted that the accuracy of sexing an individual is 95% for the pelvis alone, 90% for the skull alone, and 80% using just the long bones (Krogman 1978:149). Of course, this accuracy percentage increases with the combination of any of these remains, but in situations such as at Wachesaw it is not possible to relate cranial and post-cranial remains to the same individual so the remains can only be observed in isolation.

No burials were found during the March 1982 excavations and only three isolated human bone fragments were recovered. The distal fragment of a right humerus, probably from an adult, was recovered from square 160R30,

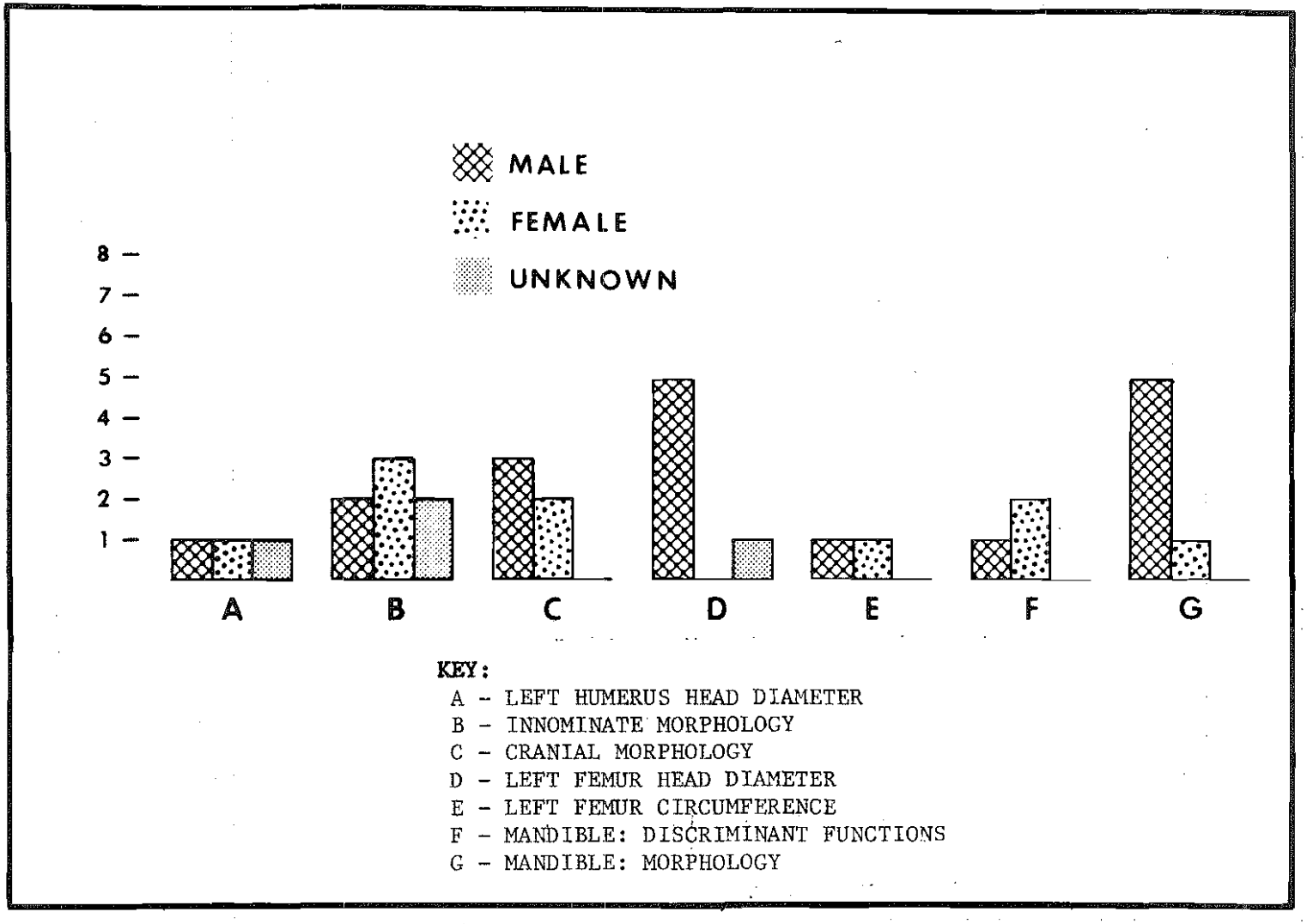

Figure 19. Comparison of male-female sex ratios from Wachesaw.

level 2a. Two small parietal fragments were found in squares 190R110, level 1 and 95R190, level 1. These remains are eroded and provide few additional data. They may have been incorporated in the site midden through aboriginal or modern accidental disturbance of burials.

Although this research was not designed to study the pathology of the skeletal remains, some observations were made. Slight to moderate lipping (osteophytosis) is noted on the edges of some vertebral centrums, suggestive of osteoarthritis (see Ubelaker 1978:78; Brothwell 1981:146-148). Two caries are observed in the 48 teeth examined. Teeth from two of the five mandibles possess caries. Larsen (1982) has recently studied Georgia coastal pre-agricultural and agricultural populations, finding significant differences in dental health between the two. While only 9% of the pre-agricultural individuals had carious lesions, 58.9% of the agricultural sample were found to have at least one dental carie (Larsen 1982:205). Similarly, only 1.4% of the individual teeth of pre-agriculturalists were affected while 13.9% of the teeth from the agricultural sample were involved (Larsen 1982:218). Larsen (1982:220-221) suggests that these data reflect the shift in subsistence base from animal protein to corn:

> [t]he progressive dependence on this dietary carbohydrate most likely promoted the growth of odontolytic organisms in the dental plaque of the agricultural group . . . . This suggests that there may have been a decreased reliance on animal protein sources with the progressive increase in utilization of corn as a dietary staple.

The Wachesaw sample fits most closely the Georgia agricultural population. Forty percent of the individuals at Wachesaw exhibit at least one carious lesion, although only 4.2% of the teeth had visible caries. In this regard the sample best fits Turner's (1979) findings for a mixed economy (based on agriculture combined with hunting, gathering, or fishing) where 4.4% of the teeth may be expected to be carious. A large abscess cavity is present at the first molar of maxilla 9. This abscess was probably sufficiently infected to result in considerable purulent dischange.

A left tibia, left femur, and proximal end of a right radius evidence a pathological condition characterized by moderate to extreme bone thickening or hyperostosis (Figure 20). The similarity of these bones suggest they belonged to the same individual, although there are no field notes regarding their association. While osteosarcoma or treponemal infections are possible explanations for this osteomyelitis, a variety of other agents are also possible, including trauma, staphylococcus, and other pyogenic microorganisms (Albert Kreutner, personal communication to the Charleston Museum). Larsen (1982:199-200, 212-213) found that the agricultural populations along the Georgia coast had significantly greater frequencies of bones showing periosteal reactions than hunter-gatherer populations. The tibia shows the greatest increase in the frequency of periosteal reactions (+10.5%), followed by the fibula and femur. The introduction of treponema infections is rejected by Larsen (1982:213) as

Figure 20. Left tibia (Charleston Museum catalog number ANP-38) which evidences hyperostosis.

an explanation because "nearly all the periosteal reactions occur on localized areas of single bones or skeletal elements of single limbs of affected individuals." Larsen (1982:214-215) suggests that:

> [b]ecause the skeletal lesions are restricted to localized areas of periosteal surfaces, most of the pathology can probably be attributed to localized soft tissue infections due to pus-producing organisms such as staphylococci or streptococci . . . . Epidemiological analysis of disease in human populations indicates that increase in population size and density has resulted in the concomitant increase in infectious disease. . . .

In 1952 Georg K. Neumann's "Archaeology and race in the American Indian," which attempted to "provide a framework for the reconstruction of the racial history of the American Indian" (Neumann 1952:31), was published. Eight varieties were defined and much of Neumann's work was built on Hrdlicka's (1916) earlier study of a Munsee cemetery from Delaware. Neumann recognized that considerable revision of his work, as additional data was gathered, would be required. He further noted that the "means of a few conventional measurements and indices do not tend to be diagnostic. In order to characterize each variety, it therefore becomes necessary to combine them with brief morphological descriptions" (Neumann 1952:33).

Archaeological and ethnohistorical studies in North Carolina have identified four distinct linguistic groups: the Algonkins along the northeast coast; the Siouans in the piedmont; the Muskhogeans, also in the piedmont for a brief time; and the Cherokee in the mountains. The Algonkins fit Neumann's Lenapid varity, the Siouans fall into the Iswanid variety, and both the Cherokee and Muskhogeans fall into Neumann's Walcolid variety. These general correlations have been verified by several morphological studies including Neumann (n.d.), Pollitzer et al. (1967), Pollitzer (1971), Coe et al. (1982), and David Phelps (personal communication). Nevertheless, there has been no attempt among those using Neumann to infer that there is a perfect correlation between mean physical type, linguistic affiliation, and culture type.

Recently Ubelaker (1978:88) has noted that:

> [m]any of the errors [misuse of biological type] stem from adherence to the discredited "typological" definition of a population. According to this view, a certain set of traits identify a "type" and all individuals possessing these traits belong to the same class. Among biologists, this concept has been replaced by "populational thinking," which recognizes that all levels of biological difference . . . incorporate a range of variation . . . .

Robbins (1977) has expressed similar disagreements with the tendency to

emphasize description or morphology of skeletal series. She states that while the purpose of this "typological" approach was to provide "definitive knowledge of prehistoric populations and of their geographic distributions, movements, migrations, and admixtures with adjacent groups" it blinded anthropologists to the "vast amount of information that the dead offered to us" (Robbins 1977:10). She additionally feels that the typological approach failed to investigate the "adaptive significance of the phenotypic variation" within the sample or population. Actually, this disagreement with Neumann's methods dates at least to Washburn's (1952) comments that his studies ought to be replaced with population dynamics.

A variety of metric and nonmetric techniques have been developed to determine intra- and interpopulational relationships. Both multivariate and univariate techniques are being use to determine the parameters of the studied population. There is an increasing tendency to discuss biological distance, based on the degree of morphological similarity of the populations (Ubelaker 1978:87-88).

Although the typological approach and the redirection toward population dynamics offer somewhat different results, both can contribute to a thorough understanding of the physical remains (see Robbins 1977:11). In the case of Wachesaw Landing the skeletal material is too incomplete to allow cranial measurements. It is possible, however, to compare the material to Neumann's Iswanid variety (Figure 21). The overall size of the individuals resembles an Iswanid (or probably a Siouan) population. Neumann (1952:19) describes the Iswanid:

> [t]he face as a whole is of gracile rather than rugged build and not large in relationship to the braincase. All facial dimensions tend to be moderate . . . and the same applied to the proportions. . . . Prognathism is medium to submedium. The size of the mandible is medium, the most common chin form is bilateral, and the gonial eversion is small to medium.

Pollitzer (1971:33) indicates that the Iswanid variety is also characterized by a "small, moderately long, ovoid skull with small to medium browridges and medium frontal slope." Although the Wachesaw assessment lacks the support of cranial indices, it does provide the first osteological evidence that the aboriginal occupants of the northeastern coast of South Carolina were possibly Siouan, as Mooney (1894), Hodge (1919), and Swanton (1952) have also argued on circumstantial grounds.

In summary, the skeletal analyses of the Wachesaw material suggest that there are, minimally, eight adult individuals, based on the left tibia count (two complete, six proximal fragments). This agrees with the notes from the Charleston Museum. Additionally, a single subadult maxilla was identified in the collection, which may have come from the single child burial reported in the Charleston Museum field notes. The male-female ratio is probably 3:2, with the ages ranging from a young adult (20 to 25 years) to 45+ years. Insufficient material from the subadult was found to

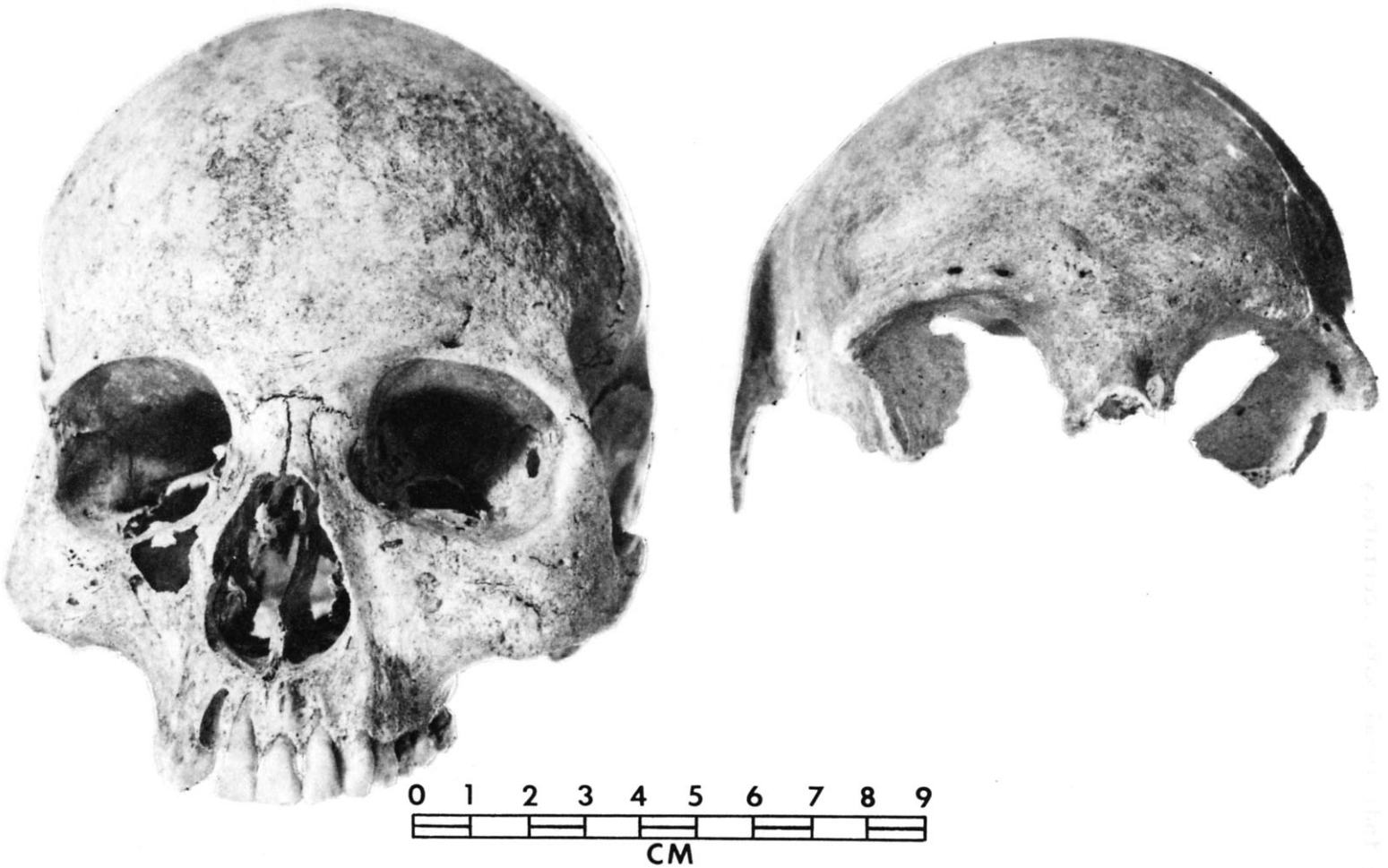

Figure 21. Frontal view of McFayden Mound (Bw^{O}67) female (left) and Wachesaw Landing female (right), both resembling Newmann's Iswanid variety.

age the individual more accurately.

CONCLUSIONS

This discussion of the investigations at Wachesaw, which involves a preliminary analysis of the extant skeletal material and the results of test excavations on the southern third of the bluff, is necessarily oriented toward description, with only occasional speculation. While considerable interest has been directed toward the investigation of Late Woodland or South Appalachian Mississippian groups, this is the first scientific investigation of a coastal contact village in South Carolina. It is also the first reported excavation for the northern coast of the state, in spite of almost 25 years of archaeology in other areas of South Carolina.

This foundation work has accomplished at least one of the earlier stated goals; specially, the recovery of a controlled sample of the cultural remains larger than previously available. The related goals of recovery of a larger skeletal sample and of a firm identification of the Siouan Waccamaw village have not been totally met, although the data presented in this report begin, at least, to whittle away at these problems. For example, while a larger collection of human skeletal material was not forthcoming, the analysis of the extant collection provides some tantalizing clues on the questions of health, diet, and especially population group or "racial type." Likewise, while a Waccamaw village is not immediately evident from the 475 square feet of excavation conducted during this one week of work, there are indications of intra-site variability, of a midden adjacent to the Waccamaw River, and of abundant, well preserved features.

A variety of questions not originally incorporated in this research have been raised and provide suggestions for future research. Most obviously, the failure to locate a village with abundant features, postholes, artifacts, and burials may suggest that the village has eroded into the Waccamaw River; that the village is actually situated on the northern end of the bluff; or, that the Waccamaw occupation of the site was so short, given the rapidly changing socio-political events in the first several decades of the eighteenth century, that no extensive village is to be found. Finally, it must be considered that there was no actual village, but rather the site served as a temporary, albeit seasonally reoccupied, camp. The presence of at least one burial cluster, found in the 1930 cabin excavations, may suggest that the burials were individually placed with only random clustering, or that this area represents a cemetery away from the main village, or that (least likely) some modified form of ossuary or secondary burial exists at Wachesaw.

The analysis of the historic artifacts suggests that the early eighteenth century remains were associated with the Indian occupation and perhaps represent European trade items. While ceramics are not normally

found at inland sites (for example no ceramics have been found in any of the burials with European trade goods at Saura Town [$Sk^{V}1a$] in the North Carolina Piedmont), coastal sites may reflect a different trade pattern because of ease of transporting goods and general proximity to the port of origin (an example of this situation might be the "Tunica Treasure" [Brain 1979] which includes an amazing quantity of earthenwares and stonewares of European manufacture). Questions which have been discussed in detail in the artifacts section of this report also surround the relationship of the Wachesaw pottery series to the earlier Pee Dee Series. Although few data are currently available there is a strong suggestion that the aboriginal occupants of Wachesaw Landing were, for unknown reasons, ignoring the abundant local riverine fauna in favor of terrestrial and estuarine species.

It is unfortunate that this investigation has shed the least light on the topic of perhaps greatest public, if not professional, concern: namely, the placement of the Waccamaw in the Siouan family. The historic documents do appear to place the Indian group known as the Waccamaw firmly in the vicinity of the Waccamaw River in the early eighteenth century, although it is uncertain where the group came from or to where they eventually retreated in order to escape colonial encroachment. The archaeological record does indicate that the Indian group at Wachesaw Landing did have trade goods which are commonly dated to the late seventeenth and early eighteenth centuries, or to about the same time period in which the Waccamaw are believed to have been settled in the area. Hence, there is circumstantial evidence linking Wachesaw Landing with the Waccamaw. "Siouan" is, of course, a linguistic term which should be applied only to vocabularies, not potsherds or human bones. But we are left without a single Waccamaw word, only items of their material culture and a few incomplete skeletal remains. Although the debate continues, Neumann (1952) strongly argued that certain skeletal groups represent physical varieties and that often these physical remains could be successfully linked to both material remains and linguistic affiliation. Such has been shown to be the case in North Carolina (see Pollitzer 1971). Consequently, after a comparison of the incomplete skeletal material from Wachesaw to more complete skeletal material believed to be Siouan from North Carolina, the resemblances appear strong. If the Waccamaw are Siouan, as suggested by Mooney (1894), Hodge (1919), Swanton (1952), and now by the physical remains, it appears that they were much more strongly influenced by the South Carolina coastal makers of Pee Dee pottery than they were by the North Carolina coastal makers of Oak Island pottery. This suggests that movement, even along the coast, was primarily along drainages, not transversely along the coastal plain.

It is tempting to select, from all these questions and speculations, one plausible reconstruction and offer that as the sum result of the work at Wachesaw Landing. While such an approach perhaps would be intellectually satisying, it would not be intellectually honest, nor would it, in reality, be useful to future endeavors, to formulate a series of premature "understandings" to cloud research objectives. It is more

appropriate to conclude this discussion with suggestions for future research than to conclude with choice speculations intertwined to resemble a reconstruction.

At Wachesaw Landing the major concerns continue to be contained under the broad umbrella of the original research goals. Additional test units must be located on the bluff north of the old road bed to provide a more thorough understanding of intra-site patterning. Following the conclusion of this testing phase it will be useful to open a larger area adjacent to and south of the old roadbed. In order to explore variations in stratigraphy more fully it may be advantageous to open a trench from the 190R30 square east to the 190R160 square and then south to the cabin. Investigation of features must be coupled with the primary need to open additional tests, since feature data will provide more reliable information on diet and subsistence, mortuary patterns, and association of historic trade goods.

Obviously, future work is needed not just at Wachesaw Landing, but along the entire Waccamaw drainage, in order to isolate and identify additional Waccamaw villages that span the temporal range of the contact period. Such a goal requires the expenditure of considerable time surveying previously unrecorded sites and collecting adequate samples of the associated pottery. This work must consider the Waccamaw drainage in its entirety, ignoring state boundaries, although a more reasonable, if not logistically realistic, survey universe is the entire Pee Dee River drainage, which would include the rivers associated with the Winyah and Waccamaw, as well as the rivers associated with their contemporaries and allies, the Pedea and Sara.

Such a survey goal should be united with a clean, fresh approach to the ethnohistorical documents and an attempt to better understand the variety of small Carolina coastal groups, including the Waccamaw, Winyah, Cape Fear, Pedea, Hooks, Back Hooks, Woccon, and Croatans. Continuing to rely on the highly speculative secondary sources will not allow any progress to be made on this significant archaeological problem. That such a break with tradition can be productive is shown by Wilson's (1982) recent work with the Sara in the North Carolina Piedmont.

APPENDIX: POTTERY TYPE DESCRIPTIONS

Pee Dee Simple Stamped

Manufacture: Annular coiling.

Temper: Rounded quartz sand grains, coarse and very coarse, in moderate to abundant amounts.

Texture: This pottery has the typical "sugary" appearance described by Reid (1967) for the Pee Dee Series. The pottery is compact and coarse.

Hardness: 3 to 4 on Mohs scale.

Color: Exteriors range from buff and red-brown to black. Interiors are generally darker. Fire clouding is observed. Cores are occasionally slightly darker, indicative of incomplete oxidation.

Surface Finish: Exteriors were roughly smoothed and then stamped with a carved, wooden paddle. A design of rough and somewhat irregularly carved grooves with variable lands is generally poorly executed on the paddle. Generally, moderate quality stamping occurs over the entire exterior, with overstamping occurring occasionally. The exterior was slightly smoothed prior to the application of the stamp. Interiors are commonly smoothed or poorly burnished.

Decoration: Decorative elements are confined to the area between the shoulder and the lip. At present only punctations and rim fillet applique strips are known. Reid (1967:24-26) discusses these techniques in detail.

Form:

Rim: A straight rim is most common, although rims with a moderate to slight eversion are found.

Lip: Usually rounded.

Body: Hemispherical bowls are common, although large burial urn styles may also have been produced.

Thickness: Body varies from 8 to 12 mm.

Probable Relations: This pottery appears to be a late type in the Pee Dee Series typed by Reid (1967). Although it has been found as a minority type in Pee Dee collections from the southern North Carolina piedmont, it does not appear as common in North Carolina as it is in the coastal

region of South Carolina.

Range: Charleston, Berkeley, and Georgetown Counties, South Carolina. This type probably extends further north up the Pee Dee and Santee River drainages, although it is not common in North Carolina.

Wachesaw Complicated Stamped

Manufacture: Coil technique not observed; most of the pottery was made from annular slabs of clay, although some modeling is also present. Fracture lines may occasionally be seen running latitudinally through the midsection of the pottery.

Temper: Rounded quartz sand grains in large amounts and occasional rounded pebbles up to 4 mm.

Texture: Somewhat friable, very coarse and granular.

Hardness: 3 to 4 on Mohs scale.

Color: Exterior and interior colors range from light gray to very dark brown. Accidental smudging is observed on a few sherds. Cores are usually slightly darker, indicative of incomplete oxidation during firing.

Suface Finish: Interiors moderately well smoothed with a hard object, but never burnished or polished. Exteriors stamped with a carved, presumably wooden (although no wood grain is observed) paddle. A design of bold, sloppy lands and grooves is found. Application is also sloppy with much smearing and overstamping. The only motif identified is the filfot scroll, although others probably exist.

Decoration: Shoulder and lip decoration is very rare, with only two examples from the study collection: rim slash punctations and large hollow reed punctations parallel to the lip.

Form:

Rim: A straight rim is most common, probably from deep jars. Very rarely a slightly everted rim will be found.

Lip: Usually strongly beveled and thickened. Also bulbous and rounded.

Body: Cylindrical jars, wide mouth hemispherical bowls. Vessel diameters range from 36 to 90 cm with a mean of 60 cm.

Thickness: Body varies from 8 to 14 mm, mean is 10 mm.

Probable Relations: This pottery appears to have strong ties with the Pee Dee Series (Coe 1952; Reid 1967), although it is less carefully made and is later in time. Further research is required to determine if the Pee Dee Series is ancestral to the Wachesaw Series, or if the

Wachesaw pottery has only been influenced by the Lamar pattern which was spreading across the Southeast during the same time period (approximately A.D. 1650 to 1700). The pottery was made by the historic Waccamaw Indians.

Range: Poorly established at present, known only from the Wachesaw Landing site in Georgetown County, South Carolina.

Wachesaw Plain

Surface Finish: Interiors well smoothed with a hard object, but not burnished or polished. Exteriors are moderately well smoothed, but not burnished or polished.

Wachesaw Simple Stamped

Surface Finish: Interiors moderately well smoothed with a hard object, but never burnished or polished. Exteriors are stamped with a carved paddle. A design of generally bold, nearly parallel and regular lands and grooves is observed. Overstamping is observed, but the application is not as sloppy as the Wachesaw Complicated Stamped motif.

Kimbel Plain

Manufacture: Coiling or annular rings.

Temper: Fine sand and clay with particles rarely exceeding 1 mm. The pottery is correctly identified as non-tempered.

Texture: Fine texture with a hard, compact paste. Very well made and fired so the sherds have a distinct "ring." The paste may glisten from small quartz grains or mica inclusions.

Hardness: 3.5 to 4.0 on Mohs scale.

Color: Ranges from gray-brown to dark brown. Fire clouding is present and a darker core, indicative of incomplete oxidation, is only occasionally present.

Surface Finish: Both interior and exterior surfaces are smoothed or occasionally imperfectly polished or burnished. Burnish facets are occasionally visible. The interiors are usually less carefully smoothed.

Decoration: None noted in present sample.

Form:

Rim: Straight or excurvate.

Lip: Rounded or flattened.

Body: Cazuela and hemispherical bowls are presently known. Other forms may exist, however.

Thickness: 6 to 8 mm.

Probable Relations: This pottery is similar to the type Caraway Plain (Coe n.d.) defined from the putative site of Keyauwee ($Rd^{V}1$), as well as pottery being produced by a variety of Siouan groups in South Carolina. The pottery probably dates to the last half of the seventeenth century and the first part of the eighteenth century.

Range: Currently unknown, but found at least in the Pee Dee River drainage at late or Historic Period sites.

Kimbel Simple Stamped

Surface Finish: Interiors smoothed, occasionally burnished, exteriors stamped with a carved, presumably wooded, paddle. The motif consists of roughly parallel bold lands and grooves. The grooves are generally broad and well defined.

Kimbel Complicated Stamped

Surface Finish: Interiors smoothed, occasionally burnished, exteriors stamped with a carved paddle, presumably wooden. Motifs include concentric circles and a rectilinear design. The stamp is usually bold and over-stamping is common.

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