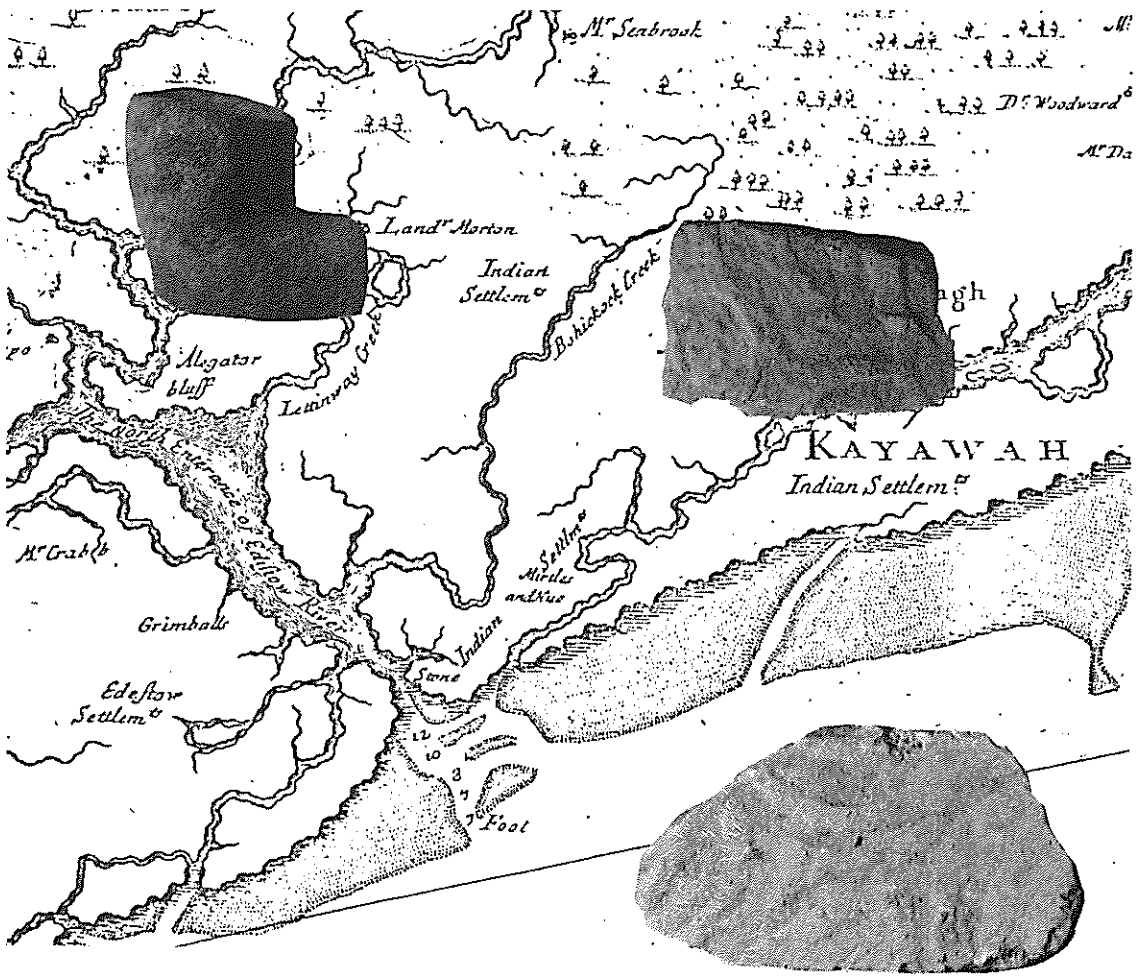
ARCHAEOLOGY AT THE WESTERN PORTION OF 38CH1257 AND 38CH1259: A GLIMPSE OF WOODLAND AND CIVIL WAR ARCHAEOLOGY ON SEABROOK ISLAND, CHARLESTON COUNTY, SOUTH CAROLINA



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ARCHAEOLOGY AT THE WESTERN PORTION OF 38CH1257 AND AT 38CH1259: A GLIMPSE OF WOODLAND AND CIVIL WAR ARCHAEOLOGY ON SEABROOK ISLAND, CHARLESTON COUNTY, SOUTH CAROLINA

Research Series 56

Michael Trinkley

With Contributions By:

Arthur Cohen
Suzanne Coyle
Irwin Rovner

Chicora Foundation, Inc.
PO Box 8664 ▪ 861 Arbutus Drive
Columbia, SC 29202-8664
803/787-6910
www.chicora.org

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The Southern coast is different: a land of incalculable biological energy, of incomparable beauty, of romance and love and nature's violence; of mysterious lush islands and serpentine salt marshes.

-- Carson McCullers

ABSTRACT

This report discusses excavations conducted at a portion of 38CH1257 and at 38CH1259 on Seabrook Island, Charleston County, South Carolina. The two sites are situated on a parcel of land intended to be developed by Kiawah Resort Associates. Seabrook is a barrier island situated on the central Charleston County shoreline between Kiawah Island to the north and Botany Bay Island to the south.

Both sites had been recorded and assessed by colleagues several years earlier. Archaeological site 38CH1257 was reported to be a large multicomponent prehistoric shell midden site found in both woods and a plowed field. These data recovery excavations incorporated only the portion of the site within the plowed fields, west of a paved road leading to adjacent Kiawah Island. Site 38CH1259 was reported to be a Civil War picket post situated on a sandy ridge adjacent to the marsh on a wooded tract. This study incorporated that entire site.

Investigations at 38CH1257 included the excavation of four 10-foot units in order to collect a sample of the artifacts from the site and also to examine the stratigraphy. This work revealed only two post holes and a relatively small collection of Woodland pottery badly fragmented and eroded by plowing. Afterwards a series of five mechanical cuts were excavated across the site area in order to expose any features.

These stripped areas cut across a low sand ridge that runs parallel to the marsh edge, about 300 feet inland. Along this sandy ridge the cuts revealed a number of post holes, including at least one structure, and features. The post holes were generally well defined and often contained pottery or other artifacts. The features included both shell steaming pits and also trash pits and hearths containing only very small quantities of shell. The materials recovered indicate that while most of the features date from the Early to Middle Woodland Period and are characterized by Deptford remains, several (including the identified structure) date to the Mississippian. One feature, containing abundant peach pits, likely dates from the protohistoric period.

Investigations at this site document settlement away from the marsh edge during the Woodland and suggest that a range of features, beyond shellfish steaming pits, may be present. The work also documents one of the few Mississippian sites from this region of the South Carolina coast. The work suggests that the portion of the site east of the paved road, not currently owned by Kiawah Resort Associates, may be of special significance and be worthy of very intensive research.

Site 38CH1259 was initially discovered through metal detecting which recovered a fairly large collection of Civil War artifacts. Although this metal detecting was used to define the site area, the current work discovered that not only had the artifacts from the survey not been curated, but none of the metal detector "hit" locations had been recorded. Consequently, it was impossible to determine if these Civil War artifacts were clustered in one area.

As a result, the archaeological studies at 38CH1259 began with a controlled metal detector survey of the site area. This initial phase of research, however, found few artifacts dating from the 1860s. It appears that the earlier metal detecting recovered virtually all of the metal artifacts present at the site.

The subsequent phase of research included the excavation of two 10-foot units in the hopes of identifying non-metal artifacts associated with the picket post. Unfortunately, both units were completely devoid of any artifacts.

The data recovery efforts at 38CH1259 offer relatively little information concerning picket posts, although it certainly provides a strong caution that documentation of all phases of research is absolutely essential.

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Oversight and review was initially provided by Dr. Chris Sherman at the South Carolina State Historic Preservation Office and Mr. Fritz Aichele at the Office of Ocean and Coastal Resources Management. Midway through the project Dr. Sherman left the SHPO and was replaced by Ms. Valerie Marcil. Both have done an admirable job in assisting us with not only compliance and procedural issues, but also the intellectual content of the study.

Mr. Keith Derting of the S.C. Institute of Archaeology and Anthropology assisted us with the site numbering for the project. Ms. Sharon Pekrul provided assistance in searching for earlier materials from these sites, as well as the curation of the current collection with the S.C. Institute of Archaeology and Anthropology. Mr. Chris Judge also graciously shared with me results of his on-going research into Mississippian complicated pottery from the South Carolina coastal region.

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INTRODUCTION

Development of the Project

The sites which are the subject of this research are situated on the northeastern tip of Seabrook Island, a barrier island located just south of Charleston, South Carolina between Kiawah Island to the north and Botany Bay Island to the south. Seabrook is separated from Kiawah Island by Captain Sams Inlet and the Kiawah River, and from Botany Bay Island by the North Edisto River. To the north, across a broad expanse of marsh and the Bohicket Creek is Johns Island (Figure 1).

In 1991 our colleagues at Brockington & Associates were retained to conduct an intensive archaeological survey of the Andell Tract for M.J. Properties of North America (Poplin et al. 1991). The survey tract, about 900 acres in extent, yielded 23 archaeological sites, 10 of which were recommended as potentially eligible for inclusion on the National Register of Historic Places.

Subsequent to the survey, East Seabrook Limited Partnership, then apparently the owner of record, initiated a Memorandum of Agreement (MOA) with the S.C. State Historic Preservation Office, citing Coastal Council (now Office of Ocean and Coastal Resource Management, or OCRM) permit requirements. This MOA, dated March 5, 1992, covers a total of eight sites — two of which are listed as eligible and six listed as potentially eligible.

A comparison of the 1991 survey recommendations and 1992 MOA requirements is provided in Table 1. The process by which the eligibility evaluations were changed is not known, although clearly there were substantial modifications between the field investigations and the preparation of the MOA. Discussions with then SHPO Archaeologist Dr. Chris Sherman indicated that there was no further documentation in the SHPO project files to reveal the process through which the eligibility determinations were made (Dr. Chris Sherman, personal communication 1998).

Recently, a portion of this survey tract (Figure 2) has been purchased by Kiawah Resort Associates (KRA), which intends to construct a golf course. The purchase also included rights to existing permits and obligations such as the MOA. Two of the MOA archaeological sites are included on the tract: the western half of 38CH1257 and all of 38CH1259. An addendum to the MOA, outlining KRA's responsibilities was approved by all of the signatory parties on March 30, 1998.

KRA requested that Chicora prepare a technical and budgetary proposal for the data recovery at the portion of these two sites, based on the data recovery plan previously developed by Brockington and Associates and apparently approved by the SHPO. A

Table 1.
Comparison of the 1991 survey recommendations and 1992 MOA requirements

Site	Survey Recommendation	MOA Requirement
38CH1246	PE	PE
38CH1247	PE	PE
38CH1248	PE	NI
38CH1249	PE	NI
38CH1250	PE	NI
38CH1255	PE	PE
38CH1257	PE	E
38CH1258	PE	PE
38CH1259	PE	E
38CH1261	NE	PE
38CH1268	PE	PE

NE = not eligible
PE = potentially eligible
E = eligible
NI = not included, not eligible

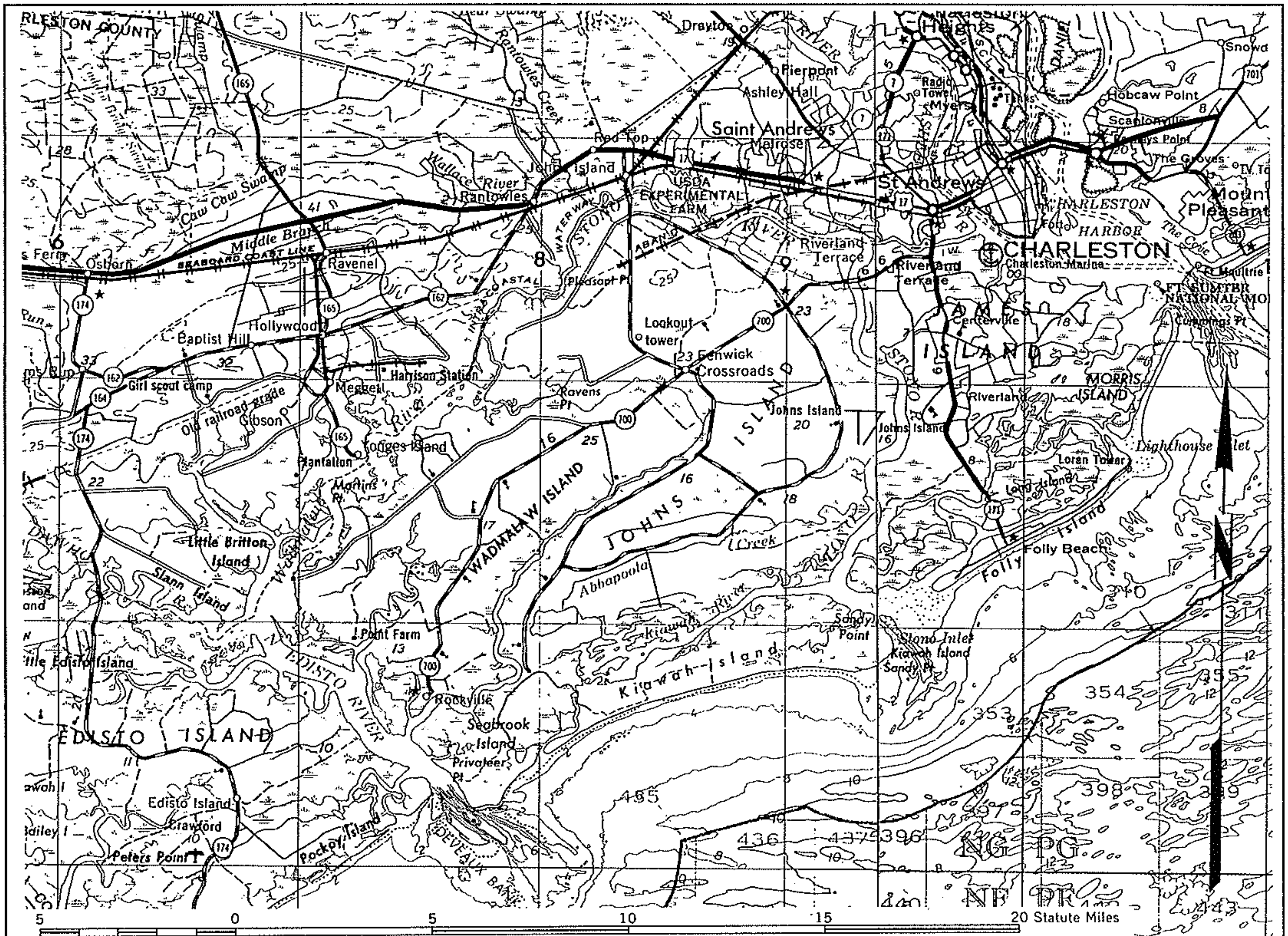

Figure 1. Vicinity of Seabrook, Kiawah, Botany Bay, and Johns islands in the Charleston area (basemap is adapted from the James Island and Savannah USGS 1:250,000 sheets).

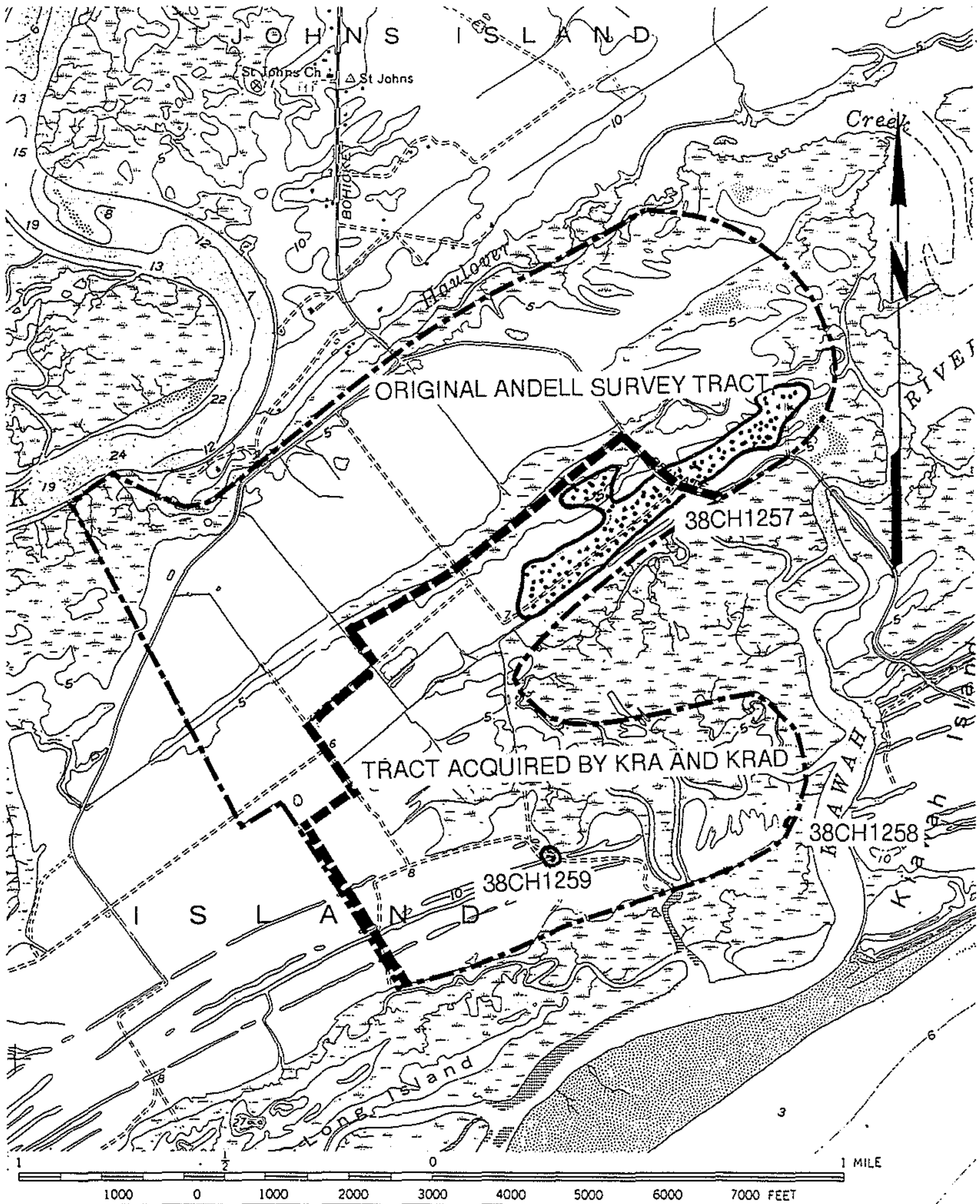

Figure 2. Map of the Andell survey tract, the area acquired by KRA, and the investigated sites.

third site, 38CH1258, is within the KRA purchase, but was not included in the data recovery proposal. The requested proposal was submitted February 27, 1998 and was approved March 9, 1998. The archaeological data recovery was conducted between April 7 and April 21, 1998.

Previous Investigations

Site 38CH1257 was described as "an extremely large Ceramic Late Archaic to Late Mississippian period" site covering an area of nearly 600 feet by 4,500 feet, or about 62 acres (Poplin et al. 1991:58-62). The authors of the original survey report that the site includes "intact shell deposits (midden) and cultural strata" primarily in the northern and eastern portions of the site. They observe that the western portion of the site (covered by the current investigations) is situated almost entirely in a plowed field and report finding only scattered shell and artifacts confined to the plowzone.

Their map of the western site area (Poplin 1991:Figure 19 [reproduced here as Figure 3]) reveals that only 21 of the 118 shovel tests (18%) yielded artifacts — the rest were negative. It also reveals what appears to be a cluster of surface finds at the northern edge of the field, in the vicinity of the paved road.

In contrast, the eastern portion of the site, which is not owned by KRA and therefore not covered by this data recovery plan, is primarily wooded and the authors report "dispersed shell heaps," some of which were apparently above grade (Poplin et al. 1991:60). In fact, their map of the eastern site area reveals that of the 50 shovel tests, 38 (or 76%) produced cultural materials. There seemed to be little doubt that the best preserved portions of this site were situated east of the paved road — outside the KRA property and outside the consideration of the data recovery efforts.

The artifacts recovered include sherds identified in the catalog as Stallings, McClellanville, and Wilmington. Also present are descriptions of plain and simple stamped wares (38CH1257 catalogs on file, S.C. Institute of Archaeology and Anthropology, University of South Carolina, Columbia).[1]

In terms of assessment, the written report recommends that "a more intensive and detailed testing program" be conducted in order to verify integrity and refine boundaries. Nevertheless, at some juncture, the decision was made to dispense with additional testing and consider the site eligible.[2]

The authors of the original survey suggested a program of controlled surface collections, supplemented with additional shovel testing, followed by 1 meter excavations, and finally mechanical stripping, although it is difficult to determine whether this was intended to represent testing *and* data recovery, or only testing.

Site 38CH1259 was reported to represent "a Civil War (Federal) picket campsite," apparently based on the artifacts recovered during the survey. The site measures about 225 feet by 130 feet, based apparently on the dispersion of metal detector hits. Only four shovel tests, excavated as part of the survey transects, fell within the site boundaries and all were negative. No additional close interest shovel testing was conducted.

The site is situated adjacent to the marsh edge in an area that includes pine and mixed hardwoods. Our examination of period maps reveals that the site, at the time of the Civil War, would have been on the edge of a large cultivated field — today evidenced by the second growth vegetation. It looks out to the northeast toward tributaries of the Kiawah River and troops stationed here were likely intended to spot any Confederate attempt to boat down the Kiawah River from Johns Island and up the smaller creeks to make landfall on the eastern end of Seabrook Island.

The metal detecting recovered 19 identifiable

[1] The collections are still held by Brockington and Associates, although catalog sheets have been provided to the S.C. Institute of Archaeology and Anthropology along with the site forms.

[2] As previously mentioned, Dr. Sherman, SHPO Archaeologist, was not able to provide additional insight into how or why this decision had been made.

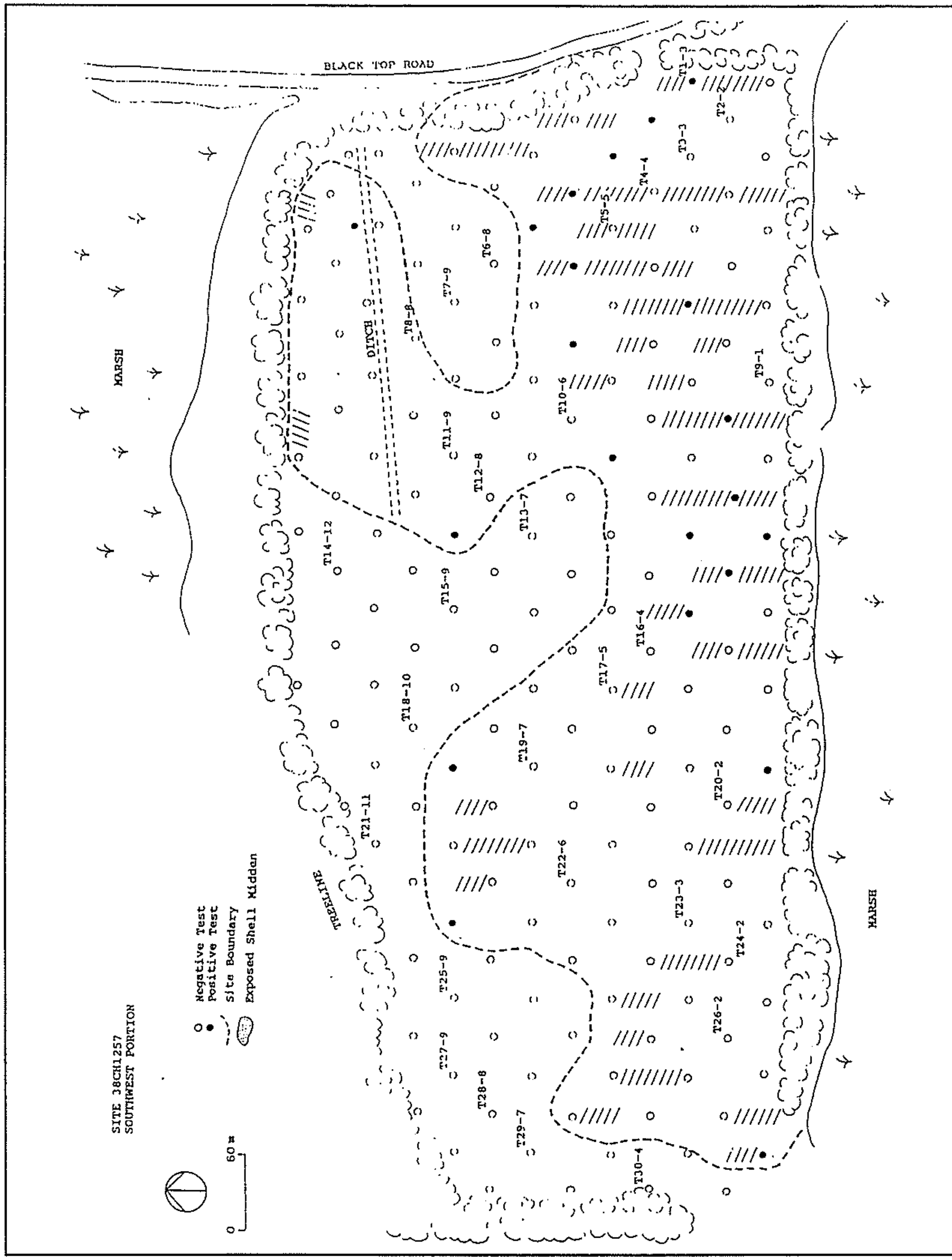

Figure 3. Map of the western half of 38CH1257 as originally identified (adapted from Poplin et al. 1991:Figure 19).

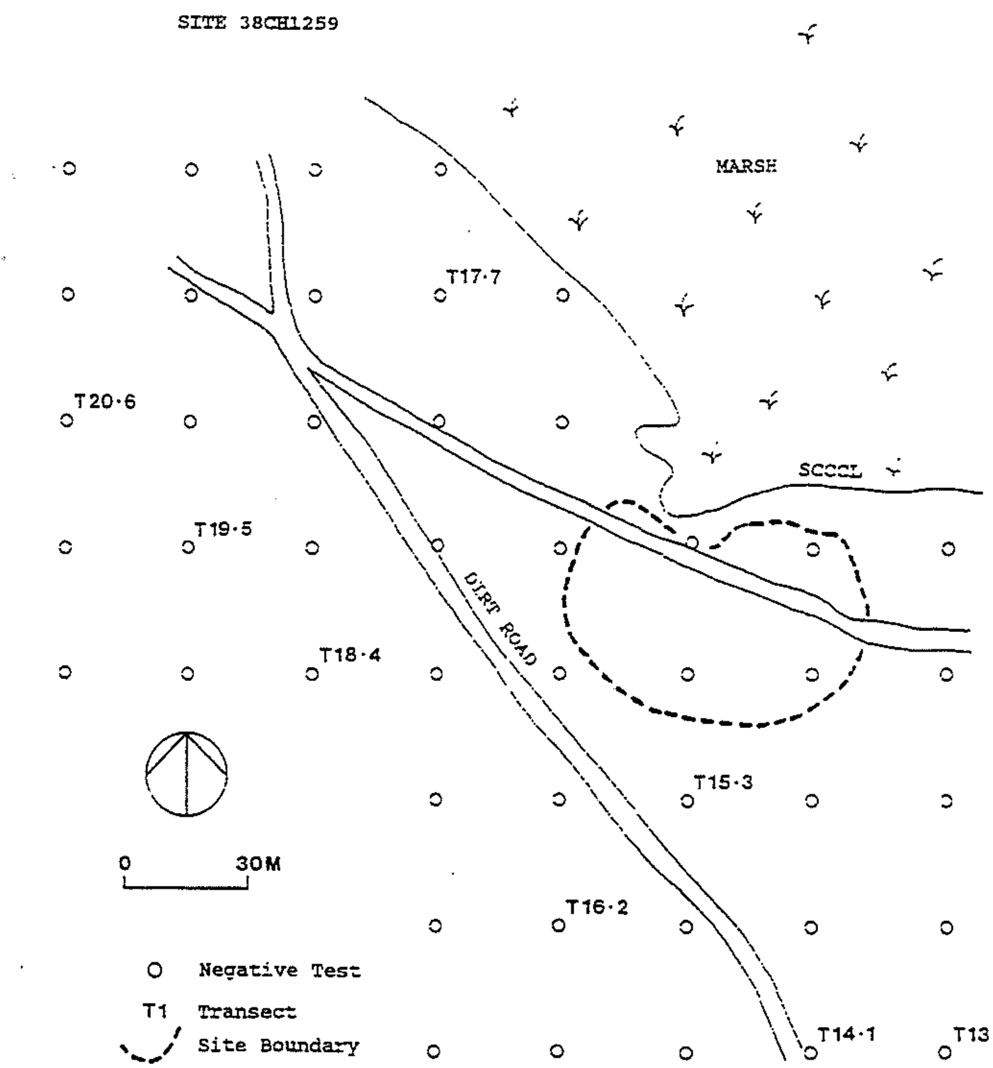

Figure 4. Site 38CH1259 as originally identified (adapted from Poplin et al. 1991:Figure 22).

Table 2.
Artifacts Found by Brockington and Associates Metal Detecting 38CH1259

Provenience	Item
LLA 1	Federal minie ball, 3 ring, unfired
LLA 2	straight razor blade cover
LLA 3	Federal minie ball, 3 ring, unfired
LLA 4	pocket knife, bone outer plate
LLA 5	3 Federal minie balls, 3 ring, unfired
LLA 6	brass button, flat, no design
LLA 7	wedge
LLA 8	minie ball [no further description]
	melted lead
	unidentified metal
LLA 9	metal spike
LLA 10	brass object
LLA 11	brass number "7" insignia
LLA 12	4 nails
LLA 13	metal bracket with metal bolt

artifacts, along with "miscellaneous brass, lead, and iron objects" (Poplin et al. 1991:64). Although the catalog indicates "prov" numbers for the objects, no map has been identified which locates these different "hits" on the ground (Dr. Eric Poplin, personal communication 1998). The only map available shows the site only the context of the shovel test transects through it — all of which were negative (Figure 4). Although these materials lack any meaningful provenience, they are listed in Table 2.

The authors recommended the site potentially eligible, noting that "additional testing . . . should include . . . an intensive controlled metal detector survey . . . . followed by the excavation of one to two formal . . . units in areas where artifact concentrations were greatest" (Poplin et al. 1991:64-66).

Research Orientation

38CH1257

Site 38CH1257 was recommended potentially eligible since it "has great potential to add to the substantive knowledge of prehistoric cultural evolution in the region, and to specifically address questions regarding the adaptive cultural changes on the island as compared with other sites in the region" (Poplin et al. 1991:60). We had no doubt that the eastern portion of the site, where good integrity is evidenced by intact midden deposits, has the potential to address a broad range of substantive research questions. In the western site area, where there has been extensive plowing and the previous researchers observe that materials seem confined to the plowzone, we wondered if these research questions were appropriate. Developing a clear research strategy was hindered by how little was actually known about the site.[3]

As a result, we suggested that a more useful approach might be an exploratory research design, focusing on what appeared to be the densest portion of the site, at its northern edge, adjacent to the paved Kiawah road.

In this portion of the site, the research we proposed was intended to (1) determine if intact features are present below the plowzone, (2) explore the possibility that either features or post holes may help distinguish habitation or activity areas (contributing settlement data), and (3) explore the subsistence data available in the recovered features.

The abundance of materials in the plowzone, of course, suggests that at one time either middens or features were plowed out and dispersed. It might be that after nearly 200 years of plowing no intact deposits are left. This, however, is not clearly known during the development of the research design and we suggested (as outlined in the following section) stripping a portion of the site to expose features, if they were present.

At other Woodland sites, for example 38BU861, we have found evidence of post structures adjacent to midden areas and have also found clustering of different artifactual material (Trinkley and Adams

[3] This isn't intended to be a criticism of Poplin and his colleagues recommendations — they anticipated that the entire site would be examined as part of the data recovery program. In fact, even if they wanted to, it is not possible to call only part of a site eligible. The problem concerning how to apply the eligibility determination arose only once the site became split between two owners, with data recovery excavations taking place on only part of the site.

1994). We thought that investigation of the densest area of 38CH1257 might contribute similar data. Although exploring only a small portion of the overall site, this investigation might also help determine if there was an association between artifact density and habitation area.

Finally, features typically produce significant quantities of subsistence data, although these data are not always uniformly interpreted. Recent investigations at both 38BU861 and also at a shell midden on Kiawah (38CH1219; Trinkley et al. 1995) have revealed the amount of information that dietary studies can provide. We felt that similar results might be possible from 38CH1257, assuming that features were recoverable.

38CH1259

Site 38CH1259 was recommended potentially eligible primarily because, "picket posts are rarely, if ever, intensively investigated" (Poplin et al. 1991:64). The authors go on to note that such sites, "hold the potential for yielding information that may contribute to the substantive knowledge of Civil War encampments through the examination of a poorly sampled component of the range of military sites" (Poplin et al. 1991:64).

It does seem true that picket posts are rarely studied by archaeologists — either because they are given little value or perhaps because they are rarely encountered in traditional archaeological surveys. Regardless, there is a strong argument that such sites should not be discounted without at least some effort to determine the range of data sets which might be present. For example, we wondered if it might be possible to recover sufficient faunal remains to begin to evaluate the amount of hunting or trapping conducted by soldiers on sentry duty. The recovered remains might help determine how time was passed at this duty. The recovery of features and post holes might help us determine if some type of rudimentary structure was constructed by the pickets. And the remains might also help researchers evaluate whether the same posts were reused.

It was troubling, however, that the authors comment this site is also significant since it "appears to have been collected less intensively than the other similar sites identified within the tract" (Poplin et al. 1991:64). This suggests that some degree of looting had likely occurred and this might make any conclusions difficult since we wouldn't know what has already been removed. Nevertheless, we concurred that some level of investigation was appropriate.

The Natural Setting

Physiography

Charleston County is located in the lower Atlantic Coastal Plain of South Carolina and is bounded to the east by the Atlantic Ocean and a series of marsh, barrier, and sea islands (Mathews et al. 1980:133). Elevations in the County range from sea level to about 70 feet above mean sea level (AMSL).

Coastal islands, based on geomorphology, area, sediment composition, and deposition, are considered to be either sea islands, barrier islands, or marsh islands. The classic sea islands, such as James and John islands, are erosional remnants of costal sand bodies deposited during the Pleistocene. Marsh islands, such as Raccoon Key and Morris Island, are composed of isolated or widely spaced Holocene sand ridges surrounded by recent salt marsh. They are typically situated in the filled lagoons behind the barrier islands, although they are also found fronting the Atlantic Ocean where erosion has removed the protective barrier islands.

Barrier islands, such as Seabrook and Kiawah, are composed of alternating beach ridges and low troughs or lagoons oriented roughly parallel to the present shoreline, deposited during Holocene high sea level stands. This particular topography is evident in many areas of Seabrook; for example at its northern edge, where ridge and trough topography extends northeastward.

Elevations range from sea level to about 27 feet above mean sea level (AMSL) at the top of the natural beach ridges. The island has about 2.5 miles of sandy beachfront and consists of about 2,610 acres of highland and 2,710 acres of marsh. Seabrook has a roughly rectangular shape, measuring about 3.5 miles in length and 2.8 miles in width.

Geology and Soils

Coastal Plain geological formations are unconsolidated sedimentary deposits of very recent age (Pleistocene and Holocene) lying unconformably on ancient crystalline rocks (Cooke 1936; Miller 1971:74). The Pleistocene sediments are organized into topographically distinct, but lithologically similar, geomorphic units, or terraces, parallel to the coast. The project area is identified by Cooke (1936) as part of the recent Holocene terrace, with elevations typically below 25 feet AMSL (in fact, most the island has elevations below 20 feet AMSL).

As a general rule, islands less than 4 miles in length — such as Seabrook — tend to be under the influence of the adjacent, usually mobile, inlets. Even when the central core of the island is more or less stable, the north and south ends suffer from inlet migration or the potential for new inlet formation. Neal and his colleagues comment that while beach accretion has occurred in the short run, the Seabrook Island shore is very mobile. They observe that the beach area is short:

> boxed in by Captain Sams Inlet and the North Edisto Inlet. The smaller of these is the Kiawah River drainage which in 1661 was almost to the end of Seabrook Island. All of this ocean-front beach backed by marsh has been occupied by inlet at one time or another. That history can be repeated (Neal et al. 1984:104)

During the recent past, they observe that Seabrook has been suffering erosion, at least partially encouraged by dense development and the reliance on seawall protection.

Within the coastal zone the soils are Holocene and Pleistocene in age and were formed from materials that were deposited during the various stages of coastal submergence. The formation of soils in the study area is affected by this parent material (primarily sands and clays), the temperate climate, the various soil organisms, topography, and time.

The mainland soils are Pleistocene in age and tend to have more distinct horizon development and diversity than the younger soils of the sea and barrier islands. Sandy to loamy soils predominate in the level to gently sloping mainland areas. The island soils are less diverse and less well developed, frequently lacking a well-defined B horizon. Organic matter is low and the soils tend to be acidic. The Holocene deposits typical of barrier islands and found as a fringe on some sea islands, consist almost entirely of quartz sand which exhibits little organic matter. Tidal marsh soils are Holocene in age and consist of fine sands, clay, and organic matter deposited over older Pleistocene sands. The soils are frequently covered by up to 2 feet of saltwater during high tides. Historically, marsh soils have been used as compost or fertilizer for a variety of crops, including cotton (Hammond 1884:510) and Allston mentions that the sandy soil of the coastal region, "bears well the admixture of salt and marsh mud with the compost" (Allston 1854:13).

Only two soil series occur in the vicinity of 38CH1257: Seabrook loamy fine sands and Kiawah loamy fine sands. The bulk of the site is found on Seabrook soils, which typically have an Ap horizon about 0.8 foot in depth consisting of a very dark grayish-brown (10YR3/2) loamy fine sand overlying a C1 horizon of dark brown (10YR4/3) sand to a depth of about 1.8 feet (Miller 1971:27). The Kiawah soils, which are found in the northern portion of the site, are less well drained and are frequently ponded after rains. The soils have an Ap horizon identical to the Seabrook soils, with an A2 and A3 horizon of similar dark soils to a depth of 1.5 feet. Below this is a B21t horizon, still characterized by grayish-brown reduced sands (Miller 1971:16).

In the area of 38CH1259 only one soil series is found, identified as the Crevasse-Dawhoo complex, rolling phase (Miller 1971:12). These soils are found on ridge and trough landscapes close to the Atlantic Ocean. The Crevasse soils are excessively drained, being found on the ridges, while the Dawhoo soils are very poorly drained, being found in the troughs. The site itself occurs on Crevasse soils, which have an A1 horizon of grayish-brown (10YR5/2) fine sands about 0.5 foot in depth overlying a C1 horizon of brownish-yellow (10YR6/6) fine sands.

Climate

John Lawson described South Carolina in 1700 as having, "a sweet Air, moderate Climate, and fertile Soil" (Lefler 1967:86). Of course, Lawson tended to romanticize Carolina. In December 1740 Robert Pringle remarked that Charleston was having "hard frosts & Snow" characterized as "a great Detriment to the Negroes" (Edgar 1972:282), while in May 1744 Pringle states, "the weather having already Come in very hott" (Edgar 1972:685).

The major climatic controls of the area are latitude, elevation, distance from the ocean, and location with respect to the average tracks of migratory cyclones. Charleston's latitude of 32°37'N places it on the edge of the balmy subtropical climate typical of Florida, further south. As a result, there are relatively short, mild winters and long, warm, humid summers. The large amount of nearby warm ocean water surface produces a marine climate, which tends to moderate both the cold and hot weather. The Appalachian Mountains, about 220 miles to the northwest, block the shallow cold air masses from the northwest, moderating them before they reach the sea islands (Mathews et al. 1980:46).

The average high temperature in the Charleston in July is 81°F, although temperatures are frequently in the 90s during much of July (Kjerfve 1975:C-4). Mills noted:

> in the months of June, July, and August, 1752, the weather in Charleston was warmer than any of the inhabitants before had ever experienced. The mercury in the shade often rose above 90°, and for nearly twenty successive days varied between that an 101° (Mills 1972:444).

The area normally experiences a high relative humidity, adding greatly to the discomfort. Kjerfve (1975:C-5) found an annual mean value of 73.5% RH, with the highest levels occurring during the summer. Pringle remarked in 1742 that guns "sufferr'd with the Rust by Lying so Long here, & which affects any Kind of Iron Ware, much more in this Climate than in Europe" (Edgar 1972:465).

The annual rainfall in this portion of Charleston is about 49 inches, fairly evenly spaced over the year. While adequate for most crops, there may be periods of both excessive rain and drought. The Charleston area has recorded up to 20 inches of rain in a single month and the rainfall over a three month period has exceeded 30 inches no less than nine times in the past 37 years. Likewise, periods of drought can occur and cause considerable damage to crops and livestock. Mills remarks that the "Summer of 1728 was uncommonly hot; the face of the earth was completely parched; the pools of standing water dried up, and the field reduced to the greatest distress" (Mills 1972:447-448). Another significant historical drought occurred in 1845, affecting both the Low and Up Country.

The annual growing season is 295 days, one of the longest in South Carolina. This mild climate, adequate rainfall, and long growing season, as Hilliard (1984:13) notes, is largely responsible for the presence of many southern crops, such as cotton and sugar cane.

Floristics

The area of the study tract exhibits two major ecosystems: the maritime forest ecosystem which consists of the upland forest areas, and the estuarine ecosystem of deep water tidal habitats (Sandifer et al. 1980:7-9).

The maritime forest ecosystem has been found to consist of five principal forest types, including the Oak-Pine forests, the Mixed Oak Hardwood forests, the Palmetto forests, the Oak thickets, and other miscellaneous wooded areas (such as salt marsh thickets and wax myrtle thickets).

Of these the Oak-Pine forests are most common, constituting large areas of Charleston's original forest community. In some areas palmetto becomes an important sub-dominant. Typically these forests are dominated by the laurel oak with pine (primarily loblolly with minor amounts of longleaf pine) as the major canopy co-dominant. Hickory is present, although uncommon. Other trees found are the sweet gum and magnolia, with sassafras, red bay, American holly, and wax myrtle and palmetto found in the understory.

Mills, in the early nineteenth century, remarked that:

> South Carolina is rich in native and exotic productions; the varieties of its soil, climate, and geological positions, afford plants of rare, valuable, and medicinal qualities; fruits of a luscious, refreshing, and nourishing nature; vines and shrubs of exquisite beauty, fragrance, and luxuriance, and forest trees of noble growth, in great variety (Mills 1972:66).

The loblolly pine was called the "pitch or Frankincense Pine" and was used to produce tar and turpentine; the longleaf pine was "much used in building and for all other domestic purposes;" trees such as the red bay and red cedar were often used in furniture making and cedar was a favorite for posts; and live oaks were recognized as yielding "the best of timber for ship building;" (Mills 1972:66-85). Mills also observed that:

> in former years cypress was much used in building, but the difficulty of obtaining it now, compared with the pine, occasions little of it to be cut for sale, except in the shape of shingles; the cypress is a most valuable wood for durability and lightness. Besides the two names we have cedar, poplar, beech, oak, and locust, which are or may be also used in building (Mills 1972:460).

The "Oak and hickory high lands" according to Mills were, "well suited for corn and provisions, also for indigo and cotton" (Mills 1972:443). The value of these lands in the mid-1820s was from $10 to $20 per acre, less expensive than the tidal swamp or inland swamp lands (where rice and, with drainage, cotton could be grown).

Today, virtually all of Seabrook Island evidences some form or another of disturbance. Over much of the island this disturbance is in the form of development, which began in the 1930s and was accentuated by the high density resort construction of the 1970s. In some increasingly small areas of the island there is still evidence of much earlier agricultural disturbance, primarily from the nineteenth century when most of the island was under cultivation for cotton.

The maritime forest or wooded areas are limited to the edge of the marsh and to those areas which historically have been too wet or the topography too rolling to warrant clearing for cultivation. A few areas, no longer being cultivated, have been taken over by second growth forest which exhibits dense, at times almost impenetrable, vegetation.

Historically, Seabrook Island was dominated by rice in the eighteenth century (Jordan and Stringfellow 1998:64), but by the antebellum had been largely taken over by Sea Island cotton, with lesser acreage of corn and sweet potatoes. Ruffin described the planting of these crops in the late antebellum (Mathew 1992:100-101) as does Benjamin Dart Roper (Jordan and Stringfellow 1998:305-312).

The estuarine ecosystem in the vicinity includes those areas of deep water tidal habitats and adjacent tidal wetlands, found south and southeast of 38CH1257, and north, east, and south of 38CH1259. Salinity in these areas may range from 0.5 parts per thousand (ppt) at the head of an estuary to 30 ppt where it comes into contact with the ocean. Estuarine systems are influenced by ocean tides, precipitation, fresh water runoff from the upland areas, evaporation, and wind. The system may be subdivided into two major components: subtidal and intertidal (Sandifer et al. 1980:158-159). These estuarine systems are extremely important to our understanding of both prehistoric and historic occupations because they naturally contain a high biomass. The estuarine area contributes vascular flora used for basket making, as well as mammals, birds, fish (over 107 species), and shellfish.

The Prehistory of the Area

Although occasionally earlier lithics have been found in the fields of Seabrook and Kiawah islands, most of the Native American remains date from the Woodland and Mississippian periods. It is these remains, of course, which were found in the fields associated with site 38CH1257.

The Late Archaic

The Late Archaic, usually dated from 6,000 to 3,000 or 4,000 B.P., is characterized by the appearance of large, square stemmed Savannah River projectile points (Coe 1964). The Late Archaic people continued to intensively exploit the uplands much like earlier Archaic groups with, in North Carolina, the bulk of our data for this period coming from the Uwharrie region of North Carolina.

One of the more debated issues of the Late Archaic is the typology of the Savannah River Stemmed and its various diminutive forms. Oliver, refining Coe's (1964) original Savannah River Stemmed type and a small variant from Gaston (South 1959:153-157), developed a complete sequence of stemmed points that decrease uniformly in size through time (Oliver 1981, 1985). Specifically, he sees the progression from Savannah River Stemmed to Small Savannah River Stemmed to Gypsy Stemmed to Swannanoa from about 5000 B.P. to about 1,500 B.P. He also notes that the latter two forms are associated with Woodland pottery.

This reconstruction is still debated with a number of archaeologists expressing concern with what they see as typological overlap and ambiguity. They point to a dearth of radiocarbon dates and good excavation contexts at the same time they express concern with the application of this typology outside the North Carolina Piedmont (see, for a synopsis, Sassaman and Anderson 1990:158-162, 1994:35).

In addition to the presence of Savannah River points, the Late Archaic also witnessed the introduction of steatite vessels (see Coe 1964:112-113; Sassaman 1993), polished and pecked stone artifacts, and grinding stones. Some also include the introduction of fiber-tempered pottery about 4000 B.P. in the Late Archaic (for a discussion see Sassaman and Anderson 1994:38-44). This innovation is of special importance along the Georgia and South Carolina coasts.

Called Stallings, after the type site excavated by the Cosgroves in 1929 (Claflin 1931), the definitive features of this pottery is its large quantity of fiber, now identified as Spanish moss (Simpkins and Scoville 1981), included in the paste prior to firing. Vessel forms include simple, shallow bowls and large, wide mouthed bowls, as well as deeper jar forms. The pottery is generally molded, although coiling fractures are occasionally present, particularly later in the period. Firing was poorly controlled with punctations (using periwinkle shells, reeds, and sticks), finger pinching, and incising. At least some of these motifs may be temporally sensitive (Trinkley 1986; Sassaman 1993). Sassaman, for example, suggests an early period dominated by plain vessels, followed by a period of drag and jab linear punctations. The final period appears to include a broad range of decorative motifs, including a resurgence of plain vessels (see Sassaman 1993:109-110).

In addition to the pottery, these Stallings sites also produce a rich cultural assemblage of bone and antler work, polished stone items, grooved and perforated "net sinkers" or steatite disks, stone tools (including knives, scrapers, and cruciform drills) (see Williams 1968).

Stallings phase sites are found clustered in the Savannah River drainage (Claflin 1931; Hanson 1982; Sassaman 1993) and in the coastal zone south of Charleston (Anderson 1975). Stoltman (1966, 1974) obtained an early radiocarbon date of 2515±95 B.C. (GXO-345) from Rabbit Mount in the Savannah Drainage. This area has produced a number of large Stallings sites, such as Stallings Island (Bullen and Greene 1970; Clafflin 1931), Fennel Hill (38AL2 notes on file, South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia), Rabbit Mount (Stoltman 1974), and Bilbo (Williams 1968:152-197; Dye 1976), with elaborate material assemblages.

Stallings pottery was produced as late as 1060±80 B.C. (UGA-1686), based on a date from the

Cunningham Mound C in Liberty County, Georgia; although Milanich and Fairbanks (1980:78) suggest that fiber tempering may be found on the Georgia coast as late as A.D. 1. While Stallings pottery is usually considered older than, and often the progenitor of, Thom's Creek pottery, the radiocarbon dates leave little doubt that the two pottery styles are largely contemporaneous (Trinkley 1976; cf. Sassaman 1993:16-20).

The following Thom's Creek phase dates as early as 2220±350 B.C. (UGA-584) from Spanish Mount in Charleston County (Sutherland 1974)[4] and continues to at least 935±175 B.C. (UGA-2901), based on a date from the Lighthouse Point Shell Ring, also in Charleston County (Trinkley 1980b:191-192). The Thom's Creek phase is characterized by an artifact assemblage almost identical to that of Stallings sites. The only major differences include the replacement of fiber tempering with sand, or a clay not requiring tempering, and the gradual reduction of projectile point size.

Thom's Creek pottery, first typed by Griffin (1945), consists of sandy paste pottery decorated with the motifs common to the Stallings series, including punctations (reed and shell), finger pinching, simple stamping, incising, and very late in the phase, finger smoothing (Trinkley 1976). Investigations at the Lighthouse Point and Stratton Place shell rings, stratigraphic studies at Spanish Mount and Fig Island, radiocarbon dates from Lighthouse Point and Venning Creek, and the study of surface collections from a number of sties, have suggested a temporal ordering of the Thom's Creek series. Reed punctate pottery appears to be the oldest, followed by the shell punctated and finger pinched motifs. Late in the Thom's Creek phase, perhaps by 1000 B.C., there was the addition of Thom's Creek Finger Smoothed (Trinkley 1983:44). Although an interesting idea, this relative chronological order seems destined for dramatic revision.

Vessel forms include deep, straight sides jars and shallow conoidal bowls. Lip treatments are dimple, and coiling fractures are common. Firing of the Thom's Creek vessels is certainly better than that evidenced for Stallings, but there continues to be abundant incompletely oxidized specimens.

Bone pins illustrated by Williams (1968:152-197) and Trinkley (1980b:Plate 17) may have functioned as weaving or netting tools (shuttles or needles). Common to the Thom's Creek sites are whelk shells with a carefully executed and well-smoothed hole in shoulder of the body whorl close to the aperture and a heavily worn or smoothed columella and outer whorl. These tools likely served as scrapers (see Trinkley 1980b:209-214). Other whelk tools evidence a heavily battered columella which has resulted in a blunt tip.

Like the Stallings settlement pattern, Thom's Creek sites are found in a variety of environmental zones and take on several forms. Thom's Creek sites are found throughout the South Carolina coastal zone up to the Fall Line. In the Coastal Plain drainage of the Savannah River there is a change of settlement, and probably subsistence, away from the riverine focus found in the Stallings Phase (Hanson 1982:13; Stoltman 1974:235-236). Thom's Creek sites are more commonly found in the upland areas and lack evidence of intensive shellfish collection. In the coastal zone large, irregular shell middens; small, sparse shell middens; and large shell rings are found in the Thom's Creek settlement system.

Limited testing has been conducted at one small Thom's Creek non-shell midden on Sol Legare Island (38CH770) in Charleston County (Trinkley 1984). The site evidenced very limited reliance on shellfish and faunal remains, with the bulk of the food remains consisting of large mammals. Excavations also identified a portion of a probable Thom's Creek post structure situated about 180 feet inland from the marsh edge.

Excavations at other coastal zone Thom's Creek sites includes the work by Sutherland (1973, 1974) at the Spanish Mount shell midden (38CH62) on Edisto Island. While this work has never been completed published, the site initially appeared to

[4] This date is often discounted because of its large sigma and questionable association (see Sassaman 1993:20). The next oldest date is 2090±90 B.C. from the Bass Pond site on Kiawah Island in Charleston County (Trinkley 1993:160).

represent a seasonally occupied camp with a diffuse subsistence base, including reliance on shellfish, floral material, fish, and mammals. More recent investigations, however, suggest that this midden may represent the remains of a shell ring largely eroded away by Scott Creek (Cable 1993). However, when this site was described by Edmund Ruffin in 1843, it certainly seemed to be a mounded, not circular deposit:

> It is a mound formed by the aborigines, & which is entirely of shells, except some considerable intermixture of ashes, & bits of their broken pottery, broken bones & charcoal. The shells are of various kinds, of the neighboring river waters & sea, but principally of oysters. The mound is elipitcal [sic], & measured by stepping over, is 150 feet long, & 48 feet wide to a perpendicular break on the creek made by the inroads of the water, & which apparently has washed away about 18 feet more of the side. The perpendicular section of the shells where exposed by this loss, is 10 feet, & 12 feet in all to the summit (above the ground of ordinary height, on which they are placed). The surface, except at the perpendicular cliff, is covered over with rich soil, & a growth of small trees and shrubs (Mathew 1992:113).

Work by Michie (1979) at the Bass Pond Dam site (38CH124) in Charleston County, suggests a similar subsistence orientation. Additional research at this site by Chicora Foundation (Trinkley 1993:160) has produced a date of 2090 ± 90 B.C. for the site, perhaps the oldest well documented date for Thom's Creek pottery along the South Carolina-Georgia coast. At this site Thom's Creek Plain pottery dominates the collection, followed by Thom's Creek Finger Pinched and Thom's Creek Reed Punctate. The faunal analysis suggested that the site was occupied in the fall and/or early winter by a microband of perhaps 20 or 30 individuals.

By far the most work has been conducted at Thom's Creek phase shell rings (see Trinkley 1980b, 1985). These sites are circular middens about 130 to 300 feet in diameter, 2 to 6 feet in height, and 40 feet in width as their bases, with clear interiors. These doughnut-shaped accumulations were formed as small mounds, arranged around an open ground area, and gradually blended together. The ring itself is composed of varying proportions of shell, animal bone, pottery, soil, and other artifacts. The midden soils are silts, and the shell is lenses and crushed. Post holes are abundant, although no structures have been clearly defined. Pits are evidenced throughout the midden, but under the midden large shellfish steaming pits, several feet in diameter and 2 to 3 feet in depth, are most clearly evident. Their use and the subsequent disposal of the shells actually formed the middens.

These shell rings were apparently mundane occupation sites for fairly large social units which lived on the ring, disposed of garbage underfoot, and used the clear interiors as areas for communal activities. The sites further suggest relatively permanent, stable village life as early as 1600 B.C., with a subsistence base oriented toward large and small mammals, fish, shellfish, and hickory nut resources (Trinkley 1985).

These rings were also observed by Ruffin in the late antebellum period. He noted with special interest the shell middens:

> which are still more artificially shaped, being regular, circular ridges, hollow in the middle. Such a one I saw on James Island, from 3 to 4 feet high, of oyster shells & periwinkles, in the center of which stands Dr. Legare's mansion house (Mathew 1992:113).[5]

Even earlier, at the turn of the nineteenth century, John Drayton described the James Island shell ring:

[5] This suggests that Ruffin was experienced enough to distinguish between circular rings, even when they were extensively modified, and large mounds.

> It is of circular form: measuring around two hundred and forty paces. Its width at the top is ten paces; and at its base from sixteen to twenty; and its height is from eight to 10 feet . . . . It is situated in the midst of cleared lands, on no uncommon residing; surrounding the dwellings house and offices of a gentleman who resides on the island. And the waters, which were driven by the hurricane of 1752, over much of the adjacent lands, are said to have been completely banked out by this work. This being observed by Mr. Rivers, he placed his dwelling house therein; which had been continued, either by repairs or new buildings, to the present day (Drayton 1802:56-57).

In fact, the Lighthouse Point shell ring can be traced from Henry Stirling Rivers to Dr. Thomas Legare (Trinkley 1980b:159) and the two quotes provide ample evidence of the site's gradual use, first for lime used in St. Michael's Church and later for road construction.

There is evidence that during the Late Archaic the climate began to approximate modern climatic conditions. Sea levels began to increase, flooding many of the Thom's Creek shell rings. Rainfall increased resulting in a more lush vegetation pattern. The pollen record indicates an increase in pine which reduced the oak-hickory nut masts which previously were so widespread. This change probably affected settlement patterning since nut masts were now more isolated and concentrated. From research in the Savannah River valley near Aiken, South Carolina, Sassaman has found considerable diversity in Late Archaic site types with sites occurring in virtually every upland environmental zone. He suggests that this more complex settlement pattern evolved from an increasingly complex socio-economic system. While it is unlikely that this model can be simply transferred to the lower coastal plain without an extensive review of site data and micro-environmental data, it does demonstrate one approach to understanding the transition from Archaic to Woodland.

Woodland Period

Sassaman (1993:55) recalls the cautions of Joseph Caldwell, who found "the regional landscape of the Early Woodland ceramic traditions" a "fascinating array of local developments and diverse extralocal influences." As a consequence, the Early Woodland becomes quickly confused and difficult to interpret.

As previously discussed, there are those who see the Woodland beginning with the introduction of pottery. Under this scenario the Early Woodland may begin as early as 4,500 B.P. and continued to about 2,300 B.P. Diagnostics would include the small variety of the Late Archaic Savannah River Stemmed point (Oliver 1985) and pottery of the Stallings, St. Simons, and (to a lesser extent) Thom's Creek series (Griffin 1943; Trinkley 1976; DePratter 1991:159-162). The fiber-tempered Stallings and St. Simons wares and the sandy paste Thom's Creek wares are decorated using punctations, jab-and-drag, and incised designs (Trinkley 1976).

Others would have the Woodland beginning about 3,000 B.P. with the introduction of the Refuge wares, also characterized by sandy paste, but often having only a plain or dentate-stamped surface (DePratter 1976, 1991:163-167; Waring 1968). There is evidence that the punctated and dentate surface decorations are gradually replaced by plain and simple stamped treatments. Sassaman et al. (1990:191) report a distribution similar to the earlier fiber-tempered and Thom's Creek wares, and suggest that the Refuge wares evolved directly from these earlier antecedents.

The Refuge Phase, dated from 1070±115 B.C. (QC-784) to 510±100 B.C. (QC-785), is found primarily along the South Carolina coast from the Savannah drainage as far north as the Santee River (Williams 1968:208). Anderson (1975:184) further notes an apparent concentration of Refuge sites in the Coastal Plain, particularly along the Santee River. The pottery is found inland along the Savannah River (Peterson 1971:151-168), although it does not extend above the Fall Line (see Anderson and Schuldenrein 1985:719; Garrow 1975:18-21).

The Refuge series pottery is similar in many

Dates	Period	Sub-Period	Regional Phases: NORTH COASTAL — Tide Water	NORTH COASTAL — Inner Coastal Plain	SOUTH COASTAL	CENTRAL PIEDMONT	
1715 – 1650	HIST.	EARLY	Carolina Algonkians	Meherrin Tuscarora	Waccamaw ?	Caraway	
1650 – 800	WOODLAND	LATE	Colington	Cashie	Oak Island	Dan River	Pee Dee
800 – A.D./B.C. – 300	WOODLAND	MIDDLE	Mount Pleasant		Cape Fear Hanover	Uwharrie Yadkin	
300 – 1000	WOODLAND	EARLY	Deep Creek		New River	Badin	
1000 – 2000 – 3000	ARCHAIC	LATE	Thom's Creek Stallings Savannah River Halifax				
3000 – 5000	ARCHAIC	MIDDLE	Guilford Morrow Mountain Stanly				
5000 – 8000 – 10,000	ARCHAIC	EARLY	Kirk Palmer Hardaway				
10,000 – 12,000	PALEO INDIAN		Hardaway - Dalton Clovis				

Figure 5. Cultural periods along the coast of South Carolina.

ways to the preceding Thom's Creek wares. The paste is compact and sandy or gritty, while surface treatments include sloppy simple stamped, dentate stamped, and random punctate decorations (see DePratter 1979:115-123; Williams 1968:198-208). Anderson et al. note that these typologies are "marred by a lack of reference to the Thom's Creek series" (Anderson et al. 1982:265) and that the Refuge Punctate and Incised types are indistinguishable from Thom's Creek wares. Peterson (1971:153) characterizes Refuge as both a degeneration of the preceding Thom's Creek series and also as a bridge to the succeeding Deptford series. There is a small stemmed biface associated with the Savannah drainage Refuge sites. This type has been termed Groton Stemmed by Stoltman (1974:114-115) and Deptford Stemmed by Trinkley (1980a:20-23). Peterson suggests that, "a change from the 'Savannah River' to the small stemmed points, a diminution basically, could occur during the Refuge" (Peterson 1971:159), although points similar to the Small Savannah River Stemmed continue to occur.

In spite of the relative lack of detailed investigations at Early Woodland sites, it seems likely that the subsistence economy was based primarily on deer hunting and fishing, with supplemental inclusions of small mammals, birds, reptiles, and shellfish. This is based on an impression that there was a continuation of a generalized Late Archaic pattern, which may or may not be appropriate.

Somewhat more information is available for the Middle Woodland, typically given the range of about 2,500 B.P. to about 1,200 B.P. The most characteristic pottery of this time period is Deptford, although both Swift Creek and Wilmington are likely late additions. Regardless, the Middle Woodland is best understood in the context of Deptford, which has been carefully described by DePratter (1979:118-119, 123-127), who suggests two divisions with check stamping and cord marking gradually being supplemented by complicated stamping. The introduction of clay or grog tempered Wilmington wares follows on the heels of the Deptford phase.

We do not, however, mean to imply that the origin of the Middle Woodland is well understood. In fact, Sassaman takes some pains to emphasize that the transition from Refuge to Deptford is *not* well understood:

> the Refuge-Deptford problem is the result of numerous regional processes that converge in the Savannah River region between 3000 and 2000 B.P. The sociopolitical entities that existed on the coast and in the interior during the fourth millennium dissolved after about 2400 B.P., resulting in the dispersal of small populations across the region. . . . Pottery designs changed from highly individualistic punctation and incision to the (seemingly) anonymous use of dowels for stamping. . . . the use of a carved paddle for simple stamping should mark the "blending" of Refuge and Deptford culture, or, more accurately, reflect the subsumption of Refuge culture by the expanding Deptford complex.
>
> To complicate matters, the tradition of cord-wrapped paddles makes its way into the South Carolina area sometime after 2500 B.P. (Sassaman 1993:118-119).

The work by Milanich (1971) and Smith (1972), coupled with the considerable additional site-specific research (see, for example, DePratter 1991; Sassaman 1993:110-125; Thomas and Larsen 1979) provides an exceptional background for this particular phase. Milanich's (1971) interpretation of a coastal-estuarine settlement model with interior occupation limited to short-term extractive activities, while still useful, has been modified through the discovery of a number of interior base camps. In fact, there seems to be evidence for a number of interior seasonal or perhaps even permanent base camps, although there is as yet no convincing evidence of horticulture. Anderson (1985:48) provides a brief overview of some very significant concerns. He notes that Milanich's interpretation that the interior river valleys were used by small, residentially mobile foraging groups which dispersed from large coastal villages is clearly not correct. In fact, just the opposite appears more likely, with coastal use and settlement being seasonal (Anderson 1985:48-49).

DePratter (1979:119, 128-131; 1991) takes the position that Wilmington pottery post-dates Deptford, ushering in the use of grog or clay as a tempering material in the late Middle Woodland. The check stamping and complicated stamped motifs found in the Deptford continue, except with clay tempering for a short time. Called Walthour, these wares are described by DePratter (1991:174-176), but they apparently existed for only a short period of time before being completely replaced by cord marking (DePratter 1979:119). They are also only occasionally seen on the central Carolina coast.

Wilmington phase sites are rather poorly understood in the South Carolina Coastal Plain. Not only has there been little effort to develop settlement models incorporating the Wilmington, there is very little technological research on the pottery itself. In fact, the distinction between grog or clay tempered and sand tempered is occasionally ignored, resulting in considerably typological confusion.

Largely contemporaneous with the sherd tempered wares are the Mount Pleasant, McClellanville, and Santee series. The Mount Pleasant series has been developed by Phelps from work along the northeastern North Carolina coast (Phelps 1983:32-35, 1984:41-44) and is a Middle Woodland refinement of South's (1960) previous Cape Fear series. The pottery is characterized by a sandy paste either with or without quantities of rounded pebbles. Surface treatments include fabric impressed, cord marked, and net impressed. Vessels are usually conoidal, although simple, hemispherical, and globular bowls are also present. The Mount Pleasant series may be found from North Carolina southward to the Savannah River (perhaps being evidenced by the "Untyped Series" in Trinkley 1981b). North Carolina dates for the series range from A.D. 265±65 (UGA-1088) to A.D. 890±80 (UGA-3849). The several dates currently available from South Carolina (such as UGA-3512 of A.D. 565±70 from Pinckney Island) fall into this range of about A.D. 200 to 900.

The McClellanville (Trinkley 1981a) and Santee (Anderson et al. 1982:302-308) series are found primarily on the north central coast of South Carolina and are characterized by a fine to medium sandy paste ceramic with surface treatment of primarily v-shaped simple stamping. While the two pottery types are quite similar, it appears that the Santee series may have later features, such as excurvate rims and interior rim stamping, not observed in the McClellanville series. The Santee series is placed at A.D. 800 to 1300 by Anderson et al. (1982:303), while the McClellanville ware may be slightly earlier, perhaps A.D. 500 to 800. Anderson et al. (1982:302-304; see also Anderson 1985) provide a detailed discussion of the Santee Series and its possible relationships with the McClellanville Series. Anderson, based on the Santee area data from Mattassee Lake, indicates that there is evidence for the replacement of fabric impressed pottery by simple stamping about A.D. 800 (David G. Anderson, personal communication 1990). This may suggest that McClellanville and Santee wares are closely related, both typologically and culturally. Also probably related is the little known Camden Series (Stuart 1975) found in the inner Coastal Plain of South Carolina.

In some respects the Late Woodland (1,200 B.P. to 400 B.P.) may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas and Georgia there were major cultural changes, such as the continued development and elaboration of agriculture, the coastal South Carolina and Georgia groups settled into a lifeway not appreciably different from that observed for the previous 500-700 years. From the vantage point of Middle Savannah Valley Sassaman and his colleagues note that, "the Late Woodland is difficult to delineate typologically from its antecedent or from the subsequent Mississippian period" (Sassaman et al. 1990:14). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971). Anderson (1994:366-368) provides a basic review of the Late Woodland and Mississippian ceramic sequence at the mouth of the Savannah River. This review is particularly useful since it also compares and contrasts these developments to those in the middle and upper reaches of the Savannah (Anderson 1994:368-377).

Along the northern Carolina coast, Anderson et al. (1982:303-304) suggest a continuation of the Santee series into the Late Woodland. The Hanover and Mount Pleasant series may also be found as late of A.D. 1000. Along the southeastern North Carolina coast, South (1960) has defined the Oak Island complex, which is best known for its shell tempered ceramics with cord marked, fabric impressed, simple stamped, and net impressed surface finishes. The phase is briefly discussed by Phelps (1983:48-49), but curiously this manifestation is almost unknown south of the Little River in South Carolina.[6] Very little is known about the northern coastal South Carolina Late Woodland complexes, although sites such as 38GE32 may document the occurrence of village life in the Late Woodland.

South Appalachian Mississippian

As Schnell and Wright (1993:2) observe, "Mississippian" means different things to different people — even to its earliest researchers. To Willey (1966) it meant a particular group of traits. To Griffin (1985) it meant a complex social and technological interaction sphere. To Smith (1986) it was defined as an adaptive strategy. The meaning is further distorted, or at least affected, when the issue is viewed from a strict temporal or chronological orientation, such as this presentation (since to us, the period covers the time span from about A.D. 900 to A.D. 1500).

The Mississippian may be viewed rather basically by focusing on a simple coastal chronology based almost entirely on the results of excavations at Irene (Caldwell and McCann 1941) and the resulting synthesis by DePratter (1979:Table 30; 1991:183-193). In this scenario the Savannah Phase, consisting of three subphases, is followed by the Irene, broken into two subphases.

The Savannah I Phase, characterized by cord marking, is seen as developing from earlier cultures. Present are flat-topped temple mounds, although these seem to decline dramatically from the mouth of the Savannah River northward. While the settlement system is very similar to that of the Late Woodland, there are also nucleated settlements found near estuaries and along freshwater rivers further inland. Although agriculture is seen by many as almost essential, there is no good evidence for corn or other domesticated crops.

Savannah II is distinguished by the introduction of check stamping and Savannah III is defined by the presence of complicated stamping. The Savannah III Complicated Stamped pottery is primarily curvilinear, often of concentric circles or oval motifs. Sassaman et al. (1990:207) suggest that the current temporal ranges are likely too restrictive for these subphases and suggest instead broader period of perhaps A.D. 1100 to 1200 for Savannah II and perhaps A.D. 1200 to 1300 for Savannah III.

The Savannah phase gives way to what is often called the Irene Phase, probably beginning about A.D. 1300. The Irene I Phase is identified by the appearance of Irene Complicated Stamped pottery using the filfot cross and line block motifs. Not only are these motifs different from the earlier Savannah Complicated Stamped designs, but the Irene ware is characterized by grit inclusions and a coarse texture, compared to the Savannah's sandy inclusions and fine to medium-grained paste.

Also present in Irene collections are a range of rim decorations, including nodes, rosettes, and fillet appliques. Although incising is found in very low quantities during this early period, the succeeding Irene II phase is characterized by bold incising. The mouth of the Savannah River, however, was likely abandoned by the end of the Irene I Phase since little incising is found in this area.

From the more northern region, the Pee Dee culture was defined through the excavations of Joffre Coe at Town Creek which is located about 150 miles due north of Charleston (Coe 1995; Reid 1967). The site, generally accepted to represent a northern intrusion of a Mississippian chiefdom, was originally dated from

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[6] The Wando Series, or something similar, has been identified by a number of researchers along the coast north of Charleston. The pottery, most commonly cord marked or check stamped, is limestone tempered and may be either Middle or Late Woodland in time (see Adams and Trinkley 1993:64-71 for additional information).

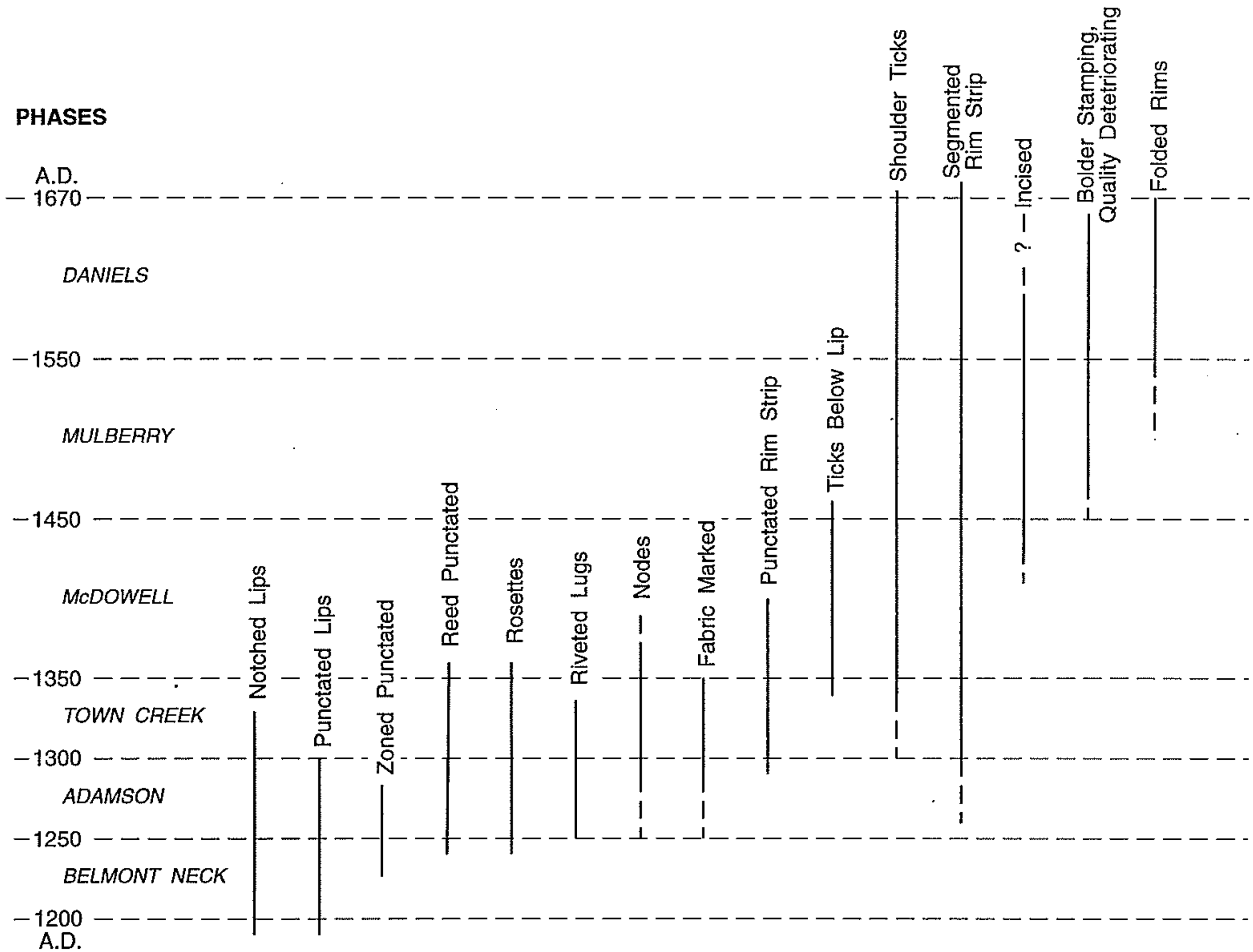

Figure 6. Late prehistoric and early historic ceramic sequence for the Wateree River Valley (adapted from DePratter and Judge 1986).

about A.D. 1550 to 1750, although more recent analyses suggests a date more likely between A.D. 900 and 1400 (Coe 1995:159).

In the Charleston area the only reasonably documented Mississippian excavations are those undertaken by Stanley South at the moundless ceremonial center at Charles Town Landing (South 1971). Anderson (1994:115) notes with regret that there has been "no broad-scale comparative analyses of Mississippian ceramics" for the South Carolina area, although there has been some effort to untangle the typology of the Middle Wateree valley. In particular DePratter and Judge (1986, 1990:56-58) have proposed a fairly detailed six phase division encompassing the period from A.D. 1200 through 1670. Although it is unclear how well their chronology and associated ceramic changes can be transposed from the Middle Wateree to the coast, it seems to be an excellent starting point (Figure 6 provides a generalized scheme).

The Belmont Neck Phase pottery (A.D. 1200-1250) is characterized by complicated stamped motifs with plain or notched rims. In the Wateree Valley these motifs are primarily concentric circles, with other various curvilinear designs and perhaps a cross bar diamond motif. Burnishing, while present, is a minority. Tempering ranges from fine to coarse sand.

The Adamson Phase pottery (A.D. 1250-1300) becomes dominated by the filfot motif, along with a minor amount of line block stamping. Burnished pottery is about twice as common as in the earlier Belmont Neck Phase. Lip notching and reed punctates below the lip are more common. There doesn't seem to be any significant change in tempering, although there may be a trend for the fine sands to drop out.

During the Town Creek Phase (A.D. 1300-1350) the pottery motifs are similar to those found earlier, with the addition of punctated and segmented rim strips. Fabric marking, which is rare in earlier phases, becomes more noticeable during the Town Creek Phase and then drops out quickly. Burnishing is only slightly more common and the temper does not seem to change.

The McDowell Phase (A.D. 1350-1450) is characterized by pottery with larger, bolder stamped motifs. The filfot motifs are still most common, although DePratter and Judge seem to suggest that simple stamping increases during this phase. Burnishing now accounts for nearly a quarter of the typical collection.

The most noticeable change during the Mulberry Phase (A.D. 1450-1550) is the addition of incising. In addition, there may be a shift away from the filfot to other motifs, apparently at the expense of plain burnished pottery, which declines in frequency. Segmented applique strips are the most common rim decoration.

During the final Daniels Phase (A.D. 1550-1670) the pottery is recognizable by a deterioration in stamping quality and larger, more abstract motifs (or perhaps just less recognizable motifs?). Burnished pottery is again more common with incising remaining stable. Applique rim strips are larger and located farther down from the lip. Tempering remains a medium sand.

After A.D. 1670 we have virtually no information.

Historic Native American Groups

Just as our understanding of the late ceramics along the coast is limited, so too is our knowledge of Native American groups. And just as we owe most of knowledge of the pottery to DePratter and Judge, Waddell (1980) remains the best source for information on the low country Indian groups. There are three which may have been in the Seabrook Island area during the protohistoric and early historic periods, including the Kiawah, Stono, and Bohicket.

It seems likely that Sandford first saw the Bohicket Indians and their agricultural fields along Bohicket Creek in 1666 (Waddell 1980:95-96) — a location they continued to hold for a number of years. In 1685, for example, they are shown by Mathews east of the head of Bohicket Creek and by 1695 they are shown on the Thornton-Morden map on the north side of the creek near the headwaters (Waddell 1980:96) — a location they held on the Crisp map of 1711 (Waddell

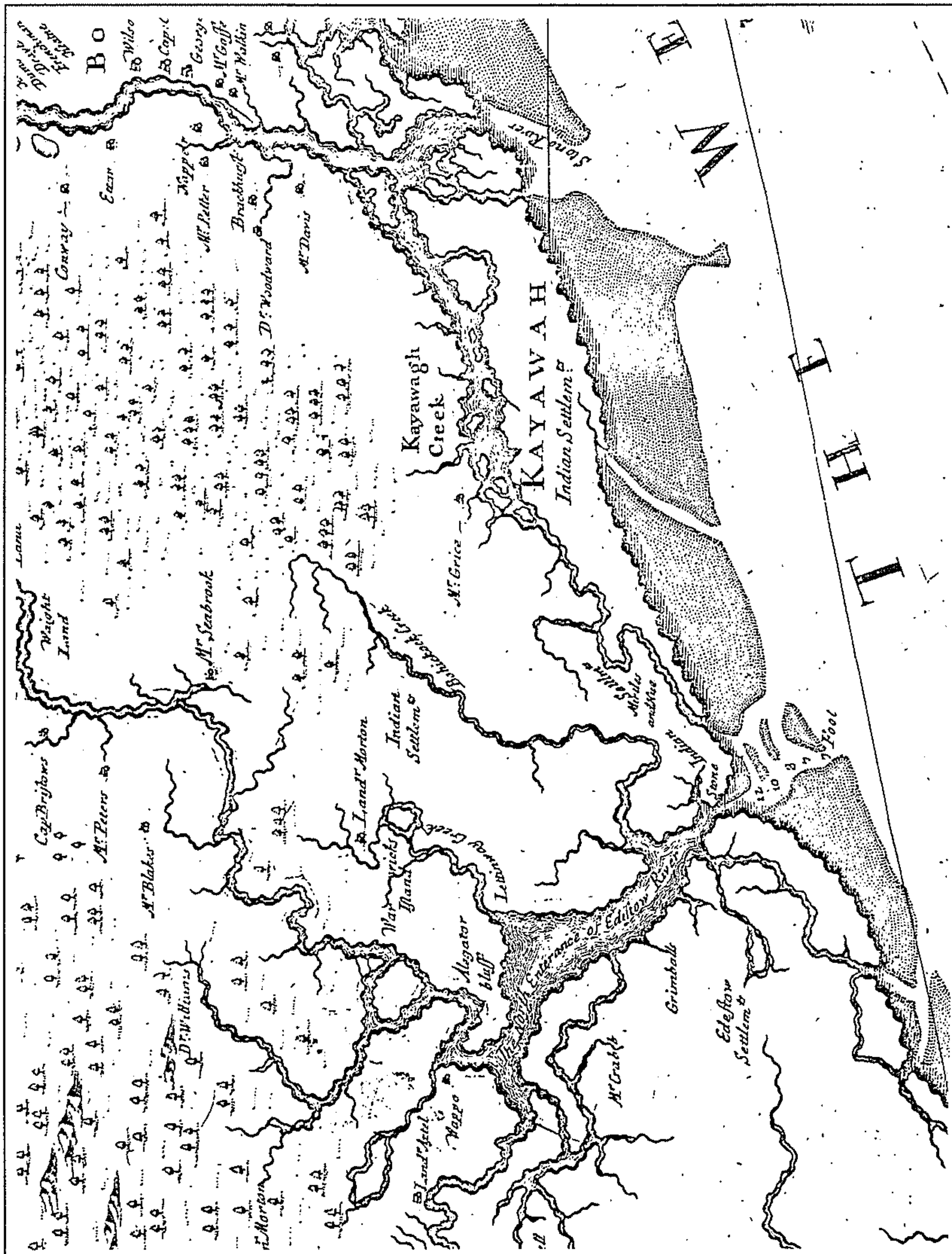

Figure 7. Thornton-Morden Map of 1695 showing Indian settlements on Kiawah, Seabrook, and Edisto islands, and on Bohicket Creek.

1980:97). In 1707 an act establishing Indian lookout posts reveals that the "Jones Island" outlook was to be manned by "Bohicott Indians." Waddell (1980:97) suggests that Jones Island was likely Seabrook.

The early location of the Kiawah is problematical, although it seems likely that by the early 1670s they were on the Ashley, in the immediate vicinity of the Abemarle settlement. Waddell (1980:236) comments on an early account by Cheves, which points out that there was an Indian village just beyond the palisade and that an Indian grave (with "trade beads") had been found near "Old Town" (Waddell 1980:234). The Kiawah were still on the banks of the Ashely in 1682, when Ferguson made his account of Indian tribes (Waddell 1980:237) and Gaycoyne shows them, in 1682, about two miles south of the Stono, on an island. Waddell points out that the map is far too crude to allow any accurate placement, and suggests that the most important feature of this map is that it indicates some movement of the Kiawah had taken place by this time. Mathews, in 1685, places the Kiawah directly on Kiawah Island and Waddell suggests a location near where the Kiawah flows into the Stono (Waddell 1980:238). Although there is uncertainty, it may be that their location remained unchanged a decade later, when they are still shown on Kiawah Island by the Thornton-Morden map.

Perhaps the best evidence pointing to a Kiawah settlement is provided by the Diamond plat of Trescott's Plantation east of the Cooper River. Waddell comments that the plat may even show an Indian mound and the historic documents reveal that Trescott even dug through Indian burials in laying out his planation house (Waddell 1980:241-242). This may be the only clear link to the Kiawah that remains.

In 1671 the Stono were reported to be living north of the Edisto and south the Kiawah (at the English settlement) (Waddell 1980:303). The location seems to remain constant, in spite of their problems with the English, since in 1682 Ferguson remarks that the Stono were south of the Kiawah, "upon the River Stonoh, adjoining to Edisto" (Waddell 1980:305). By 1695, however, the Thornton-Morden map shows the Stono on Seabrook Island, at the mouth of the North Edisto River (Waddell 1980:307). In fact, the Stono continue to be closely associated with Seabrook through at least the first decade of the 1700s, when Seabrook Island was even called "Stonoe" Island (Waddell 1980:307).

In spite of the Seabrook Island connection, it seems that the most promising lead for a Stono settlement might be the Frances Hext plantation known as Indian Graves. Situated on Johns Island it doesn't appear that too much has been made of the name of the plantation (see Jordan and Stringfellow 1998).

These brief discussions clearly point out the frequent movement of low country Indians. For example, the Kiawah moved away from the pressures of the Ashley River settlement, eventually to Kiawah island. The Stono may have moved from along the Stono River to Seabrook. The Bohicket seem to have been the most stable, largely staying north of the Bohicket, although perhaps sharing some of Seabrook Island with the Stono. In spite of the maps and review of the historical documents, none of these settlements have been found and we have no real information on any of these early tribes.[7]

The Civil War on Seabrook Island

The earliest mention we have found of Seabrook in the *Official Records* (referenced here as OR) is an April 14, 1862 reconnaissance of the island made by troops of the Third New Hampshire Volunteers and Marines from the accompanying gunboat, the USS Pocahontas. The troops apparently crossed from Edisto and proceeded to "within a mile of the village of Rockville," which suggests that they only explored the western half of the island. As a result of the reconnaissance:

> It is evident there has formerly been a large picket stationed on the island, but has been withdrawn, there being no evidence of any of late (OR

[7] It may be that South's "moundless ceremonial center uncovered at Charles Towne Landing is a Kiawah settlement, but unfortunately these excavations have never been fully reported.

20:3).

Just a few days later General H.G. Wright, stationed on Edisto Island, reported to the Union command on Hilton Head that the Confederates routinely maintained pickets on:

> Seabrook Island, at Rockville, at the mouth of Seadenwak Creek, at Bear's Bluff, and at White Point opposite, at Dawho Ferry, and at the junction of the Dawho and South Edisto Rivers (OR 20:336).

By early June 1862 there were some initial indications of Union forces massing on Seabrook Island (OR 20:536, 551). Although it wasn't clear to the Confederate forces at the time, this was part of the early preparation of the June 16 attack on the Secessionville earthworks (see Brennan 1996 for an account of the battle and Trinkley and Hacker 1997 for some of its archaeological manifestations). After the defeat at Secessionville, the Union forces began withdrawing from James Island, also abandoning their camps at Seabrook.

As early as March 1863, however, Union troops were back on Seabrook, perhaps making brief forays to determine Confederate strengths and positions. By April 5, 1863 Confederate General Johnson Hagood reported that there were at least 3,300 Union troops on Seabrook and perhaps that many on Cole's Island (OR 20:847, 879-880). Although plans were proposed to attack the Union positions (OR 20:927-928), it appears that the most the Confederate forces chose to do was to "continue to annoy our [Union] pickets" (OR 20:439). By the end of April the Tri-Monthly Report of the Department of the South revealed 3,286 troops were stationed on Seabrook Island under the command of General T.G. Stevenson (OR 20:451).

The Union forces also began to recognize that Seabrook was not a very healthy island, with Major Thomas B. Brooks reporting that the high incidence of troops on sick call was a result of their being previously stationed on Seabrook (OR 46:327). This was even more clearly recognized by the Confederate forces, who at one point hoped to drive the Union troops from their camps on the fringes of the island, where the ground was better drained and there were marsh breezes, into the island's interior, "where it is unhealthy, on account of the stagnant water" (OR 47:177).

It seems likely that it was during this period that the Union forces developed their strongest earthworks and fortifications, primarily on the western end of the island. Although we have been unable to find any specific references to the many earthworks on Seabrook, there is a brief mention that, "the engineers and black infantry were employed exclusively on fatigue duty. The white infantry served as guard of the trenches, as well as for work in the same" (OR 46:327).

Union troops on Seabrook at this time included Stevenson's Brigade (24th Massachusetts, 10th Connecticut, 56th New York, and 97th Pennsylvania regiments), Guss' Brigade (3rd New Hampshire, 76th Pennsylvania, and 25th Brigade), and Battery B of the 3rd New York Artillery.

In early July 1863, the Confederates reported two Union encampments, each perhaps only a regiment, on Seabrook. One regiment was encamped:

> on a point of Seabrook Island a little over 1 mile from Rockville.[8] They are encamped on a very small piece of ground, consequently their tents are very close together (OR 47:177).

It seems that it was about this time that the Union troops were beginning their departure of Seabrook and by July 21, 1863 Confederate Colonel H.K. Aiken reported that "our forces under Major Jenkins have taken possess of Seabrook Island, and find it entirely evacuated by the enemy" (OR 47:216).

By November 1863 Union forces were apparently once again on Seabrook Island, with Major John Jenkins reporting that "they have certainly two regiments and two companies on Seabrook" and that

[8] One possible location for this encampment is Jenkins Point.

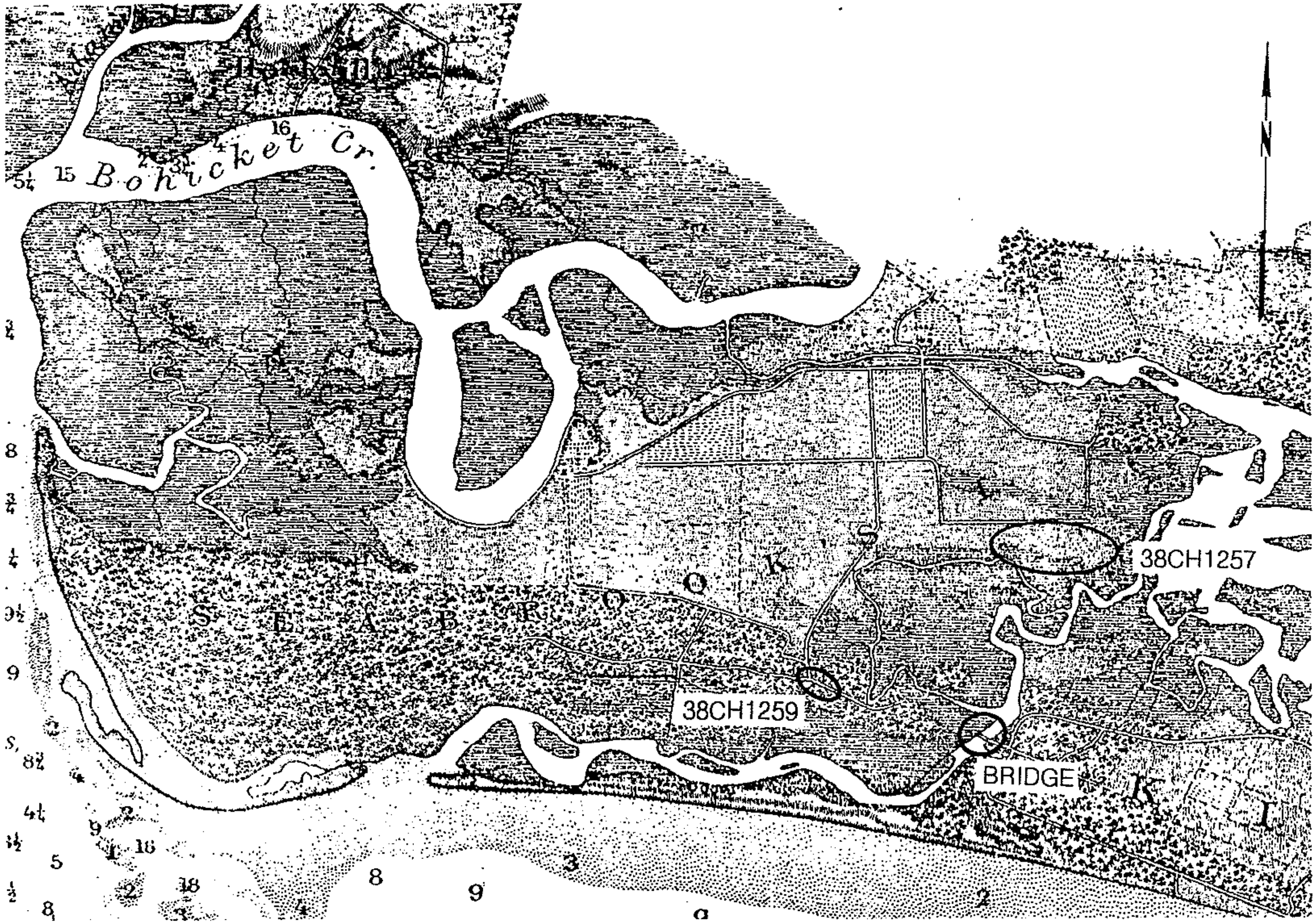

Figure 8. Seabrook Island as it probably appeared during the Civil War (Coast Chart 55, *Coast of South Carolina from Long Island to Hunting Island*, prepared in 1866). Note the location of the Seabrook-Kiawah bridge, the William Seabrook, Jr. settlement north of Haulover Creek, and the Seabrook slave settlement and complex adjacent to Bohicket Creek. Also shown are the two sites included in this research.

"they occupy all their old picket posts and new ones besides" (OR 46:738). Jenkins also sought, unsuccessfully, to stop the Union forces from rebuilding the bridge between Seabrook and Kiawah. However, it appears that the Union presence was short-lived, since Jenkins reported only a month later, on December 28, 1863, that a small detachment of Union troops had landed on Seabrook from a gunboat, for the purpose of dismantling and carrying off "lumber from their old encampment" (OR 46:752). Although we can't be sure exactly what camp this was, it appears that the Union presence was sporadic and that, at times, Seabrook was largely a no-man's land.

In February 1864 there was yet another Union "expedition" to Seabrook Island, this time from Kiawah. Although the account is not entirely clear, it seems that the force, consisting of the 157th and 144th New York Volunteers and 75th and 107th Ohio Volunteers, traveled from the Vanderhorst Plantation across Kiawah to the "Seabrook Plantation" on Seabrook Island. Although the account is sketchy, given the distances and marching times, the referenced plantation would have been that of William Seabrook, Jr., on the eastern half of Seabrook Island. Confederate reports make it clear that the Union forces had crossed over from Seabrook, onto John's Island (OR 65:144).

There they met Confederate forces (apparently advanced pickets) and engaged in a series of skirmishes which moved forward for about 2½ miles until bogging down at a location where the Confederate forces were heavily entrenched. This would place them, perhaps, at River Road. During the day union forces, "were dispatched to search the building of a plantation near the river and destroy all arms found there" (OR 65:107). There would have been several plantation in the vicinity and it is unclear whether "the river" was Bohicket River or Haulover Creek.

The Union forces withdrew to an earthwork, which was "strengthened so as to form a ditch and parapet of considerable strength." It is unclear, again, whether this earthwork was on Seabrook or John's Island.

During the spring and summer of 1864 Seabrook seems to have once again reverted to a no-man's land. In early June Union troops traveled across Kiawah and lay in hiding to determine if there was any Confederate activity on the east end of Seabrook. The reported Confederate "pickets on Seabrook Island posted as usual, but dressed partly in civilian's dress" (OR 65:62; 66:110).

In late June there were preparations for the Union attempt at coordinating a series of five attacks on James and John's island with the intention to take John's Island, flank James Island, and take Charleston. As Burton comments, "the first 11 days of July were tense for the defenders of Charleston," but the Union forces, in spite of out numbering the Confederate defenders, were poorly coordinated (Burton 1970:284-295). Seabrook appears to have played a peripheral role — although Union troops crossed over the island (OR 65:124) and Confederate troops made a reconnaissance of the island toward the end of the conflict (OR 65:141), it does not seem to have been a very significant supply point. The Confederate reconnaissance, for example, found only "three regiments, with a few cavalry" on Seabrook and the only substantive activity seemed to have been that the Kiawah-Seabrook bridge was once again rebuilt (OR 65:266).

There doesn't seem to be any mention of Seabrook in the *Official Records* after 1864 and there seem to have been very few troops stationed on the island after mid-1864. Although the Confederacy was failing, Charleston's defensive lines held and General W.T. Sherman withheld consent on another attack in January 1865, apparently seeing no hope that such a plan would hasten the fall of Charleston (Rosen 1994:134). By this time attention had turned from the coast of South Carolina to the inland and Sherman's march through Georgia.

Postbellum Activities

Both Poplin and his colleagues (Poplin et al. 1991) and Jordan and Stringfellow recount at least some of the postbellum events on Seabrook, so this discussion will largely just outline how these events may have affected the preservation of the two sites being examined by this study.

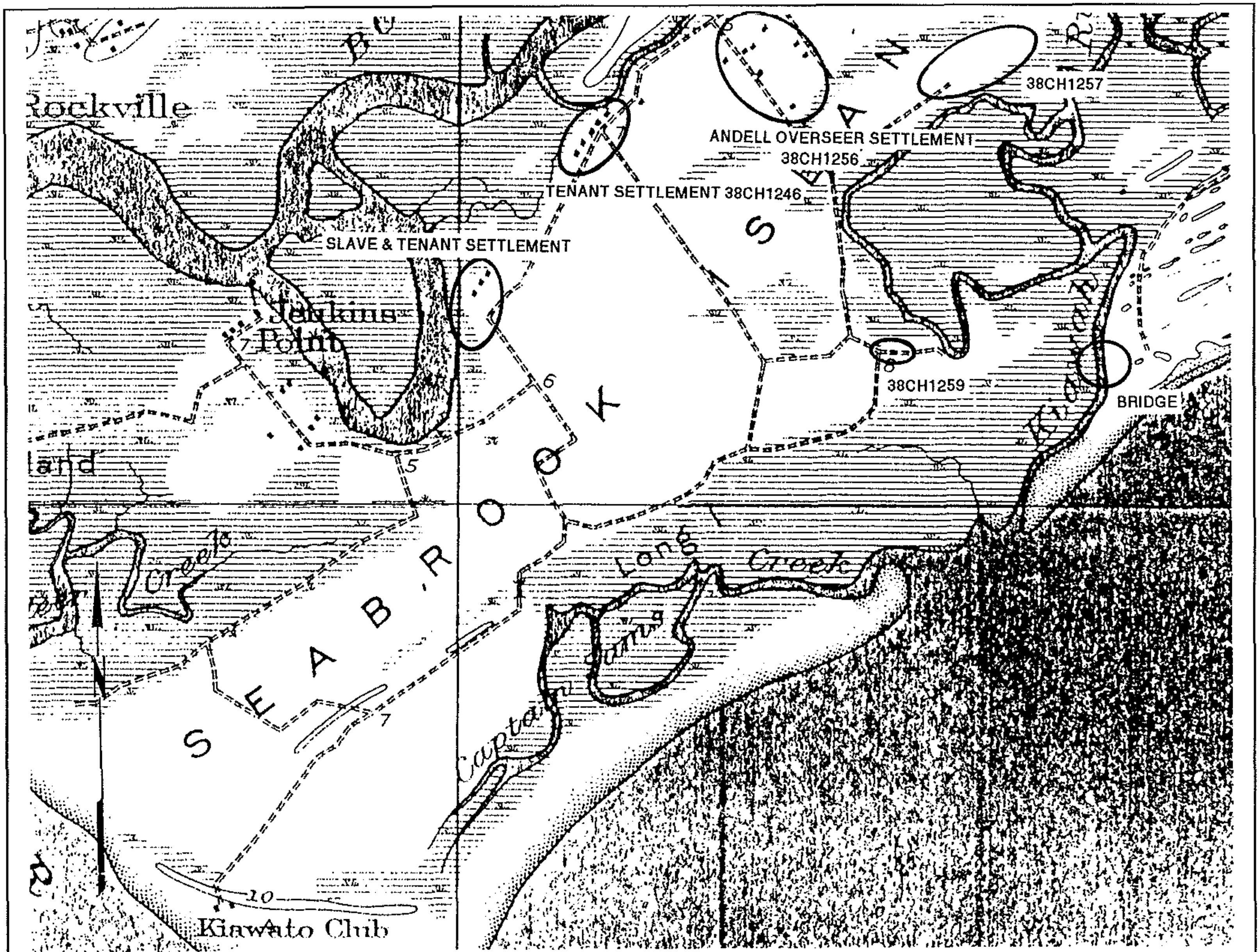

Figure 9. Seabrook Island in 1911, showing the location of the various settlements (USGS Wadmalaw).

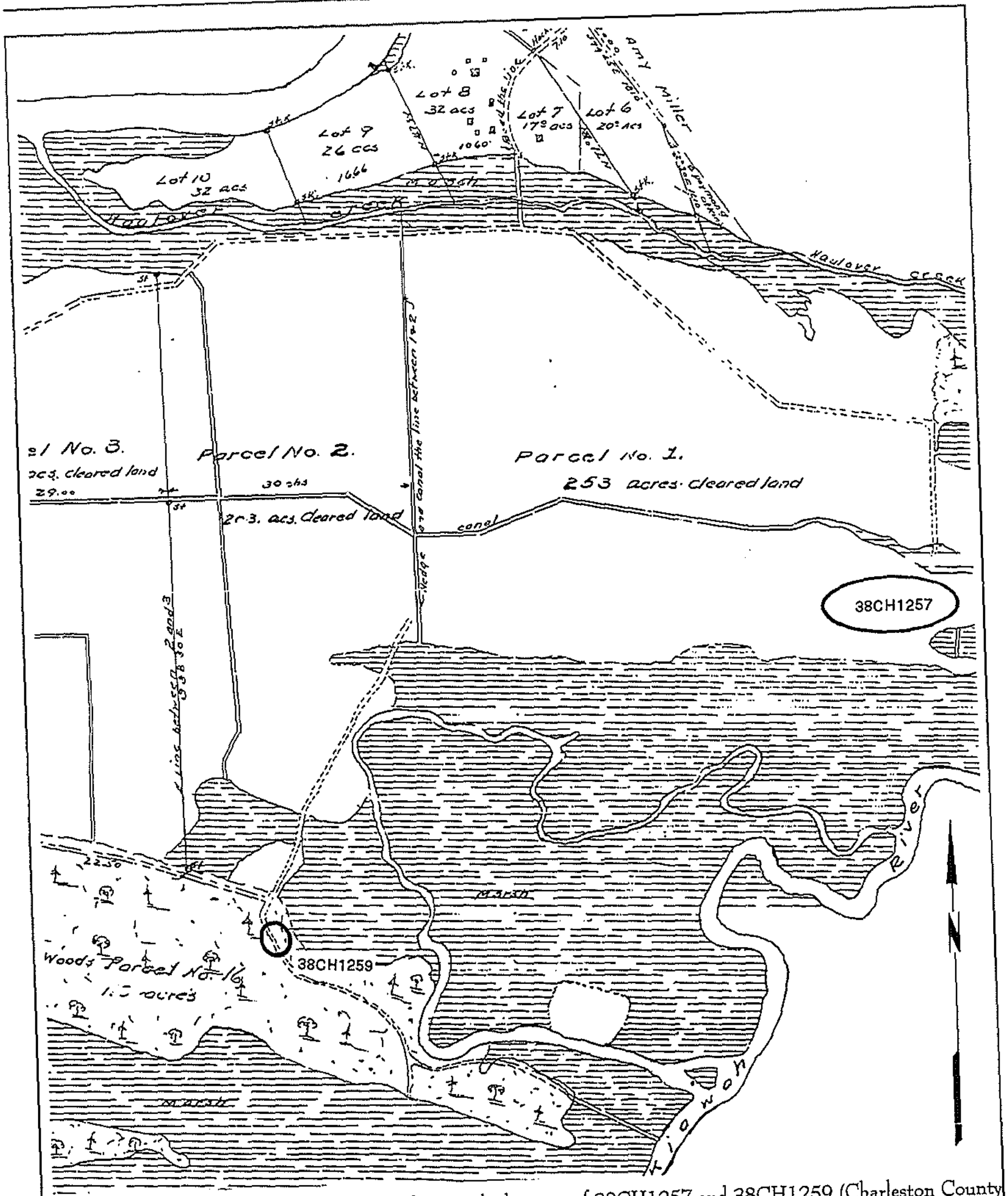

Figure 10. Plat of Seabrook Island in 1930, showing the location of 38CH1257 and 38CH1259 (Charleston County RMC, PB E, page 111).

We know, for example, that Seabrook quickly returned to agricultural production under the direction of the Freedman's Bureau. The first manager was Charles Andell, who assumed management of the farm in 1872 and was succeeded at his death in 1876 by his brother, William Andell. Houses for freedmen were built and it appears that the settlement was spread out with clusters in four different areas — at the location of the antebellum slave settlement, at the confluence of Haulover and Bohicket creeks, along a dirt road in the central portion of the Andell lands, and along another dirt road at the east end of the tract. [9]

The 1919 topographic map of the island (Figure 9) shows the location of these settlements, as well as the "old fort" (used during the Civil War) at Horse Island overlooking the Edisto River. Also shown is a settlement at Jenkins Point.

In 1930, a plat of the property (Figure 10) reveals that 60 years after the Civil War the island's division between plowed and wooded tracts had not changed. The Native American site at 38CH1257 was still in cultivation and the Civil War picket post at 38CH1259 was still in dense woods. Although the bridge linking Kiawah and Seabrook is clearly visible in the 1866 map (Figure 8), it is not shown on later maps, having washed away in 1911 and never replaced (Trinkley 1993:111).

Curation

As part of the routine curation process, updated archaeological site forms for 38CH1257 and 38CH1259 have been completed and filed with the South Carolina Institute of Archaeology and Anthropology. Although much of these sites are in the process of being destroyed by golf course construction, portions of 38CH1257 remain intact on the east side of the Kiawah road.

The field notes, photographic materials, and artifacts resulting from Chicora's investigations at these sites have been curated at the South Carolina Institute of Archaeology and Anthropology under the site numbers 38CH1257 and 38CH1259. The collections have been cleaned and/or conserved as necessary. Further information on conservation practices may be found in a following section of this study. All original records and duplicate copies were provided to the curatorial facility on pH neutral, alkaline buffered paper and the black and white photographic materials were processed to archival permanence standards. Color slides, which are not an archival media, were processed to the best practical standards and have been prepared for permanent curation using archival materials.

[9] Three of these settlements occur on the tract surveyed by Poplin and his colleagues (Poplin et al. 1991). Although all three were initially recommended potentially eligible, by the time of the Memorandum of Agreement only two, 38CH1246 (at the confluence of Bohicket and Haulover creeks) and 38CH1268 (which is also the location of the manager's house), were still considered potentially eligible.

EXCAVATIONS

38CH1257

Introduction

Although the initial study recommended additional surface collection as part of the testing and/or data recovery strategy, it seemed unlikely that surface collections would provide data capable of addressing substantive questions. This was based on the low incidence of recovery from the initial survey and also past experience with very heavily plowed sites (which tend to produce many small sherds which offer little information). Instead, we believed that the best approach at 38CH1257 was to strip several relatively large areas in order to search for features and post holes — an approach which had also been recommended by Poplin and his colleagues (Poplin et al. 1991). This would provide an opportunity to address the research goals previously outlined in a cost-effective manner.

This position was not adopted lightly, since we have frequently resisted efforts to strip sites as a simple solution to a complex problem. In this case, we believed that it was a prudent approach and it would allow access to the underlying subsoil to evaluate the potential for feature recovery. In order to evaluate the site stratigraphy (ensuring that stripping stops at the appropriate level) and to obtain at least a sample of the plowzone cultural materials, we also proposed very limited formal excavations. We recommended that these formal units be limited since the original shovel tests yielded a very low return.

Figure 11. Area of 38CH1257 looking to the west.

Field Methods

At the time of the survey most of the field was fallow, although vegetation was very low and sparse, allowing upwards of 80% surface visibility (Figure 11). The portion closest to the Kiawah road had been planted in grass. In this area visibility was reduced to about 50% at the beginning of the field investigations (but had been reduced to perhaps 10 or 15% by the end of the field work).

An initial pedestrian survey of the field revealed only a small collection of pottery, with almost all of the sherds being well under 1-inch in diameter. Shell was visible throughout the field, but largely fragmented, typically being about ½-inch in size. The

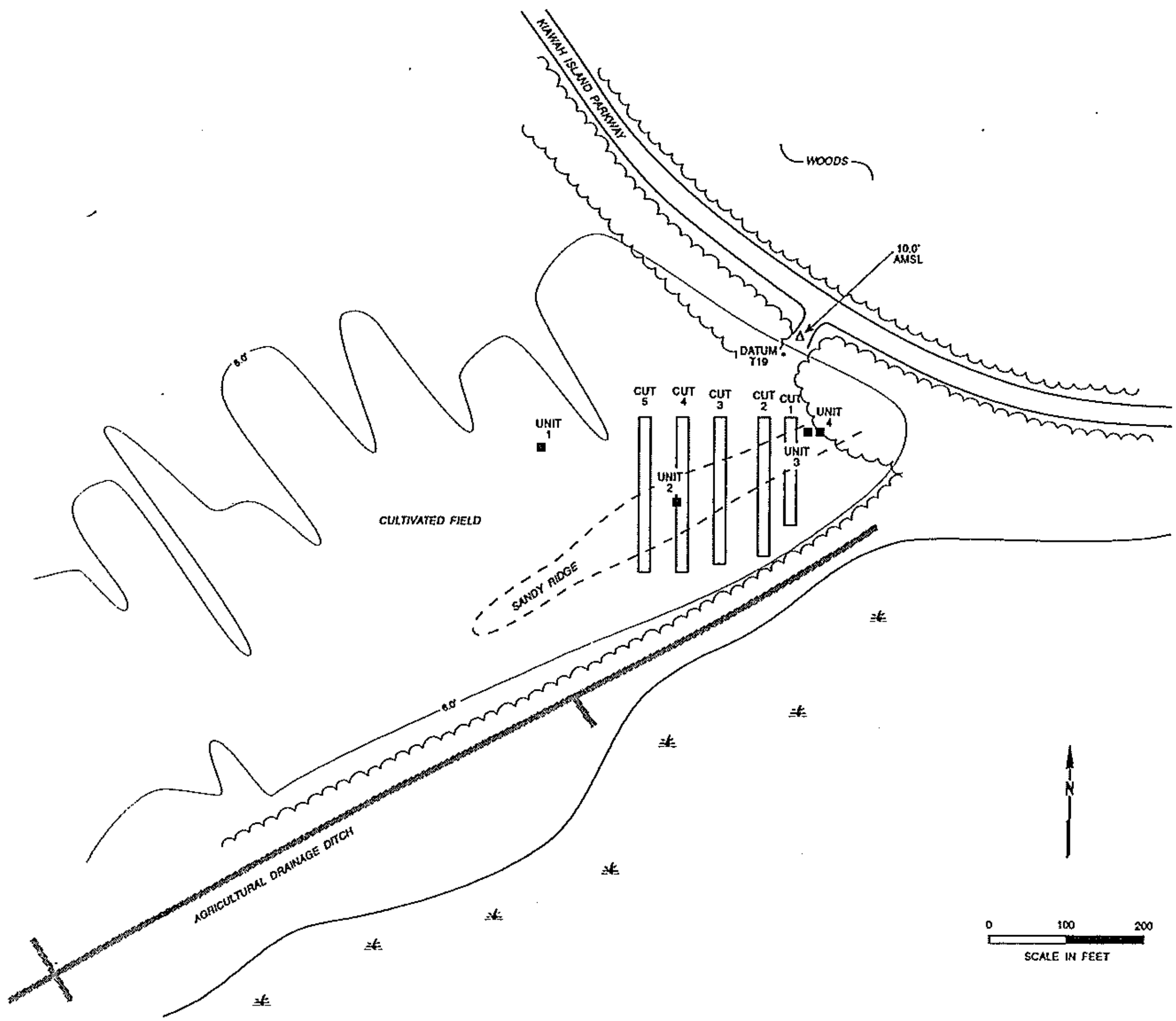

Figure 12. Plan view of excavations and mechanical cuts at 38CH1257.

shell density also appeared to increase toward the northern edge of the field. In other words, this pedestrian survey was able to offer little more information than was available in the original survey report.

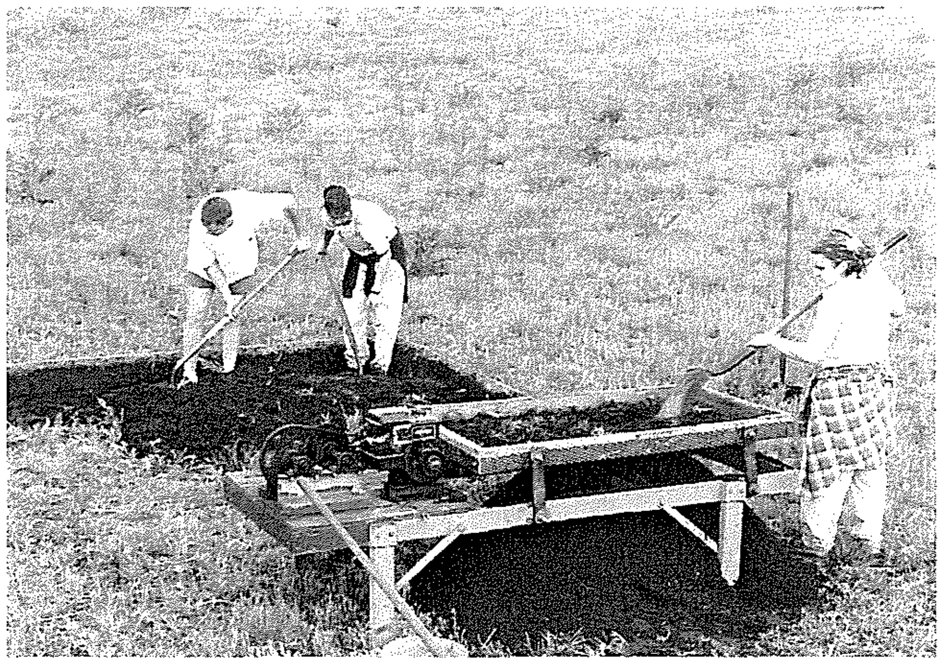
Figure 13. Hand excavation of units at 38CH1257.

The walkover also revealed a very low ridge, about 0.5 to 1.0 foot higher than the surrounding field, running southwest-northeast about 300 feet inland from the marsh edge. While just barely perceptible, this ridge was to be an important topographic feature.

Initially the research design called for the excavation of three to five 5-foot units, concentrated in areas suggested as densest by the original study. This initial survey, however, provided relatively little guidance and the pedestrian survey revealed extensive plowing. We decided to focus on the ridge area, not so much because more materials were found in this area (they weren't), but rather because it seemed like this would have been a prime occupation area based on experience at other sites. The slightly higher topography would have improved soil drainage — which was decidedly poor elsewhere in the field during the period of our fieldwork.

In addition, we decided that 5-foot units were not likely to reveal features or post holes, if they were present, and so decided to increase the unit size to 10-foot squares. A total of four units were laid out.

Unit 1 was situated northwest of the sandy ridge in an area which produced a number of surface finds and which also seemed to relate to a core area of the original Brockington and Associates survey.

Unit 2 was placed on the sand ridge toward the southwestern edge of the portion of the site being explored in this study. The unit was at the interface of the fallow field and grassed area, where a relatively large quantity of shell was observed on the surface.

Units 3 and 4 were both on the sand ridge at the north edge of the field, close to the woods line, in an area which we hoped would exhibit significantly shallower plowing. This was another area which appeared to have relatively dense quantities of shell.

These units were oriented north-south and tied to a permanent point — identified as T19 on the development maps. Vertical control was maintained by reference to a known mean sea level datum at the edge of the Kiawah Island Parkway pavement (Figure 12).

Each unit was excavated in one zone — the plowzone — which we found laying over subsoil. Throughout the work, the plowzone varied from a very dark gray (7.5YR3/1) to a dark brown (7.5YR3/2) loamy sand, while the subsoil was a consistently strong brown (7.5YR5/6) sand or sandy clay. All fill was screened through ¼-inch mesh, with the units cleaned, photographed, and drawn at the base of the plowzone (Figure 13).

After the completion of the formal excavations, we established a series of five cuts approximately 200 feet in length for mechanical stripping. A bulldozer with an 8-foot blade was used to remove the plowzone, which was intermittently piled to one edge or the ends of the cuts. As the dozer stripped the plowzone, archaeologists walked behind the equipment to identify features and post holes. Based on previous work in sandy soils during the summer, we knew that it would be virtually impossible to keep the cuts watered. Consequently, it was essential that features be marked immediately, and cleaned up later.

Cut 1 began in very close proximity to Units 3 and 4 in the northeastern corner of the site. Because of its placement, this cut was only about 170 feet in length and about 8 feet in width. It, like the others, runs north-south. Each successive cut was about 50 feet distant from the last. Cuts 2 through 5, however, were each 16-feet in width and run 190 to 200 feet in length.

We had noticed during the hand excavation that the field east of the sand ridge, toward the marsh edge, was considerably lower in elevation, with the result that storm water ponded in the field. At the time the mechanical cuts were made the field had almost dried, but the night afterwards a storm caused the southern ends of the cuts to flood. Throughout the work we had trouble with the water table, which was very high, frequently being exposed by post hole or feature excavation.

Each marked feature was intended to be cleaned, photographed, and plotted on the site base map — an activity which was carried out without modification (see Figures 13-17). Since we did not have sufficient information to speculate on the density of features prior to beginning the data recovery, our research plan noted that sampling of features might be required. The sampling would be based on feature type (i.e., shell filled pit, organic stained pit, etc.) and, where possible, on temporal period. An effort would be made to obtain a sample of all different types of features present at the site.

Features were to be bisected, with one half being excavated by natural zones. All fill would be dry screened through ⅛-inch. A sample of at least 10 gallons will be collected from features with dark, organic fill for mechanically assisted water flotation. Also routinely collected would be known volumes of shell from the fill, to assist in quantifying the different shellfish present. Soil samples were also to be collected for both pollen and phytolith studies.

As it turned out, features were present in numbers greater than we anticipated, but were not so common that we able to explore all but one. The one feature which was not investigated was first flooded and then was infested by fire ants. After several failed attempts to clean the feature, it was abandoned. Ultimately nine features (eight Native American) were explored.

We stipulated that post holes would typically not be excavated, unless it appeared that some formed a distinct pattern, in which case those would be excavated so their profiles and contents might be compared. As the work progressed, a decision was made to excavate as many of these post holes as possible in order to better understand the temporal period they represented. As a result 49 post holes were excavated in the five cuts (plus two post holes in Unit 1).

Table 3.
Shell Weights (in lbs.) of Test Units

Unit	Shell Weight
1	6
2	46
3	150
4	121

Results of Excavations

The four 10-foot units failed to reveal any prehistoric features, although Unit 1 did produce two post holes. Both were about 0.8 foot in diameter and from 0.6 to 0.7 foot in depth. Shell density increased dramatically as the units were moved onto the sandy ridge and toward the north (Table 3), but otherwise the units were generally unproductive. Artifacts density was low in all four and the majority of the sherds recovered were consistently under 1-inch in diameter — sherds which offer only minimal potential for analysis.

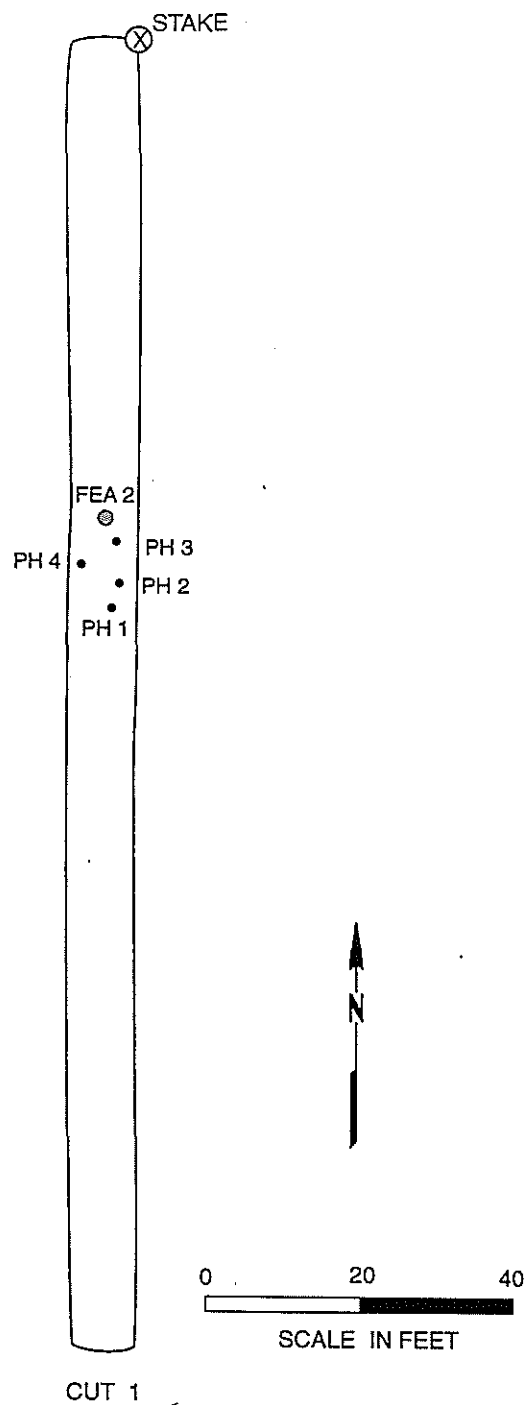

Figure 14. Plan view of mechanical cut 1.

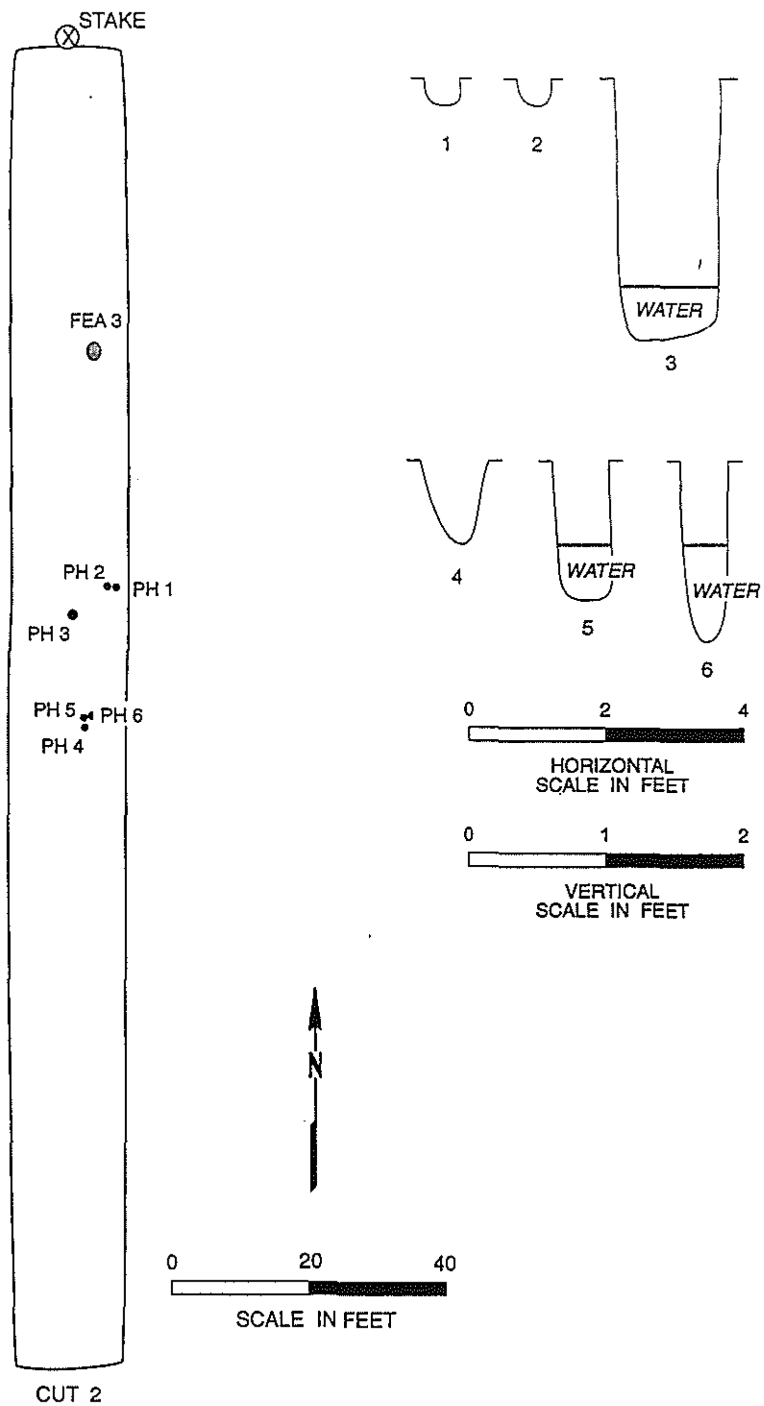

Figure 15. Plan view of mechanical cut 2.

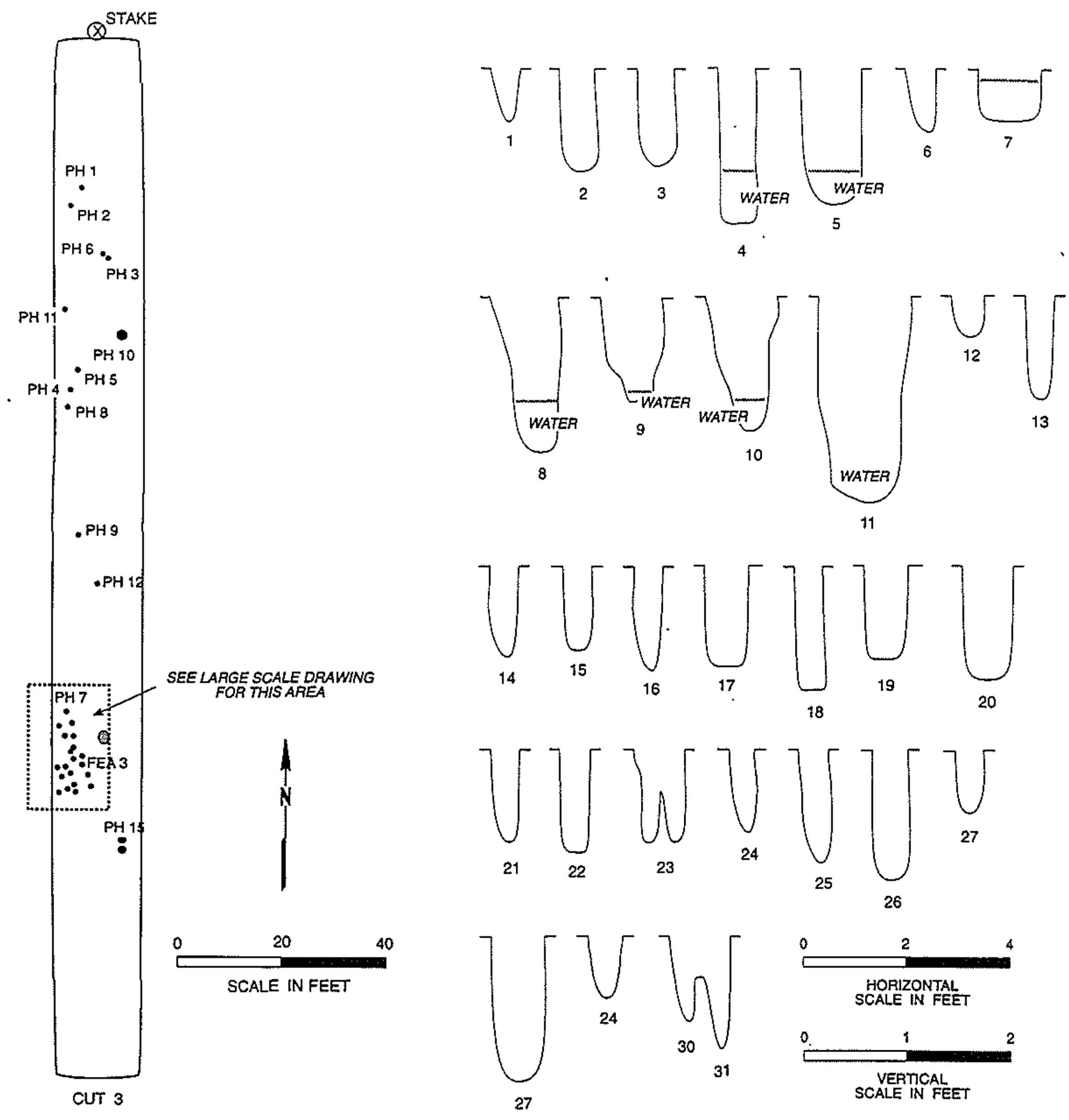

Figure 16. Plan view of mechanical cut 3.

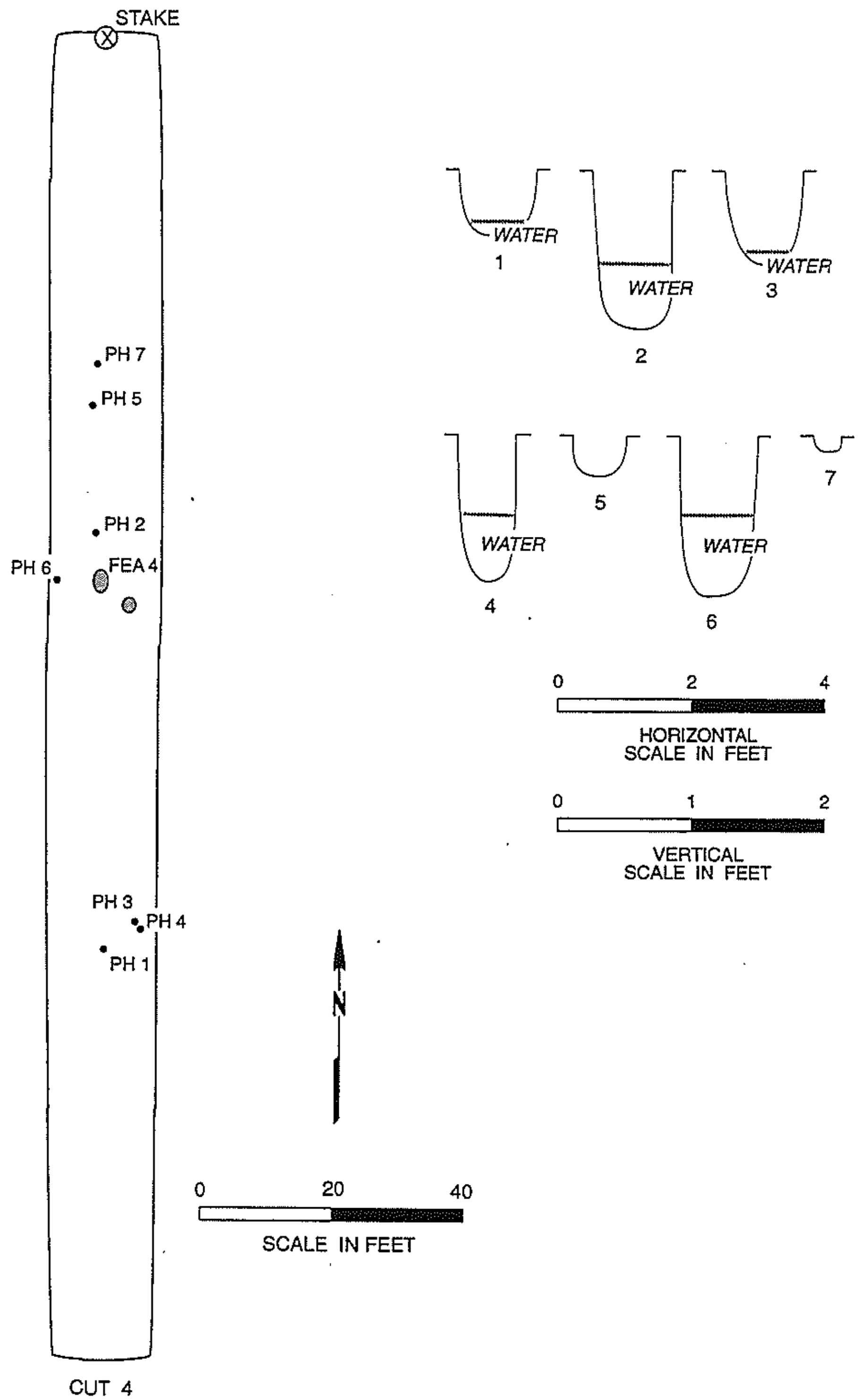

Figure 17. Plan view of mechanical cut 4.

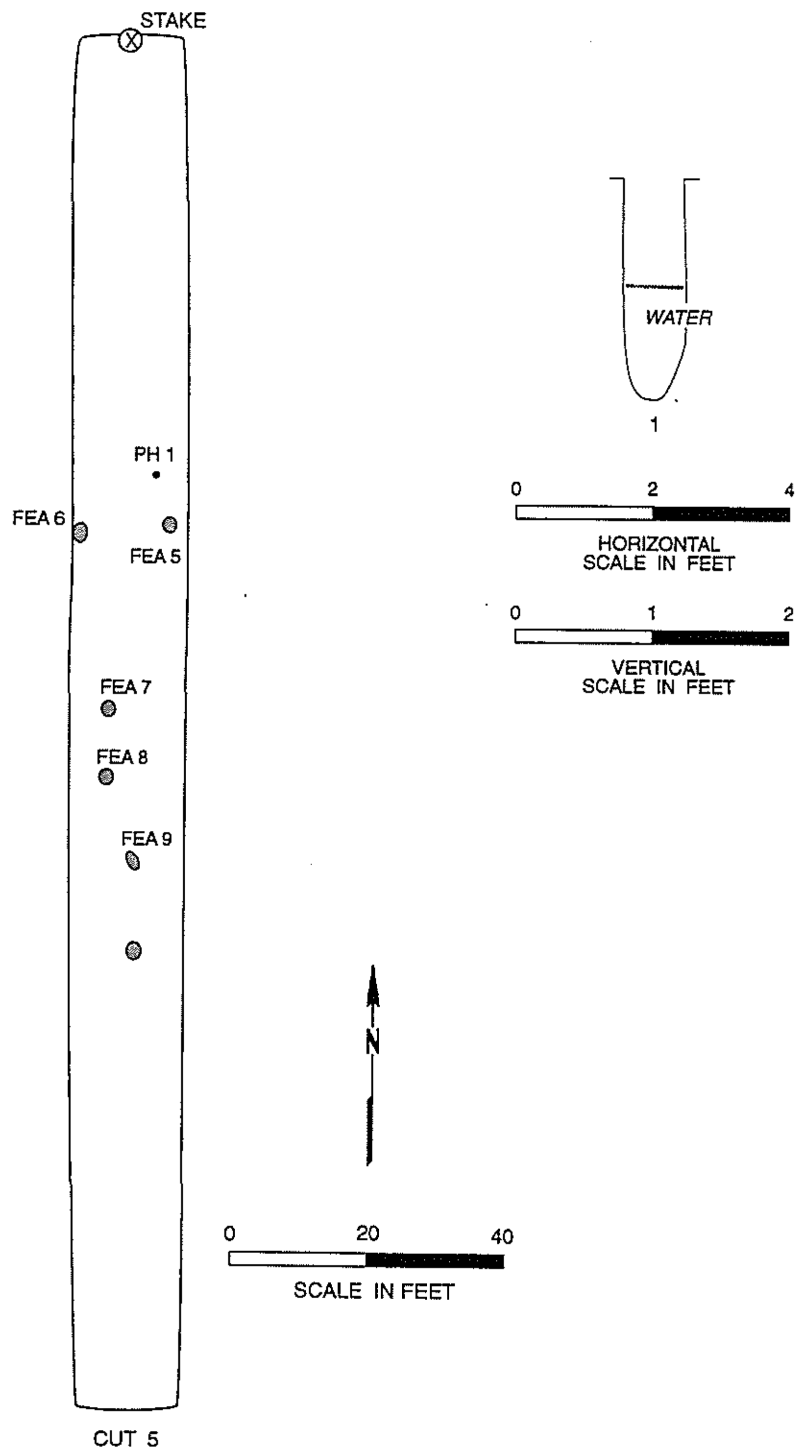

Figure 18. Plan view of mechanical cut 5.


Figure 19. Post hole pattern in cut 3, view to the southwest.

The only square which yielded a feature was Unit 3. At the base of the plowzone a black (10YR2/1) silty sand ditch was found stretching northwest-southeast through the unit. Upon being sampled this was found to represent a probable agricultural ditch running parallel to the woodsline and draining southward into the marsh. Similar ditches are still common in the field and have been consistently maintained. For whatever reason, this ditch was at some time quickly filled (the profile reveals no evidence of lensing or gradual filling).

Unit 3 was also unusual in that it revealed about 0.5 foot of fill — a grayish brown (10YR5/2) fine sand with abundant small shells — had been brought in to this area. Similar fill is found across the tract as road fill and likely represents a beach sand used to raise the farm roads for drainage. It appears that Unit 3 was in an area where this fill was temporarily stored at some time.

Unfortunately, Units 3 and 4 failed to meet our expectation that they might exhibit less plow damage. Plow scars were still numerous and quite distinct at the base of both units and the artifacts continued to be small and eroded. It appears that the entire field has been subjected to uniform, and constant, agricultural activity since at least the 1850s (see Figures 8 and 10).

Post Holes and Features

Virtually all of the post holes and features were situated on the sandy rise. Reference to Figures 14 through 18 reveals how these remains are confined to a swath varying from 20 to 80 feet in width. The 49 post holes recovered during the excavations are profiled in these figures, revealing that most were deep, about 0.8 foot in diameter, with either rounded or pointed bottoms. Artifacts were present, but not common. Charcoal, likewise, was found in several post holes, but was not common.

Post holes are found in numbers far exceeding those found at typical coastal shell middens. In terms of numbers alone, 38CH1257 seems to suggest multiple structures following the sand ridge running parallel to the Kiawah River marsh front. In addition, a portion of one structure (Figures 19 and 20) was clearly recovered from cut 3. In this area the eastern third of a square structure measuring about 14 feet square was recovered. Probably wattle and daub based on the size and placement of posts, portions of the structure were apparently replaced at least once, suggesting that the house was use for perhaps a decade. The pottery recovered from the post holes includes primarily Deptford wares, although the structure itself is far more reminiscent of Mississippian dwellings.

The features included one agricultural trench,

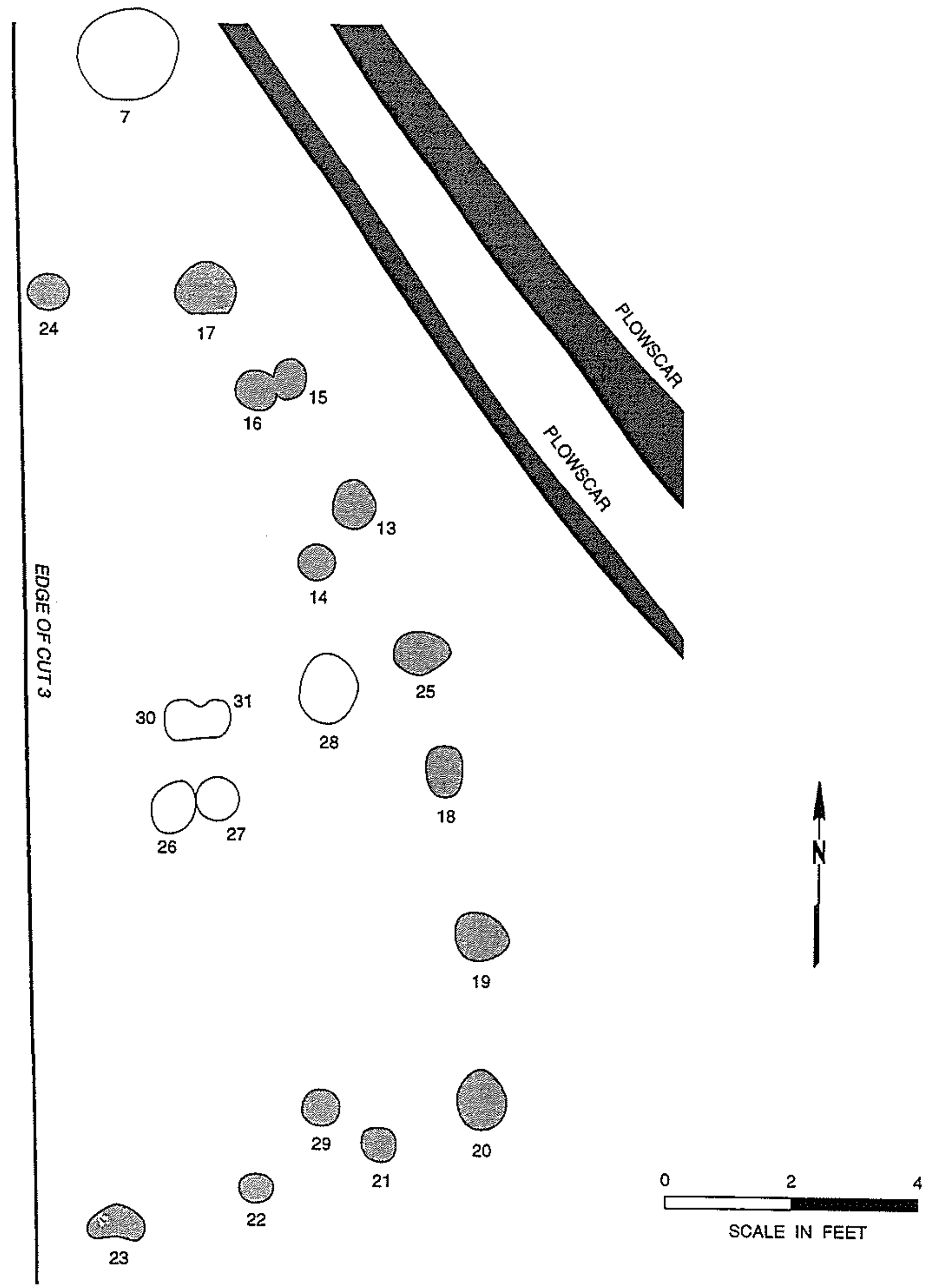

Figure 20. Post hole pattern at the south end of Cut 3.

previously discussed, and eight prehistoric pits, which are briefly discussed here.

Feature 2 was identified in the central portion of Cut 1 and was recognized as a circular black loamy sand stain with only minor amounts of shell. Upon excavation the pit was found to measure about 1.9 by 2.0 feet in diameter and to have a depth of 0.7 foot. The feature had a flat bottom and produced only 4 pounds of shell, including 2 pounds of oyster and 2 pounds of clam, all largely confined to the two concentrations initially observed. The feature consisted of a homogenous black loamy fill.

Feature 3 was found at the north end of Cut 2 and was recognized as an oval of black loamy sand at the base of the stripped Ap soil. Upon excavation the pit was found to measure about 5.2 by 4.1 feet and to have a depth of 1.27 feet. The feature consisted of a homogenous black loamy fill and the pit is basin-shaped with a relatively broad, flat base. No shell was recovered from the feature, although small quantities of bone (primarily large mammal) were recovered. Excavation also revealed a large number of peach pits. Peach is a highly popular cultigen and are found only in historic contexts — since the Indians received the peach from early European settlers or explores, most likely the Spanish. Since they have a minimum fruit bearing age of 4 to 6 years, several researchers have argued that recovery of peach remains are an excellent indicator of highly settled village life (see, for example, Wilson 1977:83).

Feature 4 was identified in the central portion of Cut 3, recognized by a concentration of oyster shell in the black loamy sand matrix. The west half was removed first, revealing lensed dense shell and black loam, followed by lenses of tan to light brown sand, probably representing mixing at the base of the pit. The west half of the feature produced 30 pounds of shell, including 24 pounds of oyster, 4 pounds of clam, and one pound each of periwinkle, whelk, and cockle. The eastern half was excavated in two zone. Zone 1 included the dense shell lens, which produced 98 pounds of shell. Again oyster was most abundant, yielding 73 pounds. Clam followed, producing 20 pounds. Whelk contributed 2.5 pounds. The remainder consisted of periwinkle, cockle, and stout tagelus. Zone 2 was the underlying sand, which included 4 pounds of oyster, 2 pounds of clam, and a trace of whelk and periwinkle. The feature measured about 4 by 2 feet and was 1.93 feet in depth. Like many shellfish steaming pits, its sides gradually slope down to the base, which is relatively flat.

Feature 5 was found at the north end of Cut 5 and was recognized by the black loam core and a ring of dense shell around the edges. Upon excavation the feature measured about 2.5 by 2.9 feet and was 1.3 feet in depth. The concentrations of shell were largely superficial, yielding only 13 pounds of shell, including 8 pounds of oyster, 5 pounds of whelk, and a trace of clam. The feature had straight sides and a flat bottom. The profile revealed that the central core was much darker than the sides.

Feature 6 was found at the north end of Cut 5 and was identified based on the fill — a black loamy sand. This feature extended westward into the side of the cut, so that only 2.5 feet of the width was exposed, although the total length was 3.5 feet. Only the eastern half of the feature was excavated, revealing a depth of 1.48 feet and suggesting that the pit may been relatively broad and shallow. The fill consisted of a homogenous black loam and no shell was recovered.

Feature 7 was found in the central portion of Cut 5 and was recognized as a smear of shell and black loam which, when cleaned up, consisted of a small pit measuring about 1.85 by 1.5 feet in diameter. A total of 6.5 pounds of shell was recovered from the pit, including 2 pounds of whelk, 1.5 pounds of oyster, 1.5 pounds of clam, and 1.5 pounds of stout tagelus. Also present was a small quantity of animal bone. During the excavation this feature produced a partial vessel, broken and collapsed inward. The feature was bowl shaped, with relatively straight sides and a rounded bottom.

Feature 8, also found in the central portion of Cut 5, is almost identical to Feature 7. It was recognized as a smear of black loam, which upon excavation, produced a pit measuring about 1.5 feet in diameter, with a depth of 1.58 feet. The profile was similar to Feature 7, although the pit was deeper. The only appreciable difference is that Feature 8 yielded a larger quantity of shell. The south half produced 18.5

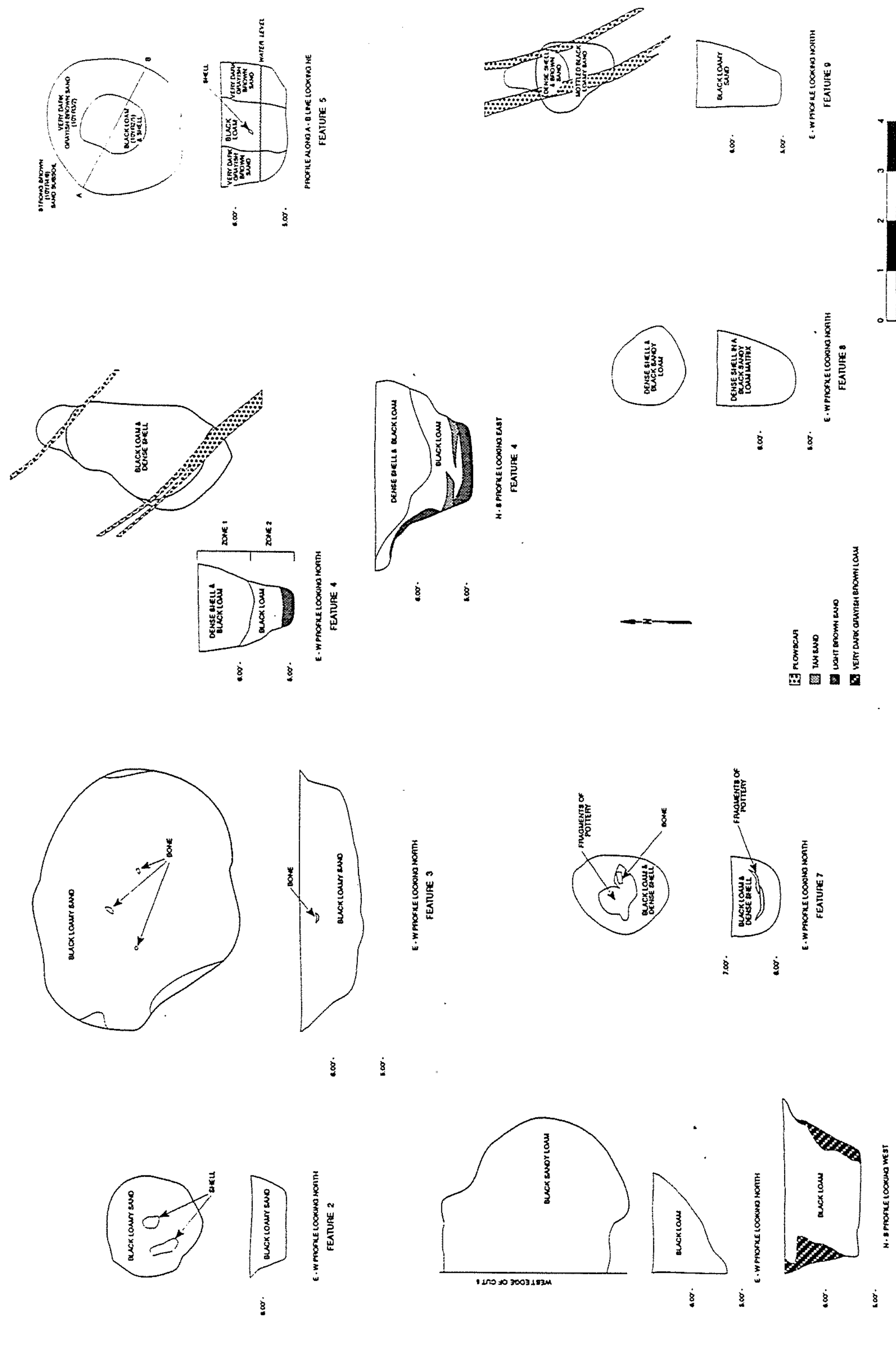

Figure 21. Features identified at 38CH1257.

pounds, including 16 pounds of oyster, 2 pounds of clam, and 0.5 pound of periwinkles. The north half yielded 11 pounds of oyster, one pound of clam, one pound of periwinkles, and a trace of stout tagelus.

Feature 9, at the south end of Cut 5, measured about 1.6 by 1.3 feet and had a depth of 1.69 feet. The fill was primarily black loamy sand, although the north half yielded 4.25 pounds of shell, including 3 pounds of oyster, one pound of clam, and 0.25 pound of periwinkles. All of the fill was subjected to water flotation. The feature has a profile very similar to Feature 8, with fairly straight sides and a slightly flattened base.

These features are dramatically different from those typically found at coastal shell middens, where shellfish steaming pits are the rule. Excavations at 38BU861, a Middle to Late Woodland shell midden on Hilton Head Island, produced pits that are uniformly characterized by shellfish, primarily oyster (Trinkley and Adams 1994:49-53). At 38CH1219, a Deptford shell midden on Kiawah, all of the recovered features consisted of shellfish steaming pits, dominated by oyster or whelk and consisting of broad, shallow basins (Trinkley et al. 1995:32-36). In fact, the features from 38CH1257 are much more representative of those found at more interior prehistoric and protohistoric villages (see, for example, Wilson's 1977 characterization of feature fills).

The black loam found in the features is suggestive of high levels of organic material, especially charcoal. This is generally confirmed by the floats. Nevertheless, there is no evidence that the fill is the result of fires being built in the pits and them being covered over. Instead, it appears that most represent "trash" pits — pits excavated for the purpose of disposing of debris from fires and food preparation. None of the pits appear to have been left open for long periods — there is, for example, no evidence of water lensing as occurs when a pit is left open during heavy rains. The admixture of several types of pottery is likely the result of either excavating the pits through earlier levels or cleaning up surface debris and picking up earlier materials in the trash.

38CH1259

Introduction

Poplin et al. recommended that data recovery at this site include an "intensive controlled metal detector survey . . . followed by the excavation of one to two formal . . . units in areas where artifact concentrations were greatest" (Poplin et al. 1991:64). Our research at this site closely follows those recommendations. Substantive changes included our decision to reduce the size the metal detector sampling blocks from up to 30 feet square to 25 by 25 feet. We felt that this would allow greater refinement and reduce operator fatigue. We did intend to limited the amount of formal excavation, since we had no clear information from the survey report that this would be productive (i.e., there are no positive shovel tests and no indication that the metal detector finds evidence any clustering since they were not plotted).

Field Methods

The first task at this site was to ensure easy access and allow the free operation of the metal detector. The site was situated in a wooded area with pine and mixed hardwood. Although there were no recorded above grade features, we still thought that the most sensitive clearing possible was the best approach and were able to arrange for the entire site area to be hand cleared. This resulted in virtually no damage to the surface layer, but completely opened the site (Figure 22).

Once the clearing was complete we established a series of approximately 51 25-foot square blocks for metal detecting. This grid was oriented north-south and horizontal control was maintained through the use of a rebar with an aluminum cap established in the access road. The grid was a modified Chicora system, with each point designed in relationship to a 0R0 point off the site area. Thus, 200R100 (where the site datum was established) is 200 feet north of the 0R0 point and 100 feet right (or east). Each grid square was designed by its southeast corner. Vertical control was maintained by use of an assumed elevation point, again the 200R100 datum, which was assigned the elevation of 10 feet.

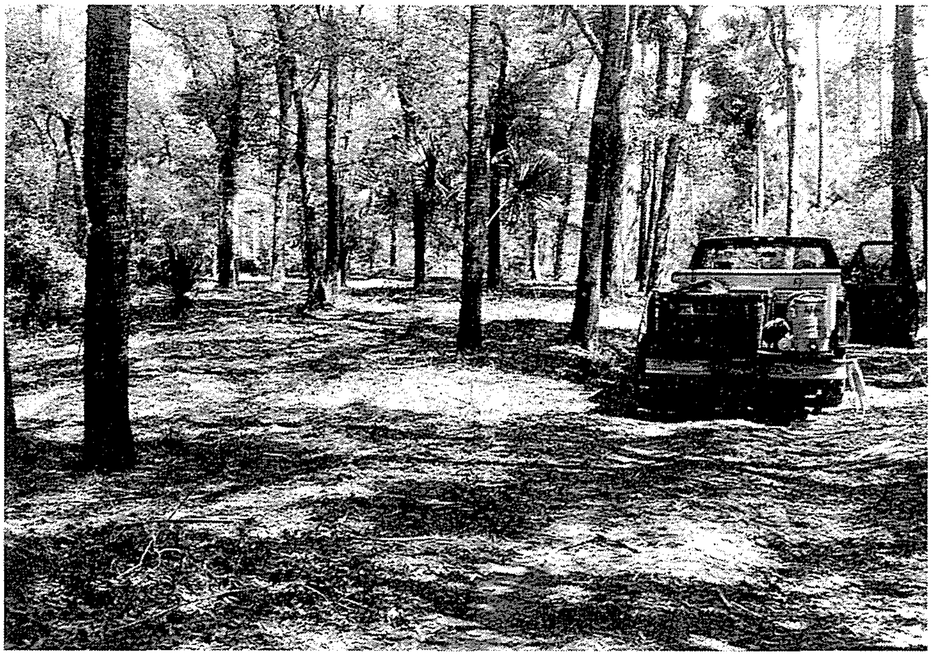

Figure 22. Site 38CH1259 after hand clearing, looking to the southeast.

We used a Tesoro Bandido II™ with an 8-inch concentric coal (electromagnetic type operating at 10KHz). The instrument has the capability to operate in either an all metal mode or discriminate mode (which eliminates ferrous metal response). The all metal mode is the industry standard VFL type which does not require motion of the search coil for proper operation. The discriminate mode is based on motion of the search coil, but allows control over the detector's response to ferrous metals.

We initially proposed to use a detector in both an all metal mode and a non-ferrous mode. The first survey would be for non-ferrous metals, such as lead and brass. Each "hit" would be flagged using plastic stake pin flags, allowing each of these potential artifacts to be mapped and then recovered. Afterwards, an all-metal mode survey would be conducted, although the individual "hits" would only be tabulated by grid designation and not flagged. We intended, however, to recover a sample of these remains to determine what they represented. We anticipated (based on prior experience at Civil War sites on both Kiawah and James Island) that the bulk would be nails or strap metal. While these may be excellent indicators of the site core, we did not believe that they needed special recovery.

Combined, the data from the metal detector survey would be used to guide the placement of at least two 10-foot units — as had been recommended by Poplin and his colleagues. These might be excavated as a block or may be dispersed. Either way the goal would be to obtain a more representative collection of artifacts, including any faunal remains that might be present. The formal excavation units would also provide an opportunity to determine if features are present.

An initial run over the entire site failed to produce any significant hits in the discriminate mode, which caused considerable concern. An effort was made to re-check the site location and it was during this effort that we discovered the original metal detector survey failed to record the location of the artifacts excavated as hits. Based on the measurements from features such as roads, the UTM coordinates, and the sketch map, we were convinced that our work was in the same location as the original survey. We also identified several depressions, which appeared to represent old looting holes.

Based on the very low incidence of non-ferrous items, we decided to abandoned the initial metal detector survey and instead use an all-metals survey. Even this approach, however, produced the identification of only 19 "hits." Each of these was flagged, plotted, and excavated.

The bulk of these hits were relatively modern (although clearly very recent debris, such as aluminum cans, were not numbered) and included iron farm parts

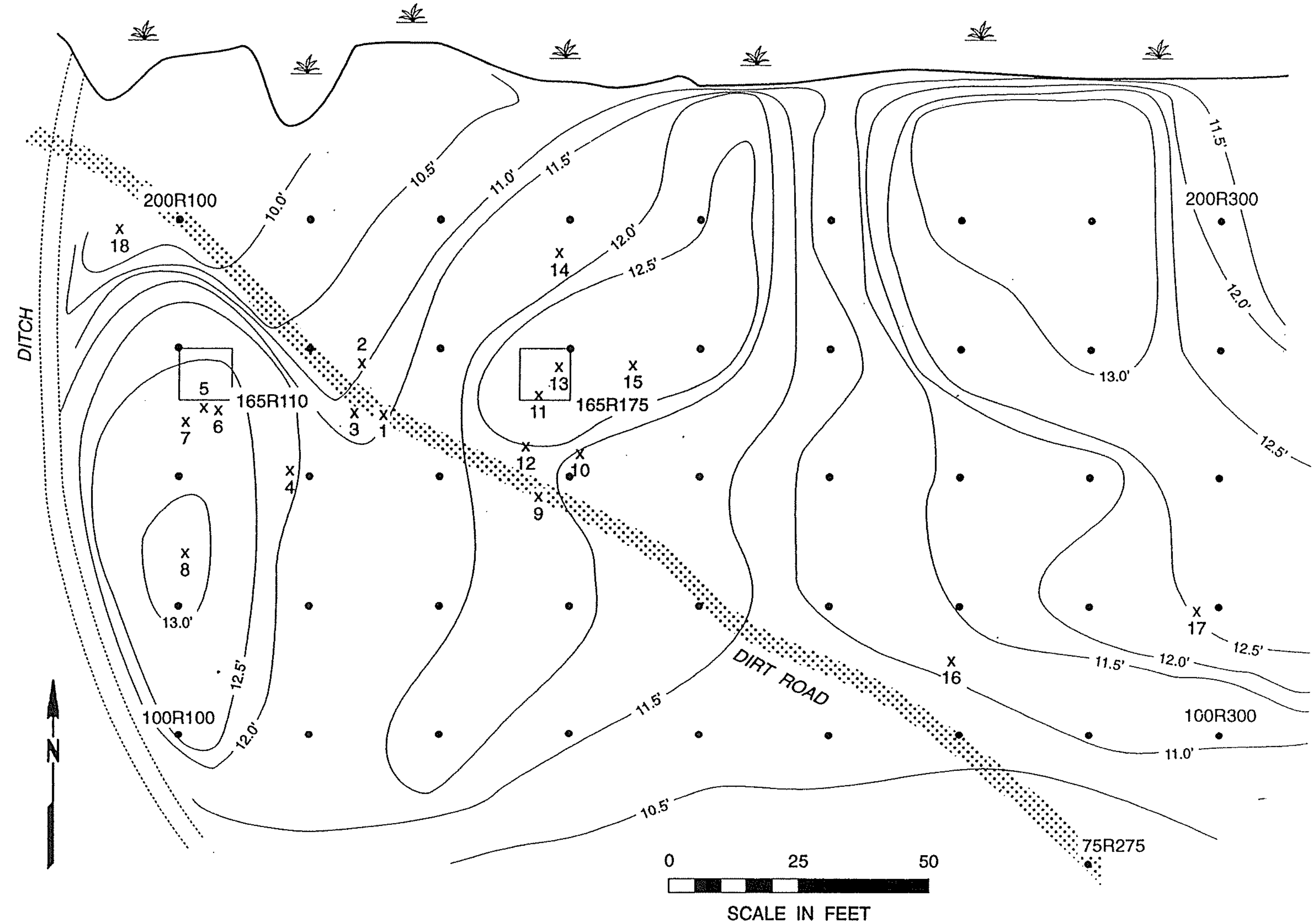

Figure 23. Map of 38CH1259 showing metal detector "hits," and excavation units.

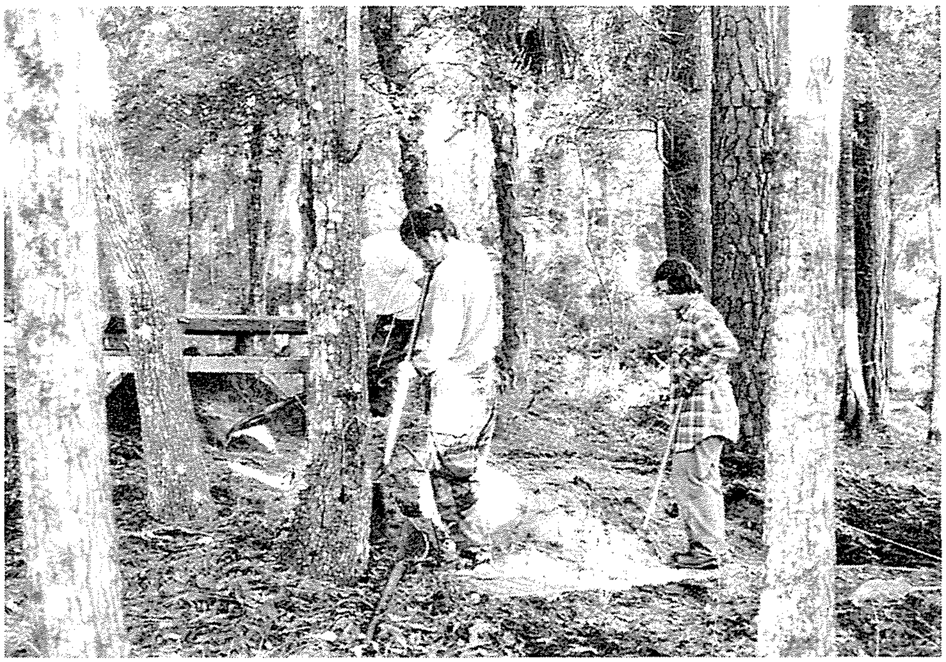

Figure 24. Excavation of a unit at 38CH1259.

highest elevation points, in areas of generally higher recovery rates. One was placed southwest of the road, at 165R110, while the other was to the northeast of the road, at 165R175.

These formal units were excavated by hand with the fill screened through ¼-inch mesh using a mechanical screen. We identified an A horizon of light brownish gray (10YR6/2) sand about 0.6 foot in depth over a pale yellow (2.5YR7/4) sand subsoil. There was no evidence of plowscars, so it is unlikely that this area has ever been cultivated.

and unidentifiable metal fragments (which might or might not date to the site's use as picket post). No Civil War military artifacts were recovered. The only items which *may* date from the picket post are several fragments of a brass pocket knife (perhaps matching those previously recovered b Poplin) and a glass stopper found in a hole with a metal fragment. This stopper is characteristic of those used on alcohol bottles of the mid-nineteenth century.

With almost no materials recovered that could, unequivocally, be associated with the picket post, two 10-foot units were placed on the

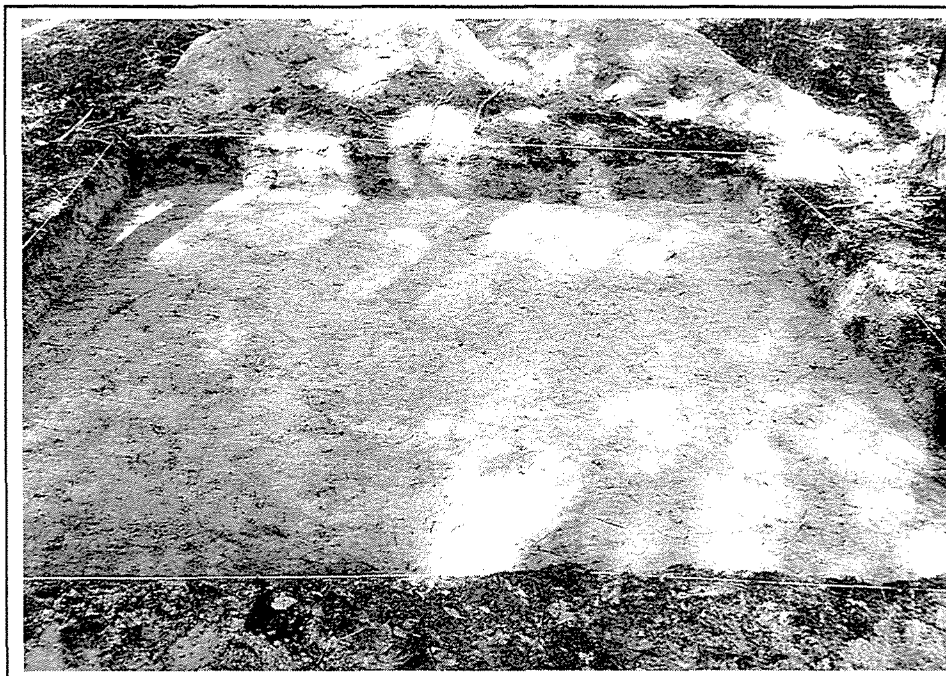

Figure 25. Unit 165R175, base of Zone 1, view to the north.

At the base of the excavations the unit was troweled, photographed in color slides and black and white, and drawn. No features were identified in either unit. In fact, neither unit produced any artifacts. It appears that all evidence of the picket post was collected during the initial, undocumented, metal detector survey or during various collecting efforts by local relic hunters.

ANALYSIS OF COLLECTIONS

38CH1257

In spite of the large amount of square footage opened during these investigations the collection suitable for analysis is exceedingly small. This is, of course, at least partially the result of mechanized stripping — although a large area is opened quickly, all of the cultural remains which might be present in the plowzone are discarded with the spoil. What is left for analysis includes materials picked up off the stripped surface and materials found in the excavation of features and post holes. Another factor in the low density at the site is the intensity of the plowing. We are convinced that the site originally consisted of a series of more or less discrete occupation areas which have become blurred together by nearly 200 years of cultivation. That plowing also created a very large number of very small sherds.

The collections include at least small quantities of Stallings, Thom's Creek, Savannah wares, associated with at least two varieties of complicated stamped pottery. However, the majority of the pottery recovered from the site is Deptford ware, principally cord marked and check stamped. This range pretty well parallels that reported by Poplin and his colleagues, including Stallings, Deptford, Wilmington, Hanover, McClellanville, Santee, Savannah, and complicated stamped (Poplin et al. 1991:60).

In fact, the only significant difference is that we failed to encounter any Wilmington or Hanover wares. Although we did identify several sherds with what might be considered grog inclusions, the amount of included material seems so low that we were reluctant to assign it much credibility. The small assemblage also weighed against singling this material out for special treatment.

Another different — although only in terminology — is that we have elected to assign all of the cord marked, fabric impressed, and simple stamped wares to the Deptford type. Thus, Poplin's McClellanville Cord Marked sherds become our Deptford Cord Marked and his Santee Simple Stamped becomes our Deptford Simple Stamped. We don't mean for this to be taken as too big of a typological statement — we aren't repudiating the McClellanville or Santee types. Rather, in a small collection dominated by small sherds, we simply aren't prepared to make very fine typological divisions. Table 4 lists the materials recovered from these excavations.

The Deptford Pottery

Deptford was the most common identifiable pottery recovered from the excavations, accounting for 88.2% of the collection (447 of 507 sherds). The assemblage is dominated by cord marked pottery (accounting for 63.8%, n=285). It is followed by simple stamped (16.3%, n=73), check stamped (9.6%, n=43), and plain (7.4%, n=33). Very small quantities of fabric impressed and incised (frequently associated with the simple stamped motif) are also found.

The Deptford wares exhibit a paste which varies from moderate amounts of fine to medium sand to that dominated by fine sand. Most of the pottery has a medium texture, with relatively few that might be classified as coarse. Just as DePratter (1979:123) notes for the Georgia Deptford, this pottery occasionally has a red film on primarily the interior of the sherd (most often cord marked specimens), although it is also found, albeit rarely, on the exterior (typically on plain wares). Like the Georgia collection this coloring doesn't appear to represent an actual film, but rather is the result of firing.

Interior finishing is typically careless, with the surface having a sandy feel. There are, however, some Deptford sherds which exhibit shell scraping identical to that typically associated with Thom's Creek pottery (Trinkley 1976:Plate 8G). This suggests a continuum of ceramic technology through the Thom's Creek, Refuge, and Deptford potters.

Table 4.
Pottery Recovered from 38CH1257

Pottery	Units				Cuts					Cut 1 PH			Cut 2 PH			
	1	2	3	4	1	2	3	4	5	2	3	4	1	3	4	5
Stallings Plain						8	1									
Thom's Creek RP				3						1						
Deptford Plain							2									
Deptford CM	8	26	58	34	1	4	3	19		1	2	3	1	1		
Deptford CS				1				3					2			
Deptford SS		4	4	1						1						
Deptford FI			4													
Deptford Incised		2														
Deptford UID																
Savannah Plain			4													
Savannah CM										1						
Savannah CS		1	2													
Savannah Comp		2	4													
Charleston Comp	1		4	3	2											
Charleston rp		3														
Charleston seg rim																
Ashley Comp		1	1	2										1		
Ashley Burnished																
Ashley Incised																
small sherds	48	239	212	170	1	2	7	2	2			2		6	3	2

Pottery	Cut 3 PH																
	1	2	3	6	7	9	10	11	13	14	17	18	20	21	23	26	28
Stallings Plain																	
Thom's Creek RP						1											
Deptford Plain							1		1								
Deptford CM	2		5			1	3	3			1						4
Deptford CS			1					1									
Deptford SS			3	1	1			2	1				1				
Deptford FI																	
Deptford Incised																	
Deptford UID																	
Savannah Plain																	
Savannah CM																	
Savannah CS																	
Savannah Comp																	
Charleston Comp																	
Charleston rp																	
Charleston seg rim																	
Ashley Comp																1	
Ashley Burnished																	
Ashley Incised																	
small sherds		1	3	4	1		4	16		1	1	1		1	4	1	2

Pottery	Cut 4PH						Cut 5		Features								Surface	Totals
	1	2	3	4	6	7	1	1	2	3	4	5	6	7	8	9		
Stallings Plain																		9
Thom's Creek RP																		5
Deptford Plain	1						1	2	3	5	13				1	2	1	33
Deptford CM		4	1		1	1	1		7	17	46	6	7	3	6	5		285
Deptford CS								1		2	13	4	1	13		1		43
Deptford SS									2	2	8	1	3	33	1	3		73
Deptford FI																		4
Deptford Incised														1				3
Deptford UID														5	1			6
Savannah Plain																		4
Savannah CM																		1
Savannah CS																		3
Savannah Comp																		6
Charleston Comp				2				1		3								16
Charleston rp																		3
Charleston seg rim										1								1
Ashley Comp										2							1	9
Ashley Burnished										1								1
Ashley Incised										2								2
small sherds	2	3	1					8	3	36	102	6	22	55	19	4	7	1002

RP = Reed Punctate; CM = Cord Marked; CS = Check Stamped; SS = Simple Stamped; FI = Fabric Impressed; UID = unidentified
Comp = Complicated Stamped; rp = reed punctates at rim; seg rim = segmented rim applique

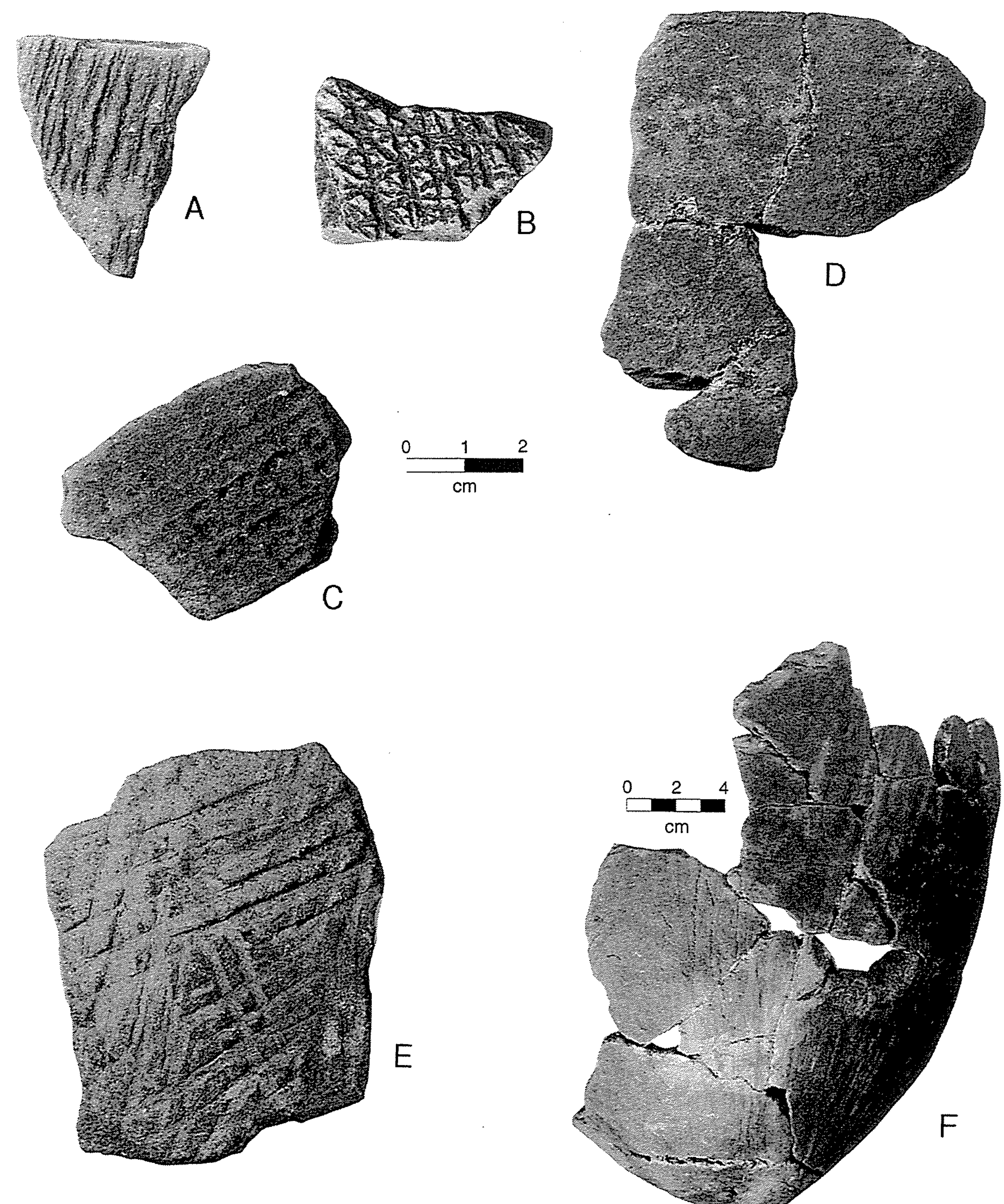

Figure 26. Deptford pottery from 38CH1257. A-B, Deptford Cord Marked (A contains small limestone bits); C-D, Deptford Check Stamped; E, Deptford Simple Stamped; F, partially reconstructed Deptforf Simple Stamped vessel, with incising at rim.

Unlike the Georgia Deptford cords, which DePratter (1979:126) characterizes as "large and distinct," the 38CH1257 assemblage reveals considerable variability. It may be that this is an indication of several different wares being subsumed under the Deptford heading.

Considerable early discussion of the cord marked problem was provided by Anderson and his colleagues (Anderson et al. 1982) as a result of their work at Mattassee Lake. There the cord marked was characterized as Cape Fear (following South's very early type description) and it exhibited the same range of cordage variation we see on Seabrook Island. Both thin, tightly woven cords and much larger, loosely woven cords were found. There is equal variation in application, with some sherds exhibiting a fairly regular application of the paddle so that the cords are perpendicular to the rim, while other sherds reveal cross cord-marked stamping.

Looking back over the past 40 years relatively little progress has been made on untangling the problems associated with the coastal cord marked wares. This doesn't seem to be the result of archaeologist's being unwilling to address the problem — a variety of possible solutions have been proposed. None, however, have received more than passing notice. It seems far more likely that the unwillingness to adopt any of the "improved" approaches is associated with our inability to provide improved chronological controls. Many of the sites being investigated are multi-component, with evidence of periodic, often repeated, occupation stretching over a thousand or more years. Under such circumstances it has been impossible to achieve any convincing chronological control. At those sites with far shorter occupation episodes, such as shell middens, there has still been the problem of repeated occupations, or perhaps worse, very small assemblages. Often the problem of small samples has been exacerbated by archaeologists failing to provide clear descriptions of the assemblages.

As a consequence, collections such as we see at 38CH1257 seem hopelessly muddled. Intuitively we suggest that multiple "types" are present in the collection — although we cannot begin to "tease apart" the different strands. As a result, we fall back on the Deptford type, and lump all of the materials together.

There are seven sherds classified as Deptford Cord Marked, and one sherd classified as Deptford Plain, which include abundant amounts of limestone as a paste inclusion. In some the white limestone is still in place, in others it has been leached out and the only evidence of it is the "hole temper," or empty cavities where it was originally incorporated in the paste. This material is identical to the Wando Series (Adams et al. 1993:65). In addition to the temper, one sherd was identified with the classic thinned and rounded lip initially recovered with the Wando materials. The question, however, remains whether these represent a distinct series, a type-variety of Deptford, or perhaps only an occasional use of a clay source containing small limestone inclusions. For this reason we have included these sherds with the Deptford materials at this site, where they account for about 1.8% of the Deptford assemblage.[1]

A final attribute of the Deptford Cord Marked worth mentioning is that four of the specimens (representing only 1.4% of the collection) evidence exterior sooting. This is consistent with the use of the vessels over a fire.

In most respects of temper and paste the simple stamped wares are identical to the cord marked specimens. Temper again varies from moderate amounts of fine to medium sand to what seems like abundant sand. The stamping itself varies from very fine — almost cord like, but without any perceptible twist — to broad impressions reminiscent of thongs. The pottery shows exactly the same range of variation revealed by both Anderson's Santee Series (Anderson et al. 1982:Figure 88) and the McClellanville Series (Trinkley 1981a:Plate 4). There are also some similarities to DePratter's (1979:Figure 63) Refuge Simple Stamped. The primary distinction between the Santee Series and the material from 38CH1257 is the same that was noted between the Santee and McClellanville wares — our materials lack the excurvate

[1] They could, however, be easily separated and are found in Cut 4 PH3 (1 sherd); Feature 4, E½ (4 sherds); Feature 8, S½ (2 sherds); and Feature 8, N½ (1 sherd).

Table 5.
Proportion of Deptford Pottery Types Recovered from Features 4 - 9

Fea	CM	CS	SS	Total #
4	68.7	19.4	11.9	67
5	54.5	36.4	9.1	11
6	63.6	9.1	27.3	11
7	6.1	26.5	67.4	49
9	55.6	11.1	33.3	9

CM = cord marked, CS = check stamped, SS = simple stamped

rims and rim stamping. Whether these are regional distinctions, evidence of the type-variety distinction suggested by Anderson, or completely different "types" is impossible to argue since the collection from 38CH1257 is so small and lacks any well defined temporal placement.

The remaining Deptford wares fail to reveal any unusual features. What is perhaps of interest is that fabric impressing exhibits such a low occurrence at 38CH1257. It was not found in any of the features and was recovered in only one of the cuts. It seems to have been a very insignificant surface treatment.

The Deptford pottery is best represented in feature contexts and we believe that seven of the eight prehistoric features (Features 2, 4-9) date to this period. In five of these eight features cord marked, simple stamped, and check stamped pottery co-occur, although three distinct proportions appear to occur (see Table 5). In four of the five features cord marking is dominant, with the fifth feature being dominated by simple stamping (most of which was derived from one partially reconstructible vessel. Check stamping is the second most prevalent pottery in three of the five features.

When compared to the Deptford pottery recovered from 38CH1219 on nearby Kiawah there are some immediate differences. For example, although the Deptford pottery at 38CH1257 is not really abundant, only 69 Deptford sherds were recovered from the Kiawah shell midden excavations (Trinkley et al. 1995). In addition, at the Kiawah midden 72.5% of the collection consisted of cord marked sherds, with only seven check stamped and three simple stamped specimens present. The proportion of these motifs from the Kiawah shell midden is noticeably dissimilar to that found at 38CH1257. Also noticeably absent from the Seabrook Island collection is any St. Catherines pottery, which accounted for about a quarter of the pottery at 38CH1219.

The Savannah Pottery

We are very skeptical of the Savannah wares present at this site. Reference to Table 4 reveals that all of the 14 sherds classified as Savannah are from two of the four units, plus a post hole in one cut. Although the sherds appear to fit the definition of Savannah wares, we can't help but wonder if they may represent unusual specimens of other wares on the site. For example, what we have identified as Savannah Cord Marked pottery does possess a smoother interior finish than is seen in the Deptford wares, but the one example is hardly convincing. Moreover, there is relatively fine cordage, sometimes cross stamped, in the Deptford wares. Likewise, the six specimens of Savannah Complicated Stamped pottery appear to fit the classic definition. They are grit tempered (medium sand) and do have curvilinear stamps. They also have simple rims. But again the same is small and our knowledge of local variation is very limited.

The Charleston Series

The term "Charleston Series" has been chosen over the more commonly used Pee Dee or Irene types for two reasons. First, since we have decided to call the late complicated stamped wares Ashley (see discussion below), using Charleston keeps us consistent with the terms suggested by South (1973). Second, since the Charleston series has never been described in any detail, we can use the term with relatively few preconceptions and even less typological baggage. We were forced to abandon the use of the phase designations offered by DePratter and Judge (1986) since we did not have adequate sample sizes to apply their sorting criteria.

Moreover, since only 14 sherds of this pottery was recovered in the collections, its actual designation may not be terribly important. In fact, the pottery is not found in any of the prehistoric features and was recovered from only one post hole (post hole 4 in Cut 4). The bulk of the pottery came from the various units, although always in very low quantities.

What we are calling Charleston wares at this site consist of relatively clear complicated stamping (although overstamping seems common) associated with a paste consisting of moderate amounts of medium to fine sand. The pottery does not quite have the abundance of coarse particles found in classic Irene or the "sugary texture" so commonly associated with Pee Dee pottery. On the other hand, it does seem to conform with the description of DePratter and Judge (1986): "tempering ranges from medium sand to medium grit."

In addition to the stamped designs there are three examples of reed punctates at the rim and one example of a segmented applique strip on a rim sherd. These design features span the entire period discussed by DePratter and Judge, with the punctations most typical of the early Belmoont Neck and Adamson phases and the applique strip most common of the McDowell and Mulberry phases. In other words, these somewhat specialized decorations are not particularly helpful in defining the temporal limits of the occupation (assuming that the phases on the coast may roughly equate with those they have proposed for the Wateree Valley).

The Ashley Series

Although only 12 sherds (2.4% of the total assemblage) have been assigned to this ware, it remains one of the more interesting collections, largely because of its linkage to Feature 3 (and associated radiocarbon date) and its probably association with the protohistoric or historic Indian groups in the Kiawah and Seabrook area.

The pottery has a paste not dissimilar to the Charleston Series — characterized by variable amounts of medium to coarse sand. The most distinctive feature is its stamping, which is larger and more poorly applied than the Charleston motifs. In truth the stamping does not appear quite so "deteriorated" as that suggested by DePratter and Judge (1986) for the Daniels Phase (which much more closely resembles the historic Wachesaw Series of the Waccamaw Neck [Trinkley et al. 1983]). Nevertheless, it seems to fit within that continuum and it would be interesting to have the original Charles Towne Landing report available to compare these materials to those identified at the moundless ceremonial center by South. Regardless, the abbreviated description (South 1973) seems to fit the ceramics found at 38CH1257 with the exception that we found no finger pinching or corn-cob impressions.

The radiocarbon date associated with this pottery from Feature 3 is 250 ± 40 BP (conventional radiocarbon age) or AD 1645 to 1670 (one sigma calibrated date) (Beta-118433). This is consistent with the recovery of peach pits from the feature (discussed below) and indicates a historic date.

As result, although the same is small, we have some indication of the pottery being produced by the historic Indians in the Seabrook Island area about the time of European settlement at Charles Towne landing.

Lithics

Next to ceramics lithics are the most common artifact recovered from 38CH1257. Curiously, the bulk of the collection consists of chunks of flakes of a bluff to light gray siltstone (sometimes called mudstone). This material is rarely identified as a lithic raw material since it has an undependable fracture, is soft, and is generally a poor material to work.

Twenty three of these siltstone lithics are found, occurring in units, cuts, post holes, and features. They seem to be most commonly associated with the Deptford proveniences at the site, suggesting that some effort was made to at least explore the use of the material. However, the effort likely proved unsuccessful since all of the remains are either shatter (angular, blocky debitage or chunks) or unspecialized flakes (thick, early stage flakes).

It is interesting that these materials are often found at coastal sites (see, for example, Trinkley et al. 1995:46), perhaps suggesting that the Woodland Indians found the acquisition of stone sufficiently

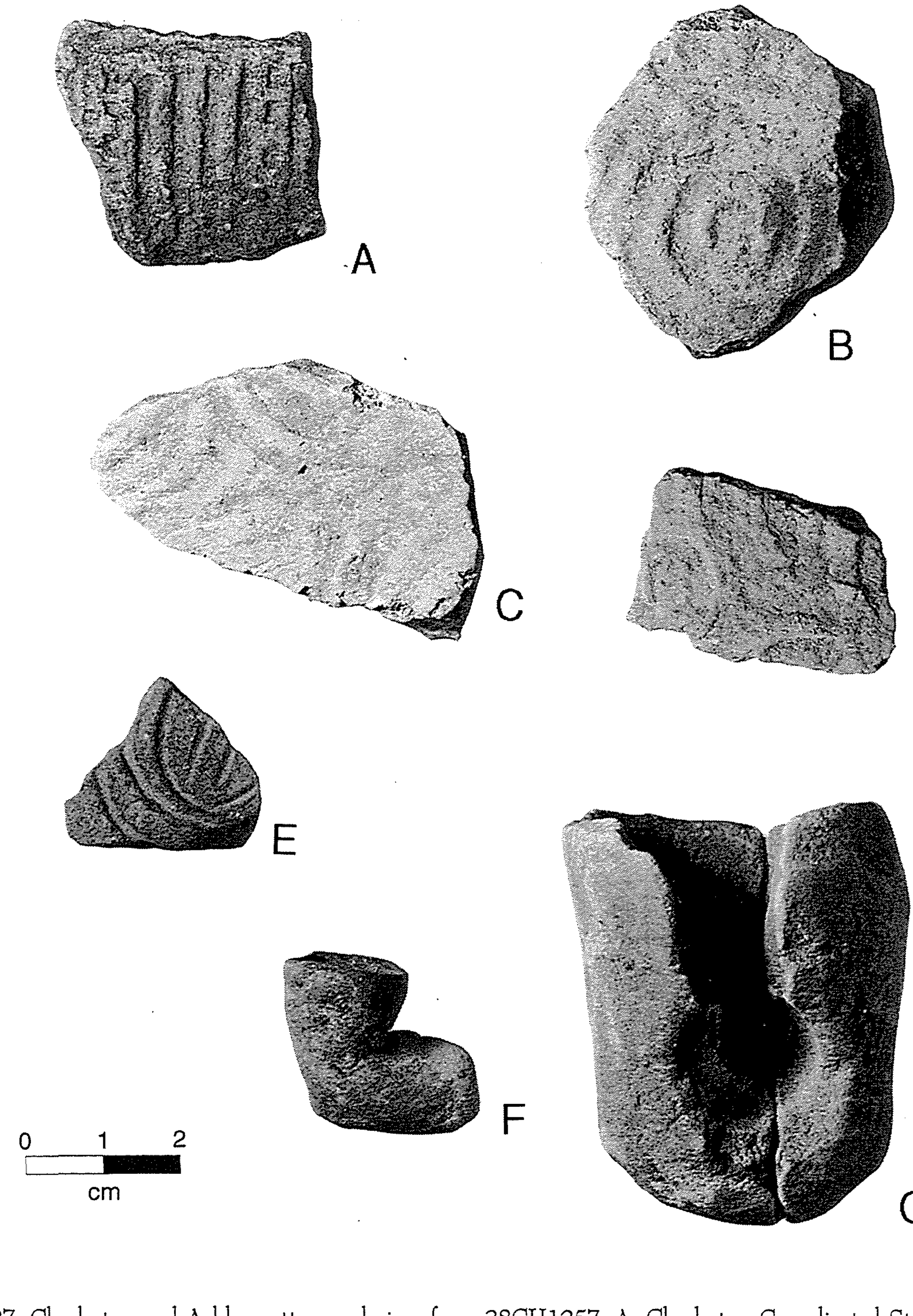

Figure 27. Charleston and Ashley pottery and pipes from 38CH1257. A, Charleston Complicated Stamped; B-D, Ashley Complicated Stamped; E, Ashley Incised; F-G, Charleston or Ashley phase clay pipes.

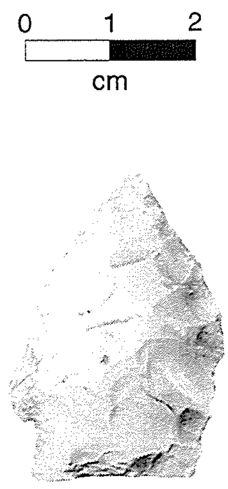

Figure 28. Exhausted Savannah River Stemmed point.

burdensome that they would make an effort to use any locally available material. As a result the siltstone was often picked up, an effort was made to use it, and it was quickly discarded.

The only other lithic flake is a fragment of chert cortex recovered from the south half of Feature 3. It suggests that some primary stage reduction may have been taking place at this site, although this is the only item recovered to provide evidence of this activity.

Two finished tools were recovered, both of coastal plain chert. One is an exhausted Savannah River Stemmed, possibly associated with the Stallings or Thom's Creek pottery at the site and recovered from the southern half of Cut 3. Although the stem width is 20 mm, the blade width is 26 mm and the total length is only 37 mm. The point appears to have been heavily resharpened, reducing the length of the point and resulting in a slightly rounded edge. The other finished tool is a non-diagnostic midsection, recovered from the surface of Cut 1.

Other Artifacts

There are several other artifacts recovered from these excavations which are worthy of mention. Two fragments of clay daub were recovered from the plowzone of Unit 3. These remains suggest that somewhere in the site area there are remains of a probably late wattle and daub structure.

Also recovered are two clay tobacco pipes. One is a very small example of a short-stem elbow pipe. It measures 26 mm in length and 22 mm in height, the bowl being round and outflaring. The clay is consistent with the ceramics recovered from the site, having a fine to medium sand paste. This is similar to a variety of Mississippian forms and, taken in the context of the literature, was likely associated with either the Charleston or Ashley wares at 38CH1257. It was found in Cut 3, post hole 19 — one of the posts forming a pattern and suspected to represent a late structure.

The other pipe is far different. Most late pipes are elbow (with either short or long stems), platform, or monitor pipes — typically dating from the Late Woodland through the Mississippian. The earlier pipes —perhaps from the Middle Woodland — seem to be tube pipes. This example, however, consists only a bowl, measuring 44 mm in diameter and 54 mm in height. There is a hole on the side, intended for the insertion of a reed. The paste is characterized by fine sand with only a very few medium inclusions. While it is not clumsily formed, it also fails to evidence any special care. The bowl had been broken and the two halves were found in different post holes (13 and 28), but in Cut 3 and in the vicinity of the other pipe.

Although this is an unfamiliar style of pipe, we believe that it, too, is likely associated with either the Charleston or Ashley wares. In fact, its somewhat degraded appearance may suggest that it is a very late pipe. Coe (1995:226) seems to imply that the use of attached reed or wood stems was more prevalent later in time. If so, it may be that this specimen dates from the very early historic period. The only similar pipes we have been able to identify are made from stone and were found in the Peachtree Mound (Cherokee County, North Carolina). Setzler and Jennings (1941:Plate 21) illustrate three very similar pipes, describing them only as "unusual types of stones pipes." Yet all were from the mound level and are likely associated with relatively late materials.

38CH1259

As previously explained, the investigations at this site produced very few artifacts. In fact, no artifacts at all were recovered from either of the two 10-foot units excavated at the site. The metal detector survey allowed the recovery of 37 artifacts from 19 "hits." These artifacts are listed in Table 6. Combined with the

Table 6.
Artifacts Recovered from 38CH1259

Provenience	Item	TPQ and Other Observations
ST 1	1 steel machinery washer or bushing	modern, probably farm related
ST 2	1 iron spike fragment, 140 mm in length	heavily corroded, possibly Civil War related
ST 3	1 iron staple fragment, thin wire	type used in manufacture of boxes, possibly Civil War related
ST 4	1 iron cable clamp	the cable clamp is an early twentieth century device
ST 5	3 brass pocket knife frags	probably nineteenth century; these may match pieces found in the initial survey
ST 6	1 iron spike fragment, 110 mm in length	heavily corroded, possibly Civil War related
ST 7	1 lead .22 cal bullet, impacted	.22 cal arms date from the late nineteenth century
ST 8	1 iron spike, 313 mm in length	this is a size usually characterized as ship or boat spikes, which were available up to 12 inches; the specimen is possibly Civil War related
ST 9	1 brass shotgun shell base	stamped "WESTERN / MADE IN USA / Nº 12 / XPERT"; post Civil War, probably first half of the twentieth century
ST 10	15 flat iron fragments; probably can	no mold seams are present; possibly Civil War related
ST 11	1 iron fragment	possibly a fragment of iron buckle, but no positive identification is possible
	1 manganese glass "club sauce type" stopper	manganese glass is most common from the last quarter of the nineteenth century through the first decade of the twentieth century; this style of stopper was used on a wide variety of commercial products, including alcohols
ST 12	1 brass shotgun shell base	stamped "WESTERN / MADE IN USA / Nº 40 / XPERT"; post Civil War, probably first half of the twentieth century
ST 13	1 flat iron fragment; probably can	no mold seams are present; possibly Civil War related
ST 14	1 .40 to .41 cal bullet	specimen has been distorted, so accurate caliber can not be determined; it has a full metal jacket with lead interior, suggesting military ammunition; it has a truncated cone; almost certainly twentieth century
ST 15	2 iron fragments; probably can	no mold seams are present; possibly Civil War related
ST 16	1 brass shotgun shell base	stamped "PETERS / Nº 12 / LEAGUE"; post Civil War, probably first half of the twentieth century
ST 17	1 cupronickel ca. .30 cal bullet, impacted	this specimen is the heavily distorted metal jacket of what was probably a partially jacketed round; possibly a 7.63 mm or .30 cal. bullet; twentieth century
ST 18	1 brass shell, .30 cal. Winchester	stamped "R - P / 270 WIN"; the R - P is a designation for Remington Arms Co.; post-1925
ST 19	1 iron fragment	thick, possibly a kettle fragment, although the item is so small no identification is possible

20 artifacts recovered during the initial survey (itemized in Table 2), the site has produced only 57 artifacts.

Perhaps the most obvious feature of Table 6 is that none of the artifacts would typically be considered a military item. In contrast, the initial survey yielded seven items of probable military origin, representing 35% of that collection. It appears that the bulk of military materials were collected during the site survey.

There are a small number of items which *may* be associated with Civil War activities at the site, including three spike fragments, 18 probable can fragments, three pocket knife fragments, and a wire staple. Although the bottle stopper might conceivably be associated with the Civil War occupation of the site, we suspect that it is somewhat latter.

Far more of the specimens — including three shotgun shells, one rifle shell, and two, possibly three bullets — are indicative of the area's use for hunting game.[2]

[2] About 450 acres of Seabrook, on the Atlantic Ocean at the southwestern corner of the island, were sold in 1917 by the Andells to the Kiawato Company. There apparently was a "club house" and an "observation tower" on the beach and while the company may have attempted to develop this portion of the island, it seems likely that the property was more commonly used as an exclusive hunting preserve. In 1925 the property passed to the Charleston Security Company when the Kiawato Company was unable to repay a $2,000 bond. Eventually this tract, as well as much of the remainder of Seabrook was sold to Victor Morawetz in 1936, a New York businessman who used the island as a hunting and vacation retreat. Unfortunately there has been little investigation of these twentieth century activities on Seabrook.

FAUNAL ANALYSIS

Suzanne Coyle
University of Florida
Gainesville, Florida
and
Michael Trinkley

Vertebrate Faunal Remains

The vertebrate faunal collection from the Seabrook site was analyzed for this study. The faunal collection consisted of 147 bone elements and fragments that weigh 194.4 grams. Material was recovered by dry screening unit soil through ¼-inch mesh. Shellfish are covered in a following section.

These investigations, of course, include only materials from the prehistoric site, 38CH1257, since no faunal or shell remains were encountered at the Civil War site studied. This section provides a description of the animal and shellfish species represented in the collections, the results of the zooarchaeological analysis of the remains, and a comparison of the data obtained from the site with that for other sites along the coast.

Analytical Techniques for Faunal Remains

The faunal collection from Seabrook was studied using standard zooarchaeological procedures. Where possible, the material was sorted according to class, order and species and individual elements were identified. The bones of each class were weighed and counted. The Minimum Number of Individuals (MNI) for each category was computed using paired bone elements and age (mature/immature) criteria.

While MNI estimations are easy to compute and understand, as measures of zooarchaeological quantification they have their limitations. Use of the MNI emphasizes small species over large ones. For example, a collection may have only a few large mammals, such as deer, and many smaller fish and turtles. Yet, the amount of meat contributed by one deer may be many times higher than that contributed by scores of the smaller food sources.

With these problems in mind, an estimate of biomass was computed for each taxon. This method of analysis is based on allometry, or the biological relationship between soft tissue and bone mass. Biomass is determined using the least-squares analysis of logarithmic data in which bone weight is used to predict the amount of soft tissue that might have been supported by the bone. The relationship between body weight and skeletal weight is expressed by the allometric equation $Y = aX^b$, which can also be written as $\log Y = \log a + b(\log X)$, where Y is the biomass in kilograms, X is the bone weight in kilograms, a is the Y-intercept for the log-plot using the method of least-squares regression and the best fit line, and b is the constant of

Table 7.
List of Allometric Values to Determine Biomass in Kilograms (kg) Based on Bone Weight Expressed in Kilograms.

Faunal category	log a	b
mammal	1.12	0.90
turtle	0.93	0.83
fish	0.51	0.67

From Table 4 in Reitz (1985:44)

allometry, or the slope of the line defined by the least-squares regression and the best fit line (Trinkley & Wilson 1994:75). Table 7 details the constants for a and b used to solve the allometric formula for a given bone weight X for each taxon identified in the archaeological record.

In using allometric calculations to predict proportional biomass from bone weight it is important to note that the weight of bone used in the calculation obviously influences the results. There are a number of factors, such as differential preservation or discard practices, that may affect the weight of the bone recovered from an archaeological site. Thus, this technique of analysis may not give the precise results that the final numbers would appear to indicate (Trinkley & Wilson 1994:7).

Identified Fauna

Before considering the results of the zooarchaeological study of the faunal remains recovered from 38CH1257, the general use and habitat preference for each identified species will be considered. Table 8 lists the various species identified in the archaeological collections recovered from general excavations and the removal of features.

The most abundant mammal species seen at Seabrook is the white-tailed deer (*Odocoileus virginianus*). Seen in seven of the thirteen features which included faunal specimens, it was represented mainly by long bone, mandibular, and dental fragments. A variety of uses exist for the different parts of this animal, so that almost all of the deer was utilized in some manner prehistorically (Runquist 1979:169; Swanton 1946:249). Deer metatarsals were used as beamers and split to make needles; ulnae were used as awls; and antlers were made into flakers, projectile points, and fish hooks (Swanton 1946:249; see also Trinkley 1980). Rattles, flutes, bracelets, and beads were also made from deer bone (Swanton 1946:249). Sinew and entrails were manufactured into bow strings, rawhide, thongs, and "thread" (Swanton 1946). Deer brains were combined with green corn to tan leather (Lefler 1967:217). The skins, hooves, and antlers were rendered into glue. Heads, skins, and antlers were used as decoys in hunting and as status/clan indicators. Hides were sewn into clothing, and used as coverings for houses and doors (Swanton 1946:249).

In general, the deer's preferred habitat is the edge of deciduous forests and open woods, although they will move to mudflats to feed on the grasses found there. Male deer tend to grow antlers beginning in May, with full development of hardened antler occurring in September. Antlers are usually dropped between the middle of January and the beginning of February. Females and their young form small family groups from the spring through the summer. These small family groups tend to become larger during the rutting season in September, October, and November, with mature males moving amongst the females of small deer bands. Once the males have dropped their antlers they stay with the small bands of females and young through the winter months. Just prior to the spring fawning period these bands break-up into small family units, with the males departing and becoming part of all-male groups, which are usually small in number (Smith 1975:18-19).

Raccoon (*Procyon lotor*) remains were seen in only one feature (Feature 4, E ½, zone 1). Raccoons served as food resources for the Indians, the furry skin being used for clothing and claws used as ornaments (Swanton 1946:250). These nocturnal animals are adapted to a variety of habitats, although they prefer wooded areas near water. They can be hunted, presumably with bow and arrow, but can also be trapped. Trapping would have expended the lowest energy, allowing the Indians to pursue other activities.

Minimal unidentified rodent remains were recovered from two features (Features 8, N ½ and 9, S ½). Unidentifiable mammal bones were noted in many of the features. The majority of this material were long bone fragments and are likely remains from *Odocoileus* based on their density and size. Positive identification, however, was not possible.

Turtle carapace and plastron fragments were seen in relative abundance — eight of the thirteen features held some quantity of these bones. This species was unidentifiable but was likely the diamondback terrapin (*Malaclemys terrapin*). This species is usually found in the brackish estuaries and marshes along the

Table 8.
Minimum Number of Individuals (MNI), Number of Bones, Weight, and Estimated Meat Yield by Species for the various features at 38CH1257

Fauna	MNI	No. of Bones	Weight in grams	Biomass kg	Biomass %
Feature 2					
mammal	1	1	0.8	0.020	46.5
perciformes	1	1	0.2	0.023	53.5
Feature 3					
White-tailed deer, *Odocoileus virginianus*	1	16	47.5	0.869	88.3
mammal	1	12	5.1	0.115	11.7
Feature 4					
White-tailed deer, *Odocoileus virginianus*	1	2	31.6	0.601	64.5
Raccoon, *Procyon lotor*	1	2	2.0	0.049	5.3
mammal	1	11	12.5	0.260	27.9
turtle	1	1	0.6	0.022	2.3
Feature 7					
White-tailed deer, *Odocoileus virginianus*	1	1	18.3	0.363	48.6
mammal	1	6	7.1	0.155	20.7
turtle	1	31	25.2	0.334	38.9
perciformes	1	1	<0.1	<0.006	0.7
Feature 8					
turtle	1	4	0.4	0.017	15.3
rodent	1	1	<0.1	<0.003	2.7
perciformes	1	30	0.5	0.015	13.5
mammal	1	.1	3.2	0.076	68.5
Feature 9					
perciformes	1	4	0.1	0.006	8.1
rodent	1	1	<0.1	<0.003	4.0
turtle	1	2	2.5	0.059	79.7
mammal	1	1	0.2	0.006	8.1
Cut 3					
turtle	1	2	0.4	0.017	---
Unit 2, Plowzone					
mammal	1	5	5.0	0.112	---
Unit 3, Plowzone					
turtle	1	4	2.5	0.059	20.8
White-tailed deer, *Odocoileus virginianus*	1	3	10.8	0.224	79.2
Unit 4, Plowzone					
White-tailed deer, *Odocoileus virginianus*	1	3	17.0	0.339	93.9
turtle	1	1	0.6	0.022	6.1
TOTAL	30	147	194.4	3.775	---

coast or in the brackish estuaries of rivers (Obst 1986:113). The diamondback terrapin was an important food resource in the Southeast .

Various fish bones were also seen. Four features had evidence of fish bones and it was typically either the denser vertebral centrum or the otolith which was recovered. This species represented by the vertebrae fragments was unidentifiable but it is likely that it is one of the more common cypriniforme (catfish) or perciforme (perch, bass) species. The otolith is that of a catfish (*Ictalurus* sp.). The most common freshwater catfish found in the sluggish waters and low salinity areas of the Carolina estuaries is the white catfish (*Ictalurus catus*) (Wenner et al. 1981). Catfish tend to be more plentiful in the estuarine habitats during the fall.

Analysis and Interpretation of the Faunal Remains

The Seabrook site collection contains 30 identified individuals and 147 bones and bone fragments that weigh 194.4 grams total. This is a small representative collection for archaeological consideration and does not meet the minimum of 200 MNI or 1400 bone elements required to document that a representative sample is being studied. Thus, the material should be carefully interpreted.

While *Odocoileus* remains were seen which do not yield much meat (jaws and feet) this may merely be an artifact of preservation. The bones comprising the jaws and feet are made of denser bone and will survive longer than those bones which are more fragile. The portions which do yield the majority of meat from the deer, the long bones of the fore- and hind-quarters, were the bulk of the bones represented in the collection. Moreover, many (perhaps most) of highly fragmented long bones are thought to represent deer. These may also provide some indication that the deer bones were being opened to extract the marrow.

Burning is the only modification observed on the bones and only the deer exhibited the blackening associated with this practice. Feature 3, N ½ contained four small long bone remains that weigh 2.4 gm total (26% of the feature). Feature 3, S ½ held one fragment of a long bone that weighs 0.8 gm (2% of the feature). These bones were either burned for consumption or were burned after being discarded, for whatever reason. No evidence of rodent or carnivore chew marks were noted on any of the bones which indicates that the material was not left exposed for any significant length of time, but was quickly buried. No evidence of other intentional modifications was present.

When the biomass results are considered, deer provided 2.4 kg of meat (or 3.14 kg if the unidentifiable mammal remains are included). Turtles contributed 0.53 kg, raccoons 0.05 kg, and fish 0.05 kg. Absent from the collection are species which we would have thought might be present, such as opossum, rabbit, fox, and squirrel. Likewise, no wild birds were recovered, in spite of the prevalence of turkey in the uplands and migratory waterfowl such as duck in the marshes. It appears that the assemblage is dominated by only a few terrestrial species, with those from the marsh (whether fish or reptiles) representing a relatively low dietary contribution.

What is perhaps equally interesting is that none of the features contain remains from more than a single individual — regardless of species. This may suggest that each feature represents a distinct meal. Moreover, since none of the pits contain any species that is more or less intact, perhaps the various pits represent individual households and provide evidence of sharing. Of course, this presupposes that all remains from a single meal were deposited in one pit, which is unsupportable at best. In addition, the supposition is based on the MNI, a very unreliable technique. Nevertheless, it is interesting that the three largest pits — Features 3, 4, and 5 — all contain a very similar amount of biomass (ranging from 0.858 to 0.984 kilograms).

The faunal assemblage from 38CH1257 represents a relatively small, although carefully examined, collection. Extreme care must be used in interpreting the collection, much less marking comparisons to other (often equally small) assemblages. Regardless, there are several other sites in the coastal area of South Carolina and Georgia possessing prehistoric faunal materials with which 38CH1257 can be compared (Table 9). These include much earlier

Table 9.
Comparison of the Faunal Category Patterns from Selected Prehistoric Sites
by Biomass Percentage

	Deptford Phase Sites					Stallings/Thom's Creek		Savannah Phase	
Faunal Catagory	38CH1257	38BU861	38BU1214	38BU2	38CH1219	38BU805	38CH124	38BU464	9CAM171
Mammals	75.8	99.9	62.9	80.5	68.8	66.5	94.1	49.7	33.6
Bird	-	-	5.8	0.3	0.4	4.5	1.9	3.0	0.2
Reptiles	21.4	-	9.7	5.0	29.4	14.9	2.0	6.8	8.9
Fish	2.5	0.1	21.5	14.2	0.9	13.2	1.9	37.9	56.3
Commensals	0.3	-	-	-	-	0.9	0.1	2.5	0.8
Biomass (kg)	2.018	3.51	2.79	16.24	1.29	2.89	103.18	7.56	6.3
MNI	18	10	12	55	6	17	58	72	257

38CH1257: includes only Deptford features, 2, 4, 7, 8, and 9
38BU861: Trinkley and Wilson 1994
38BU1214: Wilson 1991
38BU2: Espenshade et al. 1994
38BU1219: Trinkley et al. 1995
38BU805: Wilson and Wilson 1986
38CH124: Wilson 1993
38CH464: Wilson 1991
9CAM171: Smith et al. 1981

Stallings and Thom's Creek sites (38BU805 and 38CH124) on Hilton Head and Kiawah islands (Wilson and Wilson 1986, Wilson 1993); four Deptford sites (Espenshade et al. 1994, Trinkley and Wilson 1994, Wilson 1991, Trinkley et al. 1995); and two collection, from Savannah Phase sites in South Carolina and Georgia, which date slightly later (Smith et al. 1981, Wilson 1991).

Unfortunately, there really isn't sufficient earlier or later data to comment on diachronic changes in subsistence strategies. However, there do appear to be some interesting consistencies. For example, the two late sites, 38BU464 and 9CAM171 suggest heavy reliance on fish, perhaps equal to or greater than the focus on mammals. At both sites reptiles represent the third most significant food source, with birds perhaps representing opportunistic catches. Turning to the earlier Thom's Creek sites, the two data sets are so drastically different that the obvious conclusion is that we are seeing two very different subsistence strategies. The Bass Pond site (38CH124) on Kiawah seems to have focused on deer (and shellfish), perhaps to the near exclusion of all other resources. It suggests a very specialized subsistence strategy. In contrast, the Fish Haul site (38BU805) represents a much more diffuse economy. Deer still dominate the collection, but fish and reptiles are represented in near equal quantities.

During the Deptford Phase there seems to be considerably variability. In each case mammals represent the majority of the identified faunal biomass, ranging from 68.8 to 99.9%. At two sites the second most significant food source seems to be reptiles, while at two others fish are next in frequency. While mammals may be the single most important contributor to faunal biomass, it seems that the second choice might be either another terrestrial special, such as reptiles, or a purely estuarine resource, such as fish. In other words, it doesn't appear that all available econiches were exploited uniformly. Instead, choices were made. Since all of these sites seem to have relatively equal access to all of the various habitats and their respective food sources, it seems likely that some other factor was involved — perhaps seasonality. This variability, or more specifically uncovering its meaning, seems to be an excellent reason to continue the exploration of seemingly similar Deptford sites.

Shellfish

The initial survey report suggests that intact middens are present on the eastern half of the site (not included in this study). Although no intact middens were identified in this work, it seems likely that at one time middens were present along, or just inland from, the marsh edge. This is based on the density of shellfish recovered from the unit excavations (see Table 3). But in addition to these posited middens, there were also shellfish present in a number of the features recovered from the excavations. It is the shellfish in these pits that will be examined in this section, since these remains can be assigned to specific cultural periods and are also in reasonably good condition. Moreover, the dietary contribution of these shell deposits can be more confidently compared to the faunal biomass than can materials in a plowzone context.

Although oyster (*Crassostrea virginica*), was the most common shellfish, small quantities of clam (*Mercenaria mercenaria*), Atlantic ribbed mussel (*Geukensia* [formerly *Modiolus*] *demissa*), common cockle (*Trachycardium muricatum*), stout tagelus (*Tagelus plebeius*), knobbed whelk (*Busycon carica*), and periwinkle (*Littorina littorea*) were also recovered from several pits (Table 10).

The oyster is adapted to waters having considerable variation in salinity and temperature, although reproductive functions are affected by extremes. The optimum salinity range is 10 to 28 ppt. A suitable substrate is critical and oyster shells or other hard materials are preferred. Approximately 95% of the oyster standing crop in South Carolina are intertidal (Lunz 1952) and are found as oyster clumps, formed by successive yearly sets of "spat" on older oysters. These oyster beds provide habitat for a variety of other invertebrates, such as crabs, ribbed mussels, and barnacles.

Vernberg and Sansbury (1979:275) note that the most common pelecypod mollusk in the Port Royal area of Beaufort County is the oyster, with the beds in that area producing about 0.25 bushel (about 200 oysters) per square yard, of which 39% are over 2 inches in length and 15% are over 3 inches. While these data must be carefully interpreted because of commercial oystering pressures, Bearden and Farmer observe that while commercial oyster production has decreased by 56% from 1967 to 1972, the "locations and characteristics" of beds have "changed insignificantly" (Bearden and Farmer 1972:211). Many other factors must be considered when determining why oyster quality and quantity may have changed. For example, residential and commercial development have likely changed drainage patterns and rain run-off, both of which affect habitat and productivity. Nevertheless, the Kiawah-Seabrook area has historically had a number of oyster beds which have been shown on plats and extensively used even by the early settlers.

Table 10.
Shellfish Recovered from Features at 38CH1257 (weight in lbs.)

Fea	Oyster	Clam	Periwinkle	Whelk	Cockle	Tagelus	Ribbed Mussel
2	2	2	-	-	-	-	-
4	101	26	2	3.5	t	1	-
5	8	t	-	5	-	-	-
7	1.5	1.5	t	2	-	1.5	-
8	27	3	1.5	-	-	1	-
9	4	2.5	1	-	-	-	4

Prime areas for oyster beds are along the outside edge of bends in tidal stream channels (Larson 1969:123) and areas of tidal marsh with bottoms adequate to support oyster growth. Oysters grown on intertidal mud flats, where the substrate is marginally adequate, have long slender shells.

In all but Features 2 and 7 oysters were the most abundant shellfish.

Also known as the hard-shell clam, the quahog tends to most common in areas which have an abundance of shell in the substrate, such as along the bases of intertidal oyster beds and interspersed with intertidal oysters. They also tend to be found in the protected tidal creeks rather than in the bays or sounds. Quitmyer (1985a) reports a salinity range as low as 13 ppt, but an optimum salinity of about 27 ppt. Sandifer et al. (1980:180) report a clam density of about 83 clams per square yard in shelly substrate compared to about 0.2 clam per square yard in sandy bottom areas.

Although clams may account for up to 50% of the shellfish in any feature, overall they represent only 17.7% of the shell recovered in this work. Given the nature of the clam shell this translates into relatively few individuals, suggesting that it was not a common food source.

Knobbed whelk comprised 5.3% of the total assemblage at 38CH1257, although in some features it was more abundant. Given the thick, dense shell of the whelk, clearly relatively few individuals are present — making it a rare species.

Whelks are typically found on sandy bottoms in shallow waters, although they may also be found buried in sand flats exposed by the low tide and even in oyster beds, where they are a major predator of the oyster. In fact Larson noted that "these few large and edible snails would . . . have been picked up when found among the oysters" (Larson 1969:128). Quitmyer (1985a:32) observes that the whelk is a migratory species, with peak densities in fall and spring. During the winter and summer they typically move into deeper waters or the beach zones -- areas less likely to have been visited by the prehistoric occupants.

Common at Late Archaic sites, periwinkle does not seem to be especially common at Early to Middle Woodland sites and accounts for only 2.3% of the assemblage at 38CH1257.

The periwinkle's only habitat is the salt marsh, since the snail is totally dependent upon brackish water. It feeds on algae found growing on marsh grass, shells, debris, and even the marsh surface. They are relatively easy to collect since they tend to move up and down *Spartina* in rhythm with the tides. Vernberg and Sansbury (1972:274) found a periwinkle density of up to 120 individuals per square meter of marsh during the summer. During the cold winter months, however, periwinkles tend to be conspicuously absent from the marsh (Meyer 1991:51).

They may be prepared by steaming them for about 10 minutes and then picking the meat out with a small bit of wood. The snails may also be boiled to produce a broth, with the shells sinking to the bottom of the stew pot.

The species accounts for only 2.0% of the assemblage by weight. Given the lightness and fragility of the shell, it seems clear that this quantity indicates intentional collection, although it never represents more than 1.5 pounds of shell from any feature.

It is typically found in similar ecological settings as the ribbed mussel (discussed below), preferring sand-mud intertidal areas where it burrows into the bottom. Collecting the species requires that they be dug out and Larson (1969:125) questions the ease with which they could be obtained. Nevertheless, he notes that they contribute noticeable, if small, concentrations to Georgia middens, suggesting at least occasionally they were intentionally collected, perhaps in the process of also collecting burrowing clams. Quitmyer (1985a:31) indicates that the collection process is rather involved, indirectly suggesting that occasional collection with other species is more likely than direct exploitation.

The Atlantic Ribbed Mussel is found in only one feature. In addition, it is found in such a low frequency that we believe it was collected incidentally or with some other species.

It is common in the salt marshes and brackish estuaries, usually buried in the mud among the roots of the marsh cordgrass *Spartina* or fastened to objects at the surface of the mud. Typically about an inch of its wide end sticks above the mud. At high tide it opens and feeds by siphoning water; at low tide the shell is closed tight. This shellfish is able to move, albeit very slowly. Even today ribbed mussels may be found interspersed in oyster beds. Although Larson (1969:126) notes that ribbed mussels can form single-species beds, a study in the Port Royal Sound area by Vernberg and Sansbury (1972) found them as single individuals in sandy mud flats or attached to oyster shells in clumps. Their density ranged from about 0.3 to 2 individuals per square meter in study plots (Vernberg and Sansbury 1972:274). Quitmyer (1985a:30) notes that they are often found localized in the high marsh grasses and mudflats — areas easily traveled and open to simple collection techniques.

Table 11.
Allometric Values Used to Determine Biomass in kg Based on Shell Weight Expressed in kg

Shellfish	log a	b
Oyster	- 0.77	0.97
Clam	- 0.50	0.94
Mussel	- 0.22	0.80
Tagelus	0.29	0.99
Whelk	-0.12	0.84

Derived from Quitmyer 1985b:40.

Ribbed mussels have what is often described as a chewier and fuller-flavor than oysters when steamed (Amos and Amos 1985:408; Meyer 1991:54). To many, however, their yellowish appearance is far from palatable.

The common cockle is found in only feature — and even there as only a "trace." The uncommon presence of this species suggests accidental inclusion, likely in the process of gathering of other shellfish. The cockle is typically found very shallowly (under a half inch) buried in sand or mud below the mean low water in depths ranging from 1 to 30 feet (Amos and Amos 1985:398). Its preference is for sandy bottoms along beach and tidal areas.

Curiously, no blue crab remains were identified in any of the features. The local environment is certainly suitable and although crab is an "expensive" found source (in terms of edible meat to discard shell), so too are shellfish such as periwinkle. The difference may be that the shellfish require little or preparation and can be thrown into a pot to cook, unlike the crab which must be carefully prepared.

Understanding the Shellfish Diet

Just as allometric formula are useful for understanding the biomass contribution of different vertebrate remains, they may also be used in the analysis of shellfish. Allometry, as previously discussed, is the biological relationship between soft tissue and bone mass. Table 11 details the constants for a and b used to solve the allometric formula for a given shell weight X for each taxon identified in the archaeological record. In using allometric calculations to predict proportional biomass from shell weight it is important to note that the weight of shell used in the calculation obviously influences the results. There are a number of factors, such as differential preservation or discard practices, that may affect the weight of the shell recovered from an archaeological site. Thus, this technique of analysis may not give the precise results that the final numbers would appear to indicate.[1]

Table 12.
Shell Weight and Estimated Meat Yield for Shellfish at 38CH1257

	Shell Weight		Meat Yield	
Shellfish	kg	%	kg	%
Oyster	60.7	70.1	9.1	44.0
Clam	15.9	18.3	4.2	20.3
Whelk	4.8	5.5	2.8	13.5
Periwinkle	2.0	2.3	-	-
R. Mussel	1.8	2.0	3.5	16.9
S. Tagelus	1.6	1.8	1.1	5.3

[1] Kennedy and Espenshade (1992:85), using the allometric formula, comment that "to compensate for non-meat supporting shell, 82.62 percent of the total shell weight [is] utilized in the meat weight formula (Adams 1985:37)." In actuality, this adjustment was recommended by Quitmyer (1985b:37) to compensate for the dead oysters typically included in clumps. There does not seem to be any indication that he intended it to be a generalized corrective factor applied to all shellfish remains. Nor does there seem to be any particular reason to apply this factor unless there is clear and convincing evidence that the site occupants were collecting substantial amounts of dead shells. In the current study we have not used this factor, although it can certainly be applied by others using our data, if they wish.

Table 12 provides the biomass data for the shellfish recovered from the site, although no figures are available for either periwinkle or cockle. Nevertheless, the absence of these two species should not dramatically affect our conclusions. Oyster dominates the collection in terms of biomass or meat yield, accounting for 44%. Clam is the second most important shellfish meat, followed, perhaps unexpectedly, by ribbed mussel. This may serve to caution researchers that seemingly insignificant shellfish — when viewed from only the perspective of shell bulk — may actually provide a very important dietary contribution. Whelk, on the other hand, provides a noticeable quantity of the biomass at the site, in excess of its bulk. Finally, stout tagelus, while significant at some sites (see, for example, Trinkley and Hacker 1997:168), was likely not very important at 38CH1257.

Comparing the Faunal and Shellfish Diets

Combined, the shellfish provided about 20.7 kg of biomass from the Deptford features excavated during this research. In comparison, the mammalian faunal remains from the same features contributed just over 3 kg of meat. If, as has been suggested, these features represent individual meals, possibly associated with families sharing resources, this would suggest that shellfish are, in fact, a major contributor to the Deptford diet.

Shellfish, when compared to most mammals, supply relatively little protein. For example, 100 g of oyster provides approximately 66 calories and 8 g of protein, while the same quantity of deer meat provides 126 calories and 21 g of protein. A shellfish diet, supplemented with fish, hickory nuts, and deer meat, however, is not particularly wanting, as Table 13 reveals. In fact, shellfish as a dietary core is likely better in many ways than corn as the dietary focus, since corn provides (per 100 g) only 63 calories and 3 g of protein.

It is not our intention to proceed further with this analysis. The reconstruction of prehistoric foodways or the estimation of dietary composition is fraught with difficulties. The errors of any reconstruction are magnified and compounded with every additional equation or assumption.

Table 13.
Composition of Sample Foods and Nutritional Requirements

	Protein g	Calcium mg	Phosphorus mg	Iron mg	A IU	B1 mg	B2 mg	Niacin mg	C mg	Calories
Daily requirements of active male	54	800	800	10	5000	1.5	1.8	20	45	3000
Clams, 100 g	12.8	96	139	7	110	0.10	0.18	1.6	t	92
Oysters, 100 g	8.4	94	143	5.5	310	0.14	0.18	2.5	t	66
Mussel, 100 g	14.4	88	236	3.4		0.16	0.21			95
Corn, 100 g	2.7	5	52	0.6	390	0.11	0.10	1.4	8	63
Deer, 100 g	21.0	10	249	7.8		0.23	0.48	6.3		126
Hickory nut, 100 g	13.7		360	2.4						673

Compiled from Church and Church 1966; Sebrell and Haggerty 1967; Watt and Merrill 1963

Nevertheless, the combination of the faunal and shellfish dietary information poses some significant questions. For example, considering the importance of the intertidal habitat, why does the faunal assemblage suggest a focus on mammalian resources — why weren't other species present in the marshes used more commonly? Was fishing considered to be too costly in terms of energy expended, or was it that the Deptford people did not carry with them the equipment necessary to make the subtidal area productive? Or is it perhaps that we are seeing several phases of the Deptford subsistence round? Clearly more research — particularly making a greater effort to identify seasonality — seems warranted.

ANALYSIS OF PHYTOLITHS

Irwin Rovner
Binary Analytical Consultants
Raleigh, North Carolina

Introduction

Phytolith analysis was conducted on three soil samples collected at the prehistoric site 38BU323, from Features 3, 4 and 7, respectively. This analysis was selected for archaeobotanic and paleoecological interpretation of the site based in significant part on the well known superior durability and preservation of phytoliths. Phytolith assemblages at all samples fulfilled this expectation. However, the absence of a phytolith reference data base coupled with the lack of previous phytolith studies at other sites in the region, restricts expected results to unfortunately limited goals. Relative frequencies of phytoliths assigned to general taxonomic categories, e.g. grass versus non-grass, is still essentially the level of identification currently possible. In the grass family, assignment to grass tribe (Festucoid, Panicoid, Chloridoid) of distinctive silica short cells does provide the basis for significant interpretation of patterns and trends, both ecological and cultural.

Methods

Analyses conducted included phytolith extraction from soil samples; microscope scanning of extracted phytolith assemblages for identification, recording and image storage on videotape; and compilation and interpretation of data. .

Phase 1: Phytolith Extraction from Soil

Conventional soil extraction procedures for all soil samples were initially used with modifications employed as required by the nature of specific samples. Standard procedures generally followed that found in Rovner (1971, 1983). The soil was initially "cleaned" to promote disaggregation of all particles — inorganic, organic and biolithic — as follows:

1. About 20 ml volume of soil placed into clean beaker.

2. Distilled water added, stirred, and either placed in a centrifuge at moderate speed for 20 to 30 minutes, or let settle for a minimum of 4 hours. Piperno (1988) suggests one hour is sufficient for tropical soils. The additional time provided here was an arbitrary caution procedure given possible factors of soil differences. Only small to very small amounts of macrobotanical fragments, fibers or particles were observed.

3. The aliquot with suspended fine particles and very light fraction material, e.g. floating rootlets, fibers, charcoal, etc., was decanted and discarded.

4. To oxidize and eliminate (sticky) organic residues, the soil was treated with 5.25% sodium hypochlorite solution (i.e. commercial household bleach). This was successful precluding use of concentrated hydrogen peroxide or nitric acid solutions which are more difficult to handle and far less environmentally benign (with respect to disposal, for

example.)

5. Following oxidation, soil samples were rinsed 2-3 times with distilled water, stirred, settled or centrifuged and decanted.

6. Dilute HCl (20 ml) was added to each sample to remove carbonates. All five samples reacted vigorous, to be expected especially in shell midden samples. Rather unexpectedly, the two lower well samples appeared to be most vigorous, surpassing the reaction of the shell midden samples. HCl treatment continued until no reaction was obtained. Samples were allowed to settle, the aliquot decanted and discarded.

7. Each sample was rinsed 3 times with distilled water.

8. The soil was resuspended in distilled water to which a deflocculant (i.e. Calgon) was added to suspend very fine silt particles. After centrifuging or settling overnight, the aliquots with suspended fine particles were decanted and discarded. Step 8 was repeated as necessary, until aliquot was clean.

9. Soil was placed in a drying oven set at 90°C until dry.

10. Heavy liquid for flotation separation was prepared by dissolving zinc bromide powder in slightly acidified distilled water until a specific gravity between 2.3 and 2.4 was achieved. This was easily determined using a commercially-made calibrated hydrometer.

11. A 5 ml, approximately, volume of dry soil was added to heavy liquid in a bent _" clear tygon tube which was squeezed gently to "wet" the soil. The bent tube was inserted into a (lightly greased) centrifuge shell and centrifuged at moderate speed for 30 minutes to float phytoliths.

12. After centrifugation, clamps were placed on both vertical arms of the bent tube just below the flotant surface in the tube. A wash bottle stream of water was used to rinse the flotant from the tygon tube into a 50 ml centrifuge tube.

13. Distilled water was added to the centrifuge tube to about 40 ml level. Centrifugation precipitated the phytoliths. The aliquot was decanted. This step was then repeated.

14. Phytoliths were then decanted to a shell vial and placed in a drying oven to remove excess liquid.

Phase 2: Microscope Scanning

The phytolith extracts were quick-mounted in distilled water and viewed in an optical microscope at 400X. Mounts were prepared by pressing a slide over the mouth of an open vial which was then inverted. The extract was allowed to settle on the slide and then reverted to its original orientation, the slide quickly removed retaining a drop of fluid with a portion of extract included. Whole slides were scanned at 100X to find clusters of particles which were then scanned at 400X to determine the character of individual particles. Representative and especially taxonomically significant phytoliths and other biosilica bodies (e.g. diatoms and sponge spicules) in each slide mount were noted.

Phase 3: Compilation and interpretation of data

No phytolith reference database developed from phytolith extracts of living plants in the site's region was available or specifically prepared for this study. This severely limits taxonomic specificity in interpreting phytoliths present and, predictably, leaves a substantial number of morphologically distinctive (and sometimes frequent) phytolith types in the category of "unknown". However, recent publications, especially Rapp and Mulholland, 1992, provide substantial verification for both general and specific taxonomic assignments of phytoliths.

In the absence of a regional phytolith database, published typological information was employed for classification of phytolith types. For grasses, the three tribe classification of Twiss, et al. (1969) into festucoid (wet, cool habitat), panicoid (wet, warm habitat) and chloridoid (dry, warm habitat) phytolith classes is the conventional standard, along with elaborations by Brown (1984).

For angiosperms (e.g. deciduous trees and shrubs) and conifers, Rovner (1971), Geis (1973), Klein and Geis (1978) provide some guidance for eastern woodland flora content. The most elaborate work to date in these taxa has been done by Japanese experts (Kondo 1974, 1976, 1977; Kondo and Peason 1981; Kondo and Sase 1986; Kondo, et al. 1987) primarily on Asian flora. However, considerable similarity of illustrated phytolith forms at the genus level between American and Japanese plants provide confident guidance in the taxonomic assignment of distinctive phytoliths in these categories. Most recently studies by Cummings (1992) and Bozarth (1992) have confirmed and refined the typology and taxonomy of phytoliths in dicotyledonous taxa. Distinctive material can now be attributed specifically to Asteraceae (Compositae) - a dicotyledonous group well represented and ethnobotanically significant in the eastern United States. While soil phytolith studies in the general region of the mid-Appalachians and Atlantic Seaboard are few in number, general comparisons can be drawn from studies at such eastern historic period sites as Monticello, VA (Rovner, 1988b); Hampton, VA (Rovner, 1989); Harpers Ferry, WV (Rovner, 1994); Jordan Site (31NH256), NC (Rovner, 1984); 38CH145 and 38BK1011, SC and, National Museum of the American Indian Mall Site (1997c) and prehistoric sites, such as, 31MK683, NC (Rovner, 1995a, 1995b), Wakefield Sites 31WA1376, 31WA1380 and 31WA1390), NC (Rovner, 1998A); Canton Site, 9CK9, GA (Rovner, 1996) and Nantucket Sites, 19NT50 and 19NT68, MA, (Rovner, 1998b).

Results

The extracts from Feature 3 were sparse to moderate, although the phytoliths present were varied and well preserved. A second mount from the first extract and a third mount from a second extract were scanned. All appeared similar. Both grass and non-grass were present. Very little of the non-grass was distinctive and the overall non-grass assemblage did not resemble the array of forms characteristic of assemblages from forest areas further inland. Two small spheres, possibly derived from Palmetto were observed. Otherwise the non-grass may have derived from lower canopy shrubs, bush, herbs and weeds, rather than from a heavy presence of mixed deciduous trees and conifers. This is hard to state with confidence in the absence of an effective reference taxonomy of the phytoliths in local flora.

Grass forms were common and the total for all three mounts of identifiable grass short cells attributed to tribe is given in Table 14 below. Panicoid dominance is expected as the natural condition in this region — warm and wet. The presence of Chloridoids at a significantly lower frequency need only reflect localized presence of quickly drained sandy soil, waste areas and/or seasonal summer grasses. Likewise, the low frequency of Festucoids is expected and may reflect seasonal cool grasses and/or a permanently moist micro environment. The presence of sponge spicules supports the presence of permanent water in the immediate vicinity.

The general profile of phytoliths is similar to the Feature 4 assemblage, but a relative frequency comparison must be made considering the number of mounts scanned. While no specific method to insure quantitative control over the mounts was made, all samples and mounts were treated similarly so that quantitative differences due to mounting error should be random. The three mounts of Feature 3 extracts clearly had fewer phytoliths compared to the two mounts of Feature 4 extracts, but clearly more that the total from four mounts of the Feature 7 extracts.

Feature 4 is clearly the richest of the three

Table 14.
Frequency Counts of Selected Phytolith Types and Sponge Spicules

Sample	Mounts	Panicoid	Chloridoid	Festucoid	Diatoms	Sponge
Feature 3	3	14	5	3	1	13
Feature 4	2	36	3	3		36
Feature 7	4	4	5			4

features in phytolith content. The two mounts were virtually equal in contributing to the short cell and sponge spicule counts suggesting consistency in mounting. In terms of a panicoid count per mount ratio, Feature 4 is nearly 4 times the Panicoid frequency of Feature 3 and nearly 15 times that of Feature 7. This corresponds reasonably well to the observed overall comparative richness of the phytolith assemblages. Given the context of samples from cultural features, it is reasonable to attribute these differences to biases caused by human behavior.

Perhaps more significant is the Panicoid to Chloridoid and Panicoid to Festucoid ratios. A purely natural grass assemblage should tend to produce homogeneity in the grass ratios — unless there are substantial microenvironmental differences in the immediate flora at each of the locations respectively or the features were created during very different climatic regimes separated in time. The ratios are very different between Feature 3 — where Panicoid to Festucoid is less than 5 and Panicoid to Chloridoid is less than 3 - and Feature 4 where both ratios equal 12. There is a decided preference bias for Panicoid grass in Feature 4. A purely natural cause is unlikely, further reduced by the fact that increased wetness indicated by the Sponge spicule counts would, if anything, favor increased presence of Festucoid grass. This is clearly not the case.

Although one possible reason for a cultural behavior resulting in a bias toward Panicoid dominance might be the presence of maize, this seems unlikely since the feature dates from the Early Woodland. The feature, however, has been identified as a shellfish steaming pit — based on its internal morphology and distinctive attributes. With this in mind, the dominance of Panicoid phytoliths in this sample is likely to indicate that these particular grasses were selectively used to create a steaming oven for the shellfish.

Feature 7 was impoverished both in general and in the presence of grass phytoliths. While here, too, the dominant grass is Panicoid, the small observed count size precludes ratio comparisons. The less frequent Festucoid and Panicoid grasses of the other feature assemblages failed to appear at all in the impoverished extracts in spite of the scanning of four mounts.

Conclusions

Phytoliths were present and well preserved in all three samples. However, overall quantity and relative frequency of phytoliths indicate substantial differences between the three features. Feature 7 received very little phytolith producing material. Feature 4 was the richest in phytoliths and "wettest" according to sponge spicule count. The dominance of Panicoid phytoliths suggests that these grasses were selected to create the steaming oven used for cooking the shellfish. Feature 3 assemblage is intermediate.

The low level of Festucoid grass precludes the arrival of European settlement which is marked in the phytolith record by the introduction of Old World cereals and fodder grasses that are overwhelmingly dominated by Festucoid grasses. The presence of Panicoid-type grass in Feature 3, which unlike Feature 4 has no steaming function, coupled with Feature 3's protohistoric date, may suggest the presence of maize.

ANALYSIS OF POLLEN

Arthur D. Cohen
Department of Geological Sciences
University of South Carolina

Introduction

Three soil samples were submitted for pollen analysis, one each from Feature 3 (a protohistoric pit), Feature 4 (a Deptford shellfish steaming pit), and Feature 7 (a small Deptford pit).

Each sample preparation included potassium hydroxide (KOH) treatment, hydrochloric acid (HCL) treatment, zinc chloride ($ZnCl_2$) flotation, hydrofluoric acid (HF) treatment, bleaching with sodium hypochlorite, and staining with Safranin O. Ten slides from each provenience were prepared and scanned for evidence of pollen grains. Regrettably, few pollen were found in any of the samples.

Results

Feature 3, N½

The sample contained only one pollen grain (a corroded *Pinus* grain) and one or two *Riccia*-type fungal spores. These are very typical of farm fields; however, since the samples came from well below the cultivation layer, it seems more likely that these are associated with the site environs when the pit was open.

Various plant fragments were encountered. The palynofacies debris was dominated by angular, highly oxidized, fragmental components. Most of this fragmental debris was opaque, as is the case for charcoal; however, except in a very few rare cases, this debris did not have the characteristic anatomical structure of fire-produced charcoal (i.e., open network of cell walls). These may be remains from the abundant charbonized peach pits reported for the pit (see the following section). A few of the fragments had the characteristic structure of gymnosperm wood (probably pine).

Feature 4, E½

No pollen was found in this sample, only a few fungal spores and hyphae. A small amount of charcoal was found, but most palynfacies debris consisted of very finely fragmental, highly oxidized debris.

Feature 7, S½

Pollen was recovered from this sample, although not enough to reconstruct the paleoecological setting. The few palynomorphs that did occur were very highly corroded and fragmented. The types are indicated in Table 15. These remains are suggestive of a setting not too dissimilar to that found in the site vicinity today. The presence of the grass and chenopodiaceae is suggestive of a disturbed habitat — perhaps indicative of

Table 15.
Pollen Remains Identified from Feature 7, S½

Material	No./10 Slides
Arboreal	
Carya (hickory)	3
Pinus (pine)	2
Nonarboreal	
Compositae (grasses)	1
Chenopodiaceae (goosefoot, etc.)	1
Nonpollen	
Fungal spores	6
Fungal hyphae	common

the Deptford settlement and other interventions.

Various unidentified, angular, oxidized fragments similar to those from Feature 3 were encountered. In this case they appear to represent nutshell remains.

ETHNOBOTANICAL REMAINS

Introduction

Ethnobotanical remains were recovered from a number of excavation proveniences associated with the prehistoric assemblages at 38CH257, including handpicked samples from ¼-inch dry screening, as well as water floated samples. Virtually all of the available samples were included in this study and the number was limited only by the nature of the site and recovery techniques.

Flotation samples, offering the best potential to recover very small seeds and other food remains, are expected to provide the most reliable and sensitive subsistence information. Samples of 10 to 20 grams are usually considered adequate, if no bias was introduced in the field.

Popper (1988) explores the "cumulative stages" of patterning, or potential bias, in ethnobotanical data. She notes that the first potential source of bias includes the world view and patterned behavior of the site occupants — how were the plants used, processed, and discarded, for example. Added to this are the preservation potentials of both the plant itself and the site's depositional history. Of the materials used and actually preserved, additional potential biases are introduced in the collection and processing of the samples. For example, there may be differences between deposits sampled and not samples, between the materials recovered through flotation and those lost or broken, and even between those which are considered identifiable and those which are not. In the case of 38CH1257 the soil samples were each 5 to 10 gallons in volume (depending on the size of the feature) and were water floated (using a machine assisted system).

Handpicked samples may produce little information on subsistence since they often represent primarily wood charcoal large enough to be readily collected during either excavation or screening. Such handpicked samples are perhaps most useful for providing ecological information through examination of the wood species present.

Such studies assume that charcoal from different species tends to burn, fragment, and be preserved similarly so that no species naturally produce smaller, or less common, pieces of charcoal and is less likely than others to be represented — an assumption that is dangerous at best. Such studies also assume that the charcoal was being collected in the same proportions by the site occupants as found in the archaeological record — likely, but very difficult to examine in any detail. And finally, an examination of wood species may also assume that the species present represent woods intentionally selected by the site occupants for use as fuel — probably the easiest assumption to accept if due care is used to exclude the results of natural fires.

While this method probably gives a fair indication of the trees in the site area at the time of occupation, there are several factors which may bias any environmental reconstruction based solely on charcoal evidence, including selective gathering by site occupants (perhaps selecting better burning woods, while excluding others) and differential self-pruning of the trees (providing greater availability of some species other others).

Procedures and Results

The eight flotation samples, one each from Features 2-9, were prepared in a manner similar to that described by Yarnell (1974:113-114) and were examined under low magnification (7 to 30x) to identify carbonized plant foods and food remains. Remains were identified on the basis of gross morphological features and seed identification relied on Schopmeyer (1974), United States Department of Agriculture (1971), Martin and Barkley (1961), and Montgomery (1977).

All of the available material was examined from Features 2, 4, 5, 6, 8, and 9. In each case the sample

Table 16.
Analysis of Flotation Samples,
weight in grams

	Wood		Bone		Shell		Trash		Hickory Nutshell		Corn		Peach Pits		
Provenience	wt	%	wt	%	wt	%	wt	%	wt	%	wt	%	wt	%	Total
Fea 2, S½	4.00	21.9	2.10	11.5	8.24	45.0	3.96	21.6							18.30
Fea 3, S½	13.93	60.9	0.03	0.1			2.71	11.8	0.08	0.4	0.96	4.2	5.17	22.6	22.88
Fea 4, W½	6.15	16.3	1.06	2.8	30.14	80.1	0.31	0.8							37.66
Fea 5, S½	5.30	17.7	0.14	0.5	18.02	60.2	5.81	19.4	0.65	2.2					29.92
Fea 6, E½	6.35	43.1			3.64	24.6	3.36	22.8	1.40	9.5					14.75*
Fea 7, N½	24.38	79.7	2.70	8.8	3.16	10.3	0.19	0.6	0.17	0.6					30.60
Fea 8, N½	3.80	34.2	0.41	3.7	6.37	57.4	0.52	4.7							11.10
Fea 9, S½	2.44	18.4			8.68	65.5	2.13	20.1							13.25

* includes 1 unidentifiable seed coat fragment, 0.04 gm

Table 17.
Wood Charcoal Identified in Handpicked Collections,
by percent

Provenience	Pine	Oak	Hickory	Magnolia	Buckeye	Sweetgum	UID	Peach Pit	Corn
Cut 1, PH 2	100.0								
Cut 2, PH 5	100.0								
Cut 3, PH 17	100.0								
Cut 3, PH 29	100.0								
Cut 4, PH 2					100.0				
Fea 3, N½	40.4	4.5	2.6			0.7	10.2	41.2	0.4
Fea 3, S½			88.1				0.1	11.8	
Fea 4, E½	100.0								
Fea 6, E½	100.0								
Fea 7, S½	71.4	14.3		14.3					
Fea 7, N½	80.0			20.0					

was over 10 gm and in several instances over 20 gm. For Features 3 and 7 the quantity of recovered material was sufficiently large to require that a subsample be taken for analysis.

Features 3, 4, 6, and 7 also were represented by handpicked materials. The remaining handpicked samples were from five post holes identified during the examination of the mechanical cuts.

Readers will recall that eight of the nine prehistoric features are Deptford pits. These may be further subdivided on the basis of shell content and internal morphology. Feature 4, which contains dense shell, is a classic shell steaming pit, very similar to those found at Thom's Creek sites. This feature functioned to steam shellfish. Features 7 and 8 are relatively small pits, but are loaded with shell, being fairly typical of the pits found at coastal Deptford sites. Although different in internal morphology, it is assumed that they, too, served to steam or cook the shellfish. Features 2, 5, 6, and 9, on the other hand, have little to no shell, are fairly small and often shallow, and are very atypical of Deptford pits. Their function is uncertain, but they appear to be more "classic" hearths or cooking pits.

Feature 3 is the only Ashley phase pit recovered from the excavations. It is relatively large, but shallow, containing a dark loam and no shell. It appears to be a "trash" pit, consistent with many found at late sites. Wilson (1977) characterizes these pits as "shallow basins," which were probably the result of food preparation.

Table 16 provides information on the components of the flotation samples, while Table 17 lists the materials recovered from the handpicked samples.

There are four hickories common to the Charleston area -- bitternut (*Carya cordiformis*), water (*C. aquatica*), mockernut (*C. ovalis*), and pignut (*C. glabra*). These species occur on a variety of soil types, from dry woods to rich or low woods to swamp lands. In South Carolina they fruit in October, although seeds are dispersed from October through December (Radford et al. 1968:363-366). Good crops of all species are produced at intervals of up to three years when up to about 16,000 nuts may be produced per tree (Bonner and Maisenhelder 1974:271). Complicating this simple seasonality is the ability of the nuts to be stored for up to six months.

Recalling one of the few other detailed ethnobotanical studies of Thom's Creek sites, hickory nutshell seems to be the only food remains present in any appreciable quantity (Trinkley 1975). This study, incorporating Daw's Island (38BU9), Spanish Mount (38CH62), and the Sewee Shell Ring (38CH45) revealed that hickory comprised between 2% and 14% of the samples. A study of flotation samples from Bass Pond (38CH124) found that hickory nutshells comprised between 17% and 37% of each sample (Trinkley 1993:201) and a Thom's Creek feature at Secessionville (38CH1456) produced upwards of 33% hickory (Trinkley and Hacker 1997:159).

Hickory usage at Early and Middle Woodland Deptford and St. Catherines sites seems to have declined. At 38CH1219, on Kiawah, hickory accounts for only a trace in two of the three samples (Trinkley et al. 1995:55). At 38BU861 accounts for 0.2 to 8.5% of several flotation samples (Trinkley and Adams 1994:83). Although we should not immediately discount sample bias, it seems far more likely (since all of the samples have been collected and processed using similar techniques) that this decline represents a change in coastal subsistence strategy from the Late Archaic through the Middle Woodland

The near absence of seeds in the flotation collections suggests that the site occupants were not exploiting many of the plants which produce edible seeds. Perhaps the coastal environment was sufficient rich in other resources that seeds were viewed as requiring too great an energy expenditure.

Turning to the Ashley phase pit we find abundant peach pits (*Prunus persica*) and some corn (*Zea mays*). John Lawson, traveling among the Piedmont Siouan tribes, frequently observed peach and suggested that this association between the peach and Indians was proof as a Far Eastern origin (Lefler 1967:173). In spite of this, he could not find the peach growing wild nor did he observe peaches in the remote and isolated groups he visited (Lefler1967:113) — it was found only among those close to European settlements. It seems likely, therefore, that the Carolina Indians (both in the North Carolina Piedmont and in the South Carolina low country) obtained their peaches from early explorers — probably the Spanish.

Milling does mention peaches from South Carolina, commenting, "orchards of peaches were encountered by the white explorers seven years prior to the settlement of Charles Town, if not earlier" (Milling 1969:17). This is almost certainly a reference to Hilton's observation of peaches and figs somewhere between the Edisto River and Port Royal (perhaps on Edisto Island). In 1670, Joseph West observed regarding St. Helena, "the land was a good land supplyed with many Peach trees and a competence of timber, a few figg trees . . ." (Salley 1911). Although speaking of peach trees found in North Carolina, Lawson provides the best description of the fruit:

> The tree grows very large most commonly as big as a handsome Apple-Tree; the flowers are of a redish, murrey Colour, the Fruit is rather more downy than the yellow Peach, and commonly very large and soft, being very full of Juice. They part freely from the Stone . . ." (Lefler 1967:115).

Sheldon (1978) has commented that this "Indian Peach" is of particular interest since they furnished stocks for American orchards and were eventually the source of several varieties, including "Indian Chief," "Indian Rose," and "Blood Free." Although the peach provides a very high percentage of potassium and vitamin C (Vaughan and Geissler 1997:78), it is also a perennial tree which requires three to five years growth before bearing fruit). Sheldon suggests that one reason it was so easily adopted from Spanish sources is that the fruit is so sweet. Vaughan and Geissler, for example, note that there is about 8% total sugar in the peach, with over half of that being sucrose (Vaughan and Geissler 1997:78). It seems likely that the peach offered the Native American something quite unusual.

The peach specimens from 38CH1257 include four measurable samples, yielding a mean length of 2.2 cm, a mean width of 1.8 cm, and a mean thickness of 1.3 cm. These are very close to the measured samples reported by Sheldon for Childersburg, Alabama (1700-1825) and DeLeon (St. Augustine), Florida (1594-1623). Although far larger samples are needed, it appears that the Indian cultivated peaches were typically about 190% smaller than modern varieties, regardless of location or time period (Sheldon 1978:5-6).

In contrast, corn is commonly associated with the Native Americans. It is probable that there were three races of corn in aboriginal eastern North America, exclusive of the pop and sweet corns: Northern Flints (also known as Eastern Complex corn), Southeastern Dents, and Southeastern Flints. Northern Flints, found centered in the Northeast, were characterized by ears possessing 8 to 10 rows of crescent-shaped kernels (for example, kernels wider than high), short plants that were highly tillered, and ears that were frequently enlarged at the base (see Brown and Anderson 1947; Carter and Anderson 1945; Jones 1949, 1968; Brown and Goodman 1977). Cobs were large, and grooves separated the cupules. Southern Dents, found primarily in the Southeast, were noted for plant height and rarely produced nubbin ears. Rows ranged in number from 8 to 26, and the kernels were well dented; the cob frequently had an enlarged base. This race of corn widely grown in the Southeast during Colonial times (Brown and Goodman 1977; Kalm 1974). The last major race, Southeastern Flint, had short cobs, ears of 12 to 14 rows, and an ear that was slightly compressed at the base and gently tapered to the tip. Brown and Goodman note that this race is "limited to historic times. Prehistoric materials from this area seem to be more closely related to the Northern Flints" (Brown and Goodman 1977:77).

Examination of corn at Town Creek has revealed 8 to 10 row Eastern Complex corn (Trinkley 1995). Similar corn is reported from McDowell Mound in Kershaw County, as well as from a brief Irene component at Stallings Island (Brown and Goodman 1977). Gardner (1981:2-3) identified 8-row corn from a small Mississippian hamlet (38AN8), while 10-row Eastern Complex corn is reported by Sheldon and Harris (1982:349) from a Mississippian component at 38BK226. In contrast to these late prehistoric samples, the historic sample from Wachesaw Landing, which clearly dates from the late seventeenth or early eighteenth century, is a 10 to 14 row corn, with 12 row predominating. This corn seems to represent the Southeastern Flint (Trinkley et al. 1983).

The handpicked samples were also examined under low magnification with a sample of the wood charcoal identified, where possible, to the genus level, using comparative samples, Panshin and de Zeeuw (1970), and Koehler (1917). Wood charcoal samples were selected on the basis of sufficient size to allow the fragment to be broken in half, exposing a fresh transverse surface. A range of different sizes were examined in order to minimize bias resulting from differential preservation. The results of this analysis are shown in Table 17 as percentages.

The assemblage reveals the use of at least six different genera of trees, most likely for fuel, including pine (*Pinus* sp.), oak (*Quercus* sp.), hickory (*Carya* sp.), sweetgum (*Liguidamber styraciflua*), buckeye (*Aesculus pavia*), and magnolia (*Magnolia* sp.). Of these the most common is pine, with the other species being generally found in only one or two samples — probably representing isolated episodes of use.

The pine, oak, and hickory are all found in the immediate area today. Hickory and oak tend to occur on the drier sands, while pine is found widely scatter, but more commonly on the somewhat poorer drained soils. Sweetgum is found in low, rich woods, were there is wetter soil. The buckeye is found in moist forests and swamp margins, often as a large shrub or small tree. The various magnolia species are also found in low, moist woods or in the maritime forest.

The wood species found in the assemblage, therefore, seem to suggest two distinctly different habitats — a low, moist forest, perhaps on the edge of the marsh or a freshwater slough and a higher, somewhat better drained area. The two, of course, may have been in close proximity to one another.

Discussion

The Deptford Assemblage

The only food remains identified in the Deptford assemblage is hickory nutshell, which was found in three of the seven Deptford phase features. There doesn't appear to be a correlation between type of Deptford feature and the presence of nutshell — it occurs in two of the four hearth-like pits (Features 5 and 6) with only minor amounts of shell and one (Feature 7) of the three shell pits. The amount of hickory also varies from just 0.6% to 9.5%.

What is perhaps more interesting is that the two features with the densest quantity of nutshell are the hearth-like features, which are not typical of Deptford sites. The shell-laden pit, which is typical of coastal Deptford sites, contains the lowest quantity of shell — only 0.6%. More study is needed, but it may be that the preparation of shellfish was either done at a time of year when hickory was not commonly available or else the subsistence activities represented by the pit were so focused that nut collection was of only very limited consequence.

The dominance of pine, with other species suggesting a wet environment, is largely consistent with conditions today.

The Ashley Assemblage

The one feature from this late, protohistoric to historic phase, reveals the presence of both corn and peach. Although no cobs were recovered, both distinct cupules and small fragments of kernels were found. These materials are suggestive of the flints — no dents were observed and the kernels have a tight, close grained structure. Considering the age of the feature, it seems most likely that the corn from 38CH1257 represents the Eastern Complex Northern Flint. The peaches are consistent in size with others found in the southeast, although they are far smaller than modern cultivars.

Hickory nutshell, while present, is not very common and suggests that it was of margin importance — at least in the one sample available for study. There is abundant historic evidence (see, for example, Lefler 1967:34-35, 99, 105) that the hickory was extensively used, so we may simply not be seeing evidence of its importance in this one pit.

Otherwise, the wood charcoal suggests

relatively little change from the early Deptford phase. The assemblage is still dominated by pine, but there remains species suggestive of both drier, and wetter, environs in the site vicinity.

CONCLUSIONS

38CH1257

Situated in a cultivated field and bisected by a modern highway, it is difficult to visualize the site as it may have existed prehistorically — about 500 B.C. Our excavations, however, revealed that there were once concentrations or clusters of shell, probably representing distinct middens situated along the edge of the Kiawah River marsh to the south. These middens, over the years, have been plowed completely away, resulting in only denser areas of shell in the fields. Surface indications reveal that the shell middens were not found very far north, into the field, but rather hugged the shoreline.

The ethnobotanical record reveals that the shore environment was very similar to that found in the region today. Magnolias and buckeye were found on the wetter soils, oak and hickories were perhaps slightly further inland, and pines appear to be dominant. This is further supported by the pollen studies which have revealed pine and hickory, along with both grasses and the chenopod "weeds," typical of disturbed habitats. The phytolith record further confirms this presence of grassy species — perhaps suggesting an open clearing at the edge of the marsh.

The size of the site suggests that it was repeatedly revisited by Deptford people intent on harvesting the shellfish of the nearby marshes — marshes which would continue to attract settlement 2500 years later. Although oyster was the dominant species, other shellfish were also collected. Some, like the whelk and clam, were carefully sought out, although they were never as abundant as oysters. Others, like the stout tagelus, were collected incidentally, perhaps even accidentally, along with other species. The relatively small quantity of periwinkles may suggest that children were not as active as providers as they were in earlier periods.

These shellfish were steamed, using deep pits lined and covered with the grasses that are found in the vicinity. Once the harvest had been consumed the shells were thrown back into these pits and few ever saw repeated use.

The shellfish diet, rich in carbohydrates but low in protein, was supplemented with animal such as turtles which could be trapped or fish which could be netted while collecting shellfish. Larger animals, such as raccoon, were probably trapped — a low energy way of procuring meat while engaging in other activities. But there is also evidence that deer were hunted. The distribution of these mammalian resources among the various pits suggests that food was shared, perhaps along kin or clan group lines.

This site, unlike many small coastal Deptford middens, reveals that these mammalian foods were cooked in or over hearth-like pits. When filled, they are characterized by some shell, although not nearly the quantities found in the shellfish steaming pits. These hearth pits seem more common at this site than at many other middens perhaps because 38CH1257 is not only larger, but it also seems to suggest larger quantities of deer and raccoon.

However different the features might be, the pottery left by these Deptford people is very similar to that found elsewhere — dominated by cords or simple stamping, the vessels appear to be conical with slightly pointed bases. The paste is variable, but tends toward medium amounts of medium sand. And like other coastal Deptford sites, there is a dearth of lithics. In fact, the only lithics present are local mud or siltstones. The knappers seem to have repeatedly tried this material, only to be disappointed — the stone is found as chunks and flakes, but not as any finished or roughed out tools. In spite of the deer bones present at the site, there are no bone needles, pins, awls, points, or other tools, which are so common with the earlier Thom's Creek people.

Unfortunately, we can say almost nothing regarding the season in which 38CH1257 was used. The mammalian faunal remains are not particularly helpful, nor are the shellfish.[1] The presence of very small quantities of hickory nutshell in the features may suggest a cool weather period — perhaps fall or winter. The presence of grass pollen, on the other hand, is more likely to indicate a spring or summer period. This may suggest the site was not necessarily seasonal, but was simply a stop in a subsistence round for a number of different groups.

Although we can reconstruct many of the events at 38CH1257, it should be clear that there are many others which are still uncertain. What role did the site play in the Deptford settlement system? When was it occupied? Why do we find hearth-like features here, but not at sites like 38CH1219 only 2 miles to the northeast on Kiawah Island? While some would suggest that Deptford shell middens have contributed all the information they can, we'd suggest that their study is just beginning to explore the real mystery locked away.

But 38CH1257 was not abandoned after the Deptford phase. There is some indication that it continued to be used, at least occasionally, by the makers of complicated stamped pottery. Between about 1645 and 1670 — just before the settlement of Charles Towne — the site saw another occupation, this time by a group making what we call Ashley pottery. This ware represents the gradual deterioration of the fine complicated stamping practiced only a hundred or so years earlier. But even before the English landed, the Native American population had begun to feel the impact of disease and cultural disorganization.

The site was probably occupied by the Stono Indians — although they may have been either the Kiawah or Bohicket. They constructed houses of vertical poles set in the ground with squared corners, measuring about 14 feet square and probably covered with daub, or clay, smeared on a network of woven limbs called wattle.

The settling appears to have changed little from the time of the Deptford people. The sea level had fallen and then risen again to about the same level — perhaps once again making this an attractive site for settlement. The ethnobotanical study reveals pine, hickory, and oak — again on the higher sandy soils running through the center of the site — and sweetgum on the lower elevations. The pollen record is less helpful for this period, although it does reveal fungal material that is abundant in agricultural contexts — suggesting that between 1645 and 1670 the site area may have been undergoing some aboriginal cultivation. The phytolith study hints at corn, but is far more suggestive of grass. What it also tells us, confirming the radiocarbon dating, is that "modern" or European grasses had not yet made their way into the local ecosystem. In other words, the site and its occupants, were on the edge of a new world — both to themselves and the Europeans who would soon enough destroy the indigenous culture.

From one feature comes evidence of both corn and peach. The corn, although very fragmented, is likely a Northern Flint — a common type prior to European contact. The peach had been adopted from earlier explorers who passed through the region. The two form an ironic juxtaposition — the peach, which was craved by the Indians, was adopted from the same people who would later demand corn for their own sustenance and who would, eventually, overwhelm the Native American culture. Beans and squash — the rest of the "Mexican Triad" — are as undetectable here as at many other late sites in the region.

In addition to the pottery, this late occupation also revealed two clay pipes. Based on available evidence, these were almost certainly very special personal items, containing extraordinary spiritual powers. One was a small example of an elbow pipe, while the other is only a bowl, similar to stone pipes at the Peachtree Mound in North Carolina. Both are degraded and probably represent — like the associated pottery — the terminal phase of Native American life in the South Carolina low country. Both of these seem to be associated with the one house identified in the work at 38CH1257.

Much more of this site remains on the west side of the road leading to Kiawah. The original survey

[1] Although clam shells can be seasonally dated, and a number of clam were recovered from the site, they must be tied to one discrete collection period ("meal") — a condition which we cannot meet.

reports that there, in the dense woods never put under cultivation, intact above-grade shell middens are still present. The current investigations hint at the materials which may be identifiable in better preserved context.

38CH1259

This site is situated on the edge of a dirt farm lane which is one of the original roads on Seabrook Island. To the east the road takes a somewhat meandering path along a tidal creek, ending up at the Kiawah River. At this location there historically has been a bridge, connecting Kiawah and Seabrook. Hotly contested, frequently destroyed and as frequently rebuilt during the Civil War, it remained part of the landscape until the early twentieth century when it was destroyed by nature and never rebuilt. To the west the road parallels the island's rich agricultural fields, just inside the woods line, leading to the opposite end of the island. Another route lead north, across two small drainages and several large fields, to Haulover Creek, separating Seabrook from John's Island.

However remote, quiet, even desolate this site may appear, it was actually at a major crossroads connecting Kiawah, Seabrook, John's, and the western end of the island. There is no surprise, therefore, that it was the location of a Union picket post. The vantage over the Kiawah Creek marsh is superb, and the road controls access to the north, east, and west.

What is far more surprising is that the site produced almost no materials clearly associated with this picket post. To be sure, the site produced a small collection of clearly military items during the initial survey, including bullets and a regimental insignia. These items, identified by a metal detector survey, were regrettably collected with no mapping — so their association with one another has been lost. Moreover, recent efforts to identify the location of the collection has proven unsuccessful.

In spite of the early finds, this study, conducted with great intensity, found very little — and nothing which can with certainty be associated with its Civil War occupation. The study did find some materials similar to the original survey. For example, more parts of what may be the same brass pocketknife were recovered. And a number of large spikes were found, as were a number of can fragments.

Taken together, and given liberal interpretation, we can reconstruct a picket post. Perhaps the spikes were used to build an minor observation tower. Or perhaps they were used to create a log defense, or perhaps even a small shelter for the pickets. This, however, seems to be the only structural item even suggested by the study. There are no bricks or tin vent pipes which might have been used for a small fire place. There are no metal tent stakes. And there are no abundance of nails.

A small number of personal items were found — a pocketknife, a button, a razor. Items that might have been used by a soldier stationed in what must have seemed like the middle of nowhere. There are also the few truly military items — bullets and an insignia — likely dropped and lost in the sand soils.

Subsistence remains are limited to what are likely tin can fragments — tinned food. There is no evidence that the soldiers hunted or trapped while at this picket post. In fact, we haven't even found evidence of any sort of fire.

This dearth of artifacts, however, shouldn't be viewed as dismissing the importance of sites such as this. Perhaps, had we known the exact location and dispersion of the military items found in the initial survey, it would have been possible to uncover features. Or at least plot whether the same post was repeatedly used. As it was, much of the site's potential significance was lost when the exact location of the original materials was not recorded.

Future work may provide far more answers than we have been able to discern here. The problem, however, will be to identify Civil War sites which have not already been looted by vandals searching for bits and pieces of history they can convert into relics.

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