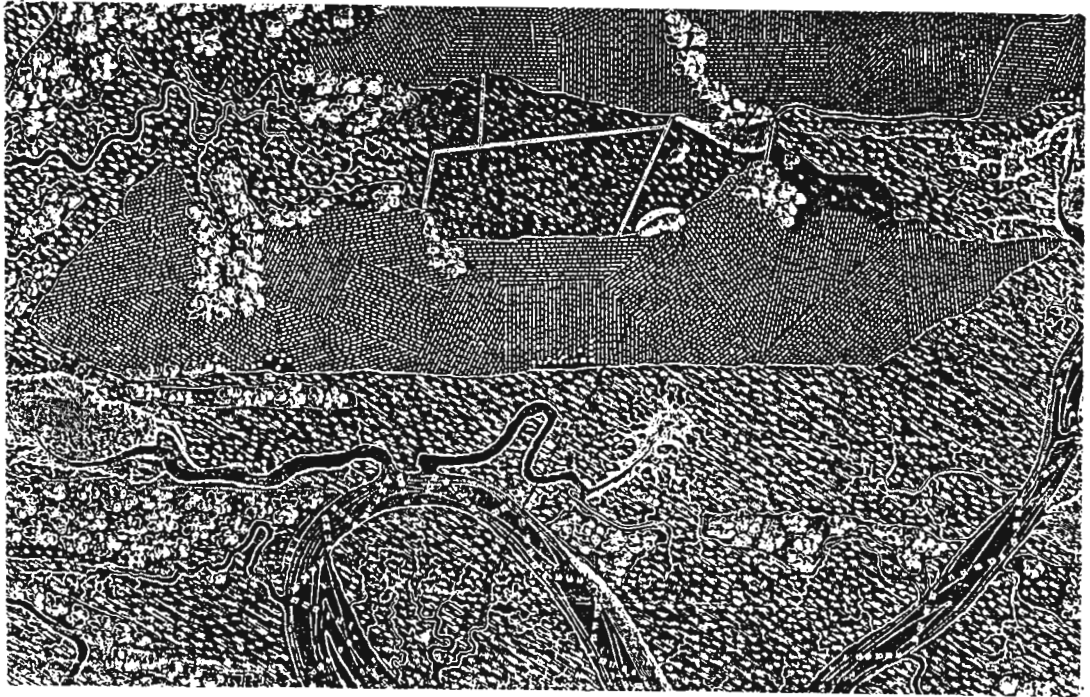


THE ARCHAEOLOGY OF  
SOL LEGARE ISLAND,  
CHARLESTON COUNTY, SOUTH CAROLINA



THE ARCHAEOLOGY OF SOL LEGARE ISLAND,  
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RESEARCH SERIES 1

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June 1984

But that all these, so hopeful of their day  
High souled in joy and hungry for the fight,  
Loved all too well such loving to betray,  
And linked in love declined into the night  
Whose dusk is flesh, whose dark is family,  
Whose midnight is despair -- full wrought in love;  
Despair of strength and the soul's entity;  
Opposed to noon by this thick world's remove.  
And since I burn so wrathfully with joy,  
And love also, as kindly as did they,  
And so would fight, and so would not destroy  
Night-hearted love that shows so proud a day:  
I'll choose the course my fathers chose before  
And with their shadows, pray my son does more.

Agee, *Permit the Voyage*

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## ACKNOWLEDGEMENTS

The sites discussed in this report were first brought to professional attention by Chevis Clark of Charleston, South Carolina. As a result of his interest and concern a significant archaeological site, 38CH779, was identified and testing operations were conducted by the Chicora Foundation. These sites are situated on the property of Riverfront Subdivision, owned by the Sherman Agency of Charleston, South Carolina. Mr. Howard Sherman graciously allowed the investigation of 38CH779.

Ms. Martha Zierden and Ms. Elizabeth Pinckney, both of the Charleston Museum, assisted in these excavations. Without their help and dedication much less would be known about the site. Dr. Ted Rathbun, University of South Carolina, examined the human skeletal remains. The directors of the Chicora Foundation, including Drs. Joffre Coe, Ted Rathbun, and Jack Wilson, Jr., have reviewed this manuscript. I appreciate their time and comments. Ms. Martha Zierden has also provided considerable peer support and review. Ms. Debi Norton assisted in the preparation of the final manuscript. Although all of these individuals have contributed their time, ideas, and emotional support to this project, I assume full responsibility for any distortion or misinterpretation of the data.

Finally, to D.H.N., who has given clear meaning to Moore's statement, "Oh call it by some better name,<sup>§</sup> for friendship sounds too cold," my deepest thanks.

## INTRODUCTION

### Background

In August 1983 Chevis Clark of Charleston, South Carolina informed me of a series of shell middens found disturbed by the construction of roads in the Riverfront Subdivision on Sol Legare Island. It was not until November 1983, however, that it was possible to visit the area. By that time the subdivision roads had been paved, many of the lots purchased, construction had begun on a few lots, and large quantities of artifacts had been removed by local collectors. My preliminary investigation defined three areas of extensive shell midden debris, later designated 38CH779, 38CH780, and 38CH781. Each site indicated that a large shell midden had been bisected by road construction. Materials indicated that each midden dated primarily to the Early Woodland, although small quantities of Middle and Late Woodland pottery were also present.

The site designated 38CH779 was found concentrated on lots 5-7B and 7-12A, Covey Lane. Several shell pits were found eroding from the road cuts and abundant shell was found on lots 10A, 11A, 6B, and 7B. The site core was estimated to be about 150 feet in diameter. The dominant pottery collected during the early survey belonged to the Thom's Creek series. Site 38CH780 was found primarily on lots 10-11C, southeast of Terns Nest Road. This site had been heavily disturbed by land clearing, but shell was abundant with some areas suggesting midden up to 3.0 feet in thickness. The site core was about 100 feet in diameter, although shell was found scattered over an area of at least 200 feet northeast by southwest and 100 feet northwest by southeast. The dominant pottery was Thom's Creek. The site, which is at the northeast end of Sol Legare Island, appeared to be more closely associated with the marsh than 38CH779. The final site, 38CH781, was found on both sides of Terns Nest Road, encompassing lots 14-16E and 3-6C. This site was similar to 38CH779, shell was abundant, and several discrete pits were found eroding from the road cuts. The site core was not easily definable, but appeared to be about 100 feet along the road. Again, the primary pottery identified belonged to the Thom's Creek series.

At all sites animal bone was found and was noted to be in excellent condition. The shells were primarily common oyster, although the marsh periwinkle was frequently locally abundant, especially in exposed pits. Small quantities of quahog, ribbed mussel, and whelk were also observed. The preliminary assessment was that the sites represented generally late, small occupations dating from the Thom's Creek phase (see Figure 1). Clark, who observed 38CH780 prior to its extensive disturbance, suggested that it might represent a shell ring. Briefly, these sites, which are circular deposits of shell midden with clear interiors (somewhat like a large doughnut) about 150 to 200 feet in diameter, appear to represent long-term or permanent occupation sites dating from the Early Woodland



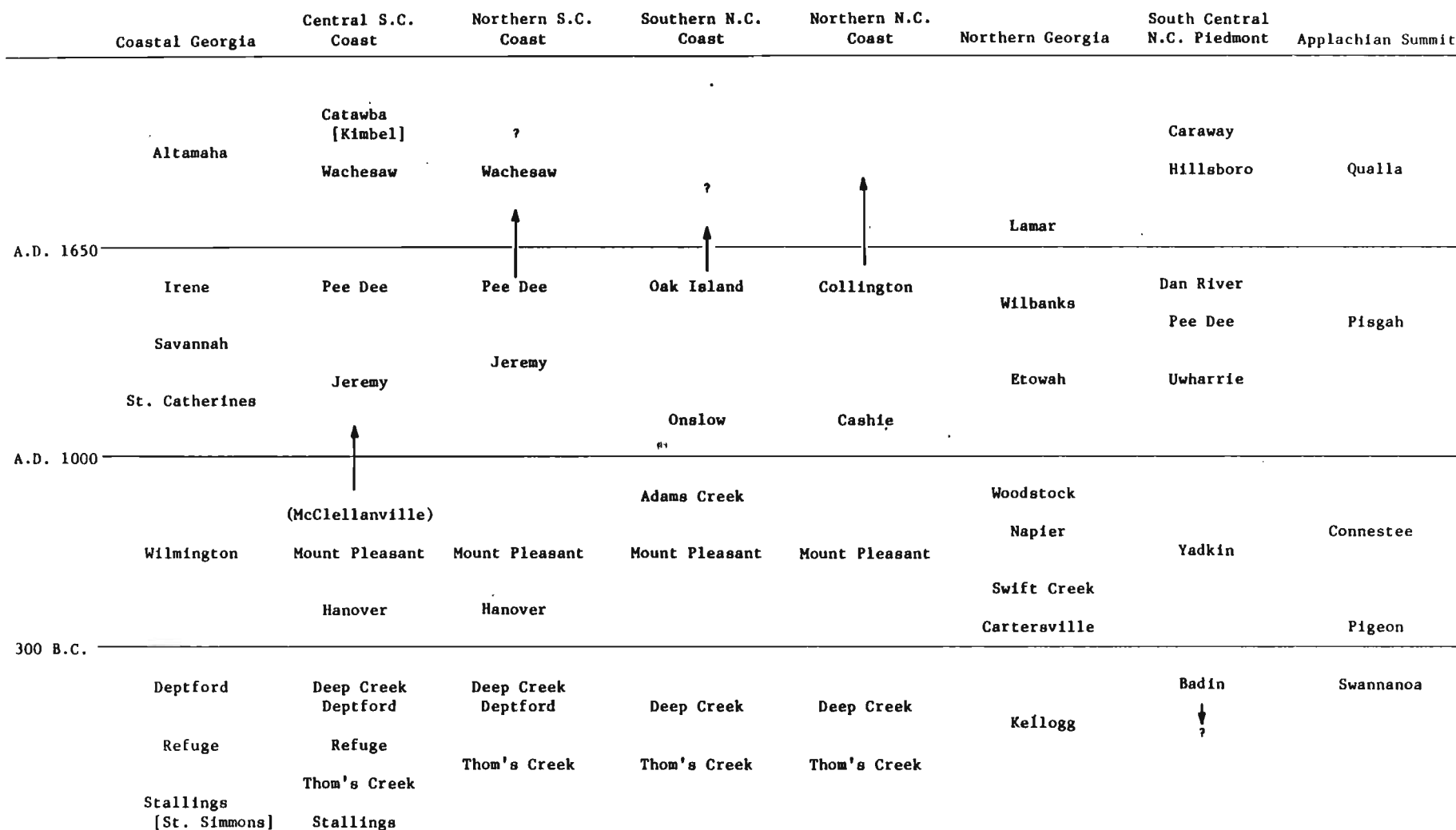


Figure 1. Chronology of the Woodland and Historic periods along the South Carolina coast.

(see Trinkley 1980b, 1983 for more thorough discussions). Although this remains a possibility, the site was so thoroughly disturbed by the time of the November investigations that it was impossible to determine if the shell midden remnants represented a shell ring. Reference to earlier aerial photographs, including the 1963 and 1973 SCSS photography, show 38CH780 heavily wooded with no obvious circular shape. The extensive, and deep, midden does suggest that 38CH780 was a major site.

In 1974 a survey of the Charleston County coastline was conducted by Carter and me (Trinkley and Carter 1974). While the primary purposes were to record sites and study the variation in environmental setting, another goal was to test a model for archaeostatistical survey based on a stratified cluster sampling approach. One of the 1.0 mile square survey tracts was situated in the marsh and encompassing the northwestern portion of Sol Legare Island immediately east of Folly Road. No archaeological sites were identified during the 1974 survey because the investigations were limited to the low marsh and inland side of Sol Legare Island. The major sites identified by Clark in 1983 were only 600 to 800 feet south and southwest of the 1974 survey boundaries. The failure to locate 38CH779, 38CH780, and 38CH781 is attributable to a slavish adherence to a statistical survey procedure which failed to allow for adjustment to micro-environmental variables. The northern or inland edge of the island consists of low, poorly drained Kiawah soils (Miller 1971:16, Map 69). The topographically higher, better drained soils are on the southern, or ocean, side of the island. It was in this area that sites would ultimately be identified.

A resurvey of the northern edge of Sol Legare Island in November 1983 again failed to identify archaeological remains in the vicinities of Wigeon Lane, Wild Wing Lane, Wading Heron Road, or Refuge Run (see Figures 2 and 4). All of these areas exhibited poorly drained, silty soils. This, at least, reinforces the thoroughness of the 1974 survey.

As a result of the investigations with Clark in November 1983 I contacted the developer, Mr. Howard Sherman of the Sherman Agency. Permission was granted to excavate portions of sites on lots still owned by the developer. Unfortunately, virtually all of sites 38CH780 and 38CH781 had been purchased. Instead of contacting individual property owners, it was decided to concentrate on the portion of 38CH779 on lots 6-7B, which were still owned by the Sherman Agency.

The decisions regarding both the site and the area of the site to be excavated were then directed by logistical and legal restraints. Sites 38CH780 and 38CH781 both appear to contain significant archaeological remains. It is not possible, at present, to assess these other sites because of their previous disturbance, disturbance resulting from subdivision activities, and the rampant collecting which took place after the sites were first exposed. Large quantities of archaeological remains, primarily pottery and bone, were removed from these sites and it has been impossible, thusfar, to locate these collections.

Site excavations at 38CH779 took place from January 21 through 23, 1984. As a result of this work four 5-foot squares were excavated and

and a controlled, intensive surface collection of the site was made. This report provides the results of this work.

### Environment

The environmental conditions of the Charleston area are described in detail by Trinkley (1980b), Mathews et al. (1980), and Sandifer et al. (1980). Sol Legare is a very small barrier island situated between the larger James and Folly islands about 7.5 miles south of Charleston. Sol Legare Island is separated from James Island by about 2000 feet of tidal marsh associated with Hollard Island Creek to the west and a tributary of Folly Creek to the east; the island is bordered on the south by Folly Creek marsh. Folly Island is about 2.3 miles to the south. Adjacent islands include Goat to the east, Long to the southeast, and Bowen to the south.

Sol Legare measures 2.5 miles parallel to the coastline (northeast-southwest) and from 0.2 to 0.5 mile wide at various points. The island encompasses over 443 acres, of which 130 acres are east of Folly Road. The island is generally flat with a maximum elevation of about 10 feet MSL. The average high land elevation, however, ranges from 7 to 9 feet. In the vicinity of 38CH779 the elevations are about 9 feet MSL with a noticeable bank and drop-off of about 4 feet to the marsh.

James Island is a Pleistocene island with a pine-mixed hardwood forest, while Folly Island is a Holocene island with a series of dune ridges and associated salt-tolerant vegetation (Mathews et al. 1980:148). Sol Legare, situated between these two islands, is included by Cooke (1936) in the Pleistocene Pamlico terrace and formation. Given the topographic setting, however, it is possible that the island is part of the Holocene shoreline development, although no one has studied the area in sufficient detail to plot dated shorelines (see DePratter and Howard 1977 for a study of Chatham County, Georgia).

In a very general sense the South Carolina coastal plain extends from the Atlantic Ocean inland for 120 to 150 miles to the fall line, where it adjoins the piedmont plateau. Cooke (1936) divided the coastal plain into a series of marine coastal terraces, all of which are underlain by sedimentary deposits, ranging in age from the Upper Cretaceous to Recent, which lie unconformably on crystalline rocks. From Cape Romain southward the coast is broken by numerous estuaries and tidewater creeks. Smith notes that

the coast is fringed by islands three or four tiers deep, separated by tidal channels which are counted by the thousand and vary from a few feet in width to sounds . . . two or three miles wide. These are the Sea Island (Smith 1933:32-33).

Brown (1973) identifies this area of South Carolina as characterized by transgressive barriers. The shorelines are straight and "are made up of a thin pocket of sand which is retreating landward through a washover mechanism" (Brown 1973:32). These areas are erosional end-products of beach ridge barriers. Sol Legare, because it is protected from the Atlantic Ocean by Folly Island, is not subject, however, to this type of

erosion. While barrier islands are usually defined as composed of beach dune ridges oriented parallel to the present shoreline, a more general term, sea island, may be used to define the erosional remnants of Pleistocene coastal islands. These islands are also parallel to the present shoreline and are rectangular in outline.

These Sea Islands present a unique and quite varied ecosystem, which may encompass coastal marine, maritime, estuarine, riverine, palustrine, lacustrine, and upland environments. In the vicinity of Sol Legare Island, because of its small size, only two, the estuarine and the maritime, are present. The estuarine system is defined as "deep water tidal habitats and adjacent tidal wetlands which are usually semi-enclosed by land" (Cowardin et al. 1977). Both intertidal and subtidal estuarine systems are found in the vicinity of Sol Legare Island. Dominant, economically important species of the estuarine area include the American oyster, quahog, fishes such as drum, Atlantic croaker, mullet, spot, silver perch, catfish, Atlantic menhaden, and flounder dependent on the habitat and salinity, reptiles such as the diamondback terrapin, waterfowl, and occasional mammals such as the marsh rabbit, white-tailed deer, and raccoon. The vascular flora of the estuarine area is dependent upon the salinity and tidal inundation. The low marsh, which is regularly flooded, is typified by extensive stands of smooth cordgrass with *Spartina*. The irregularly flooded high marsh is characterized by a mixture of several species of grasses, forbs, and rushes, including *Spartina*, minax marsh, and *Juncus*.

The maritime ecosystem is no less complex and includes all land which is not part of a wetland or aquatic system. The vicinity of Sol Legare Island is distinct from the mainland upland ecosystem by virtue of its sea island topographic situation. Also as a result of its sea island rather than barrier island situation, the island lacks the beach and open dune subsystems. Primary on Sol Legare are the transition shrub and maritime forest ecosystems, although most of the maritime forest has been removed from the island for either cultivation (originally) or development (more recently).

The vegetation of the Transition Shrub Communities includes primarily wax myrtle, yaupon holly, live oak, eastern red cedar, red bay, and various vines. The Maritime Forest Community of Sol Legare is largely open for conjecture since most of the vegetation has been cleared. Remnants, however, suggest either an oak-palmetto-pine or palmetto stand (Sandifer et al. 1980:120-122; see also Barry 1980). Although the proportions are different, both contain laural oak, palmetto, pine, red cedar, and possibly live oak. Both also contain an understory dominated by yaupon holly.

Amphibians and reptiles of the Transition Shrub and Maritime Forest Communities would include a variety of snakes, alligators, and turtles (notably the eastern mud turtle). A number of bird species, primarily passerine, utilize the maritime ecosystem, although the mainland forest supports a greater number of species (Sandifer et al. 1980:147). One of the most economically important species previously found in large numbers was the turkey. Hillestad et al. (1975) note that the maritime forests of South Carolina and Georgia exhibit a generally impoverished

mammalian fauna compared to mainland habitats. The dominant mammal is probably the white-tailed deer, although the population supportable on Sol Legare Island would be very small. Other mammals include squirrels, marsh and eastern cottontail rabbits, raccoons, and opossums. While during the early Colonial period a number of large predators occupied the maritime forests, the size of Sol Legare limited their significance. During the antebellum period many of these smaller islands were used to graze livestock (Martha Zierden and Jeanne Calhoun, personal communication).

Sol Legare Island consists of essentially three soil series: Kiawah loamy fine sands, Wando loamy fine sands, and Seabrook loamy fine sands. Small areas of Dawhoo, Rutlege, and Yonges loamy fine sands are also present. As previously mentioned the Kiawah series represents deep, somewhat poorly drained, acid soils. The Seabrook series consists of deep, moderately well drained soils and the Wando series represents excessively drained to well drained, deep, slightly acid soils. Sites 38CH779, 38CH780, and 38CH781 are situated on Wando series soils which have an Ap horizon of dark brown loamy fine sand about 0.7 foot thick overlying a Cl horizon of brown loamy fine sand to a depth of 2.7 feet where the color changes to a yellowish-brown. Concretions are few to common in Wando soils and the pH ranges from 6.1 to 6.3 (Miller 1971:30).

The Sea Islands are just on the edge of the sub-tropics and therefore have mild winters and hot, humid summers. The large amount of warm water surface present nearby produces a marine type climate which moderates both the cold spells of winter and the hot spells of summer. The warm Gulf Stream current is a major factor in bringing the sub-tropical climate northward, while the Appalachian Mountains block the shallow cold air masses which arrive from the northwest (Landers 1970).

The yearly temperature range is 61 to 39°F in December and January and 89 to 71°F in July and August. The average daily humidity is approximately 75%. About 41% of the annual rainfall is in the summer months with the average monthly total for July set at 7.7 inches (Kronberg 1971:72-73).

This brief review, as many before it (see Trinkley 1980b:136-143) suggests that the Carolina coast was abundant in subsistence items. Site 38CH779 on Sol Legare Island is situated in an area of considerable environmental diversity. Within a one mile radius of the site approximately 15% of the area is dominated by the deep water of Folly Creek, 50% is estuarine, and 40% is maritime forest. While palustrine areas must be in the vicinity they could not be readily identified from topographic mapping. These figures are roughly maintained if the area considered is extended to cover a 2 mile radius. The environmental position of 38CH779 is very similar to that of the Early Woodland Lighthouse Point and Stratton Place Shell Rings (Charleston County) and the Fish Haul site (Beaufort County). All of these sites appear to have been located to maximize the availability of the terrestrial and estuarine resources (Trinkley 1980b:156, 248; Trinkley and Zierden 1983:2-4) (Figure 2).

Of considerable concern to archaeological reconstructions along the South Carolina coast is the sea level during the past several thousand years. Recent work by Colquhoun et al. (1980) shows that while there is

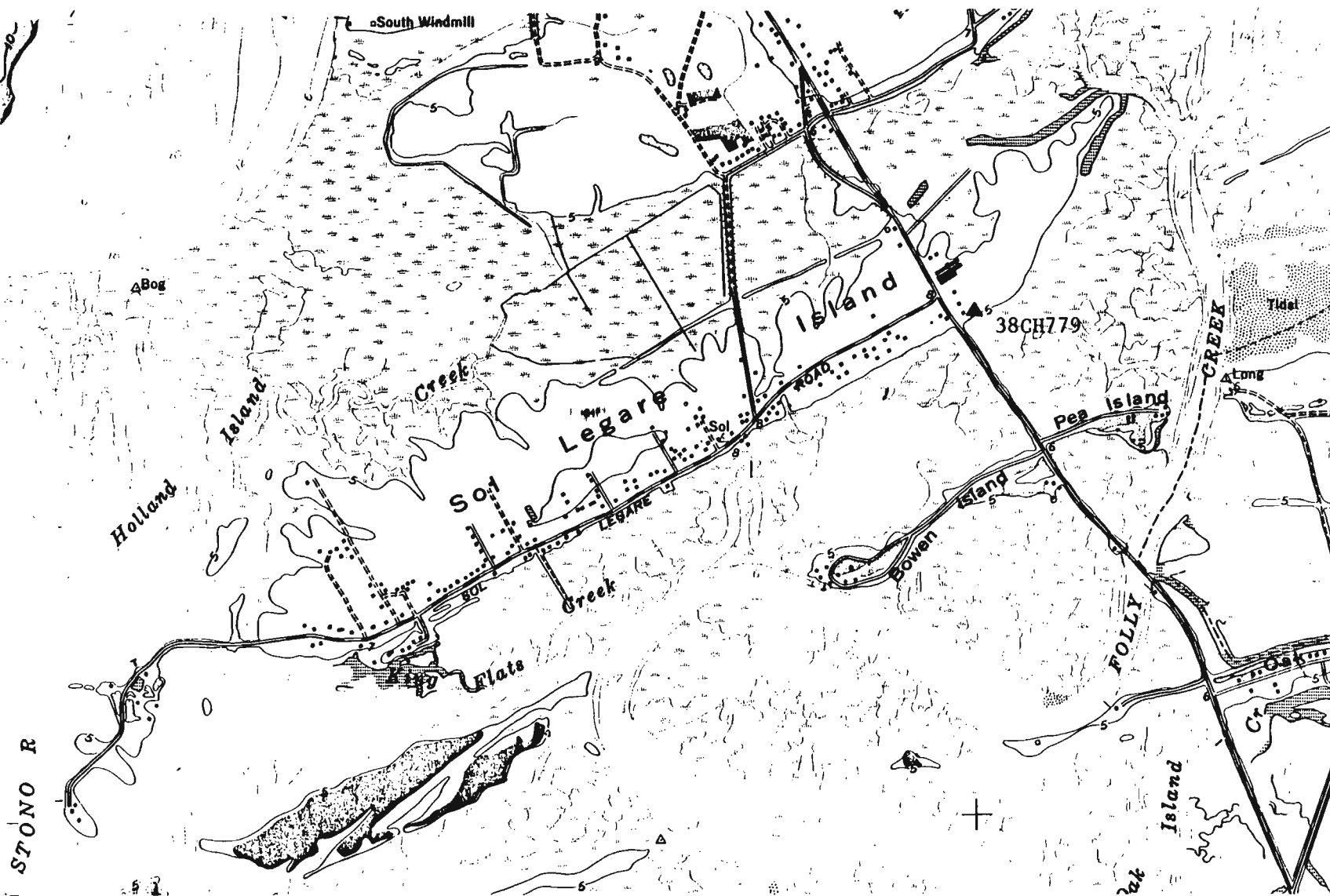


Figure 2. Vicinity of Sol Legare Island, Charleston County.

a general tendency for rising sea levels in the past 10,000 years, there have been a number of fluctuations. At about 2300 B.C. the sea level was 10.4 feet below today's level, while by 1400 B.C. the sea had risen to a level about 7.8 feet lower than present. By 950 B.C. the sea level was 2.6 feet lower than present and was at its highest point in about 600 years. This suggests that prior to 950 B.C. the estuarine creeks in the area may have had a steeper gradient and, for part of their course, been fresh or brackish water rather than estuarine. There may also have been reduced estuarine areas in the immediate site vicinity.

### Historical Review

Several recent reports have provided good surveys of the historic background of the Charleston vicinity, including Anderson and Logan (1981:35-46), Calhoun et al. (1982), Wheaton et al. (1983:30-70), and Zierden (1983). Reference to these works will assist in placing Sol Legare in its proper historical perspective.

English settlement of the New World began in the early seventeenth century. Charleston, the first permanent English settlement in South Carolina, was established in 1670 on the west bank of the Ashley River. The Carolina colony was part of the British mercantile system and was designed to profit the mother country by providing raw materials unavailable in England. The new colony was populated by English citizens, both directly from England and from British Caribbean colonies, principally Barbados, and directly by French Huguenot refugees. Black slaves, brought from the Caribbean colonies and from Africa, formed an important part of the colony's population (see Dunn 1972; Wood 1975; Zierden and Calhoun 1982).

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Large blocks of land were granted to the new settlers according to a headright system, based on the number of family members. Settlers were encouraged to develop a profitable staple crop and experimented with a variety of cultigens. During the late seventeenth century the Carolina colony provided foodstuffs to the overcrowded, overspecialized Barbados colony. Deerskins, obtained through the Indian trade, were also an important export. The fledgling colony's economy stabilized in the early eighteenth century when rice was discovered to be a profitable staple. At the same time, Indian and Spanish threats had been contained to a point that settlement began to expand beyond the immediate vicinity of Charleston (Trinkley and Zierden 1983:5). The rice monoculture of the eighteenth century shaped the social, political, and economic systems which produced and perpetuated the coastal plantation system prior to the rise of cotton culture (Drucker and Anthony 1980:24-34).

The American Revolution and the subsequent disruption of economic ties to England resulted in serious economic problems in Carolina during the late eighteenth century. By the early nineteenth century South Carolina's economy had begun to stabilize as a shift to coastal rice culture and coastal cotton monoculture developed. New European markets for these products resulted in the expansion of the labor-intensive plantation system characteristic of the low country's economy until the end of the Civil War.

There is very little specific history regarding Sol Legare Island. Bull (1970:14) notes that the island is named for Solomon Legare, "a prominent former owner." Neuffer (1972:13) also notes that Folly Creek, at some point in time, was known as Sol Legare Creek. Solomón Legaré was a French Huguenot who apparently migrated to Charleston in 1696 from Boston, where he was the son of Francois and Anne Lançois Legaré (McIver 1957:39). Holman (1948:66) notes that Francois Legaré was a goldsmith and jeweller and that Solomon was a silversmith (see also Molloy 1947:223). The Legare family history is too complex to be covered here, but is detailed by Fludd (1886).

The island took Solomon Legare's name probably during the period from 1860 to 1900. Although the 1863 "Map of Charleston and Its Defenses" does not place a name on the island, there are 1888 references to "Legare's Point" and Sol Legare's place." By 1919 the United States Geological Survey was producing maps with the island labeled "Sol Legare Island."

The Solomon Legare associated with this tract of land was apparently the Solomon Legare listed in the 1830 and 1860 censuses as a planter. Radford (1976) notes that the Solomon Legare living at 103 Tradd Street was listed in both the 1860 census and the 1859/60 directory was a planter. The tax payers list shows Legare as having property valued at \$20,000, while the 1860 census value is placed at \$13,000. This indicates a relatively wealthy planter. A plat of the Solomon Legare plantation on James Island (to the north of Sol Legare Island) dated 1879 (McCrary Plats, Book 3, page 87) suggests that he owned a variety of tracts for either cultivation, livestock grazing, or speculation (Martha Zierden, personal communication).

While no antebellum plat of Sol Legare Island has been identified, two maps show the island during this period. The first is the map of "Charleston Harbour and the Adjacent Coast and Country," surveyed between 1823 and 1825 by United States Army Engineers (National Archives Record Group 77, Drawer 64-8). This map shows two clusters of structures on the southern side of Sol Legare Island. One is on the western third of the island and is composed of eight structures. The other, which consists of 17 structures, is on the middle of the island. There appear to be at least 14 fields on the island, which is largely cultivated. The second map is the November 28, 1863 "Map of Charleston and Its Defenses" (see Ripley 1885:352) which shows the island divided into 17 fields with 12 structures lining the main road. This suggests a single, large cotton plantation with a main structure and a slave row. The 1863 road follows what is today an almost deserted county road which parallels and is about 0.5 mile to the east of Folly Road. The 1863 map shows "Legare" in the vicinity of the eastern most cluster of structures. No structures or roads are shown by either map on the eastern third of the island.

Ripley (1885:353-354) indicates that in June 1862 Federal forces, lead by Benham, landed on James Island with the Battle of Secessionville taking place on June 16, 1862. At least two, and possibly three, skirmishes took place on Sol Legare Island prior to the Battle of Secessionville. On June 2, 1862 a Federal gun boat in the Folly River shelled Legare's Point and Secessionville, then on June 3 there was a land skirmish at



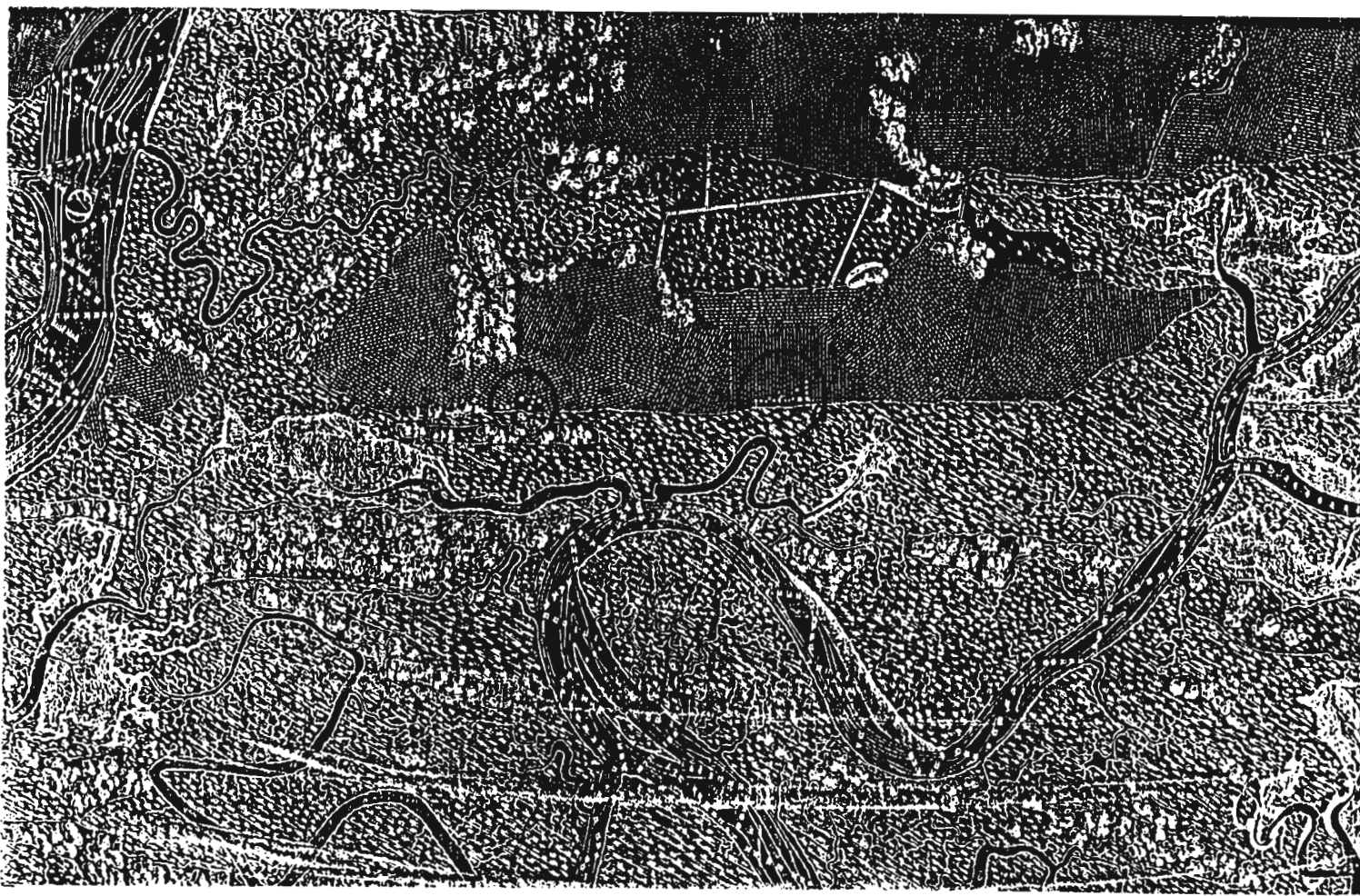


Figure 3. Historic sites on Sol Legare Island. The base map is the 1823-1825 "Charleston Harbour and the Adjacent Coast and Country."

"Sol Legare's place below Secessionville" (Johnson 1888:iii), and the 1863 map shows a skirmish in the central part of the island on June 6.

The occupational pattern on the island quickly spread out during the postbellum, probably as a result of freedmen beginning to operate small farms in the old plantation. The 1919 USGS topographic map shows the 1863 road virtually unchanged, plus an east-northeastern extension. A series of 50 structures are shown, most on the western two-thirds of the island, and none in the immediate vicinity of 38CH779. A 1921 plat of the eastern third of the island (McCrary Plats, Book 4, page 39) shows the 186.5 acre estate of George Brown. By 1942, the General Highway and Transportation Map of Charleston County shows 38 occupied farm units and 34 vacant farm units, all probably representing small tracts held by blacks. These tracts are long, linear lots oriented approximately north-northwest by south-southeast (perpendicular to the island's long axis), each encompassing about 15 acres. These lots can be traced back into the very early postbellum period. Some of these farm units may also represent tenant dwellings on the island. In addition there were four "dwellings" (i.e., occupations not directly associated with farming), three business establishments, one white church, and one Negro school. The 1919 and 1942 maps suggest a rural community of primarily black subsistence farmers who owned small tracts. The center of this occupation seems to have been the structures shown on the 1823-1825 and 1863 maps. There continued to be little occupation of the eastern end of the island.

In the mid-twentieth century CMU purchased several tracts on the east side of Folly Road and began fabricating steel guards for doors and windows. As a result of this activity considerable portions of the eastern tip of Sol Legare, by this time fallow fields, were used as dumping areas. There remains abundant evidence of this activity with the Riverfront Subdivision.

The 1973 Soil Conservation Service aerial photography indicates that sites 38CH779 and 38CH781 are both within cultivated areas, while site 38CH780 is within a forested area. In addition there is a field road which begins at Folly Road and tends northward. This road could be correlated with road ruts still visible in the vicinity of 38CH779. At least a third of a cemetery tract within the present subdivision was in cultivation prior to 1973.

The Sherman Agency, while developing Riverfront, constructed six paved roads, each 24 feet wide with a 50 foot right of way. Earth moving activities also included the construction of two lakes and the placement of underground sewer, water, electric, and telephone lines. A series of 260 lots, between 0.13 and 0.23 acre in size, have been created within the development (Figure 4).

#### Research Orientation

Sufficient archaeology has been conducted on the South Carolina coastal plain to construct an archaeological synthesis of the area's prehistory. The *Paleo-Indian Period*, lasting from 15,000 to 8000 B.C., is evidenced by scattered finds of basally thinned, side-notched projectile points;

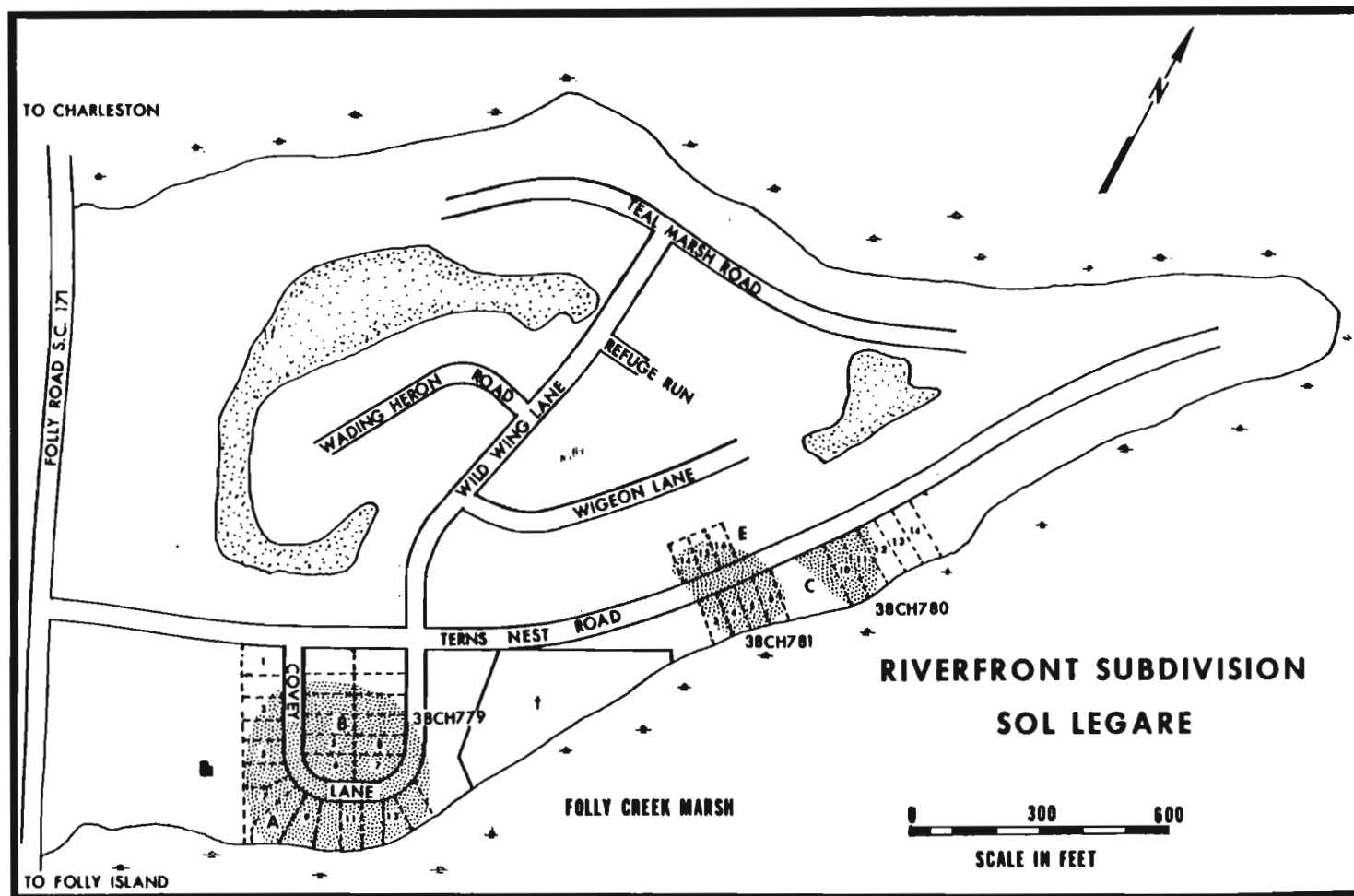


Figure 4. Subdivision map of Riverfront, Sol Legare Island, Charleston County.

fluted, lanceolate projectile points; side scrapers; end scrapers; and drills (Coe 1964; Michie 1977; Williams 1968). The Paleo-Indian occupation, although widespread, does not appear to have been intensive. Sites are most frequently found along the major river drainages in South Carolina. Michie (1977:124) suggests this occurrence supports the concept of a Paleo-Indian economy "oriented towards the exploitation of now extinct mega-fauna" which would be attracted to the floodplain ecosystem. A compelling alternative is presented by Perkinson's (1971, 1973) Paleo-Indian point studies from North Carolina. These data indicate a dispersed occurrence of points and may argue for a low density of "herd mega-fauna" in the East with a heavy dependence and focus on "individual micro-fauna." This pattern of subsistence may have contributed to the intensive development of the well-defined and long-lived Archaic Period (Jack Wilson, Jr., personal communication).

The *Archaic Period*, which dates from 8000 to 2000 B.C., does not form a sharp break with the Paleo-Indian Period, but is a slow transition characterized by a modern climate, an increase in population, and an increase in the diversity of material culture. The chronology established by Coe (1964) for the North Carolina Piedmont, may be applied with little modification to South Carolina's Coastal Plain. The majority of the lithic specimens found in the coastal area have been made from coastal plain shert, piedmont rhyolite, or quartzite (see Koob 1976). The general sparsity of Archaic sites in the coastal zone may be the result of a more attractive environment inland adjacent to the floodplain swamps of major drainages. Some sites were undoubtedly inundated by the rising sea levels since 8000 B.C. During this period the aboriginal occupants continued to be nomadic and live as hunters and gatherers.

The *Woodland Period* begins by definition with the introduction of fired clay pottery about 2000 B.C. along the South Carolina coast. The first pottery types, termed Stallings and Thom's Creek, were made until about 1000 B.C. During the Woodland Period there is increasing social complexity and population growth. As a result of rising sea levels, extensive tidal marsh is created for aboriginal exploitation, and there is a sudden increase in highly visible shell middens adjacent to the marsh. The increasing population pressure (Smith 1974; Trinkley 1976c) creates a gradual movement to and emphasis on the coastal zone. The first Stallings sites are expected to exhibit marginal reliance on shellfish and to retain the nomadic, seasonal hunting and gathering economy. During the Early Woodland Thom's Creek phase some sites, known as shell rings, are apparently permanent villages based on an economy of hunting mammals and collecting fish and shellfish (Trinkley 1980b, 1983). These sites consist of circular shell ridges which range from about 130 to 200 feet in diameter and from 2 to 10 feet in height. Distinctive of the shell rings are their clear interiors and doughnut midden shape. The change from the Early to Middle Woodland is poorly understood, although there is a noticeable shift away from large, permanent sites to a seasonal round with shellfish collection occurring in the fall and winter (Claassen 1982; Trinkley 1980b, 1981b). A new pottery style, called Deptford, gradually moves into the Charleston area from the south, while a pottery style called Deep Creek moves in from the north. The Middle Woodland is dominated by small, seasonal encampments which were oriented toward the collection of shellfish or the hunting of large mammals such as white-tailed

deer. In the Charleston area the later dominant pottery styles are Mount Pleasant and Hanover. A larger, more stable population with more complex social organization characterizes the Late Woodland. At this time the South Appalachian Mississippian influences are observed on the coast (see Ferguson 1971, 1972). Associated pottery styles are Irene to the south and Pee Dee to the north. A synopsis of Woodland phases and pottery designations has been provided in Figure 1.

Previous archaeology in the Charleston County area is recounted by Anderson and Logan (1981), Anderson et al. (1982), and Trinkley (1980b). Of particular concern is the large quantity of archaeology that has been conducted at sites which date to the Thom's Creek phase (about 1800 to 1000 B.C.), because this previous work provides a context for the limited testing conducted at 38CH779.

The first professional work in South Carolina at an Early Woodland shell ring were the 1932 excavations by Woldemar Ritter and 1933 excavations by Warren K. Moorehead at the Chester Field Shell Ring in Beaufort County (Flannery 1943). Work was conducted only a few years later by Antonio Waring and Lewis Larson (Williams 1968) at the Sapelo Island Shell Ring in Georgia. In 1965 William Edwards began excavations at the Sewee Shell Ring in Charleston County, South Carolina. Alan Calmes prepared a brief report on excavations at the Sea Pines and Skull Creek Shell Rings in Beaufort County, South Carolina. Calmes identified both Thom's Creek and Stallings pottery at these sites, while those from Georgia contained only Stallings and Edwards' investigations at Sewee had identified only Thom's Creek. E. Thomas Hemmings briefly tested the larger of the two Fig Island Shell Rings in Charleston County (Hemmings 1970a, 1970b) and found unspecified Thom's Creek pottery. In spite of these extensive previous investigations the function of shell rings remained unknown. Even by the mid-1970s Rochelle Marrinan, after excavations at two shell rings in Georgia, could still offer no hypothesis of the process of ring deposition (Marrinan 1975:117).

Thus, for over 40 years archaeologists struggled with the enigma of shell rings. The failure to break the puzzle of shell ring function and settlement type was primarily attributable to the data collection techniques used by the previous archaeologists (see Trinkley 1983). From 1976 through 1979 excavations were intermittently conducted at the Lighthouse Point and Stratton Place Shell Rings (Trinkley 1980b, 1983). A total of 2250 square feet were excavated at Lighthouse Point and 1500 square feet were excavated at Stratton Place. This work identified a variety of activity areas at shell ring sites and offered evidence of intensive, probably permanent, site occupation. Shell rings then are gradually formed habitation sites, with occupation taking place on the rings. The rings were formed from kitchen refuse, particularly shellfish and animal bone. The relatively clear interiors appear to have functioned as areas of communal activity.

Although irregular shell middens and shell-less Thom's Creek sites have been known for a considerable period of time (see Flannery's 1943 remarks concerning Lake Plantation and Sutherland's 1973 and 1974 comments on the work at Spanish Mount), it was not until Widmer (1976) that small shell middens were treated as part of a larger system. Michie (1979) has

advocated a different settlement reconstruction based on three categories of sites: shell rings, irregular shell piles, and non-shell midden sites. The latter site type is characterized as a "base camp" by Michie. This interpretation previously has been reviewed and rejected (Trinkley 1980b: 310-312).

An alternative settlement hypothesis has suggested that irregular middens may be the earliest sites on the coast and may represent a very early adaptive response to increasing population pressure and a disequilibrium in the environment's long-term carrying capacity (Smith 1974; see also Binford 1968). The early, irregular sites are accompanied by sites with little or no shell. The artifact assemblage is characterized by predominantly plain (Thom's Creek or Stallings) pottery, predominantly plain bone pins, and baked clay balls. Early sites are also dominated by Thom's Creek Reed and Shell Punctate pottery motifs.

After about 1700 B.C. there are found an increasing number of shell ring sites. There is a gradual spread of Thom's Creek culture traits from the Savannah drainage northward. As the Thom's Creek "people" became more successfully adapted to the coastal ecosystem, three major changes occurred: first, a coalescence in the population, second, an increase in the complexity of social organization, and third, a specialization of technology. The shell ring sites represent the establishment of sedentary village life along the Atlantic Littoral through the process of realizing and utilizing the potential resources concentrated close at hand.

The most recent Thom's Creek sites appear to be characterized by a diminished artifact assemblage and the presence of Thom's Creek Plain, Finger Pinched, and Finger Smoothed pottery. One site which appears to fit this late, transitional stage is Venning Creek. This site has produced a radiocarbon date of 980 B.C. (Trinkley 1980b). Site size has drastically decreased, shellfish remains are sparse, and the artifact assemblage is impoverished.

Sites of the cultural phases following Thom's Creek have been studied at a variety of locations: Lepionka has excavated a Refuge site in Jasper County (Lepionka et al. 1983), I have tested a Refuge site in Charleston County (Trinkley 1982a) and a Deptford site in Lexington County (Trinkley 1980a), and Drucker has investigated a Deptford site in Georgetown County (Drucker 1983). In spite of this work no good data have been obtained on the transition from Thom's Creek to either Refuge or Deptford.

The absence can be partially explained by recognizing that both Refuge and Deptford appear to have spread into the South Carolina coastal area from the south, just as the Deep Creek manifestations represent a northern intrusion (Phelps 1983; Trinkley 1982b). Yet, no sites which clearly document this intrusion or the resulting changes have been previously recognized or reported.

During the initial collection of the Riverfront Subdivision sites it was recognized that 38CH779 represented a Thom's Creek site with relatively little shell. The abundant Thom's Creek Plain pottery also

suggested a late site. Consequently, the research orientation at 38CH779 was directed toward first, establishing tighter temporal control for the site; second, determining the presence of intact subsurface remains; third, delimiting, even tentatively, site boundaries; fourth, collecting subsistence data to enable the site to be better placed in a regional model; and fifth, investigating, if possible, the changing adaptive strategies which may have occurred in the late Thom's Creek phase. Although the time spent at 38CH779 was minimal, all of these research goals were successfully met.

## INVESTIGATION OF 38CH779

The excavations conducted at 38CH779 were directed toward the recovery of a controlled sample of cultural remains, the isolation and identification of features, and the collection of subsistence data. Because of the limited time available for research at the site, the vague site parameters, and the desire to open contiguous units, the grid was established using areas free of vegetation for sight lines and was based on 5 foot units.

A permanent site datum was created at the south edge of Covey Lane by driving a gutter spike into the pavement. This point is 48.3 feet from the lot 9/10A rebar and 54.9 feet from the lot 7/8A rebar. This point, designated 200R200 has an elevation of 5.92 feet. Grid north was established at 35° east of magnetic north and three temporary points were established at 295R200, 300R200, and 400R200. A series of three 5 foot squares - 295R195-205 - were laid out in an area relatively free from debris and large vegetation. Although these squares intersected an old road bed, there was little other surface disturbance. These units are designated by the southeast corner and are tied into the site grid which uses the modified Chicago technique standardized by the Research Laboratories of Anthropology. The first number indicates feet north of the site datum (OR0), while the second number indicates feet right (or east) of this datum. Vertical control at the site is maintained by reference to the 200R200 pin. All soil from these excavations was sifted through  $\frac{1}{4}$  by  $\frac{1}{2}$  inch mesh screen and the units were excavated by a combination of natural zones and arbitrary levels within these zones.

The first square excavated, 295R205, revealed a stratigraphy with essentially three zones. The first strata, which contained abundant mid-twentieth century debris, was disturbed by bulldozer activity. This zone was designated level 1 and averaged 0.3 foot in thickness. The second zone was an old plowzone strata from 0.8 to 1.0 foot thick. The plowzone was divided into two arbitrary levels (2 and 3) during excavations in the hope that distinctions might be observed during analysis. They were not and the levels were later combined for analytic purposes. The plow soil contained small quantities of nineteenth and twentieth century artifacts, aboriginal remains, and shell. The soil consisted of dark brown loamy sand. The observed shells included oyster, clam, periwinkle, and ribbed mussel. All are typical of Early Woodland middens. Below this plowzone was a zone of medium to light brown sandy subsoil. Although very little shell was encountered in this zone, the aboriginal remains were quite dense. This zone, termed level 4, was about 0.7 foot deep in the initial unit. In succeeding units the excavation of level 4 was taken down only to the point that features and postholes might be readily recognized (about 0.3 to 0.4 foot).

Level 1 must be recognized as being very recent, probably dating to the past decade. Prior to that time it was part of the plowzone (levels 2



and 3). While the plowzone is of modern creation it represents a deposit of soil which postdates aboriginal occupation in the first millennium B.C. The etiology of this soil horizon is not completely known, although it is classified as an Entisol. This is a mineral soil which does not have genetic horizons or has only the beginnings of such horizons. The subsoil, or level 4, represents the surface soil during the aboriginal occupation. It is at this level that features and postholes are first observed, and that pottery is found in abundant quantities. In addition, square 300R202.5 revealed a small lens of shell laying at the base of the plowzone, uniformly on the upper portion of level 4. This lens was somewhat disturbed by plow action, but apparently represents a deposit of shell refuse from a single, short-term event.

During the excavation of units 295R195-205, a series of postholes was discovered traversing 295R200 from the south-center to the northeast corner of the square. To further explore this posited line another 5-foot square, 300R202.5, was excavated. The postholes continued through this square in a relatively straight line at the base of level 4 (see Figure 5). Upon excavation these postholes were found to be from 0.4 to 0.5 foot in diameter and from 0.2 to 0.4 foot in depth below the plowzone. Only two clusters of postholes, both in 295R200, suggest that posts were ever replaced. These similarities strongly support the belief that the postholes represent a single structure which received minimal repair during its life (see Figure 7). No evidence of daub or charcoal was found during the excavation of the postholes; it is therefore unlikely that the structure burned.

Although no corners were found during this work, other evidence suggests that the interior of the posited structure was to the west of the wall line. The soils to the west were heavily mottled and there were both more sherds and more small (i.e., fragmented) sherds to the west than to the east. The single feature identified by this work was in 295R195, to the west of the posthole line. The single shell concentration was found adjacent to the eastern edge of the posited structure. Although each aspect of this argument is speculative, the cumulative weight of the evidence is difficult to discount. An alternative explanation is that this line represents part of a lean-to or other small structure. Such an arrangement would encourage most activities to take place outside the structure, rather than within it. Consequently, the interior could be to east of the wall line, rather than to the west as I have suggested. Milanich (1971:62-68, 201-203) discusses somewhat similar structures from Deptford sites in Georgia.

The single feature discovered during this work was identified in the north wall of unit 295R195 at 300R294. The feature originated at the base of the plowzone (7.36 feet MSL) but was not excavated until the base of level 4 (7.04 feet MSL). Only the portion of the pit within square 295R195 was excavated. Maximum length was 1.7 feet and the width within the unit was 1.0 foot. Vertical thickness was 0.44 foot. Soil within the features was a black loamy sand and all of the fill was gently waterscreened through 1/16-inch mesh. No shell was found in the pit, although a small quantity of ethnobotanical remains was present, as were small sherds.

The function of this feature, at this time, is impossible to

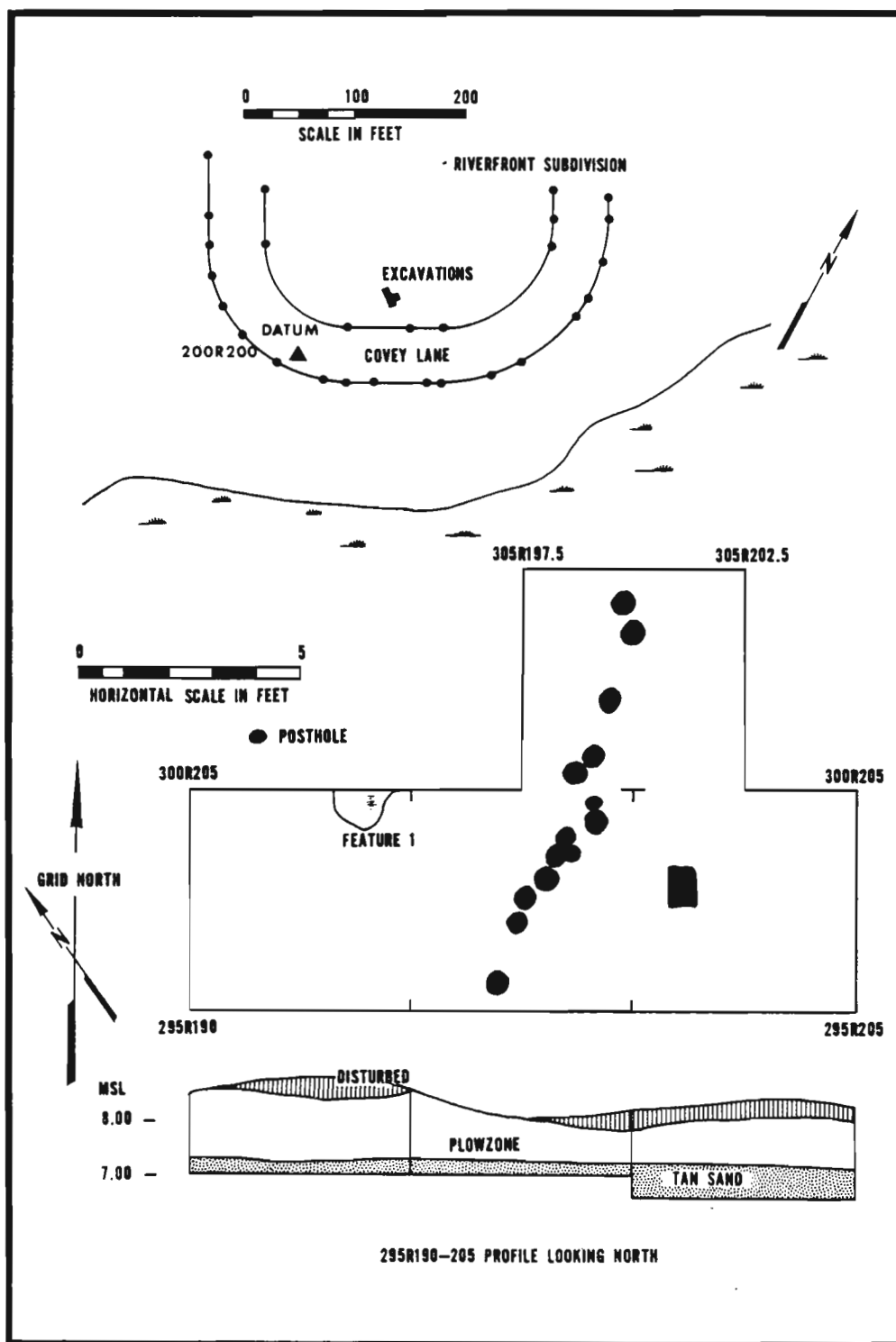


Figure 5. Plan view and profile of the excavations at 38CH779.



Figure 6. Excavation in 295R205, level 2.

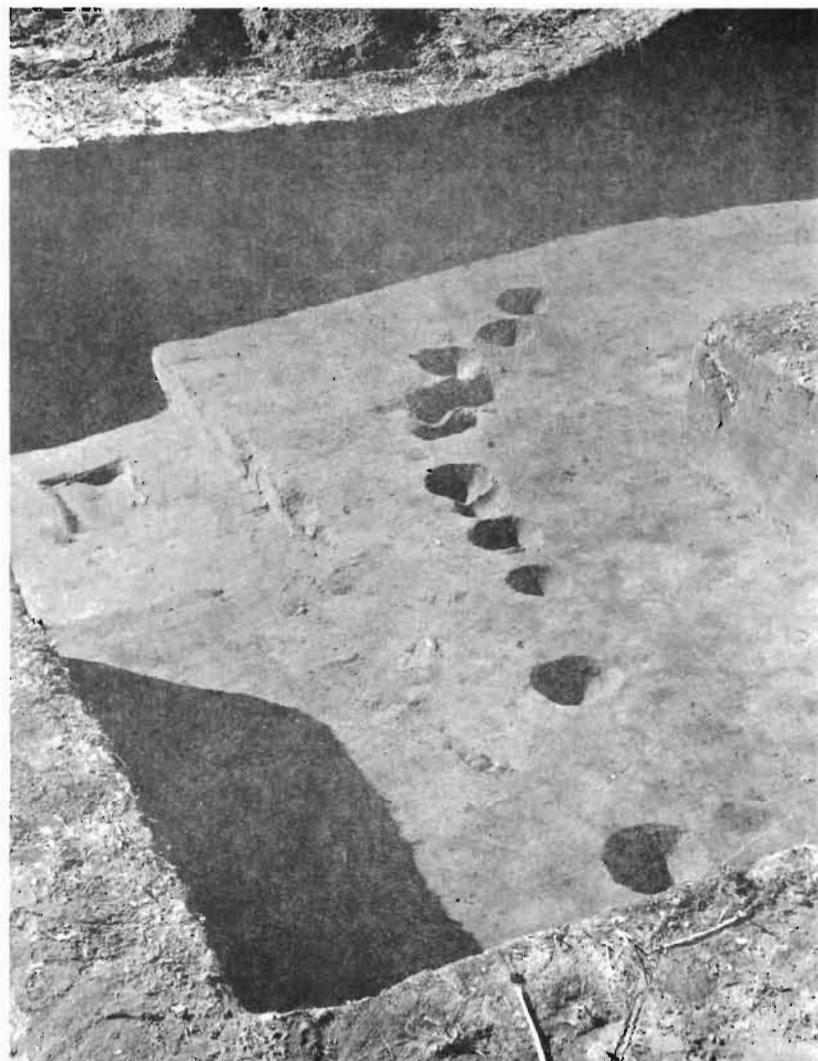


Figure 7. Excavated postholes in 295R200 and 300R202.5, looking southwest.

determine. The pit was a shallow basin which gradually sloped to the east, west, and south. It is probable that slightly under half of the pit was contained in square 295R195, which suggests a maximum size of about 1.7 by 2.0 feet. It may be that the upper foot of this pit was plowed away.

In addition to these excavations, the vicinity of 38CH779 was surface collected. A strategy of surface collection was utilized which successfully dealt with three major problems: a lack of time and manpower, wooded and heavily debris laden environs, and a site which evidenced abundant pottery only at depths of 1.0 to 1.3 feet below ground level. Simple surface survey of the lots would have revealed little, and while excavation of shovel tests would have provided excellent data the time to undertake this strategy was not available. The imperfect solution was to collect only the road cuts which encircled the excavations at 38CH779 (see Figure 4). Control was maintained by bagging artifacts according to lot designations.

This forced compromise did provide important information on the site boundaries and the temporal range of artifacts. In addition, human skeletal remains were recovered from one area. The site core is placed on lots 5-6A and 5-7B, where 69.7% of all prehistoric pottery was found. This core appears to represent a linear site parallel to the marsh, but situated about 150 feet inland. The site is also situated on a finger of higher topography than the surrounding development. Ceramic density falls noticeably to the north, where lots 1A and 1B produced only four sherds (1.7% of the total), and south, where lots 7-12A produced only 13 sherds (5.4% of the total). Historic remains were more scattered, although lot 7B produced 52.9% of all historic items. While most of the recovered material dated from the Thom's Greek phase, other Middle to Late Woodland and Historic remains were identified (Table 1).

## ANALYSIS

This analysis will consider not only the artifacts such as pottery, lithics, fired clay, and historic remains, but also the ecofacts, defined as archaeological nonartifactual data which provide information concerning man's use of the environment. Ecofactual analyses included ethnobotanical study of the recovered charcoal, examination of the recovered animal bones, and brief comments on the shellfish remains.

### Pottery

Although Thom's Creek, Deptford, Hanover, Mount Pleasant, and Irene wares are found on the surface of 38CH779, one series -- Thom's Creek -- comprises 95.4% of all identifiable pottery recovered from the site. A total of 2533 sherds were found in the excavations, although only 779 (30.9%) were sufficiently large (over 1-inch in diameter) to allow an adequate analysis. Of these 751 (96.4%) belong to the Thom's Creek Series, six (0.8%) belong to the Deptford Series, and 22 (2.8%) fall into the remaining three series. These other sherds, however, are found only in levels 1-3 (disturbed and plowzone).

The Thom's Creek Series, first typed by Griffin (1945) from the type site in Lexington County, South Carolina, consists of sandy paste pottery decorated primarily with the motifs common to the Stallings Series, most characteristically various punctations. While this pottery has been termed by many as sandy or grit tempered, work by South (1973) and myself (Trinkley 1976a: 33, 38-39) indicates that the sand and grit found in the paste is native to local clay sources. The pottery from 38CH779 exhibits a variable paste which contains moderate quantities of medium sand. Occasional sherds contain minor to moderate quantities of reddish iron ore concretions ranging in size from very coarse sand to pebble. Similar paste inclusions were found at the Lighthouse Point Shell Ring on James Island (Trinkley 1980b: 200).

Like the Stallings Series, this pottery is fairly simple and possesses three vessel forms -- a shallow bowl with an unrestricted orifice, a shallow, globular bowl with a slightly constricted orifice, and a simple, deep jar with an unrestricted orifice. The bulk of the pottery at 38CH779 appears to represent either shallow bowls with unrestricted orifices or simple, deep jars also with unrestricted orifices. The vessels have simple lip treatments, with only two forms found at the Sol Legare site. One, described as flattened, accounts for 37.3% of the rim sherds found, while the other, rounded, is found on 62.7% of the rim sherds (N=83). One sherd, however, exhibits a rim which, in different sections, is both rounded and flattened. A similar situation was observed on Stallings rims at Fish Hall. Zierden and I have therefore questioned the validity of these lip descriptions and note that "[t]he manufacturing technique

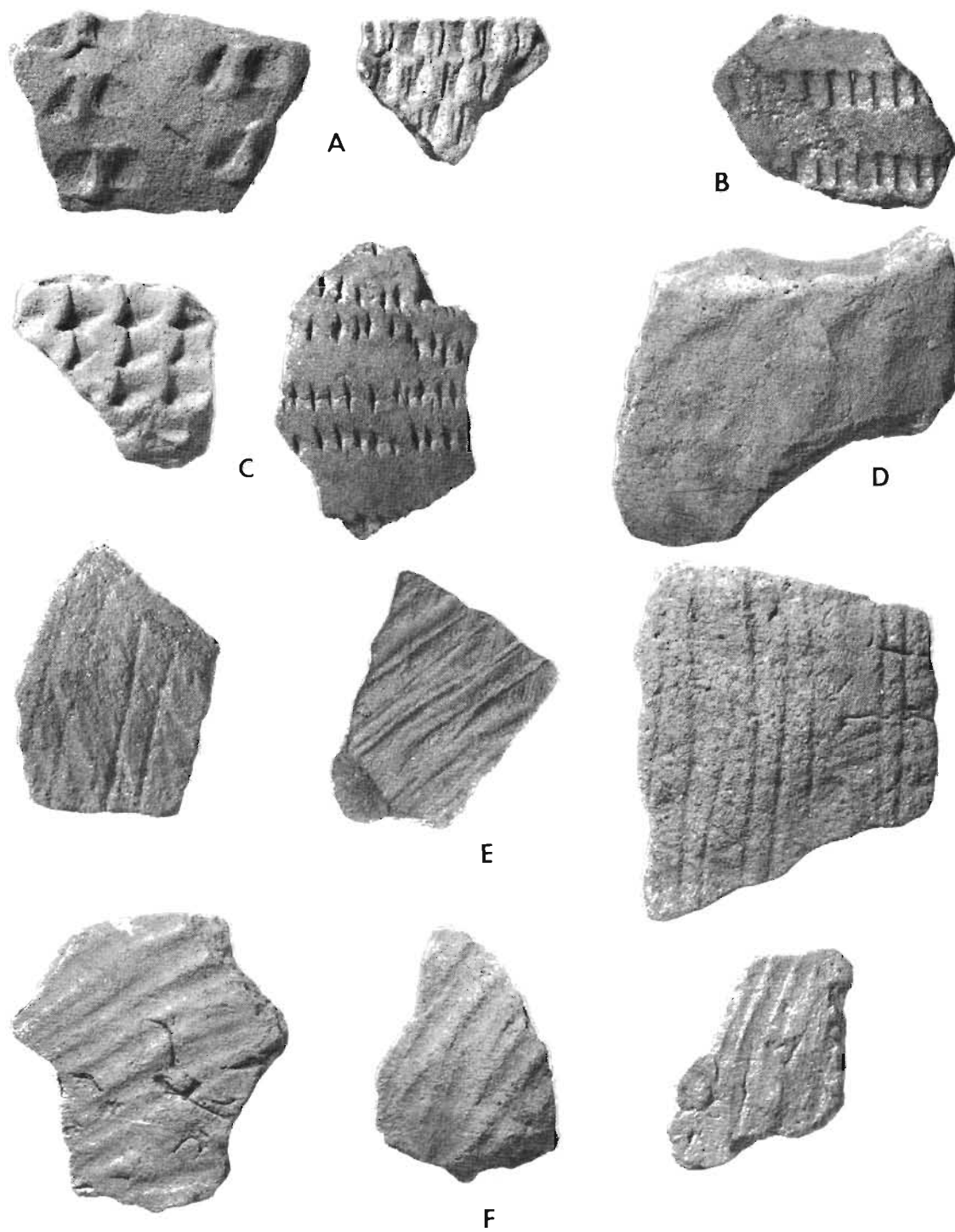


Figure 8. Thom's Creek series pottery. A, Thom's Creek Finger Pinched; B, Thom's Creek Reed Punctate, Drag and Jab; C, Thom's Creek Reed Punctate; D, Thom's Creek Finger Smoothed; E, Thom's Creek Simple Stamped, carved; F, Thom's Creek Simple Stamped, dowel.

apparently did not emphasize standardization of the lip" (Trinkley and Zierden 1983:19). Unlike the Stallings pottery, coil fractures are common in the Thom's Creek Series.

The Thom's Creek Series is found throughout the South Carolina coastal plain and into North Carolina, although there appears to be a strong concentration of sites in the Santee River drainage and the central South Carolina coast (see Anderson 1975:184; Trinkley 1976a: 63-64; Waddell 1966). Recent investigations at Lighthouse Point and Stratton Place (Trinkley 1980b), stratigraphic studies at Spanish Mount and Fig Island (Trinkley 1976a), radiocarbon dates from Lighthouse Point and Venning Creek, and the study of surface collections from a variety of sites, have suggested a temporal ordering of the Thom's Creek Series. Reed punctated pottery appears to be the oldest, followed by the shell punctated, finger pinched, plain, and finger impressed motifs. Similar evidence has been found for the Stallings Series (Trinkley and Zierden 1983:20-22).

At 38CH779 Thom's Creek Plain pottery accounts for 77.3% of the excavated identifiable collection. Following this type in popularity are Thom's Creek Finger Pinched, Thom's Creek Reed Punctate, and Thom's Creek Finger Smoothed. While this assemblage appears relatively late, the presence of the Thom's Creek Reed Punctate perhaps suggests that the site has some greater time depth than initially thought.

The relatively recent period hypothesized for this site is also supported by the presence of two distinct varieties of simple stamped pottery, tentatively identified as Thom's Creek Simple Stamped. One variety appears to have been dowel stamped, as the impressions are relatively uniform, moderate in depth, and rarely overlapping. The other appears to represent a thong wrapped paddle stamped impression, based on the squared, moderately deep, and relatively random impressions (Figure 8d and f). The former accounts for 1.3% of the pottery, while the latter accounts for 1.7%. These relatively infrequent types are worthy of comment because so little simple stamped pottery is commonly recovered at Thom's Creek coastal sites (0.03% of 8066 sherds found at Lighthouse Point; 0.06% of 1521 sherds from Stratton Place). Phelps (1968:21) did note the presence of simple stamped sherds at Thom's Creek sites in the Savannah drainage. In fact, his study found that up to 12.5% (N=416) of his collection from two sites could be typed as Thom's Creek Simple Stamped, although at least one of his sites was multicomponent.

Simple stamped pottery in the Charleston area is more commonly placed in either the Refuge or the Deptford Series. An examination of the variety in simple stamped pottery readily suggests that there is a continuum from the basically irregular, random wrapped thong stamping of Refuge to the regular, uniform, carved paddle stamping typical of Deptford (Trinkley 1982b). While it is possible to accurately type specimens from opposite poles of this continuum; it is frequently difficult, if not impossible, to consistently sort those in the middle. The Thom's Creek Simple Stamped proposed by Phelps (1968:21) appears to contain specimens from the sloppy end of the continuum, as he speaks of the application being "extremely random, and frequently overlapping." Phelps seems to be referring to simple stamped pottery that is more like Refuge than Deptford. Yet he notes finding both sharp edged simple stamping similar to the

		Thom's Creek										
		Plain	Finger Pinched	Finger Smoothed	Simple Stamped, Dowel	Simple Stamped, Carved	Shell Punctate	Reed Punctate	Reed Punctate, Drag/Jab	Deptford Check Stamped	Small Sherds	Other
295R195,	L.1	6										3
	L.2-3	40	2	3	3					1	205	4
	L.4	100	13	6	2	7	2	5	3	1	260	
	L.5, trow	15	4			1		3			14	
295R200,	L.1	9						2			36	
	L.2-3	32	4	2				2		2	210	4
	L.4	52	7	6		2	1	6			200	
	L.5, trow	16	1	1	2			2			30	
	PH 2										1	
	PH 3	1										
	PH 5	7										
	PH 6	1	1									
	PH 7	2										
295R205,	L.1	21	2								18	3
	L.2-3	89	3	6	2	2	1	5	1		250	
	L.4	26	6	2			1	3			75	
	profiles	35	2	2				2			130	
	L.5, trow	4									4	
300R202.5,	L.1	7									6	2
	L.2-3	21									130	6
	L.4	65	7	4	1		2	9	2		140	
	L.5, trow	32	6							1	23	
	PH 2	2										
Feature 1		2	1			1				1	12	
Totals		585	59	32	10	13	7	39	6	6	1744	22
%		77.3	7.8	4.2	1.3	1.7	0.9	5.2	0.8	0.8		
Surface		165	16	3	3	2	1	1		1	94	16
Totals		750	75	35	13	15	8	40	6	7	1838	38
%		26.5	2.7	1.2	0.4	0.5	0.3	1.4	0.2	0.3	65.1	1.3

Table 1. Recovered pottery from 38CH779.



posited thong wrapped at Sol Legare, as well as stamping with a "dowel-like tool," which was also found at Sol Legare.

Some of the simple stamped pottery from 38CH779 might fit the classic definition of Refuge Simple Stamped or the definition of Deptford Simple Stamped. Most of the sherds, however, may not be conveniently placed in either category without some damage to the typological definitions recently suggested (Trinkley 1982b). Most obviously it is not possible to place the Thom's Creek specimens at the crude end of the continuum so as to preserve a false unilineal development of simple stamping techniques from Thom's Creek to Deptford via Refuge. It appears, based on this collection, reference to Phelps (1968), and observation of other Thom's Creek collections, that experimentation with simple stamping began late in the Thom's Creek phase and was probably independent from the rapidly spreading Refuge developments. At this time, however, it is difficult to anticipate the amount of interaction between Thom's Creek, Refuge, and Deptford. It must be noted that mounting evidence places all three ceramic traditions in the coastal zone about 1200 to 800 B.C. On the South Carolina coast the makers of Thom's Creek pottery apparently were more willing to experiment with simple stamping than the Deptford potters were to experiment with punctations (see however Trinkley 1981a: 9-10).

In addition to the simple stamped pottery, small quantities of Thom's Creek Finger Smoothed pottery are found at 38CH779. This ware, which I first noted at Venning Creek (Trinkley 1980b:260, 263), is also found in very small quantities at Lighthouse Point, Stratton Place, and other late Thom's Creek sites. The pottery is characterized by broad, generally shallow (3 to 5 mm) grooves which appear to be the result of impressing the fingers of one's hand in the moist clay and dragging them. Thus far the motif has not been found combined with other decorative techniques.

The bulk of the Thom's Creek ceramics evidence firing in a reducing atmosphere with abundant quantities of organic remains in the clay. The pottery, however, was apparently removed from the fire and allowed to rapidly cool which produced a relatively sharp core margin with a light-colored, oxidized surface.

While accounting for less than 1% of the identifiable excavated pottery, the Deptford Series pottery is worthy of comment. From its earliest description the Deptford Series has been characterized by a fine to coarse sandy paste and a check stamped surface (Caldwell and Waring 1939). The Deptford pottery (Figure 9) at Sol Legare exhibits considerable variation in both temper and decoration, and it is this variability which is of interest. Most of the Deptford ware has abundant medium to coarse sand and is stamped with a relatively uniform check pattern. Several sherds, however, exhibit a paste with fine sand inclusions, identical to the paste of the Thom's Creek pottery. These same sherds exhibit very sloppy check stamped motifs with either light impressions, careless overstampings, or very poorly carved checks. While these sherds may represent simply the extreme in Deptford variation, they are consistently found in Thom's Creek levels. This association of small quantities of aberrant Deptford sherds with large quantities of Thom's

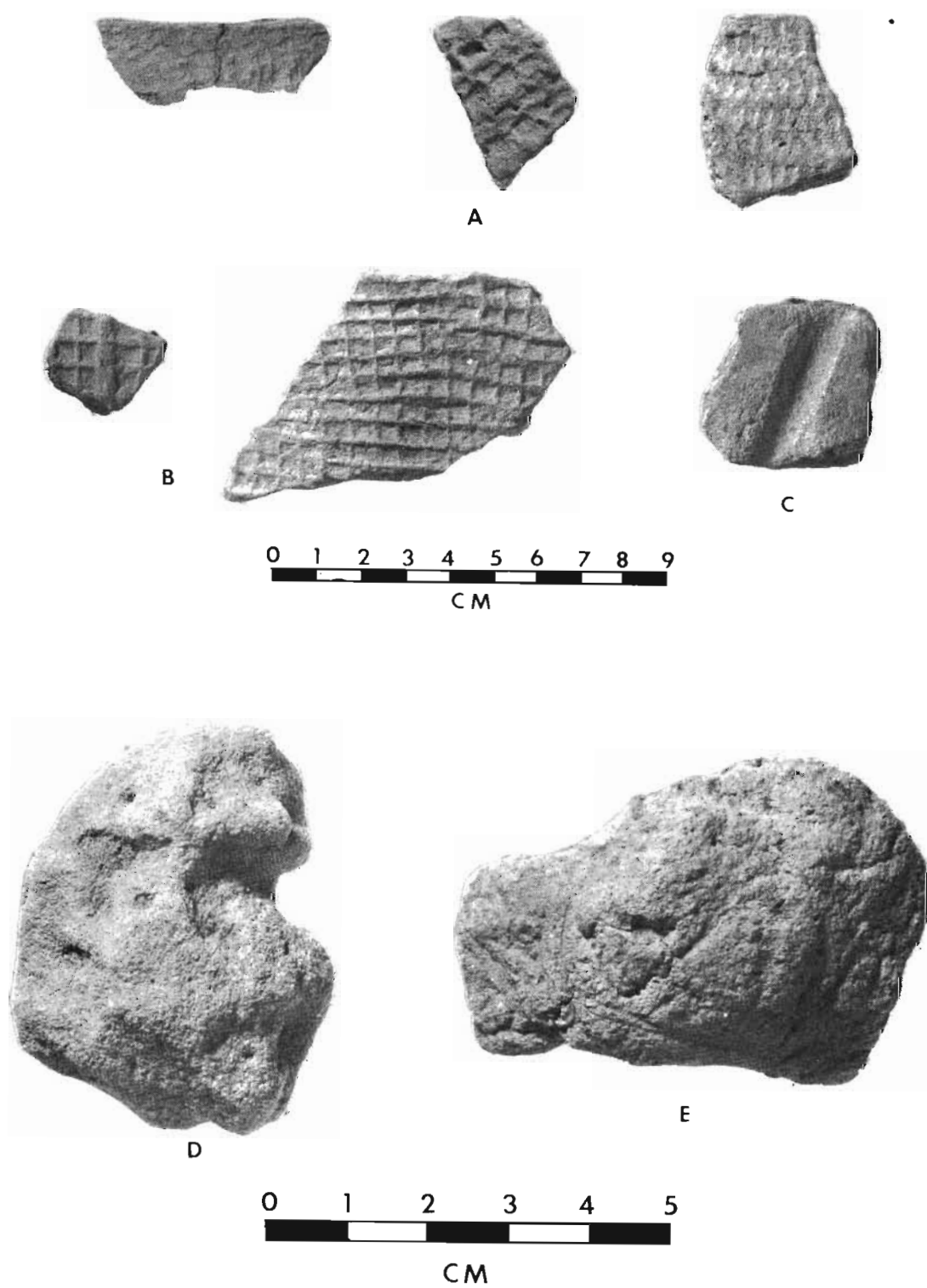


Figure 9. Deptford series pottery and baked clay objects. A, sloppy Deptford Check Stamped; B, Deptford Check Stamped; C, sherd abrader or hone; D-E, baked clay objects.

Creek pottery suggests a very early date for the Deptford ware, if not its experimental production by Thom's Creek potters.

Although the evidence, at present, is sparse, I suggest that 38CH779 represents a very late Thom's Creek phase site which contains, as a result, a high percentage of Thom's Creek Simple Stamped and Plain sherds mixed with a very small quantity of sloppy Deptford pottery. It is suspected that this interface occurred about 900 B.C. Such a reconstruction provides tentative, independent support for DePratter's (1979) Refuge III phase on the Georgia coast. He suggests that about 900 B.C. Deptford Check Stamped and Deptford Linear Check Stamped motifs are added to the pre-existing Refuge Series. The Refuge Series of Georgia is largely replaced by Thom's Creek in South Carolina.

A single sherd of Hanover Plain pottery was recovered from the disturbed level 1 in square 295R195. The Hanover Series is characterized almost solely by its sherd temper inclusions, which may make up 30 to 40% of the paste. Hanover was first described by South (1960) and is similar to Wilmington (Caldwell and Waring 1939:6-7) except that it has never suffered from typological mixings and abuses. The Hanover Series dates from about 200 B.C. to A.D. 700 (disregarding a series of three dates which would take Hanover/Wilmington up to A.D. 1120).

The Mount Pleasant Series is represented by one fabric impressed sherd from level 2 (plowzone), square 300R202.5. This series, described by Phelps (1983), is characterized by a sandy paste with few or no inclusions. The series dates, in both North and South Carolina, from about A.D. 200 to 1000.

The largest category of non-Early Woodland pottery is that of the Irene Series, which was first typed by Caldwell and McCann (1941:46-49) into the motifs of plain, incised, and fillet stamped. The pottery is characterized by its abundant coarse sand to pebble tempering and compact paste. This ware is part of the South Appalachian Mississippian manifestation and dates about A.D. 1300 to 1550 on the Georgia coast (DePratter 1979:111). In spite of the original published description there is no doubt that the complicated stamped specimens evidence a variety of motifs, including many found in the Pee Dee Series (Reid 1967). Specimens recovered from 38CH779 include plain and complicated stamped.

### Lithics

The collection of lithics from 38CH779 is quite small and comprises one English (?) chert ballast stone, four primary flakes of a honey-colored poor quality chert, and a single orthoquartzite projectile point.

The four flakes appear to represent local coastal plain chert of very low quality apparently derived from a limestone context. The stone is moderately fossiliferous. This stone appears similar to a "tan fossiliferous chert" identified by Anderson et al. (1982:126-127) from the Mattassee Lake investigations. The source for this material is the Santee Limestone Formation and is assumed to be in the vicinity of Lakes

Marion and Moultrie. Joffre Coe collected a large quantity of similar tan chert from a site (SoC<sup>V</sup>56) at Princes Pond on Lake Marion in 1964. This site appears to represent either a quarry or an area of extensive primary reduction. Consequently, Anderson's suggested point of origin for this material appears reasonable.

The single projectile point, from square 295R195, level 3, is typed as a Morrow Mountain II (Coe 1964:37, 43). The point has a width of 29 mm, an estimated length of 54 mm (only the basal portion is intact), and a stem length of 12 mm (approximately 12% of the total estimated length). The presence of Archaic points is uncommon on barrier and sea islands, but is not rare (see Koob 1976).

### Fired Clay

Two specific types of fired clay artifacts have been identified from the excavations at Sol Legare. One category, daub, consists of two specimens from 295R195, level 3 and 295R200, level 3. Neither had stick or vegetation impressions, although both had been fired to a gray-white color. The small quantity of daub in the vicinity of the posited wall correlates with the absence of charcoal in association with the postholes. Consequently, it is probable that these fired clay fragments have resulted from aboriginal hearths or natural firings.

The second category of fired clay consists of baked clay objects. Similar objects have been described by South (1970) from his work at Charles Town Landing. The function of these items is uncertain, although they are presumed to represent replacements for rocks for use in "stone boiling." The five specimens from 38CH779 are found in levels 1 through 4 and in squares 295R195, 295R205, and 300R202.5. Most are very small fragments, of which several may represent South's (1970) "irregular biscuit" form with few punctations. One specimen is similar to South's "melon shape" but lacks punctations or perforations.

Similar baked clay objects are common on Stalling's sites (Williams 1968) and may occasionally be found on Thom's Creek sites (Trinkley 1980b:428). Anderson et al. (1982:320) also report similar objects from later in the Woodland Period. The evidence from Sol Legare indicates their presence at least as late as 900 B.C.

### Historic Remains

A small quantity of historic remains were recovered from the excavations (levels 1-3) and from the surface of the site vicinity. These items are listed in Table 2 and may be seen to represent primarily remains from South's Kitchen Artifact Group (91.3% of the total). The items are primarily domestic refuse and have a temporal range from the early eighteenth through mid-nineteenth centuries. The most common ceramic is pearlware (37.0% of the total ceramic collection), although there is great diversity with nine wares comprising the collection. The glass assemblage is representative of the nineteenth century and is composed of

Ceramic		
Whiteware, plain		2
Pearlware, plain		6
Pearlware, shell edged		1
Pearlware, annular ware		1
Pearlware, polychrome hand painted		1
Pearlware, blue hand painted		1
Creamware, plain		3
Combed and Trailed Slipware		4
Delft, eroded		2
Lead Glazed Redware		3
Gray Saltglazed Stoneware		1
Black Basalt Stoneware		1
Colono Ware		1
Glass		
Opaque green bottle		13
Manganese		2
Window		1
Metal		
Machine cut nail		1
Lead wieght		1
Kaoline		
Pipestem, 5/64 inch		1
Total		46

Table 2. Quantification of 38CH779 historic assemblage, excavation and surface collections, excluding post-1900 items.

primarily opaque green wine bottle glass, including one bottle neck with a single bead neck finish. The two sherds of manganese glass are representative of the period from 1880 to 1918, during which manganese was added to the flux to produce an almost colorless glass.

The Architectural Artifact Group was very small, containing one piece of window glass and a single "modern" machine cut nail. The nail postdates 1830 (Nelson 1968:7). The Activities Group includes only a lead fishing weight. The Tobacco Artifact Group contains a single kaoline pipestem which has a bore diameter of 5/64 inch.

The aberrancy of this artifact grouping when compared to the Carolina Artifact Pattern (South 1977) is probably the result of the small sample size and the bias of combining both excavated and surface data. The primary value of the collection lies in its ability to document the temporal range of historic occupation on Sol Legare Island. To this end South's Mean Ceramic Date formula was applied to the assemblage. This formula is the product of the median date for the manufacture of each ceramic type times the frequency of each ceramic, divided by the sum of the frequency of each type (South 1977). The result is a proposed mean date of the ceramics, which is a very good approximation of the site's mean occupation date (South 1977:217-218). Table 3 shows the Mean Ceramic Date calculations for the site as a whole. The resulting date for 38CH779 is about 1773, which is earlier than the very limited archival data would have suggested. The archaeological evidence, however, suggests a strong late eighteenth-early nineteenth century occupation.

Although few historic artifacts were found during the excavations (26 items or 58% of the total historic artifact collection) there was the evidence of historic occupation provided by the single square posthole present in square 295R205. This, coupled with the analysis of recovered historic artifacts, suggests that additional archival research is warranted.

#### Ethnobotanical Remains

Because of the limited area of excavation only four small collections of ethnobotanical remains were available for analysis. Three were handpicked from either level 4 or the top of level 5 (Thom's Creek zone) and one is from the waterscreening of fill from Feature 1 (also dating from the Thom's Creek phase).

The handpicked specimens revealed only one genus of wood charcoal, pine (*Pinus* sp.), from all three samples, hickory nutshell (*Carya* sp.) from one, and acorn meat (*Quercus* sp.) from another. The waterscreening from Feature 1 produced a nearly identical collection of pine wood, hickory nutshell, and a small quantity of acorn shell.

This collection is very similar to previously studied assemblages from Stallings and Thom's Creek sites along the Carolina coast and the Savannah River drainage. Comparative data are available from three Thom's Creek phase coastal sites (Trinkley 1976b) and two Stallings sites (Trinkley 1974; Trinkley and Zierden 1983). Pine wood occurs in consistently

Artifact	xi	fi	xi • fi
Whiteware, plain	1860	2	3720
Pearlware, plain	1805	6	10830
Pearlware, shell edged	1805	1	1805
Pearlware, annular ware	1805	1	1805
Pearlware, poly hand painted	1805	1	1805
Pearlware, blue hand painted	1800	1	1800
Creamware, plain	1791	3	5373
Combed and Trailed Slipware	1733	4	6932
Delft	1700	2	3400
Lead Glazed Redware	1700	3	5100
Gray Saltglazed Stoneware	1733	1	1733
Black Basalt Stoneware	1785	1	1785

$$Y = \frac{\sum_{i=1}^n x_i f_i}{\sum_{i=1}^n f_i}$$

$$y = 1722.6$$

$$\sum_{i=1}^n f_i$$

Table 3. Mean ceramic date calculations for the 38CH779 assemblage.

percentages from a variety of aboriginal sites, possibly suggesting its abundance, good self-pruning characteristics, or some aspect of cultural preference. While hickory nutshell is fairly common at Early Woodland sites, acorn meat/shell is uncommon or rare. This rarity, however, must be judged against Yarnell's (1974:119) caution that acorn shell is lighter in weight and more fragile than hickory.

While it is probable that both hickory and acorns were food sources at 38CH779, their importance to the diet cannot be easily determined. A much larger collection is necessary for dietary reconstructions to be offered.

#### Faunal Remains

Animal bone at 38CH779 was uncommon, but was generally well preserved. It appears, therefore, that the low density of bone is the result of dietary or disposal patterns, and not preservation factors at the site. A total of 26 bones were found in the excavations, while another 25 were recovered in the surface collections at 38CH779.

Recovered remains were very small and generally precluded identification to a species level. Total weight of the faunal collection is 131.95 g of which 35.7 g (27.1%) are from excavated units. The majority of the faunal remains, by both weight and number, are mammals (46 or 128.25 g). This category, however, contains only deer (72.6% of the total assemblage by weight) and unidentified mammal (24.5%). The collection also includes unidentified bird (1.8% by weight), unidentified fish (0.2% by weight), and unidentified turtle (0.9% by weight).

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	# of fragments		wt (g)		MNI
	surface	excavation	surface	excavation	
Deer	11	2	81.12	14.75	1
Unidentified mammal	12	21	12.57	19.81	3
Unidentified bird	2	-	2.33	-	1
Unidentified fish	-	1	-	0.24	1
Unidentified turtle	1	1	0.23	0.90	1

Table 4. Faunal remains from 38CH779.

Recently bone weight allometry has been advanced as an analytic technique which avoids many of the problems inherent in dietary and nutritional reconstruction. Reitz notes that the allometric equation offers an alternative to other techniques and that in allometry the skeletal mass is scaled to body mass (Reitz 1982:3). This scaling relationship is described by the power function  $y = ax^b$ . Reitz and Cordier comment that the "true contribution of allometry to studies of human behavior lies in the potential for calculating actual nutritional components for the identified taxa from the derived meat weight estimates" (Reitz and Cordier 1982:13). Although the data from Sol Legare are too



sparse for allometry to be used this powerfully, the allometric formulae do provide a truer estimate of total meat weight by taxa represented in this study than the MNI method.

The formulae and values proposed by Reitz and Cordier (1982) are used in this analysis. Mammals, including deer, have a bone weight of 128.25 g. The allometric formula is  $\log y = 0.90(\log 128.25) + 1.12$ , which yields a meat weight of 1.04 kg. Birds have a bone weight of 2.33 g. The allometric formula is  $\log y = 0.91(\log 2.33) + 1.04$ , which yields a meat weight of 0.02 kg. Turtles have a bone weight of 1.13 g and a corresponding allometric formula of  $\log y = 0.67(\log 1.13) + 0.51$ . The resulting turtle meat weight is 0.004 kg. The fish bone weight is 0.24, which with the allometric formula of  $\log y = 0.81(\log 0.24) + 0.90$ , yields a meat weight of 0.003 kg.

These results indicate that all faunal taxa except mammal provided an almost inconsequential amount of meat to the diet. Mammal meat weight represents 97.2% of the total, followed by bird, which accounts for 2.2%. Fish and turtle together account for less than 1%. It is probable that fish are underrepresented because the bones were collected from dry screening through  $\frac{1}{4}$  by  $\frac{1}{2}$ -inch mesh. Feature 1, however, provided no faunal remains, although the feature fill was waterscreened through 1/16-inch mesh.

The dietary reconstruction based on this faunal assemblage would be highly suspect, just as was stated for the ethnobotanical remains. The observed remains are in a general way similar to other Early Woodland sites studied in the Charleston vicinity, although the variety at 38CH779 is quite low (cf. Trinkley 1980b, 1981a, 1982a).

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### Shellfish

As previously discussed, shellfish at 38CH779 are not common. Samples were found scattered through the plowzone and a cluster of shell was found at the base of the plowzone in square 300R202.5. Shell from the site is represented primarily by the common oyster (*Crassostrea virginica*). They appear to represent tidal specimens and most are 3-inches or under in height. The quahog (*Mercentaria mercenaria*) is uncommon in the midden, although several relatively intact specimens were recovered. Whelks are also uncommon and are represented by only one species, *Busycon carica*. Both intact specimens, knob fragments, and columella fragments were identified. The intact specimens vary in height from 40 to 80 mm, with 50% of the specimens being 80 mm in height. The Gulf periwinkle (*Littorina irrorata*) is found sparsely scattered through the plowzone. Several pits containing large quantities of periwinkle were observed in the road cuts. A single cockle shell, probably *Trachycardium muricatum*, was found in the plowzone of 295R205.

This shellfish assemblage is not dissimilar, except in its small size, to collections at other Early Woodland sites. The low variety may be the result of the small sample size or a reduced dependence on shellfish during the occupational history of 38CH779. An examination of the preferred habitats of the dominant shellfish species from the site indicates that they will be found in three relatively distinct areas. Periwinkles are

commonly found migrating up and down *Spartina* in rhythm with the tide, in the higher regions of the marsh. The oyster has fairly specific requirements which cannot be met in a great number of locations, although oyster beds are today common in the vicinity of 38CH779. Oyster beds, because of their dense mass of shell and hard bottom, are not a likely habitat for many other mollusks. Whelks, however, are predators of oysters and may be found localized on oyster beds. Otherwise, the whelk will be found in shallow water on sandy bottoms. Finally, the other species, particularly the quahog, will be most frequently found shallowly burrowed into a mud-sand intertidal beach area. The quahog is found just below the surface of the tidal flat, occurring in concentrations within restricted areas.

Although I have previously argued that the clam requires a higher salinity than the oyster (for example, see Trinkley 1980b:122-124) based on the work of Castagna and Chanley (1973), Claassen (1982) suggests that the salinity tolerances are similar with both taxa preferring salinities between 25 and 28 ppt. She maintains that the major difference between the ecology of the oyster and clam is that the latter is capable of withstanding low salinities for longer periods of time. Hence, clam populations are better able to withstand prolonged periods of freshwater runoff. Claassen (1982:21-22) also contends that clam dominated zones at North Carolina shell middens are indicative of low sea levels. While not directly advocated by Claassen, it may be that the low occurrence of clams represents site occupation during a period of relatively high sea level. It should be recalled that by 950 B.C. the sea level in the South Carolina region was at its highest point in almost 600 years. This may account for the small quantities of clam present in the midden deposits.

Clams have recently been used to provide seasonality estimates. In brief, the clam exhibits microscopic annual stress lines which appear as zones of relatively transparent shell and which are the equivalent of annual growth lines. These annual growth lines are correlated with the environmental stress of the summer season. Samples have been collected for this analysis.

#### Human Bone

A total of 15 small cranial fragments were recovered in surface collections made in the vicinity of lot 17A at 38CH779. These bones appear to represent a single individual, possibly male and possibly 25 to 35 years of age at the time of death. The bones were apparently disturbed and scattered during the grading of Covey Lane. The remains include a first right maxillary premolar, a number of small cranial fragments, and a small fragment of the left maxillary. The premolar shows considerable wear with exposure of the dentine. No caries, however, were present in this single tooth.

## SITES 38CH780 AND 38CH781

In addition to 38CH779, two other sites were recorded in the Riverfront Subdivision. One, designated 38CH780, is situated primarily on lots 9-12C and may represent a heavily damaged shell ring (see Trinkley 1980b, 1983 for a discussion of shell ring sites). The soils in the site vicinity are well-drained Wando loamy fine sands and the elevation is about 5 feet MSL. The area has been bulldozed with the shell midden scattered over a large area. Shell banking is observed adjacent to the marsh on lots 10 and 11C and a small portion of intact midden is situated on lot 10C, protected by a clump of palmetto trees. This site has not been plowed within the twentieth century, based on the associated trees and reference to available aerial photographs.

The second site, 38CH781, is situated on lots 3-6C and 14-16E. The site has been bisected by Terns Nest Road and several large shell pits are visible in the road cut. The site area is within previously plowed fields and has been used as a dumping area. Pottery was collected primarily from the road cuts because most of the area is still in second growth scrub. Soils in the vicinity of this site are also Wando loamy fine sands (see Figure 4).

Inhabitants of both sites appear to have taken advantage of a narrow ridge of high, well-drained sand which runs through the central part of Sol Legare Island. The soils become less well drained and lower in elevation to the northwest (inland). This probably explains the failure to identify sites on Wigeon Lane, Wild Wing Lane, or Wading Heron Road.

Recovered materials are primarily pottery, although bone preservation at 38CH780 and 38CH781 is very good. The recovered pottery is listed in Table 5. Thom's Creek dominates both collections, although small quantities of the later Deptford and Mount Pleasant series are also found. Site 38CH780 appears to contain a relatively pure Thom's Creek component, with the presence of Thom's Creek Finger Smoothed pottery suggesting a late time period. The absence of Thom's Creek Finger Pinched pottery cannot be explained at this time. Site 38CH781 appears very similar in structure, context, and artifact content to 38CH779. It may represent a late Thom's Creek transitional Deptford camp. Both sites appear to contain intact deposits and could provide significant archaeological data.

		<u>Thom's Creek</u>					<u>Deptford</u>	<u>Mount Pleasant</u>				
	Plain	Finger Pinched	Finger Smoothed	Shell Punctate	Reed Punctate	Check Stamped	Simple Stamped	Cord Marked	Fabric Impressed	UID	Fired Clay	Animal Bone
38CH780	95	-	6	2	4	1	-	-	-	-	-	-
38CH781	42	1	1	3	5	1	1	1	1	3	1	2
Totals	137	1	6	5	9	2	1	1	1	3	1	2

Table 5. Artifacts recovered from 38CH780 and 38CH781.

## SUMMARY

It should be recalled that five goals were originally proposed for this very preliminary work at 38CH779. The first goal was to establish a tighter temporal control. This has largely been done through the analysis of the recovered ceramics. The pottery collection is dominated by Thom's Creek specimens which appear to represent the late end of the Thom's Creek phase. Specifically, the presence of Thom's Creek Finger Smoothed and Thom's Creek Simple Stamped sherds suggest a date around 900 B.C. In addition, the site also produced a small quantity of Deptford pottery, some of which appeared to be early, possibly even made by Thom's Creek potters. Future work should not only refine this temporal estimate of 900 B.C., but should also seek to collect samples suitable for radiometric dating. At present the charcoal from Feature 1 is insufficient for a reliable date, although the shell from square 300R202.5 should provide a good terminal date.

The second goal proposed for this work was to determine site integrity, specifically if intact subsurface remains could be identified. This goal was based on the obvious disturbances to the site: plowing, use of field roads, disposal of twentieth century garbage, and construction of subdivision roads. Any of these activities could have seriously disturbed the site and made it useless for scientific research. The results of the four excavated 5-foot squares, however, indicate that the site integrity is quite high. This is at least partially the result of the primary zone of occupation being protected by up to 1.3 feet of recent soil accumulation. Both intact postholes and a feature were identified by this work. The postholes suggest a structural pattern and the feature contained abundant ethnobotanical remains. Identification of these remains in only four 5-foot squares suggests the likelihood of locating other features at the site.

The third goal was to determine site boundaries. This was accomplished, in part, through the use of the previously cut subdivision roads. Surface collections made from the road cuts suggests that the site core occupies a sandy ridge running parallel to Folly Creek, about 150 feet from the marsh. The distance from the present shoreline suggests that the site was not strongly associated with the estuarine environment. At about 950 B.C. the sea level would have been several feet lower than at present. The discovery that the occupational zone is covered with up to 1.3 feet of relatively sterile soil should be viewed with caution by archaeologists who rely on shallow shovel tests or the surface of plowed fields to accurately and adequately reflect archaeological involvement. It is unlikely that either 38CH779 or the Fish Haul site (Trinkley and Zierden 1983) would have been discovered or adequately assessed using traditional archaeological survey techniques.

The fourth goal was to collect subsistence data. While this goal was

met as adequately as possible given the small amount of excavation and the sparse remains, it is impossible to offer much of a reconstruction. All of the collected subsistence items -- shellfish, faunal remains, and plant foods -- occur in low densities. None suggest evidence of primary reliance and all suggest a very short-term occupation by a small number of individuals. Considerably more work, however, is needed at 38CH779 before it will be possible to fully understand how this site fits into a larger site complex.

The final goal was to begin collecting information on the transition from the Thom's Creek to Deptford phases in the Charleston vicinity. With so little data in hand, it is difficult to offer any assessments of this transition at present. The pottery collection possesses certain indications of typological change and mixing. The subsistence data has offered a view of a smaller population and/or a shift in the subsistence base away from intensive shellfish collection. The architectural data suggest that during the late Thom's Creek phase structures of some sort were being constructed.

The data collected from this limited work suggest that about 900 B.C. a small group of Thom's Creek "people" established a temporary camp on Sol Legare Island. At least one structure, and probably others, was built and pits were dug. The occupation may have lasted for only one or two seasons since the posited structure section uncovered evidenced little replacement of structural timbers. The diet was varied and included primarily oysters and mammals, and lesser quantities of birds, turtles, fish, hickory nuts, and acorns. The mixing of the ceramics suggests that contact, through trade or some other source, was taking place between the makers of Thom's Creek and Deptford pottery.

Site 38CH779 is significant because it has provided information on a heretofore little known period in South Carolina archaeology. This pales before the site's potential to yield significant data concerning the terminal Thom's Creek phase. The transition from Thom's Creek to Deptford represents a relatively short period and one that has left very ephemeral archaeological remains. The discovery of 38CH779 by accident illustrates how these transitional sites may be easily overlooked. Further work at 38CH779 should minimally involve excavation of the remainder of the structure and collection of more complete feature data.

## REFERENCES

- Anderson, David G.  
1975 Inferences from Distributional Studies of Prehistoric Artifacts in the Coastal Plain of South Carolina. *Southeastern Archaeological Conference Bulletin* 18:180-194.
- Anderson, David G., Charles E. Cantley, and Andrea Lea Novick  
1982 *The Mattassee Lake Sites: Archaeological Investigations Along the Lower Santee River in the Coastal Plain of South Carolina*. Commonwealth Associates, Jackson, Michigan. Submitted to the United States Department of the Interior, National Park Service, Interagency Archaeological Services, Atlanta.
- Anderson, David G. and Trisha Logan  
1981 *Francis Marion National Forest: Cultural Resources Overview*. United States Department of Agriculture, Forest Service, Columbia, South Carolina.
- Barry, John M.  
1980 *Natural Vegetation of South Carolina*. University of South Carolina Press, Columbia.
- Binford, Lewis R.  
1968 Post-Pleistocene Adaptations. In *New Perspectives in Archaeology*, edited by Sally R. Binford and Lewis R. Binford, pp. 313-341. Aldine, Chicago.
- Brown, Paul Jeffrey  
1973 *Coastal Morphology of South Carolina*. Unpublished M.S. thesis, Department of Geology, University of South Carolina, Columbia.
- Bull, Elias  
1970 The Islands of the Littoral: Part I. *Names in South Carolina* 17:11-15.
- Caldwell, Joseph R. and Antonio Waring, Jr.  
1939 Some Chatham County Pottery Types and Their Sequence. *Southeastern Archaeological Conference Newsletter* 1:5-6.
- Caldwell, Joseph R. and Catherine McCann  
1941 *Irene Mound Site, Chatham County, Georgia*. University of Georgia Press, Athens.
- Calhoun, Jeanne A., Elizabeth A. Paysinger, and Martha A. Zierden  
1982 *A Survey of Economic Activity in Charleston, 1732-1770*. Charleston Museum, Charleston, South Carolina.

- Castagna, Michael and P. Chanley  
 1973 Salinity Tolerance of Some Marine Bivalves from Inshore and Estuarine Environments in Virginia Waters on the Western Mid-Atlantic Coast. *Malacologia* 12:47-96.
- Claassen, Cheryl  
 1982 Seasonality and Beyond. Ms. on file, Peabody Museum, Harvard University, Cambridge.
- Coe, Joffre L.  
 1964 The Formative Cultures of the Carolina Piedmont. *Transactions of the American Philosophical Society* 54.
- Colquhoun, D.J., M.J. Brooks, W.H. Abbott, F.W. Stapor, W.S. Newman, and R.R. Pardi  
 1980 Principles and Problems in Establishing a Holocene Sea-Level Curve for South Carolina. In *Excursions in Southeastern Geology: The Archaeology-Geology of the Georgia Coast*, edited by James D. Howard, Chester B. DePratter, and Robert W. Frey, pp. 143-159. Georgia Department of Natural Resources, Atlanta.
- Cooke, C. Wythe  
 1936 *Geology of the Coastal Plain of South Carolina*. Bulletin No. 867, United States Geological Survey, Washington, D.C.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. Laroe  
 1977 Classification of Wetlands and Deep-Water Habitats of the United States: An Operational Draft. Ms. on file, U.S. Fish and Wildlife Service, Washington, D.C.
- DePratter, Chester B.  
 1979 Ceramics. In *The Anthropology of St. Catherines Island: The Refuge-Deptford Mortuary Complex*, edited by David Hurst Thomas and Clark Spencer Larsen, pp. 109-132. *Anthropological Papers of the American Museum of Natural History* 56(1).
- DePratter, Chester B. and J.D. Howard  
 1977 History of Shoreline Changes Determined by Archaeological Dating: Georgia Coast, United States of America. *Transatlantic Gulfcoast Association Geology Society* 27:251-258.
- Drucker, Lesley  
 1983 Coastal Subsistence During the Early Woodland Period in South Carolina: A View from the Minim Island Site, Georgetown County. Paper presented at the 40th Southeastern Archaeological Conference, Columbia, South Carolina.
- Drucker, Lesley and Ronald Anthony  
 1980 *A Cultural Resources Survey of the Pinckney Island National Wildlife Refuge, Beaufort County, South Carolina*. Carolina Archaeological Services, Columbia, South Carolina. Submitted to the United States Department of the Interior, Fish and Wildlife Service, Savannah, Georgia.



Dunn, Richard

- 1972 *Sugar and Slaves: The Rise of the Planter Class in the English West Indies, 1624-1713.* W.W. Norton, New York.

Ferguson, Leland G.

- 1971 *South Appalachian Mississippian.* Ph.D. dissertation, University of North Carolina at Chapel Hill. University Microfilms, Ann Arbor.
- 1972 Upper South Atlantic Coastal Plain. *Handbook of North American Indians*, in press.

Flannery, Regina

- 1943 Some Notes on a Few Sites in Beaufort County, South Carolina. *Bureau of American Ethnology Bulletin* 133:147-153.

Fludd, Eliza C.K.

- 1886 *Biographical Sketches of the Huguenot Solomon Legaré and his Family.* Edward Perry, Charleston, South Carolina.

Griffin, James B.

- 1943 An Analysis and Interpretation of the Ceramic Remains from Two Sites Near Beaufort, South Carolina. *Bureau of American Ethnology Bulletin* 133:159-167.

Hemmings, E. Thomas

- 1970a *Emergence of Formative Life on the Atlantic Coast of the Southeast.* Institute of Archaeology and Anthropology Research Manuscript Series 7. University of South Carolina, Columbia.
- 1970b Preliminary Report of Excavations at Fig Island, S.C. *Institute of Archaeology and Anthropology Notebook* 2(2-3): 9-15.

Hillestad, H.O., J.R. Bozeman, A.S. Johnson, C.W. Berisford, and J.I. Richardson

- 1975 *The Ecology of the Cumberland Island National Seashore, Camden County, Georgia.* Georgia Marine Science Center Technical Report Series 75-5.

Holman, Winifred L.

- 1948 Letter. *S.C. Historical and Genealogical Magazine* 49:66.

Johnson, John

- 1888 Daily Important Events in Charleston and Vicinity During the Civil War, 1860-1865. *Charleston City Yearbook, 1888:i-x.*

Koob, William L.

- 1976 The Anne King Gregorie Collection. *South Carolina Antiquities* 8:19-24.

Kronberg, Nathan

- 1971 *Climate*. In *Soil Survey of Charleston County, South Carolina*, edited by E.N. Miller, pp. 72-74. United States Department of Agriculture, Soil Conservation Service, Washington, D.C.

Landers, H.

- 1970 *Hilton Head and the Sea Islands of South Carolina*. Climatology of the United States No. 21-38-3. United States Department of Commerce, Environmental Science Services Administration, Washington, D.C.

Lepionka, Larry, Donald Colquhoun, Rochelle Marrinan, David McCollum, Mark Brooks, John Foss, William Abbott, and Ramona Grunden

- 1983 *The Second Refuge Site, Location 22 (38JA61), Savannah National Wildlife Refuge, Jasper County, South Carolina*. Submitted to the United States Department of the Interior, National Park Service, Interagency Archaeological Service, Atlanta, Georgia.

McIver, Petrona R.

- 1957 Wappetaw Congressional Church. *The South Carolina Historical Magazine* 58:34-47.

Marrinan, Rochelle A.

- 1975 *Ceramics, Molluscs, and Sedentism: The Late Archaic Period on the Georgia Coast*. Ph.D. dissertation, University of Florida. University Microfilms, Ann Arbor.

Mathews, Thomas D., Frank W. Stapor, Jr., Charles R. Richter, John V. Miglarese, Michael D. McKenzie, and Lee A. Barclay

- 1980 *Ecological Characterization of the Sea Island Coastal Region of South Carolina and Georgia*, vol. I. United States Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Michie, James L.

- 1977 *The Late Pliostocene Human Occupation of South Carolina*. Unpublished B.A. honor's thesis, Department of Anthropology, University of South Carolina, Columbia.
- 1979 *The Bass Pond Dam Site*. Institute of Archaeology and Anthropology Research Manuscript Series 154. University of South Carolina, Columbia.

Milanich, Jerald T.

- 1971 *The Deptford Phase: An Archaeological Reconstruction*. Ph.D. dissertation, University of Florida. University Microfilms, Ann Arbor.

Miller, E.N.

- 1971 *Soil Survey of Charleston County, South Carolina*. United States Department of Agriculture, Soil Conservation Service, Washington, D.C.

Molloy, Robert

- 1947 *Charleston, A Gracious Heritage*. D. Appleton-Century, New York.

Nelson, Lee H.

- 1968 *Nail Chronology as an Aid to Dating Old Buildings*. Technical Leaflet No. 48. American Association for State and Local History.

Neuffer, Claude Henry, editor

- 1972 Notes on Names. *Names in South Carolina* 19:6-17.

Phelps, David S.

- 1968 Thom's Creek Ceramics in the Central Savannah River Locality. *Florida Anthropologist* 21:17-30.
- 1983 Archaeology of the North Carolina Coast and Coastal Plain: Problems and Hypotheses. In *The Prehistory of North Carolina: An Archaeological Symposium*, edited by Mark A. Mathis and Jeffrey J. Crow, pp. 1-49. North Carolina Division of Archives and History, Raleigh.

Perkinson, Phil H.

- 1971 North Carolina Fluted Points - Survey Report Number One. *Southern Indian Studies* 23.
- 1973 North Carolina Fluted Projectile Points - Survey Report Number Two. *Southern Indian Studies* 25.

Radford, John

- 1976 The Charleston Planters in 1860. *The South Carolina Historical Magazine* 77:227-235.

Reid, Jefferson, Jr.

- 1967 *Pee Dee Pottery from the Mound at Town Creek*. Unpublished M.A. thesis, Department of Anthropology, University of North Carolina at Chapel Hill.

Reitz, Elizabeth J.

- 1982 Application of Allometry to Zooarchaeology. Paper presented at the 39th Southeastern Archaeological Conference, Memphis, Tennessee.

Reitz, Elizabeth J. and Dan Cordier

- 1982 Use of Allometry in Zooarchaeological Analysis. Paper presented at the Fourth International Council for Archaeozoology, London, England.

Ripley, R.S.

- 1885 Charleston and its defences in the late "War Between the States." *Charleston City Yearbook*, 1885:347-358.

Sandifer, Paul A., John V. Miglarese, Dale R. Calder, John J. Manzi, and Lee A. Barclay

- 1980 *Ecological Characterization of the Sea Island Coastal Region of South Carolina and Georgia*, vol. II. United States Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Smith, Lynwood

- 1933 *Physiography of South Carolina*. Unpublished M.S. thesis, Department of Geology, University of South Carolina, Columbia.

Smith, Richard L.

- 1974 *The Archaic Period in the Central Savannah River Area: A Study of Cultural Continuity and Innovation*. Ms. on file, Research Laboratories of Anthropology, University of North Carolina at Chapel Hill.

South, Stanley

- 1960 *An Archaeological Survey of Southeastern North Carolina*. Ms. on file, Research Laboratories of Anthropology, University of North Carolina at Chapel Hill.
- 1970 *Baked Clay Objects from the Site of the 1670 Settlement at Charles Towne, South Carolina*. *Institute of Archaeology and Anthropology Notebook* 2(1):3-16.
- 1973 *Indian Pottery Taxonomy for the South Carolina Coast*. *Institute of Archaeology and Anthropology Notebook* 5:54-55.
- 1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.

Sutherland, Donald R.

- 1973 *Preliminary Analysis of Ceramic Materials Recovered from the Spanish Mount Site, Edisto Island, South Carolina*. *South Carolina Antiquities* 5(2).
- 1974 *Excavations at the Spanish Mount Shell Midden, Edisto Island, South Carolina*. *South Carolina Antiquities* 6(1):25-36.

Trinkley, Michael

- 1974 *Report of Archaeological Testing at the Love Site (SoC<sup>V</sup>240), South Carolina*. *Southern Indian Studies* 26:3-18.
- 1976a *A Typology of Thom's Creek Pottery for the South Carolina Coast*. Unpublished M.A. thesis, Department of Anthropology, University of North Carolina at Chapel Hill.
- 1976b *Paleoethnobotanical Remains from Archaic-Woodland Transitional Shell Middens Along the South Carolina Coast*. *Southeastern Archaeological Conference Bulletin* 19:64-67.
- 1976c *The Thom's Creek Phase: Cultural Ecology and Subsistence*. Paper presented at the 3rd Conference on South Carolina Archaeology, Columbia, South Carolina.
- 1980a *Additional Investigations at Site 38LX5*. South Carolina Department of Highways and Public Transportation, Columbia.
- 1980b *Investigation of the Woodland Period Along the South Carolina Coast*. Ph.D. dissertation, University of North Carolina at

Chapel Hill. University Microfilms, Ann Arbor.

- 1981a *Archaeological Testing of the Walnut Grove Shell Midden, Charleston County.* Submitted to the United States Department of Agriculture, Forest Service, Columbia, South Carolina.
  - 1981b *Studies of Three Woodland Sites in Beaufort County, South Carolina.* South Carolina Department of Highways and Public Transportation.
  - 1982a *A Summary Report of the Excavations at Alligator Creek, Charleston County, S.C.* Submitted to the United States Department of Agriculture, Forest Service, Columbia, South Carolina.
  - 1982b *Ceramics of the Central South Carolina Coast.* Paper presented at the Coastal Carolina Aboriginal Pottery Seminar, Charleston, South Carolina.
  - 1983 *The Form and Function of South Carolina's Early Woodland Shell Rings.* In *Method and Process in Southeastern Archaeology*, edited by Roy S. Dickens and H. Trawick Ward, University of Alabama Press, in press.
- Trinkley, Michael and Jacqueline Carter
- 1975 *Preliminary Survey of the Charleston, South Carolina Coastline.* Paper presented at the 1st Conference on South Carolina Archaeology, Columbia, South Carolina.
- Trinkley, Michael and Martha Zierden
- 1983 *The Archaeology of Fish Haul Creek, Hilton Head Island, Beaufort County, South Carolina: A Preliminary Statement and Recommendations.* Charleston Museum, Charleston, South Carolina.
- Waddell, Eugene G.
- 1966 *Results of a Preliminary Survey to Determine the Significance of Shell Rings.* Ms. on file, Institute of Archaeology and Anthropology, University of South Carolina, Columbia.
- Wheaton, Thomas R., Amy Friedlander, and Patrick H. Garrow
- 1983 *Yaughan and Curriboo Plantations: Studies in Afro-American Archaeology.* Soil Systems, Marietta, Georgia. Submitted to the Department of the Interior, National Park Service, Archaeological Services Branch, Atlanta, Georgia.
- Widmer, Randolph J.
- 1976 *Archaeological Investigation at the Palm Tree Site, Berkeley County, S.C.* Institute of Archaeology and Anthropology Research Manuscript Series 103. University of South Carolina, Columbia.
- Williams, Stephen B., editor
- 1968 *The Waring Papers: The Collected Works of Antonio J. Waring, Jr. Papers of the Peabody Museum of Archaeology and Ethnology* 58.

Wood, Peter

- 1975 *Black Majority: Negroes in Colonial South Carolina from 1670 Through the Stono Rebellion*. Alfred A. Knopf, New York.

Yarnell, Richard A.

- 1974 Plant Food and Cultivation of the Salt Cavers. In *Archaeology of the Mammoth Cave Area*, edited by Patty Jo Watson, pp. 113-122. Academic Press, New York.

Zierden, Martha

- 1983 Historical and Archaeological Investigations of Eighteenth Century Charleston. Paper presented at the 9th Conference on South Carolina Archaeology, Columbia, South Carolina.

Zierden, Martha and Jeanne Calhoun

- 1982 *Preliminary Report: An Archaeological Preservation Plan for Charleston, South Carolina*. Charleston Museum, Charleston, South Carolina.

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