

AN ARCHAEOLOGICAL ASSESSMENT
OF THE
GREENFIELD BORROW PIT, GEORGETOWN COUNTY

by

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CHAPTER I INTRODUCTION

Background

Limited archaeological testing at the proposed Greenfield Pit #1 site was initiated at the request of L-J Construction Company, who plan to use the borrow pit in construction of the Black River bridge. The borrow pit was initially surveyed by Dr. Michael Trinkley of the South Carolina Department of Highways and Public Transportation. At this time he noted the presence of brick piles and suggested that they may represent the remains of slave cabins or other plantation related structures. Archaeological testing was conducted at the site by the Charleston Museum to determine the nature and extent of the site, suggest cultural and temporal affiliations, and make further management recommendations. Fieldwork was conducted from February 10 to February 22, for a total of five working days. A variety of materials were recovered during the excavations, including architectural and domestic refuse dating to the nineteenth century. Archival and archaeological research suggests that the site is a slave settlement associated with historic Campfield plantation, and will be referred to in the following report as Campfield Settlement.

Natural Setting

The Greenfield Pit is located on the Black River in Georgetown County, approximately eight miles north of Georgetown. It centers on a spit of land adjacent to abandoned rice fields, west of Highway 701 and south of Highway 51 (Figure 1). The site is presently part of Greenfield Plantation, which is centered east of Highway 701, but historically was a separate tract known as Campfield Plantation.

Georgetown County is located on the Atlantic coast north of Charleston. The town of Georgetown is located on Winyah Bay, one of the best harbors in South Carolina. Georgetown became a port of entry in 1732, sixty two years after the founding of the Carolina colony. Georgetown served as a subsidiary point in the water transportation network for manufactured goods and raw materials throughout the eighteenth and nineteenth centuries.

Winyah Bay receives drainage from four major rivers which transect the county (Figure 2). The Waccamaw, Pee Dee, and Black Rivers initiate in the mountains of North Carolina, and are navigable to the sand hills or the piedmont. The Sampit is a deep river of local origin. Each river is subject to tidal action beyond the western limits of the county (Stuckey 1982: 2). It is this network of rivers, with their marshes and tidal fluctuation, that made Georgetown the center of rice production during the eighteenth and nineteenth centuries (Rogers 1970: 10). The prime rice lands were located five to ten miles from

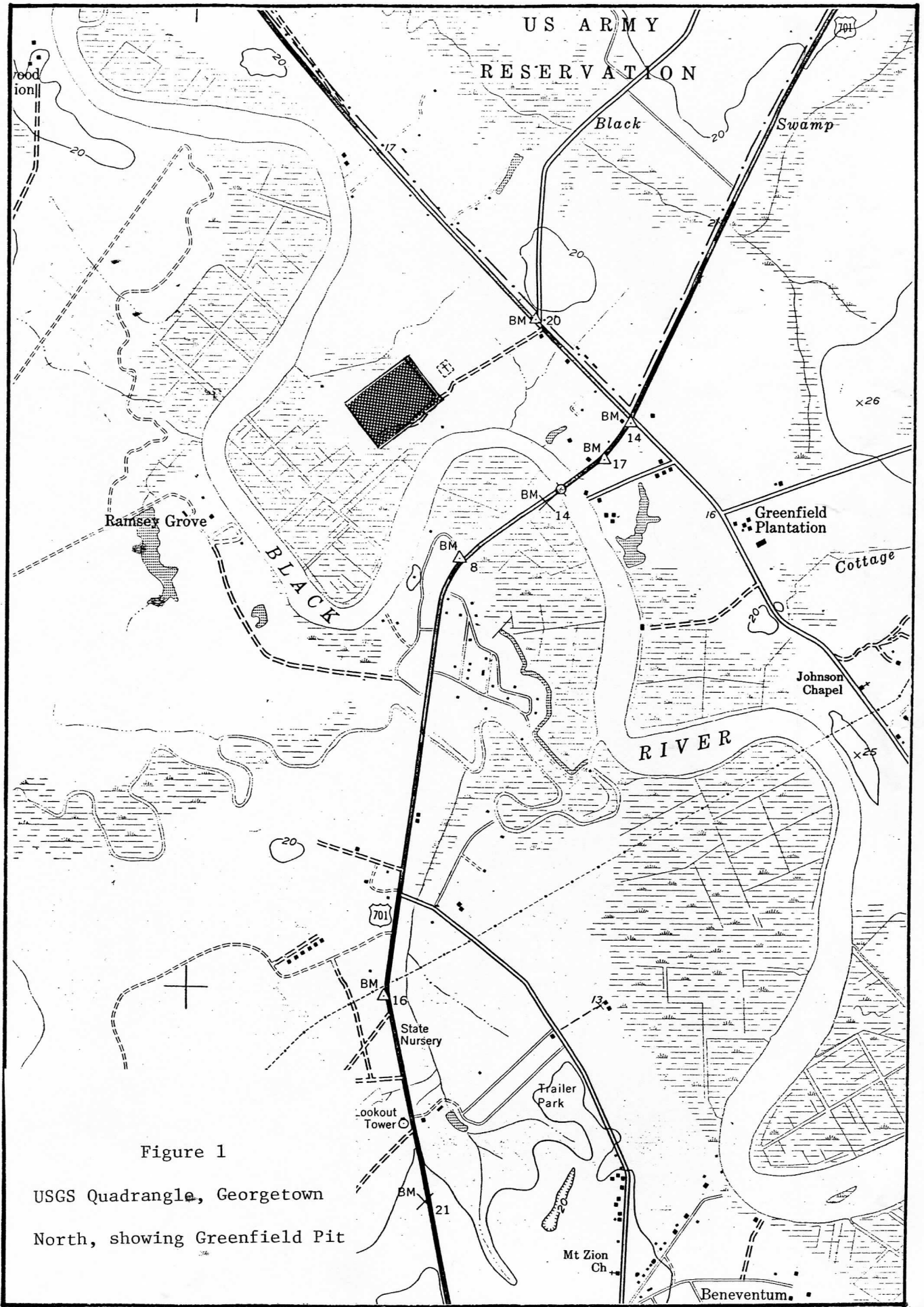


Figure 1

USGS Quadrangle, Georgetown
North, showing Greenfield Pit

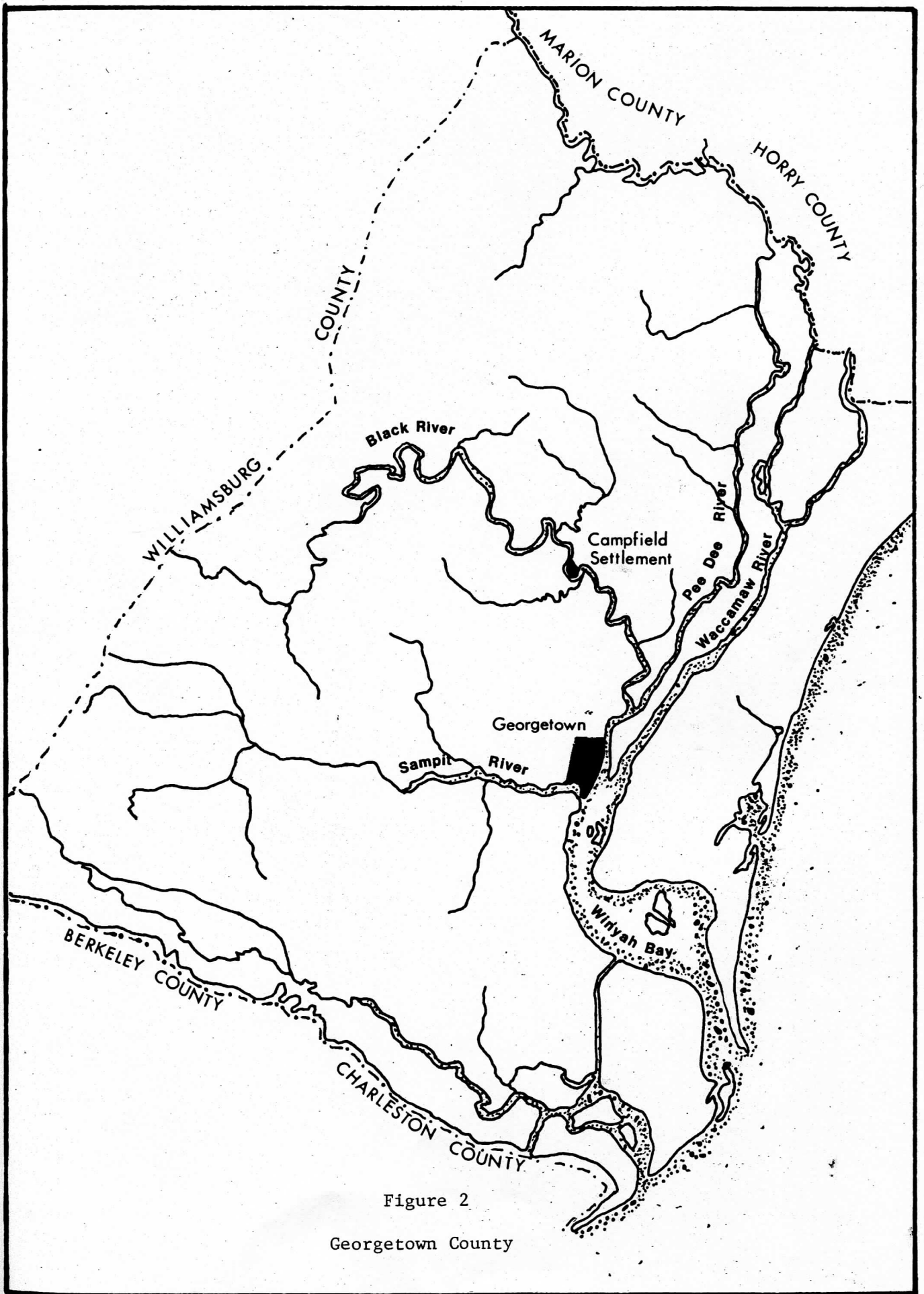


Figure 2

Georgetown County

the coast, beyond the reaches of the salt water wedge which penetrates the rivers from the ocean (Hilliard 1975: 64). Rice dikes are still visible in the marshes adjacent to the rivers, and many of these impounded marshes have been converted into ponds for migrating waterfowl.

The entire county is a low, coastal environment, characterized by sandy pine barrens to the west, and a series of hardwood swamps and flat sandy areas towards the coast. The coast is protected from the ocean by a series of barrier islands, behind which is an extensive estuarine system. The terrain is gently sloping, with a maximum elevation of 40 feet in the western portion of the county. The climate of coastal South Carolina may be characterized as humid subtropical, and is a result of the gulf stream which flows off the Atlantic coast. The average annual temperature of 51° and an annual rainfall of 50 inches contributes to a long growing season, accounting for Georgetown's agricultural emphasis throughout her history. The climatic factors favor rapid decay of organic materials and minerals, and the soils tend to be highly acidic (Matthews et al. 1980).

Site Description

Campfield Settlement is situated on a point of land overlooking the former rice fields of the Black River. The site is characterized by a series of knolls of relatively high relief, ranging from 5 feet to 24 feet MSL (Figure 3). Vegetation consists of a climax hardwood forest of oak, hickory, and magnolia. The borrow pit is bisected by a small swamp of cypress and gum vegetation. The ground is covered in moderate leaf litter, with an undergrowth of briars and immature hardwood species. Soils at the site are Lakeland Fine Sand, an excessively drained, gently sloping sand, found on the coastal plain near major rivers. The soil has a low organic content, and is poorly suited to row crops (Stuckey 1982: 17). The sandy nature of this soil makes it desirable as borrow fill.

Several above ground features suggest an extensive use of the area during historic times. A standing rice barn is located southwest of the pit boundary, on a small point of land adjacent to the marsh. Wooden peg construction suggests that the structure is of some antiquity; the brick foundation to a rice mill is located adjacent to this barn. A cemetery is located on the highest (24 ft. MSL) knoll, just north of the proposed pit boundaries. Local informants indicate that the site is still used as a cemetery by local black residents in the area of Greenfield Plantation. The site is shown on the 1943 USGS Quadrangle map of the area. Although the antiquity of the cemetery is uncertain, it is suspected that the cemetery is associated with the nineteenth century occupation of the site, as slave cemeteries were a common feature of lowcountry rice plantations.

Southwest of the cemetery, within the boundaries of the proposed borrow pit, is a second, lower, knoll (16 ft. MSL) which contains extensive



Figure 3
General View of Campfield Settlement,
Facing Northwest.

above ground evidence of former occupation. Two large brick piles, (ca. 40 feet in diameter), probably resulting from fallen brick chimneys, are present at the top of the ridge (Figure 4a), while a third, smaller (ca. 20 feet in diameter) brick pile is located west and slightly north of brick piles A and B. In addition, an extensive brick scatter is present adjacent to the slough, north of brick piles A and B. Also visible in this brick scatter is an intact corner of a brick foundation (see Figure 13). Located to the south of the brick piles, and presumably associated with them, is an open brick well, 5 feet in diameter and approximately 20 feet deep (Figure 4b). A fifth, ephemeral brick scatter was located at the head of the slough, adjacent to the eastern boundary of the borrow pit; no artifacts were recovered from shovel tests adjacent to this brick scatter.

Shovel testing suggests that cultural remains are centered on the knoll, adjacent to the brick piles, and north to the edge of the slough, in the vicinity of brick pile D. Suggested site boundaries are shown in Figure 6. Extensive subsurface testing was confined to this area. Details on methodology are provided in Chapter 3. Chapter 4 contains a discussion of the analysis of materials recovered, while Chapter 2 outlines the history of Campfield Plantation and its role in the development of Georgetown County. Conclusions and management recommendations are contained in Chapter 6.



Figure 4

Above-ground features of Campfield Settlement
Brick pile A, well

CHAPTER II HISTORICAL SUMMARY

In 1826, Robert Mills noted that in Georgetown,

every thing is fed on rice; horses and cattle eat the straw and bran; hogs, fowls, &c. are sustained by the refuse; and man subsists upon the marrow of the grain.

Although undoubtedly an exaggeration, Mills' comment can be easily understood. The census report for 1839 states that the Georgetown area alone produced 36,360,000 of the total United States crop of 80,841,422 pounds of rice (Easterby 1945: 7). In this area, rice, not cotton, was king and rice plantations were a way of life.

Campfield Plantation was merely one of the many nestled along the waterways of the Georgetown district. These rivers, the Waccamaw, Pee Dee, Black, and Sampit, converged to form Winyah Bay in the southeastern corner of the Georgetown area. Between Winyah Bay and its southern border is the vast expanse of the Santee swamp, eminently suitable for the cultivation of rice.

Campfield Plantation lies on the north side of the Black River. One of the plantation's earliest owners was Capers Boone, from whom the land passed to his son, John Boone, Jr. (CCRMCO C-10: 432). In February of 1791, John Boone, Jr. sold Campfield to William Doughty for 2,000 pounds (CCRMCO E-6: 201). Following William Doughty's death, the executors of his estate sold the plantation to his son Dr. James Doughty on November 3, 1818 for \$30,000. At this time, Campfield was comprised of approximately 600 acres which were bounded on the north and northeast by part of a tract lately belonging to Captain R. Boone, on the southeast by land formerly belonging to the estate of Stephen Ford, and on all other sides by the Black River (Figure 5) (CCRMCO B-9: 145-147). In the will of Dr. James Doughty, which was proved on December 6, 1831, his relict, Sarah B. Doughty, and Sextus T. Gaillard were qualified as Executrix and Executor (Charleston County Wills 39: 944-945). In 1832, Sextus Gaillard married his friend's widow, Sarah Doughty, and the two of them made their home on Campfield Plantation (CCRMCO C-10: 432).

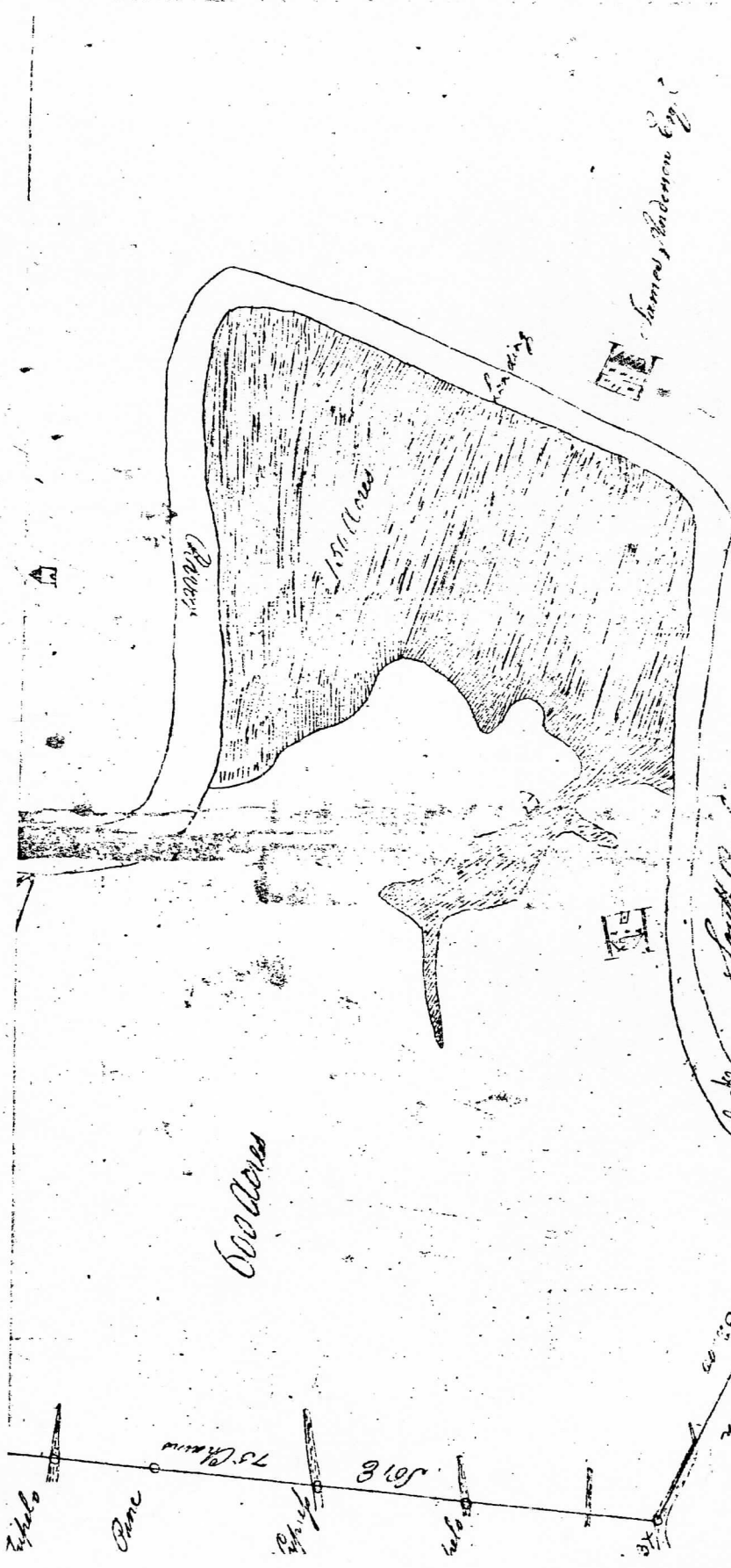
Sextus T. Gaillard grew rice at both Campfield, which had its own rice mill, and, for a time, Ramsay Grove Plantation. Together, the two plantations produced 320,000 pounds of rice in 1850 from the combined efforts of 69 slaves. In 1855, Sextus Gaillard's niece, Theodora Gaillard, married Edward P. Guerard who then took possession of Ramsay Grove (Rogers 1970: 281-282).

Plantations such as Ramsay Grove and Campfield depended on large forces of slaves to perform the debilitating labor necessary for the

Stephen Ford Esq.



Stephen Ford Esq.
142 1/2 Champs
Ely



James Ford Esq.

The above Plat of the plantation is more correct than that in a former survey, but I have been obliged to alter the boundaries of the plantation, and to add to the same, a large tract of land, which I have purchased of the late Mr. Ford, and which I have now conveyed to the said James Ford Esq. by a deed bearing date the 10th day of March 1790.

James Ford Esq.
142 1/2 Champs
Ely

Record & Examine
by Thomas Stone
1790

Figure 5

Historic Plat of Campfield

Plantation, 1790

successful cultivation of rice. Many of the early Carolinian immigrants were from the West Indies, where plantations and slave labor were an important element in society. In their move to Carolina, a number of these men were accompanied by not only their slaves but also their social standards which esteemed slave ownership. This perception of slaveholding as a status symbol plus the land grant system which counted slaves as members of a family in order to ascertain the amount of acreage to be granted the immigrant, served to encourage the initial possession and transportation of as many slaves as possible. As Carolina's search for a staple crop led to rice, black labor came into its own.

Few Englishmen, including those who had lived in the West Indies, were familiar with rice cultivation. The grain which was to dominate Carolina's agricultural landscape throughout most of the eighteenth century was at first extremely difficult for the Europeans to master. As one eighteenth century Englishman recalled,

The people being unacquainted with the manner of cultivating rice, many difficulties attend the first planting and preparing it, as a vendable commodity, so that little progress was made for the first nine or ten years, when the quantity produced was not sufficient for home consumption (Wood 1975: 58).

By 1761, however, Governor James Glen could claim,

The only commodity of Consequence produced in South Carolina is Rice and they reckon it as much their staple Commodity, as Sugar is to Barbadoes and Jamaica, or Tobacco to Virginia and Maryland (Wood 1975: 34).

Simultaneous with the development of rice as a commercial mainstay was the Carolina planters' increasing reliance on African slave labor. Cause and result are often difficult to separate. Many Africans, particularly those from the West African Windward Coast, were familiar with rice cultivation. The technique used by slaves throughout the New World of pressing a hole with the heel and covering the seeds with the foot was strikingly similar to that prevalent in their homeland. The Carolina Blacks' custom of singing and hoeing in unison in the rice fields was also a carryover from their African heritage. Even the wide, flat winnowing baskets used to fan the threshed grain were patterned after an African design (Wood 1975: 61). Whether it was the Africans' very skill in rice cultivation which, ironically, led to their intensive exploitation in this field as manual laborers or other factors such as availability and their tolerance of certain diseases and fevers endemic to the Carolina lowlands, is impossible to determine. Suffice it to say that African slave labor became the backbone of the Carolina rice plantation.

Due to the vast amount of strenuous physical labor involved in growing rice, large numbers of slaves were required to man these

plantations. In colonial Georgia, an average plantation of undetermined acreage generally had about 48 workers. By the nineteenth century, rice cultivation necessitated approximately one laborer for every six or seven acres (Singleton 1980: 27-28).

Gabe Lance, a former slave in Georgetown County, recalled,

All dem rice-field been nothing but swamp. Slavery people cut kennel (canal) and dig ditch and cut down woods - and dig ditch through the raw woods. All been clear up for plant rice by slavery people (Rawick 1972: 91-93).

Rice cultivation involved exhausting labor and unhealthy working conditions. The process depended on stagnant water, a perfect breeding ground for mosquitoes. Slaves usually lived in settlements, or quarters, set aside for their use. Their houses were often frame with brick chimneys, such as those at Campfield. These were generally situated on natural mounds in the rice fields or on a relatively high space in fields banked off and thoroughly drained. Often the white overseer lived in the same area (Doar 1936: 22). Thus in the warm months the slaves were constantly threatened by disease carrying mosquitoes, and their partial immunity to that disease was not merely desirable but absolutely necessary.

Lowcountry planters were well aware of the health hazards involved in rice cultivation. One of the advantages of slave labor was the Africans' resistance to malaria. Although their immunity was only partial, it was also hereditary and was due to a genetic sickle-cell trait which the West Africans had developed in response to living in such a highly malarious area. From studies begun in the 1950s, it is evident that as of 1975 the incidence of the sickle cell trait among Gullah Blacks in coastal South Carolina was still higher than the national average for American Blacks and more nearly approximates that of the West Africans (Wood 1975: 88-89). Although eighteenth and nineteenth century Carolina planters were obviously ignorant of this scientific basis, they nonetheless had observed its results. They also recognized that they themselves did not share this immunity and strove to remove themselves from the contagious environment when the danger of disease was at its peak.

Traditionally, planters vacated their plantations in May and dared not return until October or November. Their attitude was summed up in 1856 by one planter who declared,

he would as soon stand fifty feet from the best Kentucky rifleman as to spend a night on his plantation in summer (Brewster 1947: 4-6).

Sextus and Sarah Gaillard were no exceptions. By the 1840's and 1850's, many South Carolina planters had begun to end their summer migration in small pine land villages safe from the threat of disease,

yet close enough to allow the absentee proprietors to visit their plantations during the day. Plantersville, located in Georgetown County midway between the Black and Pee Dee Rivers, was one such refuge (Rogers 1987: 317). In 1852, the Plantersville Society, consisting of,

S.C. Ford, S.T. Gaillard, J. Rees Ford, John P. Ford, J.R. Sparkman, George T. Ford, and all others who now or hereafter may own any lot or lots in the settlement...generally known as Plantersville,

was empowered by the Legislature to both formulate and enforce regulations pertaining to their own affairs and those of the settlement (Brewster 1974: 43). Plantersville proved not only a haven from disease but also from isolation and the terrors of the Civil War. Secession disrupted life throughout South Carolina. With the approach of Northern troops, a number of families fled to Plantersville while others went further into the interior, often taking their slaves with them (Rogers 1970: 404). Adele Petigru Allston wrote in a letter from Plantersville dated January 11, 1863,

We all thought after the battle before Fredericksburgh that the war might terminate soon and we might be spared the trouble and expense of moving, but the political horizon is again overcast and know not how much longer this most wicked war may be urged against us...Your Father will be going to Morven about the middle of this month and I think Adele Clards and I will go at the same time to Society Hill...(Easterby 1945: 192).

The Georgetown district could not compete with other areas in military significance. By the beginning of 1865, virtually all defending troops had been withdrawn and the district was left open to Northern attack (Rogers 1970: 414-415).

On February 25, 1865, Georgetown was taken by Federal troops. The following day the end of slavery was declared and martial law established throughout the district. On March 5 and 6, marines from the naval ships anchored in Georgetown harbor went up the Pee Dee River to the rice plantations to spread the word of freedom to the slaves living there. Many of the Blacks, sometimes with the Union soldiers' help, proceeded to ransack their former masters' homes and threaten the white families who had left their plantations and congregated in Plantersville (Rogers 1970: 417-419).

The planters, though used to dealing with Blacks, suddenly found themselves confronted with a totally new and frightening situation. Blacks who had formerly been strictly controlled now came and went as they pleased, worked when they felt like it, and spoke with as great, or little, deference as they chose. Plantation owners and managers were not merely bewildered but infuriated that their crops were being neglected and their commands ignored. They appealed to the Federal

officers to enforce order and assist them in putting their former slaves back to work.

By the end of March, 1865, the Union Army officers were ready to comply. Convinced of the necessity of establishing control over the freedmen, they began using their authority and power to support the planters. Jane Pringle, the mistress of Greenfield and White House plantations on the Black River, wrote,

Here I have over them the abiding fear of the Yankee Captains who go out and speak sharply to them and sustain my authority (Rogers 1970: 423).

In April an order was issued that the planters of Georgetown and Charleston districts were to take an oath of allegiance to the United States, assemble their former bondsmen to tell them they were free, and enter into reasonable written contracts with the freedmen. Under these contracts, the planters were obligated to provide food and other necessities, as they had previously, until the crops were harvested, whereupon the laborers would receive half of the crop (Rogers 1970: 424). S.T. Gaillard of Campfield was one of the Black River planters who followed these instructions.

The attempt to establish at least a semblance of normality was one of the objectives of President Johnson's reconstruction program. This goal called for a constitutional convention in each formerly rebellious state in order to draw up a new constitution (Rogers 1970: 428-429). The South had decided there must be a definite system of control for the newly freed Blacks. As one North Carolina planter piously explained,

If they (Blacks) cannot (as they never can) occupy the places of legislators, judges, teachers, &c., they may be useful as tillers of the soil, as handicraftsmen, as servants in various situations, and be happy in their domestic and family situations...It is our Christian duty to encourage them to these ends (Litwack 1979: 400).

Thus the Black Codes, with minor variations from state to state, were developed and included in the Southern states' new constitutions.

The Black Codes were based on antebellum restrictions on free Blacks, northern apprenticeship laws, and regulations of the Freedman's Bureau and the War Department. These Codes defined the Blacks' civil and legal rights: marriage, ownership of property, and ability to sue or be sued. The most important tenet, however, was the specific definition of the freedman's status as an agricultural laborer who could be forced to work. The South Carolina Code referred to the two parties involved in a labor contract as "servants" and "masters" and stipulated that no Black could engage in any employment except agricultural labor or domestic service unless he first obtained a special license and certification from a local judge stating his "skill and fitness" and "good moral character" (Litwack 1979: 400-402).

On January 1, 1866, South Carolina's Black Code was declared null and void by the Federal authorities. At the same time, the laborers were given ten days in which to either enter into contracts supervised by the military or leave the plantations on which they lived (Rogers 1970: 431). Although the Black Codes legally no longer existed, the ideology behind them remained unchanged. The contracts negotiated on the Heyward plantations in South Carolina stipulated that the freedman was to recognize the "lawful authority" of the employer and his agents and behave "in such manner as to gain the good will of those to whom we must always look for protection." Another South Carolina planter's contract insisted that the freedmen were "to be strictly as my slaves" in obeying his commands. To impress upon the Blacks the sanctity of the contract system, a commissioner of the Freedmen's Bureau in Mississippi told them,

Your contracts were explained to you, and their sacredness impressed upon you again and again. If you do not have some occupation you will be treated as vagrants, and made to labor on public works (Litwack 1979: 447).

Southern Blacks had escaped from bondage into a servitude only slightly less harsh.

The disruption of the labor force on which the rice plantations had depended resulted in a greatly weakened economy in the Georgetown district. Many of the planters, however, persevered. Campfield apparently remained an active rice plantation during this time. On January 12, 1880, Sextus Gaillard rented to James R. Ford,

the Rice Plantation on Black River known as Campfield for the term of three years from the 1st day of January 1882 to the 1st day of January 1885 (subject to certain reservations and conditions hereinafter specified) for the sum of Fourteen Hundred Dollars.

Mr. S.T. Gaillard reserves for his personal use the dwelling in which he now resides, with all the buildings appurtenances thereto, including Carriage House & Stables, with the other outbuildings belonging to the same premises. Also the small building near the Overseers House at present used as a Store barn & feed House, vegetable garden, poultry House & cattle pens...Mr. James R. Ford agrees to furnish domicile or house room for such servants in the actual service of Mr. S.T. Gaillard as may not be accommodated on premises...but all the buildings in the Negro Settlement & on the plantation not included in this special reservation, shall be subject ...to the said James R. Ford...(GCRMCO H: 337).

During the 1880's and 1890's, the planters in Georgetown County attempted to stabilize the rice plantation economy. A number of these men formed joint stock companies in an effort to commercialize a revival of the rice industry (Drucker 1981). They were not successful. In 1850,

the plantations in South Carolina had yielded 159,930,613 pounds of rice. This amount gradually decreased over the years until by 1906 there were only 418,722 pounds produced (Doar 1936: 41).

There were several reasons for the decline in the productivity of South Carolina's rice plantations. The storms and freshets of the late nineteenth century played havoc with the planters' already weakened finances. The market price of rice declined while available labor became less efficient. The definitive blow, however, was the introduction of rice into Louisiana and the Southwestern states. These areas were able to mechanize and renovate the South's outdated methods of rice cultivation. The resulting lower prices were simply too much competition for the South Carolina rice planters (Doar 1936: 41-42).

Following Sextus T. Gaillard's death in 1886, the executors of his estate sold Campfield Plantation to O.B. Skinner, "Dealer in General Merchandise and Manufacturer of Naval Stores", for \$4,500 (Will of O.B. Skinner, Geo. Co.). Consisting of 270 acres, at this time the plantation was bounded on the north and west by lands known as the "Cottage", formerly belonging to Miss P.M. Burgess but now the perperty of the Misses Sparkman, on the north and west by the Black River, and on the east by lands belonging to the said O.B. Skinner (GCRMCO I: 548-550). This deed was later modified for, in actuality, Campfield Plantation was comprised of 606 acres. As O.B. Skinner had bought the plantation in its entirety, this extra land also belonged to him (GCRMCO I: 551). In addition, Skinner purchased from Gaillard's estate the approximately 1,172 acres lying on the public highway between Peters Creek and Chappie Creek. He also bought,

all that certain...piece of land...lying...in the Village of Plantersville in the County of Georgetown...containing about five acres with the buildings and improvements on the same, being the well known summer residence of...S.T. Gaillard, deceased, and also all the right title and interest of the said S.T. Gaillard...of in and to the ...residue of Plantersville tract of land...(GCRMCO I: 548-550).

Under the ownership of O.B. Skinner, Campfield was merged with Greenfield Plantation. In 1935, these plantations were bought by Walter P. Inman, a wealthy outsider. He was only one of the many who, in the quest for the beauty and leisured lifestyle of the Old South, bought plantations in the Georgetown district. Upon Mr. Inman's death in 1954, the land passed to his son, Walter Inman, Jr. Campfield is currently managed by Mr. Vic S. Deere and is utilized as a recreational property. Its cemeteries are a constant reminder of Campfield's slave past. In 1904, Eizabeth Waties Allston, a rice planter on the Black River, noted in her diary,

Every year more hands leave the plantations and flock to the town, and every year more funerals wend their slow way from the town to the country; for though they all want to live in town, none is so poor but his ashes must be taken "home"; that is, to the old plantation where his parents and grandparents lived and died and lie waiting the final summons...The expense of a railroad journey does not deter them from bringing their dead "home". The whole family unite and "trow cen" to make up the sum necessary to bring the wanderer home, and even the most careless and indifferent of the former owners respect the feeling and consent to have those who have been working elsewhere for years laid to rest in the vine-covered graveyard on the old plantation (Pennington 1961: 59-61).

Even now, many Blacks whose ancestors were buried on Campfield and Greenfield plantations carry on this tradition. Campfield plantation, though not as well known as some in the wealthy Black River district, is a striking example of a Georgetown rice plantation, from beginning to end.

CHAPTER III EXCAVATION METHODOLOGY

Two types of excavations were conducted at the Greenfield borrow pit site to determine the extent and integrity of archaeological remains. Controlled excavations were conducted in the vicinity of the visible structural remains. Other areas of the borrow pit were examined by shovel testing.

Shovel tests were concentrated in two areas of the pit, the area west of the visible structural remains (Area 2), and the portion of the proposed pit north of the small slough (Area 4, Figure 6). Shovel tests were placed at thirty foot intervals, and materials were screened through $\frac{1}{4}$ inch mesh. Figure 6 shows the location of the shovel tests. Soils in the northern portion of the pit consisted of a light grey sand overlying orange sand. No cultural materials were recovered from the tests in this area of the pit. The areas outside the designated pit boundaries were not examined.

Shovel tests in the western portion of the pit began adjacent to brick pile C and were placed at thirty foot intervals to the edge of the borrow pit. In addition, three shovel tests were placed at the tip of the point, adjacent to the marsh. Cultural materials were recovered from only the two easternmost shovel tests, which suggests that the western boundary of Campfield Settlement is approximately fifty feet west of brick pile C. No cultural materials were recovered from other shovel tests in this portion of the pit, including the spit of land adjacent to the marsh. The shovel tests revealed a basic stratigraphy of grey humus overlying medium brown sand, followed by orange sandy subsoil. These areas were investigated because the contractor expressed the most interest in these areas of the pit. No shovel tests were placed in the eastern portion of the pit, between the site and the cemetery (Area 3). Therefore, the eastern edge of the site was not determined.

Controlled excavations were concentrated in the areas adjacent to the brick piles (Figure 7). A total of six 5 foot squares were excavated in this area. A modified Chicago grid was established over the site. A permanent datum point was located outside the designated pit boundaries; 100N100W is located fifteen feet south of the southern corner of the borrow pit. A meridian was established along magnetic north and a second datum was established at 400N100W. A base line was then established west from 400N100W. The meridian and base line were established with the use of a transit. The meridian is located east of the site. Therefore all measurements were made north and west of the datum. Excavation units were designated by the southeastern corner (Figure 6).

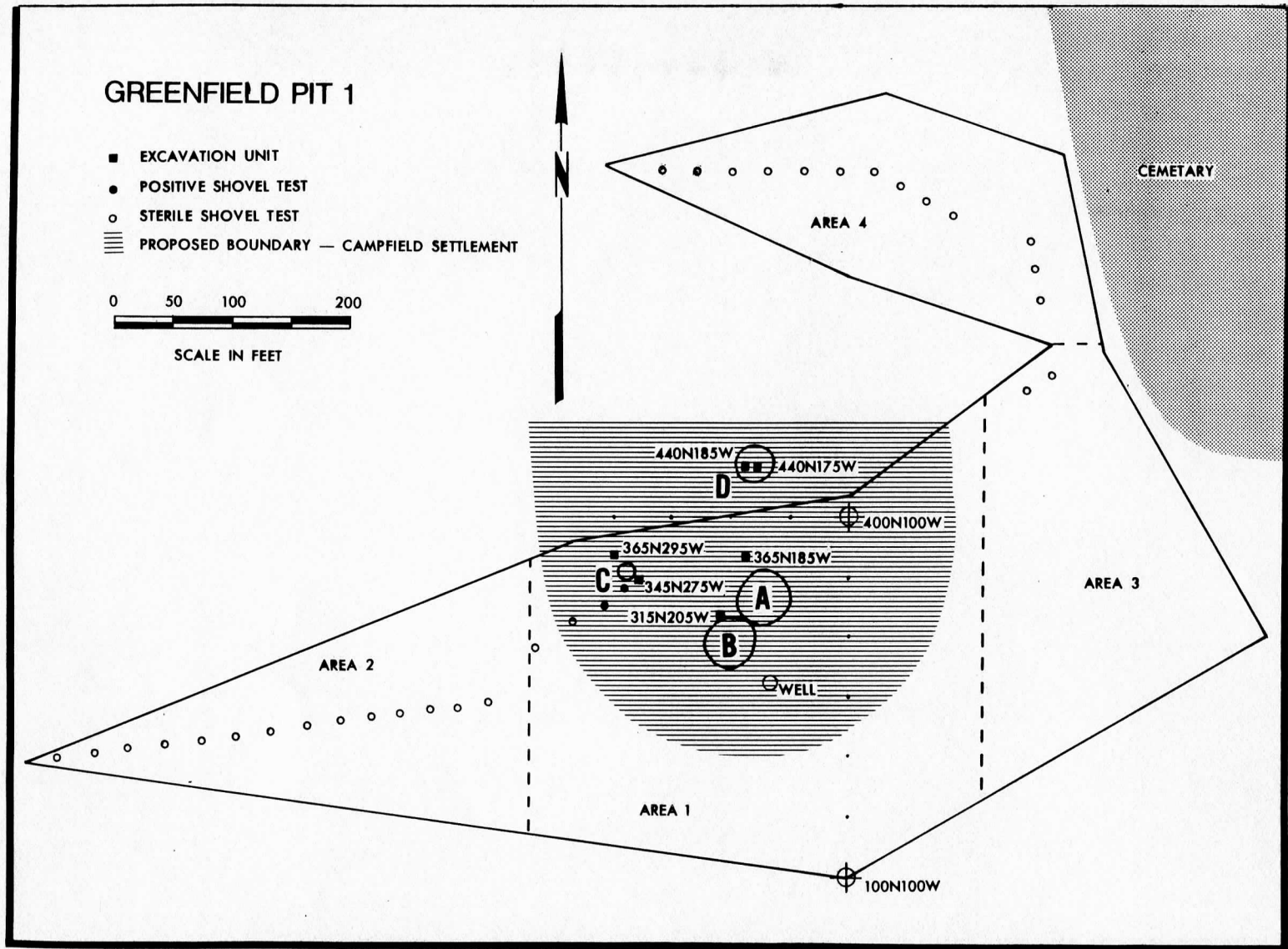


Figure 6
Boundaries of Greenfield Pit

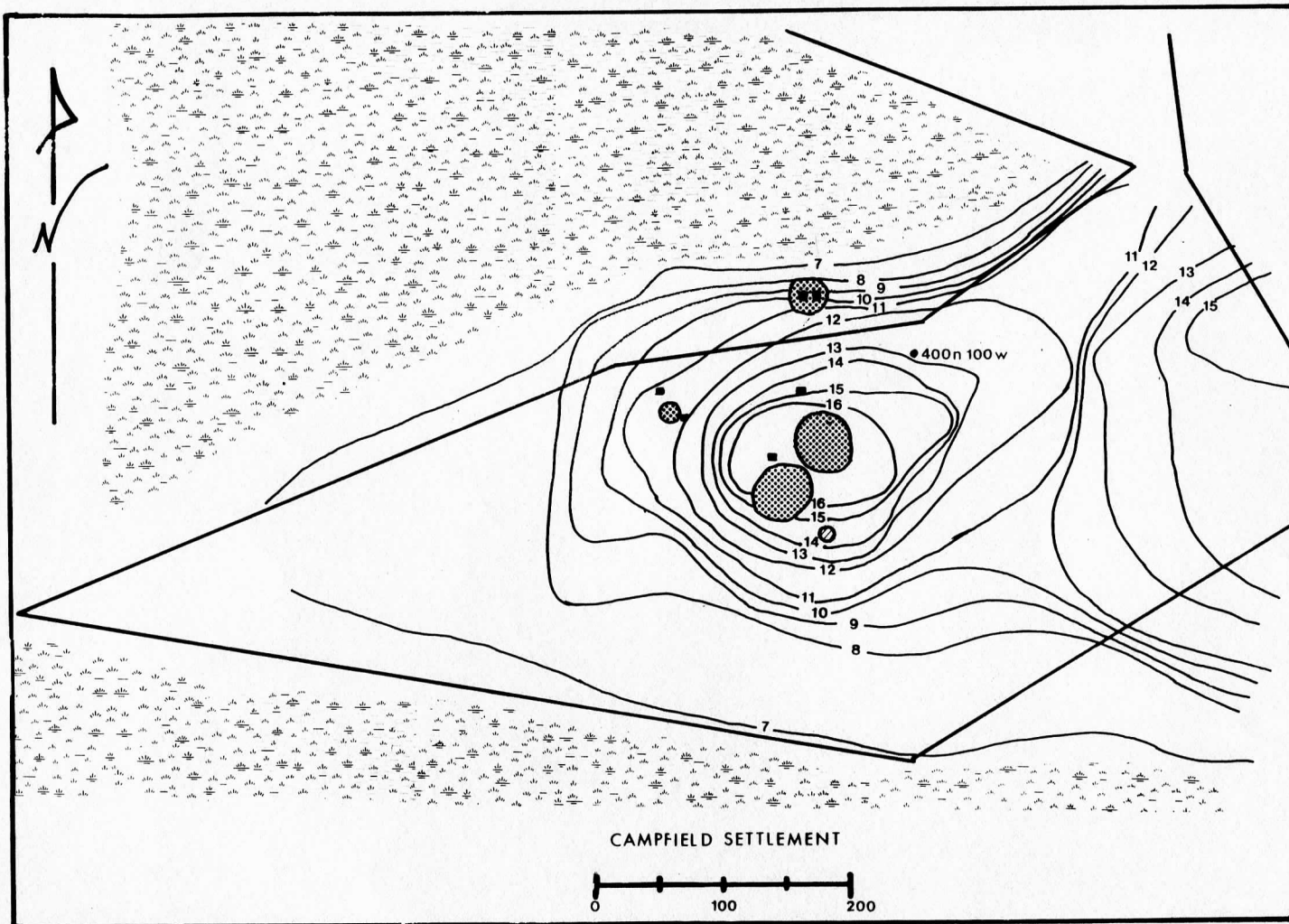


Figure 7

Contour Map of Campfield Settlement

Vertical control was maintained with the use of a transit. Elevations were taken in relation to the datum at 400N100W. This datum was tied into the USGS Campfield benchmark located on the east side of Highway 51 and an unimproved county road, .4 miles north of Highway 701. The elevation of the Campfield benchmark is 20.617 feet MSL, while 400N100W is 12.59 feet MSL. All elevations were taken in reference to this datum, and are expressed as feet above mean sea level (MSL).

All units were hand excavated using shovels and trowels. All materials were dry screened through $\frac{1}{4}$ inch mesh, using a shaker screen. Soil samples were retained for each provenience. In addition, a larger soil sample of 8 gallons was retained from organically rich deposits for flotation purposes. Two squares were excavated adjacent to brick piles A and B, two squares adjacent to brick pile C, and two squares adjacent to brick pile D.

Square 365N185W was located north of brick pile A, on the northern edge of the concentration of fallen brick. The square was located near the top of the knoll, with the ground surface of the southeast corner at 15.88 feet MSL. Excavation of the square revealed a basic stratigraphy similar to that noted in the shovel tests in Area 2. A medium grey-brown zone containing loose brick fall was designated Zone 1. Zone 1 contained the majority of cultural material recovered from the square. Zone 1 was deeper in the southern portion of the square, tapering off to the north (Figure 8). Zone 2 consisted of a medium brown sand, containing sparse amounts of cultural material. Gold sterile sand was encountered at 14.79 feet MSL. No features were encountered in the square. Cultural material was relatively dense for the site, at 16.07 artifacts per cubic foot.

Square 315N205W was located southwest of 365N185W, between brick piles A and B. The square was located on top of the knoll, with the southeast corner at 15.4 feet MSL. The stratigraphy in this square was somewhat different than that encountered in the first square. Zone 1 was a dark grey-brown soil, containing domestic refuse. A concentration of charcoal was noted at the base of this zone, as was Feature 1. Feature 1 consisted of burned mortar and nails in a matrix of black sandy soil (Figure 9). The presence of this feature, plus the charcoal in Zone 1 and the concentration of nails, suggests a burned wooden structure.

Beneath Feature 1 and Zone 1 was Zone 2, similar to Zone 2 in 365N185W, although somewhat darker. Zone 2 was a dark brown sand. This overlies a mottled gold and grey sand, initially believed to be sterile. Directly beneath this zone, however, was Zone 4, a medium grey coarse sand. This graded to a dark grey coarse sand in the southern portion of the square. Although the interface was not well defined, the dark area was excavated as Zone 5 (Figure 10). Sterile sand was encountered at 13.79 feet MSL. Artifact density was relatively low at 7.45 artifacts per cubic foot.

Key to Figures 8 - 14



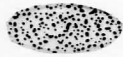
Medium grey-brown sandy soil



Medium brown sandy soil



Dark grey-brown sandy soil



Dark brown sandy soil



Soil with architectural rubble



Medium grey humus



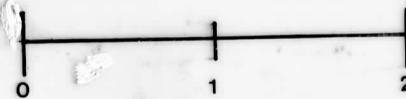
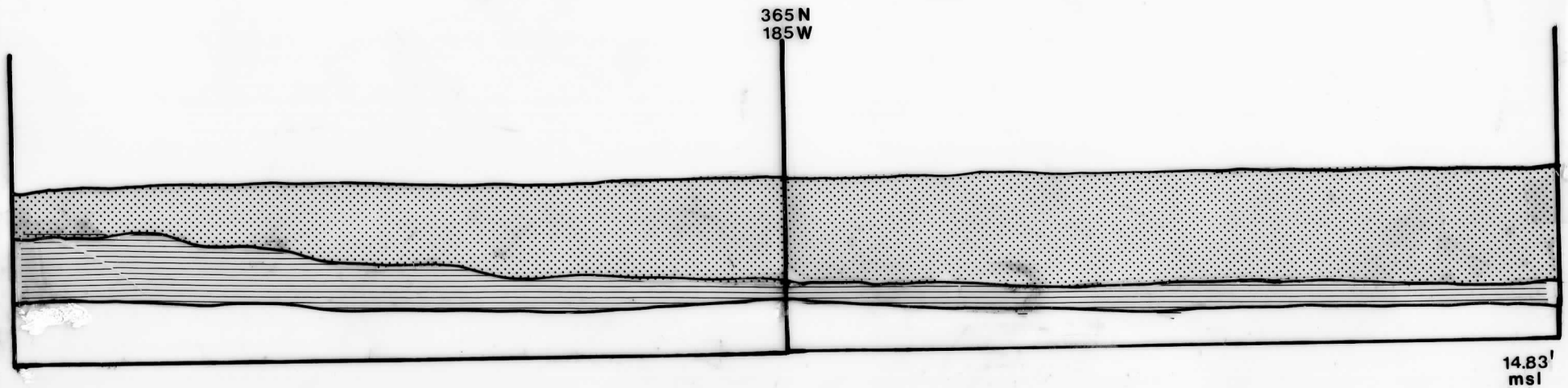
Mottled orange and grey sand



Black sand, charcoal lense



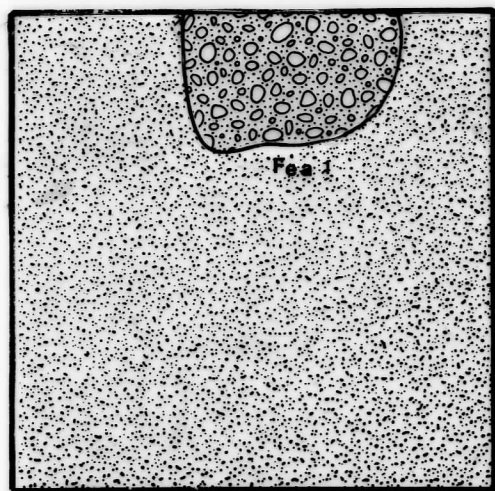
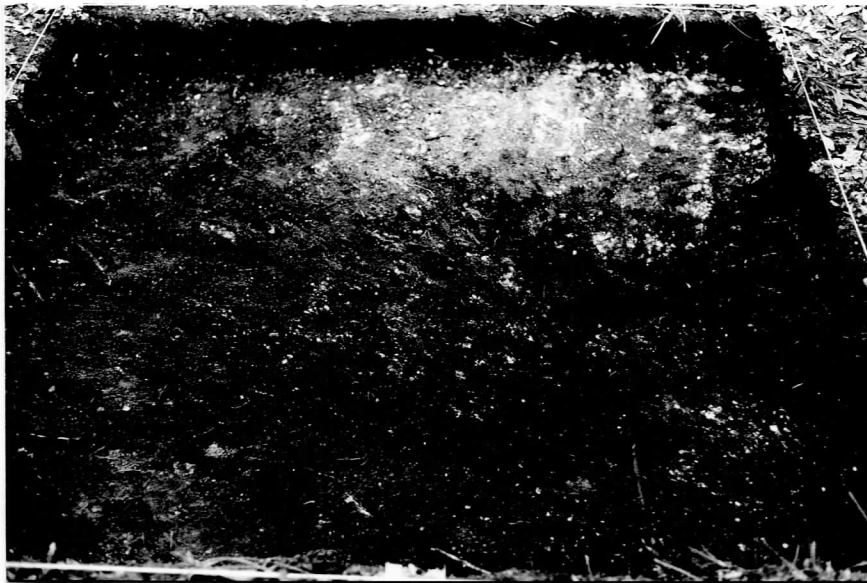
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SOUTH & EAST PROFILE

365n185 w

Figure 3



31'5 N
205 W

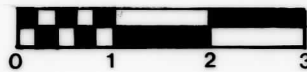
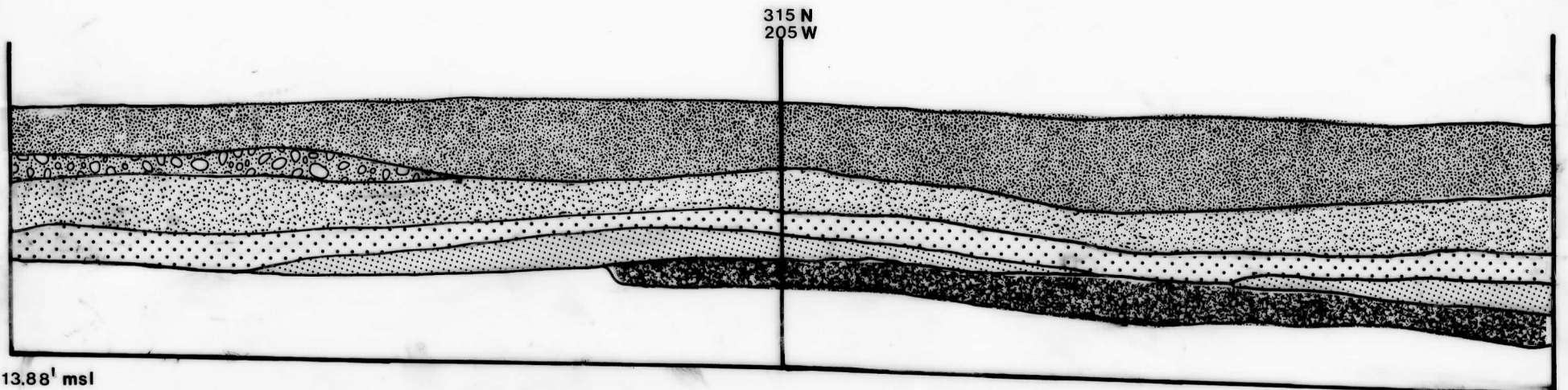


Figure 9
Feature 1, 315N 205W



24



SOUTH & EAST PROFILE
315n 205 w

Figure 10

Two squares were excavated adjacent to the smallest visible brick pile, brick pile C. Square 365N295W was located northwest of the brick pile, while 345N275W was southeast of the brick pile. Both squares and the brick pile are located on the northern slope of the rise (Figure 8); the southeast corner of 345N275W is 14.03 feet MSL while the southeast corner of 365N295W is 12.33 feet MSL. Both squares exhibited stratigraphy identical to Area 2 of the borrow pit. A thin lense of medium grey humus overlay a zone of medium brown sand (Zone 1) (Figure 11). Sterile soil was encountered at the base of Zone 1, at 13.12 feet MSL and 11.36 feet MSL, respectively. Although sparse (3.34 per cubic foot and 2.46 per cubic foot, respectively), cultural materials were encountered in both squares. The western boundary of the site is believed to be 50 feet west of 365N295W.

The final two squares were located adjacent to brick pile D, at the base of the northern slope adjacent to the slough. These squares exhibited quite different stratigraphy from the rest of the site. Square 440N185W contained a dark grey-brown midden deposit, marked by an increase in the quantity of cultural material, especially animal bone and other food remains (9.54 per cubic foot). Zone 1 contained a quantity of charcoal, with a concentration of charcoal at the base of the zone (Figure 12). Eight gallons of this organically rich soil were retained for flotation. The artifact density of this square is somewhat misleading since faunal material, representing a large portion of the materials recovered, was not included in the density calculations.

Square 440N175W was located so that the intact portion of the brick foundation (Feature 2) would be bisected by the square. It was also located adjacent to the slough, at 11.37 feet MSL. Square 440N175W contained the most complex stratigraphy of the site. Zones 1 and 2 were similar to other areas of the site, being a dark grey-brown sandy soil followed by a dark brown sand. Two postholes were found intruding into Zone 2, at 10.88 feet MSL (Figure 13a). The postholes were shallow, with a rounded base. Beneath Zone 2 was a zone of brick and mortar rubble, with quantities of charcoal. Zone 3 appears to have been the result of the burning of this cabin. At the base of Zone 3 was a burned pine plank in situ. The plank appears to have originally measured 1 inch by 6 inches. The position of the plank in association with the brick rubble, and the presence of quantities of wood charcoal in Zone 3, suggests that the plank was a structural member.

Zone 4 was a light grey sand, located beneath the rubble zone. The same matrix was found in Feature 3, the builder's trench for the structural foundation, initiating at 9.62 feet MSL and intruding into sterile sand (Figures 13b, 14). The depth and size of Features 2 and 3 suggest that this structure, unlike those represented by brick piles A-C, was quite substantial. Two postmolds of grey sand were noted in the southern portion of the square, intruding into sterile soil. They were shallow, with rounded bottoms and contained no cultural material. Artifacts were densest in this square, at 19.21 per cubic foot.

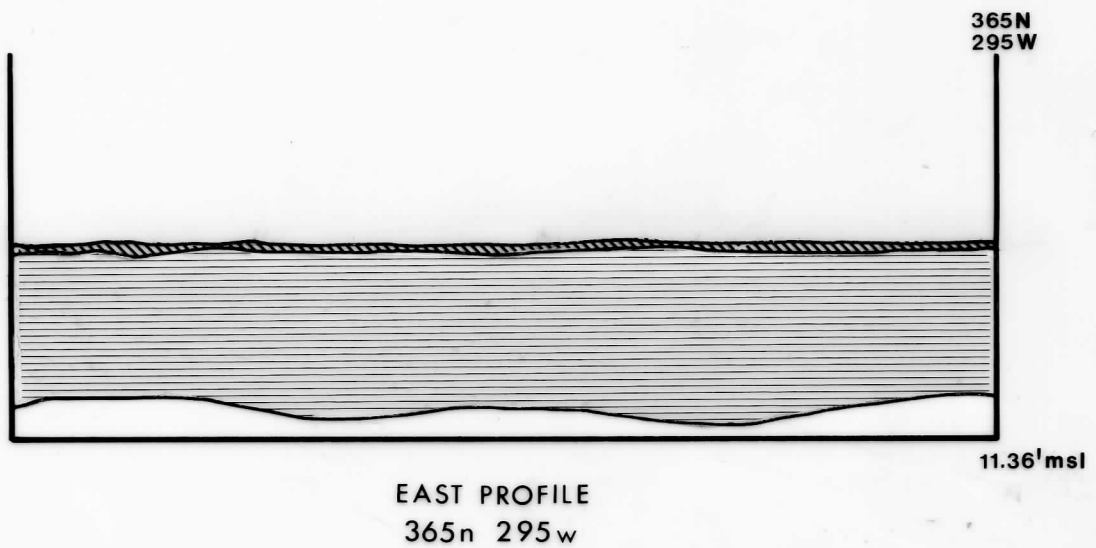
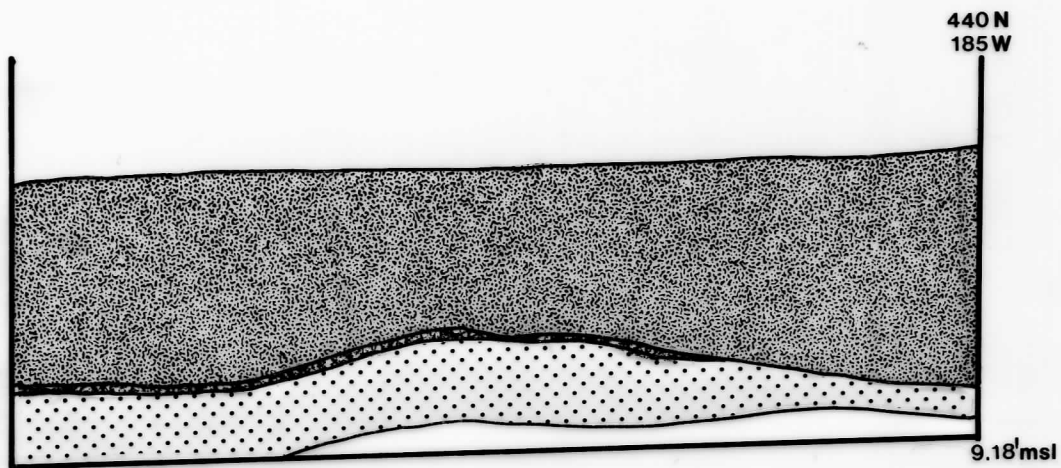
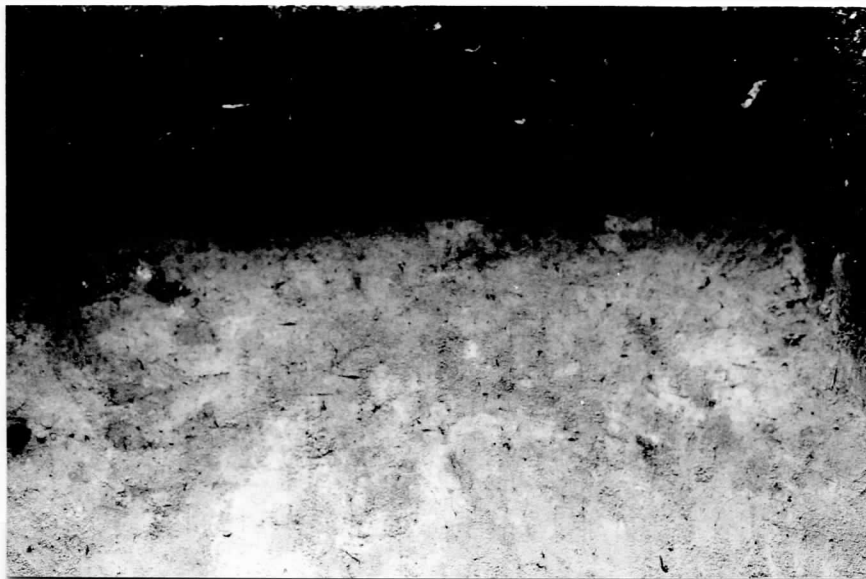
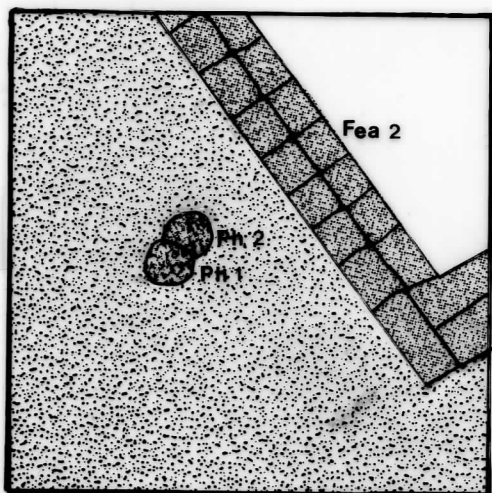


Figure 11

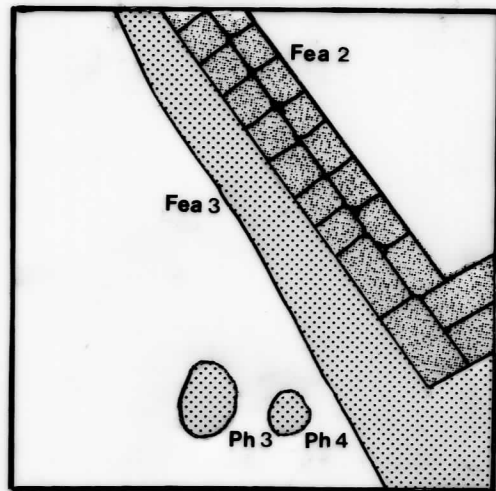


EAST PROFILE
440n185w

Figure 12



440 N
175 W



440 N
175 W

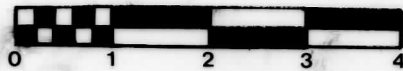


Figure 13

Features, 440N 175W

A) Base of Zone 1

B) Base of Zone 4

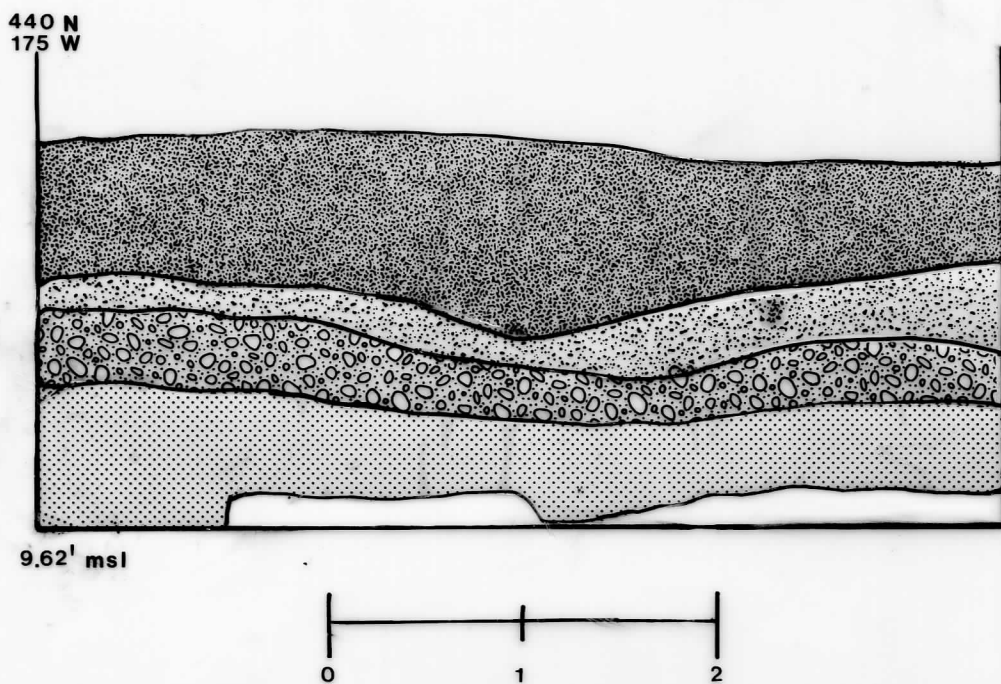
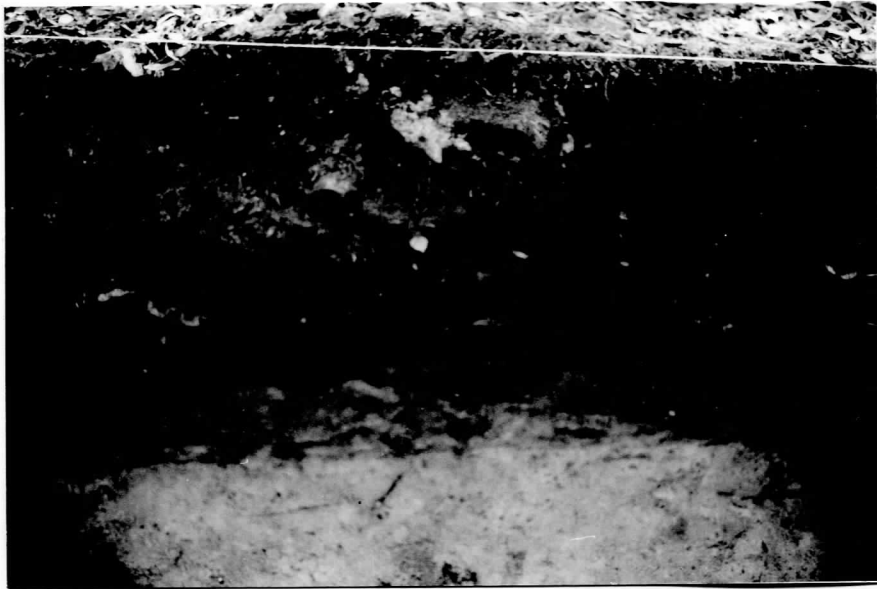


Figure 14
SOUTH PROFILE
440n 175w

In summary, six 5 foot squares were excavated adjacent to the four visible brick piles, in an area roughly 200 feet square. A complete list of excavated proveniences can be found in Table 1. Although the sample size is small, it is adequate to suggest the cultural and temporal affiliation of the site, determine stratigraphic integrity and the presence of intact archaeological features, and to make preliminary suggestions about the activities of the site inhabitants. These issues are discussed more fully in the following analysis section

Table 1

Provenience Guide, Campfield Settlement

FS#	Exc. Unit	Provenience	Top	Base	Function
1	365N185W	Zone 1	15.88	14.96	
2	365N185W	Zone 2	14.96	14.79	
77	315N205W	Zone 1	15.4	14.96	
8,9	315N205W	Zone 2	14.96	14.22	
11	315N205W	Zone 3	14.22	14.07	
12	315N205W	Zone 4	14.07	--	
13	315N205W	Zone 5	--	13.79	
10	315N205W	Feature 1	14.9	14.7	architectural deposit
3	365N295W	Zone 1, level 1	12.33	11.82	
4	365N295W	Zone 1, level 2	11.82	11.36	
5	345N275W	Zone 1, level 1	14.03	13.61	
6	345N275W	Zone 1, level 2	13.61	13.12	
14	440N185W	Zone 1 level 1	10.88	10.41	
15	440N185W	Zone 1, level 2	10.41	9.7	
16	440N185W	Zone 2	9.7	9.18	
18	440N175W	Zone 1	11.37	11.06	
19	440N175W	Zone 2	11.06	10.48	
22	440N175W	Zone 3	10.48	10.04	
23	440N175W	Zone 4	10.04	9.62	
26	440N175W	Feature 3	9.62	9.29	builder's trench
20	440N175W	Posthole 1	10.88	10.3	posthole
21	440N175W	Posthole 2	10.88	10.35	posthole
24	440N175W	Posthole 3	9.61	9.28	posthole
25	440N175W	Posthole 4	9.61	9.31	posthole

CHAPTER IV ANALYSIS

A total of 1817 artifacts were recovered during excavation. The first step in the analysis of materials was the identification of the artifacts. Noel Hume (1969) was the primary source. Price (1979) was used for ceramic identification and Switzer (1974) was used for glass identification. Comparative materials in the Charleston Museum collections were also utilized in the identifications.

Following identification, the materials were grouped according to functional categories, based on South's (1977) model for the Carolina and Frontier artifact patterns. Under this method, artifacts are organized into different types, groups, and classes, based on their function. Quantification of these type-group-classes results in the elucidation of a pattern, or recognizable regularity, in the archaeological assemblage which, in turn, is assumed to represent behavioral patterns of the population being studied. South's technique of quantification and pattern recognition has been widely adapted by historical archaeologists (e.g. Deagan 1982; South 1977b; Honerkamp 1980). This methodology has the potential for providing general anthropological rather than narrow historical interpretations, in that the archaeological record rather than the documentary record is stressed (Honerkamp 1980: 28). In addition, South's categorization is an extremely useful heuristic device in that it allows complete quantification of the assemblage, and thus allows direct intersite comparison. Quantification of the assemblage is shown in Table 2.

Kitchen

The Kitchen artifact group comprised 24.33% of the total assemblage, and 179 of the kitchen artifacts were ceramics. Refined earthenware tablewares comprised 76% of this ceramic assemblage, while utilitarian stonewares and earthenwares comprised the remaining 24%.

Colono ware, a locally made, low-fired unglazed earthenware, comprises 18% of the ceramic assemblage (Figure 15). The origin of the ceramic is the subject of current debate. Traditionally associated with historic Indian groups, many archaeologists now suggest that at least some of the wares may have been made by Black slaves (Drucker and Anthony 1979; Ferguson 1980; Lees and Kimery-Lees 1979; Trinkley and Zierden 1983). Based on his excavations at Fort Moultrie, South originally placed Colono wares in the Activities group, believing its presence to be the result of Indian trade (South 1974; see South 1977: 172). As research continued on the ware, most archaeologists began to place Colono ware in the Kitchen group, suggesting that it functioned as a replacement for European vessels (Lees 1980: 136-137; Garrow 1980; Trinkley and Zierden 1983; Zierden et al. 1982). The authors feel

Table 2

Quantification of the Campfield Settlement Assemblage

Kitchen

Ceramics

Yellow ware	3	
Ironstone, plain	16	
Whiteware, plain	52	
Pearlware, plain	6	
Whiteware, transfer print, blue	29	
Whiteware, transfer print, black	3	
Whiteware, hand painted	7	
Annular ware	10	
Whiteware, Shell edge	2	
White Porcelain	17	
Stoneware, utilitarian	7	
Glazed earthenware	2	
Colono ware	37	
Clear bottle glass	107	
Pharmaceutical bottle	22	
Green bottle glass	91	
Aquamarine glass	28	
Milk glass	2	
Iron pot	1	
Subtotal	442	24.33
Architecture		
Nails, tacks	1173	
Window glass	128	
Hinge	2	
Plank	1	
Subtotal	1304	71.77
Furniture		
Brass tack	1	.05
Arms		
Shell	1	.05
Clothing		
Buckle	1	
Brass button	2	
Porcelain button	1	
Subtotal	4	.22
	33	

Table 2, continued

Personal		
Jewelery link	1	
Key	1	
Subtotal	2	.11
Tobacco Pipe		
stem fragment	7	
bowl fragment	3	
Subtotal	10	.55
Activities		
Coal clinker	9	
Plow blade	1	
Pulley	1	
Barrel strap	25	
UD hardware	4	
Toy dishes	13	
Subtotal	53	2.91
TOTAL	1817	99.9

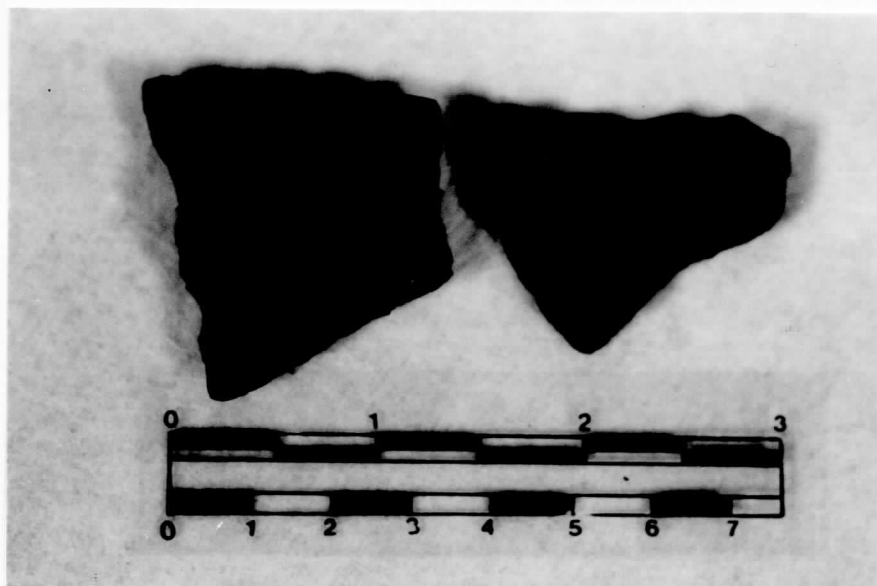
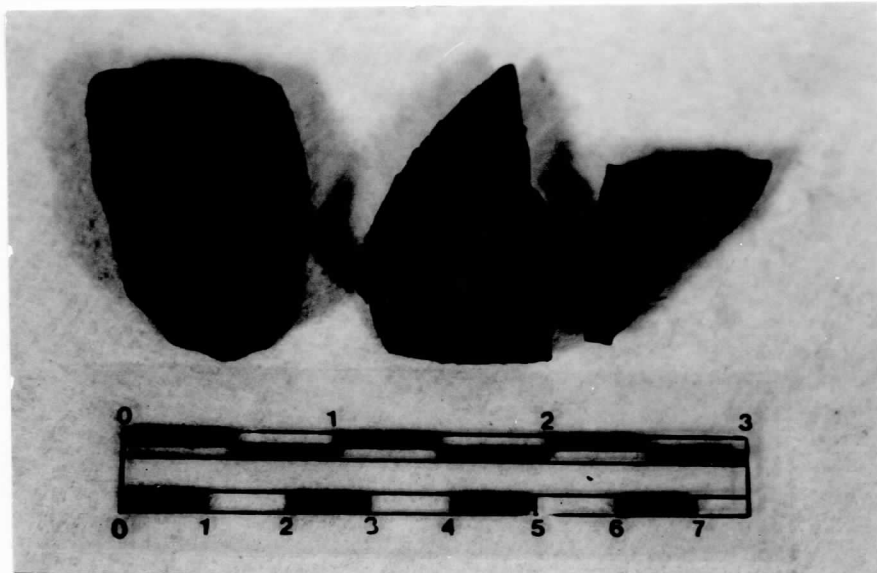


Figure 15

Ceramic artifacts from Campfield
a) lead glazed earthenware, Colono ware
b) Colono ware

that Colono ware functioned as a food preparation, storage, and, possibly, consumption container, and thus belongs in the Kitchen group.

Two sherds of an unusual redware were recovered from the squares adjacent to brick pile C. The redware was marked by a thick red paste with a green exterior glaze and a yellowish interior glaze. The sherds appear to have been part of a bowl (Figure 15).

The majority of the ceramics recovered were refined earthenware tablewares. All of the fragments were too small to identify vessel form. Six sherds were pearlware and 103 were whiteware, suggesting that the site was not occupied until 1820. Undecorated whiteware dominated the category, comprising 56% of the refined earthenware. Transfer print followed at 27%. Annular ware, the most common refined earthenware on coastal Georgia sites (Singleton 1980: 155; Otto 1977: 98), comprised only 10% of the Campfield wares. Other decorative motifs include hand painted, 6%, and shell edge, 2%. The disparity between the Campfield and Georgia data may be partially explained by the high percentage of undecorated wares.

Plain porcelain and Yellow ware tablewares complete the assemblage. Porcelain comprises 10% of the ceramic assemblage, and Yellow ware comprises 2%.

Glass fragments comprised a significant portion of the Kitchen group. One hundred twenty nine fragments of clear bottle glass were recovered, including 22 fragments of pharmaceutical bottles. Ninety one fragments of olive green bottle glass were recovered, including a bottle base containing a grey, chalky material. This substance was identified as pluff mud by individuals in the geology department of the College of Charleston (Frank Kinard, personal communication). The presence of pluff mud in this bottle suggests extensive reuse of abandoned items. Twenty eight sherds of aquamarine glass and 2 sherds of milk glass complete the assemblage. The final Kitchen artifact was a fragment of an iron kettle.

Architectural

Architectural artifacts dominated the assemblage, comprising 72% of the total. The most common artifact was machine-cut square nails and tacks, which were manufactured after 1790 (Noel Hume 1969: 253). No wire nails, manufactured after 1850, were recovered from the site. One hundred twenty eight fragments of window glass comprised the second major architectural category. Two hinges and a pine plank completed the group.

The plank was recovered from 440N175W, adjacent to the brick foundation, Feature 2. Zone 3, the brick rubble, contained a quantity of wood charcoal and burned brick, suggesting that the structure burned. The position of the plank in this zone deposit suggests that it was a structural member. This plank is being preserved at the Museum.

Furniture

A single brass tack head comprised the total Furniture group.

Personal possessions

Clothing and Personal items were rare at the Campfield site, comprising .13% and .07%, respectively. Two brass buttons, a porcelain button, and a brass buckle complete the Clothing category. The brass buttons were plain, flat discs with a wire eye fastener, similar to Stanley South's Type 9 (South 1964; Noel Hume 1969: 91). An unusual brass buckle was found (Figure 16) with an embossed floral design. The buckle is actually one half of the total piece; the small hook joined to an identical piece. Personal items were represented by an iron key and a chain link of twisted brass wire, presumably part of a necklace (Figure 16).

Tobacco pipes

Tobacco pipe fragments comprised only 1.6% of the total assemblage. Three bowl fragments and 7 stem fragments were recovered, all with a bore diameter measuring 5/64". The percentage of tobacco pipes on a domestic site is extremely variable, depending on the individual habits of the site inhabitants.

Activities

The Activities group comprised 7.2% of the total assemblage. This group included a plow blade (Figure 17), 25 fragments from barrel straps, and 3 unidentified hardware fragments. A small pulley attached to a threaded wood screw was probably used for a curtain or window shade (Kenneth Jones, personal communication) (Figure 16). Thirteen fragments of white porcelain toy dishes were recovered. The set of dishes included a soup bowl and at least two saucers (Figure 17).

The assemblage dates to the nineteenth century. The long manufacture date of the majority of the materials recovered makes absolute dating of the beginning and end of occupation difficult. The presence of a majority of whiteware in the ceramic assemblage suggests that the site was not occupied until the 1820's. The late nineteenth century date for the pulley and two bottle fragments suggests that the slave settlement was occupied after the Civil War. This is suggested in the documentary evidence as well. No twentieth century materials were recovered, suggesting that the site was abandoned by this time. This is also tentatively suggested in the documentary record. The absence of wire nails suggests that the structures themselves were constructed in the antebellum period.

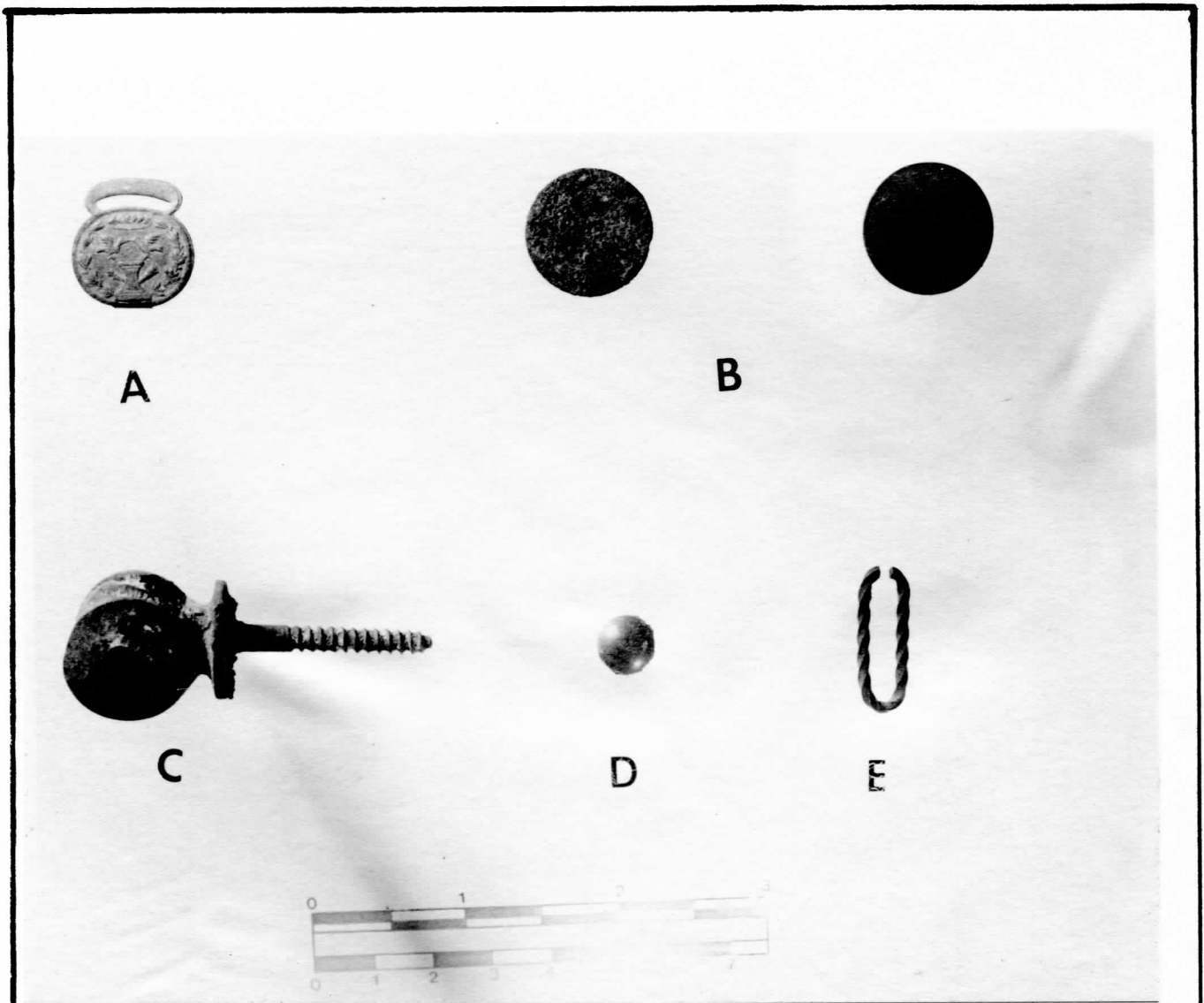


Figure 16

Personal and Activities Items

- A) Brass buckle
- B) Brass buttons
- C) Iron pulley
- D) Brass furniture tack
- E) Brass chain link

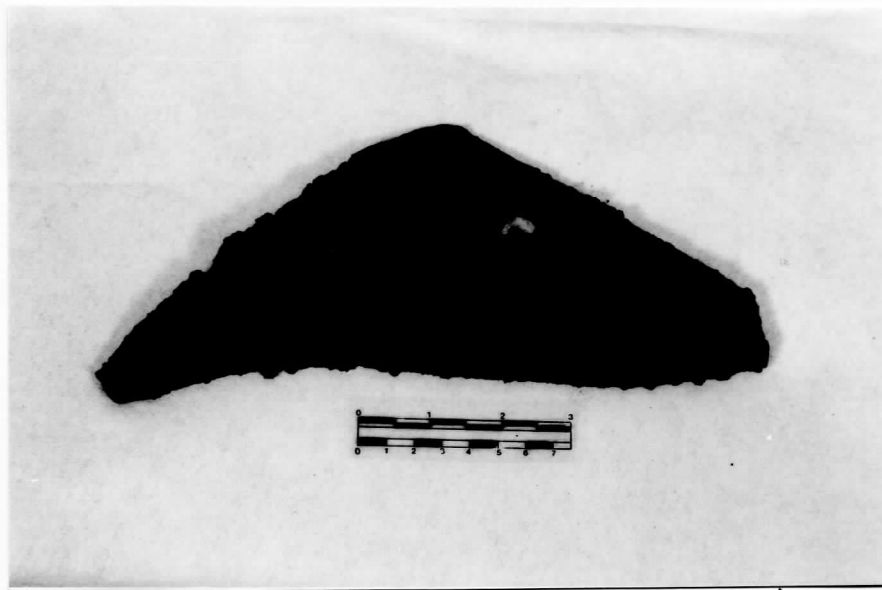
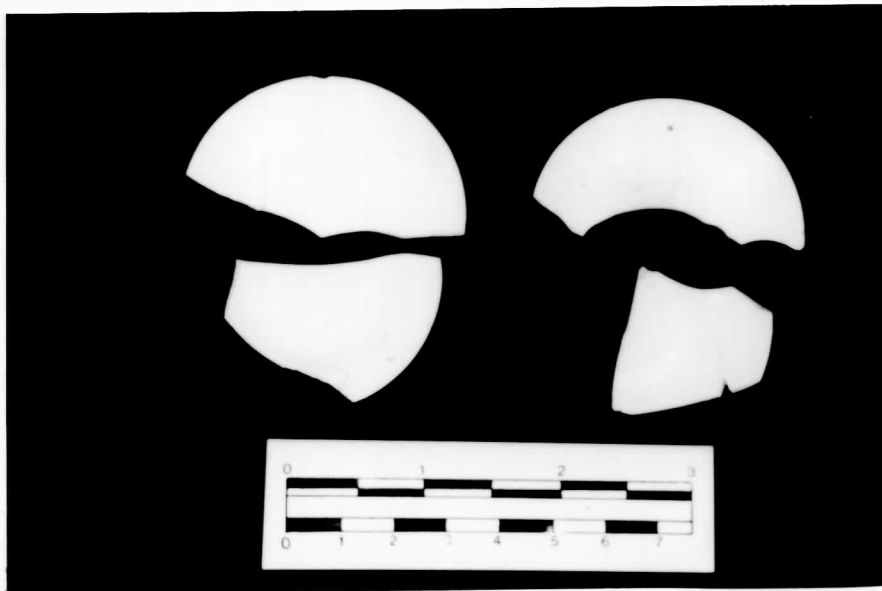


Figure 17

- Activity artifacts
a) toy dishes
b) plow blade

Stanley South's Mean Ceramic Date formula was applied to the assemblage (South 1971), although problems have been noted with its application to nineteenth century sites in general and slave sites in particular (Zierden 1981; Otto 1977; Garrow 1980; Price 1979). A Mean Ceramic Date of 1852 was obtained for the Campfield site, using revised manufacture dates suggested by Price (1979), Bartovics (1978: 213) and Lewis and Haskell (1981). This date supports the suggested antebellum-postbellum occupation (Table 3). Due to the small sample size and problems with nineteenth century sites, the pipestem dating formulas (Binford 1962; Heighton and Deagan 1972) were not applied to the assemblage.

Archaeological Research into Slave Lifeways

In recent years, archaeologists have become increasingly involved in the investigation of sites formerly occupied by Afro-American slaves. Because the slave is poorly represented in the documentary record, archaeological investigations were initially developed to expand upon the traditional interpretation of slave lifeways (Singleton 1980: 10). Many of the preliminary studies are descriptive in nature, although recently attempts have been made to synthesize these data (Schuyler 1980; Singleton 1980). An initial research interest was the identification of African retentions in the material culture (Fairbanks 1974), but these efforts were largely unsuccessful. Since that time, archaeological research has been directed towards the definition of subsistence patterns associated with the socioeconomic status of slavery. The pioneering work in this field has been conducted by Dr. Charles Fairbanks and his students at the University of Florida (Ascher and Fairbanks 1971; Otto 1975; Singleton 1979; 1980; Mullins-Moore 1979).

Archaeological investigations of slave sites have centered on the Georgia and South Carolina coast, providing excellent comparative data for the present study. South Carolina sites utilized in the comparison were the Spiers Landing site in Berkeley County (Drucker and Anthony 1979) and Vaughan and Curriboo Plantations on the Cooper River (Garrow 1980; Wheaton 1980). To date, the most complete synthesis of slave site data is Singleton's (1980) work, in which she synthesized data from two slave settlements at Cannons Point Plantation (MacFarlane 1975; Otto 1975, 1977), Kingsley Plantation in north Florida (Fairbanks 1974) and Butler Island (Singleton 1980). Using South's (1977) functional categories and comparing relative frequencies of these artifact categories, Singleton defined a slave artifact pattern for the Georgia coast. Her results are shown in Table 4.

The high percentage of architectural artifacts is attributed to the vast amount of nails associated with the frame slave dwelling. Singleton also suggests that a focus on architectural, rather than "backyard" (Fairbanks 1977) excavation methodology may account for this percentage. High proportions of Kitchen artifacts support the suggestion that the cabins were central to slave cooking and eating

Table 3

Mean Ceramic Date Calculations

Ceramic	x_i	f_i	$x_i \cdot f_i$
Pearlware, plain	6	1800	10800
Whiteware, plain	44	1860	81840
W.Ware, Transfer print, blue	29	1850	53650
W.Ware, Transfer print, black	3	1860	5580
W.Ware, hand paint	7	1860	10320
W.Ware, shell edge	2	1830	3660
Yellow ware	3	1865	5595
Annular ware	10	1853	18530
White Porcelain	17	1860	31620

224296

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

(South 1971)

$$Y = 1853.68$$

Table 4

Comparison of Slave Assemblages
by Relative Percentages

	Campfield	Spiers Landing*	Yaughan**	Curriboo**	Georgia(synthesis)+
Kitchen	24.33	73.7	84.18	80.01	24.34
Architecture	71.77	20.2	11.8	13.54	70.78
Furniture	.05	.1	.05	.07	.02
Arms	.05	.2	.02	.27	.14
Clothing	.22	.8	.3	.36	1.03
Personal	.11	.1	.04	.02	.09
Tobacco	.55	2.4	3.36	5.42	3.32
Activities	2.91	2.6	2.23	.31	.28

* Drucker and Anthony 1979

** Garrow 1980, Wheaton 1980

+ Singleton 1980

activities, in contrast to the documentary record. Furniture and personal items were scarce, indicating that such were luxury items, and difficult for a slave to obtain. Clothing, on the other hand, is somewhat variable, and Singleton suggests that this may be related to the status of slaves at various sites. Tobacco pipes are also quite variable, and may reflect individual smoking habits, or variation in the rations provided by the planter. Firearms are present in limited amounts, suggested limited access to guns. This is also in contrast to written sources (Singleton 1980: 216-217).

When compared to the data from South Carolina and Georgia, Campfield is most strikingly similar to the Georgia assemblages (Table 4). The Campfield data exhibits an overwhelming majority of architectural artifacts, comprising 71% of the total assemblage. This compares to the Georgia mean of 70%. The Kitchen assemblages are also comparable at 24% each. The Campfield and Georgia data stands in contrast to the South Carolina sites, which exhibit architectural groups comprising 20% and 13%, and kitchen groups comprising 73% and 80%. It is expected that a difference in cabin construction techniques and materials is responsible for these gross differences in relative percentages. The slave cabins in Georgia were of frame construction. This would account for the large percentage of nails in the assemblage. The present data suggest that the Campfield cabins were also of frame construction, with brick hearths and chimneys. Excavations were insufficient to determine further architectural details of the cabins, such as size. The excavations did indicate that at least two of the structures burned, as evidenced by the burned bricks and charred wood.

The frame construction of the Campfield and Georgia sites is in contrast to the construction techniques of the South Carolina sites. The slave cabins at Yaughan and Curriboo are believed to have been post and mud wall huts, based on the configuration of the trench foundation (Wheaton 1980). The one frame structure encountered at Yaughan Plantation yielded a much higher percentage of architectural artifacts. The type of construction at the Spiers Landing site is uncertain; Drucker and Anthony suggest daubed logs or clapboard siding (1979: 90). All three sites yielded little window glass. Clearly, the Yaughan, Curriboo, and Spiers Landing structures were less substantial than the Campfield cabins.

Another possible reason for the contrast between Campfield and the other South Carolina sites is the temporal difference. Campfield, as well as the Georgia sites, dates to the nineteenth century. Spiers Landing, Yaughan, and Curriboo are late eighteenth century sites. The higher percentage of kitchen artifacts at these sites may reflect a greater concentration of food preparation and consumption activities in the individual cabins, although considerably more evidence would be needed before such a suggestion could be seriously proposed. The difference may also reflect individual administrative habits of the planter, or may reflect sampling biases, as suggested by Singleton.

An interesting contrast between the Georgia and the South Carolina data, including Campfield, is the presence of Colono ware. The differences in relative frequencies of Colono ware for the eighteenth and nineteenth centuries have been discussed. The difference in relative percentages of Colono ware between Campfield and the other South Carolina sites is seen as a result of this temporal difference. Colono ware has been found consistently on South Carolina plantation sites, at planter, overseer and slave structures (Lewis and Haskell 1980; Lees 1980; Zierden 1980) and in urban sites (Lewis 1977; Zierden et al 1982; Herold 1981; Honerkamp Council and Will 1982). To date, no comparable ceramic type has been found on Georgia plantation sites, although such wares have been reported from other southeastern states (Ferguson 1980). This may be partially explained by the fact that the Georgia slave sites are antebellum, the period in which Colono ware was declining in South Carolina. If Colono ware is a product of Afro-Americans, its strong presence in the lowcountry may suggest a localized craft. This may be a response to limited availability of European goods during the turbulent colonial period, as suggested by Lees (1980: 137). It may, however, be the result of the presence of an early and sustained Black majority in the Carolina colony (Wood 1974), in contrast to the neighboring colony of Georgia. The isolation of these African groups on plantations resulted in the retention of African traits in other areas of Afro-American culture, such as music (Parrish 1942; Courlander 1963), language (Turner 1949), decorative arts (Vlatch 1978), and burial practices (Bascom 1976; Combes 1974). Colono ware may be another material product of this cohesive cultural group, representing adaptation to the needs of the New World environment. It is also possible, of course, that the wares are the product of colonial aboriginal groups, supplied to the plantations via the Indian trade network. A more detailed examination of Colono ware is in progress (see Drucker 1981: 62).

An overall characteristic noted for all of the slave assemblages, regardless of the geographical or temporal affiliation, is a dearth of personal or luxury goods, including artifacts in the Personal, Clothing, Arms, Furniture, Pipe, or Activities groups. The combined Kitchen and Architectural categories comprise at least 93% of all assemblages examined (Table 5). This stands in contrast to the mean of the Carolina Artifact Pattern (South 1977), in which these two artifact categories total 88%. The low percentage of items besides those associated with subsistence may merely be indicative of a low social status, or a "culture of poverty", and may not be unique to slave sites (Kelley and Kelley 1980). A more detailed examination of lower-status White sites is necessary before status and ethnicity can be distinguished in the archaeological record. Nonetheless, the close correlation of the Campfield data, and that from other South Carolina sites, with the data from Georgia, strongly supports Singleton's (1980: 216) suggested slave artifact pattern, with its emphasis on subsistence and shelter.

Interestingly, the very small assemblage from the assumed site of Mitchelville, a Civil War era freedman settlement on Hilton Head Island (Trinkley and Zierden 1983) corresponds well to this slave

Table 5

Comparison of Subsistence/Shelter Categories
by Relative Percentages

	Campfield	Spiers Landing*	Yaughan**	Curriboo**	Georgia ⁺	Mitchelville ⁺⁺	Carolina Pattern †
Kitchen	24.33	73.7	84.18	80.01	24.34	91.0	63.1
Architecture	<u>71.77</u>	<u>20.2</u>	<u>11.8</u>	<u>13.54</u>	<u>70.78</u>	<u>3.0</u>	<u>25.1</u>
Subtotal	96.1	93.9	95.98	93.55	95.12	94.0	88.2
Other categories	3.99	6.2	4.02	6.45	4.99	6.0	11.4

* Drucker and Anthony 1979

** Garrow 1980, Wheaton 1980

+ Singleton 1980

++ Trinkley and Zierden 1983

† South 1977

artifact pattern. Ninety-four percent of the Mitchelville assemblage is associated with subsistence/shelter. Although considerably more research is needed on postbellum freedmen sites, the data suggest that the patterning at Campfield may not be skewed by the postbellum occupation of the site.

Horizontal Patterning at Campfield

Although testing at Campfield was limited, tentative suggestions can be made about refuse disposal patterns at the site. Artifact density at the site varied from excavation unit to excavation unit, as did the organic content of the soil. Artifact density for each square is listed in Table 6. Artifact density was much higher at the base of the knoll, adjacent to the slough, than on the crest of the knoll adjacent to the structures. Artifact density was also high in 365N185W, located on the slope of the knoll. The units adjacent to the slough also contained darker, more organic soil, and a much larger quantity of faunal material and charred plant remains. No trash pits or concentrated refuse dumps were encountered at the site. The artifact density at Campfield suggests that refuse was deposited in, or adjacent to, the slough and, to a lesser extent, scattered around the structures.

A similar pattern of refuse disposal was noted at the rice plantation on Butler Island (Singleton 1980: 123). Singleton attributed this refuse disposal pattern, plus the absence of wells and privies, to slave subsistence practices adapted to the deltaic, marshland habitat of the rice plantation. She noted a lack of concentrated refuse dumps, with the exception of refuse deposited in a drainage ditch. She suggests that refuse was most likely deposited in the river. Singleton was unable to identify any intentional pattern of refuse disposal. In view of the lack of wells and privies, she suggested that water was obtained directly from the river. In absence of privies, slaves may have used nearby woods.

The pattern is certainly similar to that at Campfield, with the exception of the rather substantial well. This may be due to the location of the Campfield settlement on high, sandy ground, rather than in the rice fields themselves, as was often the case. Singleton notes this settlement pattern to be the most discernable difference between slave occupation at cotton and rice producing plantations. This was probably in response to differing environmental factors. Once again, the Campfield data correspond well with the Georgia data, while evidencing subtle differences as a result of adaptation to the local environment.

Subsistence Strategies at Campfield

Examination of faunal remains by Reitz and floral remains by Trinkley present somewhat conflicting information on slave and freedman life at Campfield. Trinkley's analysis suggests a heavy reliance on wild plants,

in this case probably for medicinal, rather than subsistence, purposes. Reitz's analysis, on the other hand, suggested a heavy reliance on domestic fauna, in contrast to archaeological data from other slave and freedman sites. The data suggest a subsistence strategy oriented towards dependence on domestic faunal resources in combination with a heavy utilization of wild plant resources. This particular assemblage corresponds with the controversial documentary evidence presented by Hilliard (1972).

The possible biases posed by a small sample size have been described in Appendicies I and II. The pattern reflected in the Campfield data may reflect human behavior, or they may reflect sampling biases. The data do provide a basis for further research. The comparative data utilized in the faunal analysis were all small samples. Virtually no comparative data were available for the floral analysis. The data also underscore the need to examine freedmen sites in terms of comparison to slave sites.

Table 6

Artifact Density by Squares

<u>Excavation Unit</u>	<u>Cubic Foot</u>	<u>No. Artifacts</u>	<u>Density</u>
365N185W	27.25	438	16.07
315N205W	40.25	300	7.45
365N295W	24.25	81	3.34
345N275W	22.75	56	2.46
440N185	42.5	404	9.51
440N175W	28.0	538	19.21
TOTAL	185.0	1817	9.8

SUMMARY AND RECOMMENDATIONS

Preliminary archaeological testing of Greenfield Borrow Pit was conducted February 10 to 22, 1983 for L-J Construction Company by the Charleston Museum. Initial survey of the six acre site resulted in the identification of a series of brick piles as a possible historic site. During further inspection, a brick well was located, and portions of intact foundations were noted in the brick piles. Controlled excavations were concentrated in the area of the brick piles, and the recovered assemblage represents a domestic assemblage dating to the nineteenth century.

Although no excavations were placed in Brick piles A - C, their above-ground configuration suggests fall from brick chimneys. The quantities of nails recovered from the excavation suggest the adjoining structures were frame. An intact corner foundation was visible in Brick pile D; excavations conducted adjacent to the foundation indicated that this particular brick feature represents a wall foundation, tentatively suggesting that this structure was more substantial than the other three.

Historical research, site location, and site configuration suggest that the site represents a slave settlement associated with historic Campfield plantation. Such features as evident in the Campfield site are typical of rice plantations. The materials recovered span the nineteenth century, and no stratigraphic separation of these materials was evident. Thus the archaeological data suggest that the site was occupied before and after the Civil War. This is suggested, but not substantiated by the historical data.

Campfield was a minor, but successful, rice plantation. The plantation became active in the 1790's, and continued to produce rice throughout the nineteenth century. The plantation was owned and farmed throughout its history by solid members of the Georgetown planter community. Although Campfield suffered the same debilitating effects of the Civil War as all other southern plantations, it continued to be productive in the postbellum period, utilizing the labor of the freedmen who remained in the area.

The assemblage was compared to data from slave sites on cotton and rice plantations in coastal Georgia and South Carolina. The Campfield data were most similar to the Georgia sites, in that architectural artifacts, specifically nails, dominated the assemblage. This is attributed to the probable frame construction of the structures (Singleton 1980). Likewise, the lack of architectural artifacts at the South Carolina sites is attributed to their probable mud wall construction (Drucker and Anthony 1979; Wheaton 1980). These construction technique differences, and the resulting differences in the relative

percentages between the Kitchen and Architecture groups, are possibly due to the temporal differences between the two groups of sites.

One feature that the Campfield assemblage shared with the South Carolina sites, to the exclusion of the Georgia sites, is the presence of Colono ware. Although the source of this ware remains uncertain, its extensive use by slaves for food preparation, and probably consumption and storage, cannot be denied. The extensive presence of this locally made ware on slave sites is indicative of the low status of the sites' inhabitants. If the manufacture of this ware by slaves is confirmed, it may also be indicative of the ethnic affiliation of the sites' inhabitants.

In general, the Campfield assemblage, and the other South Carolina assemblages, conform to the general slave artifact pattern proposed by Singleton (1980: 216). This conformance lends further credence to the suggestion that the Campfield site is a slave settlement. Antebellum slave sites on the Georgia and South Carolina coast contain a predominance of architectural artifacts, suggesting that, in the archaeological record at least, houses were the material aspect of slave life. A large percentage of kitchen artifacts suggest that the cabins were central to food preparation and consumption activities. Furniture and personal items are scarce. Clothing and tobacco items are also scarce, but are more variable than the personal category. This may suggest status differences, or variation in distribution of supplies by the planter. Firearms are consistently present in small amounts, suggesting that slaves had limited access to guns. In general the pattern indicates a material poverty, centered on shelter and subsistence.

The confirmation of Singleton's slave artifact pattern by the Campfield and other South Carolina data lends credence to South's (1977) suggestion that archaeological patterning is representative of patterned human behavior, and thus to his method of organizing archaeological data. The close comparison does not, however, elucidate the underlying causes that account for the defined similarities in the artifact assemblages. This is seen as a major drawback to South's methodology (Honerkamp 1980: 29; Honerkamp, Council and Will 1982: 9). Recognizing this drawback, South's methodology has been used here as a descriptive-comparative tool, rather than as an explanatory paradigm.

Although the data presented here suggest a valid slave artifact pattern, this pattern may be the result of the socioeconomic status of the slave population, rather than the ethnic affiliation (Kelley and Kelley 1980). In his pioneering study of social status in a plantation setting, Otto recognized the difficulty of delimiting ethnic affiliation (Otto 1975; 1980). This difficulty was reaffirmed in his study of the Hardy Banks Farm (Otto 1979). Even Schuyler, in his synthesis of archaeological investigations into ethnicity (Schuyler 1980) states that although progress has been made in this direction, considerably more research is needed in order to define ethnic

affiliation archaeologically. What is needed in this case is the definition of a pattern for low-status Anglo-American sites (see Trinkley 1983), using documentarily anchored sites. It will only be through comparative studies in which the number of variables, such as status, temporal association, and ecological setting, are reduced that ethnicity can be isolated in the slave artifact pattern.

Management Recommendations

The data present in this study suggest that the Campfield Settlement site contains important information relevant to the history of South Carolina. The site is most likely eligible for the National Register of Historic Places. Subsurface investigations suggest that the site measures 200 feet by 200 feet. Suggested site boundaries are shown in Figure 6. North and west boundaries of the site have been determined; southern and eastern boundaries are approximate.

Cultural deposits ranged in depth from .9 to 2.0 feet deep. Artifacts were encountered in the top .5 feet of each excavation unit. Intact cultural features were encountered in two of the six excavation units, indicating that the site is intact, and has not been significantly disturbed by twentieth century land management activities.

For the purposes of management discussion, the borrow pit has been divided into four areas, shown in Figure 6. Area 1 contains the Campfield Settlement. Based upon the present investigation, it is our recommendation that this portion of the pit be avoided during borrow activities. Any disturbance to the soil would adversely impact the site. Areas 2 and 4 contained no cultural remains. Ground-disturbing activities in these areas would not be detrimental to cultural resources, as long as the Campfield site was adequately protected. Area 3 was not tested, as the contractor expressed little interest in this area. Because the western boundary of the cemetery and the eastern boundary of the Campfield Settlement have not been determined, this area remains sensitive. Additional testing is needed before this area can be cleared archaeologically.

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APPENDIX I

Ethnobotanical Analysis of Specimens from
Greenfield Plantation, Georgetown County, South Carolina

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Introduction

These ethnobotanical remains were collected in February 1983 by Ms. Martha Zierden of the Charleston Museum from a series of test excavations at Greenfield/Campfield Plantation on the Black River in Georgetown County, South Carolina. While additional archaeological information concerning the site is available in the preceding primary report, it is important to briefly describe the general site context. These test units were laid out adjacent to a number of brick piles believed to represent the remains of antebellum slave cabins. Occupation, however, appears to have been continuous, so that the structures may have been occupied into the post-bellum period. These remains, therefore, probably represent low status occupation, but may also represent both slave and freedman housing. There appear to be no stratigraphic distinctions by either zones or levels, based on temporally sensitive artifacts, although Zone 1 is usually a gray-brown sandy loam while Zone 2 is a less organic medium-brown sandy loam. Squares which contained the most organic fill include 440N185W, adjacent to the marshy slough and 315N205W, situated on the crest of the knoll.

Most of these specimens had been hand picked during the excavations and the bulk were thoroughly carbonized, hence their preservation. Several items were only partially carbonized; however, their archaeological context suggests that they are part of the Greenfield assemblage and are not accidental inclusions. In addition, two flotation samples, both floated from about 4 gallons of soil, were provided for analysis. Both flotation samples are from one of the excavation units adjacent to the marshy slough, 440N185W. Samples from Zone 1, Levels 1 and 2 were obtained. These remains appear to represent an archaeological midden deposited down slope from the main occupation area. The samples are large and provide significant information on the micro-environmental situation of the site, the diet of the site occupants, and the use of medicinal plants.

Procedures and Results

All material was examined under low magnification (7x to 30x). Wood charcoal was identified, where possible, to the species level using comparative samples, Panshin and de Zeeuw (1970), and Koehler (1917). Wood charcoal specimens were broken in half to expose a fresh transverse surface. Food, food remains, and seeds were not broken, but were identified on the basis of gross morphological features. Seed identification was assisted by the use of USDA (1971), USDA (1948), and the comparative collections of the University of South Carolina Herbarium.

The results of the analysis of the handpicked specimens are shown in Table 1, which is organized by units and proveniences. Although wood charcoal makes up the vast bulk of these remains, plant food remains include one carbonized squash seed (Cucurbita spp.) and one fragment of walnut shell, probably the black walnut (Juglans nigra). Additionally, one china-berry seed (Melia azedarach) is identified. The incorporation of these remains in hand picked samples, which ususally contain only large wood charcoal fragments, indicates not only the presence of carbonized plant foods and

	Wood Charcoal								Seeds			
	<u>Pinus sp.</u>	<u>Pinus sp.?</u>	<u>Pinus palustris</u>	<u>Quercus sp.</u>	<u>Juniperus virginiana</u>	<u>Nyssa sp.</u>	non-porous	resin	unidentified	<u>Cucurbita sp.</u>	<u>Melia azedarach</u>	<u>Juglans nigra (shell)</u>
315N205W, Z.1	+											
315N205W, Z.1-2	+							t				
315N205W, Z.2	+							t	t			
315N205W, Z.3	t			t								
315N205W, Z.4	t			t			t					
315N205W, Z.4-A	+						t	t		1		
315N205W, Fea.1	+											
345N275W, Z.1, L.2	+	t			?	t						
365N185W, Z.2	+							t				
365N295W, Z.1, L.1	+											
365N295W, Z.1, L.2		+										
440N175W, Z.1, L.1	+			t								
440N175W, Z.2	+											
440N175W, Z.3	+											
440N175W, Z.4			+									
440N175W, Fea.3	+			t								
440N175W, ph 1	t											1
440N175W, ph 2		t										
440N185W, Z.1, L.1	+			t			t					
440N185W, Z.1, L.2	+		t	t	t						1	
440N185W, Z.2	+		t				t					
440N185W, profile	+								t			

+ - dominant; t - trace; ? - identification uncertain

Table 1. Wood charcoal and seeds identified from hand picked samples.

seeds, but also the care with which the excavations were conducted. The bulk of these samples were picked from $\frac{1}{4}$ -inch hand screening.

The most common wood is pine (*Pinus* spp.), found in 20 of the 22 samples and dominant in 17 of the samples. Two samples contain small quantities of a wood tentatively identified as longleaf pine (*Pinus palustris*) and one sample (from 440N175W, Zone 4) contains only longleaf pine as architectural remains (wooden plank siding from a burned structure). Small quantities of oak (*Quercus* spp.) are found in six samples, while cedar (*Juniperus virginiana*) is found in two collections and gum (*Nyssa* spp.) is found in one sample. The diversity of the wood specimens is low, although small quantities of resin, a diffuse-porous wood, and an unidentified wood are also noted.

The two floated samples were prepared in a manner similar to that described by Yarnell (1974:113-114) and were examined under low magnification to identify carbonized foods and food remains. The results of this analysis are shown in Tables 2 and 3. Zone 1, Level 1 from 440N185W produced primarily wood charcoal (86.65%) with 10.66% of the sample consisting of plant foods, food remains, and seeds. A small quantity of hickory nutshells (*Carya* spp.) are recovered, as well as 44 seeds. These seeds include 15 large fruits and seeds of the china-berry (*Melia azedarach*), 18 seeds of the perennial or annual herbs of the family Brassicaceae (three probably represent *Brassica* spp. or mustards), two seeds of the sandspur (*Cenchrus* spp.), one seed of the Fabaceae or bean family, five seeds of the family Polygonaceae (probably *Rumex* spp.), and three seeds of the sedge family, Cyperaceae. Zone 1, Level 2 produced a similar assemblage, although it contains a higher percentage of wood charcoal (94.77%) and a lower percentage of seeds (1.94%). The 18 seeds include three china-berry fruit fragments (*Melia azedarach*), 10 seeds of the family Brassicaceae (including seeds of peppergrass, *Lepidium* spp., and shepherd's purse, *Capsella bursa-pastoris*), and five sandspurs (*Cenchrus* spp., including three bur fragments and two seeds).

Discussion

Pine is the most common wood in the materials recovered from Greenfield and several samples permit a species identification of longleaf pine (*Pinus palustris*). Longleaf pine is very fire-resistant except immediately after germination, and is therefore considered a fire subclimax species which originally existed in pure stands in the coastal plain. This species is generally classified as intolerant of competition, however, and is often replaced by other pines or hardwoods (Fowells 1965:388). Longleaf pine was abundant in the colonial period (Croker 1979; Lees 1980) and was a significant source of naval stores and building materials. Croker (1979:34) and Panshin and de Zeeuw (1970:456-457) indicate that because of the high resin content of the heartwood (10 to 25%) longleaf pine is resistant to rot and insect damage. In addition the longleaf pine has considerable structural strength (Panshin and de Zeeuw 1970:222).

The remaining identified woods, oak (*Quercus* spp.), cedar (*Juniperus virginiana*), and gum (*Nyssa* spp.) are common in the vicinity of Greenfield,

<u>Sample</u>	<u>Weight</u>	<u>Sample Components</u>			<u>Plant Food/Remains</u>	
		<u>Debris</u>	<u>Wood Charcoal</u>	<u>Plant Food/Remains</u>	<u>Hickory</u>	<u>Seeds</u>
N440W185, zone 1, level 1	69.61	1.87	60.32	7.42	0.23	7.19
N44W185, zone 1, level 2	63.47	2.09	60.15	1.23		1.23

Table 2. Flotation samples: contents by weight in grams.

<u>Sample</u>	<u>Weight</u>	<u>Sample Components</u>			<u>Plant Food/Remains</u>	
		<u>Debris</u>	<u>Wood Charcoal</u>	<u>Plant Food/Remains</u>	<u>Hickory</u>	<u>Seeds</u>
N440W185, zone 1, level 1	69.61	2.69	86.65	10.66	0.33	10.33
N440W185, zone 1, level 2	63.47	3.29	94.77	1.94		1.94

Table 3. Flotation samples: contents as percent of total sample.

which may be classified as belonging to the "Southern Evergreen Forest Region" (Braun 1950). The basic community type in the Greenfield area, termed the Upland Mesic Hardwoods Community or Braun's (1950) "oak-hickory forest," contains oaks, beech, and sweet gum, although the species will vary from site to site (Sandifer et al. 1980:448). Oak is identified in six samples, while gum is found in only one sample and cedar is found in two. These trees are commonly found in the oak-hickory forest or in the adjacent hardwood swamp forest.

The sparsity of hardwoods and the dominance of pine cannot be explained botanically, but rather suggests cultural practices. The two major functions of wood at antebellum plantation sites were use as building materials and use as firewood. The use of pine as a building material is documented at Greenfield in the recovery of charred pine planks in square 44ON175W. It is also suggested by the presence of only pine in Feature 1 (315N205W), which is an architectural feature containing mortar and abundant nails. Pine, particularly longleaf pine, was apparently a cheap and abundant source of saw timber (see Croker 1979:37-38) and its use in slave cabins is reasonable. The use of pine as a firewood is not as immediately reasonable. The wood contains a large quantity of resin which makes it easy to light. Pine, however, burns rapidly, provides only a medium amount of heat, and emits large quantities of smoke (Reynolds 1942:6; USDA 1978). Reynolds (1942:7) indicates that pine has a heat value of 77%, surpassed by oak (86%), hickory (96%), maple (84%), and ash (79%). Yet in the South Atlantic area 55% of the fuel wood consumed from 1630 to 1930 was softwood, compared to 10% for the Middle Atlantic Region (Reynolds 1942:15). The South Atlantic, East Gulf, and Lower Mississippi Regions, from 1800 to 1899, consumed 358,780 million board feet of softwood saw timber trees for fuel, or 72% of the softwood consumed by the entire Eastern Region during that time period. For whatever reasons these preliminary data suggest that the South, particularly that area known as the Black Belt, was consuming large quantities of softwood, primarily pine. This is supported by the near absence of hardwoods from Greenfield. Reynolds' (1942:6-7) analysis of wood preferences and selection practices suggests that there may be a status difference, with the heavier (or denser) woods which burn longer and with a hotter fire being reserved for the higher status dwellings, while lower status individuals were perhaps forced to use pine. Pine probably was used by all status groups as kindling and may have been used uniformly for cooking, where a smoking, quickly burning fire would have been less objectionable. While coal was predominant in densely settled coastal areas, such as Charleston, by 1879, wood remained the primary cooking and heating fuel of the rural South (Reynolds 1942:5-6).

There are only three ethnobotanical studies of historic sites in South Carolina which provide data on wood charcoal and none are directly comparable. One is a study of remains from McCrady's Tavern (Trinkley 1982), a mid to late eighteenth century site in an urban context. Another is of remains from Spiers Landing (Trinkley 1978), a late eighteenth century or early nineteenth century lower socio-economic dwelling site. At both sites pine dominates the wood charcoal assemblage. Gardner (1980:9), while not quantifying the wood charcoal from the early nineteenth century Yaughan and Carriboo slave settlements, does mention that pine also dominates these collections.

The plant foods, plant food remains, and seeds from Greenfield include two nuts, one fruit, and seeds of nine genera or families. The two nuts are hickory (*Carya* spp.), a relatively common genus on the drier soils of the coastal plain and black walnut (*Juglans nigra*), an uncommon species found in rich woods (Radford et al. 1968:362). The hickories fruit and disperse from September through December, while the walnut fruits in October. Neither is found in sufficient densities to suggest that it was a significant food resource; both may represent either leisure food items or even accidental inclusions. While both hickory and walnut were recovered by Gardner (1980:11) from the slave settlements of Yaughan and Curriboo, neither represent a significant component in the flotation samples and Gardner characterizes these remains as representing not dietary staples, but rather "snack foods."

The one fruit, found in abundance in three samples from square 440N185W, is that of the china-berry tree (*Melia azedarach*). This deciduous tree is currently considered an ornamental, although it occurs wild as an escape from cultivation. The fruits, which occur in September and October, are round to oval, the pulp is juicy, and the hard stone contains five seeds. The plant has medicinal uses which were recognized by Porcher (1869) during the nineteenth century. Although the plant is considered poisonous, it has a long history as a vermifuge used to expell worms, especially roundworms (Morton 1974:95-96). Duncan reports that "[w]orms of all kinds seem also to have plagued Carolina bondsmen" (Duncan 1971:258). It may also be taken as a diuretic and infusions of the leaves or fruits are given to relieve fever or applied topically to treat eczema and dermatitis. The fruits may also be used to keep insects from drying fruits, grains, and vegetables (Morton 1974:96) and the plant may be used to drive out household insects, especially fleas (Morton 1974:96; Hamel and Chiltoskey 1975:29). In spite of these medicinal uses Morton reports that there is great variation in the quality, taste, and toxicity of the fruits and that "people in the Low Country claim that the fruits are 'sweet'" and frequently eat them (Morton 1974:96). The china-berry is also recognized by the Cherokee for its medicinal qualities, especially for the treatment of worms (Hamel and Chiltoskey 1975:29). While the present data cannot document the purpose of the archaeological fruits, there is evidence that the plant was economically useful. Even if not eaten, the china-berry's potential use to treat worms and drive out household insects would be sufficient to make the plant valuable to lower socio-economic groups in the nineteenth century.

The single squash seed (*Cucurbita* spp.) probably belongs to either *C. pepo* or *C. moschata*. Based on this genus level identification it is probable the specimen represents cultivation for its fleshy fruit (see Whitaker 1981). The specimen is indicative of a summer fruiting.

All of the remaining seeds, from eight genera or families, may be broadly lumped into the catagory of "weedy plants" or "pioneers of secondary succession" (Bunting 1960). As such these plants are especially adapted to "disturbed" habitats with these habitats primarily the result of man's activities. The immediate conclusion is that they are indicative of cleared ground, which would promote their propagation, adjacent to or in the vicinity

of the structures. Beyond this, however, some may be indicative of either food or medicinal use; only a few have no possible economic use.

The Brassicaceae (Cruciferae) or mustard family consists of perennial or annual herbs, many of which are considered introduced "weeds." Examples of this family are the cole crops, cress, peppergrass, shepherd's purse, and mustard. Many of these plants may be used as potherbs or winter salads (see Medsger 1966). Specifically identified within this family were mustard (Brassica spp.), peppergrass (Lepidium spp.), and shepherd's purse (Capsella bursa-pastoris). Mustard may be an annual, biennial, or perennial found in disturbed habitats. This genus seeds from March through July and includes the species of turnips, cabbage, and rape, all notable potherbs. Brassica may also be considered a medicinal plant and is used to increase appetite and as a stimulant. It may be used to make a poultice for the croup (Hamel and Chiltoskey 1975:46). Peppergrass is an erect, caulescent winter annual which seeds from June through October. It is considered a common weed of fields, gardens, and disturbed habitats (Radford et al. 1968:492). At least one species, Lepidium virginicum, is used as a poultice and to treat certain skin conditions (Hamel and Chiltoskey 1975:48). Shepherd's purse is another winter annual which is found as a weed around buildings and in fields. The plant seeds from March through June and is commonly used as a food (Medsger 1966:164; Hamel and Chiltoskey 1975:54). A possible stem section of Brassica sp. has been obtained from Feature 65 at Curriboo Plantation (Paul Gardner, personal communication).

Seeds of the Polygonaceae family were also found in the Greenfield sample and they have been tentatively identified to the genus level as Rumex spp. The Rumex genus consists of herbaceous perennials, biennials, and winter annuals, all of which are weeds of sandy fields. Most seed from May through July. The common names include sour-grass and dock and the plants are commonly used as potherbs (Medsger 1966:139; Hamel and Chiltoskey 1975:56). The plants are also used to produce a root tea, a salve, and the juice is used to treat ringworm (Hamel and Chiltoskey 1975:32).

One family, Fabaceae, is identified on the basis of a legume fruit which is too fragmented to positively indicate a genus level, although it is similar to the genus Strophostyles sp. The Fabaceae includes trees, shrubs, or herbs which usually fruit in late summer and early fall. Based on the present sample it is not possible to suggest any economic use for the represented plant. Similar legume seeds are reported from the Yaughan and Curriboo slave sites possibly representing the genera of Crotalaria sp. or Strophostyles sp. (Gardner 1980:12).

The last two seed groups include plants with no known economic importance: the sedge family, Cyperaceae and the sandspur, Cenchrus spp. The sedges are rhizomatous perennials which represent taxonomically difficult species complexes (Radford et al. 1968:168). They seed from June through September. The sandspurs are erect, tufted to sprawling annuals or perennials found in sandy woods, fields, and waste placed. They are found in seed from June through October. Gardner (1980) has also reported a number of "weed seeds" from Yaughan and Curriboo.

These seeds indicate a diverse group of plants, many of which may have had significant economic value to the occupants of the Greenfield slave cabins. While it is impossible to determine if the plants were collected and used or if they were simply part of the "weedy" growth in the vicinity of the dwellings, the identification of large numbers of seeds from a relatively few species, in a midden context, argues strongly for intentional use. Hilliard (1972:172-179) discusses the presence of garden crops in the southern antebellum diet and specifically mentions the importance of turnips (Hilliard 1972:51).

The only other slave settlements with ethnobotanical analysis to which Greenfield may be compared are the Vaughan and Carriboo Plantations, excavated by Soil Systems, Inc. as part of the Santee-Cooper Re-diversion project. The 61 flotation samples were examined by Gardner (1980). While, like Greenfield, the majority of each sample is composed of wood charcoal, at least three cultigens are identified: corn (Zea mays), rice (Oryza sativa), and peach (Prunus persica). Gardner (1980:16) mentions that while the faunal evidence suggests extensive use of wild animals, there is little evidence of any wild plant use. Further, he proposes a focal economy, with evidence of only eight plants used by the slaves, although it is recognized that potherbs may not be preserved in the archaeological record. Identified are hawthorn (Crataegus sp.), bramble (Rubus sp.), sumac (Rhus sp.), legume seeds, as well as small quantities of Rumex sp., Acalypha sp., Euphorbia collata, Polygonum sp., and several grass species. Direct comparisons between the Santee-Cooper sites and Greenfield are not possible. While there are no cultigens found at Greenfield, the other remains are generally similar with an emphasis on a variety of "weedy" species.

Examination of the fruiting times for the seeds and nuts recovered from Greenfield reveals three distinct periods shown in Table 4: the fall and early winter, the spring and summer, and the late summer and early fall. Although the midden deposit is mixed, there is a tendency to find seeds of spring through early fall plants in level 2, while level 1 contains those remains as well as the fall and early winter hickory nutshells. There is too little known, at the present time, to explain the midden formation processes at Greenfield, although these data suggest that the midden accumulated over at least several months (may through October) and that the midden incorporated a variety of economically useful plants within a matrix of wood charcoal. This wood charcoal, in turn suggests discard from cooking or heating.

	D	J	F	M	A	M	J	J	A	S	O	N
<u>Carya</u>	-											-----
<u>Juglans</u>	-											----
<u>Melia</u>												---
<u>Brassica</u>												-----
<u>Lepidium</u>												-----
<u>Capsella</u>												-----
<u>Rumex</u>												-----
<u>Fabaceae</u>												-----
<u>Cyperaceae</u>												-----
<u>Cenchrus</u>												-----

Table 4. Fruiting periods for remains recovered from Greenfield.

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APPENDIX II

Zooarchaeological Analysis of
Vertebrate Fauna From Campfield Settlement,
Greenfield Plantation, South Carolina

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Vertebrate remains from Campfield Settlement, Greenfield Plantation, Georgetown County, South Carolina were excavated by Martha Zierden, Charleston Museum. Campfield Settlement was originally a slave settlement located on a rice plantation known as Campfield Plantation. Although the settlement was occupied by slaves prior to the Civil War, the deposits are thought to be those of postbellum freedmen. A total of 11 individuals were identified from the collection, which included 281 bones weighing 687.9 gm. The faunal collection was dominated by domestic animals and pond sliders (Pseudemys scripta).

Campfield Settlement is located in Georgetown County, South Carolina on the Black River about 10 miles inland. The rice plantation with which this slave settlement was associated was originally known as Campfield also, but was recently merged with Greenfield Plantation. The plantation operated as a rice plantation from sometime prior to 1791 until the early twentieth century. The occupation represented by the vertebrate component is probably that of freedmen rather than slaves. The land about the settlement is low-lying. Vegetation is climax hardwood forest of oak, hickory, and magnolia. A cypress swamp is nearby, as are numerous rice plantation drainage canals. These lead into the Black River south of the settlement. The Black River at this point is still subject to tidal fluctuations but of low salinity.

SUBSISTENCE ON COASTAL RICE PLANTATIONS

Very little is known of slave or freedman subsistence on rice plantations (Figure 1). Excavations at Parland Plantation, Georgia (Steinen 1978) provides the only evidence of freedman subsistence from a coastal setting. Some data for low socio-economic status slaves or subsistence farmers is available from Spier's Landing, South Carolina (Drucker 1981), but this is a piedmont rather than a coastal plantation. Theresa Singleton's work (1980) at Butler Island has provided data on slave diet at a Georgia rice plantation and work at Curriboo and Yaughan Plantations provides similar data for South Carolina (Garrow 1980; Wheaton 1980; Reitz 1980). An important observation to be made about these collections is that all are very small and subject to the biases of small samples (Grayson 1979). Taken together these data do not indicate a pattern of slave or freedmen subsistence at coastal rice plantations. They do, however, indicate the need for additional research.

Data from Parland Plantation are the only ones available for coastal freedmen subsistence. Parland Plantation was located on Colonel's Island, Georgia, a marsh island just south of the Brunswick River. The staple product here was sea-island cotton. The freedmen

cabin area was excavated in 1977 by Karl T. Steinen and Theresa A. Singleton (Steinen 1978). The faunal collection is small, containing 45 individuals (Reitz 1978). Domestic species contributed 22% of the individuals recovered from the cabin. Pigs contributed 15% of the individuals, cows 4%, and chickens 2%. Deer and sea turtles (*Cheloniidae*) were hunted extensively, comprising 11% of the individuals. Pond turtles (*Emydidae*) contributed 2% of the individuals and fish 15%. A gar (*Lepisosteus* spp.) and a white catfish (*Ictalurus catus*) were identified. The remaining individuals were sea catfish (*Ariidae*), sheepshead (*Archosargus probatocephalus*), and a black drum (*Pogonias cromis*).

Two samples are available for slave subsistence at coastal rice plantations. Butler Island was a rice plantation located on a river delta island just south of the Altamaha River in Georgia. It operated between 1804 and 1861 (Singleton 1980). Three slave cabins were excavated by Theresa A. Singleton (1980). Although the faunal collection was in poor condition, the species which could be identified indicate heavy use of wild resources (9 of the 12 genera). By bone weight, domestic animals contributed 60% of the collection. Most of the weight (20%) was from cow bones, while pig contributed only 9% of the weight. The species list from Butler Island reflects the reduced salinity of the marsh island/river delta setting by containing aquatic species such as gar (*Lepisosteus* spp.), bowfin (*Amia calva*), and freshwater catfish (*Ictaluridae*). However the marine taxa of sheepshead (*Archosargus probatocephalus*) and drums (*Scaenidae*) were also identified. Aquatic turtles included mud turtles (*Kinostern* spp.), cooters (*Pseudemys* spp.), and softshell turtles (*Trionyx ferox*). These constituted less than 2% of the collection's weight. Raccoon (*Procyon lotor*) and deer (*Odocoileus virginianus*) were identified but contributed less than 1% of the bone weight.

Limited data are also available from the eighteenth and nineteenth century plantations of Curriboo and Yaughan. Rice and perhaps cotton were grown on these plantations, which were located in Berkeley County, South Carolina one mile north of the Santee River. The vertebrate sample was very small (9 individuals) and in poor condition (Reitz 1980). Pigs and cows were the dominant species, however a possible opossum (*Didelphis virginiana*), a possible deer (*Odocoileus virginianus*), a goose (*Anserinae*) a snake, and a freshwater catfish (*Ictaluridae*) were also identified. There were no turtles in the collection.

The Spier's Landing data might also provide information for interpreting coastal subsistence of low socio-economic households. Spier's Landing is an undocumented site which was occupied in the late eighteenth/early nineteenth century. The site was excavated by Lesley Drucker and may have been occupied by slaves or subsistence farmers (Drucker 1981). It is located on the south shore of Lake Marion on the Old Santee River channel. The small faunal assemblage (16 individuals), contained 50% wild individuals and 50% domestic ones. Cow and pig were the only

domestic animals identified. The other taxa were raccoon (Procyon lotor), deer (Odocoileus virginianus), UD Bird, and bowfin (Amia calva).

An aspect of slave subsistence which is being increasingly well documented is the degree to which slaves contributed food to their diets through their own efforts (Fogel and Engerman 1974; Gibbs et al. 1980; Morgan 1982; Reitz and Gibbs 1983). While plantation owners supplied food to slaves, slaves also raised, purchased, or otherwise procured additional items. Produce, livestock, fish, and game obtained through the efforts of slaves were viewed as additional foods, not as substitutes for the staples given the slaves by plantation owners. It has been suggested that the task system widely employed on coastal plantations allowed the slaves free time which could be spent on such activities (Morgan 1982). Freedmen working on coastal plantations after the Civil War may or may not have had as much time. More documentary work is required in this area.

In summarizing these data it seems probable that freedmen utilized both domestic and wild vertebrate species. This would be consistent with what is known of slave or slaveholder subsistence from Tennessee to the Gulf and Atlantic coastal plains from the seventeenth through the nineteenth centuries (Reitz and Gibbs 1983). Due to Campfield's location near a low-salinity river it is expected that fish would not be a large component of the diet, but other wild fauna such as opossum, rabbit, raccoon, and deer should be present. Lack of free time, however, may have restricted the hunting and fishing activities of freedmen.

MATERIALS AND METHODS

Vertebrate fauna examined in this study were excavated by Martha Zierden of the Charleston Museum. Excavations were conducted in 1983 on the old Campfield part of the Greenfield Plantation, Georgetown County, S.C. in an area designated for a borrow pit. Six 5 foot squares were excavated and 32 shovel tests were dug elsewhere in the proposed borrow pit. All of the material were screened through $\frac{1}{4}$ inch mesh. Matrix samples were collected for flotation, but none of the fauna recovered in flotation are included in this study. A list of the samples examined is included in Appendix A.

The vertebrate fauna were examined using standard zooarchaeological methods. They were identified by Elizabeth J. Reitz using the comparative skeletal collection of the Zooarchaeology Laboratory, Department of Anthropology, University of Georgia. Bones of all taxa were weighed and counted in order to determine relative abundance of the species identified. Notes were made of age, sex, modifications to the bones, and the elements identified. Measurements were taken of all elements where possible, following the guidelines established by Angela von den Driesch (1976). Minimum Number of Individuals (MNI) were determined

based on paired elements, age, and sex. In calculating MNI, the archaeological collection was considered a single analytical unit, producing a minimum distinction (Grayson 1973).

Due to small sample size no effort was made to determine diversity, equitability, or biomass. All of these calculations, as well as MNI, are subject to sample size bias. In samples of less than 200 individuals or 1400 bones, the sample is undoubtedly too small for reliable interpretation (Grayson 1979, 1981; Wing and Brown 1979). With small samples the species list is too short, and the abundance of one species in relationship to others is probably inaccurate. It is not possible to determine the nature or extent of the bias, or to correct for it, until the sample is larger.

RESULTS

The sample from Campfield Settlement is very small (11 individuals and 281 bones). Interpretation should be approached with caution since the lack of diversity in the species exploited as well as reliance upon one species over another could be due to the small sample. The fact that 79% of the collection came from a single unit, 440N185W, could also be a source of bias (Table 1). This unit was located at the edge of a marshy slough on the north side of the settlement.

The species utilized at Campfield indicate heavy reliance upon domestic livestock and pond sliders (Tables 2 and 3). The collection does not contain the faunal diversity characteristic of antebellum or postbellum assemblages from other coastal sites. This is due primarily to the total absence of wild terrestrial animals such as opossum, rabbits, raccoons, or deer, and the absence of marine fish. Among the species which were used at Campfield, pond sliders (Pseudemys scripta) were the major resource based on numbers of individuals, followed by pigs (Sus scrofa) other domestic livestock, and bass (Micropterus salmoides). The Hispid cotton rat (Sigmodon hispidus) and the frog/toad (Rana/Bufo spp.) are interpreted as commensal species in the absence of any evidence to the contrary. Remains of oysters (Crassostrea virginiana) and quahog clams (Mercenaria spp.) were also part of the collection.

Distribution of elements from Campfield Settlement is tabulated in Table 4. In addition to these elements the cotton rat (Sigmodon hispidus) was identified from an innominate fragment and the frog/toad (Rana/Bufo spp.) from a shaft fragment. The largemouth bass (Micropterus salmoides) was identified from three head elements. The UD Bird taxa includes several elements from a large bird other than a chicken. Unfortunately these could not be identified further since each had been gnawed by a carnivore. UD Turtle and pond slider (P. scripta) fragments were almost entirely carapace and plastron. Only eight limb bones were recovered.

Modifications to the bones included cutting, hacking, burning, and carnivore gnawing (Table 5). The cut and hack marks were probably due to butchering with a knife or cleaver. A carnivore was responsible for most of the altered bird bones. The animal was probably a dog. Interestingly one turtle scapula and an innominate fragment were cut, indicating that these turtles were consumed and that the carcass was dismembered at some point in the process. Since only one of the turtle fragments was burned, it seems that turtle meat was more often boiled than roasted. None of the bones had been sawed although each plastron fragment had been smashed where it bridges up to the carapace. There were seven of these hyoplastron and hypoplastron fragments.

Age at death was determined in several ways. All of the pig bones were fused. The proximal epiphyses of pig metacarpals fuse between one and two years of age while the distal epiphyses fuse at about two years of age (Schmid 1972: 75). The both pigs were at least two years of age at death since the two diagnostic metacarpals were both completely fused. The caprine was probably an adult, but no age could be determined for the cow. One of the UD Bird fragments, a radius, was from a juvenile individual. No evidence could be found for the turtle or the bass. All were mature, large individuals.

Some evidence was available that female birds egg-laying condition were consumed. Two UD Bird fragments contained medullary bone. This is a calcium deposit present on bird bones while the bird is in laying condition (Rick 1975).

Only three bones could be measured (Table 6). Few comparative data are available for caprines for coastal sites, but the animal identified from Campfield appears to be small in comparison with the UGA reference skeletons. The chicken measurements fall within the range of such measurements at other coastal sites.

DISCUSSION

When a collection is small, as is the one from Campfield Settlement, it is difficult to know if the character of the faunal assemblage is a reflection of the sample size or of former human activity. Since so much of this collection was recovered from a single unit it is also possible that the collection represents idiosyncratic behavior or temporally unique behavior rather than a general pattern of freedmen subsistence.

Assuming for the sake of discussion that the collection is generally indicative of freedmen subsistence at Campfield, the curious feature of the component is its uniqueness. The freedmen were unexpectedly dependent upon domestic livestock compared to the freedmen at Parland Plantation. In fact the only antebellum or postbellum collections which show a similar level of dependence upon domestic livestock are from interior

coastal plain or piedmont areas rather than estuarine locations. These sites include seventeenth century Pettus and Utopia from Tidewater Virginia where no screen was used in recovery of faunal remains (Miller 1979); Elmwood Plantation near New Orleans, Louisiana, where caprines were extensively utilized (Reitz 1983); and piedmont Millwood Plantation, on the Savannah River (Orser et al. 1982). However, use of domestic animals at the Tennessee sites of First Hermitage (Smith 1976) and Hermitage Mansion (Smith et al. 1977) was as low as at most estuarine plantations.

Dependence upon domestic livestock is a measure of the relatively low use made of wild food resources by the Campfield freedmen. At Parland Plantation 78% of the individuals were wild while at Campfield only 55% were wild. The major differences are lack of wild terrestrial mammals at Campfield; lack of marine fish; and low use of aquatic fish. The location of Campfield accounts for the absence of marine fish and perhaps for the low use of aquatic fish. The failure to use wild terrestrial animals must be a reflection of other factors such as lack of opportunity.

It is possible that amenable marine species influenced the extent to which wild resources were exploited. Many of the marine species exploited by estuarine slaves (McFarlane 1975; Otto 1975; Singleton 1980; Moore 1981) and freedmen (Reitz 1978) in the estuaries of the Atlantic coastal plain are easily captured using mass capture or untended devices. Many aquatic species must be actively fished with hand-held lines. While this is not always the case it may be significant that fish form a major part of the vertebrate collections only at estuarine sites. Collections from sites only a mile or two away from the coast appear to have few fish (Reitz 1981; 1982; 1983a; 1983b).

An important exception to the ease of capture represented by estuarine resources rather than aquatic ones is the pond slider. Pond sliders are usually found along sluggish rivers and shallow streams with dense vegetation and soft bottoms (Behler and King 1979: 452-453). Rice plantation drainage canals might have been ideal habitat for them. These are basking turtles which are easily and traditionally captured in traps set beneath logs upon which the turtles are fond of sunning. When the turtles are startled or otherwise decide to leave their logs, they usually simply fall off the log into the water, or into a waiting basket trap. The "hunter" simply collects the contents of each basket at regular intervals. Need to reduce scheduling conflicts between work and food collecting could easily be met by such a technique. The use of pond turtles suggested by the Campfield collection may reflect a response to scheduling conflicts not faced by the Parland Plantation freedmen.

It is interesting that the only other wild food species identified was also probably a resident of the rice drainage canals. The large-mouth bass (Micropterus salmoides) is a carnivorous fish which thrives

in shallow, weedy lakes, or in weedy river backwaters where aquatic plants and submerged debris provide protection. Bass are usually found in waters less than 20 feet deep and rarely go beyond the limits of rooted vegetation (McClane 1978: 136-138). Although bass are taken with baited hand-held lines, it indicates reduction of time spent on subsistence by utilization of a resource area located very near the settlement.

While the habits and habitats of aquatic and marine resources must have had some role in the use of wild resources, this does not explain the absence of wild terrestrial resources in the Campfield Settlement collection. Wild terrestrial species such as opossum, rabbits, and raccoons could have been trapped rather than hunted and must have been locally available. An explanation of this aspect of Campfield fauna will have to await further studies of freedmen collections from similar locations and elsewhere.

At least three explanations can be offered for the subsistence activity observed at Campfield. It has been frequently suggested that coastal plantation slaves had ample free time in which to produce or procure supplements to their diet (Morgan 1982). Slaves may have had ample time, adequate resources, and enough freedom of movement to utilize wild foods extensively as supplements to their rations (Reitz and Gibbs 1983). It is possible that freedmen working on plantations did not enjoy this opportunity and therefore utilized few wild resources. The Parland Plantation freedmen may well not have been so employed and hence used less domestic meat and more wild food. Alternatively employed freedmen might have been provided or been able to purchase domestic meat while unemployed freedmen did not have this source of domestic meat. A third possible explanation is that the Campfield and Parland collections represent different strategies for exploiting distinct environments. Further documentary and archaeological work is required to explore this question further.

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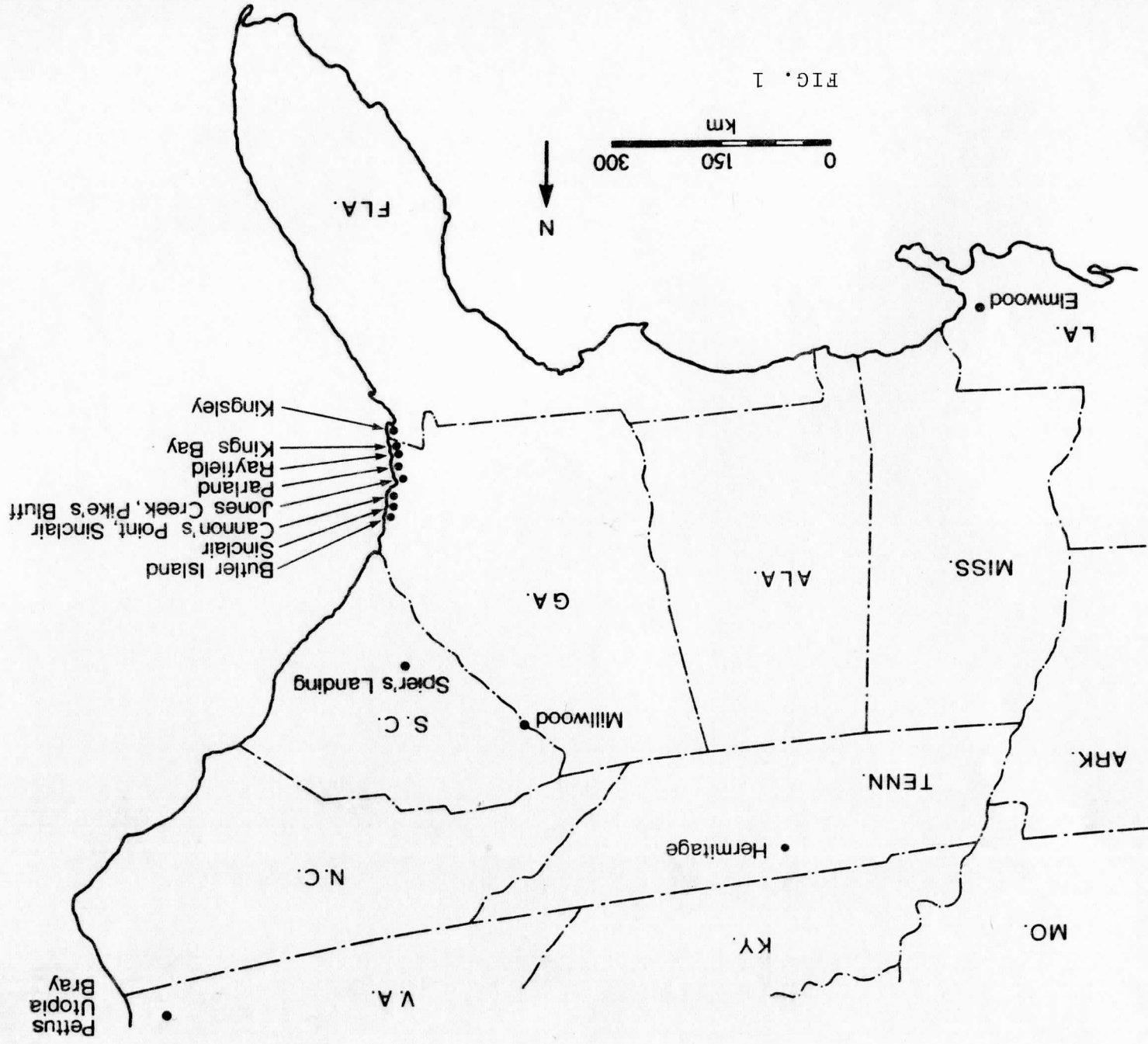


FIG. 1

Table 1

Campfield Settlement: Distribution of Samples By Count

	315N 205W	345N 275W	365N 185W	365N 295W	440N 175W	440N 185W
Ud Mammal	2	1	8	1	11	51
Rat					1	1
Artiodactl		1				1
Pig						5
Cow						3
Caprine						3
Ud Bird			1		7	23
Chicken						4
Ud Turtle					2	42
Pond slider			22		1	88
Frog/Toad					1	
Bass						3
Total	2	2	31	1	23	222

Table 2
Campfield Settlement: Species List

	Ct	MNI		Weight	
		#	%	gms	%
Ud Mammal	74			77.2	11.22
<u>Sigmodon hispidus</u> Hispid cotton rat	1	1	9.1	0.1	0.01
Artiodactyl	1			0.4	0.06
<u>Sus scrofa</u> Pig	5	2	18.2	29.4	4.27
<u>Bos taurus</u> Cow	3	1	9.1	168.3	24.47
Caprine Sheep or Goat	3	1	9.1	17.5	2.54
Ud Bird	31			27.7	4.03
<u>Gallus gallus</u> Chicken	4	1	9.1	1.5	0.22
Ud Turtle	44			40.4	5.87
<u>Pseudemys scripta</u> Pond slider	111	3	27.3	324.0	47.10
<u>Rana/Bufo</u> spp. Frog or Toad	1	1	9.1	0.1	0.01
<u>Micropterus salmoides</u> Largemouth bass	<u>3</u>	<u>1</u>	9.1	<u>1.3</u>	0.19
Total	281	11		687.9	

Table 3
Campfield Settlement: Summary

	MNI		Weight	
	#	%	gm	%
Domestic Mammals	4	36.4	215.2	36.9
Domestic Birds	1	9.1	1.5	0.3
Aquatic Turtles	3	27.3	364.4	62.6
Fish	1	9.1	1.3	0.2
Commensal Species	<u>2</u>	18.2	<u>0.2</u>	0.03
Total	11		582.6	

Table 4

Campfield Settlement: Distribution of Elements

	Pig	Cow	Caprine
Maxilla			2
Teeth	1		
Ribs		2	
Femur		1	
Metacarpals	3		
Astragalus			1
Phalanx	<u>1</u>	<u>—</u>	<u>—</u>
Total	5	3	3

Table 5
Campfield Settlement: Bone Modifications

	Cut	Burned	Hacked	Carnivore Gnawed	Total
Ud Mammal	3	5		1	9
Pig				1	1
Cow			1	1	2
Ud Bird		1		7	8
Chicken		1			1
Ud Turtle	<u>2</u>	<u>1</u>	—	—	<u>3</u>
Total	5	8	1	10	24

Table 6

Campfield Settlement: Measurements*

Caprine	Astragalus	Dm	16.2 mm
		Bd	19.4 mm
		GLm	28.2 mm
		GLl	29.1 mm
		Dl	16.4 mm
Chicken	Carpometacarpus	Did	9.1 mm
	Scapula	Dic	13.0 mm

*(following von den Driesch 1976)

APPENDIX A

Sample Number	Square
FS#1	365N185W
FS#2	365N185W
FS#3	365N295W
FS#4	365N295W
FS#5	345N275W
FS#6	345N275W
FS#9	315N205W
FS#10	315N205W
FS#14	445N185W
FS#15	445N185W
FS#17	445N185W
FS#18	445N175W
FS#19	445N175W
FS#23	445N175W
FS#28	Shovel Tests 3&4

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