INDIAN AND FREEDMEN OCCUPATION AT THE FISH HAUL SITE (38BU805), BEAUFORT COUNTY, SOUTH CAROLINA
INDIAN AND FREEDMEN OCCUPATION AT THE FISH HAUL SITE (38BU805), BEAUFORT COUNTY, SOUTH CAROLINA

RESEARCH SERIES 7

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December, 1986
The folly of mistaking a paradox for a discovery, a metaphor for a proof, a torrent of verbiage for a spring of capital truths, and oneself for an oracle, is inborne in us.

Paul Valery, *Introduction to the Method of da Vinci*
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ABSTRACT

The Fish Haul site (38BU805) is situated on Hilton Head Island in Beaufort County, South Carolina and consists of a Stallings component dating from about 1800 to 1300 B.C. and a historic freedmen component dating from about A.D. 1862 to 1880. Excavation of more than 4000 square feet at this site has been conducted by the Chicora Foundation and is discussed in this report.

Research on the subsistence and settlement patterns exhibited by the Late Archaic-Early woodland Stallings phase sites has traditionally emphasized the more obvious shell middens and rings of the Savannah River drainage and Georgia-South Carolina coasts. Some have viewed Stallings sites which lack shell midden accumulations as indicative of limited occupation in marginal areas. Data from the Fish Haul site suggest that these non-shell midden sites may represent a significant segment of a diversified settlement system.

Research at Fish Haul has examined the ceramics, lithics, and other aspects of the material culture. Data are also presented on the Stallings diet as evidenced by floral and faunal samples recovered from 1/4 and 1/16-inch screens, and flotation. The season and nature of the occupation are explored and evidence is offered of a possible Stallings phase structure.

While the events surrounding the "Port Royal Experiment" and their effects on Sea Island blacks have been the topic of numerous historical studies, virtually no archaeology has been conducted on the period of black cultural transition from slavery to freedom. Mitchelville is a freedmen's village on Hilton Head. As a self-contained village built, governed, and occupied by recently freed Sea Island Blacks, it represents one aspect of the much broader "Port Royal Experiment." This research at Mitchelville documents the social status, wealth, and lifestyle of the "contraband" blacks.
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ACKNOWLEDGMENTS

This work was funded by a $44,018 grant from The Environmental and Historical Museum of Hilton Head Island and was administered by Mr. Michael Taylor and Ms. Helen Cork. I wish to express my appreciation to the Museum for their interest in the Fish Haul site and for the confidence expressed in Chicora throughout this project. It was a pleasure to work with individuals who are concerned about archaeology and history and who recognize the need to preserve the past before it is lost to development. I also wish to thank the property owner, Mr. Louis Jaffe, who allowed the work to be conducted, held off developing the site, and who assisted in funding the project.

Many other individuals greatly assisted this project on the local level. I am particularly indebted to Jerre and Nancy Weckhorst for their interest in the site and efforts to preserve it for archaeological study. They also provided hospitality, encouragement, and a field laboratory during the excavations. Mr. Gordon Robertson of Palmetto Bay Small Engines took a strong interest in our work and insured that our mechanical sifters continued to operate. During our work over 600 people visited the site, obtaining exposure to real archaeology and real history. To assist in the management of these people and to provide guided tours of the site a number of local people, affiliated with the Museum, volunteered time as guides.

The excavations were conducted by Ms. Ramona Grunden, Mr. Bill Jurgelski, Mr. Eric Loring, Mr. Carl Steen, and Ms. Homes Wilson. I wish to thank these individuals for their dedication to the project and professionalism. The archaeology benefited from their input and skill. Most of the laboratory work was ably conducted by Ms. Debi Hacker. In addition, a number of volunteers assisted our work including Mr. and Mrs. Joe Hope, Mrs. C.L. Turner, and Mrs. Sarah Stokes. Three individuals, however, deserve special mention. Ms. Kathy Strother faithfully labored with us over the nine weeks. Her dependability and cheerfulness was a pleasure. Another volunteer who willingly contributed time and energy, devoting her spring break to this project, was Ms. Sarah Velody. Considerable assistance was provided by Dr. Jack H. Wilson, Jr., who worked at the site for a week and who oversaw the placement of the site grid and the location of the auger tests. I appreciate all of these efforts.

The local press was particularly kind to us during our work, providing excellent, accurate accounts of archaeology.
I wish to particularly mention Ms. Kathy Andrews (Lowcountry Report, WJWJ TV), Mr. William Whitten (Hilton Head Report), and Mr. John Leland (Charleston, News and Courier).

During the historical research a number of individuals were of assistance, including the staffs of the S.C. Department of Archives and History Search Room, the South Carolina Library, the University of South Carolina Map Library, the Charleston Library Society, the South Carolina Historical Society, the Beaufort County Public Library, the Beaufort County Clerk of Court, the Georgia Historical Society, the Amsted Research Center (New Orleans), the Library of Congress and the National Archives. While I conducted most of the historical research, Mr. Scott Hacker made a major contribution to the project through his research at the Library of Congress and the National Archives. I also wish to thank a very special friend who assisted in the historical study by providing expertise and particularly moral support, Dr. Amy Friedlander.

Accomodations during the fieldwork were provided at the Waddell Mariculture Center through the interest and assistance of Senator James Waddell. Ms. Sue Borland, of Primier Travel on Hilton Head, arranged to donate airline tickets for the historical research in Washington, D.C.

The faunal analysis was assisted by Dr. David Lee, Curator of Ornithology, N.C. State Museum; Mr. Alvin Braswell, Curator of Herpetology, N.C. State Museum, and Mr. Vince Schneider, Curator of Paleontology, N.C. State Museum.

I wish to express my considerable thanks to my co-authors for their interest in this project, dedication to scholarship, and willingness to meet stringent deadlines. Their contributions have added immeasurably to this study. I also wish to thank Mr. James Scurry, who produced the excellent computer generated density maps. Mr. David Ruth, Fort Sumter National Monument (NPS), graciously assisted in the identification of a number of military items. A number of friends and colleagues have taken time from their own schedules to discuss the study, look over the specimens, and review the text. Obviously, I assume full responsibility for any problems, but I feel certain that the study has benefited from their counsel. I wish to thank Ms. Jeanne Calhoun, Dr. Patricia Criddlebaugh, Dr. Chester DePratter, Ms. Langdon Edmunds, Dr. Amy Friedlander, Mr. Fritz Hamer, Ms. Terry Harper, Mr. Curtiss Peterson, Dr. Elizabeth Reitz, Dr. Bruce Rippeateau, Dr. Theresa Singleton, Mr. Stanley South, Dr. Jack Wilson, Jr., and Ms. Martha Zierden. I particularly thank those who had the unenviable tasks of typing and proofing this manuscript -- Ms. Laura Amick, my wife Jane, and my friend Ms. Debi Hacker.
INTRODUCTION

Michael Trinkley

Background and Research Orientation

The prehistoric component of the Fish Haul site went unrecognized until May 1982 when the property owner at that time, John Crago, and his foreman, Jerre Weckhorst, discovered a quantity of pottery while digging to lay water lines and grading for subdivision roads. The historic component was probably known by a handful of local collectors, but fortunately had not produced sufficient "finds" to give it much prominence. Weckhorst notified The Charleston Museum of the site and donated the prehistoric material to that institution (Accession Number 1982.63) in June 1982. The site attracted professional interest because of the quantity of material unearthed, its depth below the present surface, and the size of the sherds recovered. While the significance of the prehistoric component was easily recognizable, the historic material looked rather unspectacular at that time.

In spite of the site's potential prehistoric significance and its impending development, no funds for site testing could be obtained from the property owner or state agencies. Consequently, in July 1982, a small group of professional archaeologists volunteered their time to work on the site. In addition, a number of local people participated in the work and 96 person hours were spent at the site from July 24 to July 26. Three 10-foot squares were excavated in an area of suspected high prehistoric artifact density (Figure 1) and two 5-foot squares were excavated on the bluff edge overlooking the marsh. Initially, these tests were placed to examine the prehistoric artifact density adjacent to the marsh, but the excavations suggested a light prehistoric occupation and instead, a noticeable nineteenth century historic presence. The collections from this study are curated at The Research Laboratories of Anthropology, University of North Carolina, Chapel Hill, as Accession Number 2345.

This initial work had essentially one goal, that of assessing the variety and significance of the remains at Fish Haul. The excavation strategy was designed to obtain valid research information from several site areas known or suspected to contain abundant remains, not to obtain a sample of remains from the entire tract. The results from this early, very preliminary, work clearly demonstrated that the prehistoric component consisted primarily of Stallings phase remains, although later ceramics were found. This Stallings occupation lacked a shell midden but was sealed below 1.0 to 1.5 feet of sterile soil, preserving horizontal and vertical
stratigraphy. Both features and post holes were recovered and analyses demonstrated the presence of ethnobotanical, faunal, and shellfish remains from the one excavated feature. Research at this site, known as Fish Haul for the subdivision in which it was located, could provide significant information on the settlement and subsistence of non-shell Stallings phase sites (Trinkley and Zierden 1983).

Just as significantly, the historical research, combined with the archaeological study of the recovered nineteenth century artifacts, revealed the site to be part of Mitchelville, an obscure freedmen's village, built after Hilton Head fell to Union troops in 1861. The historic component, then, was felt to be significant for the information it could provide on the black cultural response to sudden freedom. The site could "bridge the gap" between our knowledge of early nineteenth century slave lifestyle and that of the freedmen tenant farmer in the late nineteenth century.

For reasons unrelated to the archaeological significance of the site, the planned single family residential Fish Haul subdivision failed to proceed and development was eventually abandoned. Several local individuals, however, remained concerned about the site and sought funds to study more fully its potential. Simultaneously two events transpired which would eventually assure that the Fish Haul site would receive at least a minimal level of professional study. The property was sold by its original developer, John Crago, to Louis Jaffe, who intended to build high density condominiums on the property. The threat to the archaeological resources at Fish Haul was recognized by a number of local individuals who were also beginning to organize The Environmental and Historical Museum of Hilton Head Island. Funding was sought and obtained by these individuals from both the developer and the State Budget and Control Board (which controls the allocation of Accomodation Tax monies to local agencies for the promotion of tourism). The use of the Accomodation Tax Revenues to conduct archaeological study is a novel, but certainly appropriate, use of money earmarked to promote tourism. Historic preservation has long been recognized to be a factor in the development and maintenance of a tourism industry. At Fish Haul site tours were led by Museum guides and over 600 people were introduced to the prehistory and history of Hilton Head Island. They were also introduced to archaeology and archaeological techniques.

Chicora Foundation, Inc. was chosen by the Museum's Board of Directors to conduct the historical and archaeological investigations at Fish Haul, based upon its proposal, submitted in December 1985. Unfortunately, the full scope of research proposed by Chicora in December could not be funded and a revised proposal was submitted in January 1986, with a contract for the work signed on March 5,
1986. Work was begun on March 9, 1986 and continued for nine weeks to May 9. Laboratory processing and analysis continued in Columbia and Charleston after that date. The collections from this project are curated by the Environmental and Historical Museum of Hilton Head Island as Accession Number 1986.1.

The research design for the Fish Haul study, while more elaborate than that used in 1982, still recognized that much was unknown about the site and, also, that this work, like that performed in 1982, might represent the last opportunity for scholarly study at Fish Haul. Consequently, at one level the research performed at Fish Haul will evidence obvious descriptive objectives. That is, this work will offer detailed descriptions of the site, the excavation and analysis methods, and the recovered artifacts. As Adams has succinctly noted, "[i]nterpretations can and will change, but the data recovered will not change" (Adams 1985:8). While descriptive statements without an attempt at or an interest in analytic interpretation is Boasian particularism at its worst and rightly elicits a response of dread, it may be that reports which balance both a thorough, accurate description of the data and a reasonable, cautious interpretation may survive the test of time better than those reports which do little more than cleverly frame questions and adroitly manipulate data.

At another level, however, this study was guided by relatively simple, but fundamental, explanatory objectives. These research questions begin to flesh out the descriptive study by asking who lived at the Fish Haul site, what was life like for those people, when was the site occupied, and where the occupants lived at the site. In addition to these synchronic questions, it is important to view the Fish Haul research also from a diachronic perspective and ask how and why the lifestyle changed over time.

Based on the broad parameters of the descriptive and explanatory goals just discussed, it was possible to formulate more specific research questions which were felt to be answerable given the previous work at the site. For the Stallings occupation questions regarding subsistence, settlement, and culture history were proposed. With the historic Mitchelville component the descriptive and explanatory goals were much the same as for the prehistoric Stallings occupation and they assumed a very significant role since little was known about Mitchelville or the blacks' cultural experience during the early days of freedom. Of special interest was a thorough analysis and descriptive study of the site's material culture. As will be discussed in a subsequent chapter, the role of Hilton Head and especially Mitchelville, has been largely overlooked by previous discussions of the "Port Royal Experiment," so there was little historical information in the secondary sources on
which to base the archaeological research. Questions regarding the effects of sudden freedom on Afro-American culture, and the social organizations and group dynamics of the town were examined by the Mitchelville excavations.

**Stallings Subsistence**

Fish Haul offers the potential to deal effectively with subsistence questions from the Stallings component. The presence of intact features which contain ethnobotanical, faunal, and shellfish remains is significant as each subsistence category is capable of providing not only subsistence data, but also information on seasonality and micro-environmental reconstructions. For this data to be useful it must be consistently gathered and carefully quantified. Recent work by Wing and Quitmyer (1985) demonstrates that use of 1/4-inch mesh alone at coastal sites for the recovery of faunal remains introduces a significant bias into subsistence reconstructions. Although 1/4-inch mesh is frequently regarded by coastal archaeologists as "fine screening," it selects against the recovery of small invertebrates, fish, and plant food remains. As a result, subsistence reconstructions emphasize shellfish and large mammals. Use of 1/16-inch mesh dramatically increases the number of specimens recovered and the minimum estimate of meat. The work at Fish Haul was designed to collect, identify, and quantify all aspects of the diet, so that a realistic approximation of the aboriginal subsistence strategy might be offered.

Seasonality of coastal sites typically has been addressed by an examination of a narrow range of subsistence items, such as the presence or size of certain species. Recent work begun on the coast by Clark (1979) and continued by Classen (1982) and Quitmyer et al. (1985) has demonstrated the usefulness of the clam (Mercenaria mercenaria) as a seasonal indicator. Clam has proven to provide an exceptionally clear indication of its season of death. From there it is up to the archaeologist to demonstrate, first, that the specimen died from intentional human collection and second, what the information ultimately means. Even more recently, Lawrence (see this volume) has perfected a technique which uses the configuration and size of the right hinge of the oyster (Crassostrea virginica) to indicate its season of death. These studies, because they are so accurate, because they date items which are generally in abundance at coastal sites, and because the shellfish were apparently not stored for later use, are of considerable use to coastal archaeologists. However, like other forms of seasonal dating (i.e., the use of faunal or floral remains) they can only provide information on when the site was occupied, not on when it was abandoned.
Questions regarding seasonality are of paramount importance since by the late Thom's Creek phase some groups, through careful scheduling and exploitation of the rich coastal environment, apparently had established permanent villages on the coast (Trinkley 1980c, see also DePratter 1979b). Seasonality data from sites such as Fish Haul are necessary if we wish ever to understand how, why, and when the change from a nomadic, foraging way to life to a settled lifestyle occurred.

Stallings Settlement

Very little is known concerning the Stallings (Claflin 1931) phase settlement pattern, either on an intra or inter-site level. Although it is not possible to answer many questions about inter-site patterning based on one site, Fish Haul represents a type of site that is not commonly identified or studied. Consequently, Fish Haul has the potential to contribute information which will assist us in more completely understanding the range of typical settlement pattern variation. DePratter (1979b:37) has tended to view non-shell midden Stallings sites as representing "only limited occupation in marginal areas." Saunders (1985:166) has recently taken exception to this settlement reconstruction, noting that non-shell midden sites are abundant, are located in prime environmental areas, and span considerable time. None of these non-shell midden sites have been studied in sufficient depth to determine whether they represent limited occupation as suggested by DePratter (1979b) or "a limited segment of a diversified settlement system" (Stoltman 1972:51), i.e., loci of specific activities, which either by choice or circumstances, did not include intensive shellfish collection.

The Fish Haul site may also evidence a number of spatially discrete Stallings occupation areas. The use of radiocarbon dating, seasonality studies, and artifact typology may reveal whether these discrete loci represent synchronic or diachronic occupations.

Stallings Culture History

Because the Stallings zone is up to 1.5 feet in thickness, there may be sufficient depth to allow studies of artifact change over time. Previous work by Trinkley and Zierden (1983) has suggested temporal changes of the decorative motifs of Stallings pottery. Similar change is suggested in projectile point forms. Excavation and analysis of the Stallings zone by thinner levels than were used in the original study may provide better temporal control.
The question of cultural continuity is also worthy of consideration. Previous study of the subsistence, settlement pattern, and ceramics has suggested that change was sometimes quite slow. The stability and apparent cultural conservation of the Early Woodland is reflected in the strong similarities of the Stallings and Thom's Creek Cultures over almost 1000 years.

Mitchelville Research

The site of Mitchelville presents an excellent opportunity to study the effects of sudden freedom and other rapid changes on Afro-American culture. Only one similar study has been conducted on the Southeastern Atlantic coast (Singleton 1979), although the controversial work of Fogel and Engerman (1974) did suggest that slavery might be understood by comparing it with the life of postbellum freedom. A similar technique is used by Cranton (1978) with the Worthy Park data from Jamaica. Data from Mitchelville, the home of at least 1500 newly-freed blacks during and immediately after the Civil War, should provide important information on this subject.

Changes from slavery to freedom may be evidenced in a study of artifact pattern analysis (which emphasizes the types and quantities of various artifact classes), the use of ceramics to indicate status, and the presence or absence of certain specific artifacts (such as military objects). The presence of colono ware pottery at Mitchelville adds a tantalizing piece of information to the study of this pottery type. Colono ware was originally thought to be present on Anglo-American and Afro-American sites as a result of Indian trade or possible Indian slave manufacture. The presence of this ware on eighteen and early nineteenth century plantation sites and, more recently, on urban sites has led archaeologists to suggest that this ware may be the product of black slaves (Ferguson 1980, see also Ferguson 1985). While work continues to piece together the Colono ware puzzle, the presence of this ceramic at a mid to late nineteenth century freedmen's village suggests that its manufacture by blacks lasted longer than previously thought.

Although it was recognized from the outset of the project that the work to be performed at Mitchelville would not expose or allow the study of a great many structures, it was determined that questions of social organization, group dynamics, and group interactions should be considered. What were being examined were structures within a village or small town -- not isolated farmsteads. Work performed at the nineteenth century New Jersey site of Skunk Hollow (Geismar 1982) suggests that such an approach, if it is used with
Figure 1. 1982 excavations in squares 80-100R100, looking southeast toward Fish Haul (Coggins) Creek.

Figure 2. Vicinity of Hilton Head Island, Beaufort County, South Carolina.
thorough historical documentation, may yield a clearer view of the community's rise and eventual disintegration. The comparative, quantitative analysis on which this approach is dependent, however, requires information on the placement and identification of a number of structures. Such information was not expected to be abundant for Mitchelville but the data from this freedmen's village was still thought to be worthy of this intensive effort.

Natural Setting

The Fish Haul site, which encompasses about 15 acres, is situated on the north end of Hilton Head Island, Beaufort County, South Carolina, and is bounded to the north by Port Royal Sound, to the east by Coggins Creek (also known historically as Fish Haul Creek), to the south by a low, poorly drained slough (known on at least one nineteenth century map as "Pope Gall"), and to the west by Beach City Road (S-33). The site is about 14 miles (22 kilometers) south of the city of Beaufort, 58 miles (94 kilometers) southwest of Charleston, and 27 miles (44 kilometers) northeast of Savannah (Figure 2). The UTM central coordinates are 529450 East and 3566440 North (Zone 17).

Physiographic Province

Hilton Head Island is a sea island located between Port Royal Sound to the north and Daufuskie Island to the south. The island is separated from Daufuskie Island by Calibogue Sound and from the mainland by a narrow band of tidal marsh and Skull Creek. Between Hilton Head Island and the mainland are several smaller islands, including Pinckney and Jenkins islands.

Hilton Head is situated in the Sea Island section of South Carolina's Coastal Plain province. The coastal plain consists of the unconsolidated sands, clays, and soft limestones found from the fall line eastward to the Atlantic Ocean, an area of more than 20,000 square miles or about two-thirds of the State (Cooke 1936:1-3). Elevations range from just above sea level on the coast, to about 600 feet mean sea level (MSL) adjacent to the Piedmont province. The coastal plain is drained by three large through-flowing rivers -- the Pee Dee, Santee, and Savannah -- as well as by numerous smaller rivers and streams. The coastal plain may be arbitrarily divided into three general regions: the inner coastal plain, the middle coastal plain, and the outer coastal plain.
The inner and middle coastal plain regions are similar in many aspects, although relief is quite different. The inner coastal plain exhibits rolling hills adjacent to the fall line, steep bluffs along major rivers, and other evidence of considerable weathering. The middle coastal plain, however, is relatively flat and contains freshwater marshes, savannahs, river swamps, and Carolina bays (Barry 1980:126-135). As one moves toward the coast, the area of swamp land increases and the dry land ceases to be continuous and is, instead, broken into islands separated by fresh and salt water swamps or marshes (see Fenneman 1938). From the North Carolina line to about Winyah Bay the coast is characterized by a stable, smooth, concave curve, broken by few tidal inlets. This area has been classified as an arcuate strand (Brown 1975; Smith 1933). From Winyah Bay southward for about 20 miles (32 kilometers) lies South Carolina's Cuspate Foreland, an area characterized by an eroding cape and deposition through the formation of recurved spits to the west and north. This area has been heavily affected by the diversion of the Santee River in 1941. An area which previously had been prograding began to erode at a rate of up to 900 feet (277 meters) since 1941 (Brown 1975:2231). From Bull Bay southward, South Carolina's coast presents a different picture. The area is characterized by low-lying, sandy islands bordered by salt marsh. Brown (1975) classes these islands as either Beach Ridge or Transgressive, with the Transgressive barrier islands being straight, thin pockets of sand which are rapidly retreating landward with erosion rates of up to 1600 feet (492 meters) since 1939. The Beach Ridge barrier islands, however, are more common and consist of islands such as Kiawah and Hilton Head. They are characterized by a bulbous updrift (or northern) end.

Kana (1984) discusses the coastal processes which result in the formation of barrier islands, noting that the barrier island system includes tidal inlets at each end of the barrier with the central part of the island tending to be arcuate in shape while the ends of the island tend to be broken. Sand transport tends to be southward, producing a characteristic curved spit growing in a downdrift of southeast direction. The inlets at either end of the barrier influence the shape of the island through the development of offshore deltas. These deltas produce shoals, which cause waves to bend or break before reaching the shore and thereby creating sheltered areas. Hilton Head Island, however, is slightly different from other islands, partially because of its proximity to the very large Port Royal tidal inlet. The tidal delta extends further offshore than usual and the nearby islands tend to be more irregular in shape. Hilton Head has the typical central bulge caused by sand wrapping around the tidal delta and then depositing midway down the island. Further, the south end has an accreting spit where sand is building out the shoreline. The central part of the
island, however, has experienced a 25-year erosion trend averaging 3 to 10 feet (0.9 to 3 meters) a year (Kana 1984:11-12). During the period from 1952 to 1970, the most serious erosion occurred at the north end of the island where about 17 feet (5.2 meter) a year were lost (U.S. Army Corps of Engineers 1971). The National Ocean Service, in cooperation with the Coastal Engineering Research and Statistical Services of the State of South Carolina compiled maps showing coastal erosion between 1859 and 1983 (Shoreline Movement Maps, Folder 1, S.C. Department of Archives and History). This study indicates that erosion in the vicinity north of Coggins Creek during this period was about 900 feet (277 meters), while to the south the erosion has been as much as 400 feet (123 meters) (Figure 3).

Hilton Head Island, however, is also a different shape than most other islands since it has a Pleistocene core with a Holocene beach ridge fringe. To understand fully the significance of this situation, it is important to realize that technically the sea islands and the barrier islands are quite different from a historical perspective. The classic sea islands of colonial and antebellum fame (such as James, St. Helena, and Sapelo islands) are erosional remnants of coastal sand bodies deposited during the Pleistocene high sea level stands. They are crudely elongate, parallel to the present day shoreline, and rectangular in outline. Their topography is characterized by gentle slopes, and poorly defined ridges and swales. Maximum elevations typically range from 5 to 35 feet (1.5 to 10.7 meters) MSL. In contrast, barrier islands were deposited during the Holocene high level stand. They are composed of beach dune ridges oriented parallel to subparallel with the present shoreline. The topography contains locally steep slopes and elevations range from 10 to 25 feet (3.1 to 7.7 meters) MSL. Typical barrier islands include Pawleys, Kiawah, and Hunting islands. There are, in addition, marsh islands, such as Morris and St. Phillips islands, composed of isolated or widely spaced Holocene sand ridges surrounded by Holocene salt marsh (Mathews et al. 1980).

Some islands, such as Hilton Head (S.C.), Daufuskie (S.C.), and St. Catherines (Ga.), however, have an oceanward fringe of beach dune ridges which were constructed during the Holocene high sea level stands (Mathews et al. 1980:65-71; Ziegler 1959). Ziegler (1959:Figure 6) suggests that Hilton Head Island is composed of several sea or erosion remnant islands, joined together by recent Holocene deposits. The Coggins Creek area is primarily contained within the Holocene formation.

Hilton Head Island is about 11.5 miles (18.5 kilometers) in length and has a maximum width of 6.8 miles (10.9 kilometers), yielding 19,460 acres (7,876 hectares) of highland and 2400 acres (971 hectares) of marsh (Figure 4).
Figure 3. Shoreline erosion in the vicinity of Coggins Creek between 1859 and 1983.

Figure 4. Hilton Head Island.
Elevations range from sea level to 21 feet (6.4 meters) at the top of the highest natural beach ridges. Tidal range is 6.6 to 7.8 feet (2.0 to 2.4 meters) (Mathews et al. 1980:68).

In the vicinity of the Fish Haul site the topography tends to be level, with only a gentle slope southward toward a low slough which has recently been converted to a fresh water lagoon. This slough originally served as localized drainage for an area extending about a half mile south of its opening into the Coggins Creek marsh. Elevations range from about 10 to 16 feet (3.1 to 4.9 meters) over the 5-acre tract, although the bank overlooking Coggins Creek is in places steep, dropping off to an elevation of 6 feet (1.8 meters). The broad, level plain of the Fish Haul tract is evidenced in Figure 5.

Soils

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

The mainland soils are Pleistocene in age and tend to have more distinct horizon development and diversity than the younger soils of the Sea Islands. Sandy to loamy soils predominate in the level to gently sloping mainland areas. The island soils are less diverse and less well developed, frequently lacking a well-defined B horizon. Organic matter is low and the soils tend to be acidic. The Holocene deposits typical of barrier islands and found as a fringe on some sea islands, consist almost entirely of quartz sand which exhibits little organic matter. Tidal marsh soils are Holocene in age and consist of fine sands, clay, and organic matter deposited over older Pleistocene sands. The soils are frequently covered by up to 2 feet (0.6 meter) of salt water during high tide. These organic soils usually have two distinct layers. The top few inches are subject to aeration as well as leaching and therefore are a dark brown color. The lower levels, however, consist of reduced compounds resulting from decomposition of organic compounds and are black. The pH of these marsh soils is neutral to slightly alkaline (Mathews et al. 1980:39-44).

Hilton Head consists of only three soil associations. On the upland areas are found the Wando-Seabrook-Seewee and Fripp-Banatari Associations. The first is usually the predominant association on the uplands of the sea islands and
is sandy throughout. The Wando soils are excessively drained, the Seabrook soils are moderately well drained, and the Seeewe soils, found in the lower elevations are somewhat poorly drained. These are primarily Pleistocene in origin. The Fripp-Banatari Association consists of gently sloping to steep soils on narrow ridges and troughs which were formed in windblown marine sediments. These soils are associated with the Holocene deposits seaward on Hilton Head Island. Fripp soils are excessively drained, being found on the ridges, while the Baratari, in the troughs, are poorly drained. The third soil association -- Bohicket-CapersHandboro -- is found in the lowland areas of the island, adjacent to tidal influenced creeks and along the north coast (Stuck 1980:6-8).

The Fish Haul site is today dominated by four soil types. The site is situated on a broad plain of Wando fine sands, bordered to the south by the Capers soils of Coggins Creek and the Rosedhu fine sands of the slough. To the north are similar Capers soils associated with an unnamed tidal inlet and Ridgeland fine sands also associated with this tidal creek (Stuck 1980:Map 94).

The Wando series consists of excessively drained, rapidly permeable soils formed in thick sandy coastal plain sediments. The soil is low in natural fertility and organic matter, has a pH of 5.6 to 7.3 throughout, and has a water table commonly below a depth of 6.0 feet (1.8 meters). The Ap horizon may be up to 0.8 foot (0.3 meter) in thickness and is a dark brown, friable, fine sand. The soil lacks a B horizon. The C horizon consists of a brown to pale yellow fine sand. Iron concretions up to 1 inch (2.5 centimeters) in diameter are found in some pedons of this soil (Stuck 1980:42-43, 85).

The Capers soils are poorly drained and formed in silty or clayey marine sediments. They are associated with broad tidal flats and are frequently flooded by salt water. A greenish gray clay is found at a depth of about 2.7 feet (0.8 meter) (Stuck 1980:64). The Rosedhu series consists of very poorly drained soils formed in thick sandy coastal plain sediment. The soils are found in low sloughs frequently subject to flooding and the water table is at or near the surface for about 8 months during the year (Stuck 1980:81). The Ridgeland fine sands, also formed in thick sandy sediments, are somewhat poorly drained and have a water table within 2.5 feet (0.8 meter) of the surface.

The Fish Haul site is situated on an elongated, high sandy ridge parallel to and bordered on both sides by low marsh areas bisected by salt water tidal creeks. The Wando soils typically have surface pH levels of 5.6 to 7.3. The average pH of 81 tests uniformly spaced over the 10-acre Fish Haul tract is 5.6 (tested using a pH meter), although the range is 4.4 to 7.3. These data indicate that the soil
Figure 5. The Fish Haul tract, Hilton Head Island.
pH at the site is more acid than typical for Wando soils. In fact, pH readings of 4.5 to 5.0 are considered very strongly acid. Agriculture without periodic liming tends to lower soil pH (Allaway 1957) and pine forests tend to produce more acidic soils than hardwoods (Harper et al. 1957:738). While the forest vegetation is a recent phenomenon, agricultural practices are probably responsible for this low pH. There is historical evidence that the Fish Haul site was largely a cotton field during the antebellum period. The principal means for fertilizing these fields was to gather the fertile marsh mud and grass during the winter for application to the fields in the winter (Woofter 1930). This marsh mud contains sulfides, which once aerated and dried oxidizes to form sulfuric acid (Miller 1971:29). The resulting material, called catclay, would naturally lower the pH of any soil to which it was added. While this, over time, would have affected the ability of the cotton to obtain nutrients from the soil, the effects would not have been immediately noticeable since cotton is not a "lime-loving" plant (Duggar 1921:335). Since sweet potatoes, another commonly cultivated crop during the antebellum period, require the addition of humus to sandy soil (Duggar 1921:436-437), it may be that their cultivation also increased the acidity of the soil.

The total phosphorus level of the soil is low, with a range of 28.5 to 60 ppm (Don Halbick, personal communication 1986). Phosphorus does not readily migrate in the soil, being "fixed" within a few millimeters of its entry in the vertical profile (Eidt 1977:1328). Phosphorus, in the form of phosphate, is perhaps the macro-nutrient most indicative of human occupation. It is a component of feces and urine, and calcium phosphate is one of the primary minerals found in bone. Phosphorus levels at the Fish Haul site are noticeably high, ranging from a low of 10 ppm to a high of over 200 ppm. The average is 145 ppm. Examination of the spatial results indicated consistently low (85-120 ppm) to very low (less than 85 ppm) concentrations adjacent to the marsh at the bluff and over the bluff edge. Very low concentrations were also revealed northwest of the lagoon. Elsewhere the readings were generally high (157 ppm). Antebellum agriculture added little phosphorus to the soil and postbellum agriculture at the site is expected to have had little impact on the macro-nutrients in the soil. Consequently, these high readings may be directly attributable to intensive historic occupation at the site.

The antebellum occupants did not always recognize the nature of the soil under their feet, as evidenced by Nordoff's observations upon seeing Hilton Head for the first time in 1863,

[t]he soil on which the famous long staple cotton was -- and is -- grown, instead of the rich black mould which I expected to
find it, is a pale yellow sand, which seems to you useless for agricultural purposes, till you notice that it glistens with white particles, which are the pulverized shells, the lime of which gives the soil its strength and substance (Nordoff 1863b:111).

Geology

The Sea Island coastal region is covered with sands, silts, and clays originally derived from the Appalachian Mountains and which are organized into coastal, fluvial, and aeolian deposits. These deposits were transported to the coast during the Quaternary period (which is composed of the Pleistocene and Holocene epochs and dates from about 2 million years B.P. to the present) and were deposited on bedrock of the Mesozoic Era and Tertiary period (dating from about 225 million years B.P. to 2 million years B.P.). These sedimentary bedrock formations are only occasionally exposed on the coast, although they frequently outcrop along the Fall Line (Mathews et al. 1980:2). The crystalline basement rocks are very deeply buried in the Beaufort area, not being reached by test wells dug to a depth of 1640 feet (504 meters). The crystalline rocks were not reached by a Charleston well excavated to a depth of 2050 feet (631 meters) (Smith 1933:21).

The Mesozoic and Tertiary sedimentary bedrock formations, since they contain resources important to both the prehistoric and historic occupants of the Sea Islands, are worthy of further discussion. There are three Upper Cretaceous (Mesozoic era) formations -- the Tuscaloosa formation, composed of sands and clays; the Black Creek formation, composed of both laminated sands and clays and marl (a crumbly deposit of sand or clay which exhibits a substantial quantity of calcium carbonate); and the Pee Dee formation, also composed of sand and marl (Cooke 1936). Upchurch (1984:130-132) notes that while occasional chert pebbles or other silicified stone may be found in these formations, they do not represent significant raw material sources for the prehistoric Indians. Cooke (1936) notes that the Eocene epoch (Tertiary period) formations include the Black Mingo, the Santee Limestones, the Cooper Marls, and the Barnwell sands. Upchurch (1984:132-135) notes that these formations contain indefinite potential to be of use to the prehistoric occupants of South Carolina. Outcrops of these formations do occasionally occur in the central coastal plain (Anderson et al. 1979:10-11) and Anderson et al. (1982) report identifying chert from the Black Mingo Santee Limestone formations. In addition, the Black Mingo formation outcrops along the Black and Santee rivers provide the only known utilized sources for orthoquartzite, a type of chert.
and/or chalcedony cemented sandstone (Anderson et al. 1982). Upchurch (1984) notes identical material he calls "Silica-Cemented Sandstone," outcropping from the Flint River or Barnwell formations, although the material was not used in Allendale County (Goodyear and Charles 1984: 116).

The only representative of the Oligocene Epoch in South Carolina, according to Cooke (1936), is the Flint River formation, which is exposed in only a limited area in Allendale County near the Savannah River. This formation produces the bright yellow, vitreous chert known as "Allendale chert" and consequently is perhaps the most significant raw material source in the coastal plain (Goodyear and Charles 1984; Upchurch 1984:135).

Miocene Epoch deposits include the Hawthorn formation, Raysor marl, and the remnants of the Duplin marl. While the Hawthorn formation contains silicified clay and opaline chert, Upchurch notes that "[n]one of the silicified Hawthorn materials . . . are optimal for tool manufacture" (Upchurch 1984:136). While this formation provided few economic resources to the prehistoric Indians, beginning in 1867 the phosphate rock found in the formation provided a significant industry for the lowcountry. The phosphate rock, used as fertilizer, either ground or with the addition of sulfuric acid, was found within a coastal strip about 30 miles (48 kilometers) from the Broad River in Beaufort County to the Cooper River in Berkeley County. Two types were mined -- the "land rock" which was phosphatic marl or limestone that had been enriched and which required excavation, and the "water rock" which consisted of pebbles of land rock deposited in the water courses through erosion. By 1889, 541,645 tons were being mined. Mining effectively ceased in 1920, although some activity was reported as late as 1930 (Cooke 1936:159; Mathews et al. 1980:28).

The final sedimentary bedrock formation is of the Pliocene and consists of the marine shell beds of the Waccamaw formation. No lithic resources are known from this formation (Cooke 1936).

The Pleistocene sediments are organized into topographically distinct, but lithologically similar, terraces parallel to the coast. The terraces have elevations ranging from 215 feet (65.5 meters) down to sea level. These terraces, representing previous sea floors, were apparently formed at high stands of the fluctuating, although falling, Atlantic Ocean and consist chiefly of sand and clay (Cooke 1936; Smith 1933:29). More recently, research by Colquhoun (1969) has refined the theory of formation processes, suggesting a more complex origin involving both erosional and depositional processes operating during marine transgressions and regression.
Cooke (1936) found that most of Hilton Head is part of the Pamlico terrace and formation, with a sea level about 25 feet (7.7 meters) above the present sea level. Portions of the island, in the vicinity of the Fish Haul site, represent a recent terrace, formed during the past 10,000 years. More recently Colquhoun (1969) suggested that Hilton Head is more complex and represents the Princess Anne and Silver Bluff Pleistocene terraces with corresponding sea levels of from 20 to 3 feet (6.2 to 0.9 meters) above the present level.

These recent terraces provide access to a number of clay resources. Cooke (1936:160) noted that clay could frequently be found in the former lagoons behind ancient barrier islands and Colquhoun (1969) demonstrates the presence of an old marsh terrace east of the Coggins Creek area. The Pamlico formation is a prime producer of clay. Cooke comments that "[c]lay predominates in the lower part of the formation, especially in Beaufort County" (Cooke 1936:149). Sloan (1904) notes that a number of Cretaceous and Tertiary formations also evidence significant clay deposits. He also notes that "[a]long the part of the Coastal Plain immediately within the zone of our sand islands and extending inter-mittently over the section ramified with bayous and other short salt water streams there occurs a mantle of red and white stratified clay" (Sloan 1904:89). An examination of the soil survey for Beaufort County (Stuck 1980) reveals six soils, accounting for 143,400 acres, which exhibit a relatively high plasticity index and have clay, sandy clay, or silty clay horizons within 1.1 feet (0.3 meter) of the surface. These soils include Argent, Bladen, Bohicket, Capers, Levy, and Wahee. The Bohicket and Capers soils are found in tidal flats, the Argent and Bladen soils are found in depressions and drainageways, the Levy soils are associated with backswamp areas, and the Wahee soils tend to be found on low uplands. While none of this data has been field checked, it suggests that pottery clay, during the prehistoric period, was readily available on the island. Work by Espenshade (1985) at Kings Bay clearly revealed that the aboriginal occupants of that locality were consistently using local clays.

Two additional aspects of Sea Island geology should be briefly discussed. The first is groundwater availability, since water is of primary importance to both prehistoric and historic settlement criteria. As Mathews et al. state, "[g]roundwater may well be the most important material economic resource of the Sea Island Coastal Region" (Mathews et al. 1980:31). The principal deep water artesian aquifer is the limestone of Eocene age known as the Santee Formation. Based on 1880 data this head was so great that wells in the Beaufort County area were free flowing at the surface and on Hilton Head, the head forced water in wells to an elevation of at least 10 feet (3 meters) MSL. By 1971, however, this aquifer was so depleted that no surface flowing
water was known and the head would not force water above mean sea level on Hilton Head Island (Mathews et al. 1980:3132). Today there is also a serious problem of salt water encroachment. Work by Hassen, however, suggests another source of potable water during both the prehistoric and historic periods. He notes, based on a study of the Ladies and St. Helena islands, that:

ground water in the shallow aquifer occurs under unconfined conditions, allowing rapid rates of recharge by local rainfall. Water levels in these deposits respond frequently to changes in the rates of rainfall, evaporation, and transpiration. . . . . Water levels in shallow wells ranged from zero to 10 feet below land surface, averaging 3 feet in the study area (Hassen 1985:17).

Chloride contamination of the local island aquifers is most likely at the island margins, while inland even today the water is at or below levels of 250 mg/l chloride (Hassen 1985:27-29). It is therefore likely that both during the prehistoric and historic periods Hilton Head offered a variety of freshwater sources, including both shallow dug wells and free flowing springs.

The historic documents suggest that both deep and shallow wells were common. Roe, discussing February 1863 events on St. Helena Island, mentions that, "[n]earby is a settlement of contrabands, and it is not long before trouble ensues as to the taking of water from several wells, which apparently, the colored folks have had in use hitherto" (Roe 1907:180). Numerous accounts (e.g. Darvis 1866:186; Denison 1879:22; Palmer 1885:22) mention the digging of shallow wells, but the best account is by Copp,

[i]n our camp at Hilton Head, every company had its well, by digging through the sand to a depth of from four to six feet [1.2 to 1.8 meters], empty barrels would be inserted, and the well was complete, with plenty of water: although brackish to the taste it was not as bad as we were frequently obliged to use in our later campaigns (Copp 1911:94).

The second aspect of Sea Island geology to be considered in these discussions is the fluctuation of sea level during the late Pleistocene and Holocene epochs. Prior to 15,000 B.C. there is evidence that a warming trend resulted in the gradual increase in Pleistocene sea levels (DePratter and Howard 1980). Recent work by Colquhoun et al. (1980) clearly indicates that there were a number of fluctuations
during the Holocene. High stands are recorded at about 2050 B.C. (-3.6 feet [1.1 meters] MSL), 1650 B.C. (-1.9 feet [0.6 meter] MSL), 950 B.C. (-2.6 feet [0.8 meter] MSL), and 500 B.C. (-2.3 feet [0.7 meter] MSL). Low stands are recorded at 1850 B.C. (-10.4 feet [3.2 meters] MSL), 1250 B.C. (-10.1 feet [3.1 meters] MSL), 700 B.C. (-6.5 feet [2.0 meters] MSL), and 300 B.C. (-7.5 feet [2.3 meters] MSL). By A.D. 1650 the sea level was about 2.6 feet (0.8 meter) lower than present.

These data suggest that as the first Stallings phase sites along the South Carolina coast were occupied about 2100 B.C. the sea level was about 3.9 feet (1.2 meters) lower than present. However, by 1600 B.C., when a number of Thom's Creek shell rings were occupied, the sea level had fallen to a level of about 7.2 feet (2.2 meters) lower than present levels. By the end of the Thom's Creek phase, about 900 B.C., the sea level had risen to a level 2.6 feet (0.8 meter) lower than present, but over 4.5 feet (1.4 meters) higher than when the shell rings were first occupied (Figure 6). Quitmyer (1985b) does not believe that the lower sea levels at 2100 B.C. would have greatly altered the estuarine environment, although drops of 10 feet (3 meters) would have greatly reduced available tidal resources.

Data from the nineteenth and twentieth centuries suggest that the level is continuing to rise. Kurz and Wagner (1957:8) report a 0.8 foot (0.2 meter) rise in Charleston, South Carolina sea levels from 1833 to 1903. Between 1940 and 1950 a sea level rise of 0.34 foot (0.1 meter) was again recorded at Charleston. These data, however, do not distinguish between sea level rise and land surface submergence.

Biophysical Environment

An understanding of the biophysical environment of the Sea Island region is necessary to an adequate appreciation of the resources available to the occupants of the Fish Haul site. It is also necessary, however, to recognize and, where possible to delineate, the changes which have taken place during the Holocene. It is inappropriate to reconstruct settlement and subsistence systems using synchronic data. The review of the biophysical environment surrounding the Fish Haul site will concentrate on the plant and animal communities typical of the region.

Hilton Head Island today exhibits four major ecosystems: the coastal marine ecosystem where land has unobstructed access to ocean, the maritime ecosystem which consists of the upland forest area of the island, the estuarine ecosystem of deep water tidal habitats, and the palustrine ecosystem which consists of essentially fresh water, non-tidal wetlands (Sandifer et al. 1980:7-9).
The coastal marine ecosystem consists of that area from the dunes extending seaward to the level of extreme low spring tide so that there are both intertidal and subtidal components. Salinity consistently exceeds 30 ppt. This ecosystem shelters a number of food resources, such as sea turtles, resident and migrational species of fish, marine and pelagic birds, and several sea mammals, including dolphins, whales, and the manatee. While many of these resources are occasionally found in the archaeological record, there is little indication that the beach strand was a significant ecosystem during the prehistoric period. Even during the nineteenth century this zone provided little to interest the inhabitants of Hilton Head. McKee, in his history of the 144th Regiment, does describe the "capture" of a 200 pound (91 kilogram) turtle which brought $5.00 on the Hilton Head market. He goes on,

[soldiers with hunter instincts learning of this habit of the turtle [laying eggs in the dunes] would get a "leave of absence" for the night and following down the beach would note turtle tracks leading across the beach toward the sand hills and following would find Mrs. Turtle. Laying hold of her shell they would proceed to turn her on her back and then search for others. Sometimes several would be found in the course of the night. In the morning a wagon would be procured and the night's "find" would be gathered up (McKee 1903:166).

While not a "resource" in the conventional sense, there are several insects which have been noted into the nineteenth century as playing a significant role on the coastal beaches. Sandifer et al. note that, "[o]n occasion, hordes of these insects may descend upon the intertidal marine beaches, rendering them essentially unfit for man's recreational use" (Sandifer et al. 1980:87). Clark stated that, "[d]uring the summer, the gnat, the mosquito and the sand flea, are among the soldier's greatest enemies" but "the red sand flies are the worst of all" (Clark 1865:58). Tourtelotte is more descriptive, asserting that "[s]and fleas and mosquitoes [are] fully on par with the 'Plague of Egypt'" (Tourtellotte 1910:41).

Mathews et al. (1980:155) note that the most significant ecosystem on Hilton Head Island is the maritime forest community. This maritime ecosystem is defined most simply as all upland areas located on barrier islands, limited on the ocean side by the extreme high spring tide mark and on the mainland side by tidal marshes. On sea islands the distinction between the maritime forest community and an upland ecosystem (essentially found on the mainland) becomes
blurred. Sandifer (1980:108109) defines four subsystems, including the sand spits and bars, dunes, transition shrub, and maritime forest. Of these, only the maritime forest subsystem is likely to have been significant to either the prehistoric or historic occupants and only it will be further discussed. While this subsystem is frequently characterized by the dominance of live oak and the presence of salt spray, these are less noticeable on the sea islands than they are on the narrower barrier islands (Sandifer et al. 1980:120).

The barrier islands may contain communities of oak-pine, oak-palmetto-pine, oak-magnolia, palmetto, or low oak woods. The sea islands, being more mesic or xeric, tend to evidence old field communities, pine-mixed hardwood communities, pine forest communities, or mixed hardwood communities (Sandifer et al. 1980:120-121). In the vicinity of Coggins Creek there is considerable evidence of late nineteenth and early twentieth century disturbance, primarily through agriculture, so there are abundant successional communities. The logging and clearing for agriculture has resulted in the creation and maintenance of a pine dominated forest in many areas. The Fish Haul site itself may be divided into two general vegetative areas. The northern and central areas consist of young, successional (subclimax) hammock growth developing out of "scrubby flatwoods" (Figure 7). Such communities are apparently common in transition fire-protected areas and are characterized by broadleaf deciduous or evergreen trees, depending on local soil conditions (Bozeman 1965; Sandifer et al. 1980:448-450). Major constituents include live oak (Quercus virginiana) and water oak (Quercus nigra), although bay (Magnolia spp.), cherry (Prunus caroliniana), pine (Pinus spp.), American holly (Ilex opaca), and saw palmetto (Serenoa repens) are also found. Adjacent to the marsh is found palmetto (Sabal spp.) and yaupon holly (Ilex vomitoria). The central area (see Figure 1) is unnaturally open because of clearing operations over the past four years which removed understory vegetation in preparation for development. This successional sequence has been on-going since at least the 1930s (based on aerial photographs) and perhaps since the late nineteenth century, and given time the area will develop a live oak-mixed hardwood climax community. The forest is composed of similar oaks, with the noticeable addition of hickories, particularly pignut hickory (Carya glabra) (Sandifer et al. 1980:450). At the south end of the tract is an open old field community which has only within the past 20 years gone out of cultivation. This area is still characterized by broom straw (Andropogon spp.), although some pine seedlings (primarily Pinus palustris) are obvious.

Nearby areas of Hilton Head evidence upland mesic hardwoods, also known as "oak-hickory forests" (Braun 1950). These forests contain significant quantities of mockernut hickory (Carya tomentosa) as well as pignut hickory, both
Figure 6. Sea level curve and cultural periods (adapted from Coiughoun et al. 1980:Figure 1).

Figure 7. Subsurface tests in an area of dense hammock growth.
economically significant to the aboriginal inhabitants. Other areas are more likely to be classified as Braun's (1950:284-289) pine or pineoak forest communities. Wenger (1968) notes that the presence of loblolly and shortleaf pines is common on coastal plain sites where they are a significant sub-climax aspect of the plant succession toward a hardwood climax. Longleaf pine forests were likewise a common sight (Croker 1979) and Brown (1950:285286) notes that they are very adaptable.

Mills, discussing Beaufort District in the early nineteenth century, states,

[b]esides a fine growth of pine, we have the cypress, red cedar, and live oak . . . white oak, red oak, and several other oaks, hickory, plum, palmetto, magnolia, poplar, beech, birch, ash, dogwood, black mulberry, etc. Of fruit trees we have the orange, sweet and sour, peach, nectarine, fig, cherry (Mills 1826:377).

He also cautions, however, "[s]ome parts of the district are beginning already to experience a want of timber, even for common purposes" (Mills 1826:383) and suggests that at least 25% of a plantation's acreage should be reserved for woods.

A mid-nineteenth century map, while showing the Fish Haul tract cultivated, shows nearby areas as "Swamp Ground," "Thick Wood Pine Tree and Live Oak," " Pines, Live Oaks and a few other kind," and "Very Thick Woods" (National Archives RG77, Map I52), giving a clear impression of the diversity caused by over a century of intensive agriculture. The "Swamp Ground" forest is clearly indicative of the bottomland forests to be discussed with the palustrine ecosystem. Other trees mentioned on the map show the mingling of needle evergreen and broadleaf evergreen species. Pine was apparently a common species. A description of the island, based on a visit from March through May 1863, states,

[t]he characteristic trees are the live oak . . . Besides these, are the pine, the red and white oak, the cedar, the bay, the gum, the maple, and the ash. The soil is luxuriant with an undergrowth of impenetrable vines (Anonymous 1863:294-295).

A letter written from Hilton Head Island in November 1861 describes the view as seen by a northern soldier,

[h]ere we are, surrounded by cotton, sweet potatoes, corn, beans, mules, oranges,
palmetto trees, Southern pines, niggers, palm and peanuts, with here and there a live oak ... . . the island is one great pine plain, interrupted only by an occasional swampy run (quoted in Eldridge 1893:69).

These accounts would seem to suggest that the vegetation on Hilton Head was already intensively affected by intensive farming and logging as early as the nineteenth century.

The pollen record is somewhat useful for the prehistoric period. Wright states that,

\[\text{[t]he transformation to temperate deciduous forest similar to that of today occurred rapidly through a series of successional stages and in most of the area it was essentially completed by 9,000 years ago, with relatively minor changes since then in the proportion of the principal forest components (Wright n.d.:23).}\]

Watts (1979:n.p.) would characterize the vegetation and climate after 7600 B.C. as being "rather similar to the present," and "essentially like the present" after 4000 B.C. One significant aspect of these palynological studies is that hickory is consistently a minor species, representing 5% or less of the recovered fossil pollen. Even today the two most common hickories - mockernut and pignut -- are not very common. Fowells (1965:116) states that mockernut hickory can grow on sandy soil with pines and live oak, but is best suited to moist, bottomland hardwood forests, while the pignut hickory is only a minor component in a limited number of forests (Fowells 1965:125). The relatively abundant bitternut hickory (Carya cordiformis) is likewise found on the richer, overflow bottoms of the coastal plains (Fowells 1965:112).

The presence and diversity of hickories is significant because of their suspected contribution to prehistoric diets. The occurrence of hickory nutshell at Stallings-Thom's Creek sites has been previously noted (Trinkle 1976) as, more recently, have Harris and Sheldon (1982). Although acorn shell is frequently less common (on a weight basis), it is lighter in weight than the hickory nutshell and acorn shell represents more food for its weight than does hickory nutshell. The food value of hickory and acorn compliment each other and they offer a good nutritional combination. Hickory nuts are high in protein and fat, but low in carbohydrates. The acorn, in contrast, is high in carbohydrates, but offers little protein or fat (Asch and Ford 1971). Hickory nuts have a caloric value equal to that of most meat (Hutchinson 1928:261).
The dependability of the various nut sources varies considerably. Hickory nuts are fairly dependable with masts occurring every two to three years and are available from September through December. Acorn crops are less dependable and the trees will not develop good masts until they are at least 20 years old. Masts frequently occur every 4 to 10 years with relatively barren periods in between. Acorns ripen in September and fall by December (Fowells 1965).

There are a number of terrestrial species found in the upland hardwood hammocks and Quitmyer states that "if the density and diversity of terrestrial animals occurring in the hardwood forests are compared to all other terrestrial habitats, values would be higher for the hardwood forest" (Quitmyer 1985b:15). Significant species include the deer (Odocoileus virginianus), opossum (Didelphis virginiana), raccoon (Procyon lotor), gray squirrel (Sciurus carolinensis), and rabbit (Sylvilagus spp.).

Deer are among the largest terrestrial mammals found in the Sea Island area and are considered ubiquitous (Shelford 1963:28). Golly (1962:199) reports the average biomass of male Georgia deer to be 103 pounds (46.7 kilograms) to 120 pounds (54.4 kilograms), with about 75% of the weight being edible although the coastal deer are consistently smaller. Breeding season is variable, but may extend from late August through January with a peak in November. Fawning normally extends from March through July (Moore 1978:7). Antlers are present, primarily on the male, from September through February and the shedding begins in January and continues through March. Few shed antlers can be recovered from the forest floor because they are actively sought by rodents (Moore 1978:8). Density is usually less than 15 animals per square mile (6 per square kilometer) (Golly 1962), and the deer are generally solitary animals. Quitmyer (1985b:18) suggests that the deer may have been most available in the fall as they congregate to exploit the acorn masts. Their daily cycle has them most active in the early morning and early evening.

The opossum ranges from about 1 to 8 pounds (0.5 to 3.7 kilograms) (Golly 1962:35) and Quitmyer (1985b:17) suggests that 60% of the animal is edible. Although the animal is extremely adaptable, its preferred habitat is along the bottomland streams of mixed hardwoods not found on Hilton Head Island. The opossum is nocturnal and solitary except during the breeding seasons of January-March and April-June (Golly 1962:35). Density may range from up to 220 per square mile (85 per square kilometer) (Golley 1966).

The raccoon may weigh from 20 to 40 pounds (9 to 18 kilograms) (Larson 1969) and densities may be as high as 200 per square mile (77 per square kilometer), although 65 per
square mile (25 per square kilometer) is more probable (Golley 1966). They tend to be nocturnal and to be found on forest edges (Larson 1969).

The gray squirrel is the most common species encountered in the coastal area and was the most common mammal reported taken by hunters during a 1965 postal survey. The gray squirrel ranges from 0.8 to 1.4 pounds (0.4 and 0.6 kilogram) in weight and up to 65% of the weight represents useable meat (Quitmyer 1985b:17). The habitat of the gray squirrel is largely limited to the hardwood forests, where it utilizes the nut masts. Golly (1962) reports that activity is heaviest at twilight.

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Avifauna is abundant in the terrestrial upland ecosystem, but is largely composed of Passeriformes. Significant species include the Carolina wren (Thryothorus ludovicianus), mockingbird (Mimus polyglottos), and mourning dove (Zenaida macroura). (Sandifer et al. 1980:460). A number of avian predators are also found, including owls and hawks. There are few that might represent an economic resource.

There are few species of terrestrial turtles found in coastal South Carolina. Eastern box turtles (Terrapene carolina carolina) may be occasionally found and are primarily hardwood forest inhabitants. Gopher tortoises (Gopherus polyphemus) are found in areas of sand pine barrens where they aggregate in loose colonies. In addition, there are a number of transient fresh water species (discussed below) which may be occasionally found in the uplands (Sandifer et al. 1980:457). A number of snakes are also found in the uplands. Clark writes,

[s]nakes of many varieties are to be found on Hilton Head. Some of them are of the most poisonous and deadly species. Among the number may be mentioned the moccasin, Copperhead, Rattle, Adder, Black, &c., &c., . . . . . Seeing that the negroes were so much afraid of them [water moccasins], the soldiers were very careful when traveling through the swamps. A snake called the Wood
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The estuarine ecosystem in the Hilton Head vicinity include those areas of deep-water tidal habits and adjacent tidal wetlands ranging from Coggin Creek and its marsh to Port Royal Sound. Salinity may range from 0.5 ppt at the head of the estuary to 30 ppt where it comes in contact with the ocean. Estuarine systems are influenced by ocean tides, precipitation, fresh water runoff from the upland areas, evaporation, and wind. The tidal range for Hilton Head is 6.6 to 7.8 feet (2.0 to 2.4 meters), indicative of the areas being swept by moderately strong tidal currents. The system may be subdivided into two major components: subtidal and intertidal (Sandifer et al. 1980:158-159). Thompson notes that the "estuarine ecosystem represents one of nature's most productive biomes" (Thompson 1972:9) because it represents a mixing of both fresh and sea water to produce a "nutrient trap." The nutrients are capable of supporting a wide variety of life forms. A study conducted in the Port Royal Sound identified 107 different species of fish and 18 species of macro-invertebrates using the estuary (Thompson 1972:13).

Vascular flora within the estuarine system is primarily limited to the intertidal area, where it may be further classified into two zones according to elevation. The low marsh consists entirely of a smooth cordgrass (Spartina alterniflora) community that varies from tall to short as one moves inland (toward the high marsh) away from the creekbank. The irregularly flooded high marsh contains a transition zone of Spartina, followed at a slightly higher elevation by "minox marsh" characterized by very short Spartina and an abundance of fiddler crabs (Uca minox). At a slightly higher elevation is a glasswort and salt grass (Salicornia-Distichlis) community. This zone may be unvegetated salt flats. At the highest elevations and adjacent to the upland vegetation is the black needlerush (Juncus) marsh (Sandifer et al. 1980: 212-213). This upland vegetation, adjacent to the marsh, is usually dominated by species which exhibit salt tolerance, such as wax myrtle (Myrica cerifera), Southern red cedar (Juniperus silicicola), and yaupon (Ilex vomitoria).

Mammal species, such as the raccoon, are usually only visitors to the marsh edge as the stress of salt water fluctuation, reduced numbers of plant species, and the open exposure are unfavorable (Quitmyer 1985b:16). The river otter (Lutra canadensis) is found feeding in the estuarine waters and is fairly common in South Carolina. Breeding occurs in the late fall or winter and the litter is born in
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April. The otter is especially valued for its fur, which is the standard by which all other furs are measured as to texture and durability (Sandifer et al. 1980:206). Marsh rabbits are found at the marsh edge and have been previously discussed. Likewise, the deer may be found on hard tidal marsh flats grazing on the various grasses. The only reptiles frequently found in the estuarine area are the Carolina diamondback terrapin (Malaclemys terrapin centrata) and the American alligator (Alligator mississippiensis). The diamondback terrapin is found near shell bottoms and oyster bars where it seeks out its preferred foods (Sandifer et al. 1980:202). It is a diurnal animal and maximum yields may be obtained during their breeding season of May and early June (Quitmyer 1985b:20). The average dressed weight for the terrapin is 1.1 pounds (0.5 kilogram) (Trinkley 1980c:140). The diamondback terrapin was a gourmet item in the late nineteenth and early twentieth centuries, but the market collapsed after World War I. Quitmyer notes that the use of the terrapin, however, predates the late nineteenth century, observing that "[d]uring the plantation period, the animal was so abundant that slaves even went on strike to have it reduced from the food provided them" (Quitmyer 1985b:20). Alligators are observed moving between islands and in tidal creeks, although they seem to be more common in brackish water (Sandifer et al. 1980:252).

The tidal marsh provides a unique habitat for birds, who use the vegetation for food, roosting, and nesting. Although about 70 species use the estuarine wetlands, only 27 are considered dominant by Sandifer et al. (1980:Table 4-33). These include various herons, egrets, rails, gulls, terns and the ibis. In addition, a number of waterfowl may be found in the estuarine area.

Previous archaeological studies have identified few species of marsh birds and those recovered have been found in so few numbers that they suggest little more than an opportunistic catch. Of the four genera identified, only two, the wood ibis (Mycteria americana) and the clapper rail (Rallus longirostris), have been taken to the species level (Trinkley 1980b:109). Although the wood ibis, while nesting in rookeries, is a permanent resident of the coast, it is most common in the mid to late summer months. Baird et al. (1967:83) note that the wood ibis is a solitary bird, perhaps accounting for its apparently low frequency in coastal sites. The clapper rail is an abundant permanent resident, but is more abundant in the winter because of a large influx of northern birds. The clapper rail, more frequently called the "marsh hen," nests in the marsh grass, and is easily flushed. The bird is slow in flight, and probably would have been easily hunted by the Indians (Baird et al. 1974:362).

Seven species of ducks (Anas spp.) are commonly found in the South Carolina coastal area. All are common winter
residents and are found from September through May. The average dressed weight of a duck is 0.5 pounds (1.0 kilogram) (Trinkley 1980c:140). The herons and egrets are permanent residents, but are less common in the winter (Sprunt 1970).

In discussing the fish resources of the estuarine ecosystem, it is important to recognize that the intertidal zone consists of mud flats interspersed with intertidal oyster reefs as well as shallow tidal creeks. In these areas the movement of various species of fish depends largely upon the tidal stage, with the small species being flushed out of areas as the tide falls. Species found in the subtidal habitat are more dependent on the salinity and the waters' bottom characteristics.

Thirteen species of fish make up those found most commonly in South Carolina waters. They include silversides (Menidia spp.), bay anchovy (Anchoa mitchilli), mummichog (Fundulus heteroclitus), mullet (Mugil spp.), Atlantic menhaden (Brevoortia tyrannus), spot (Leiostomus xanthurus), silver perch (Bairdiella chrysura), Atlantic croaker (Micropogonias undulatus), weakfish (Cynoscion raganis), sea catfish (Arius felis), white catfish (Ictalurus catus), flounder (Paralichthys spp.), and star drum (Stellifer lanceolotus). Additional information on these fish is provided by Table 1.

Many of the fish (such as flounder, drum, and catfish) represent larger predators which are not common in the intertidal creeks, but rather at their mouths, feeding on the smaller fish, such as the mummichog, spot, silversides, and bay anchovy, which follow the flow of the tide (Cain 1973). A few of the species, such as silversides, bay anchovy, and mummichog are small fish which commonly travel in schools, migrating in and out of the intertidal creeks with the tide (Cain 1973:76-77).

These fish suggest that at least two different methods of procurement are required. The small fish, occupying a shallow intertidal creek habitat, and tending to occur in aggregations, are most easily procured with nets or seines. The larger, predatory species found at the mouths of the smaller tidal creeks may be obtained as individuals, either by hook and line or by gigging.

Fish are not especially good seasonal indicators although, as Table 1 indicates, many have a range of months during which they are most common in the marsh or riverine environment. The bulk of the species are available in the summer months, with fewer species available in the fall and winter. The best fishing season appears to be May through September, when the greatest variety and the largest numbers of fish are found, although fish are available throughout the year.
<table>
<thead>
<tr>
<th>Fish</th>
<th>Habitat</th>
<th>Found As</th>
<th>How Obtained</th>
<th>Season</th>
<th>Average Collected Wt. (Pounds/grams)</th>
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<tr>
<td>Silversides</td>
<td>Shallows</td>
<td>large schools</td>
<td>fine nets, weirs</td>
<td>resident</td>
<td>0.001-0.1 0.4-37.0</td>
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<tr>
<td>Bay anchovy</td>
<td>Shallows, brackish water</td>
<td>large schools</td>
<td>fine nets, weirs</td>
<td>resident</td>
<td>0.002-0.01 0.8-3.7</td>
</tr>
<tr>
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<td>loose schools</td>
<td>fine nets, weirs</td>
<td>resident</td>
<td>0.001-0.01 0.4-3.7</td>
</tr>
<tr>
<td>Mullets</td>
<td>Shallows, brackish water</td>
<td></td>
<td>gill, cast nets</td>
<td>spring</td>
<td>0.04-0.2 14.9-74.6</td>
</tr>
<tr>
<td>Silver Perch</td>
<td>Bottom feeder,</td>
<td>small schools</td>
<td>hook</td>
<td>spring</td>
<td>0.04-0.3 3.7-111.9</td>
</tr>
<tr>
<td></td>
<td>lower tidal creeks</td>
<td></td>
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</tr>
<tr>
<td>Spot</td>
<td>bottom feeder,</td>
<td>small schools</td>
<td>nets, hook</td>
<td>spring-summer</td>
<td>0.04-0.3 14.9-111.9</td>
</tr>
<tr>
<td></td>
<td>lower tidal creeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Star Drum</td>
<td>lower-middle reaches</td>
<td></td>
<td></td>
<td>summer</td>
<td></td>
</tr>
<tr>
<td>Atlantic Menhaden</td>
<td>high marsh, tidal creeks</td>
<td>large schools</td>
<td>nets, weirs</td>
<td>summer</td>
<td>0.003-2.0 1.1-746</td>
</tr>
<tr>
<td>Atlantic Croaker</td>
<td>bottom feeder,</td>
<td></td>
<td>hook</td>
<td>summer</td>
<td>0.005-0.3 9.2-111.9</td>
</tr>
<tr>
<td></td>
<td>tidal creeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weakfish</td>
<td>shallows</td>
<td>schools</td>
<td>nets, hook</td>
<td>summer-fall</td>
<td>0.01 3.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flounder</td>
<td>bottom feeder,</td>
<td></td>
<td>nets, gigging</td>
<td>summer-fall</td>
<td>0.2-3.0 74.6-1119.0</td>
</tr>
<tr>
<td></td>
<td>shallows, bays</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White Catfish</td>
<td>upper reaches</td>
<td></td>
<td>hook, nets</td>
<td>winter</td>
<td>0.03-9.07 11.2-26.1</td>
</tr>
<tr>
<td>Sea Catfish</td>
<td>high salinity sounds</td>
<td></td>
<td>hook</td>
<td>spring-summer</td>
<td>2.0-3.0 746.0-1119.0</td>
</tr>
</tbody>
</table>

Sources: Freeman and Walford 1976; McClane 1965; Sandifer et al. 1980

Table 1. Common South Carolina estuarine fish.
The amount of edible flesh on fish is estimated to be as high as 50 to 60% of the total weight of some species and as low as 30% on others, although 50% is probably a reasonable average (Borgstrom 1962; Hutchinson 1928:81).

Tourtellotte comments that in August of 1862, "fresh fish in plenty . . . could be purchased in abundance from the floating horde of contrabands" (Tourtellotte 1910:41). This source also puzzles over the blacks' habit of fishing at night, commenting that, "[m]any in the rank and file felt sure the coffee colored contraband who felt obliged to do his fishing at night was none too loyal" (Tourtellotte 1910:43). Joyner, however, quotes Waccamaw Neck planter J. Motte Alston who reported that slaves, would usually go to the seashore and lay in a supply of fish and clams. Large numbers of mullet were caught at night in cast nets, and sacks full brought home (Joyner 1984:130).

A rich macroinvertebrate community is found on the sheltered intertidal flats of the estuarine area. These communities are reported to be influenced by gradients and/or fluxes in salinity, temperature, tidal influence, and substrate type (Sandifer et al. 1980:176–177, 263). Significant species include the American oyster (Crassostrea virginica), hard shell clam (Mercenaria mercenaria), ribbed mussel (Geukensia [Modiolus] demissus), stout tagelus (Tagelus plebeius), periwinkle (Littorina irrorata) knobbed whelk (Busycon carica), and blue crab (Callinectes sapidus). Another significant invertebrate is shrimp (Penaeus sp.), a seasonal resource found in the high marsh and tidal creeks.

The oyster is adapted to waters having considerable variation of salinity and temperature, although reproductive functions are affected by extremes. The optimum salinity range is 10 to 28 ppt. A suitable substrate is critical and oyster shells or other hard materials are the most common material. Approximately 95% of the oyster standing crop in South Carolina are intertidal (Lunz 1952) and are found as oyster clumps, formed by successive yearly sets of "spat" on older oyster. These oyster beds provide habitat for a variety of other invertebrates, such as crabs, ribbed mussels, and barnacles. Vernberg and Sansbury (1972:275) note that oysters are the most common pelecypod mollusk in the Port Royal area and that oyster beds in the Beaufort area produce approximately 0.25 bushel (200 oysters) per square yard (240 oysters per square meter).

The clam, because of heavy predation, tends to be most common in areas which have an abundance of shell in the substrate such as along the bases of intertidal oyster beds.
and interspersed with intertidal oysters. They also tend to be found in the protected tidal creeks rather than in the bays or sounds. Quitmyer (1985) reports a salinity range as low as 13 ppt, but an optimum salinity of about 27 ppt. Sandifer et al. (1980:180) report a clam density of about 83 clams per square yard (100 per square meter) in shelly substrate compared to about 0.2 clam per square yard (0.25 per square meter) in sandy bottom areas.

Ribbed mussels are found in localized colonies on hard mud flats, while the stout tagelus also is found in small localized colonies in the intertidal zone. The ribbed mussels are found in groups of up to six individuals per square yard (eight per square meter) (Vernberg and Sansbury 1972). Chester DePrattet (personal communication 1986), however, has noted clusters of 20 to 30 individuals around the root systems of Spartina. Both species prefer salinity levels above 8-10 ppt, although they can exist in levels much lower. Castagna and Chanley (1973) report survival of ribbed mussel in water with salinity as low as 5 ppt and stout tagelus as low as 2.5 ppt. The marsh periwinkle is found on Spartina in the high marsh.

While four species of whelks are found in the South Carolina-Georgia area, the knobbed whelk is most common in the archaeological record. All are predators of the oyster and may be found localized on oyster beds. Otherwise the whelk will be found in shallow water on sandy bottoms. Up to 50% of the total weight of the whelk is edible meat, a much higher return than the other mollusks (Borgstrom 1962). Eversole and Anderson (n.d.) note that removing the meat from the shell is a tedious chore, done either fresh or after boiling the whelk for several minutes. If done fresh, a hole must be made between the third and fourth whorls of the shell's spire. A sharp instrument is then used to cut the columellar muscle which runs along the central axis of the shell.

Because whelks are mobile, they are indicative of seasonality in their availability (Magalhaes 1948). The knobbed whelk is most active in the tidal marshes from June through July and is generally absent during the winter months. The number of available juveniles peak from June through August. While the juveniles are most active during the day, the mature individuals are most abundant at night.

Crabs are found on mud, shell, and sand bottoms in salt and brackish waters. They are especially abundant in estuaries and the mouths of tidal creeks around sea grass. They are active in water warmer than 50°F (10°C), but seek deep water during the winter. Most are taken from March through November (Freeman and Walford 1976). Turner and Johnson (1972:182) report that blue crab made up most of
the invertebrate biomass during their study of tidal streams in the Port Royal area. They accounted for 4.8 pounds (1.8 kilograms) per acre or, numerically, 26 per acre.

Three species of shrimp are found in South Carolina tidal creeks -- white, brown, and pink. Shrimping may be conducted along beaches, river banks, and in tidal creeks. They may be taken during daylight and at night and are usually most abundant at an out-going tide just after high water. During most years the white shrimp, which is found in less saline waters, is most common and is caught primarily during the spring (May and June) and fall (September through December) (Moore et al. 1980:16). About 257 white shrimp per acre (0.7 pound or 0.3 kilogram) are considered a standing crop in the Port Royal area during July (Turner and Johnson 1972:183).

The shellfish, crabs and shrimp were rarely mentioned in the accounts of the nineteenth century, although Eliza Summers, in an April 1867 letter from Hilton Head states that,

[w]e are not going to eat any more oysters after this month. We are eating fresh fish and crabs every day, and the people bring us spwrans [shrimp] which are very nice. They are about as long as your finger, are red like a lobster and taste very much like one" (Martin 1977:68).

Reese notes that oysters, "[l]ike all fish, . . . are out of season at spawning time; and hence the origin of the old saying 'an oyster is never good except when there is an R in the month'" (Reese 1847:453). He also notes that the whelk is "of little importance as general food, though eaten by the poorer classes, and sufficiently wholesome" (Reese 1847:453).

The last environment to be briefly discussed is the freshwater palustrine ecosystem. The subsystem includes all wetland systems, such as swamps, bays, savannahs, pocosins, and creeks, where the salinities measure less than 0.5 ppt. The palustrine ecosystem is diverse, although not well studied (Sandifer et al. 1980:295).

The vascular flora ranges from the wild rice (Zizania aquatica), arrow-arum (Peltandra virginica), and giant cutgrass (Zizaniopsis milacea) of tidal wetlands to the bottomland hardwood forests of the tidal and nontidal forested wetlands. The nontidal forested wetlands evidence the greatest physiographic and species diversity. Table 2 lists the most common vegetation types found on Hilton Head and their occurrence. Several of these forest types offer useful resources to prehistoric groups. The bottomland
Table 2. Vegetative types and associated physiography (adapted from Sandifer et al. 1980:328).

<table>
<thead>
<tr>
<th>Vegetative Type</th>
<th>Poorly drained interstream flats</th>
<th>Depressions, ponds</th>
<th>Carolina Bays</th>
<th>Ridge and Bay Topography</th>
<th>Flood Plains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Savannah</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Pond Cypress</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Swamp Tupelo</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Pond Cypress–Swamp Tupelo</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Evergreen Shrub</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Bay Forest</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Bottomland Hardwoods</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Bald Cypress–Water Tupelo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X X</td>
</tr>
</tbody>
</table>
hardwoods in particular, would have been attractive because of their numerous oaks and hickories (Sandifer et al. 1980).

Several species of turtles exhibit relatively generalized requirements for freshwater aquatic habitats, such as the common snapping turtles (*Chelydra serpentina*), eastern mud turtle (*Farancia abacura*), and the stinkpot (*Sternotherus odoratus*), all of which are nocturnal. Other turtles include Florida cooters (*Chrysemys floridana*), yellow belly sliders (*Chrysemys scripta*), and eastern chicken turtles (*Deirochelys reticularia*).

The palustrine ecosystem is also used by a number of wading birds, including egrets, herons, and the white ibis, as rookery sites. The nonforested wetlands also offer diversity in food resources which are attractive to a number of species. Sandifer et al. (1980:370) note that about 78 species of birds occur in this habitat alone, although only 22 may be considered dominant and as many as 200 species may be found in the forested wetlands (Sandifer et al. 1980:375).

Because the palustrine forested wetlands include a variety of forest types, a number of terrestrial mammals will be found in the area. A major herbivore typical of this area is the beaver (*Castor canadensis*), which previously was found along rivers, streams, and lakes (Sandifer et al. 1980:381). One of the larger herbivores of the forested wetlands is the whitetailed deer, which is attracted by the browse common to some forest types. Two additional mammals, once more common than today, are the black bear (*Ursus americanus*) and the bobcat (*Lynx rufus*).

**Climate**

Depending upon whose authority may be trusted, the nineteenth century Beaufort climate was "one of the healthiest" (Mills 1826:377), "salubrious" (Mills 1826:372), and "equable" (S.C. Department of Agriculture 1883:20), or it had "malaria arising from the Southern swamps" (Copp 1911:94) and "excessive heat" (Copp 1911:169). Linehan felt that "[m]alaria was the greatest curse of the sea coast, as all know who served there and who feel its evil affects to this day" (Linehan 1895:211). Forten wrote that "yellow fever prevailed to an alarming extent, and that, indeed the manufacture of coffins was the only business that was at all flourishing at present" (Forten 1864:588). A letter written in December 1861 is quoted by Walkley,
between [the fleas] and malarial headache sleep is anything but restful. The matted vines trail down into the dank edges of the swamps and the hot sun by day decays them enough to exhale malarious gases by night (Walkley 1905:34).

The major climatic controls of the area are the latitude, elevation, distance from the ocean, and location with respect to the average tracks of migratory cyclones. Hilton Head's latitude of about 32°N places it on the edge of the balmy subtropical climate typical of Florida. As a result there are relatively short, mild winters and long, warm, humid summers. The large amount of nearby warm ocean water surface produces a marine climate, which tends to moderate both the cold and hot weather. The Appalachian Mountains, about 220 miles to the northwest, block shallow cold air masses from the northwest, moderating them before they reach the sea islands. Distance from the ocean is also significant because of the sea breeze phenomenon, which normally begins before noon and continues until late afternoon (Landers 1970:2-3; Mathews 1980:46).

Maximum daily temperatures in the summer tend to be near or above 90°F (32°C) and the minimum daily temperatures tend to be about 68°F (20°C). The summer water temperatures average 83°F (28°C). The abundant supply of warm, moist, and relatively unstable air produces frequent scattered showers and thunderstorms in the summer. Winter has average daily maximum and minimum temperatures of 63°F (17°C) and 38°F (3°C) respectively. The average winter water temperature is 53°F (12°C). Precipitation is in the forms of rain associated with fronts and cyclones; snow is uncommon (Janiskee and Bell 1980:1-2).

The average yearly precipitation is 49.4 inches (125.6 centimeters), with 34 inches (86.5 centimeters) occurring from April through October, the growing season for most sea island crops. Hilton Head has approximately 285 frost free days (Janiskee and Bell 1980:1; Landers 1970).

While the temperatures on the Sea Islands are not extreme, the relative humidity is frequently high enough to produce muggy conditions in the summer and dank conditions in the winter. Relative humidity ranges from about 63-89% in the summer to 58-83% in the winter. The highest relative humidity occurs in the morning and as the temperature increases, the humidity tends to decline (Landers 1970:11; Mathews et al. 1980:46).

Along the Sea Islands severe weather usually means tropical storms and hurricanes; tornados are infrequent and waterspouts tend to remain over the ocean. The tropical storm season is in late summer and early fall, although they
may occur as early as May or as late as October. The coastal area is a moderately high risk zone for tropical storms, with 169 hurricanes being documented from 1686 to 1972 (0.59 per year) (Mathews et al 1980:56).

When discussing tropical storms it is customary to rank them according to size and intensity on a scale of 1 to 5. This ranking is based on wind speed, storm surge, central atmospheric pressure, and destruction, with the most intensive storms receiving higher numerical ranging (5=Extreme; 4=Great; 3=Major; 2=Hurricane). One of the most devastating effects of these storms, particularly during the prehistoric and earlier historic periods, were the associated storm tides. These storm tides are defined as the height of the sea surface above the local MSL during the storm. The 1804 hurricane produced a storm tide of 7 feet (2.1 meters) and 500 deaths were reported in South Carolina. The 1881 hurricane produced a storm tide of 16.2 feet (4.9 meters) and 700 deaths in Georgia and South Carolina. Perhaps the worst recorded hurricane occurred on August 27, 1893. Although wind speed did not exceed 120 miles/hour (194 kilometers/hour), the storm tide was 17.0 to 19.5 feet (5.18 to 5.94 meters) and up to 2000 deaths were reported (Mathews 1980:54-55). No significant hurricanes occurred between September 1854 and August 1881, sparing Hilton Head during the Civil War and Reconstruction. Perhaps the most concise description of the attitude toward hurricanes in the nineteenth century was offered by Ramsay,

[in such a case between the dread of pestilence in the city, of common fever in the country, and of an expected hurricane on the island, the inhabitants . . . are at the close of every warm season in a painful state of anxiety, not knowing what course to pursue, nor what is best to be done (Ramsay, quoted in Calhoun 1983:2).

Prehistoric Occupation in the Beaufort Area

Previous Research

While there were several antiquarian endeavors in the late nineteenth century, the advent of quasi-scientific archaeology was Clarence B. Moore's (1899) investigation of 14 aboriginal sites along the southern coast. Spurred northward by his success in Georgia, where 63 mounds or mound complexes were investigated, Moore was disappointed with the sparse remains he found in the Beaufort area. No large mounds with complicated-stamped pottery and urn burials were
identified, although "dwelling sites marked by the presence of oyster shells were often met with" (Moore 1899:147). Moore's survey generally reflects the widespread occurrence of Early to Middle Woodland sites and the rarity of Late Woodland or South Appalachian Mississippian sites in the Beaufort area (an observation repeated by Braley 1983 and Trinkley 1981).

The Charleston Museum houses data collected by W. Ritter and W.K. Moorehead from excavations at the Chester Field shell ring and the Lake Plantation shell middens. Extensive excavations were undertaken at both locations during the period from 1930 to 1939, but nothing was published until a student of Moorehead summarized the activity almost ten years later (Flannery 1943; see also Griffin 1943). The Chester Field site appears to be a Stallings-Thom's Creek phase shell ring, while the sites at Lake Plantation consist of a number of small shell middens representing a large range of Woodland cultural periods. Other sites investigated by Moorehead and Ritter (for which there are collections in The Charleston Museum) include the Jones Island site (Stallings shell midden, now completely plowed away), the Cat Island site (largely destroyed by cultivation and recent development), and the Kempfer Place (where a sand burial mound was completely excavated).

By the late 1930s the existence of aboriginal remains along the South Carolina coast had been documented, described, and to a large extent illustrated. Emphasis had been (and would largely continue to be) placed on the highly visible: shell middens, strange ring-shaped enclosures of shell, and sand mounds. Although great emphasis was placed on collection and description during this period, little concern was placed on understanding. Even the significance of the Stallings Island site, excavated in 1930 by the Cosgroves under Peabody Museum sponsorship (Claffin 1931), was not fully understood and the distinctive fiber tempering of Stallings pottery was not recognized as significant until Fairbanks' (1942) article.

Depression era work on the Georgia coast, primarily by Antonio Waring (Williams 1968), formed a cultural framework that remained largely unchanged into the 1970s. Major Georgia sites included Bilbo, Deptford, Wilmington Island (Meldrim, Walthour, and Oemler), and Sapelo, while the Refuge site was just within South Carolina (Caldwell 1952).

The Bilbo site (Williams 1968:152-197; see also Dye 1976) is a Stallings phase shell midden which dates from 2175 to 1750 B.C. and which suggested a Stallings Plain, Stallings Punctated, Refuge, Deptford continuum. The work at the Sapelo shell ring provided clear evidence of the site's basic occupational function. The plain Stallings pottery was found stratigraphically below the decorated motifs (Williams
1968). The Oemler, Meldrim, and Walthour sites evidenced Stallings, Deptford, and Savannah components (Caldwell 1952; DePratter 1979b:40-42; Williams 1968:112, 118, 129-130, 182-183). Waring observed the Refuge pottery as a transition from Stallings to Deptford ceramics at the Refuge site (Williams 1968:198-208), while the Deptford and Evelyn sites provided data on the Middle Woodland occupation along the coast (DePratter 1979b:38-39, 52; Williams 1968:140-142).

During this same time Joseph Caldwell was investigating a series of sites along the Georgia Coast, including a Savannah phase burial mound at the Deptford site (Caldwell 1943), the Irene site (Caldwell and McCann 1941), and various Wilmington sites in the Savannah area (see Caldwell and McCann 1940). At Walthour, Caldwell and McCann (1940) note a common problem at coastal sites -- abundant post holes, but an absence of patterns. Their report also clearly reveals that while shell middens are abundant, the quantity of artifacts drastically decreased into the Middle Woodland (a synthesis of much of this work is provided by Caldwell 1952:312-321).

In 1945 Griffin published an informal (but lasting) typology of the Thom's Creek series, based on 19 sherds from the type site in Lexington County. Griffin (1945:467) found the sherds to be non-tempered or slightly grit tempered, with motifs similar to the Stallings pottery. Another major development in the understanding of South Carolina pottery types and cultural periods, was Stanley South's (1960) survey of southeastern coastal North Carolina and northern South Carolina. He identified and offered typologies for Thom's Creek, Cape Fear, Hanover, and Oak Island wares based on a collection of 2701 sherds from 81 sites. This typology stood, essentially unaltered, for the next 20 years.

During the 1960s Alan Calmes examined three sites on Hilton Head and one site from adjacent Jenkins Island (Calmes 1967a, 1967b). Two of the sites, Sea Pines and Ford's Skull Creek, were shell rings, while the other two, Jenkins Island and Green's Shell Enclosure, represented Wilmington and Irene occupations respectively. These studies yielded significant comparative collections and assisted in developing a better understanding of Hilton Head's cultural history.

Aboriginal activity along the Savannah River is intimately connected with the manifestations of the coastal area, and in the mid to late 1960s a series of investigations were conducted at several early Savannah River sites. James Stoltman (1974) intensively studied the Rabbit Mount site and briefly surveyed twenty other sites, all on Groton Plantation in South Carolina. A synthesis of site distribution and cultural ecology was offered for these sites which showed a transition from flood plain dependence in the Stallings phase to upland exploitation in the Wilmington period (cf. 40
Trinkley 1974). This gradual movement from floodplains to upland was thought to be correlated with the rise of horticulture, although no direct evidence of cultigens or agricultural activity was observed in the archaeological record (Stoltman 1974:214). Stoltman also provided considerable documentation of the Savannah River Stallings occupation. Peterson's (1971) subsequent work on Groton Plantation did not radically alter the perspective developed earlier by Stoltman.

Several sites in Georgia were investigated by David Phelps, including the Stallings phase White's Mound where the stratigraphic sequence of Stallings Plain, Stallings Punctated, Deptford, and Wilmington was observed (Phelps and Burgess 1964). Phelps also used the data from this site to develop a Thom's Creek typology for the Savannah River region (Phelps 1968). Whites Mound was also investigated by A.R. Kelly (University of Georgia-Athens) and Joffre Coe (University of North Carolina-Chapel Hill). The Chapel Hill collection was examined by Trinkley (1980c:46-48) and found to reveal the presence of coiled Stallings pottery, increasing through time at the expense of traditional moulded Stallings pottery and coincidental with the development of non-tempered Thom's Creek pottery. That coiled Stallings pottery would eventually be found was suggested by Griffin, who upon examining the Chester Field collection noted that there was a "suggestion of coiling or ring building on some sherds, but it is not too clear" (Griffin 1943:159).

A significant Savannah River quarry site, Teriault, was excavated by William Edwards in the 1960s, although no report was produced until Paul Brockington's 1971 summary. Regrettably, the field notes could not be located, but the site produced 120 projectile points, 973 bifaces, and a quantity of other tool types. The ceramics from the site suggest a Stallings, Thom's Creek, Refuge, Deptford, and cord marked transition from levels 4 to 1.

In 1970 Richard Smith surveyed a number of sites on the Savannah River below Augusta, Georgia and tested five sites (Smith 1974). One of these evidenced a "pure" Savannah River phase component. Trinkley (1974) briefly examined a Stallings phase upland site in Allendale County, South Carolina which may represent a portion of a seasonal exploitation round. The site also exhibited a mixture of Stallings and Thom's Creek pottery. At about the same time another Stallings site in Allendale County, known as Fennel Hill, was discovered being actively vandalized (38AL2, notes on file, S.C. Institute of Archaeology and Anthropology). The site produced an abundance of Stallings pottery and an extraordinary quantity of bone artifacts (Figure 8).

Milanich (1971) conducted test excavations at two shell middens on Cumberland Island in 1970 (see also Ehrenhard
Milanich reports the discovery of a posited Deptford structure, oval in shape and measuring 32 by 22 feet (9.7 by 6.7 meters) (Milanich 1971:67).

Anderson used data from 203 South Carolina Coastal Plain sites to study the distribution of major ceramic wares (Anderson 1975). Stallings pottery was found concentrated in the area of the Savannah drainage and "[m]oving northward from the Savannah River, the Edisto is the last drainage with a high incidence of this material" (Anderson 1975:181) (Figure 9). Thom's Creek pottery was found to be centered between the Santee and Edisto River regions, with gradually decreasing amounts to the northeast and southwest. Anderson comments that Deptford wares are more common in the interior than on the coast, "suggesting an adaption to the rich resources of this [inland] area" (Anderson 1975:186). Subsequently, one fall line Deptford phase site has been extensively studied (Anderson 1979a; Trinkley 1980a), as has one on the Savannah River (Hanson 1985).

Shell ring studies continued with the investigation of two sites on the Georgia coast by Marrinan (1975), and DePratter (1979b). Work at the Lighthouse Point and Stratton Place shell rings in Charleston County, South Carolina (Trinkley 1980c) opened large areas and succeeded in developing considerable information on site formation and function. The sites apparently formed through gradual accumulation and represent domestic refuse from year-round village occupation. Trinkley also suggested that population pressure in the Savannah River area necessitated new forms of subsistence (see Smith 1974), such as shellfish collection. The expansion of population onto the coast is thought to be seen at sites such as Daws Island, Venning Creek, and Spanish Mount -- irregularly shaped middens having radiocarbon dates averaging 1921 B.C. These early sites are noted to have cultural assemblages that closely approximate the Stallings phase: clay balls, lithics, limited amounts of worked bones, and fiber-tempered pottery. As the people of the Thom's Creek phase became more successfully adapted to the highly productive coastal ecosystem, three major changes seem to have occurred: a coalescence in population, an increase in the complexity of social organization, and a specialization of technology. Thus, by 1500 B.C. the Thom's Creek phase was firmly entrenched, generally successful, and people were living primarily at shell ring sites.

Caldwell (1971) and Milanich (1977:134-142) have both offered revisions of Warings' (Williams 1968) basic Georgia coast chronology. More recent work on the Georgia coast has been dominated by the research conducted by the American Museum of Natural History (Thomas et al. 1978, Thomas and Larsen 1979) on St. Catharine's Island, about 35 miles (56 kilometers) south of Savannah. Posited Refuge-Deptford
Figure 8. Worked bone from Fennel Hill, S.C. (38AL2).

Figure 9. Distribution of Stallings pottery in South Carolina.
mortuary sites, dating from 1700 B.C. to A.D. 550, have been studied. As a result of this work and additional research, DePratter (1979a) has offered a cohesive synthesis of Georgia coastal ceramics and dates (Figure 10). Adams' (1985) work in the Kings Bay locality, just north of the Florida border in Georgia, provides significant subsistence and settlement data for a number of cultural periods, including Late Archaic or Early Woodland fiber-tempered occupations. This work represents significant methodological advances over previous studies, particularly in the realm of subsistence reconstruction.

The Beaufort area has received considerable attention over the past 10 years. Surveys have been conducted of the Port Royal Sound shores (Michie 1980), Callawassee Island (Michie 1982), portions of Daufuskie Island (Michie 1983), Pinckney Island (Braley 1983; Charles 1984; Drucker and Anthony 1980), and Victoria Bluff (Trinkley 1981; Widmer 1976). Extensive excavations have been conducted at a number of prehistoric sites including Location 22 in the Savannah National Wildlife Refuge (Lepionka et al. 1983), two sites on Pinckney Island (Trinkley 1981), the Victoria Bluff Shell Middens (Trinkley 1981), and the Callawassie Island Burial Mound (Brooks et al. 1982).

Historical archaeology in the Beaufort area, prior to South's investigations of Santa Elena and Charlesfort on Parris and Port Royal islands respectively (South 1979, 1980, 1982a, 1982b, 1983, and 1984), was primarily a by-product of prehistoric investigations. In fact, there is only one summary article on the archaeology of several major plantations excavated in Beaufort County (Grunden 1985). Elsewhere, however, historical archaeology began to focus on plantation sites and topics such as socioeconomic status and slave lifestyle. Two recent articles summarize the progress of plantation archaeology (Fairbanks 1984; Orser 1984).

Fairbanks emphasizes the slave archaeology conducted primarily on the Georgia coast by University of Florida researchers. These studies include Kingsley Plantation on Fort George Island, Florida (Fairbanks 1972), Ryefield on Cumberland Island, Georgia (Ascher and Fairbanks 1971), Cannon's Point, St. Simons Island, Georgia (Otto 1984), Hampton Plantation on Butler Island, Georgia (Singleton 1980), and LeConte Plantation near Riceboro, Georgia (Hamilton 1980). Data from these projects have shed light on the socioeconomic status, diet, and housing of slaves. Little has been learned about black ethnicity, burial practices, or Afrocanisms. Fairbanks briefly comments on excavations carried out by Theresa Singleton and Martin Dickinson for West Georgia College at a freedmen's site on Colonel's Island near Brunswick, Georgia (Singleton 1985). The bulk of the artifacts date from the 1860s and 1870s and are indicative of "extreme poverty." House construction and
dietary remains are also, according to Fairbanks (1984:8), indicative of a standard even below slavery. Fairbanks, however, suggests that both broader excavations and comparative data from white subsistence farmers are needed.

Orser's (1984) review is a critical evaluation of plantation archaeology, emphasizing three areas: plantation slavery, plantation social structure, and the value of cultural resource management studies. Several of his observations are significant to a complete understanding of recent plantation research. He notes that the work at Yaughan and Curriboo Plantations in Berkeley County, South Carolina (Wheaton et al. 1983) addresses the process of slave acculturation as seen in artifact patterns, architectural remains, and food preparation practices. Although not specifically mentioned by Orser, the Yaughan-Curriboo work is also significant for its separation of slave produced (Colono ware) and Indian produced (Catawba ware) pottery (Wheaton et al. 1983:225-250). Orser (1984:5-6) contrasts the work of Otto (1984) and Sue Mullens-Moore (1981). Otto suggests that social status is observable in the archaeological record and notes that the archaeological remains of planter - overseer - slave are all distinct. Mullins-Moore argues that it is perhaps economic position which is being observed archaeologically, so that the material culture of a small planter may be similar to that of an overseer at a large, wealthy plantation. The conclusion from this comparison is, of course, that history is not simple. Schlereth warns that "[t]o enshrine any one version of the American past violates historical truth" (Schlereth 1980:215).

While plantation archaeology has received considerable attention over the past 15 years, little archaeological attention has been directed to free blacks in either the urban or rural antebellum south. Studies have been conducted in the north at Weeksville (Salwen and Bridges 1974), Sandy Ground (Schuyler 1974), Parting Ways (Deetz 1977), Black Lucy's Garden (Baker 1977; Bullen and Bullen 1945), and Skunk Hollow (Geismar 1982). In the South there is a growing interest in the archaeology of rural tenant farmers, although the work is largely limited to the studies of William Adams (1980) at Waverly Plantation, Mississippi and Orser’s (Orser et al. 1983), at Millwood Plantation, South Carolina. No studies of postbellum black farmers have been undertaken on South Carolina's Sea Islands.

Overview of Prehistoric Occupation

The previous discussions clearly indicate that the work conducted in the vicinity of the Savannah River, while variable in orientation, is sufficient to develop a sequence of occupation and at least some information on how the prehistoric occupants lived. This section will emphasize the
The Paleo-Indian period, lasting from 12,000 to 8,000 B.C., is evidenced by basally thinned, side-notched projectile points; fluted, lanceolate projectile points; side scrapers; end scrapers; and drills (Coe 1964; Williams 1968; Michie 1977). The Paleo-Indian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along major river drainages, which Michie interprets to support the concept of an economy "oriented towards the exploitation of now extinct mega-fauna" (Michie 1977:124). To date only isolated finds have been found in the area and Michie (1977:104-105) identifies only two Beaufort County sites with Paleo-Indian points -- 38BUI110 and 38BUI114. Sea level during much of this period is expected to have been as much as 65 feet (20 meters) lower than present, so many sites may be inundated (Flint 1971). Unfortunately, little is known about Paleo-Indian subsistence strategies, settlement systems, or social organization. Generally archaeologists agree that the Paleo-Indian groups were at a band level of society (see Service 1966), were nomadic, and were both hunters and foragers. While population density, based on the isolated finds, is thought to have been low, Walthall suggests that toward the end of the period "there was an increase in population density and in territoriality and that a number of new resource areas were beginning to be exploited" (Walthall 1980:30).

The Archaic period, which dates from 8000 to 2000 B.C., does not form a sharp break with the Paleo-Indian period, but is a slow transition characterized by a modern climate, an increase in population, and an increase in the diversity of material culture. The chronology established by Coe (1964) for the North Carolina Piedmont, may be applied with little modification to the South Carolina coast. Archaic period assemblages are rare in the Sea Island region, although the sea level is anticipated to have been within 13 feet (4 meters) of its present stand by the beginning of the succeeding Woodland period (Lepionka et al. 1983:10). Brooks and Scurry note that,

Archaic period sites, when contrasted with the subsequent Woodland Period, are typically small, relatively few in number and contain low densities of archaeological material. This data may indicate that the inter-riverine zone was utilized by Archaic populations characterized by small group size, high mobility, and wide ranging exploitative patterns (Brooks and Scurry 1978:44).
Alternatively, the general sparsity of pre-ceramic Archaic sites in the coastal zone may be the result of a more attractive environment inland adjacent to the floodplain swamps of major drainages. Of course, this is not necessarily an alternative explanation, since coastal Archaic sites may represent only a small segment in the Archaic settlement system.

The Woodland period begins by definition with the introduction of fired clay pottery about 2000 B.C. along the South Carolina coast (the introduction of pottery, and hence the beginning of the Woodland period, occurs much later in the Piedmont of South Carolina). It should be noted that many researchers call the period from about 2000 to 1000 B.C. the Late Archaic because of a perceived continuation of the Archaic lifestyle in spite of the manufacture of pottery. Regardless of terminology, the period from 2000 to 1000 B.C. is well documented on the South Carolina coast and is characterized by Stallings and Thom's Creek pottery.

It has generally been assumed that the first ceramics were produced in the Savannah River region. A number of investigators have found evidence, either stylistic or stratigraphic, for an in situ development of the Stallings culture (Miller 1949, Williams 1968, Smith 1974). This idea has been given additional credence by Stoltman's (1966) early radiocarbon date of 2500 B.C. from Rabbit Mount (Allendale County, S.C.). The paste of these ceramics included large amounts of Spanish moss fiber (Simpkins and Allard 1986). Radiocarbon dates suggest that ceramics without fiber inclusions followed on the heels of the Stallings ware. Although this is suggestive of the origin of the Stallings culture, it does not explain the process. Smith (1974), after an extensive study of the Central Savannah River region, suggested that, as a response to climatic conditions of the Altithermal, there were intrusions into the Savannah River region by the carriers of the Morrow Mountain and Guilford complexes. A highly successful, generalized adjustment to the Piedmont was made, and combined with the established Stanly complex, the transition was made to the Savannah River complex (Coe 1964:70, 123). The intrusion of Morrow Mountain and Guilford, at a time when population densities had approached long-term carrying capacity, caused a disequilibrium which resulted in selective pressure being directed toward a method of procuring supplemental food sources. One such source was shellfish, which were apparently becoming available in larger quantities about this time (Hanson 1982:13). This more effective subsistence base led to a population increase and, thus, larger sites. Ceramics, elaborate bone workmanship, and other aspects of the total cultural pattern were added as an outgrowth.

Smith goes on to suggest that the larger social units and the resultant disequilibrium led to further geographical
expansion -- into the Atlantic Littoral. This expansion was fairly rapid as irregularly shaped middens, such as Daws Island, Venning Creek, Spanish Mount, and Marrett Mount, have radiocarbon dates averaging 1921 B.C. The earliest sites may be expected to possess cultural assemblages more closely approximating the Stallings culture than larger (and later) sites. Thus, many of these early irregular middens have clay balls, large amounts of lithics, limited amounts of worked bone, and pottery with fiber inclusions. Simpkins and Allard suggest that initially the use of fiber was technological -- that it served to "bind soils during initial shaping and subsequent firing" (Simpkins and Allard 1986:114). They go on to hypothesize that,

[a]s potters became more familiar with the properties of clays and the means of shaping and firing them, fiber-tempering may have become technologically obsolete. However, cultural conservatism might have preserved the trait for some time as ceramic production diffused through a region (Simpkins and Allard 1986:114).

This hypothesis would explain why the presently available radiocarbon dates for the fiber-tempered Stallings and nontempered Thom's Creek wares are largely contemporaneous. It would also explain why, when both Stallings and Thom's Creek pottery are found stratigraphically separated on the same site, the Stallings ware is the earliest of the two.

The elaborate Savannah River drainage sites such as Stallings Island, Fennel Hill, Rabbit Mount, and Bilbo, are all characterized by large quantities of either freshwater mussel or tidal oysters, large quantities of artifacts, and abundant features. Stoltman (1974:51-56) further suggests the possibility of a structure at Rabbit Mount. These middens, however, represent only one aspect of the Stallings settlement system. Another portion of that system is represented by Stallings sites which evidence little shell. The function of these non-shell midden sites, characterized by DePratter as evidencing "limited occupation in marginal areas" (DePratter 1979b:37), is poorly understood. These may represent early sites when the subsistence base was diffuse, prior to intensive riverine and estuarine exploitation. Alternatively, they may represent a seasonal round in the Stallings settlement system (another view has been presented by Michie 1979 and reviewed by Trinkley 1980c:309-314).

While there may have been seasonal rounds at first, the coast is rich in available resources and there would seem to be no ecological determinants of subsistence such as exist with the Kung bushmen (Lee 1968:56). The archaeological
record of the later Thom's Creek phase offers some indications of permanent settlement with the various remains indicating an occupation during a considerable portion of the year. The frequent occurrence of pottery and the occurrence of a diffuse subsistence base support the contention of continuous habitation.

As the people of the Stallings-Thom's Creek phases became more successfully adapted to the coastal ecosystem there seem to have been three major changes: first, a coalescence in the population; second, an increase in the complexity of social organization, and third, a specialization of technology. Coe and Flannery have stated, "a drastic reduction of the number of niches to be exploited, and a concentration of these in space, would . . . permit the establishment of full-time village life" (Coe and Flannery 1964:651). The process along the Carolina and Georgia coasts was essentially the same as the process in Meso-America -- that of realizing and utilizing the potential resources concentrated close at hand.

The subsistence economy was based primarily on deer hunting and fishing, with supplemental inclusions of small mammals, birds, reptiles and shellfish. Various calculations of the probable yield of deer, fish, and other food sources identified from shell ring sites indicate that sedentary life was not only possible, but probable. Recent work at fiber-tempered sites on the southern Georgia coast has led Quitmyer to note that there was,

a specialized economy heavily dependent on marine resources. Marine invertebrates, primarily oyster, were the most significant of the zoological resources. Marine vertebrates, primarily drum, accounted for another important aspect of the diet. To a lesser extent Sea catfishes (Ariidae) and mullet were part of the diet. Terrestrial animals, like deer, represented only an occasional resource (Quitmyer 1985a:90).

By 1500 B.C. the Thom's Creek phase was firmly entrenched and generally successful. Through purely local innovation a culture along the coast of South Carolina and Georgia was establishing for itself a settled existence that was not going to be equaled until at least A.D. 1200. Toward the end of the Thom's Creek phase there is evidence of sea level change and a number of small, non-shell midden sites are found. Apparently the increasing sea level drowned the tidal marshes (and sites) on which the Thom's Creek "people" relied. The succeeding Refuge phase evidences the fragmentation necessary when the environment which gave rise to large, sedentary populations disappeared.
The Refuge phase, which dates from about 1100 to 500 B.C. is best known from the Refuge and Location 22 sites in the Savannah delta region (DePratter 1976; Lepionka et al. 1983; Williams 1968). Sites are generally small and some coastal sites evidence no shellfish collection at all (Trinkley 1982). The Refuge series pottery is similar in many ways to the preceding Thom's Creek wares. The paste is compact and sandy or gritty, while surface treatments include sloppy simple stamped, dentate stamped, and random punctated decorations (see DePratter 1979a:115-123). Peterson (1971:153) characterizes Refuge as a degeneration of the preceding Thom's Creek series and a bridge to the succeeding Deptford series (see also DePratter 1976:6).

The Deptford culture takes its name from the type site located east of Savannah, Georgia which was excavated in the mid-1930s (Caldwell 1943:12-16, 1952). Deptford sites are best recognized by the presence of fine to coarse sandy paste pottery with a check stamped surface treatment. Other Deptford phase pottery styles include cord marking, simple stamping, a complicated stamping which resembles early Swift Creek, and a geometric stamping which consists of a series of carved triangles or diamonds, often with interior dots (Williams 1968). The Deptford culture is dated from about 1100 B.C. to A.D. 600.

Deptford sites are found from Georgia northward to the Neuse River in North Carolina and, in South Carolina, west to the Fall Line. The settlement pattern involves both coastal and inland sites. The coastal sites, which are always situated adjacent to tidal creeks, evidence a diffuse subsistence system and are frequently small. The inland sites are also small, lack shell, and are situated on the edge of swamp terraces. This "dual distribution" has suggested to Milanich (1971:194) a transhumant subsistence pattern. While such may be the case, it has yet to be documented on the coast. The Pinckney Island midden, north of Hilton Head, evidences a reliance on shellfish and was occupied in the late winter (Trinkley 1981). The Minim Island midden, also on the coast in Georgetown County, indicates a greater reliance on fish and was apparently occupied in the fall or winter (Drucker and Jackson 1984).

The Middle Woodland occupations in South Carolina are characterized by a pattern of settlement mobility and short term occupation. On the southern coast it is associated with the Wilmington phase, which dates from about 100 B.C. to as late as A.D. 900. The pottery is characterized almost solely by its crushed sherd temper which makes up 30 to 40% of the paste and which ranges in size from 1/8 to 3/8 inches (3 to 10 millimeters) (see DePratter 1979a; Williams 1968:113-116).

This Middle Woodland period is characterized by the use of sand burial mounds and ossuaries along the Georgia, South
Carolina, and North Carolina coasts (Brooks et al. 1982; Caldwell 1952; Thomas and Larsen 1979; Wilson 1982). Middle Woodland Coastal plain sites continue the Early Woodland Deptford pattern of mobility. While sites are found all along the coast and inland to the Fall Line, shell midden sites evidence sparse shell and few artifacts. Gone are the abundant shell tools, worked bone items, and clay balls.

In many respects the South Carolina Late Woodland may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas there were major cultural changes, such as the continued development and elaboration of agriculture, the Carolina groups settled into a lifeway not appreciably different from that observed for the previous 500 to 700 years. This situation would remain unchanged until the development of the South Appalachian Mississippian complex.

The Late Woodland on the southern South Carolina coast is characterized by the St. Catherines phase, first defined by Caldwell (1971) based on his St. Catherines Island work. The ceramics have fine clay tempering and carefully smoothed interiors. Surface treatments include fine cord marked, burnished plain, and net marked (DePratter 1979a; Trinkley 1981:73-88). Only one St. Catherines midden area in South Carolina, Victoria Bluff, has been examined. At this site the economy was based on shellfish collection and there is evidence of winter-spring occupation. The subsistence base appears more focal than is found at the preceding Middle Woodland midden sites. The St. Catherines phase may last, in the Beaufort area, as late as the fourteenth century A.D. (Trinkley 1981). The tenacity of this simple lifestyle suggests that the Gaule intrusion was relatively minor in many areas, or at least co-existed with the native inhabitants whose lifestyles were generally unchanged.

The South Appalachian Mississippian is the most complex level of culture attained by the native inhabitants and is followed by cultural desintegration brought about largely by European disease. The period is characterized by complicated stamped pottery, complex social organization, agriculture, and the construction of temple mounds and ceremonial centers. The earliest phases include the Savannah and Irene (1200-1550 A.D.). Sometime after the arrival of Europeans on the Georgia coast in 1519 A.D., the Irene phase is replaced by the Altamaha phase. The ceramics associated with this period were made, at least through the end of the Spanish Mission period in the 1680s, when the various Guale groups were either relocated to the St. Augustine vicinity or dispersed by the English (DePratter and Howard 1980:31).
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**Figure 10.** Ceramic chronology for the northern Georgia coast (from DePratter 1979a:Figure 62).

**Figure 11.** Indian groups of the South Carolina low country during the sixteenth and early seventeenth centuries (after Waddell 1980).
Considerable ethnohistoric data has been collected on the Muskogean Georgia Guale Indians by Jones (1978, 1981). This group extended from the Salilla River in southern Georgia northward to the North Edisto River in South Carolina (Jones 1981:215). Jones suggests that the Guale may have been divided into chiefdoms, with two, the Orista and the Escamacu-Ahoya, being found in South Carolina (Jones 1978:203). During the period from 1526 to 1586, Jones places the Escamacu-Ahoya in the vicinity of the Broad River in Beaufort County, while the Orista are placed on the Beaufort River, north of Parris Island. By the late seventeenth century the principal town of the Orista appears to have been moved to Edisto Island, about 30 miles to the north (Jones 1978:203).

Waddell considers Orista a variant of Edisto (Waddell 1980: 126-168) and places them on Edisto Island by 1666. Prior to that time they were situated in the Port Royal/Santa Elena area. The Escamacu are noted to also have lived in the Port Royal area, between the Broad and Savannah rivers (Waddell 1980:3, 168-198). Nearby were the Yoya, Touppa, Mayon, Stalame, and Kussah (Waddell 1980:3). Many of these tribes (such as the Kussah and Edisto) shifted northward as a result of the Escamacu War (1576-1579) when the Spanish sent out major expeditions. Waddell believes that the Escamacu War "probably left the area between the Broad and the Savannah rivers deserted" (Waddell 1980:3). He notes that in 1684,

the Proprietors decided to clear their title to the coast between the Savannah and the Stono rivers . . . , so they had eight separate cessions and one general cession made to give them a paper claim to all of this territory. The Witsheaucht (previously unknown), St. Helena (Escamacu), Wimbee, Combahee, Kussah, Ashepoo, Edisto, and Stono surrendered all their claims (Waddell 1980:4).

Historical Overview

Aboriginal groups and culture persisted in the low country into the eighteenth century, although their population declined from at least 1750 in 1562 to about 660 in 1682 (Waddell 1980:8-13). It is therefore difficult to separate discussions of Native Americans from the period of early Spanish and French exploration and settlement (1521-1670 A.D.).
The Spanish Period

The first Spanish explorations in the Carolina low country were conducted in the 1520s under the direction of Lucas Vasquez de Aylon. Quattlebaum notes that,

Ayllon's captain, Gordillo, spent many months exploring the Atlantic coast . . . . Unfortunately we have little record of the extent of this expedition (Quattlebaum 1956:7).

One of the few areas explored by Gordillo which can be identified with any certainty is Santa Elena (St. Helena). Apparently Port Royal Sound was entered and landing made at Santa Elena on Santa Elena's Day, August 18, 1520. "Cape Santa Elena," according to Quattlebaum (1956:8) was probably Hilton Head (Hoffman 1984:423).

Gordillo's accounts spurred Ayllon to seek a royal commission both to explore further the land and to establish a settlement in the land called Chicora (Quattlebaum 1956:12-17). In July 1526 Ayllon set sail for Chicora with a fleet of six vessels and has been thought to have established the settlement of San Miguel del Galdape in the vicinity of Winyah Bay (Quattlebaum 1956:23). Hoffman (1984:425) has more recently suggested that the settlement was at the mouth of the Santee River (Ayllon's Jordan River). Ferguson (n.d.:1) has suggested that San Miguel was established at Santa Elena in the Port Royal area. Regardless, the colony was abandoned in the winter of 1526 with the survivors reaching Hispaniola in 1527 (Quattlebaum 1956:27).

The French, in response to increasing Spanish activity in the New World, undertook a settlement in the land of Chicora in 1562. Charlesfort was established in May 1562 under the direction of Jean Ribaut. This settlement fared no better than the earlier Spanish fort of San Miguel and was abandoned within the year (Quattlebaum 1956:42-56). Ribault was convinced that his settlement was on the Jordon River in the vicinity of Ayllon's Chicora (Hoffman 1984:432). Recent historical and archaeological studies suggest that Charlesfort was situated on Port Royal Island, probably in the vicinity of the Town of Port Royal (South 1982a). The deserted Charlesfort was burned by the Spanish in 1564 (South 1982a:1-2). A year later France's second attempt to establish their claim in the New World was thwarted by the Spanish destruction of the French Fort Caroline on the St. John's River. The massacre at Fort Caroline ended French attempts at colonization on the southeast Atlantic coast.

To protect against any future French intrusion such as Charlesfort, the Spanish proceeded to establish a major
outpost in the Beaufort area. The town of Santa Elena was built in 1566, a year after a fort was built in St. Augustine. Three sequential forts were constructed: Fort San Salvador (1566-1570), Fort San Felipe (1570-1576), and Fort San Marcos (1577-1587). In spite of Indian hostilities and periodic burning of the town and forts, the Spanish maintained this settlement until 1587 when it was finally abandoned (South 1979, 1982a, 1982b). Spanish influence, however, continued through a chain of missions spreading up the Atlantic coast from St. Augustine into Georgia. That mission activity, however, declined noticeably during the eighteenth century, primarily because of the 1702 and 1704 attacks on St. Augustine and outlying missions by South Carolina Governor James Moore (Deagan 1983:25-26, 40).

The British Proprietary Period

British influence in the New World began in the fifteenth century with the Cabot voyages, but the southern coast did not attract serious attention until King Charles II granted Carolina to the Lords Proprietors in 1663. In August 1663 William Hilton sailed from Barbados to explore the Carolina territory, spending a great deal of time in the Port Royal area (Holmgren 1959). Hilton viewed the headland, which now bears his name, noting,

\textit{[t]he lands are laden with large, tall trees, oaks, walnuts, and bayes, except facing the sea it is most pines, tall and good. The land generally, except where the Pines grow, is a good soyl covered with black mold. . . . The Indians plant in the worst land because they cannot cut down the timber in the best, and yet have plenty of corn, pommions, water-mellons, musk-mellons (William Hilton 1664; quoted in Holmgren 1959:35).}

Almost chosen for the first English colony, Hilton Head Island was passed over by Sir John Yeamans in favor of the more protected Charles Town site on the Ashley River in 1670 (Clowse 1971: 23-24; Holmgren 1959:39). The Carolina colony was part of the British mercantile system and was designed to profit the mother country by providing raw materials unavailable in England (Clowse 1971). Charleston was settled by English citizens, including a number from Barbados, and by French Huguenot refugees. Black slaves were brought into Carolina from both the Caribbean colonies and directly from Africa.

The Charleston settlement was moved from the mouth of the Ashley River to the junction of the Ashley and Cooper
rivers in 1680, but the colony was a thorough disappointment to the Proprietors. It failed to grow as expected, did not return the anticipated profit, and failed to evidence workable local government (Ferris 1968:124-125). The early economy was based almost exclusively on Indian trade, navel stores, lumber, and cattle. Rice began emerging as a money crop in the late seventeenth century, but did not markedly improve the economic wellbeing of the colony until the eighteenth century (Clowse 1971).

Meanwhile, Scottish Covenanters under Lord Cardross established Stuart's Town on Scot's Island (Port Royal) in 1684, where it existed for four years until destroyed by the Spanish. It was not until 1698 that the area was again occupied by the English. Both John Stuart and Major Robert Daniell took possession of lands on St. Helena and Port Royal islands, and on August 16, 1698 Hilton Head was included as part of a 48,000 barony granted to John Bayley (Holmgren 1959:42). The town of Beaufort was founded in 1711 although it was not immediately settled. While most of the Beaufort Indian groups were persuaded to move to Polawana Island in 1712, the Yemassee, part of the Creek Confederacy, revolted in 1715. By 1718 the Yemassee were defeated and forced southward to Spanish protection. Consequently, the Beaufort area, known as St. Helena Parish, Granville County, was for the first time safe from both the Spanish and the Indians. On December 10, 1717, Colonel John Barnwell claimed a grant of 500 acres on the northwest corner of Hilton Head (Royal Grants, volume 39, page 225). About the same time, Alexander Trench, as agent for John Bayley, son and heir of Landgrave John Bayley, began to dispose of the 48,000 acre inheritance. Holmgren notes that Trench "must have been his own best customer," for he begins to either acquire title or use much of the Bayley property (Holmgren 1959:46-47). Hilton Head eventually became known as "Trench's Island" in the mid to late eighteenth century.

In 1728 a survey of the Port Royal area was conducted by Captain John Gascoigne and Lieutenant James Cook. Gascoigne's 1729 map ("A True Copy of A Draught of the Harbour of Port Royal") based on this survey identifies "Hilton Head Island," while Francis Swaine, using the same survey, identifies Hilton Head as "Trench Island" on his 1729 "Port Royal" map. By 1777 J.F.W. Des Barres produced a map entitled "Port Royal in South Carolina," still using the 1728 Gascoigne-Cook survey, which identifies Hilton Head as "Trench's Island" (Cumming 1974).

The British Colonial Period

Although peace marked the Carolina colony, the Proprietors continued to have disputes with the populace, primarily over the colony's economic stagnation and
deterioration. In 1727 the colony's government virtually broke down when the Council and the Commons were unable to agree on legislation to provide more bills of credit (Clowse 1971:238). This, coupled with the disastrous depression of 1728, brought the colony to the brink of mob violence. Clowse notes that the "initial step toward aiding South Carolina came when the proprietors were eliminated" in 1729 (Clowse 1971:241).

While South Carolina's economic woes were far from solved by this transfer, the Crown's Board of Trade began taking steps to solve many of the problems. A new naval store law was passed in 1729 with possible advantages accruing to South Carolina. In 1730 the Parliament opened Carolina rice trade with markets in Spain and Portugal. The Board of Trade also dealt with the problem of the colony's financial solvency (Clowse 1971:245-247). Clowse notes that these changes, coupled with new land policies, "allowed the colony to go into an era of unprecedented expansion" (Clowse 1971:249). South Carolina's position was buttressed by the settlement of Georgia in 1733.

By 1730 the colony's population had risen to about 30,000 individuals, 20,000 of whom were black slaves (Clowse 1971: Table 1). The majority of these slaves were used in South Carolina's expanding rice industry. In the 1730 harvest year 48,155 barrels of rice were reported, up 15,771 barrels or 68% from the previous year (Clowse 1971:Table 3). Although rice was grown in the Beaufort area it did not become a major crop until after the Revolutionary War and it was never a significant crop on Hilton Head (Hilliard 1975). Elsewhere, however, rice monoculture shaped the social, political, and economic systems which produced and perpetuated the coastal plantation system prior to the rise of cotton culture.

Although indigo was known in the Carolina colony as early as 1669 and was being planted the following year, it was not until the 1740s that it became a major cash crop (Huneycutt 1949). While indigo was difficult to process, its success was partially due to it being complementary to rice. Huneycutt notes that planters were "able to 'dovetail' the work season of the two crops so that a single gang of slaves could cultivate both staples" (Huneycutt 1949:18). Indigo continued to be the main cash crop of South Carolina until the Revolutionary War fatally disrupted the industry.

A decade prior to the Revolutionary War, James Cook produced "A Draught of Port Royal Harbour in South Carolina" (1766) which identified 25 families on Hilton Head Island and, for the first time, showed "Fish Haul Creek." This is significant in understanding the Colonial ownership of the study tract, since most property records were destroyed either in 1864 (by the Civil War) or in 1883 (by a fire).
Colonel John Barnwell's 500 acre grant was apparently transferred to his son and daughter-in-law, John and Martha Barnwell by the senior Barnwell's will (Fish Hall Historic Marker notes on file, S.C. Department of Archives and History). John and Martha Barnwell sold the tract, described as Fish Hall, to Edward Ellis in October 1760 (Charleston County RMC, DB YY, page 245-247) (cf. Holmgren 1959: 51, 126; Peeples 1970:2). The tract appears to be the same one later owned by Mary B. Pope and operated by General Thomas Drayton.

The Federal Writers' Project notes that,

[d]uring the Revolution General Prevost established a post here [at Beaufort] which proved very important for the British, for by means of the inland waterways in the vicinity, the Red Coats could penetrate into any part of the coastal region without fear . . . " (Federal Writer's Project 1938:7).

Holmgren (1959:55-59) notes only that skirmishes took place on Hilton Head between the island's Whigs and Tories from neighboring Daufuskie Island. During one skirmish, the Talbird house, on Skull Creek, was burned.

The Antebellum Period

While freed of Britain and her mercantilism, the new United States found its economy thoroughly disrupted. There was no longer a bounty on indigo, and in fact Britain encouraged competition from the British and French West Indies and India "to embarrass her former colonies" (Huneycutt 1949:44). As a consequence the economy shifted to tidewater rice production and cotton agriculture. Lepionka notes that "long staple cotton of the Sea Islands was of far higher value than the common variety (69 cents a pound compared to 15 cents a pound in the 1830's) and this became the major cash crop of the coastal islands" (Lepionka et al. 1983:20). It was cotton, in the Beaufort area, that brought a full establishment of the plantation economy. Lepionka concisely states,

[t]he cities of Charlestown and Savannah and numerous smaller towns such as Beaufort and Georgetown were supported in their considerable splendor on this wealth . . . . An aristocratic planter class was created, but was based on the essential labor of black slavery without which the plantation economy could not function. Consequently, the demographic pattern of a black majority first
established in colonial times was reinforced (Lepionka et al. 1983:21).

Holmgren (1959) and Peeples (1970) provide antebellum accounts of Hilton Head Island which emphasize the geneology and land ownership of the period. Hilton Head was quickly settled in the late eighteenth century and by the mid-nineteenth century the island was largely owned by the Baynard, Chaplin, Drayton, Elliott, Fickling, Gardner, Graham, Jenkins, Kirk, Lawton, Mathew, Seabrook, Scott, Stoner, and Stuart families (Holmgren 1959:67). Peeples (1970) identifies 25 plantations by name on Hilton Head.

Mills, in 1826, provides a thorough commentary on the Beaufort District noting that,

Beaufort is admirably situated for commerce, possessing one of the finest ports and spacious harbors in the world . . . . There is no district in the state, either better watered, of more extended navigation, or possessing a larger portion of rich land, than Beaufort: more than one half of the territory is rich swamp land, capable of being improved so as to yield abundantly (Mills 1826:367).

He described the town of Beaufort as the principal (and probably only) town, and in a moment of ironic foresight he states that while the port had been examined for use as a naval depot, "the only objection to its adoption for this purpose is the great expense of fortifying it so as to be secure from the approach of an enemy" (Mills 1826:368).

Describing the Beaufort islands, Mills comments that they were "beautiful to the eye, rich in production, and withal salubrious" (Mills 1826:372). Land prices ranged from $60 an acre for the best, $30 for "second quality," and as low as 25 cents for the "inferior" lands. Grain and sugarcane were cultivated in small quantities for home use while,

[t]he principal attention of the planter is . . . devoted to the cultivation of cotton and rice, especially the former. The sea islands, or salt water lands, yield cotton of the finest staple, which commands the highest price in market; it has been no uncommon circumstance for such cotton to bring $1 a pound. In favorable seasons, or particular spots, nearly 300 weight has been raised from an acre, and an active field hand can cultivate upwards of four acres, exclusive of one acre and half of corn and
ground provisions (Mills 1826:368).

The emphasis of Beaufort District's agriculture can be easily observed by reference to Hilliard (1984). During the antebellum period Beaufort's wheat production remained below one bushel per capita and less than 15 bushels per square mile. Corn production fell from 20 to 30 bushels per capita in 1840, although corn production remained above 250 bushels per square mile for most of the district throughout the period. Less than 10,000 pounds of tobacco were grown in the District in 1860 and less than 100 hogheads of sugar cane were produced. Sweet potatoes were the largest non-cash crop grown.

Reference to the 1860 agricultural census reveals that of the 891,228 acres of farmland, 274,015 (30.7%) were improved. In contrast, only 28% of the State's total farmland was improved, and only 17% of neighboring Colleton District's farm land was improved. Even in wealthy Charleston District only 17.8% of the farm land was improved (Kennedy 1864:128-129). The cash value of Beaufort farms was $9,900,652, while the state average by county was only $4,655,083. The value of Beaufort farms was greater than any other district in the state for that year, and only Georgetown listed a greater cash value of farming implements and machinery ($616,774 compared to Beaufort's $559,934).

Beaufort ranked thirteenth in the number of horses (3,169), eighth in the number of asses and mules (2,405), first in number of milk cows (12,317), first in the number of working oxen (2,330), third in the number of other cattle (19,496), fourth in the number of sheep (14,139), but twentieth in the number of swine (25,369). Overall, Beaufort ranked fourth in total value of livestock ($1,254,608). Beaufort produced only 1.3% of the State's wheat crop, 2.1% of the rye crop, 4.1% of the corn crop, 1.1% of the oat crop, 6.0% of the pea and bean crop, and 12.9% of the sweet potato crop. It did, however produce 19,121 (400 pounds) bales of cotton, virtually all long staple, in 1860 (5.4% of the State's total of all cotton), 18,790,918 pounds of rice (16.6% of the State's total) and 6,767 gallons of cane molasses (44.7% of the State's total). It also ranked eighth in the value of its orchard products (Kennedy 1864:346347).

This record of wealth and prosperity is tempered by the realization that it was based on the racial imbalance typical of Southern slavery. In 1820 there were 32,199 people enumerated in Beaufort, 84.9% of which were black (Mills 1826:372). While the 1850 population had risen to 38,805, the racial breakdown had changed little, with 84.7% being black (83.2% were slaves). Thus, while the statewide ratio of free white to black slave was 1:1.4, the Beaufort ratio was 1:5.4 (DeBow 1853:338).
One of the successful Beaufort District planters on the eve of the Civil War was Thomas F. Drayton. Drayton married Catherine Emma Pope, the only daughter of John Edward and Mary Baynard Pope, on February 28, 1838. Drayton apparently left his Bluffton plantation (Rephaim) at that time, although he continued to plant it, and resided with his wife at her mother's plantation known as Fish Hall. When Mary B. Pope died about 1856, Drayton was named administrator of her estate and continued to operate Fish Hall in trust for seven minor children: Jonathan Edward Drayton, Anna M. Drayton, William S. Drayton, Mary E. Drayton, Percival Drayton, Emma G. Drayton, and Thomas F. Drayton (Reynolds and Faunt 1964:208; Fish Hall Historic Marker notes on file, S.C. Department of Archives and History). The 1860 slave census lists the 52 slaves of "Thomas F. Drayton, in trust for 7 minors" separate from his own 113 slaves at his Bluffton plantation. Although the sexes are about evenly divided at Fish Haul (26 males, 25 females), there are nearly three times as many female children (11 under the age of 14) as male children (four under the age of 14). There are also three times as many males over the age of 50 (6) than females over 50 years old (2). Whether this demographic pattern is intentional is not known. Examination of Drayton's Bluffton plantation reveals that while there continues to be more "old" males than "old" females, there are more prime age females (36) than males (26) and that there are more young (under 14 years) black males (19) than females (15) (National Archives 1967:20-21).

An examination of the 1860 agricultural schedule provides information on both Fish Hall, listed under Thomas F. Drayton, Agent, and Rephaim, listed under Drayton's name alone (U.S. Census Agricultural Schedule 1860:281-282). Fish Hall contained 250 improved acres and 450 unimproved acres (41.4% is improved, above the averages of both the district and Bluffton and Savannah post office area of St. Luke's Parish). In contrast, of the 4550 acres of Rephaim Plantation, only 11.8% were improved. Fish Hall was valued at $10,000, over $14 per acre, while Rephaim was valued at $25,000, just under $5.50 per acre. This difference may reflect the greater extent of developed acreage at Fish Hall. Both plantations had twice the area average of farming implement value ($2,000 at Fish Hall and $2,600 at Rephaim, compared to an average of $1,016). Fish Haul, however, had no milk cows, no oxen, no cattle, no sheep, and no swine. Its entire $800 value of livestock included four horses and two mules. In this respect it is quite atypical, while Rephaim approximates the norm in each category.

The crops produced at Fish Hall in 1860 included corn (500 bushels), cotton (25 bales), peas and beans (100 bushels), sweet potatoes (2000 bushels), and hay. In contrast, Rephaim produced these crops as well as oats, rice,
and Irish potatoes. Fish Hall did list $100 worth of orchard crops. Compared to Rephaim, which was diversified and contained a quantity of acreage in reserve, Fish Hall was clearly oriented to cotton production, with small quantities of grain and sweet potatoes raised for local use.
The Civil War, Hilton Head, and The Evolution of Mitchelville

The choice having been made to attack the Confederacy in the deep South, a Union fleet of about 60 ships and 20,000 men sailed from Fortress Monroe at Hampton Roads, Virginia on October 29, 1861 and arrived off the coast of Beaufort on November 3 through 5. The naval contingent was under the command of Admiral S.F. DuPont and the Expeditionary Corps troops were under the direction of General T.W. Sherman. The attack of the Confederate Forts Walker (on Hilton Head) and Beauregard (at Bay Point on St. Phillips Island) began about 10:00 a.m. on Thursday, November 7 (Figure 13). By 3:00 p.m. the Union fleet had fired between 2,000 and 3,000 shots at the two forts and the Confederate forces had retreated from both forts, moving inland (Scott 1882:1:6:186-187; Bombardment and Capture of Forts Beauregard and Walker, Port Royal, S.C. 1861).

This event had a significant impact not only on the morale of the South and local Confederates, but also on the black slaves. Nichols noted,

[the evidence of the cannonading were manifest all about them, and the negroes, when questioned as to its effects on them, declared that at first they didn't mind the firing, but "when them rotten shot began to splatter about them, they jes' ran for de woods" (Nichols 1886:70).

Slave narratives clearly reveal the impact of this event. Sam Mitchel, at the age of 87, remembered the event vividly,

Maussa had nine children, six boy been in Rebel army. Dat Wednesday in November w'en gun fust shoot to Bay Pint (Point) I t'ought it been t'under rolling, but day ain't no cloud. My mother say, "son, dat ain't no t'under, dat Yankee come to gib you Freedom." I been so glad, I jump up and down and run. My father been splitting rail and Maussa come from Beaufort in de carrage and tear by him yelling for de driver. He told de driver to git his eight-oar
Figure 13. Hilton Head and vicinity in December 1861.
boat name Tarrify and carry him to Charleston. My father he run to his house and tell my mother what Maussa say. My mother say, "You ain't gonna row no boat to Charleston, you go out dat back door and keep a-going." So my father he did so and when day git 'nuf nigger to row boat and Maussa and his family go right away to Charleston (Rawick 1972:3:202-203).

Sam Polite, at the age of 93, remembered, "[w]'en gun shoot on Bay Pint (Bay Point) for freedom, I been sebenteen year old wuking slobe" (Rawick 1972:3:371), while 96 year old Lecretia Heyward said "[w]'en gun fust shoot on Hilton Head Island, I been 22 year old" (Rawick 1972:2:279).

The first Union troops which landed on the island met no resistance, but rather found,

[w]hat dreadful havoc our shells had made; the sight beggars description. The dead and wounded lay in heaps, and the air resounded with groans and petitions for help . . . . Every building near the fort was riddled by our shells, while the tents were torn into shreds . . . . Many of the dead were literally torn to atoms, and some were half buried where they fell (Cadwell 1875:26-27).

Several events followed in quick succession. A number of reconnaissance parties (both official and unofficial) began to scout the island and appropriate a variety of items. Contacts were made with a number of black settlements, and some began to be attracted to the Union encampments. The Union began to build up the fortifications of Hilton Head, eventually transforming a vulnerable position into a major military supply depot and the Department of the South, from which Savannah and Charleston were blockaded. These events are discussed in regimental histories, official records and correspondence, and in period accounts. Frequently these sources fail to agree on significant issues, such as the extent of and persons responsible for looting. It appears military discipline was sufficiently lax that both Union and Confederate troops had ample opportunity to loot, but the victors have tended to attract the bulk of the attention. Looting by slaves was most violent in the urban area of Beaufort. On the more rural islands such as Hilton Head it is likely that looting by blacks of plantation houses was
rather minimal, particularly compared to what the retreating and advancing armies did.

A number of sources comment on the large quantity of materials left behind by the Confederates. Cadwell says simply that "knapsacks, blankets and rifles lay in confusion all around and were found at almost every step for miles though the woods" (Cadwell 1875:20). Eldridge describes the same scene,

Capt. Gillmore... made a reconnaissance of Hilton Head Island with escort of Seventh Connecticut... and proceeded first to Seabrook, six miles across the island... without seeing any enemy or even a white man... There were found on the road, knapsacks, haversacks, canteens, cartridge boxes, etc., scattered all along the road and on the wharf at Seabrook... There were also found near the landing fifteen to eighteen large wagon loads of bacon, hard bread, sugar, rice, corn, vinegar, etc. (Eldridge 1893:67).

Two accounts provide evidence of the significance of this situation. Tourtellotte mentions that these discards of equipment and clothing attracted the attention of the blacks who "had carefully culled over and hide away such articles as suited their fancy" (Tourtellotte 1910:17). Todd mentions that the Union troops did the same thing,

our heavy uniform jackets and woolen pantaloons were laid aside, for the lighter clothing so considerately left behind by the enemy (Todd 1886:99).

Thus, early in the conflict the blacks on Hilton Head began to have access to a variety of military goods.

Within four days General Sherman issued General Order 24 concerning the various activities of the Union troops. The order said, in part,

[t]he general commanding is pained to know that some of the troops of his command have, without orders, invaded the premises of private individuals and committed gross depredations upon their property... All horses,
cattle, and other private property which have been taken off any of the plantations and now in the hands of officers or soldiers, will be immediately surrendered to the chief quartermaster . . . (Scott 1882:1:6:187).

The actions to which General Sherman made reference are described by several authorities, including Palmer,

[s]couting parties were sent out over the island and they captured horses, mules, chickens, pigs, and about everything they could lay their hands on, and divided the "eatables" between the different companies. That, however, was not considered "stealing" but "confiscating" (Palmer 1885:20).

Likewise, Eldridge comments on the order, saying, "[General Sherman] couldn't object to a soldier having a mule" (Eldridge 1893:72). But perhaps the most candid statement comes from Todd,

[g]eese, turkeys, pigs and chickens were killed and eaten whenever we wanted them. At first we paid the darkies for these, but on thinking the matter over - when our cash began to run short - we came to the conclusion that that would never do: these things did not belong to the negroes but their masters; their masters were the enemies of the government, and had run away, leaving their property behind; by all the rules of war the abandoned property belonged to the victors - to us; so whenever we wanted anything after that, the darkies would be ordered to kill and cook and we paid them for their labor, as long as our money lasted (Todd 1886:104-105).

This account, besides providing insight on the racial attitudes and ethics of some Union soldiers, also provides evidence for the black's introduction to a developing wage economy.
The extent to which the blacks participated in the looting, as previously mentioned, is disputed by period accounts. Todd states that on St. Helena, "nothing appeared to be disturbed, the darkies being under strict discipline not having entered their masters' houses" (Todd 1886:101; a similar view is presented by The War for the Union 1861), while Walkley observed that, "[t]he owners of the plantations had fled precipitately, abandoning much property which such negroes as had contrived to remain on the island were looting without restraint" (Walkley 1905:29; see also the 1861 account of black looting in Blassingame 1977:360). One of the best authorities, Edward Pierce, reported in February 1862 that,

[i]t is reported that they [the slaves] have taken things left in their masters' houses . . . it is not true that they have, except as to very simple articles, as soap or dishes, generally availed themselves of such property (Moore 1866:308).

It may be that the blacks only looted once this activity was given an air of respectability by the marauding Union troops. This is implied by Forten, who wrote, "[t]he masters, in their hasty flight from the islands, left nearly all their furniture; but much of it was destroyed or taken by the soldiers who came first, and what they left was removed by the [black] people to their own houses" (Forten 1864:590). It is only concerning Beaufort that virtually all authorities agree the blacks looted (see Rose 1964:106-108). Davis, writing a year after the war, comments that, "[t]he negroes commenced the pillage before the army arrived, and when it landed the victorious heroes were received by wenches dressed in silks and satins that had adorned the beautiful forms of Carolina's fairest daughters" (Davis 1866:184).

Blacks, within two days of the Union victory, began descending on the outpost. A number of regimental histories provide colorful accounts, such as Copp, who states,

negro slaves came flocking into our camp by the hundreds, escaping from their masters when they knew of the landing of "Linkum sojers," as they called us . . . many of them with no other clothing than gunny-sacks. . . . These people were loaded down with all sorts of household goods, carrying everything describable upon their heads, bedding, furniture, and across their backs, bags holding anything and everything, sweet potatoes ,
chickens and small pigs, the big negroes sometimes having on their heads an inverted table, and piled up upon this was a small tray load of other goods (Copp 1911:74-77; see also Palmer 1885:20 for a similar account).

The clearest accounts, however, come from General Sherman, who periodically wrote Washington asking for assistance. The absence of any government policy concerning the "contraband negroes" was to plague the Lincoln administration for several years. The first mention of the contraband came on November 9, when Captain Saxton, Assistant Quartermaster, remarked that they were coming into the Union lines "in great numbers." He noted that since the landing two days previous "150 have come in, mostly able-bodied men, and it will soon be necessary to furnish them with coarse clothing" (Scott 1882:1:6:187). Sherman, writing on December 10, 1861, remarked that,

> the negroes have rendered us but little assistance. Many come in and run off . . . The large families they bring with them make a great many useless mouths. Before long — after they have consumed all they have on the plantations — they will come in in greater numbers . . . They are a most prolific race (Scott 1882:1:6:202).

Again on December 15, he wrote,

> 320 have thus far come in and offered their services. Of these the quartermaster has but about 60 able-bodied male hands, the rest being decrepit, and women and children. Several of the 320 have run off. Every inducement has been held out to them to come in and labor for wages . . . The reasons for this apparent failure thus far appear to be these: 1st. They are naturally slothful and indolent . . . 2nd. They . . . are unsettled to any plan. 3rd. Their present ease and comfort on the plantations, as long as their provisions will last, will induce most of them to remain there . . . It is really a question for the
Sherman repeats his pleas again on January 15, 1862, mentioning "I would also suggest that a quantity of negro clothing be sent out here as soon as practicable, and this should include stuff for women's and children's wear" (Scott 1882:1:6:218), and February 9, 1862.

From these earliest days the relations between black and white were strained. Ample evidence of this situation is provided by a number of period accounts. Linehan (1895) remark that many troops felt jealous of the attention the blacks received and had "hardly arrived at the conclusion that a negro was as good as a white man" (Linehan 1895:346). Roe (1907:180), Price (1875:148) and Davis (1866:189) describe assaults on blacks and the burning of several of their structures. Tourtellotte comments that the enlisted troops "did not relish bending to hard labor while the husky contrabands were strolling about the island picking up saleable articles to barter with the soldiers" (Tourtellotte 1910:19). Officially the Department of the South did not condone these practices, as evidenced by General Order 27 issued August 17, 1862,

"[n]umerous acts of pilfering from the negroes have taken place in the neighborhood of Beaufort, committed by men wearing the uniform of the United States. I cannot and will not call them soldiers (Scott 1885:1:14:376)."

One of the most disturbing events surrounding the Government's attitude and actions toward the blacks is recounted by Beecher from early in the Federal occupation,

"[the contraband] were fast becoming a burden and a nuisance. They were asked to volunteer to work . . . but the majority preferred to stay in Beaufort, feeding on Government rations, . . . to working. Some . . . were taken and forced to work. A rumor that they were all going to be ordered to Hilton Head . . . as workmen . . . caused them to flee to the woods and swamp, where they would stay during the day, sneaking back to the city at night. The authorities resolved to put a stop to this, and so a
plan to catch them was devised. One night after 12 o'clock, when it was supposed that all the darkies had left the woods and swamps and entered the city, Beaufort was surrounded and a raid made for darkies by a detail of soldiers. . . . It was a regular nigger hunt. . . . All were dragged out. . . . Next morning all the able bodied men were sent to the dock. . . . When at Hilton Head the men were made to work on the fortifications (Beecher 1901: 2:231).

By September 20, 1862, General O. M. Mitchel stated,

I find a feeling prevailing among the officers and soldiers of prejudice against the blacks, founded upon the opinion that in some way the negroes have been more favored by the Government and more privileges granted to them than to the volunteer soldier (Scott 1885:1:14:385).

Two General Orders, 122 and 130, issued on August 22 and September 6, 1864, dealt with the loitering of blacks. The first stated,

[t]he number of idle persons, of both sexes, found loitering around the camps and Posts of the Districts of Beaufort and Hilton Head, is subverse of good order and military discipline, and is a fruitful source of vice and disease.

While the second found,

[t]he practice of allowing negro women to wander about from one Plantation to another . . . is not only objectionable in every point of view . . . but is generally subserve of moral restraint.

Tourtellotte mentioned the presence of "some very pretty quadroon girls" on Hilton Head (Tourtellotte 1910:53) and this situation may have eventually required the military to issue General Orders 122 and 130.
In spite of all the associated problems, a number of blacks were employed by the Government. Captain H. A. Hascall, Assistant Quartermaster, reported a number of blacks were employed as carpenters, blacksmiths, and boatmen for the month of February 1862. Solomon, the only black previously belonging to Drayton listed, served as a carpenter for 19 days and was paid $8.14 ($12/month or approximately 43 cents/day). The same list indicates that white carpenters, of necessarily no greater skill, were being paid $2.00 a day. Corporal William H. Hyde, Company D of the 6th Connecticut Volunteer Regiment, had been placed in charge of the contrabands (Report of Persons and Articles Hired for February 1862, Roll of Enlisted Men Employed on Extra Duty for March 1862, South Carolina Historical Society).

Nordhoff, during a March 1863 visit to Hilton Head, found a number of blacks employed in the military or as laborers by the Quartermaster's Department, where "about one thousand able-bodied blacks are employed" for $4.00 a month plus military rations (Nordhoff 1863a:2). Pearson provides several letters which describe the work available for blacks. One such letter states, "[m]any of the men were not adverse to trying their hands at life in the world, for many of their number have been and still are at work for officers, etc. at Hilton Head . . . with most desirable pecuniary results" (Pearson 1969:41). Another visitor remarked that "the camps offered a high-priced market both for labor and the products of labor" (Anonymous 1865:17).

By February 6, 1862 Sherman, in General Order 9, requested help for the contraband ("this unfortunate and now interesting class of people") from the "highly favored and philanthropic people" of the North. Coincidental with this plea, the federal government slowly began to recognize the needs and promises of the region. As early as November 27, 1861 Sherman had been ordered by Washington "to seize all cotton and other property which may be used to our prejudice" and that "[t]he services of negroes will be used in picking, collecting, and packing the cotton" (Scott 1882:1:4:192). Secretary of the Treasury Solomon Chase appointed Colonel William H. Reynolds to collect contraband cotton and goods, although no policy had yet been devised concerning contraband negroes. By December 20, Reynolds was in Beaufort and on January 1, 1862 he wrote to Chase that, "the negroes seem very well disposed and quite well pleased with the new order of things here, most of them preferring to remain on the Plantations where they were raised, if they can receive something for their labor" (National Archives, RG 366, Port Royal Correspondence 1861-1862). Going about his business, Reynolds shipped 92 bales (30,479 pounds) of cotton north to Hiram Barney, Cotton Agent, N. Y., between January 18, 1862 and May 1, 1862 (National Archives, RG 366, Port Royal Correspondence 1861-1862). Unfortunately Reynolds kept
neither good records nor cotton seed for next year's crop. Likewise, lots of Sea Island furniture, livestock, and plantation tools were gathered up and either sent north or sold (National Archives, RG 366, Abandoned Property; RG 366, Fifth Special Agency Papers Box 299).

Chase also recognized the plea for humanitarian aid and sent Edward L. Pierce to Port Royal to look into the contraband negro situation (Rose 1964:21-23). Pierce's first report to Chase, made on February 3, 1862, reports that there were 16 plantations on Hilton Head and that there were 600 blacks at the federal encampments. Of these 600, apparently only 472 were "registered" and of those 472, 137 were on the payroll. The 472 included fugitives from the mainland (279), residents of Hilton Head (77), Pinckney Island (62), St. Helena (38), Port Royal (8), Spring (7), and Daufuskie (1). They were under the direction of two civilians, Barnard K. Lee, Jr. of Boston and J. D. McMath of Alleghany City, Pennsylvania, assigned to the Quartermaster's Department. The blacks were being paid $8-12 a month for carpentry and $4-8 a month for other labor. In addition, each individual was receiving a military ration of food, "but from the monthly pay are to be deducted rations for his family, if here, and clothing for both himself and his family" (Moore 1866:313).

Rose points out the immediate problems which arose between Reynolds and Pierce (Rose 1964:24-26) and how into this situation were introduced the "humanitarians," such as the Reverend and Mrs. Mansfield French of the American Missionary Association, a driving force in the spiritual and worldly education of the contraband. While apparently an honest individual with high ideals, no one was safe from criticism as the area was eventually transformed and by 1866 French was described as "Father French the Tycoon of all robbers" (Truman 1866; see also Rose 1964:394). Quickly Pierce and French devised a plan for the education, welfare, and employment of the blacks. A number of philanthropic individuals in the north responded to the call and this is largely the "Port Royal Experiment" of Rose's (1964) excellent study. The government contribution to this effort was originally under the direction of the Treasury Department, but was transferred to the War Department by the summer of 1862 when General Rufus Saxton was placed in charge (Rose 1964:152).

The Treasury Department, however, remained actively involved in the land policies of the "Experiment" through the actions of the Federal Tax Commissions for Beaufort-- Dr. William H. Brisbane, Judge Abram D. Smith, and Judge William W. Wording. They were responsible for collecting South Carolina's share of a direct tax of twenty million dollars to support the war effort. McGuire notes that,
[u]nder this law Federal tax commissioners proceeded to rebellious districts falling under Union control to assess real estate on local 1860 guidelines, adding a fifty percent penalty for disloyalty. Upon the failure of Confederate owners to pay both tax and penalty, land would be forfeited to the Federal Government and sold at public auction. Elaborate redemption provisions were the act's most distinctive feature (McGuire 1985:23).

The Tax Commissioners faced a variety of challenges, not the least being an absence of tax maps and records, but by November 25, 1862 they had fixed the taxes on Hilton Head Tract No. 3 -- "Fish Hall," one of 24 plantations recognized on the island (Figure 14). The plantation was "said to be or to have been owned by General Drayton" and was thought to contain 1300 acres (National Archives, RG 217, Records of the Beaufort, S. C. Tax District, Valuation Volume). When General Drayton failed to come forward to claim the land and pay the taxes of $156.00 on the plantation valued at $5200, it was advertised for sale (Sale of Lands for Unpaid Direct Taxes in Insurrectionary Districts, State of South Carolina 1863). The property was purchased by the federal government and held until 1875 (Fish Hall Historic Marker notes on file, S. C. Department of Archives and History; Beaufort RMC Deed Book 9, pp. 254-255). The 1300 acres apparently included not only Fish Hall, but also adjacent Pine Lands.

Both Rose (1964) and McGuire (1985) should be consulted for a more thorough account of the political events surrounding the "Port Royal Experiment" and the land redistribution policies of the Tax Commissioners. Both are necessary to a full understanding of the events occurring in the Port Royal area, but the rest of this discussion will concentrate on the evolution of Mitchelville, its history, and what the primary historical records may contribute to our understanding of the Mitchelville archaeology.

The housing of the blacks pouring onto Hilton Head, as previously discussed, was a problem from the very beginning. Two approaches were eventually used to deal with the problem. The first was to establish "camps" for the blacks, such as those in operation by June 1862 at Beaufort, Hilton Head, Bay Point, and Otter Island which were built by and under the control of the Quartermaster's Department (Moore 1866:316). Blassingame (1977:360) indicates that another was built "at the mouth of Edisto Inlet" by December 1861 and
Figure 14. Hilton Head ca. 1864 (National Archives, RG 58).
Botume reveals that one camp outside Beaufort was called "Montgomery District" (Botume 1968:16). These "camps" were apparently holding areas used by the government until permanent locations and jobs could be found for the blacks. They were begun early in the war and apparently continued until the last days. By 1864 the Treasury Department called such camps "Freedmen's Home Colonies," where "all freed persons within the Agency may be received" and would be provided "temporary shelter and care" (National Archives, RG 366, July 29, 1864 Rules and Regulations). The use of tents in these camps (Botume 1968:16) was quickly replaced by various structures. An anonymous visitor in 1863 reported that the Quartermaster's Department,

is building twenty-one houses for the Edisto people, eighteen feet by fourteen, with two rooms, each provided with a swinging board window and the roof projecting a little as a protection from rain. The journeymen-carpenters are seventeen colored men, under the direction of Frank Barnwell, a freedman (Anonymous 1863:309).

Botume provides a different description for a camp "about half a mile" from Old Fort Plantation where she taught. The camp consisted of,

a row of a dozen or more buildings. . . . Each house was divided into four rooms or compartments, and in each room was located one family of from five to fifteen persons. In each room was a large fireplace, an opening for a window with a broad board shutter, and a double row of berths built against the wall for beds. One or more low benches, and a pine table with "piggins," home-made cedar tubs, on it, completed the furniture (Botume 1968:51).

This was the approach first used on Hilton Head and by February 3, 1862 Pierce reported that, "[c]ommodious barracks have been erected for these people, and a guard protects their quarters" (Moore 1866:313). It is likely that a number of these barracks were built around the Hilton Head post as the number of blacks increased. In July of 1862 a New York Times correspondent found,
the quarters of the contrabands outside of camp. These quarters consist of two long rows of wooden buildings, nicely whitewashed on the outside, and having much the appearance of commissary store-houses, pierced with innumerable windows for the purpose of ventilation (The Negro in South Carolina 1862).

Frank Leslie's Illustrated Newspaper describes these quarters as, "very comfortable and well ventilated, and hav[ing] the great architectural merit of being perfectly adapted to their purpose" (Government Buildings for Contrabands at Hilton Head 1862: Figure 15).

The use of barracks is not surprising since these structures were built under the supervision of the Army Quartermaster's Department. The Quartermaster's Architectural plans on file with the Cartographic Branch of National Archives reveal ready to use plans for a number of such structures, including Laundress Quarters with 1 door and a window on front which measures 25 by 169 feet (National Archives, Map 103B, Sheet 4) and Barracks with a central store which measure 25 feet 6 inches by 136 feet (National Archives, Map 103B, Sheet 3). Similar barracks were used until the end of the war for the Provost Marshal General's Guard (National Archives, Still Pictures Branch, 165-C-572), while the white laborers were also put in somewhat smaller barracks (National Archives, Still Pictures Branch, 165-C-143 and 165-C-335).

By October of 1862, however, these arrangements had proven unsatisfactory and a second approach to the housing of the contrabands was being developed. One newspaper article describes the situation,

[t]he present negro quarters - a long row of partitions into which are crowded young and old, male and female, without respect either to quality or quantity, such has thus far been the necessity - having become a sort of Five Points, half stye, half brothel, the Major-General [O.M. Mitchel] has ordered to be removed outside [the encampments], and accordingly a piece of ground has been selected near the Drayton Plantation, about two miles off, for a negro village. The negroes
Figure 15. A view of the contraband barracks, pre-dating Mitchelville (from Frank Leslie's Illustrated Newspaper, July 19, 1862, p. 269).
are to be made to build their own houses, and as it is thought to be high time they should begin to learn what freedom means by experience of self-dependence, they are to be left as much as possible to themselves. In preparation for the advances of the army, when they will be intrusted with the entire charge of the islands. A teacher has been provided for them — since they have as yet had none upon this island — who will be paid from the Quartermaster's Department (New York Times October 8, 1862, p. 1).

A similar, though more detailed account was offered by New South several days previously,

Some wholesome changes are contemplated by the new regime [General O.M. Mitchel, who assumed command September 17, 1862], not the least of which is the removal of the negro quarters beyond the stockade. Where they can at once have more comfort and freedom for improvement. Accordingly, a spot has been selected near the Drayton Plantation for a Negro village. They are able to build their own houses, and will probably be encouraged to establish their own police under supervision of their Superintendent. A teacher, Ashbell Landon, has been appointed, to be paid from the Quartermaster's Department. Mr. McMath is at present the active and efficient Superintendent of these people on the island [McMath was mentioned by Pierce, also in 1862] (The Negroes 1862).

These are the earliest accounts detailing the founding of what came to be known as Mitchelville, in honor of General Mitchel, who died on October 31, 1862, before the village was completed. It appears that there were a variety of reasons for wishing to segregate the blacks and the troops. As will
be discussed, one reason was certainly to foster self-reliance and develop home rule. But other factors cannot be ignored. Previous remarks concerning the jealousy of the troops towards the blacks have been discussed, as have several indications of improper moral conduct. Not surprisingly, this problem continued to the end of the war, for Saxton in December 1864 remarked that,

[the] women were held as the legitimate prey of lust, and as they had been taught it was a crime to resist a white man they had not learned to dare to defend their chastity. Licentiousness was widespread; the morals of old plantation life seemed revived in the army of occupation (Ainsworth and Kirkley 1900:1029).

In addition, smallpox was a constant threat, frequently breaking out among the blacks and spread by unsanitary conditions and overcrowding. As late as July 8, 1863 Special Order 431 was issued empowering L. S. Marsh, Post Sanitary Inspector, to remove all contrabands "that may reside within the Entrenchments at this Post" (National Archives, RG 393, Part 4, Entry 551, pp. 15-16).

Regardless of the reasons, it is apparent that Mitchelville was built, but not yet named, by March 1863 (Anonymous 1863:309-310). Although it is implied by several sources that this town was laid out by military order, no General or Special Order to this effect has been located. Reid (1866) offers the "main points of the military order under which Mitchelville is organized,"

I. All lands now set apart for the colored population, near Hilton Head, are declared to constitute a village, to be known as the village of Mitchelville. Only freedmen and colored persons residing or sojourning within the territorial of said village, shall be deemed and considered inhabitants thereof.

II. The village of Mitchelville shall be organized and governed as follows: Said village shall be divided into districts, as nearly equal in population as practicable, for the election of councilmen, sanitary and police regulations, and the general
government of the people residing therein.

III. The government shall consist of a supervisor and Treasurer, to be appointed by, and hold office during the pleasure of the Military Commander of the district assisted by a councilman from each council district, to be elected by the people, who shall also, at the same time, choose a Recorder and Marshal. The duties of the Recorder and Marshal shall be defined by the Council of Administration.

IV. The Supervisor and Councilmen shall constitute the Council of Administration, with the Recorder as Secretary.

V. The Council of Administration shall have power:

To pass such ordinances as it shall deem best, in relation to the following subjects: To establish schools for the education of children and other persons. To prevent and punish vagrancy, idleness and crime. To punish licentiousness, drunkenness, offences against public decency and good order, and petty violation of the rights of property and person. To require due observance of the Lord's Day. To collect fines and penalties. To punish offences against village ordinances. To settle and determine disputes concerning claims for wages, personal property, and controversies between debtor and creditor. To levy and collect taxes to defray the expenses of the village government, and for the support of schools. To lay out, regulate and clean the streets. To establish wholesale sanitary regulations for the prevention of disease. To appoint officers, places and times for the holding of elections. To
compensate municipal officers, and to regulate all other matters affecting the well-being of the citizens, and good order of society.

Hilton Head Island will be divided into school districts, to conform, as nearly as practicable, to the schools as established by the Freedmen's Association. In each district there shall be elected one School Commissioner, who will be charged with supplying the wants of the schools, under the direction of the teacher thereof. Every child, between the ages of six and fifteen years, residing within the limits of such school Districts, shall attend school daily, while they are in session, exception only in cases of sickness. Where children are of a suitable age to earn a livelihood, and their services are required by their parents or guardians, and on the written order of the teacher of such school District, may be exempt from attendance, for such time as said order shall specify. And the parents and guardians will be held responsible that said children so attend school, under the penalty of being punished, at the discretion of the Council of Administration. (Reid 1866:89-91).

This identical document has been reprinted by Fleming (1960) and is quoted by Webster (1916:80).

Two further accounts offer war-time views of the town. Nordhoff reports that the town had "upwards of 100 houses" by March 20, 1863, but the village was, unfortunately laid out on too contracted a scale. The plot of ground assigned to each cottage is not large enough to furnish support to the owners. . . . It seemed to me, too, that the site chosen was the least fertile I saw. . . . the people are contented and industrious; I saw the women and children in every "lot," planting
sweet potatoes, and preparing the ground for corn. I observed that wood ashes are used as manure (Nordhoff 1863a:11).

In March 1867 Captain A. P. Ketchum of the Freedmen's Bureau, estimated that it took a minimum of 10 acres of land to make a working family of four self supporting (National Archives, RG 105, Monthly Report of Lands). In 1866 Coffin provides an extensive account of the town and discussions with several of its occupants. He notes that,

[the town is on a broad sandy plain, bordered by groves and thickets of live-oak, palmetto, and the coast pine. At that time there were about twenty houses, - or cabins rather, - of the rudest description, built of logs, chinked with clay brought up from the beach, roofs of long split shingles, board floors, windows with shutters, - plain board blinds, without sash or glass. Each house had a quarter of an acre of land attached. There was no paint or lime, not even whitewash, about them (Coffin 1866:231-232).

By November 1865 Mitchelville contained "about 1500 souls" (National Archives, RG 105, Monthly Report of Lands).

Mitchelville, then, was much more than a refugee camp or a holding area. It was a self-governing town with the first compulsory education law in South Carolina. The structures, unlike the previous military barracks, were built by the blacks with materials largely supplied by the military. As a consequence, the structures were likely to be more individualized and varied in construction detail. Three sources provide considerable detail concerning the architectural layout of Mitchelville. The first is a ca. 1860s map showing a portion of Hilton Head (Figure 16), including the military installations, plantations, fields, and most significantly, the street plan of Mitchelville (National Archives, RG 77, Map I 52). This map clearly shows the wide, regularly laid out streets, the fences which surround individual blocks, and the lots associated with each house. The accuracy and usefulness of this map to the archaeological investigations will be discussed in a subsequent section.

The second source are the S. C. District Tax Maps produced in 1869 (National Archives, RG 217, Records of the
Figure 16. A portion of the ca. 1860s map of Hilton Head, showing Mitchelville (National Archives, RG 77, Map 152).
Beaufort, S. C. Tax District) and the field notes of the survey for these maps, which was conducted beginning in February 1864 (National Archives, RG 458, Field Notes for Survey Dividing St. Luke's and St. Helena). These cartographic records are very accurate, being actual township surveys (Figure 17). The field notes provide information not available on the maps themselves. For example, the Mitchelville streets were 0.54 chain wide (35.6 feet or 11 meters) and one structure, bisected by a survey line, measured 20 by 15 feet (6.2 by 4.6 meters).

The third source of information is obtained from a series of photographs taken of the Hilton Head post in 1864 by Samuel A. Cooly. Cooly frequently billed himself as "U. S. Photographer, Department of the South," probably to increase the sale of his photographs. He was at best a quasi-official photographer, being under contract with the federal government in 1864 to document the Hilton Head base. Davis (1982:2:86) notes that Cooly had permanent establishments at Hilton Head, Beaufort, and Folly Island and that his partners included Haas and Peale (Davis 1982:5:10).

These photographs offer a unique opportunity to view construction techniques, hardware, and forms at both the Hilton Head post and Mitchelville. While a few of the more important buildings on the military post were either whitewashed or probably painted, such as the Headquarters for the Provost Marshal General, others evidence worn off whitewash or paint. Most evidence only bare boards. As early as February 12, 1862 the Quartermaster at Hilton Head wrote the Quartermaster General complaining that "against my judgement the General Hospital has been ordered painted - this will require an immense expenditure of [white] lead and other articles for painting" (National Archives, RG 92, Office of the Quartermaster General Consolidated Correspondence, Box 402). Structures had roofs of wood shingles, metal, or wood boards. Foundations include two types: round posts (some still with bark) set into the sand or posts set on a timber sill which is laid directly on the ground. While brick chimneys are seen on a number of structures, even more common were stove pipe vents. Stoves, in fact, are observed outside a cook house and also at the staff stables. At least some of these were burning coal, since several photographs show coal stockpiled. One photograph (National Archives, Still Pictures Branch, 165-C-336) also shows stacked and dumped bricks which appear to have been scavanged from other locations. Fences throughout the post are shown to be pine slabs (waste from the saw mill operations), picket, ornamental, and solid board and batten.

Turning to the "refugee quarters" in Mitchelville, there is ample evidence of individualized architecture. Four of the eight available photographs are shown in Figures 18 to
Figure 17. Section 7, Town 3 South, Range 1 West Tax District map, 1869 (National Archives, RG 217).
21. A few (such as Figure 21) show brick chimneys, but most indicate only stove pipe vents. A variety of roofing is observed, including wood shingles (Figure 21), metal (165-C-138) and bitumen paper (Figure 18). Most, though not all (Figure 21) have glass windows, although one photograph (165-C-140) shows a structure with no windows on the two visible sides. There is no organization to the architecture, design, or orientation, except that all but one are of a lapped horizontal board construction. The one exception appears to be an example of vertical lapped board-on-board construction (Figure 20). All of the structures are elevated; Figures 18 and 21 illustrate wood post piers while Figure 19 illustrates the wood sill technique. Some appear whitewashed (Figure 21), while others are obviously bare wood (Figure 18). Both front gabled and side gabled roofs are present (Figure 21), as are shed (or half-gabled) roofs (165-C-140). None have a noticeable over-hang. Figure 18 shows a lean-to addition, a common feature in the photographs. Both plank (Figure 18) and panel (Figure 19) doors are observed, but all appear to have ceramic doorknobs. There is evidence of T-hinges on shutters (Figure 21), but the doors all appear to have used butt hinges.

The yards show clean sand (Figures 18 and 19), weeds (Figure 20), and abundant trash (Figure 21). Several show barrels and tubs (Figures 18, 20, and 21) and two show articles of furniture which are well-made (Figures 20 and 21). Other photographs show the presence of a privy outhouse (165-C-140) and a windlass well (165-C-139).

There is also a photograph of the "Contraband Commissary" for October 1864 (165-C-289), which places it outside Mitchelville on the beach within the main part of the Hilton Head outpost. Likewise, the Office of the Superintendent of Contrabands was apparently located within the Hilton Head camp, not in Mitchelville (165-C-297).

While the maps and historic documents suggest a formal, well-laid out village, these photographs suggest a certain casualness which suggests that some of the regularity may have diminished as the village expanded (alternatively, the cartographers may have idealized the village layout). Lot sizes may have decreased as room was made for new arrivals. The structures evidence considerable individuality in construction and upkeep. There is little suggestion of military discipline in terms of yard upkeep and trash disposal, which supports the contention that the freedmen were largely left to their own devices in Mitchelville. There are no obvious outward indicators of status differences (the one structure which evidences a well built brick chimney lacks glazed windows). What is obvious, however, is that these structures will have left little archaeological evidence. In most respects they are clearly similar to nineteenth century antebellum slave houses (for a synopsis of
slave housing, see Genovese 1972:524-535). Dubois explains the situation by noting that,

... Immediately after emancipation the Negroes began to buy land... The peasant proprietors who thus arose, gradually demanded better houses. But here the anomalous situation of southern industry showed itself; there was no ideal home-making to which the better class of freedmen could look. ... No middle class dwellings - only the Big House and the slave-pen, nothing between. The black landholder could not think of building a mansion and he therefore built a slave cabin with some few improvements (Dubois 1901a:537).

Of course there was a middle class architecture in the South, but it is unlikely that many blacks had access to it, so they built what they were most familiar with - an improved version of the slave cabin.

There are few accounts of the activities at Mitchelville during the period from 1862 to 1867. It seems likely that the daily life of the contraband was of little consequence to the military or period observers while there was a war being fought. The New South did report the formation of the First Baptist Church in Mitchelville, with "120 members, all of whom are contrabands." Abraham Murchison, "a colored man in the employ of the Chief Quartermaster," was selected as the minister (Church Organization at Hilton Head 1862). A church, "authorized to be built near the negro quarters," was dedicated in October 1862 (Dedication of the Negro Church 1862). While it is not certain that these two churches are the same, the article suggests they are. Related to the religious well-being of the contrabands was an article reporting that "Gen. Saxton has appointed a commission, consisting of Rev. Mr. French, Rev. I. W. Brinkerhoff, and Mr. B. K. Lee, Jr., to whom all cases of domestic difficulties among the contrabands will be referred" (Divorces Among the Contrabands 1863).

Several examples are also offered of the military's economic interaction with the contraband. A February 1864 notice in the Free South announced that,

[The Subsistence Department will purchase all the Potatoes, Onions, Turnips and Cabbages they may have}
Figure 18. Refugee quarters at Mitchelville (165-C-162).

Figure 19. Refugee quarters at Mitchelville (165-C-135).
Figure 20. Refugee quarters at Mitchelville (165-C-136).

Figure 21. Refugee quarters at Mitchelville (165-C-137).
By August 1864 the military had ordered that all produce for sale had to be first offered at the Pilot's Wharf Market from 5:00 to 11:00 A.M. and that only after those hours could the unsold items be offered in the camps, streets and private dwellings at the established (but unspecified) prices (New South, August 6, 1864, p. 3).

While the military operated a commissary, probably to dispense rations to those that were eligible (see Ainsworth and Kirkley 1900:3:4:44-450), a number of trading stores were authorized to operate on various plantations. Of special interest are those that operated in Mitchelville. Fortunately all such posts had to possess a permit from a Special Agent for the Treasury Department, so there is good evidence for at least four and possibly five supply or trading stores operating within Mitchelville (National Archives RG 366, Boxes 303-304).

An application was made by Dumont R. Carey on March 31, 1865 and there is some evidence that he operated at least through May 1865. August Lambert of Hilton Head was granted authority for a supply store stocking up to $4000 of goods per month on September 13, 1864, but the authority was revoked on October 6, 1864 at the request of Major General Foster. There is one invoice of goods shipped to Lambert in Mitchelville prior to his authority being revoked. The items he offered for sale included rice, flour, cheese, lard, sugar crackers, soda crackers, snap crackers, grits, matches, smoking tobacco, candles, pepper, allspice, and a cask of ham, for a total value of $628.64.

Thomas and Dixon suffered the same fate as Lambert. Granted authority on October 11, 1864, their permit for a store stocking up to $1000 of goods per month was revoked on November 1, 1864. Chauncey G. Robbins of Beaufort and his two partners from New York first applied to establish a trade store at Mitchelville on May 6, 1864 and provided a bond on May 29, 1864. No evidence was found, however, that Robbins ever opened a store.

The best information comes from the operation of William G. Tackaberry and Henry A. Ely, both of Beaufort, who applied to operate a store on December 1, 1864. Ely and Tackaberry anticipated offering merchandise worth no more than $1000 per month and were in business at least through April 1865. A series of seven invoices for this concern have been found. They offered a wide range of kitchen goods for sale, including coffee pots, quart cups, tea pots, oval pans, dish pans, buckets, tin pie plates, sauce pans, tablespoons, teaspoons, basters, fry pans, knives, stamped dippers, flesh forks, egg whips, bread pans, corn square pans, shovels, tin
plates, tea kettles, coffee boilers, pails, brooms, tubs, wash boards, brushes, hand scrubs, whisks, baskets, sieves, roll pins, oven mats, fish sines and cord. Clothing and personal items included shirts, drawers, suspenders, a variety of cloth (such as prints, gingham, red flannel, and cotton), blue shirting, cologne, pomade, spectacles, fine hair combs, head nets, silk belts, hair pins, pencils, worsted braid, bead necklaces, watch keys, arm corsets, leather belts, thimbles, brace horn buttons, white bonnets, pearl shirt buttons, white agate buttons, coral buttons, Darling coat and vest buttons, plantation buttons, shoe laces, and collars. Food and grocery items included condensed milk, navy tobacco, Kentucky leaf tobacco, hams, dried apples, dried peaches, dried pineapples, dried tomatoes, telegraph matches, pipes, flour, hominey, sugar crackers, soda crackers, syrup, butter, lard, sugar, rice, coffee, starch, and soap.

While at first the destitute blacks were probably forced to wear discarded, donated, or bartered military clothing because the Union invasion occurred before their winter clothing allotment, it is obvious that other clothing was in demand (see Botume 1968:32, 54, and The Negro in South Carolina 1862 for accounts of blacks wearing and repairing military clothing; the Freedmen's Bureau continued to issue military trowsers, sack coats, cotton shirts and great coats into 1866 - National Archives, RG 105, Monthly Returns of Clothing, Camp, and Garrison Equipage, Box 78). Rose discusses the buying habits of the contraband, noting that Northerners quickly recognized "the enlarged market for Northern manufactures that will be created by an enlarged area of freedom" (James M. McKim in Rose 1964:164). In 1863 an observer noted,

there is a great demand for plates, knives, forks, tin ware, and better clothing, including even hoop skirts. Negro cloth . . . [is] very generally rejected. But there is no article of household furniture or wearing apparel, used by persons of moderate means among us, which they will not purchase when they are allowed the opportunity of labor and earning wages (Anonymous 1863:310).

Reid states that "counters . . . are piled with heavy stacks of ready-made clothing, pieces of coarse goods, hats and the like; and the show-cases are filled with cheap jewelry, and the thousand knickknacks which captivate the negro eye" (Reid 1866:122). He goes on to note that these merchants are regulated and that "a military order has been found necessary
to curtail the extravagant profits of the traders, and protect the negroes" (Reid 1866:123). Other sources, such as Todd (1886:126) and Denison (1879:129) mention that pains had to be taken to prevent the traders from cheating the contraband; this may explain the limited operations of August Lambert and Thomas and Dixon.

Several accounts specifically mention the contraband's love of jewelry. One source states that "necklaces of glass beads were the ornaments of many, while the cheap dollar jewelry, of Connecticut manufacture, was also in demand" (The Negro in South Carolina 1862:2). Forten remarked that, "[t]hey are, however, very fond of all kinds of jewelry" and that earrings were common, even among the children (Forten 1864:592).

There was apparently only one type of goods which the blacks had difficulty purchasing - alcohol. While whiskey rations were issued to the enlisted troops in 1861, they were apparently discontinued early in 1862 so that by March only officers were allowed to have liquor shipped to Hilton Head for their own use. A May 1, 1862 letter from General Stevens to Mr. Eustis states, "[o]rders have long since been issued prohibiting the sale of liquor to the negroes as well as to enlisted men within the limits of this command . . ." (South Caroliniana Library, Box 2162). As the military left, however, liquor became more common, so that in 1869 a Mitchelville teacher (who may have had a bias) remarked,

[intemperance is one of the most apparent vices on the Island. I
think I am safe in saying, that scarcely a family, in which, there
is not some member, who is a victim of this Destroyer, - not a
store, into which you can enter, - for any necessary article, but you
see the fatal Poison, as one of the principle sources of gain, and
by White Men to - what can be done to save the youth from this

fearful snare? (American
Missionary Association Archives,
7345, letter from S. T. C. Gerrish
to Rev. E. P. Smith, March 13,
1869).
Mitchelville In The Postbellum Period

General Rufus Saxton, who had been appointed by the War Department in April 1862 to handle freedmen's affairs in the Port Royal area, became Assistant Commissioner of the Bureau of Refugees, Freedmen, and Abandoned Lands on June 10, 1865, with headquarters at Beaufort. He was replaced by General Robert K. Scott in January 1866, largely because of Saxton's "long association with the freedmen of South Carolina" and his staunch defense of their right to the Sea Islands (Rose 1964:356-357). This was the period of land restoration to Southern whites, often at the expense of the newly emerging black yeoman class who had been led to believe that their title to the land was clear. An excellent discussion of this situation is offered by McGuire (1985), who emphasizes the land policies of nearby St. Helena Parish from 1861 to 1900. A more general account is offered by Oubre (1978), and Abbott (1967) discusses the Freemen's Bureau in South Carolina.

While much of the teaching during the war years was conducted by Quartermaster employees, there were a number of missionaries in the Port Royal area (see Rose 1964). The most active group was the American Missionary Association, a group which obtained its funds from the Wesleyan Methods, Free Presbyterians, and the Free Will Baptists (Johnson n.d.). The schools on Hilton Head after 1866 were actually Tax Commissioner's Schools, supported by "the proceeds of lands which in 1863 fell into possession of the general government at tax sales." W.E. Wording, a Tax Commissioner, was the disbursing agent. Teachers' salaries were paid by the government, and most of the buildings and teachers' residences (except at Hilton Head) were owned by the government. Students were "nominally required to pay 25 cents per month, to be appropriated for the purchase of school books at wholesale costs prices, and for fuel, etc." (Alvord 1869:20-21). It is clear, however, that the American Missionary Association contributed heavily toward its teachers' upkeep and that those unable to pay the 25¢ were not turned away (AMA Archives, H7634).

The activities of this group provide one of the few postbellum views of Mitchelville, where they concentrated their efforts because of its large black population (see Martin 1977). By 1866 they were the sole missionary group on the island and a November 10, 1866 letter from George C. Carpenter to Rev. Samuel Hunt states that the teachers would,

live here at Mitchelville till you
send more teachers for other points
. . . . . The other society has
abandoned the island you know and we
have all the ground (AMA Archives, H6251).

In 1866 Hilton Head was divided into five school districts -- Mitchelville, Marshland, Seabrook, Stoney, and Lawton (the latter four being named for the plantations at which school was held) (AMA Archives, H6268). The AMA was offering a primary, intermediate, and high school for the Mitchelville blacks, being taught at the Free Will Baptist, Methodist, and Baptist churches respectively. Attendance at the primary school, which met for 4½ hours a day, ranged from 108 to 52, at the intermediate school attendance varied from 15 to 40, while the high school students, who met for 5 hours a day, had attendance ranging from 90 to 62. The teachers recognized that the attendance was directly tied to agricultural needs, so that in March 1867, E. Wright wrote to Rev. E.P. Smith that,

I suppose there will be a considerable irregularity in the attendance of the pupils now that the season for work in the fields has arrived (AMA Archives, H6463).

The teachers lived at "The Home" in Mitchelville, described by Eliza Summers as,

a little bit of a house with a single thickness of boards for sides and floors, not a bit of whitewash or plaster on the whole house and spaces between the boards on the sides wide enough so the birds fly through. Every house on the Island stands on posts so that the air can circulate under . . . . The garret [gallery, porch] is considered the coolest place. The houses here look like barns on stilts. but the teachers' home is so small and light that the slightest wind shakes it (Martin 1977:7-8).

That "The Home" was unattractive is also supported by E. Wright's November 22, 1866 letter to Rev. Samuel Hunt,

[it seems to me that teachers sent to such a desolate field as this ought to have a more liberal allowance and more special attention . . . . Though the surroundings are forbidding and dreary the house at least can be made comfortable and pleasant . . . . I have visited a
good many teachers' homes but have never found one so poorly supplied (AMA Archives, H6266).

Another problem was the lack of school houses at Mitchelville. The teachers wrote on at least two occasions (November 29, 1866 - AMA Archives, H6275 and December 3, 1866 - AMA Archives, H6282) pointing out that the black churches were unheated in winter, small, and lacking in school house conveniences. No school houses, however, were built. By 1867 it was obvious that enrollments were dropping and a March 20, 1867 letter from E. Wright to Rev. E.P. Smith states,

Maj. Delany [Freedmen's Bureau] says a third of the blacks have left the island this spring. Others will come to take their places in time, but the schools will not fill up again this year (AMA Archives, H6476).

Although two sections of the Primary School were being offered, total attendance was down to about 60 students, high school was not being taught, and the Intermediate school attendance ranged from 45 to 23. An Alphabet School was offered in the 1867 school year, with attendance ranging from 75 to 36.

By 1868 changes on the island were even more noticeable. One teacher noted that,

[m]y school is very small . . . .
The people are at work and are obliged to keep most of the children at home. I think my time would be more profitably passed now in a new field (AMA Archives, H7003).

The 1867 abandonment of Hilton Head by the military was felt strongly by the teachers, and we presume by the blacks. A letter from Mary T. Putnam to Rev. E.P. Smith dated November 26, 1868 discusses how government buildings have been sold, the Marshland mansion (used for the teachers' residence) had blown down, how the steamer now stopped only at the Seabrook landing, and how there were no "government teams" (AMA Archives, H7216).

In spite of all this, it appears that Mitchelville was still an active village. M.A. Burnett wrote on January 7, 1868,

[t]here are several large plantations upon which are small
settlements, but the greater part of the colored population of the island are located a short distance from Hilton Head at a place called Mitchelville. It is an incorporated town, regularly laid out in streets and squares. About 1500 inhabitants, not a single white person. There are three churches - two Baptist, one Methodist, two schools which are taught by A.M.A. teachers (AMA Archives, H6901).

The teachers, however, were no longer living at "The Home" in Mitchelville because a portion of it fell down in November 1867 (AMA Archives, H6835). "The Home" was put to use as a school building and records indicate it was the scene of the 1869 primary and intermediate schools.

The AMA letter also provides insight on the location of "The Home" within Mitchelville. On January 28, 1870, S.P. Gerrish, the last AMA teacher for Mitchelville, wrote Rev. E.B. Smith that the Mitchelville "Home" would soon be "untenantable - 12 ft. of the front yard having been washed [away] by the sea since we left it and now is being torn in pieces by vandal hands, for feul [sic]" (AMA Archives, H7657). She also mentions that "The Home" was situated on A Street. The New York office advised her to dispose of the structure in the best way. The next correspondence from Gerrish is on May 14, 1870, when she said,

I have delayed writing with reference to the "Home" until this late hour for what seemed to me a reasonable offer for it. 30.00 dollars being the largest sum. That offer is by a Methodist preacher who has in charge the building of a church for that denomination on this island (AMA Archives H7759).

This suggests that the teachers' "Home" was situated at the north end of the village, adjacent to the rapidly eroding Port Royal waterfront. Such a location is reasonable since the proximity to the water would have produced a cooling breeze. Reference to Figure 16 also reveals that the structures facing Port Royal Sound have been set off from the remainder of Mitchelville, implying a distinction or division. Summers describes the bridge, seen in Figure 16, which connected Mitchelville with the Hilton Head post, noting that "[t]he home is at one end of the bridge and Mr. Noyes' store is at the other end" (Martínez 1977:48).
Apparently the structure was sold to the Methodist preacher for on February 18, 1871, a James E. Hill wrote the AMA,

[t]his will informe you that I have receive your letter ten days after but my reason for not answer your letter is because there was several clames was made to that house property which you let me have it is now said to belong to the Government please give me propper clames to that property (AMA Archives, H7847).

Two notes at the bottom of the letter indicate something of the AMA response: "Miss Good. Can you tell me anything about this?" and "He means proper title - we will give him." Whether James E. Hill was ever able to salvage the structure is not known, but the AMA archives suggest that by the early 1870s Mitchelville, while still occupied, was also eroding and being scavaged for building elsewhere.

At the end of the 1870 school term, Judge Wording of the Tax Commission, who was in charge of the Tax Commissioner's Schools, notified Gerrish that he was not renewing her support and the last AMA school in Mitchelville closed. By that time her attendance in the intermediate school ranged from 54 to 21 with about half paying the 25¢ tuition or "tax" as she called it (AMA Archives, H7634). School was meeting about 20 days a month for 5½ to 7 hours a day. While no white students were reported for 1870, three were reported for the preceding year in the Intermediate School (AMA Archives, H7383) and two attended the Primary School (which was closed at the end of the 1869 school year) (AMA Archives, H7253).

The AMA Archives provide occasional items of lesser interest concerning the Hilton Head environs and the blacks in Mitchelville. Summers mentions that quantities of wild plums and blackberries were collected by the blacks (Martin 1977:91) and that the blacks raised "caster oil" plants in their gardens (Martin 1977:51). Wright comments that everything on Hilton Head "is exhorbitantly high" and requests that Irish potatoes, beets, cabbages, butter, lard, flour, spices, sugar, tea, coffee, corn starch, farina, apples, condensed milk, crackers, and five stoves be shipped from New York (AMA Archives, H6266). For the three months ending December 31, 1866, the AMA spent $370.41 on provisions, $63.50 for fuel, and $24.00 each for the cook's and washerwoman's wages. At that time there were four, perhaps five, teachers in the Mitchelville home, so provisions ran only $25-$31 per person per month (AMA Archives, H6304). There is also evidence that besides the AMA teachers, who taught Sunday school during the school term, there were
others, perhaps local blacks, who continued the Sunday School lessons through the summer (AMA Archives, H7146). Indeed, by December 1869 Gerrish had an unnamed black assistant teacher (AMA Archives, H7640).

Throughout the war Drayton Plantation had remained an active spot. Within days of the island's fall to Union forces, the blacks at Drayton's had a large prayer meeting and provided the Northerners with their first view of a black religious event (Eldridge 1893:76). The Drayton Plantation was also the location of an operable cotton gin in February 1862 (Eldridge 1893:107) and a large sawmill (No. 2), which burned in August 1863 (Saw Mill Burned 1863). The yard of the Drayton house was the campground for the First South Carolina volunteers, the first black regiment (The Negro in South Carolina 1862).

In July 1867, Fish Hall was home to 120 blacks. The Freedmen's Bureau also specified that it contained 250 acres of cultivated land, 125 acres of wood, and 125 acres of cleared lands (compared with 250 acres of improved land and 450 acres of unimproved land in 1860; the "loss" of 200 acres cannot be explained). On the property were "mansion, barns and quarters" (National Archives, RG 105, Monthly Report of Lands, July 1867).

Many blacks were understandably reluctant to work for their previous owners, or any white man for that matter, much preferring to acquire their own land. McGuire points out that land rental, especially on federal property, was an acceptable alternative which allowed independent cultivation. She also notes that "enterprising freedmen sometimes combined resources and rented entire plantations" (McGuire 1985:158). This situation is seen at Fish Hall, where the Tax Commissioners rented the plantation to Bacchus Singleton, in trust for himself and those residing on the land who paid their portion of the rent, in 1865 for $220. The property was rented "subject to occupation by the military authorities, and reserving one half the mansion house for a school." Additional rules and regulations precluded more than half the arable land being cultivated in any year, required land to be fallow for a year, specified that nothing should be wasted, allowed the government to take a lien on the crop (since only half of the rent was paid in January, with the remainder due in July), specified that no one currently residing on the property could be forced off, required that laborers perform their fair share of the work, and prohibited the laborers from living in or occupying the mansion house. The Tax Commissioners also specified that individuals working for the Government could continue to live on the plantation and, although not participating in the rental program, might cultivate up to three acres per full hand at a cost of $2 per acre (National Archives, RG 217, Records of the Beaufort, S.C. Tax District, Indenture
that there were individuals living at Fish Hall who, like those in Mitchelville, were primarily wage hands.

A similar rental agreement was prepared in 1866, again with Bacchus Singleton, for $220. This time, however, the plantation description specifies,

except the mansion house thereon, Garden and buildings for necessary house servants and the Corral (so called) subject to occupation by the military authorities. And there is also excepted from this lease the village of Mitchelville (so called) (National Archives, RG 217, Records of the Beaufort, S.C. Tax District, Indenture Volume, p. 81).

A similar rental agreement was prepared for 1867, again, excluding Mitchelville, although the corral is not mentioned and the rent is only $90. By 1868 (and again in 1871) the agreement is with Summer Christopher. In 1868 the rent is not specified, perhaps by mistake, while in 1871 the property is no longer rented "in trust" and the fee is $140 (National Archives, RG 217, Records of the Beaufort, S.C. Tax District, Indenture Volume, pp. 81, 129, 154, 236).

The failure to rent the plantation after 1871 is indicative of the gathering storm of land restoration. Fish Hall, being purchased by the federal government and never going into private ownership, was not intensively involved in the bitter controversy surrounding the war time direct tax sales to white Northerners and local blacks (see McGuire 1985). The military post at Hilton Head was officially abandoned on January 14, 1868, but the affairs of the Department of South (renamed Second Military District) were largely transferred to Charleston after its fall in 1865 (for example, see National Archives, RG 92, Box 402). By 1868 a Board of Appraisal was studying the sale of buildings at Hilton Head to the Freedmen's Bureau (Special Order 60, Headquarters Second Military District, Charleston, South Carolina, March 23, 1868) and by 1871 land at the "entrenchments" was being leased or sold (National Archives, RG 217, Journal of Direct Tax Commissioners for South Carolina, pp. 37, 39).

McGuire notes that by 1872 the Port Royal area was "'in a state of utter disorganization' from the effects of planters attempting to divest title from wartime purchasers" (McGuire 1985:132). It was hoped that restoration of federal lands, to which no one had a strong attachment, "might slow or even terminate court proceedings on lands sold already, thus permitting wartime purchasers to retain undisputed title.
to their holdings" (McGuire 1985:132). To this end a bill was introduced into and passed the 42nd Congress, 2nd Session (House bill 1269, Senate bill 780), which allowed two years for the restoration of all unsold Federal holdings after the previous owner paid taxes, costs, and interest. The law was extended several times, making it possible to apply for land redemption until 1877 (McGuire 1985:132-133). Thus, on April 17, 1875, the heirs of Mary B. Pope paid $407.83 and obtained approximately 1300 acres of Fish Hall Plantation (including the Pine Land tract) back from the Federal government (Beaufort County RMC DB 9, pp. 254-255). Excluded from the Certificate of Release were the approximately 803 acres on the Hilton Head Point south and east of Fish Hall Creek, which were reserved as a military reservation (National Archives, RG 49, Hilton Head), but included was the village of Mitchelville (Figure 22). Perhaps anticipating the return of the Fish Hall tract the heirs of Mary B. Pope (John E. Drayton, John G. Thomas, Anna M. [Drayton] Thomas, William S. Drayton, Mary E. Drayton, Percival Drayton, Emma G. Drayton, and Thomas F. Drayton, Jr.) had given their power of attorney to Henry E. Young and William S. Drayton for the express purpose of disposing of Fish Hall Plantation (Beaufort County RMC, DB 10, pp. 516-517). The heirs were not concerned that the property be sold as a tract, and even specified that lots could be donated for "church purposes." Of particular note is the statement that they authorized the attorneys to establish a cemetery on the Fish Hall lands "and give graves or lots . . . to such . . . persons as will remove their dead from the places of present interment near the residence house" (Beaufort County RMC, DB 10, p. 516). Given the proximity of the present day "Drayton Cemetery" to the site of the main house, it appears unlikely that Young and Drayton were successful at getting relatives to move any graves. Perhaps unknown to the Draytons was the location of a smallpox cemetery (No. 3) "325 yards northwest of the Drayton Plantation House," in which there were buried, with headboards, eleven soldiers, while 20 other graves were unmarked. The military, in the late 1860s, was still using the cemetery and stated "the bodies cannot be moved without danger of breeding contagion" (National Archives, RG 92, Box 402).

Rivers and Drayton, however, were otherwise successful as they began selling parcels of the property in 1876. Robert C. McIntire bought 147 acres on December 9, 1876, Kate Fields bought 5 acres on January 8, 1977, James Washington, Sancho Christopher and Phillis Holmes purchased 16 acres on January 22, 1877, Rutledge and Young, Esq. purchased 201 acres on August 31, 1878, and G.P. Gardner purchased 650 acres on October 1, 1888 (Beaufort County RMC, DB 10, pp. 514-515; DB 11, p. 105-106; DB 11, p. 569; DB 11, p. 363-364; DB 18, p. 613). This would appear on the surface to be an atypical situation of the former owners not wishing to restart plantation operations and expressing a
Figure 22. Plat of the lands set aside in 1874 for a military reservation on Hilton Head Island.
willingness to sell land both to speculators and to freedmen. The last transaction, to G.P. Gardner, probably contained a large portion of Mitchelville, although it is not mentioned by name.

In 1912, Clara Wigfall, Emmelin Washignton, Linda Perry, Gabriel Boston, and Celia Boston, all heirs of March Gardner (the father of G.P. Gardner) brought suit in the Beaufort Court of Common Pleas against James Heyward, Lillian G. Pearson, Lavinia Howard, Henry Heyward, and Clifford Heyard (heirs of wife of G.P. Gardner) for 154 1/4 acres of land encompassing most of Mitchelville (Beaufort County RMC, Judgment Roll 2795).

The plaintiffs alleged, and the court finally agreed in 1921, that March Gardner, an illiterate, but very successful black man, had purchased the Mitchelville property from Drayton sometime between 1865 and 1866 and had immediately thereafter paid a fine to release his only son, Gabriel P. Gardner, from jail in Charleston. March placed his son in charge of the property, mill, gin, and store, and entrusted him to have a proper deed made out. Although not addressed by the Court, Drayton could not provide a deed, because in 1865 - 1866 the land still belonged to the federal government, not the Pope heirs. Gabriel took advantage of his father by eventually obtaining a deed in his own name and then transferring the property to his wife and daughter.

The most significant aspect of the court action is the depositions taken by a Court appointed Special Master. The blacks that came forward to offer testimony talk of the Mitchelville area during the late nineteenth century, a period of time from which there is little other documentary evidence. Emmeline Washington testified that her father, March Gardner, died about 1880. He had purchased Mitchelville from William Drayton and operated a number of businesses there. Apparently a number of individuals farmed plots on the land and the money collected as rent went to pay the taxes. Clara Wigfall revealed that she was born "in slavery times" and that her father arrived at Hilton Head, during the war, several years before she came over. She had been cultivating 3 - 4 acres of the property every year. Renty Miller talked of how "many people was planting the land in lots when the old man [March Gardner] lived" and how they rented the land from him. Linda Perry remarked that March Gardner had a "gin house and cotton house, and grinding [mill]." There was also a store on the property in the early 1870s. A Stephen Singleton testified that March Gardner was a carpenter who worked for a Mr. Lindsey during the war. After the War March apparently constructed a mill and ginhouse in Mitchelville, which was apparently still a village. Thomas Wigfall, who was 18 when the Civil War began, frist met March Gardner in 1863. At that time he was building a shop on one of the Mitchelville roads. March was
also planting peas and cotton and Emmaline Washington ran the shop in Mitchelville. Wigfall also mentioned that the boiler for the mill was still at Mitchelville in the 1910s. Wigfall was also able to name a number of people who lived at Mitchelville -- John Nesbit, Bob Washington, Caesar White, Charles Robins, Charles Perry, Robert Wiley, Scapio Drayton, Jack Screven, Charles Pinckney, Billy Reed, Peter Flowers and Joe Williams. Hannah Williams testified that she came to Hilton "two years before the soldiers were mustered out [1868]" and that she stayed at Mitchelville where she eventually purchased a house for $5, although she did not receive a deed.

An examination of the deeds of property improperly sold by Gabriel P. Gardner's wife and daughter (S.A. and S.B. Gardner) also offer some insight. Virtually all of the deeds, dating from the early to mid-1880s describe the property as being "in the village of Mitchelville" and use specific road names, such as First and Second Streets or the terms alley and lane. Property is deeded to churches and also to individuals who are already residing on the property (Beaufort County RMC, DB 13, p. 250-251; DB 13, p. 473; DB 13, p. 601, DB 14, p. 334). March Gardner's store, opened sometime in the early 1860s, continued to be run by Susan B. Gardner into the 1890s. In 1892 it was one of six general stores on Hilton Head Island (Anonymous 1892).

It appears that a number of individuals saw in Mitchelville an opportunity to make money. With the federal government leaving Hilton Head and the blacks relatively illiterate and not yet worldly, it was perhaps easy enough to sell Mitchelville twice. Mitchelville was not situated on prime agricultural land and the Draytons probably felt (correctly) that few planters would want to purchase a black town. March, and later his son Gabriel, however, began collecting rents on (and selling) property other blacks had been using for years. The federal government, which had tried to think of every possible aspect of town government, had made no provision for the town once the war ended since the early land policies presumed that the blacks would own the land in perpetuity. It was unthinkable to the early planners of Mitchelville that the land on which the town was situated would eventually be restored to its former owners.

The Court directed a survey be made and the property divided among the legal heirs upon each one paying their share of the costs associated with the case (Figure 23). Eugenia Heyward redeemed her tract of 35 acres on June 7, 1923 (Beaufort County RMC, DB 39, pp. 342-345). It is this tract on which the Fish Haul site is situated. Celia and Gabriel Boston obtained the adjacent tract on September 2, 1921 (Beaufort County RMC, DB 39, pp. 1719). Linda Perry, Emmaline Washington, and Clara Wigfall also obtained their
Figure 23. Plat of the Mitchelville tract in 1921 (Beaufort County RMC, Judgement Roll 2795).
respective parcels in 1921 (Beaufort County RMC, DB 39, pp. 14, 37, 39).

By 1930 the 35 acre (calculated at 33 acres in 1930) Eugenia Heyward tract was sold for $31.00 by the Sheriff to pay a defaulted tax bill of $15.00. The purchaser was Roy A. Rainey of New York (Beaufort County RMC, DB 46, p. 232). Rainey held the property for a little over 10 months and sold the 33 acre tract to Landon K. Thorne and Alfred L. Loomis on May 21, 1931 (Beaufort County RMC, DB 48, pp. 117-118). Thorne and Loomis are discussed by Holmgren (1959:123, 126) who notes that they gradually acquired the entire Fish Hall tract by "buying land from any negroes willing to sell, and by 1936 there were only 300 negroes on the island instead of the 3,000 of forty years before" (Holmgren 1959:123). Loomis and Thorne sold their property, including Mitchelville, to the Hilton Head Company on March 22, 1950 (Beaufort County RMC, DB 70, pp. 7-8), who in turn transferred it to the Hilton Head Co., Inc. through the merger of the Hilton Head Co., Port Royal Plantation, and Island Development Corp. in 1972 (Beaufort County RMC, DB 195, p. 1143). From there the property was transferred to John L. Crago, to the Fish Haul Corp., and from this corporation to Louis Joffre as a number of individual lots. The 28 acre Celia and Gabriel Boston tract was sold to Johnnie White on March 15, 1943 for $20.00 by the Sheriff for delinquent taxes (Beaufort County RMC, DB 88, p. 58).

Other descriptions of postbellum life in and around Mitchelville include such sources as Parsons (1923). She notes that the typical house was frame, usually painted white, and raised "about two feet from the ground, on posts made of oak or palmetto" (Parsons 1923:208). It is apparent that housing styles changed little since the antebellum period and the house of the early twentieth century was identical to that observed in Figures 18 to 21. By the early 1920s there was only "one old man [basket] weaver left" on Hilton Head and the only baskets still observed were shallow, used for washing corn (Parsons 1923:208). Farmers on Hilton Head worked their own lands, usually with horses (Parsons 1923:208-209). By the late 1930s legal transactions were still uncommon with the island's blacks. The Federal Writers' Project said, [d]eeds to practically all these plots [of land sold to blacks] are still in the names of the negroes who bought them, and their children and grandchildren pay taxes in the names of forefathers, long since dead, rather than in their own names as actual owners (Federal Writers' Project 1938:8).
In the early 1880s the agricultural practices of the blacks were described,

[the size of the land-holdings is from one to twenty acres and nowhere is more than fifteen acres of cotton cultivated under one management. Much of the land is uncultivated, and the remainder, in small patches, varying from one-eighth of an acre and less to three acres in size, is planted in corn, cotton, and sweet potatoes, curiously intermingled (S.C. Department of Agriculture 1883: 31; see also Woofter 1930).

For some reason the postbellum cartographic sources for Hilton Head range from unrevealing to outright inaccurate. U.S. Coast and Geodetic Survey Chart 438 was first published in 1873, based on 1865 and 1868 topographic surveys (Figure 24). While the main fort buildings and the Drayton settlement are clearly shown, there is no indication of Mitchelville, which was a prospering village at the time of the topographic surveys. There is a settlement located on the south side of a small tidal creek north of Mitchelville. There is no indication of a village in this area so it is likely that the topographic survey mislocated Mitchelville by one tidal creek too far north. The 1882 chart has no new topographic survey, but the fort complex has been removed except for two structures and the pier is shown in ruins. Drayton's plantation is still shown, as is the misplaced Mitchelville. The 1893 chart is identical. Turning to the 1920 Corps of Engineers Hilton Head topographic map (Figure 25), the 1916 topography shows a number of structures in the vicinity of Mitchelville, including a church. The area is shown as cultivated and this map probably shows the area as it appeared to the parties of the 1911 court action over the March Gardner tract.

Summary

The historical accounts of Mitchelville are useful not only because they provide an interesting, if not altogether clear, view of the freedmen lifestyle, but also because they offer an opportunity to more clearly focus our archaeological study. Based on the historical record we may formulate certain archaeological expectations which will serve as topics for further study. At this initial stage the bulk of these topics relate to material culture, but this will begin to allow a comparison to be made between antebellum slave and postbellum freedmen lifestyles.
The blacks' first opportunity to obtain previously unavailable or scarce goods came with the abandonment of the island by Southern whites. Three avenues were opened to the contrabands -- scavanging of goods and supplies abandoned by the Confederates, looting plantation houses, and bartering from Union troops who looted plantation houses. Previous studies have indicated that slaves, in spite of laws to prevent it, did acquire firearms which were used to supplement the diets of both slave and owner (Joyner 1984:100-101; Otto 1984:45-46). We would expect that the island's blacks would have acquired a supply of arms and ammunition from the retreating Confederates, both of which should be evidenced in the archaeological record. There are specific historical accounts of both "dishes" and clothing being looted by the slaves after the Confederates abandoned Hilton Head. We anticipate that a variety of both durable and non-durable high status goods (specifically furniture, clothing, and kitchenware) will be incorporated into the archaeological record.

The freedmen were almost immediately introduced into a wage economy, although Genovese (1972:313-317) notes that many blacks had some exposure to wage labor (or similar incentives) during slavery (see also Stampp 1956:72-73, 90). The period of prosperity in Mitchelville lasted from about 1861 through 1867. Wages varied from $4 to $12 a month, depending on the job. The lower end of the scale, typifying unskilled and domestic labor, was equal to that paid antebellum Virginia housemaids (Olmsted 1953:75), while the higher end, paid to skilled freedmen, was equal to only the antebellum wages of poor Whites who worked in cotton mills (Olmsted 1953:213, 385). The freedmen were not paid on par with Southern mechanics, much less at current Northern wage rates (Olmsted 1953:90, 487-488).

Research by Seagrave in Louisiana reveals that there was a significant increase in real incomes of Class 1 field hands in the period following freedom. Seagrave notes that, "by the years 1866-67 real incomes of those workers had increased between 100 and 200% over the levels of goods and services provided to slaves prior to the War's end" (Seagrave 1975:75).

Blacks apparently engaged in unbridled consumerism at Mitchelville. Trading stores in the town sold three major categories of goods -- clothing, kitchenware, and food. All three categories may be observed in the archaeological record: clothing as fancy notions and buttons; kitchenware as ceramics, utensils, tinware, and glasses (although ceramic sets may not be found and tinware may have been more common than ceramics); and food primarily as tin can fragments. While this improvement in purchasing power will be observed in the archaeology of Mitchelville, it will be tempered by the short duration of military wage labor (1862-1867), the
extremely high prices charged by local vendors, and the loss of plantation rations (valued by Seagrave [1975:19] at $43.00 a year for Louisiana slaves between 1856 and 1860).

In spite of freedom, and the freedmen's resultant joy, blacks overall did not show any amazing rise in economic wealth. Most continued to be relatively poor, although many were able to purchase lands and some of the luxuries they were previously denied. While previously clothing, food, tobacco, and medicine were more or less routinely supplied by their owners, freedmen were largely responsible for all of their needs, as well as wants. The archaeological record, therefore, may be uneven. In the face of multiple choices, we anticipate considerable idiosyncrasies and it seems unreasonable to believe that, at least at first, there will be much uniformity in purchasing habits.

Seagrave suggests several factors to account for the freedmen's failure to attain their full economic potential. Although this study was conducted for Louisiana and is based on farm wage labor, it may still be useful for understanding the situation in the Hilton Head area. First, Seagrave notes that there was a deterioration in the terms of trade after 1859, so that the price of cotton was lower in relation to the price of ration goods than it had been in 1859. Second, and probably of greater significance, there was a drop in output and productivity between the years of 1859 and 1869. A number of factors are responsible for this decline, including the reduction in the use of complimentary resources, the reduction in capital expenditures needed to maintain the quality of the farms, and the substitution of leisure time for work over the year by the freedmen (Seagrave 1975:69-72).

The military influence on the Mitchelville settlement is anticipated to have been minimal, based on the decision to establish the village as an autonomous governing body -- part of the grand experiment. This is fortunate since it largely eliminates a significant variable from the process of black acculturation to freedom. The freedmen, particularly from 1862 through 1867, did have access to military clothing, through bartering and relief efforts. Abundant evidence of this is expected in the archaeological record. Likewise, military rations were issued to a number of the Mitchelville occupants. These rations included fresh meat, either beef or pork, and we expect to see evidence of specific cuts in the archaeological record, although by March 1863, General Order 22 limited the issue of fresh beef because of its expense. There is no indication that any of the trading stores carried fresh meats, so the beef found in the archaeological record is most likely military issue and a sign that the refuse was from a household whose members were hired by the military.
Of all the public services and laws possibly formulated by the leaders of Mitchelville (with military assistance), only those relating to sanitation and possibly education are likely to be clearly visible in the archaeological record. The laws regarding sanitation may be evidenced in different refuse disposal practices. Refuse may no longer be thrown behind the house in the rear yard, or in the street, or in an adjacent marsh, but may be collected and disposed of in a central location. Alternatively, this may represent only a minor refinement in previous practices which required slaves to "stockpile" certain types of trash (such as oysters for eventual use in tabby production). There may also be an increase in the use of privies among freedmen, although to obtain evidence of this will require more intensive excavations than are currently feasible. There were at least three (and through time probably more) public buildings in Mitchelville which served as both churches and schools. These structures will be clearly evidenced in the archaeological record by their size and artifact pattern.

The settlement pattern of Mitchelville is clearly documented in the historic records. Not only is there a detailed map of Mitchelville, but there are also photographs of the contraband quarters. These photographs show structures which appear well built and which will leave a distinct archaeological record, but which will not leave evidence of their exact location or size. We suspect that the quantity of architectural remains (nails, hardware, window glass) will be high, although the absence of brick piers and a substantial roof overhang will make it difficult to firmly establish many structural details. Brick fireplaces appear relatively uncommon, being largely replaced by stoves and vents.

In contrast to the ordered regularity of the Mitchelville map, the Mitchelville photographs suggest a certain causalness to the village organization. We believe that the map may be somewhat idealized, or else may represent Mitchelville early in its history. The detail of the map suggests that it may be possible to pin-point specific structures, although since the structures are not keyed to individuals or any census, this effort is useful only for reconstructing the spatial limits of the village. The photographs suggest that as the village grew, the strict 1/4 acre lot division may have been broken down, but it may be useful to study adjacent structures to determine how strict boundary lines were and what sort of refuse disposal practices existed, particularly after 1867. The individualized construction techniques and house designs revealed in the photographs are the result of the freedmen building their own houses. As a consequence, we will expect great diversity in the archaeological record, reflecting the individual abilities, tastes, and resources of the freedmen.
There is clear evidence that in the 1870s the face of Mitchelville was changing -- structures were being torn down and new ones were being built. It appears that there was salvaging of materials from old structures, brought on by expediency, the expense of purchasing new hardware and window glass, and the absence of government operated saw mills. We anticipate that evidence of salvaging may be observed in the archaeological record as robbed architectural features, reuse of brick, and a variety of window glass thickness.

Finally, the historic documents reveal occupation in some areas of the village continuing into the 1910s. Identification of late structures, however, is not likely because of their reduced number. This late kin-based community did possess at least one store, a gin, and a mill. Future archaeological research should study this aspect of Mitchelville.

Unlike other "negro camps" which served as temporary holding areas for displaced contraband, Mitchelville was an example of the northern experiments in citizenship. It was organized along the lines of northern urban areas, with elected town officials empowered to maintain the civil order. Begun in 1862, its history through 1867 probably represented that of a moderate sized community of primarily wage laborers. Structures, built by freedmen, had a strong tie to previous "slave hut" architecture. After 1867 there is evidence that the village continued relatively unaltered and intact into the early 1870s. The economy of its inhabitants, however, turned away from the declining wage labor opportunities and returned to an agrarian base (the inhabitants entered the sizable "black yeomanry" class). Sometime in the late 1870s or early 1880s Mitchelville ceased being a true village and became a small, kinship based community. This community apparently continued into the early twentieth century, based on the nucleated settlement observed on the 1920 Hilton Head map (Figure 25), until it was destroyed by a second Northern invasion and infusion of development money. Such was a sad end for an area that boasted it was, the great experimental department of the country, and upon its stage have been advanced ideas which, more than any others, have contributed to mould public opinion (The Department of Experiments 1862).

Rose clearly reveals the failures of the "Port Royal Experiment," noting that the Northerners felt that "in granting the franchise the national obligation to the freedmen had been fulfilled" (Rose 1964:389). Money and Northern support for the freedmen quickly dried up after the
Figure 24. A portion of the 1873 USC&GS chart 438, showing the Mitchelville vicinity (circled).

Figure 25. A portion of the 1920 Corps of Engineers Hilton Head topographic map, showing Mitchelville.
war, leaving most blacks with little beyond their small plots of land which they carefully guarded, for "they well understood the bases of their security" (Rose 1964:396). The black yeomanry, however, was largely disfranchises by the 1895 South Carolina constitutional convention. Rose notes that Sea Island blacks became, as a result, increasingly self-governing with the Baptist church being the greatest force in their lives. While the "secular law was the 'unjust' law, the church law was the 'just' law" (Rose 1964:407). The impact of Mitchelville, with its sense of community, churches, and order, may have been more far reaching than its brief history would suggest.
EXCAVATIONS

Michael Trinkley

When the Fish Haul site was first encountered in 1982, Crago and Weckhorst both remarked that historic ceramics and prehistoric pottery could be found wherever there was ground disturbance. Faced with remains scattered over at least 10 acres (4 hectares) the original excavations at the site were judgementally placed, based on Weckhorst's experiences during the property's development (Trinkley and Zierden 1983:11). Three 10-foot squares were excavated as a trench in an area of known prehistoric pottery and two 5-foot squares were excavated on the marsh edge (Trinkley and Zierden 1983: Figure 1b). All units were oriented magnetic north-south and were tied into property markers. Excavations were by both natural and arbitrary levels, with all soil screened through 1 x 1 inch (1.3 x 0.6 centimeter) mesh. Each of these arbitrary levels were about 0.5 foot in thickness.

A number of lessons were learned from the three days spent engaged in this early work. First, while the work revealed rich prehistoric and historic components, it did nothing to establish site boundaries or delineate the types and extent of occupation present at the site. The original impression was that the Fish Haul "site" might represent a number of relatively small, spatially and temporally distinct occupation areas. This was to be a major topic during subsequent work at the site. Second, the vegetation at the Fish Haul site would make the establishment of any sitewide grid system a major undertaking. Yet, if the "site" was, in fact, composed of a number of discrete occupation loci, such a grid, with consistent horizontal and vertical controls, would be a necessity. Third, as had been demonstrated at other sites (e.g. Trinkley 1980a), 10-foot squares would be more successful at revealing the form and function of features, especially in the Stallings zones, than smaller units. Future work would benefit from a continued use of this methodology. While the original work used a backhoe to remove humic overburden soils in an area with little evidence of historic occupation, such a methodology was constrained by the developer's requirements that no trees over 6 inches (15 centimeters) in diameter be removed and that the area be restored to its original condition. Also, mechanical stripping in most site areas would result in the loss of significant data. Fourth, this original endeavor suggested that future work would benefit from the use of finer screening. A number of both prehistoric (e.g., flakes) and historic (e.g., buttons, beads) artifacts might be better represented in collections obtained using 1-inch (0.6 centimeter) mesh. Fifth, future work in the Stallings loci would benefit from the use of finer arbitrary levels for greater vertical control. The plotting of artifacts,
particularly stone tools, found in situ might also provide a significant source of data neglected during the initial study.

In September, 1985, Mr. Tommy Charles, with the S.C. Institute of Archaeology and Anthropology, visited the site for several hours and excavated 30 2-inch (5 centimeter) auger tests, some to a depth of 38 inches (0.9 meter) below the ground surface. All but five of these tests were placed within 150 feet of the 10 x 30 foot trench excavated by Trinkley and Zierden (1983) and over half (60%) produced prehistoric pottery or lithics. Five tests were placed northerly toward the Port Royal end of the Fish Haul tract (S.C. Institute of Archaeology and Anthropology, notes on file).

These tests, because of their limited extent, produced no new information concerning site boundaries, artifact density, or the different temporal periods which might be presented. While one auger test produced 39 very small pottery fragments (originally representing one sherd), most tests yielded three or four sherds or flakes. Consequently, one of the most significant contributions of this auger survey was to demonstrate that a larger hole was necessary to recover an adequate sample of cultural remains. A second contribution was to verify that the Fish Haul site represented a non-shell midden Stallings site, suspected but not demonstrated by the original investigators (Trinkley and Zierden 1983).

Strategy of the 1986 Investigations

Auger Tests

The first objective of the 1986 work was to obtain more information on the vertical and horizontal patterning of cultural remains on the Fish Haul tract. Previous investigations had demonstrated a variety of components, potentially spread over the entire 15-acre tract, but no definite loci or site boundaries had been proposed.

Since the entire tract was wooded, in some places heavily, it was obvious that some subsurface testing technique would be required, as would a sampling scheme to ensure coverage of the entire tract. Subsurface testing techniques may take any number of forms, such as shovel tests, post hole digger tests, auger tests, or some form of unit testing (1-meter, 3-foot, or even 5-foot squares). Regardless of the technique, the goal of each is to allow the researcher to see beneath the ground cover. Each has definite advantages and disadvantages. For example, the shovel test, while fairly quick to dig, provides a small
"window" into the survey universe. Larger test pits, such as the 3-foot units used successfully by South (1984) at Fort San Felipe, rectify the problems of small size shovel tests, but the technique is quite labor intensive. A 3\% sample, found by South (1984) to be a good predictor of archaeological remains, at Fish Haul would require the excavation of 2178 3 foot squares. While such a program is probably quite accurate, it is not very cost effective when applied to a large tract of land about which little is known.

Previous studies suggested that remains would be found to depths of at least 3.3 feet (1 meter). Such depths are not practical with either shovel tests or post hole diggers, (cf. DePratter 1983:33-34), especially in wooded tracts (with abundant roots). The obvious choice, given the terrain and depth of deposits, was therefore a power auger. While a tractor mounted unit with a 10-inch (25 centimeter) auger was initially considered, the heavy woods would have severely limited mobility, so a two person power auger with an 8-inch (20 centimeter) auger blade was used. Such an approach allowed units to be rapidly dug, even in heavily wooded areas with thick root masses. All units were excavated to a depth of 3.1 feet (0.95 meter) and had a surface area of 1.4 square foot (0.13 square meter). As each test was augered, crews came behind to sift the stockpiled soils (Figure 7) through \frac{1}{4} inch (0.6 centimeter) mesh, collect all recovered items (including brick rubble and shell fragments and soil samples), and record information concerning the auger profile, stratigraphy, and artifacts on a standardized form.

The number and spacing of the auger tests often are difficult both to determine and to justify statistically. Ragir (1967) notes that to obtain a truly representative sample the original population must be fairly well known, which was certainly not the case at the Fish Haul site. Thomas (1969:92-93) briefly discusses the problems of estimating sample variance and determining sample size, noting that, to some degree, the sample size must depend on the size of the population. Watson et al. note that there is a basic difference in the sampling design between a project whose goal is to "describe the range of variation within the universe as accurately as possible" and a project whose goal is the "statistical description and comparison between samples" (Watson et al. 1971:122-123). These two designs are similar to Deming's (1950:10) judgement and probability samples. In the judgement sample the biases and sampling errors cannot be calculated from the sample, but must be settled by judgement. In the probability sample the sampling errors can be calculated and the biases are either eliminated or contained within known limits.

There are four basic types of sampling designs: simple random, systematic, stratified, and multistage cluster, in ascending order of complexity and (generally) reliability.
The stratified and cluster designs decrease sampling error by ensuring a more homogeneous population. These techniques were rejected for the Fish Haul tract because there was no reason to doubt the presence of a homogeneous population and no reasonable strata, such as environmental zones, were immediately evident on the property. Further, the cost of implementing such a system with accuracy is great for wooded tracts. The concern with accuracy was a major consideration since this sampling design was intended to assist in the placement of excavation units. If the sampling units were not accurately placed on the ground, the program might provide an idealized picture of site and artifact density, but it could not reliably be used to locate 10-foot squares within a 15-acre tract.

A simple random sampling scheme was rejected because of the potential for sampling units to cluster, leaving "blank" broad areas of the universe. The simple random design is also labor intensive as each sampling point must be precisely located in the field (Babbie 1973). Instead, a systematic sampling scheme was chosen. The first unit (in this case the location of an auger test) is randomly chosen and thereafter succeeding units are chosen at a regular interval (every Nth element), depending on the sampling fraction desired. This technique is more accurate than simple random sampling, but may be biased by periodicity since choosing the same Nth element every time may fail to reveal equally spaced items (Babbie 1973; Mueller 1974).

To implement this scheme the South Carolina Plane Coordinate grid, already laid out on the ground at 100 foot intervals by Coastal Surveying and Engineering Company, was used. This system was judged to be quite accurate and was one that could be easily reconstructed, regardless of the ensuing development, by future researchers. While it seemed unlikely that the prehistoric component might be regularly patterned, the potential for periodicity did exist with the streets and structures of Mitchelville. The potential bias, however, is reduced by the grid's magnetic orientation, which placed it at roughly a 45° angle to Mitchelville.

It was determined that tests would be placed every 50 feet, except where relocation was necessary to avoid structures, roads, or trees. A 50 foot interval was chosen as a matter of economics, although the 1982 excavations (Trinkley and Zierden 1983) suggested that the Stallings loci might be as large as 50-feet in diameter. The initial test (Auger Test 1) was located at point N 147,850 and E 2,097,800 and a total of 248 tests were excavated at 50 foot intervals proceeding north to south and east to west from that point (Figure 5). The 15-acre tract from the Port Royal southward to the outparcels was therefore sampled at a fraction of slightly over 0.05%. Although this represents an extremely small percentage of the site universe, it was felt to provide
adequate coverage to generate computer artifact density maps and was a cost-effective use of time. The entire auger test survey (including grid preparation, augering, screening, and recording) required only 203 person hours.

Artifacts were originally to be analyzed using broad classes of historic artifacts (architectural [nails, window glass], kitchen [bottle glass, ceramics], etc.) and broad prehistoric pottery styles. The artifact density from the 8-inch auger tests, however, was found to be too low to allow reliable pattern definition at this level of analysis. Consequently, computer SYMAPS were produced for only two artifact categories -- historic and prehistoric artifacts. In addition, brick and shell were both weighed and maps were produced based on these weights (Figures 26-29).

Figure 26 reveals five major prehistoric clusters, at Auger Tests 140, 142, 159, 169, and 225. In addition, a number of less dense prehistoric concentrations are observed throughout the area, with several representing relatively large areal extents. Curiously, the concentration in the area of the 1982 excavations (Auger Tests 153, 154, 165) was not detected at this level of sampling. Conversely, the computer was mislead into creating a very dense area in the vicinity of Auger Test 169 because at that location 17 sherd fragments were recovered. All of these fragments, however, came from only two sherds.

The distribution of prehistoric artifacts suggests that Fish Haul "site" actually consists of a number of discrete occupation loci. It is possible that this situation may represent a series of discrete habitation areas occupied simultaneously, were it not for the radially different radiocarbon dates obtained from two areas (discussed in the following section). This pattern is more suggestive of multiple episodes of short-term occupation in the same general location. It is likely that one or more resources were concentrated in the vicinity and served to make the Fish Haul environs attractive to a number of groups. It is likely that such a distribution would not be recognized in the course of surveying plowed fields, but rather a number of loci would be lumped together, based on proximity, to produce two or three "sites" in the 15 acre field (none of which would probably be recognized as significant, based solely on the surface indications). This auger test not only allows a preliminary glimpse of the settlement system, but also allows specific concentrations to be targeted and isolated for further study. The concentration in the vicinity of Auger Test 47 appears to represent a Deptford occupation, while the Auger Test 140-142 concentrations produced Stallings remains and the cluster at Auger Test 225 produced Thom's Creek pottery.
The distribution of historic artifacts is quite different (Figure 27). Generally, the historic artifacts are found clustered adjacent to the northwestern property boundary, parallel to Beach City Road. Major concentrations were found in the vicinity of Auger Tests 8, 47, 63, 96, 134, 161, and 223. The concentrations adjacent to the marsh area, with the exception of clusters at Auger Test 7 and 33, are quite weak, suggestive of little occupation in this area. Auger Test 7 was placed on the steep slope into the marsh, while Auger Test 33 was actually placed in the marsh. Both produced a quantity of debris, apparently discarded over the bank edge into the marsh. Auger Test 17, also in the marsh, revealed a large worked log, although no artifacts were recovered. Zierden and Calhoun (1983:46) note a similar swamp refuse pattern from the Campfield slave settlement in Georgetown County, South Carolina and Singleton (1980:123) found the same situation at Butler Island, Georgia.

The pattern of historic artifacts closely resembles that expected based on reference to the Mitchelville map (Figure 16). The cluster of structures adjacent to the marsh edge in the vicinity of Auger Test 157, however, was not detected. Reference to Figure 28 reveals that the distribution of brick at Fish Haul again indicates a series of clusters (most notable at Auger Tests 47, 68, 94, and 148) which closely resemble the alignment of Mitchelville structures. The auger test brick weight data does not as clearly indicate the location of Mitchelville structures as the artifact clusters, probably because not all structures made use of bricks (see Figures 18-21). The data also suggest that even those structures which contained brick made differential use of this building material. No evidence of any structures is found adjacent to the marsh edge.

The distribution of shell at the Fish Haul site (Figure 29) presents a more complex picture because shell may be associated with both prehistoric and historic occupations and because, in the historic period, it is not necessarily associated with structures. Consequently, upon examination of the shell distribution, there appears to be some evidence of shell refuse in the vicinity of the Mitchelville structures (Auger Tests 20, 47, 49, 121, and 224) as well as refuse piles at a distance from the structures (Auger Tests 7 and 101). There may be a slight tendency for the shell to be found in the rear yard of the structures, rather than in the front yard or in the streets of Mitchelville, although separation of shell refuse of the prehistoric period from similar refuse dating to the historic period is very difficult. At the Butler Point Plantation on St. Simon's Island, Georgia, Fanny Kemble, describing antebellum practices, noted that "great heaps of oyster shells are allowed to be piled up anywhere and everywhere, forming the most unsightly obstructions in every direction" (Kemble 1961:257).
Figure 26. Distribution of prehistoric artifacts.
Figure 27. Distribution of historic artifacts.
Figure 28. Distribution of brick weights.
Figure 29. Distribution of shell weights.
Block Excavations

As a result of the auger tests several areas of dense historic or prehistoric artifacts were chosen for more intensive investigation. Some of these areas represent no more than one or two 10-foot squares, while others represent a considerable expenditure of labor and the exposure of large horizontal areas. Regardless of their size, all of the blocks (except the pre-existing 1982 excavation area) were tied into the South Carolina Plane Coordinate grid, which was already established at the site, and the 50-foot auger test grid which was superimposed on the plane coordinate grid. Each block measured 50 feet square and at each corner was a numbered auger test. The auger test at the southeast corner of the grid served to number that 50-foot block. The auger test number, rather than the actual South Carolina Plane Coordinates, was used to simplify the system and avoid numbering mistakes.

Within each numbered 50-foot block a modified Chicago grid system was established to divide the block into 10-foot excavation units. The southwest block corner was the OR0 point, while the southwest corner was OR50. The first number indicates feet north of the block datum (OR0), while the second number indicates feet right (or east) of this datum. Squares were designated by the coordinates of their southeast corners, with the block number added as a prefix (hence, square 10R10 in Block 50 would become 50-10R10) (see Figure 4). This system allowed excavations to be conducted within relatively small grid limits, which ensured a high degree of grid accuracy with minimal confusion, while also ensuring that future investigators could reconstruct the grid regardless of the development which took place on the property.

Vertical control at the site was maintained through the use of pre-existing elevation datums established by Coastal Surveying and Engineering Company. Elevations are expressed as feet above mean sea level (MSL) as determined by reference to available USGS survey monuments. This system allows widely separated areas of the site to be precisely compared and the vertical controls can be easily re-established in the future.

Excavation, except for the removal of the near sterile upper zones of the aboriginal blocks (129-141 and 1982) with a backhoe, proceeded by hand with all soil mechanically screened through 1-inch (0.6 centimeter) mesh. Screen loads were sorted in the field, with all materials from a single provenience bagged together and assigned a single field specimen (FS) number. The FS numbers were used for initial inventory control and as a preliminary catalog number for items removed for special study. Bricks, mortar, and shell (primarily from the historic occupation) were quantified by
weight in the field and discarded. Soil and shell samples were judgementally retained from the unit excavation.

Artifacts were washed in the field and cataloging was completed after the conclusion of field work. These materials are curated by The Environmental and Historical Museum of Hilton Head Island under Accession Number 1986.1 and catalog numbers ARCH 1-429. All field notes and photographs, prepared to archival standards, are also curated by this group, although Chicora has maintained copies and all analysis notes.

Stratigraphy throughout the site area was fairly simple and generally uniform. Zone 1 is a dark brown humic sand which represents the site's A horizon and which is from 0.8 to 1.0 foot in thickness. The soil is a very friable fine sand which evidences abundant roots. Evidence of previous cultivation, in the form of plow scars and ridges, was observed only in the 1982 block. This zone, depending on location in the tract, may be nearly sterile or may contain abundant brick, shell, and historic remains.

Zone 2 approximately correlates to the soil's C horizon and consists of a tan, loose, friable sand which grades into a yellow sand. Zone 2 was divided into arbitrary 0.3 foot levels in those blocks where excavation continued below the upper-most 0.3 foot of Zone 2. The upper 0.3 to 0.5 foot of Zone 2 represents a leach zone from the overlying humic sands. As the depth increases the humic content noticeably decreases.

The 39-40-47-48 block encompasses one 10-foot and three 5-foot squares placed to examine further the high density historic artifacts, brick and shell. The 91-92 block includes two 10-foot and two 5-foot squares to explore further the dense shell revealed by the auger tests and to obtain additional information on the historic feature revealed by the 1982 excavations in Test Pit 2. The 110-123 block, which consists of three 10-foot and two 5-foot squares, was placed to explore a possible historic structure which was evidenced by a mound of brick rubble. The 160-161 block of eight 10-foot and six 5-foot squares was also laid out to examine a discrete structure. The 130 block, which includes three 10-foot and one 5-foot squares was originally developed to investigate a quantity of human bone fragments found in S.C. Institute of Archaeology and Anthropology Auger Test 13 and bone fragments found in Chicora's Auger Test 130. A single 10-foot square was excavated in the 177 block in the hopes of obtaining additional information on historic structures thought to be in the general area. The 218 block excavation of two 10-foot squares and a single 5-foot unit was laid out to investigate further the concentration of shell and historic and prehistoric artifacts in this general vicinity. The 129-141 block, consisting of six 10-foot
squares, was excavated to explore the concentration of prehistoric remains in the vicinity of Auger Tests 140 and 142. Likewise eight additional 10-foot squares were opened adjacent to the original three 10-foot units dug in 1982, increasing the total excavation in that block to 11 10-foot squares.

All of these blocks are discussed in more detail in a following section and at this point it is sufficient to indicate that this work explored a total of 3765 square feet of ground, of which 1400 square feet represent primarily prehistoric occupation areas, 1825 square feet represent primarily Mitchelville occupation, and 540 square feet represent both light prehistoric and historic occupations. Including the 1982 excavations, over 4100 square feet of the Fish Haul tract have been intensively examined. In spite of the quantity of information this work has produced, only 0.6% of the tract has been subjected to intensive data recovery and large areas of both prehistoric and historic occupation remain unexamined. Of particular interest would be the further examination of the prehistoric remains in the vicinity of the 140, 150, 169, and 225 blocks and the historic remains in the area of the 47, 63, 68, and 94-96 blocks.

Excavation in the historic blocks was terminated at the base of Zone 2, Level 1, based primarily on the declining artifact densities and the desire not to truncate any post holes or features which might be present. Generally post holes and features could not be isolated at the base of Zone 1 because of a combination of cultural (heavy mottling) and natural (humic leaching) factors. The base of Zone 2, Level 1 was troweled, photographed with color slide and black and white negative film, and plotted at a scale of 2 feet to 1 inch. Profiles were drawn at the same horizontal scale, but with an exaggerated vertical scale of 1 foot to 1 inch.

Excavation in the prehistoric blocks generally began with the Zone 2, Level 1 soils left by mechanical stripping and continued to a maximum depth of Zone 2, Level 6. Generally excavation was terminated by the base of Zone 2, Level 5. The prehistoric squares were troweled, photographed and plotted as often as warranted by the features found in each unit, but were minimally recorded at the completion of the excavation. Plan and profile drawings used the same format as discussed above for the historic blocks.

Features and post holes were photographed and plotted at the base of level in which they were first observed and complete excavation and recordation took place before the unit excavation continued to the next zone or level. Most features were bisected, with the first half being removed by arbitrary levels, the profile drawn and photographed, and then the remaining portion excavated by any apparent zones.

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Minimally all soil from features was dry screened through ¼-inch (0.6 centimeter) mesh. When the feature evidenced a dark humic or organic fill two samples (5 gallons [19 liters] each by volume) were collected for waterscreening through 1/16-inch (0.16 centimeter) mesh and water flotation. The waterscreening was conducted in the field, while the flotation was conducted in Columbia after completion of the field work. Soil, shell, and handpicked charcoal samples were collected from features where appropriate.

Test Pits

Toward the completion of the field project a decision was made to obtain a larger sample from another Mitchelville structure, suggested by the distribution of brick and historic artifacts in the vicinity of Auger Tests 94-96. A series of twenty 1.5 foot square shovel tests were excavated at 10 foot intervals to further document this area. Soil from each test was screened through ¼ inch (0.6 centimeter) mesh. Each test produced historic artifacts, including ceramics, glass, nails, and buttons, in addition to abundant brick and shell. Test Pit 10 evidenced articulated brick and is apparently in the immediate vicinity of the structure. This study clearly documents the presence of another Mitchelville structure, which appears to be in very good condition.

Archaeological Remains

This section will briefly review the lay-out and organization of the various blocks, as well as the features and stratigraphy revealed within each area. Information on the artifacts recovered is contained in other chapters and the prehistoric pottery is enumerated in Table 3 of the following chapter. The radiocarbon dates obtained from this site are reported in uncorrected years.

39-40-47-48 Block

This block consists of squares 39-OR5 (5x5), 40-45R5 (5x5), 47-OR50 (5x5), and 48-40R50 (10x10) excavated around Auger Test 47 in the hopes of understanding the large quantity of mortar (18 ounces [509 grams]) and brick (34 ounces [962 grams]) recovered from that one auger hole. Other artifacts identified from that test were 10 nails, a single small prehistoric sherd, and a kaolin pipestem. The immediate suggestion was that the auger test had penetrated
Figure 30. Test Pits in the vicinity of Auger Test 94.
the vicinity of a brick feature, probably a chimney footing. Excavation of these units produced 400 pounds (180 kilograms) of shell and 3.5 pounds (1.6 kilograms) of brick or 2.3 pounds (1.0 kilograms) of shell per cubic foot (0.03 cubic meter) and 0.2 pound (0.1 kilogram) of brick per cubic foot (0.03 cubic meter).

The excavations revealed a lens of tabby mortar rubble which covered about 60% of the area opened. This rubble consisted of a tabby shell mortar with abundant wattle impressions which was not in situ, but which appeared to reflect wall fall. Further excavation revealed two historic features (13 and 14) and two post holes (Figure 31). Feature 13, which was centered at 470R50, consisted of a broad, shallow basin of light tan sand, shell, and mortar measuring 7.5 by 6.0 feet (2.3 by 1.8 meters). At a depth of about 0.3 foot (10 centimeters) the pit bottomed out, except for a 3.7 by 1.5 feet (1.1 by 0.5 meter) trench oriented northwest-southeast. This straight-sided pit contained a tin can in its upper zone and only mortar at its base (Figure 32). This feature appears to be a shovel dug footing which has been robbed. The larger, shallow basin around the footing may have been a by-product of the robbing, or may simply reflect a shallow, midden filled depression.

Feature 14 was situated about 6.0 feet (1.8 meters) to the northeast and represents a robbed builders trench running northwest-southeast, parallel to the footing in Feature 13. The exposed length of this trench was about 3.5 feet (1.1 meters) and it was 1.4 feet (0.4 meters) in width and 0.6 foot (0.2 meter) in depth (Figure 33).

It appears that this block has partially exposed the remains of a wattle and daub structure removed sometime during the late nineteenth century, probably to allow easier cultivation since it is unlikely the structure contained significant amounts of brick, architectural hardware or other salvagable items. Colin Brooker (personal communication 1986) notes that similar tabby mortar wattle and daub construction was discovered at Structure VI from the Callawassie Island slave settlement. This structure measured about 10.5 by 10.0 feet (3.2 by 3.0 meters) on its exterior. Brooker characterizes this as an eighteenth century form of slave architecture which was not thought to have persisted into the nineteenth century. Features 13 and 14 from the 39-40-47-48 block, combined with evidence from other blocks, suggests that this architectural form persisted into the mid-nineteenth century. Dubois notes that in the West Indies slaves constructed houses by "driving four posts into the ground and weaving the walls so as to make a room 10x15 feet" (Dubois 1901b:486). This archaic architectural tradition may have been kept alive by the continued, albeit illegal, importation of Africans into the lowcountry during the early to mid-nineteenth century.
Figure 31. 39-40-47-48 block excavations.
Figure 32. Feature 13, footing and associated stain, south half excavated. View is to the north.

Figure 33. Feature 14, wall trench, excavated. View is to the northeast.
A single prehistoric feature was identified at the base of Zone 2. Feature 15, centered at 47-1.8R45.6, represents a cluster of Deptford Plain sherds in an area about 0.8 feet (0.2 meter) in diameter and 0.2 foot (0.1 meter) in depth.

91-92 Block

The 91-92 block consists of squares 91-OR5 (5x5), 91-OR10 (5x5), 92-4OR10 (10x10), and 92-3OR10 (10x10) which were excavated to explore the dense shell midden on the marsh bluff, first noted by Trinkley and Zierden (1982) and further delineated by the auger tests. The excavation revealed a low density of mortar and brick (less than 0.1 pound [0.04 gram] per cubic foot [0.03 cubic meter]), although several mortar fragments appear to represent tabby mortar from a wattle and daub wall (this technique was previously discussed for the 39-40-47-48 block). Shell was abundant, accounting for 3.8 pounds (1.4 kilograms) per cubic foot (0.03 cubic meter). Zone 1 in all units contained more shells and darker, organic soil than the underlying Zone 2. Six post holes and two features were identified by this work (Figure 34).

The post holes form no recognizable pattern, although all but one are square, distinct, and have depths of up to 1.0 foot (0.3 meter). At least two, based on ceramics found in their fill, postdate the deposition of Zones 1 and 2. Feature 10 is a large (10.0 x 10.4 foot [3.0 by 3.2 meter]) circular pit about 2.1 feet (0.7 meter) in depth. Three distance zones were observed. The uppermost zone was black sand with abundant shell -- a fill very similar to the overlying Zones 1 and 2 soils. The underlying Zone 2 feature fill was a tannish yellow sand lens or cap, overlying more shells, black sand, and abundant charcoal. Zone 2 was found adjacent to the feature's west wall and covered only about one-quarter of the feature. Feature 11 was an oval pit bisected by the 91-N5 wall. The exposed portion measured about 3.5 by 1.8 feet (1.1 by 0.6 meters) and was found to be 1.2 feet (0.4 meter) in depth. The uppermost zone consisted of unit Zone 2 slump, while the feature fill was black to dark brown loamy sand with charcoal. Both Features 10 and 11 contained abundant fish bone and many of the historic ceramics found in the feature fill matched or cross-mended with specimens from Zones 1 or 2 of the excavation units.

The 91-92 block appears to represent a secondary refuse midden deposited adjacent to the marsh sometime after the early nineteenth century. The refuse contains a variety of items, including large quantity of ceramics. Among these ceramics are the site's only abundant creamware and pearlware examples, which suggests that the source of this trash may have some temporal depth. The ceramic motifs and artifacts suggest the source was also a higher status occupation.
Figure 34. 91-92 block excavations and Feature 10 profile.
Although mends are found throughout the proveniences and features, no completely reconstructable vessels were recovered, which suggests that this midden is a secondary deposit. Evidence will be developed in a following section that this deposit represents the Mitchelville dump, operated from 1862 to 1867.

Feature 10 was dug through the midden, into the underlying tan to yellow Zone 2 soil and a hot, oxidizing fire was built (based on the ash lenses and small pieces of charcoal). The feature was apparently used as a cooking pit, with the Zone 2 lens perhaps representing the remnants of a sand cap used to maintain the heat of the coals. Such a pit may have been used to steam shellfish, although a number of foods might be similarly prepared, including fish, sweet potatoes, which were frequently roasted, and "army [or baked] beans." Eldridge describes their preparation,

[a] hole is previously dug in the ground, not after the manner of a post hole, but say two feet wide by three or four long and two or more feet deep. In this a wood fire is built, and kept burning freely till the ground has become sufficiently heated and the embers have ceased to smoke. The wood has been reduced to live coals. The oven is now ready for the beans. They are then further prepared . . . and being placed in camp kettles . . . are with tender hands placed . . . on the hot coals and pieces of boards laid across the top and covered with dirt to keep in the heat. They remain there the proper length of time (Eldridge 1983:971-972).

This operation would explain the Feature 10 fill and the presence of burned and unburned cross-mended ceramics.

Feature 11 presents a somewhat less clear picture, although the ceramics found in its fill are identical to those found in the excavation units and Feature 10. This indicates that the feature postdates the midden deposition. The feature's function, at present, is undetermined.

110-123 Block

Five squares -- 110-35R10 (10x10), 123-40R50 (10x10), 123-30R50 (10x10), 123-25R50 (5x5), and 123-20R50 (5x5) --
comprise the excavations found in the 110-123 block, which was placed to bisect an obvious surface brick pile. Brick density is very high - 1.5 pounds (0.7 kilograms) per cubic foot (0.03 cubic meter), while combined mortar and shell represented a lower density -- 0.6 pound (0.2 kilogram) per cubic foot (0.03 cubic meter). Fill from these squares revealed abundant historic remains from the period of Mitchelville.

Upon excavation of the brick pile, a single architectural feature was identified -- that of a poured tabby chimney footing (Feature 3). Further excavation revealed 10 post holes and another historic feature of undetermined function (Feature 27)(Figure 35). Excavation was continued to the south by two 5-foot squares to explore a depression about 20 feet from the brick pile. The excavations revealed the depression to be the remnants of a large tree throw and no further work was conducted in this area.

The architectural remains and artifacts recovered from this block clearly indicate that a mid-nineteenth century structure has been encountered. Of particular interest is the information this excavation can provide concerning the tabby chimney and the events surrounding its use. The chimney footing is constructed of a poor quality ground pour tabby. The exterior chimney wall measured 4.2 feet (1.3 meters) in length and 0.9 foot (0.3 meter) in width, while the interior or hearth footing measured 5.2 feet (1.6 meters) in length and 0.7 foot (0.2 meter) in width. The side walls, approximately 3.0 feet (0.9 meter) in length and the same width as the interior wall, angle inward from the interior to the exterior wall. Rubble from the chimney, including a large exterior wall fragment which had fallen over to the southwest, clearly reveal the chimney construction to have been a tabby mortar wattle and daub. Because the chimney was constructed from a poured base there were no corner posts typical of stick and mud chimneys (see Gonzales 1924:228). However, either as a brace or a later repair, two 0.8 foot (0.2 meter) square timbers were sunk 0.9 to 1.0 foot (0.2 to 0.3 meter) at each of the exterior corners (see Drucker and Anthony 1979: Figure 32 for a similar standing example of this technique).

At some later date, apparently as a repair, three bricks were placed in the crumbling northeast exterior corner of the chimney. At the time of this repair the northeast corner post was no longer in place since the three bricks, laid edge to edge, partially cover the post hole. It may be that the edge support rotted off just below ground level and this resulted in damage to that corner. The bricks, which were not mortared, appear to have been added to repair the damage and also to provide a firm footing for either the rotten timber or a replacement piece. It is unlikely, however, that
Figure 35. 110-123 block excavations.
the chimney was as serviceable after these makeshift repairs (Figure 36).

Feature 27, bisected by the 110-R10 wall, measures 2.5 feet (0.8 meter) in length and 0.8 foot (0.2 meter) in width and was exposed by the excavations. The pit had straight sides, a flat bottom, and was about 1.0 foot (0.3 meter) deep. The only historic artifacts found in the tan sand fill were two nails and a single lead shot. No function can be attributed to this feature at the present time.

129-141 Block

This prehistoric block consists of six 10-foot squares: 129-OR10, 129-10R10, 129-10R20, 129-20R20, 141-OR50, and 141-10R50 (Figure 37). These units were placed to explore more fully a concentration of prehistoric remains identified by the auger test survey and the first unit investigated, 129-10R10, revealed a Stallings feature at the base of Zone 2, Level 2. The Zone 1 humic sand from that square revealed only occasional historic remains (one glass, three ceramics, one pipe bowl, and two small prehistoric sherds), so the remaining five squares were mechanically stripped to the upper portion of Zone 2.

Work in this block revealed a significant Stallings occupation, clustered to the north, and contained primarily in Zone 2, Levels 2-4. Two post holes were found in 129-10R20 at the base of Zone 2, Levels 2-3 and three post holes were recovered from 129-20R20 at the base of Zone 2, Level 2.

Seven Stallings phase features were recovered during the investigation of the 129-141 block, with four being found in one square -- 129-20R20. This is the northern most unit excavated and this distribution is identical to that anticipated by the computer mapping of the auger test survey data.

Feature 12 is a poorly defined Stallings pit which measured about 2.8 feet (0.8 meter) in diameter and had a depth of 1.04 feet (0.3 meter). The pit was centered at 129-18R0.8 and was first identified at the base of Zone 2, Level 2 (13.540 feet MSL [4.17 meters MSL]). The fill consisted of a mottled tan to brown sand with abundant flakes and a small quantity of charcoal.

Feature 16 was exposed by backhoe excavation and was consequently somewhat disturbed prior to excavation. The pit was oval to circular in form with straight sides and a relatively flat bottom, measuring about 1.2 feet (0.4 meter)
Figure 36. Feature 3, chimney footing, in the 110-123 block. View is to the east.

Figure 37. 129-141 block excavation.
in diameter and 0.5 feet in depth (0.2 meter). The center point of the pit was 129-19.5R16.5 and the feature originated at the base of Zone 2, Level 1 (13.47 feet MSL [4.14 meters MSL]). The feature fill consisted primarily of marsh periwinkles with smaller quantities of clam, oyster, and ribbed mussel in a black sand matrix.

Feature 17, centered at 129-20.5R18.5, was found at the base of Zone 2, Level 2 (13.54 feet MSL [4.17 meters MSL]). The pit measured 4.2 by 4.0 feet (1.3 by 1.2 meters) and was 2.5 feet (0.7 meter) deep. The pit was found to be composed of two zones. The upper, termed Zone 1, consisted of abundant oyster and clam, with lesser quantities of knobbled whelk, cockle, stout tagalus, ribbed mussel, and periwinkle in a dark gray sandy matrix. Below Zone 1 was a zone thought to represent soil mixing from the original pit excavation. Shells from this lower zone included only occasional oyster, clam, ribbed mussel, and stout tagalus. A total of 92 pounds (41.7 kilograms) of shell were recovered from this feature, which may have served as a shell fish steaming pit.

Feature 18 is a large sand and somewhat amorphous shellfish steaming pit used during the Stallings phase (Figure 38). Charcoal from this feature gave an age of 3280±80 years: 1330 B.C. (Beta - 16922). The pit measures about 5.5 by 6.0 feet (1.7 by 1.8 meters) and 2.9 feet (0.9 meter) in depth. The feature originated at the base of Zone 2, Level 2 (13.63 feet MSL [4.19 meters MSL]) and was centered at 129-24R17. Excavation revealed three distinct zones. The uppermost was a level of loose shell including primarily oyster and clam, with minor evidence of ribbed mussel, stout tagalus, and crab in a black loamy sand matrix. The middle zone consisted of a tan sand and ash lens which contained minor amounts of burnt oyster, clams, ribbed mussel, knobbled whelk, periwinkle, stout tagalus, and crab. The bottom zone consisted of abundant shell and tan sand. Much of the shell from this zone, including oyster clusters, clam, ribbed mussel, knobbled whelk, stout tagalus, cockle, barnacles, and crab is cemented with ash in large chunks. A total of 243.5 pounds (110.3 kilograms) of shell were recovered from this pit, with 44.6% coming from Zone 1, 22.3% coming from the Zone 2 sand lens, and 33.1% coming from the lowest deposit, Zone 3. This feature appears to represent a reused shellfish steaming pit, similar in form and function to those documented at Thom's Creek phase sites such as Lighthouse Point and Stratton Place (Trinkley 1980c).

Feature 19 consisted of a shallow basin, with an intrusive post hole, which originated at the base of Zone 2, Level 2 (13.66 feet MSL [4.20 meters MSL]). Located at 129-19.5R15.5, the pit measured only 2.8 by 1.5 feet (0.8 by 0.4 meters) and 0.4 foot (0.1 meter) deep. The pit contained a mottled tan fill with no shell, similar to Feature 12, while the post hole, 0.6 foot (0.2 meter) in diameter and 1.2
feet (0.3 meter) in depth, had a black sand and oyster shell fill.

Feature 20, which also dates from the Stallings phase, was found at 13.80 feet MSL (4.24 meters MSL). The center point for the feature, which measured 2.9 by 2.1 feet (0.9 by 0.6 meters), was 129-19-5R12 and only the south half was excavated. This pit was 1.1 feet (0.3 meter) deep and contained a mixed dark tan, and oyster and whelk shell fill. The pit contained 5 pounds (1.9 kilograms) of shell, including nine knobbed whelks (2.1 pounds [0.8 kilogram]), several of which evidenced holes to remove the meat. The function of this feature is unknown -- insufficient shell and charcoal was recovered to suggest a steaming pit, yet some refuse was present.

Feature 28 is a 0.8 foot (0.2 meter) diameter Stallings sherd cluster centered at 141-15.5R45 and found within Zone 2, Level 3. The cluster began at 13.18 feet MSL (4.06 meters MSL) and terminated at 12.70 feet MSL (3.90 meters MSL). Soil associated with the feature was dark brown, although no definite boundaries could be established. Abundant charcoal (wood and hickory nut shells) was found associated with the sherds and it was originally thought this feature represented a small hearth. A radiocarbon sample of the associated charcoal yielded an age of 6060± 110 years: 4110 B.C. (Beta-16925), clearly too old for Stallings. Review of the sample by Dr. Murry Tamers of Beta Analytic revealed no anomalies -- the sample was considered good and the dating appears accurate. The most reasonable explanation, especially since the cluster includes Stallings Plain, Shell Punctate, Reed Punctate, and Incised specimens, is that the depression in which the sherds collected was an old tree hole, which contributed carbon of some antiquity.

130-131 Block

The 130-131 block includes three 10-foot squares -- 130-0R50, and 130-10R50, and 130-20R50 -- and one 5-foot square -- 131-45R50 (Figure 39). The units were originally laid out in the hopes of identifying the intermittent source of small calcined bone fragments, some of which were felt to be human. No further data were obtained on the source of these remains, although the 325 square foot excavation did yield limited information on other questions. Squares 131-45R50, 130-0R50, and 130-10R50 were excavated to the base of Zone 1, while square 130-20R50 was excavated to the base of Zone 2, Level 3. Three features -- two historic and one Stallings -- and two historic post holes were identified in this block. There were, in addition, several projectile points plotted in situ as well as several possible features which were not removed because of their indistinct outlines and time constraints. Although the squares evidenced a good deal of mottling and organic staining, most was attributed to trees,
Figure 38. Feature 18, Stallings shellfish steaming pit, west half excavated. View is to the north.

Figure 39. 130-131 block excavation.
and there is little evidence of intensive use during either the prehistoric or historic periods.

The prehistoric pit, designated Feature 9, was situated at 130-28R42.5 and measured about 4.8 by 3.4 feet (1.5 by 1.0 meters). The pit originated at 12.17 feet MSL (3.74 meters MSL) and was removed at the base of Zone 2, Level 2. The feature was 1.9 feet (0.6 meter) in depth and contained sparse oyster shell (4.0 pounds [1.8 kilogram]) and tan sand with Stallings sherds. No function has been determined for this pit.

Although not assigned a feature number, a small cluster of Thom's Creek simple stamped sherds were identified in square 130-20R50 at 130-21.7R47.5. The cluster was found at the base of Zone 1 and had an elevation of 12.52 feet MSL (3.85 meters MSL).

During the excavation of 130-0R50 a complex pattern of stains were revealed at the square's southeast corner. Subsequent excavation of 131-45R50 revealed two historic period features, a trash pit (Feature 8) which had been intruded into by a shallow ditch (Feature 7), both of which were intrusive into a tree stain (Figure 40).

Feature 7 began in unit 130-0R50 and ran southeastward to the corner of 131-45R50 where it disappeared into the east profile. Only the 7 feet (21. meters) exposed by these excavations was removed. The trench varied from 1.0 to 1.5 feet (0.3 to 0.4 meter) in width and about 0.1 to 0.3 foot (0.03 to 0.09 meter) in depth. The fill consists of tan sand with occasional shell inclusions, but is not lensed. This homogeneous fill suggests that the trench was dug and quickly backfilled. No purpose can be attributed to it at present, but it appears to have originated within the Zone 1 soils on at the current ground surface. It is in some respects similar to the trench observed by Trinkley and Zierden (1983) in Test Pit 1.

Feature 8, centered at 131-48R48, was a 3.5 by 3.8 foot (1.1 by 1.2 meter) historic trash pit which had irregular sides, a rounded bottom and was 1.9 feet (0.6 meter) in depth (Figure 41). While the original purpose of this hole is unknown, its eventual function was to receive a variety of refuse, include several bottles, tin cans, abundant animal bone, and a crushed stove pipe. Also found below the stove pipe, in the otherwise homogeneous dark brown sand fill, was a lens of gray ash.

Several 1860s sources discuss the policing of camp grounds and the burial of trash. Price notes generally that "the company streets and unoccupied ground [were] being cleanly swept" (Price 1875:135). General Order 80 from the
Figure 40. Feature 8, trash pit, before excavation. Feature 7 and the tree stain have been removed. View is to the south.

Figure 41. Feature 8, trash pit, south half excavated. Note metal stove pipe in the profile. View is to the south.
Headquarters of the Department of the South, issued on June 6, 1984, reads in part,

[each camp must be thoroughly policed every morning and evening, and all garbage or refuse matter will be collected and buried in sinks . . . . Great care must be taken in the construction of proper sinks . . . and the debris will be covered every morning with at least six inches of sand.

It seems, therefore, that Feature 8 might be expected at a military camp. It is unexpected at a freedman's village where the bluff edge was no more than 50 feet (15 meters) away. Several explanations are possible. The feature may represent the remains of a brief military encampment prior to the construction of Mitchelville in 1862. Alternatively, the isolated buildings near the southern marsh edge of Mitchelville (Figure 16), which may be in the vicinity of this block, may have been military in nature and may have imprinted that discipline onto a small segment of the archaeological record.

1982 Block

The 1982 block is the only excavation area not based on the South Carolina Plane Coordinate grid at the Fish Haul site. The 1982 block which originally consisted of three 10-foot squares, was tied into property markers adjacent to the subdivision road (Trinkley and Zierden 1983). Since then the block was expanded to include a total of eleven 10-foot squares (70-90R90, 70-100R100, 70-100R110) and the block was tied into several grid points (Figure 42). Excavations were begun in this area by the mechanical stripping of Zone 1 soils and the hand removal of backfill from the 1982 units (80-100R100). From that point excavations proceeded using arbitrary 0.3 foot (9.0 centimeter) levels within Zone 2.

As a result of these excavations, four prehistoric features, two prehistoric post holes, and two historic post holes, were encountered. This brings to six the number of features found in the 1982 block. Likewise, six prehistoric post holes are now recorded from the block. Five of these post holes appear to represent a "D"-shaped structure. The post holes originated in Zone 2, Level 2 and were found to be up to 0.5 foot (0.1 meter) deep when excavated at the base of Zone 2, Level 2. The post holes identified in 1982 were first noted at the base Level 3 (the equivalent of Zone 2, Level 4) and when plotted at the base of Level 3 were very shallow (no deeper than 0.1 foot [0.03 meter]). The posited structure measures about 14 by 10 feet (4.3 by 3 meters) with
Figure 42. 1982 block excavations.
its long side oriented approximately east-west and opening
toward the marsh. Little other evidence of a structure is
present. Daub is very rare at the site and there were no
textural differences in the soils noted during excavation.

Based on the stragigraphic position of these post holes,
this structure appears to be associated with the Stallings
phase occupation. Although little remains of this shelter, it
was no more ephemeral than Stoltman's (1974:51-54) Stallings
phase lean-to at Rabbit Mount, and is somewhat similar to the
Deptford phase structure reported by Milanich (1971:62-65)
from Cumberland Island, Georgia. The Fish Haul structure is
nearly identical to a piedmont Georgia late Archaic-Early
Woodland structure identified by Crook (1985:38) at the Cagle
site. The Cagle structure is also "D"-shaped and measures
about 16 feet (5 meters) by 6.5 feet (2 meters). The
structure was identified in a stratum dated to about 600 B.C.

Feature 21, centered at 1982-103.5R106.5, represents a
cluster of Stallings sherds in a matrix of dark brown sand.
The feature originated within Zone 2, Level 3 at 13.00 feet
MSL (4.00 meters MSL) and continued to a depth of 11.90 feet
MSL (3.66 meters MSL). The pit, which measured about 2.7 by
2.9 feet (0.8 by 0.9 meter) had gently sloping sides and a
flat bottom. Wood charcoal collected from this pit yielded
an age of 3720±90 years: 1770 B.C. (Beta-16923).

Feature 22 was very similar to Feature 21, measuring 2.1
by 3.1 feet (0.6 by 0.9 meter) and 0.8 feet (0.2 meter) in
depth. It originated at 12.88 feet MSL (3.96 meters MSL)
(base of Zone 2, Level 3) and contained a tan sand matrix
with Stallings sherds, but no shell.

Feature 23, which originated in the middle of Zone 2,
level 2 (13.14 feet MSL, 4.04 meters MSL), was bisected by
the south profile of 1982-70R90. The exposed portion
measures 3.8 by 2.4 feet (1.2 by 0.7 meters) and was 1.1 feet
(0.3 meter) in depth. The soil matrix is a homogeneous dark
brown sand. The 92 pounds (41.6 kilograms) of shell found in
the pit include primarily oysters, with lesser quantities of
clam and occasional cockle, stout tagulus, ribbed mussel, and
knobbed whelk. This single episode shellfish steaming pit
has a radiocarbon age of 3680±60 years: 1730 B.C.
(Beta-16924).

Feature 24, centered at 1982-75.7R94.4, represents a
small cluster of Stallings sherds found in Zone 2, level 2
(13.11-12.93 feet MSL [4.03-3.98 meters MSL]). The sherds
were found in an area of 0.5 square foot (0.05 square meter).

Significantly, the two dated features in the 1982 block
are within 40 years of each other, which suggests that this
particular cluster of Stallings remains is the result of a
single, short duration occupation and not multiple
occupations over several centuries. These remains are probably associated with the single posited Stallings structure found in the block.

160-161 Block

The 160-161 block, the largest exposure of a Mitchelville structure, incorporates six 5-foot squares (161-0-25R25) and eight 10-foot squares (160-0R30-40, 161-30R20-40, 161-40R20-40). The 5 by 30 trench (161-0-25R25) was excavated minimally to explore the near rear yard. The larger block, consisting of the eight 10-foot squares, opens the area associated with two successive structures. Nine post holes and five features were identified during the course of this work (Figure 43).

The rear yard tests revealed a single feature -- Feature 26 -- which was a small shell midden which included 38 pounds (17.2 kilograms) of primarily oyster with a small quantity of clam. Many shells are uniformly burned to a gray color and are soft and crumbly. The oysters are all under 2 inches (5.1 centimeters) in length. This feature, centered at 161-11.5R23, measured about 3.8 by 3.0 feet (1.2 by 0.9 meters). The quantity of animal bone found associated with this deposit suggests this is simply an example of rear yard disposal practices. The pattern of burning suggests that this feature may represent the production (or attempt at production) of quick lime for mortar or perhaps tabby. The small shell might be more thoroughly and easily reduced from calcium carbonate to calcium oxide than would larger shells. Alternatively, the small, burnt shells may represent specimens deemed too small to open for food and which were discarded in the fire.

The density of shell in the rear yard is about 0.8 pound (0.4 kilogram) per cubic foot (0.03 cubic meter), although the density is as high as 3.5 pounds (1.6 kilograms) per cubic foot (0.03 cubic meter) in the vicinity of Feature 26. Brick density, however, is uniformly low in the rear yard -- 0.02 pound (0.01 kilogram) per cubic foot (0.03 cubic meter).

Brick density in the vicinity of the structure is quite high - 1.9 pounds (0.8 kilograms) per cubic foot (0.03 cubic meter) for the entire 10-foot block area and as high as 4.6 pounds (2.1 kilograms) per cubic foot (0.03 cubic meter) in the immediate area of the chimneys. While 1465 pounds (663.6 kilograms) of brick were recovered, this represents only 300-370 bricks. A total of 833 pounds (377 kilograms) of shell were recovered, for a density of 1.1 pounds (0.5 kilogram) per cubic foot (0.03 cubic meter). Much of this shell, however, was originally contained in a tabby mortar, which is found in a recognizable form at a density of 0.4
Figure 43. 160-161 block excavations.
The earliest Mitchelville structure in the block is represented by Feature 25, a crudely built chimney base (Figure 45). This chimney is oriented N48°5'E and is centered at 162-40R38.5. It is built of salvaged bricks measuring from 8 7/8 x 4 1/4 x 3 to 9 1/4 x 4 1/8 x 2 3/4 inches (22.5 x 10.8 x 7.6 to 23.5 x 12.4 x 7 centimeters) The remains are only three courses in height (with a top elevation of 16.11 feet MSL [4.96 meters MSL] at its north corner) and were laid one course thick in a random bond. The mortar is a shell type, but quite poor, so the bricks were largely unbonded although they were articulated. This chimney base measured about 2.0 by 2.8 feet (0.6 by 0.9 meters) and had a hearth area of about 1.5 by 2.3 feet (0.5 by 0.7 meter), slightly smaller than that noted from the Callawasse structure of somewhat similar construction (Colin Brooker, personal communication 1986). The interior of the chimney was plastered with a shell mortar and the remnants of tabby mortar floor were found at the midpoint of the first brick course (15.38 feet MSL [4.73 meters MSL]).

The dating of this feature as the earlier of two structures in the block is based on stratigraphic evidence and archaeological inference. The fill within the chimney base, above the tabby floor, was identical to that found as Zone 1 fill elsewhere in the block. Below the tabby floor there is a near sterile Zone 2 sand, atypical of the remainder of the block. No builder's trench was present, so it appears that this footing was built at or just below the 1860s ground level and a tabby floor was laid in the fire box. As the structure's fire box was not elevated it is likely the structure had a poured tabby mortar floor. Although no post holes could be found for this structure, it was apparently built using a tabby wattle and daub technique. Such an impermanent structure, discussed previously for the chimney in the 110-123 block, would have required only corner posts, which may not have been deeply placed. Within a short period of time this structure was torn down and a larger, better built structure replaced it.

Evidence for the structure's removal and original construction technique is provided by Features 5 and 6. Both are tabby filled pits, centered at 161-7R38 and 161-5.4R31 respectively. Feature 5 was the largest, measuring about 5.2 by 5.1 feet (1.6 by 1.5 meters) and upon excavation found to be 1.9 feet (0.6 meter) in depth (Figure 46). The pit fill consisted of 557 pounds of tabby mortar, most with wattle and daub impressions (Figure 47), although a number of pieces represented poured flooring. An 1862 penny in the pit fill provides a terminus post quem (TPQ; a date after which an object must have found its way into the ground) for this pit, probably even later than the penny's date. Yeoman
Figure 44. Density of brick and mixed shell and mortar in the 160-161 block.
Figure 45. Feature 25, chimney base in the 160-161 block. View is to the northeast.

Figure 46. Feature 5, tabby rubble filled pit. View is to the south.
(1976:10) notes that coinage became scarce with the outbreak of the Civil War and Reinfeld notes that,

[by] July 1862 all the regular coinage had disappeared. The citizens, anticipating future increases in the value of metal, were hoarding every piece of gold, silver, and even copper (Reinfeld 1959:39).

Another item in the fill was a gilt Union military button with little wear, which suggests a similar date.

Feature 6, a small version of Feature 5, measured about 2.8 by 2.5 feet (0.8 by 0.7 meters) and 0.9 foot (0.3 meter) deep. The fill consisted of small tabby mortar pieces, weighing 77 pounds (34.8 kilograms). It is as though the larger hole had been filled when the need arose to dispose of a quantity of smaller pieces, so a second pit was dug for their disposal.

At some point during or shortly after 1862 a pre-existing tabby wattle and daub structure with a crude brick chimney was torn down and the large rubble buried. Evidence for the structure's short duration is provided by this flooring, which shows no wear or repair (Colin Brooker, personal communication 1986). Like the burial of refuse in Feature 8, this operation has the appearance of a military directed, if not conducted, operation. Based on refuse disposal patterns observed elsewhere it would be unusual to see slaves or freed men dispose of trash in this manner.

The second structure is evidenced by Feature 4, a larger, better made chimney base which had a raised hearth (Figure 48). This chimney is oriented N44°19'E, only 3°46' off the first chimney base -- an almost imperceptible difference. This suggests the two structures had the same orientation, apparently to the streets of Mitchelville, which were laid out with an orientation of N42°45'E (National Archives, RG58, Field Notes for Survey Dividing St. Lukes and St. Helena).

The chimney was built of salvaged bricks (which at one time had been whitewashed) which measured 7 3/4 x 3 3/8 x 2 1/4 to 8 x 3 5/8 x 2 3/8 inches (19.7 x 9.8 x 5.7 to 20.3 x 16.8 x 6.0 centimeters), slightly smaller than the bricks from Feature 26. While the bricks from Feature 26 appear to have been salvaged from a colonial or early antebellum structure based on their size, the bricks used for Feature 4 are more typical of the mid-nineteenth century (Colin Brooker, personal communication 1986; see also McKee 1973:53). The base was a maximum of seven courses in height, and two bricks in width (to produce a "9 inch wall") laid in
Figure 47. Tabby mortar with wattle impressions.

Figure 48. Feature 4, chimney base. View is to the northeast.
American or stretcher bond. The base measures 4.8 by 3.5 feet (1.5 by 1.1 meters) and has a hearth area of 3.5 by 2.8 feet (1.1 by 0.9 meters).

Surrounding the exterior of the chimney base was a builder's trench about 0.5 foot (0.1 meter) in width which originated at the base of Zone 1. When the chimney footing was dug, a larger trench was excavated in the hearth area. After the construction of the footing this area was filled with a quantity of oyster shells to the level of the hearth, which has since disappeared. This shell fill, however, contained a piece of tabby with wattle impressions, which clearly establishes the sequential dating of the structures represented by Features 26 and 4.

177 Block

The 177 block consists of one 10-foot square -- 177-0R30 -- originally laid out in the hope of identifying structural remains or artifacts which were associated with the Mitchelville structures bordering the marsh (Figure 49). Upon excavation it was discovered that up to 1.4 feet (0.4 meter) of fill had been distributed over this area during the construction of the nearby lagoon. Consequently, the 10-foot square was continued into Zone 1 as a 5-foot square (177-0R25) in the southwest corner of the unit. Zone 1 was found to be a very fine brown sand resting on a mottled white sand. This information clearly indicated that the 177 block was on the edge of the natural slough known to run through the property and that the fill gave the area an unnaturally high elevation. It is likely that the marsh edge structures were located further to the northeast, perhaps in the vicinity of the 131 or 144 blocks. Both prehistoric and historic artifacts were very sparse in these excavations.

218 Block

The 218 block consisted of two 10-foot squares, 218-40R20 and 218-40R30, and a single 5-foot square, 218-42R10 (Figure 50). The placement of these units were designed to explore an area of denser shell and historic artifacts which were thought to be another structure. While small quantities of brick (19 pounds [0.6 kilograms]) and larger quantities of shell (108.5 pounds [49.2 kilograms]) were recovered, no architectural features were identified. Historic artifacts, including architectural items, were recovered, but this area does not appear to be in the immediate vicinity of a structure.
FINE BRN SAND

SOUTH PROFILE LOOKING NORTH

- 10 FEET

MOTTLED YELLOW SAND

FL10

O 111-40R30

118-41

118-40R10

6

MOTTLED FILL

VERIGATED MOTTLED FILL

EXCAVATIONS

EXCAVATED TO BASE OF ZONE 1

TAN SAND

5x5

177-0R30

9' MSL

8' -

FURTHER EXCAVATIONS

SOUTH PROFILE LOOKING NORTH

0 5 10 FEET

Figure 49. 177 block excavations.

MOTTLED YELLOW SAND

218-42R10

218-40R10

0 5 10 FEET

218-40R20

218-40R30

PH

Figure 50. 218 block excavations.
Square 218-40R30 was excavated to the base of Zone 2, level 4 (13.77 feet MSL [4.23 meters MSL]) as a test for prehistoric remains. Stallings, Thom's Creek and Deptford remains are found mixed in this square, although the Deptford pottery tends to be concentrated in Zone 2, Level 1 (15.07-14.78 feet [4.63-4.53 meters] MSL). While not designated a feature, a cluster of eight Deptford Simple Stamped sherds were found at 218-39.4R26.6 at 14.93 feet (4.59 meters) MSL.
These excavations produced a total of 3541 prehistoric low-fired earthenwares, representing seven recognized series -- Stallings, Thom's Creek, Refuge, Deptford, Mount Pleasant, St. Catharines, and Irene. These wares document aboriginal occupation at or visits to the Fish Haul site from at least 1700 B.C. to about A.D. 1500. The Stallings series represents the largest collection of identifiable pottery (N=1481), comprising 83.8% of the total. The Deptford series, the next largest collection (N=181), accounts for only 10.2% of the identifiable pottery. The Thom's Creek series (N=74) accounts for 4.2% of the identifiable pottery, while the Mount Pleasant (N=14) and St. Catharines (N=13) sherds together account for 1.5% and the Refuge (N=2) and Irene (N=2) account for the remainder.

Typology

Stallings Series

The Stallings series is recognized by the occurrence of fiber tracks, the result of plant material which oxidized during the firing process. Recent work by Simpkins and Allard (1986) indicates that the bulk of this plant material was Spanish moss, intentionally added to the clay probably as a binder. It seems unlikely that there was any intentional effort to promote porosity as has been previously suggested. Also characteristic of this series is the general absence of obvious coil fractures, which has been interpreted as an indication of a modeling technique of construction. Recent work by Trinkley (1980c:46-48) documents that coiled Stallings pottery is found, presumably toward the end of the phase. Decoration includes a variety of punctation modes, incising, and minor numbers of simple stamping and finger pinching.

Although not presently typed, Wauchope (1966:45) has noted the occurrence of both cord marked and net impressed specimens from northern Georgia, and Fairbanks (1942:228) reports two sherds exhibiting fabric impressions. Waring also referenced "Griffin Impressed" as fiber-tempered ware "made by modeling the clay inside of large, rough baskets" (Williams 1968:216,220). As late as 1978, however, Griffin noted that this pottery "was a gag on Waring's part" (James B. Griffin, personal communication 1978). In spite of this, work at Fish Haul (Trinkley and Zierden 1983:22-23,
Figure 8B) has revealed Stallings pottery with cord impressions. Similarly impressed Stallings pottery has also been observed in the collections from Ford's Skull Creek shell ring (38BU8).

The Stallings series type site is Stallings Island, in the Savannah River immediately north of Augusta, Georgia (Claflin 1931). The distribution of Stallings pottery has been previously discussed (see Figure 9) and sites containing Stallings are most abundant in South Carolina within the Savannah drainage and in the Beaufort County, South Carolina area (Anderson 1975:181-183), although they are found throughout the coastal plains of Georgia, South Carolina, and into North Carolina. The occurrence of this pottery is bracketed by two generally accepted radiocarbon dates: 2515±95 B.C. (GO-345) from Rabbit Mount in Allendale County, South Carolina and 1060±80 B.C. (UGA-1686) from Cunningham Mound C in Liberty County, Georgia.

Originally Waring (Williams 1968:160) argued that a distinction should be made between the fiber tempered pottery found inland (which he called Stallings) and that found on the coast (which he called either Bilbo or St. Simons). This distinction was based on four beliefs: first, that the inland pottery was thinner and had more uniform vessel walls; second, that the inland pottery had smaller, neater, more varied forms of punctations; third, that the inland pottery evidenced crude "simple stamping" on many bases; and fourth, that flanged, carinated bowl forms were found only at inland sites. DePratter continues to hold the opinion that the Stallings type "should only be applied to inland ceramics because of major differences between coastal and inland ceramics (Waring 1968a, p. 160 [Williams 1968:160])" (DePratter 1979b:113). Stoltman has disagreed with Waring, noting that the first two differences (thickness and style of punctations) were subjective and impossible to apply consistently (Stoltman 1974:19). Waring himself noted that "ornamentation [at the coastal Beaufort County, South Carolina Chester Field site] . . . is much more elaborate than at the mouth of the Savannah River . . . " (Williams 1968:255). Stoltman (1974:19) also noted that flanged carinated bowl forms supposedly characteristic of inland Stallings pottery were not present at Groton Plantation. Consequently, at this time there seem to be no convincing typological reasons for separating Stallings from either Bilbo or St. Simons. These discussions will refer to all fiber tempered ceramics from Fish Haul as Stallings.

Previous investigations have uniformly identified Stallings pottery as modeled, pinched or drawn -- some technique other than coiling. Since pottery forming techniques are frequently not easy to determine based on visual macroscopic examination, it is likely that the previous evaluations of Stallings as non-coiled have been
based on the absence of coil fractures. Rye (1981:67-68), however, notes that coiling produces separations along coil lines only if the vessel was joined when the clay was too dry, otherwise coiled vessels do not tend to break differently than either pinched or drawn vessels. The near absence of coil fractures on Stallings sherds is probably related to the water retension and binding attributes of Spanish moss, as discussed by Simpkins and Allard (1986:114).

A careful analysis of the Fish Haul collection has revealed that most of the surface evidence of forming techniques was either difficult to interpret or had been obliterated by smoothing and decorating operations. As a result, it was decided to use radiography to study the forming techniques. Rye (1977) suggests that x-ray photographs are useful to study the orientation of inclusions, which are distinctive for each forming technique. He notes that in coiled pottery, inclusions orient parallel to one another along the centers of coils when the pottery is x-rayed normal to the surface. Pinched pottery produces no obvious horizontal or vertical orientation. Drawn vessels indicate a vertical orientation of inclusions (Rye 1977, 1981:68-72).

A preliminary study, similar to that outlined by Rye (1977; see also Carr 1986), was conducted using a small number of Stallings sherds. The purpose was to determine whether the x-ray technique would be successful at identifying manufacturing techniques for the Stallings pottery. Rye (1977:206) notes that particles must be at least 0.04 inch (1 millimeter) in diameter and must not be spherical, since for the purposes of this technique temper particles must be visible and must be able to assume an orientation during the vessel manufacture. While "prismatic, needle-like (acicular) and plate-like particles" are best, I felt that the fiber tracks (which would appear as black voids on the x-ray film) would serve. Rye also indicates that sherds at least 4 inches (10 centimeters) in size are necessary to observe temper orientations (Rye 1977:207).

Some modifications in Rye's (1977:209-211) suggested methods were required because of the limitations imposed by the available equipment. These modifications, however, do not significantly alter the fundamental principles of the methodology, especially as this work is viewed as a pilot study. Kodak T-Mat G film with a Lanex Regular screen was used. Lead sheeting was also used on the bench top to reduce backscatter. Film processing was automated to Kodak standards. The source-film distance was standardized at 37 inches (94 centimeters), which gave full coverage of the 9 x 11 inch (22.8 x 28 centimeter) plates. In these trials the milliamperage varied from 1.6 to 2.5 and the kilovoltage was standardized at 56kV. This work suggests that thick sherds (or curved sherds not in contact with the film) are best
exposed at 56 kV and 2.5 mA, while thin sherds are best x-rayed at 56 kV and 1.6 mA.

The results of this study would be enhanced by the use of a fine grain film (such as the Kodak AA suggested by Rye) and the study of a larger number of sherds (23 Stallings sherds and three non-Stallings sherds were examined). The results, however, are encouraging and suggest that while not all Stallings pottery at Fish Haul evidences coiling, some sherds clearly evidence inclusions orienting parallel along the coils (Figure 51). It may be that the mixture of different manufacturing techniques is natural for this early stage of pottery technology. Coiling may have been the preferred technique for larger vessels. This preliminary study clearly reveals that further work would be profitable and would provide valuable information on the technology of Stallings pottery production.

Fiber was a common inclusion and vermiculation is apparent in cross section and on the interior surfaces. Exterior surfaces appear to have been smoothed, promoting the flotation of clay particles to the surface, so fiber tracks are not as obvious as on the interior. The clay is composed of uniformly very fine sand and no coarser inclusions were observed in any of the sherds. Coarse inclusions, however, are seen in several of the radiographs. The Fish Haul specimens, as previously noted (Trinkley and Zierden 1983:19), tend to be relatively hard, about 3.0 on the Mohs scale. Texture is generally fine and friable, and the paste is contorted.

The ceramic cores of the Stallings ware from Fish Haul are typical of those one would expect from open firing at temperatures below 1832°F (1000°C). The cores also provide some indication of the atmosphere of firing (Rye 1981:114-118; see also Crusoe 1971:113-114). Three combinations of temperature and atmosphere were observed in the Fish Haul collection. About half of the collection was suggestive of organic clays fired in an oxidizing atmosphere with incomplete oxidation. The remaining collection was indicative of either organic clays fired in a reducing atmosphere throughout the firing and cooling, or firing in a reducing atmosphere with subsequent removal and cooling in an oxidizing atmosphere. This range of firing is suggestive of simple and relatively uncontrolled techniques. Such a situation is not unexpected for the Stallings ware, but should not be equated with primitive or unskilled, for as Rye notes, "[a]lthough open firing involves no building or maintenance of structures, it requires a high degree of skill and observational ability to be successful" (Rye 1981:97-98). The firing of pottery in pits, noted by Rye (1981:98) and Shepard (1956:75-76), may help to explain the number of Stallings phase pits with no other obvious function. No obvious examples of firing faults or wasters
Figure 51. Radiographs of Stallings pottery. A-B, Stallings sherds which evidence inclusions oriented parallel along coils; C-D, Stallings sherds which evidence random orientation of inclusions; E-F, Deptford sherds which evidence voids between coils (visual inspection reveals "coil fractures").
were identified at Fish Haul, so the pottery may have been brought to the site from elsewhere.

Colors range from pale browns to reds to reddish yellows to yellowish reds and browns. Interior and exterior colors are occasionally mottled, but fire clouding was not noted. As previously mentioned, the Fish Haul sherds suggest that the vessel exterior was more carefully smoothed than the interior and a few examples evidence considerable care in preparation. None of the sherds evidence any form of interior scraping. Some even indicate that no attempt was made to smooth interior bulges caused by over zealous punctating.

Decoration of Stallings pottery at Fish Haul was limited to punctation (N=860; 58.1%) and incising (N=76; 5.1%). Plain pottery (N=538) accounts for 36.3% of the collection. The remainder of the collection (N=7; 0.5%) consists of a cord impressed type. Previous investigators have chosen to lump together all varieties of punctations (shell, reed, and drag and jab), although the punctations have sometimes been classed as linear, random, individual, or curvilinear. This analysis takes a slightly different approach, separating punctations motifs made with a shell from those made with reeds or sticks. The most common shell punctation is the conical form made with the tip of a marsh periwinkle (N=163, 11.0% of the total collection, 18.9% of the punctated specimens) (Figure 52A-B). Punctations made with reeds and sticks are usually square or triangular (Figure 52C-F), although round punctations occur (N=403; 27.2% of the total collection, 46.9% of the punctated specimens) (Figure 52G-H). Punctations may be individually applied without any overlap (Figure 52A-H) or may be arranged into rows using a drag and jab technique (N=294; 19.9% of the total collection, 34.2% of the punctated specimens). Investigations at Fish Haul suggest the drag and jab technique was only used with the reed punctate varieties and that its application is inconsistent, varying from individual punctations to classic drag and jab punctations (Figure 52I-K). Individual punctations may be arranged in rows or may be more randomly applied, particularly toward the bottom of the vessel. Both shell and reed punctations may cover the entire vessel, although they are frequently found restricted to the rim area. Occasionally examples of zoned punctations (Figure 52C) and curvilinear motifs are discovered.

The distinction between shell and reed punctation was first used to advantage in the analysis of Thom's Creek pottery (Trinkley 1980b). It was discovered that the Thom's Creek series could be seriated such that a transition from plain to reed punctate to shell punctate to finger punching was observed at a variety of sites (see also Trinkley 1980c). Because of the partial contemporaneity of the Stallings and Thom's Creek series it seems reasonable to to
Figure 52. Stallings pottery. A-B, Stallings Shell Punctate; C-H, Stallings Reed Punctate; I-K, Stallings Drag and Jab; L-O, Stallings Incised; P-Q, cord impressed; R-S, lip decoration.
predict that a stratigraphic separation of shell and reed punctate pottery would be present at Fish Haul. A preliminary study (Trinkley and Zierden 1983:20-22) did, in fact, suggest that plain pottery decreases through time, shell punctate increases, although reed punctate was equivocal. The patterns observed in the 1982 and 129-141 blocks will be discussed in the following section.

Incising is a minority decoration, found on only 76 sherds. Virtually every example from Fish Haul reveals the application of incising when the clay was leather-hard -- the margins of the incisions are even and clean. Examples of incision include broad, parallel lines (Figure 52L) and medium to narrow lines in geometric patterns (Figure 52M-O).

Previous research found six sherds from Fish Haul which "exhibit a considerable number of cordage fragment impressions" (Trinkley and Zierden 1983:23). Further investigations, on a much larger scale, have revealed only seven additional sherds, all from the 1982 block. It appears likely that all of these specimens came from one vessel. Description of the collection is identical to that offered in 1983. The cordage ranges from 1/8 to 3/16 inch (1.5 to 2 millimeters) in diameter and has from 5 to 10 twists per inch (2 to 4 twists per centimeter). All of the cords have a Z or left final twist which is at an angle of about 35 degrees (tight). The cords were applied in parallel, crossing bands, but were not knotted. Several of the cordage impressions are so deep and clear they may have been created by the cords burning out during firing of the pottery (Figure 52P-Q). It is clear that this is not accidental, although it represents a distinct minority in the collection.

Two hundred sixty three Stallings rim sherds were recovered from these excavations at Fish Haul. Three lip forms have been previously identified from Fish Haul -- rounded, flattened, or combination (straight interior wall with a gently rounded exterior wall). These lip forms are paralleled by the Thom's Creek series (Trinkley 1980b: 10-13), although the bulbous, T-shaped rim has not been identified at Fish Haul. Previous work at Fish Haul demonstrated that lip treatment varied on single vessels, suggesting that there was no cultural preference involved in lip preparations. The one possible exception to this is lip decoration (Figure 52R-S). Flattened lips were occasionally decorated (10 of the 263 rims, or 3.8%, were decorated), usually with simple stamping at an angle to the rim. Phelps (1968:25) notes a similar decoration for the Savannah drainage Thom's Creek, although such motifs are generally absent from coastal Thom's Creek sites (Trinkley 1980b). Phelps also observes that this was one of the few decorative rim motifs found in the Stallings Island collections (Phelps 1968:26).
Although 15.4% (2 of 13) of the Stallings incised rim sherds were decorated, the sample is probably too small to be a viable indicator of preference. Decoration on other rims of other motifs (plain, shell punctated, reed punctated, and reed drag and jab) ranges from 2.4% to 7.4%.

Rim forms vary from straight to slightly incurvate. The typical vessel appears to be a simple, large, wide-mouthed bowl, with vessel diameters ranging from about 8 to 20 inches (20 to 51 centimeters). Previous studies (Trinkley and Zierden 1983:19) suggest slightly rounded and thickened vessel bases. Vessel height for one specimen was estimated at 8 inches (20 centimeters). Vessel wall thickness varies considerably (1/4 to 5/8 inches [6 to 16 millimeters]) with the rims tending to be slightly thinner.

These vessels were apparently used over open fires for cooking, based on the carbonized material present on the exterior of sherds (Figure 52L). Although less common, carbonized remains are also found adhering to the interiors of a few sherds. Curiously, these Stallings vessels do not seem to be an optimum design for cooking (see Linton 1944:370). By the succeeding Thom's Creek and Deptford stages vessels tend to be larger and give the appearance of being better adapted to cooking.

Deptford

From its earliest description the Deptford series has been characterized by a fine to coarse sandy paste and check stamped surface (Caldwell and Waring in Williams 1968:116-119; Waring and Holder in Williams 1968:135-151). Also characteristic along the South Carolina coast is a cylindrical vessel form with a conoidal base. The Deptford series, developed during the WPA era of southeastern archaeology, has gone through a variety of typological metamorphoses, but has been recently discussed by DePratter (1979a) and Trinkley (1983a).

The Deptford collection from Fish Haul includes 181 sherds. Coiling seems to have been almost exclusively used, although coil fractures are uncommon in the collection (see Figure 51E-F). The paste contains quantities of fine to medium coarse sand, although these aplastics are probably native to the clay sources being used by the potters. This resulted in a fine and compact texture, frequently with a gritty feel.

The Deptford ware exhibits essentially an identical color range to that found in the Stallings pottery. Firing atmosphere for the bulk of the Fish Haul collection was reducing, which leaves the pottery black throughout in cross section. A few sherds indicate that some reduced vessels were removed from the fire and allowed to cool in air,
resulting in thin layers of natural colored clay at the surface. Generally the exterior has a wider band of post-firing oxidation which suggests the interior was less accessible to air (i.e., that the pot was placed mouth down).

Surface treatments include plain (N=71, 39.2% of the Deptford series), check stamped (N=54, 29.8%), simple stamped (N=38, 26.6%), cord marked (N=25, 13.8%), and incised (N=1, 0.6%). The plain pottery was apparently smoothed while the clay was leather hard, and while there is some variation in the quality, none have a gritty interior finish. No evidence of combing or scraping was found. The Deptford Check Stamped specimens have been impressed with a wooden paddle which was carved with parallel lines crossing each other, generally at right angles (Figure 53A-C). This motif of small checks with raised lands is characteristic of the series. The simple stamped motif was applied with either a carved paddle (Figure 53D-F) or a thong wrapped paddle (Figure 53G) to produce a series of grooves in the vessel surface. These impressions are both parallel to each other (Figure 53G) and also overstamped (Figure 53F). The stamping is usually at a slight angle to the vessel rim.

The exterior of the Deptford Cord Marked type is stamped with a cord wrapped paddle (Figure 53H-I). The stamp is distinct and consists of a series of roughly parallel line twisted cord imprints. Overstamping was rare in this collection, and cross-stamping was not identified. Cord size ranges from fine to heavy (1/32 to 7/64 inch [0.8 to 2.8 millimeters]) and the number of twists ranges from 5 to 10 per inch (2 to 4 per centimeter). The twist is uniformly tight and the cordage exhibits a Z or left final twist (see Hurley 1979). The single incised specimen is otherwise plain. The incisions were made in an apparently random fashion by an instrument about 1/64 inch (0.4 millimeter) in width while the clay was leather dry.

Deptford lips in the Fish Haul collection were either flattened or, more often, rounded with a slight exterior overhang. No lip treatments were recovered and the rims are usually straight and vertical, although several examples are weakly outflaring. Vessel form is only suggested by this small collection, but a deep, cylindrical jar with straight to slightly outflaring walls and a conoidal base is suggested. Several vessels at Fish Haul had rim diameters of from 6 to 10 inches (15 to 25 centimeters).

Other Prehistoric Wares

The remaining 93 sherds have been classified as Thom's Creek, Refuge, Mount Pleasant, St. Catherines, and Irene. None of these collections, however, is sufficiently large to
Figure 53. Deptford and other pottery. A-C, Deptford Check Stamped; D-G, Deptford Simple Stamped; H-I, Deptford Cord Marked; J, Thom's Creek Shell Punctate; K-L, Thom's Creek Simple Stamped; M, Refuge Random Punctate; N, Mount Pleasant Cord Marked.
warrant a detailed analysis; the remains suggest only very occasional use of the Fish Haul tract by these groups.

The Thom's Creek series has been discussed by Phelps (1968) for the Savannah River drainage and Trinkley (1980b, 1980c) has discussed the Thom's Creek pottery from the South Carolina coastal area. The Fish Haul specimens (Figure 53I-L) are typical of this series and plain, simple stamped, shell punctate, and reed punctate motifs have been identified. Trinkley (1984) has recently discussed the place of simple stamping in the Thom's Creek series.

The Refuge series has been recently discussed at length by DePratter (1979a) Lepionka et al.(1983), and Trinkley (1982). Examples from Fish Haul are limited to two sherds of a random punctate motif on a very sandy and friable paste. One sherd has sharp dowel or stick stamp impressions in the lip (Figure 53M).

The Mount Pleasant series on the South Carolina coast is characterized by a fine sandy paste with few or no inclusions. While originally typed from North Carolina by Phelps (1984:41-44), its application in South Carolina is discussed by Trinkley (1983a). Both plain (N=6) and cord marked (N=8) specimens are identified from Fish Haul (Figure 53N).

DePratter (1979a) discusses the St. Catherines series and Trinkley (1981) discusses the excavation of a small St. Catherines midden on Victoria Bluff, Beaufort County, South Carolina. The Fish Haul specimens include only plain (N=9) and cord marked (N=4) examples.

The Irene series at Fish Haul is represented by two sherds -- one plain and one complicated stamped. The Irene pottery was typed by Caldwell and Waring (in Williams 1968:119-125) and was further discussed by Caldwell and McCann (1941). Work in the Hilton Head area has identified a major site on Skull Creek (Calmes 1967a), but generally sites of this time period are not common in the area.

Distribution of Stallings Pottery

The distribution of the Stallings pottery may be viewed both horizontally (either across the site or within a single block) and vertically (by either elevation or zone and level). Table 3 provides information on all of the prehistoric pottery recovered from the site. Two blocks, 1982 and 129-141, provide the most complete information for the Stallings pottery and will be the most thoroughly examined by these discussions.
Table 3. Prehistoric pottery recovered from Fish Haul, by provenience.
Table 3 (cont.). Prehistoric pottery from Fish Haul, by provenience
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### Table 3 (cont.). Prehistoric pottery from Fish Haul, by provenience.

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Table 3 (cont.). Prehistoric pottery from Fish Haul, by provenience.
Table 3 (cont.). Prehistoric pottery from Fish Haul, by provenience.
Table 3 (cont.). Prehistoric pottery from Fish Haul, by provenience.
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Table 3 (cont.). Prehistoric pottery from Fish Haul, by provenience.
Vertical Distribution

As discussed earlier, previous research at Fish Haul suggested that the 1.3 foot (0.5 meter) of Stallings deposits might yield stratigraphic information on the development of the different motifs. This was based on the belief that these deposits were gradually accumulated during periods of successive occupation. The first indication that this interpretation might be incorrect was provided by the computer mapping of the auger tests, which suggested discrete loci of limited duration. This subsequent analysis of the Stallings type distribution by levels within Zone 2 tends to support the interpretation of a short duration occupation in different site areas and fails to support the original contention (Trinkley and Zierden 1983) that changes in pottery type frequencies could be observed stratigraphically. While there are some anomalies in the distributions, these may be best explained by the relatively small simple sizes. The possibility remains that shell, reed, and drag and jab motifs may be temporally sensitive; there is simply too little time depth associated with the discrete horizontal clusters at Fish Haul for this hypothesis to be tested.

Figure 54 illustrates the distribution frequency of various Stallings decorative motifs by levels in the 1982 and 129-141 blocks. It will be observed that for most motifs, in both blocks, there is a peak in occurrence in Zone 2, level 3 with the frequency of the motif decreasing both in lower and higher levels. For most decorative styles, in other words, there is an attenuated battleship curve with the bulge corresponding to level 3 of Zone 2. There are only two exceptions -- the drag and jab motif in the 1982 block which gradually builds to a maximum popularity in level 2, and the shell punctate motif in the 129-141 block which appears to decline in popularity from a maximum in level 4. These two exceptions may represent sampling problems (although at least the drag and jab sample from the 1982 block is relatively large, representing 20.8% of the pottery from that block).

Figure 54 is interpreted to suggest that the major period of Stallings cultural activity is represented by level 3 of Zone 2 and that the levels below and above this are more weakly associated with the Stallings occupation. Part of the "blurring" is the result of the archaeological levels failing to conform perfectly with the actual Stallings cultural level. It is difficult, given the sandy soils of the site, to refine the stratigraphy, but several clues are offered.

In the 1982 block, Zone 2, level 3 is found mainly from 12.60 to 13.10 feet MSL (3.88 to 4.03 meters MSL) and the tops of the various Stallings features are found from 12.70 to 13.14 feet MSL (3.91 to 4.04 meters MSL). The bulk of
<table>
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<th>Stallings Reed</th>
<th>Stallings Drag &amp; Jab</th>
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- = 10%

Figure 54. Distribution of Stallings motifs by levels.
the Stallings material, however, appears to be found in the 1 foot (0.3 meter) of soil between the elevations of 12.40 and 13.37 feet MSL (3.01 to 4.11 meters MSL). Certainly a portion of this foot, however, must represent upward and downward migration of artifacts due to both natural and cultural actions. In the 129-141 block, Zone 2, Level 3 was found within the elevations 12.75 to 13.50 feet MSL (3.92 to 4.15 meters MSL), although the tops of most features were found between about 13.10 and 13.80 feet MSL (4.03 to 4.25 meters MSL). While the mean top elevation of features in the 1982 block is 12.95 feet MSL (3.98 meters MSL), the mean for the 129-141 block is 13.42 feet MSL (4.13 meters MSL). The single date from the 129-141 block places it about 400 years younger than the mean of the two dates from 1982 block, which suggests that between 1750 and 1330 B.C. about 0.5 foot of soil was deposited in the area.

Another manner of viewing the vertical distribution of the Stallings pottery is to use the simple, but quite useful, technique discussed by Anderson (1982:218), called the "average depth." Anderson notes that,

[s]imply put, the average depth of a taxa equals the number of sherds of that taxa in a given level times that levels' basal depth, summed over all levels, with the resulting figure divided by the total number of sherds of that taxa in all levels (Anderson 1982:218).

In the case of the Fish Haul collection the "average depth" is calculated using the level designations rather than basal depths, to yield a figure representing not the actual depth in MSL, but the average level of occurrence.

In the 1982 block the Stallings types have average levels ranging from 3.1 to 1.6, and if the various punctates are combined, the average level of occurrence ranges from 2.8 to 2.9. The overlying Deptford pottery exhibits a less collapsed stratigraphy, with plain and check stamped types occurring at an average level of 2.2 and Deptford Cord Marked at an average level of 1.0. Turning to the 129-141 block, the Stallings wares are found distributed from average levels of 3.3 to 3.0. The 218-40R30 square, from a more inland site area, reveals that the Stallings Plain has an average level of 2.2, the Thom's Creek Plain has an average level of 1.8, while the Deptford Plain and Simple Stamp have average levels of 1.5 and 1.3 respectively. Thus, while site depth decreases inland from the marsh, the integrity of site's stratigraphy appears to remain relatively intact.

In summary, the vertical distribution of Stallings pottery at Fish Haul suggests that the two major blocks
examined in this study probably do not represent long, continuous occupations, but rather are loci of short duration occupations. The vertical distribution of pottery in these blocks is the result of both cultural and natural actions, including prehistoric ground surface disturbances (such as the digging of unrecognized pits and the trampling of refuse into the sandy soil), erosion and deposition, and animal and plant soil movements.

Horizontal Distribution

If the two prehistoric blocks represent spatially and temporally discrete occupations then it is anticipated that the frequency of various taxa will differ between the two areas. While an examination of the total collection from the two blocks does reveal frequency differences, they range from as little as 0.4% for incised to only 7.7% for reed punctate (Table 4). Computation of the chi-square test for independence reveals a $\chi^2$ of 44.74, which is significant at the .001 level. It is therefore likely that the observed differences between the two areas are significant. Most of the $\chi^2$ (28.92) was derived from the reed punctated pottery, which suggests that this Stallings type is relatively more sensitive (or at least spatially skewed) than the other taxa.

The 1982 block, which contains the greater frequency of Stallings Reed Punctate pottery, has also produced two radiocarbon dates older than the one available for the 129-141 block. In addition, the percentage of Stallings Reed Punctate pottery decreases from 37.5% in the 1982 block

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Table 4. Distribution of Stallings types by block (exclusive of Stallings Incised).
features to 30.3% in the 129-141 block features. While the results are far from clear, the spatial distribution of pottery between the two blocks may reflect the various motifs' temporal sensitivity and further research should concentrate on an examination of larger collections from Fish Haul and additional radiocarbon dating of samples from the site, as well as on obtaining better stratigraphic samples from other sites.

The horizontal distribution of Stallings sherds in the 1982 block reveals declining densities to the northwest and increasing densities to the south and possibly the northeast. While there does not appear to be a correlation between Stallings sherds and the posited Stallings structure in squares 1982-80R90-100, greater numbers of small (i.e.; under 1 inch [2.5 centimeter] in diameter) sherds are found in these squares and immediately to the south. This suggests that activity in the vicinity of this possible structure created greater fragmentation of pottery.

The 129-141 block revealed a slight increase of large sherds to the north, but a very clear increase in small sherds south to north. The increase in the density of small sherds may relate to activity which took place in the vicinity of the square 129-20R20, which is the locus of five features (Features 17-20).
Introduction

Analysis of the Fish Haul lithic assemblage was developed with several goals in mind: (1) to describe the materials; (2) to examine the technology; (3) to make inferences about the use of curated tools; and (4) to place the site in a regional framework related to current research examining mobility models.

Archaeological research throughout North America, including the Southeast, has focused on development of regional chronologies. Early research concentrated largely on ceramic artifacts (Caldwell and Waring 1939; Griffin 1952; Waring and Holder 1940) and development of projectile point types considered to reflect the "... activities of a particular group of people at a particular period of time" (Coe 1964:6). With hindsight we can observe the error in this assumption, however, it was not until Coe's (1964) excavations at the Doerschuk and Hardaway sites, initiated in the 1940s, that the first well documented, stratified sites with diagnostic single components were identified. This seminal work serves as the basis for chronological interpretations of ceramics and projectile points in the region. Although the importance of lithic material types has been recognized for some time (Goodman 1944), Coe (1964) and Stoltman (1974) brought the issue to the forefront, again serving as the foundation for later contributions (Blanton 1983; Novick 1978). Only with well developed chronological frameworks and descriptions is it possible to address behaviorally oriented questions.

Our major interest, beyond describing the assemblage, is examining the Fish Haul lithics from a regional perspective. While Griffin (1952) and others posed hypotheses about site differences and site use several decades ago, the necessity of examining site diversity and variability (Binford and Binford 1966) has received more attention lately as a result of increased CRM work (Glassow 1977; Mathis 1979). Small sites, probably task specific sites or short term occupations, are no longer glossed over. Rather attempts are made to fit them into regional models (Binford 1983). A number of models integrating organizational strategies and lithic materials have been proposed (Cable 1982; Kelly 1985; Torrence 1983) based on Binford's (1980) forager-collector model as it relates to environmental variables of resources and temperature. In addition to these models, diachronic studies of lithic materials play an important role in

Although Waring (1968:245) recognized the increase of late Archaic projectile points along the coast, lithic assemblages from coastal sites generally are minimal (May 1987; Milanich 1971). Consequently the size of the Fish Haul collection, including both tools and debitage, makes it anomalous and allows us to propose some interpretations. Thus a contextual framework exists, including both a well developed chronology and research questions, within which the Fish Haul analysis may be fitted.

Due to the late project involvement of the authors the analytical results are descriptive and preliminary in nature. Analysis of the hafted bifaces/projectile points, large stone tools, and debitage was conducted respectively by the authors. The introduction is followed by a general statement of analytical methods and description of lithic materials. Particular attributes and analytical results of the assemblage subsets are presented, followed by interpretations and inferences about manufacturing strategies and formation of the assemblage.

**Analytical Methods**

Certain analytical procedures were used for the entire assemblage and are detailed below. Each artifact was analyzed individually and measured using metric calipers. All weights were recorded in grams. A Nikon binocular microscope aided identification of platform preparation and edge damage.

**Lithic Material**

A preliminary examination of the artifacts led us to conclude that most of the material represents varieties of Allendale chert. Similar materials are found in archaeological contexts throughout the region, beginning in early Holocene times, and are readily identified as Oligocene-age fossiliferous cherts of the Flint River formations of South Carolina and Georgia (Cooke 1936). Those sources are widely recognized in the regional literature as "Coastal Plain," "Allendale," or "Briar Creek" cherts, and have been recorded at a number of sites throughout the lower Savannah region and surrounding areas (Anderson 1979; Anderson et al. 1982; Brockington 1971; Kelly 1954; Moore 1898; Stoltman 1974; Waring 1968).
Since some of the large chert tools were dominated by particular colors, our analysis separated lithic material by color, texture, and grain. A variety of fossiliferous cherts were separated by color and include buff/yellow, pink, gray, brown and pink, pink and gray, and white and gray.

Some material is so siliceous that it appears to be more like chalcedony than chert. Consequently it was separated and includes a tan, brown, and gray fossiliferous chalcedony, a clear and white chalcedony, and a pink chalcedony. Jasper, an opaque uniformly textured and colored chert, was also included as red or burgundy and brown.

Minor occurrences include dark gray fossilized wood, gray rhyolite, white quartzite, a dark gray granular material with vesicles, and an unidentified pale brown material. The last material is so highly weathered that it is often difficult to distinguish flake characteristics on the patinated pieces.

**Thermal Alteration/Heat Treatment**

The use of heat treatment (Crabtree and Butler 1964; Flenniken and Garrison 1975) during reduction may vary between technologies, therefore its occurrence was monitored in an effort to determine where it occurred in the various reduction schemes for specific lithic materials. Lithic materials were initially separated by such attributes as color and degree of glossiness so this variable monitored actual, more discrete evidence of heat treatment.

**Remnant heat treated surface** or color change is a visible textural difference on the dorsal surface of the flake. The original stone surface is dull, while the flake scar indicative of post heat treatment removal is glossy and smooth. This dull, pre-heat treatment surface is not to be confused with cortex; it often exhibits dull dorsal surface scars, indicative of reduction prior to heat treatment. Color change is where an actual color difference is visible on the dorsal surface of the flake. Color differences are visible within flake scars as well as between remnant surfaces and post-heat treatment flake scars.

**Burned stone** displays pot lid fractures and crazed stone is cracked from heat, often in a series of rectangular patterns similar to the way a ceramic glaze cracks when it burns. Some flakes had crazed exteriors and chalky interiors.

**Waxy** texture was recorded as being possible evidence for thermal alteration as was a "semi-waxy" texture.
Dull texture is characteristic of quartzites regardless of their thermal state and for cherts that have not been thermally altered. However, the fine quality of some cherts give them an almost glossy appearance although they may not be thermally altered.

Heat fractured stone includes debitage or tools that have been heat fractured and display characteristic crazed or crenated fractures. Inference plays a critical role in archaeological interpretation; consequently, when a lithic artifact displays these characteristics it is difficult to assess its culture significance. Such an artifact may have been over heated when it was thermally altered. Alternatively, the tool may have been left on a ground surface upon which a fire was built, then rediscovered and pressure flaked to rejuvenate the edges. Thus the tool may result from a series of scenarios and it would be difficult to know which of these is correct.

Additional attributes particular to certain artifacts were recorded for the three subsets of artifacts and are detailed below.

**Hafted Biface Analysis**

A total of 21 complete or nearly complete biface specimens were available for analysis, plus a smaller number of bifacial tool fragments (Table 5). The following discussions are primarily descriptive in nature, due to limitations of time and sample sizes.

**Typology**

All (21) of the complete projectile points, or hafted bifaces, can be categorized as one of three "types" defined in the regional literature. These include Savannah River Stemmed (6 specimens), Small Savannah River Stemmed (12 specimens), and Gypsy Stemmed (3 specimens) (Coe 1964; Oliver 1981).

The several blade fragments (n=8) undoubtedly are broken portions of biface types identical to the three named varieties, but cannot be classified because of their fragmentary nature and lack of diagnostic haft elements. Occurrence of such fragments is predictable (Ahler 1971; Frison and Bradley 1980) and most likely results from fragmentation of larger bifaces during: (1) use as projectiles; (2) use as multipurpose cutting, scraping or perforating tools; or (3) failed attempts to rejuvenate broken or worn specimens. The nature of raw materials utilized, which frequently contain natural stress lines,
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**KEY**

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<td>Basal fragment with portion of blade</td>
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<td>Base with portion of blade</td>
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<td>Asymmetrical triangular edges recurvate/recurvate</td>
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<table>
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| HE | Shape of lateral haft edge |

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<td>Small Savannah River Stemmed</td>
</tr>
<tr>
<td>GTP</td>
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Table 5. Projectile point analysis.
crystalline-filled vugs, and other impurities, suggests that manufacturing breaks would be anticipated.

Basic metric data (Table 5) on the complete biface specimens fall easily within standard published ranges of variation for similar typed examples from the lower Savannah region (Stoltman 1974; Waring 1968). Indeed, recognition and sorting of the various examples into the types commonly defined for Late Archaic and Early Woodland sites in the region, as elsewhere in North America, proceeds not so much from radical changes in overall morphology, hafting devices or raw materials, but most commonly is predicated on perceived reduction of gross metric categories such as length, width, and thickness (Fenenga 1953; Thomas 1978). The concept of flaked stone tool life-cycles, particularly blade attrition, has become accepted (Claggett and Cable 1982; Goodyear 1974); however, there has been some debate about which hafted biface attributes are least likely to change through time. Most agree that haft elements, with attributes such as haft length to haft width ratios, are most resistant to change and are therefore most diagnostic (Thomas 1981, 1986; Claggett and Cable 1982; Oliver 1981); while others argue, on the basis of experimental data, that haft elements are most susceptible to breakage and subsequent rejuvenation and change (Flenniken and Raymond 1986). At the present time archaeological data support the former argument.

Simple metric data available in Table 5 would tend to support this exercise in grouping, as Table 6 demonstrates.

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<tr>
<th></th>
<th>mean haft width</th>
<th>mean blade width</th>
<th>mean thickness</th>
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<td>72.2</td>
<td>11.3</td>
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<tr>
<td>Small Savannah River</td>
<td>17.9</td>
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<td>9.9</td>
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<tr>
<td>Gypsy</td>
<td>13.7</td>
<td>30.0</td>
<td>6.7</td>
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Table 6. Mean metric data (in mm) for Savannah River, Small Savannah River, and Gypsy points.

Given these statistics, it can be seen that overall measures such as haft width, thickness, and blade length do decrease through the categories and, according to the accepted typology, through time. Other metric data show similar patterning, at least between the identified historical types.

Similar patterning in this evolutionary trend has been identified at a number of sites (Oliver 1981, 1982, 1985). At the Doerschuk, Gaston, Thelma, and Warren Wilson sites in
Figure 55. Savannah River and Small Savannah River Stemmed projectile points.
North Carolina, a sequence of Savannah River, Small Savannah River, and Gypsy Stemmed was identified from the early portion of the Late Archaic ("classic" Savannah River), to the latter portion of the period (Small Savannah River), and into the Early Woodland (Gypsy). Earlier, Bullen and Greene (1980: 13-14) observed a similar sequence in that Stallings Island, Type 3 points overlay Stallings Island, Type 1 points and "... the extinction of Type 3 points as the digging penetrated the base of the fiber-tempered ceramic deposits was quite noticeable ..." In this comparison, Type 1 points appear to represent an equivalent of the "classic" Savannah River, while Type 3 points represent an equivalent of the Small Savannah River. Stallings Island, Type 3 or Small Savannah River also share similar radiocarbon dates of 1780 B.C. at Stallings Island and 1565 B.C. at Warren Wilson -- both well within what may be considered the latter stages of the Late Archaic period. At all of these sites the Small Savannah River/Type 3 point underlies a smaller, more crudely worked type. Bullen and Greene (1970) recognize a Stallings Island, Type 4 point while Oliver (1981) identifies the Gypsy Stemmed.

Similarities are noted not only in morphology and stratigraphic provenience, but also in the frequency of resource materials. Examination of point assemblages from a variety of sites in the North Carolina Piedmont and Mountain provinces demonstrate that temporal changes in lithic material utilization occur (Oliver 1982). The earliest Late Archaic points are dominated by rhyolite and quartzite. With time lithic materials become more diverse, until the Early Woodland when chert (in the Mountain region) and fine-grained metavolcanics (in the Piedmont) become the predominant resource materials. Since all but one of the Fish Haul projectile points are made of Allendale chert, such a comparison about material change through time is impossible. These trends of lithic material as they relate to implications about mobility, however, will be addressed at the end of the chapter. With respect to typology, a similar trend is apparent between the Fish Haul hafted bifaces (Table 7) and the decrease in point size observed in analyses of other temporally comparable assemblages (Bullen and Greene 1970; Oliver 1982).

Of the three types identified, Small Savannah River Stemmed predominates (n=12; 57%), followed by Savannah River (n=6; 29%) and Gypsy Stemmed (n=3; 14%). Two additional statistics are notable: (1) 86% (n=6) of the specimens identified as heat treated or heat altered were classed as Small Savannah River; (2) approximately two-thirds of the entire sample (chipped stone and tool fragments) exhibited evidence of reworking. Reworking was occasionally observed on blade margins, but was most often observed as flake scars originating along the edges of the blade which extended
across the dorsal and ventral faces towards the median of the blade.

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<tr>
<td>Small Savannah River</td>
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<td>8</td>
</tr>
<tr>
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<td><strong>19</strong></td>
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Table 7. Typological and categorical assignments, Fish Haul Site.

With the exceptions of a single whole biface (ARCH 123) and four biface fragments (Table 5), all specimens of whole or broken bifaces could be identified as one of several color variations of fine-grained, Allendale chert.

**Manufacturing and Maintenance**

Trajectories for prehistoric manufacture of the biface collection from the Fish Haul site are difficult to define, given the limited sample and the apparent single-purpose nature of the site that exhibits little evidence of tool production.

Much, if not all, of the present appearance of the Fish Haul biface collection can be readily explained in terms of breakage or wear on implements sufficient to render them unusable unless rejuvenated. Periodic resharpening of blade edges, "repainting" of damaged distal ends (blade tips), and corrections to flaws in haft element design are some examples of contingency responses (cf. Claggett and Cable 1982; Frison 1978; Kelly 1986). Eventually, of course, tool forms reached a point (barring accidental loss -- considered unlikely) where measures to revive edges, points, etc. became ineffective relative to perceived or actual costs (energy expenditure) of creating wholly-new tools (at the quarry/workshop sites). At such junctures the
broken/exhausted tools were discarded. Only one specimen from Fish Haul (ARCH 154) exhibits definite alteration from one functional mode to another (hafted biface to drill or perforator). All other specimens appear to have been maintained within a single behavioral trajectory as cutting, scraping, or projectiles from initial manufacture to discard. None of the excavated specimens exhibit impact-type fractures on their distal ends, as evidence of spear or dart points, although the few examples of transverse blade fractures could have resulted from such usage as readily as from failed attempts to rework blade elements due to "end shock" (Callahan 1979; Crabtree 1972).

Whatever the actual function of the several Fish Haul biface specimens, even cursory examination of metric and discrete attribute data suggests that very real maintenance strategies were in place and shared by the site occupants. Two distinct modes of tool maintenance are observable, either within the traditional typological schemes discussed earlier, or, alternatively, as a means to explain internal variations and inconsistencies within those frameworks.

In terms simply of blade maintenance -- length of cutting edges, acute edge angles, minimal blade edge thickness, etc. -- the Fish Haul bifaces illustrate two contingency response patterns. The first involves axial blade shortening, or reduction of blade length, probably as a response to a snapped or transversely fractured blade during use as a knives or, equally likely, as a result of failed attempts to resharpen blade edges by percussion. The proposed second method of blade reduction (usually in combination with the first) involved lateral edge reduction by percussion and/or pressure flaking to "sharpen" worn edges in the absence of distal blade breakage.

If either, or both, of those procedures consistently explains biface reduction leading to eventual discard within a single, temporarily discrete tradition ("phase"), then other metric elements could be expected to remain constant or vary independently from other typologically-dependent constructs. Again, however, without engaging in more sophisticated statistical analyses, such hypotheses for the Fish Haul data must remain untested.

Measurement and monitoring of edge angles (at discard) through what are assumed to be several temporally-discrete types could likewise inform on type validity versus simple reduction/discard behavior within a single cultural-temporal tradition. By holding raw material and other elements such as thermal alteration relatively constant, it should be possible to better define the situations under which "perfect" bifaces were rejected due to increased edge angles and/or inabilities to reduce overall blade thickness by continued resharpening.
Haft element design among the three biface types is nearly unvarying. Except for measurable differences in haft length, haft width, etc., the basic form of square to subrectangular stems is constant within and between the typed specimens. Little or no evidence of haft element damage or repair is evident indicating that failure of those tool portions was an uncommon cause for discard (Claggett and Cable 1982; Oliver 1981; Thomas 1981). If maintenance occurred while the specimen was hafted, we would expect gross blade reduction of the lateral margins and little alteration of the haft element. This latter possibility parallels the observations of this portion of the analysis. Specifically, the Fish Haul hafted biface assemblage indicates rejection due to either gross or, more commonly, quite subtle changes in blade morphology that rendered them unsuitable for chosen tasks.

Large Stone Tools Analysis

Ten specimens (Table 8) were classified as large stone tools. Of this number four (40%) were categorized as hammerstones, three (30%) were unmodified rock, one (10%) was a large flake produced from bipolar reduction, one (10%) was a modified/worked flake, and one (10%) was a large fragment of heavily heat-altered fossiliferous chert. Few meaningful statements can be made concerning such a small number of specimens. However, there are three specimens that deserve special mention.

ARCH 155 (Figure 56G), is a pitted, roughly six-sided hammerstone of a highly weathered, unidentified material which may be causally identified as a "nutting stone." Based upon the results of microscopic analysis (10X-30X) of the pits within the stone, such an identification would be inaccurate. Our examination found no indication of crushing or grinding within these depressions. The analysis, however, did identify substantial edge-wear on the cortical surface. Therefore, until more sophisticated analysis is conducted we shall refer to the specimen as a hammerstone.

Two additional specimens deserving mention are ARCH 198 (Figure 56F), a large quartzite cobble fragment, and ARCH 226 (Figure 56E), a hammerstone of petrified wood. Although the material is unusual, it has been reported in assemblages in the interior Coastal Plain (Anderson et al. 1982:130). Specimen ARCH 198 appears to represent a distinctive by-product of bipolar reduction and as such may represent a rare insight into the optimal response pattern of the site occupants.
Figure 56. Miscellaneous Stallings phase tools. A-C, Gypsy Stemmed points; D-E, hammerstones; F, possible evidence of bi-polar manufacturing; G, pitted hammerstone; H-L, sherd hones; M-N, sandstone hones; O-Q, baked clay objects.
<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Category</th>
<th>Measurement (in mm)</th>
<th>Resource Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 155</td>
<td>hammerstone</td>
<td>54x45</td>
<td>undetermined</td>
</tr>
<tr>
<td>ARCH 172</td>
<td>rock</td>
<td>46x28x25</td>
<td>undetermined</td>
</tr>
<tr>
<td>ARCH 169</td>
<td>hammerstone</td>
<td>68x66x40</td>
<td>undetermined</td>
</tr>
<tr>
<td>ARCH 198</td>
<td>bipolar flake</td>
<td>100x48x20</td>
<td>quartzite</td>
</tr>
<tr>
<td>ARCH 307</td>
<td>rock</td>
<td>80x47x40</td>
<td>quartzite</td>
</tr>
<tr>
<td>ARCH 226</td>
<td>hammerstone</td>
<td>70x69x40</td>
<td>petrified wood</td>
</tr>
<tr>
<td>ARCH 130</td>
<td>rock</td>
<td>48x32x23</td>
<td>undetermined</td>
</tr>
<tr>
<td>ARCH 158</td>
<td>modified flake</td>
<td>61x52x19</td>
<td>buff/yellow chert</td>
</tr>
<tr>
<td>ARCH 227</td>
<td>hammerstone</td>
<td>65x39x35</td>
<td>fossiliferous chert</td>
</tr>
<tr>
<td></td>
<td>fire-cracked</td>
<td>110x70x61</td>
<td>fossiliferous chert</td>
</tr>
</tbody>
</table>

Table 8. Large stone tools.

Large stone tools from the Fish Haul site reflect occupations of limited purpose and short duration. The practice of bipolar reduction is suggested by the presence of at least one artifact, perhaps future research gathering a larger sample may further elaborate on this observation. At the present time, we may do little other than speculate that the appearance of this artifact represents a response to the scarcity of lithic material in the Fish Haul area.

**Debitage Analysis**

The debitage analysis methods are based on several previous analyses of Southeastern assemblages (Novick 1982, 1984) as well as with some additions geared specifically to technological questions that would be helpful in interpretations of stone tool curation. Since the Fish Haul assemblage is a biface technology rather than a blade technology or specialized flake technology, emphasis is placed on New World (Binford 1963, Binford and Papworth 1963, Callahan 1979, Crabtree 1971, White 1963) lithic studies rather than Old World (Tixier 1974) studies. Collins's (1974) dissertation, a comparison of lithic assemblages from Texas and France, illustrates a nice blend of Old World and New World approaches. Although we agree with much of Collins's (1974) discussion, much Old World terminology which is often specialized would be superfluous here.

Since this lithic analysis was designed for computer analysis anticipation of new artifact categories was inevitable and a certain amount of flexibility was built into the actual analysis and coding procedures.
chippage, flakes or the waste by-products of chipped stone tool manufacture were separated into six major categories: primary, secondary, non-cortical, pressure, notch and miscellaneous/flake fragments.

Flake Categories

Primary flakes (White 1963:5) are generally the first flakes struck from a pebble, nodule, or tabular piece of material with a dorsal or outer surface completely covered with cortex.

Secondary flakes (White 1963:5) are the second flakes struck from a pebble, nodule, or tabular piece of stone with a dorsal surface that is only partially covered with cortex.

Non-cortical flakes exhibit no cortex on their dorsal surface. These were separated into two basic groups based on their longitudinal cross section: flat or curved, with the latter interpreted as biface thinning flakes. Flat non-cortical flakes were distinguished by a variety of morphological attributes including shape, number of dorsal ridges and orientation. One type of flake has no dorsal surface ridges and is interpreted as representing platform preparation or small, initial strikes from a flake blank.

Bifacial thinning flakes are curved in cross-section and generally exhibit no cortex on their dorsal surface. Characteristic attributes representative of the parent core or biface surface topography are single or multiple dorsal ridge with two or more flake scars.

Pressure flakes are generally some of the smallest flakes in any assemblage. They are thin with small platforms and bulbs of percussion. The classic pressure flake has one or two ridges running the length of the dorsal surface with lamellar, lateral edges and a tapered, feathered distal end; however, most pressure flakes were less than perfect. Examination of pressure flaked tools indicates that many pressure flakes are short and wide with distal ends that are as wide or wider than the medial section of the flake.

Notch flakes are small, crescent-shaped flakes with a cone-shaped cross section (Titmus 1985) which are the by-product of notching a tool's base, side, or corner. Their platforms are small, v-shaped in cross section, and often crushed. In plain view the platform is semi-lunar or crescent shaped, although in some cases they form an almost complete 360 degree circle.

Miscellaneous flakes include non-cortical flake fragments, shatter and pot lids.
Flake Size

Flake size (weight or length) is one of the most important variables in this analysis. It has been found to be particularly useful in examining lithic material types and relationships about reduction and curation of stone tools (Magne 1983; Miller, Green and Hattori 1984; Novick 1982, 1984; Pokotylo 1978). Each flake was sized on a square grid composed of 12 size classes ranging from 3 millimeters to 80 millimeters (Table 9).

Platform Categories

Since tool curation and manufacture are problem domains in this study, platform preparation was examined to provide data from which interpretations about tool use and manufacture techniques could be proposed. Curated tools used at the site leave debitage as their only evidence of use and resharpening activities. Consequently it was anticipated that platforms of these flakes would exhibit evidence of grinding, damage, and/or polish. Manufacturing debris exhibits platform preparation in the form of abrasion damage, although certain flakes were removed without platform preparation. Platform preparation strengthens the edge of the tool from which the flake is being struck, enhancing the success of its removal (Callahan 1979:117). Unfortunately platform edge preparation is difficult to observe as a result of different lithic materials, weathering, and other variables. Abrasion easily seen on obsidian may be difficult to distinguish on other siliceous rocks. The platform categories defined below are a combination of morphological and technological attributes.

Cortical platforms are entirely covered by cortex and are indicative of initial flakes struck from a pebble or cobble. Thus they provide insights about procurement and production of lithic materials used for flaked stone tool manufacture.

Single facet platforms exhibit one flat surface which is the part of the core or biface that was struck to form the flake.

Bifacial platforms exhibit a number of previous flake scars on both faces of the platform. These platforms are indicative of a bifacial edge (generally assumed to be a biface), however, some cores may be bifacially reduced resulting in the same type of platform preparation. Dorsal surface typography and flake cross section aid in determining from which type of core flakes were removed.
<table>
<thead>
<tr>
<th>Flake Size Class</th>
<th>Flake Size (mm)</th>
<th>#</th>
<th>%</th>
<th>Cumulative #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>1</td>
<td>.1</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>1</td>
<td>.1</td>
<td>2</td>
<td>.3</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>23</td>
<td>3.8</td>
<td>25</td>
<td>4.1</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>149</td>
<td>24.9</td>
<td>174</td>
<td>29.1</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>278</td>
<td>46.5</td>
<td>452</td>
<td>75.7</td>
</tr>
<tr>
<td>6</td>
<td>20</td>
<td>110</td>
<td>18.4</td>
<td>562</td>
<td>94.1</td>
</tr>
<tr>
<td>7</td>
<td>30</td>
<td>26</td>
<td>4.3</td>
<td>588</td>
<td>98.4</td>
</tr>
<tr>
<td>8</td>
<td>40</td>
<td>5</td>
<td>.8</td>
<td>593</td>
<td>99.3</td>
</tr>
<tr>
<td>9</td>
<td>50</td>
<td>3</td>
<td>.5</td>
<td>596</td>
<td>99.8</td>
</tr>
<tr>
<td>10</td>
<td>60</td>
<td>1</td>
<td>.1</td>
<td>597</td>
<td>100</td>
</tr>
<tr>
<td>11</td>
<td>70</td>
<td>0</td>
<td>0</td>
<td>597</td>
<td>100</td>
</tr>
<tr>
<td>12</td>
<td>Over 70</td>
<td>0</td>
<td>0</td>
<td>597</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 9. Flake size distribution.
Crushed or collapsed platforms retain, if anything, only a small remnant platform. These result when a problem with the percussor develops and most of the platform is destroyed. For example, when too much force is exerted platforms crush, while a glancing blow may collapse the platform.

Triangular platforms have more than one facet with the dominant feature being a triangular ridge in the center, right, or left part of the platform. These often represent the remnant dorsal ridge selected by the knapper to serve as a guide for the force from the percussor that removes the flake (Callahan 1979:53).

Alternate platforms occur on flakes removed using an alternate flaking technique. One flake is struck from the first face of a flake blank or biface. The tool is turned over and another flake is struck from face two using the previous flake scar as a platform.

Concave platforms are crescent shaped and result from attempts to strike a second flake from a single platform. Often, but obviously not always, these flakes are not removed because the platforms collapse.

Prepared platforms exhibit some form of preparation that was not readily distinguished.

In some instances a platform appeared to be bifacial but may have simply been multiple faceted.

Broken platforms were recorded and in the case of shatter no platform had existed.

Edge Damage

No formal unifaces, such as hafted end scrapers, were discovered in the Fish Haul assemblage. Minor edge damage was observed on a number of flakes and one modified flake scraper was identified within the analysis of large stone tools. On the basis of experiments (Brose 1975) and observations (Gould et al. 1971) it is argued that caution is in order for interpretations of edge modification. The study of post excavation edge damage resulting from screens, bag retouch, etc. has indicated potential problem areas. Brose (1975) argues that flakes used in butchering develop fat accumulations that protect their edges from damage. Thus flakes may be used as tools and exhibit no visible traces of wear. Similarly, edge wear studies that were gaining popularity in the late 1970s (Hayden 1979; Keeley 1980) have failed to produce conclusive, replicable results. Edge modification resulting from trampling has been investigated with various results (Tringham et al. 1974; Flenniken and
Consequently, a separate variable was recorded rather than assigning a catalog number to each flake that exhibited damage.

Edge damage, for the present analysis, consists of the presence of a series of flake scars, crushed edges, etc. Flakes were oriented dorsal surface up and proximal end towards the investigator. Evidence of damage was studied on both dorsal and ventral surfaces.

Sample type is a measure of the degree of completeness of the flake. The classes include complete, bulb only, medial section, distal end, flake fragment, fragment/shatter, and possible bifacial fragment/shatter.

The Debitage

A total of 610 flakes, flake fragments, and small tool fragments were examined during the analysis. Small tool fragments (n=34) include biface edges, tangs, stems, and tip fragments. Twenty percent of all debitage consists of complete flakes (n=114). Flakes are dominated by proximal fragments still retaining the platforms (n=196, 34.4%). Medial sections (n=72, 12.6%) and distal fragments (n=29, 5%) compose only a relatively small proportion of the debitage. Flake fragments that could not be distinguished comprise 8% (n=46) of the debitage while shatter is relatively common at 112 pieces. Since the brown weathered material could not be distinguished by flake classes it tends to skew the distribution.

Flake size tends to be skewed towards the small end of the size scale with 19 outliers and no really large flakes. The size five class (15 mm) is both the mode and the median in this assemblage. Size classes one and two, each include only one flake. Twenty (3.8%) size three flakes were recovered while nearly one quarter of the debitage consists of size four flakes (n=149). Nearly half of all debitage (n=278, 46.5%) is size five. A relatively high proportion of flakes were size six (n=110, 18.4%). Only 26 (4.3%) size seven flakes were recovered and fewer size eight (n=5, .8%), size nine (n=3, .5%), and only one size ten flake (.1%) were recovered.

No primary flakes were found in the Fish Haul debitage assemblage and only six cortical flakes (1%) were represented. Interior flakes, those with flat cross-sections and possibly representing early stage lithic reduction, compose nearly one fifth of the assemblage. Bifacial flakes form the major flake class (n=219, 38%). No pressure or notch flakes were recovered. Non-cortical flake fragments (n=115, 20%) and shatter (n=119, 20.6%) form the bulk of the
assemblage while pot lids, the by-products of over heated stone comprise only 2.4% (n=14) of the debitage.

In addition to flake class, platform type provides information about how lithic material was reduced at the site. Only two (0.3%) cortical platforms indicative of on-site reduction of nodular material were recovered. Single facet platforms generally representative of early stages in the reduction process were represented by only 11 flakes (2.2%). Most platforms are bifacial (n=194, 33.6%), several were classified as probably bifacial (n=16, 2.7%); however, it should be noted that not all flakes classified as bifacial exhibited typical bifacial platforms. Triangular platforms (n=33, 5.7%) are removed from bifaces when a dorsal ridge from two overlapping flake scars is used as the primary area for transmission of force. Three alternate platforms, characteristic of a particular reduction technique were recovered while five were identified as prepared. Flake fragments (n=148, 25.6%) exhibit no platforms and shatter (n=115, 19.9%) in most cases never had platforms.

Edge damage was observed on the distal end of nine flakes and on the lateral margins of two flakes, approximately 2% of the debitage. As noted above this type of damage may result from use, lithic material reduction, or post-depositional activity.

Although thermal alteration experiments have been conducted with Allendale chert (Anderson 1979), the variable color and quality of the chert make these assessments questionable. The majority of flakes and by-products (n=325, 55.6%) are dull which suggests that they were not thermally altered. Next in frequency is a class labeled semi-waxy with a luster that may reflect thermal alteration (n=150, 25.6%). A real waxy luster, in this assemblage some of the best evidence for heat treatment, was recorded on 85 flakes (14.5%). Since Allendale chert has a tendency to turn pink when it is heated, 13 flakes were pink and waxy while 11 flakes (1.8%) exhibited a pink color change on a portion of the flake. Overall there is good evidence for nearly 20% of the debitage and by-products having been thermally altered, although it is possible that some of these pieces may have been post-depositionally heated. There is possible evidence that an additional 25% of the assemblage (150 flakes) was thermally altered leaving slightly more than half not having been thermally altered.

The predominant lithic material is the classic buff colored fossiliferous Allendale chert. Other fossiliferous types comprise the bulk of the debitage although a high quality chalcedony makes up about 10% of the material (Table 10).
### Table 10. Lithic material distribution within the Fish Haul debitage.

<table>
<thead>
<tr>
<th>Material</th>
<th>Flake Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buff/yellow fossiliferous chert</td>
<td>327</td>
<td>53.5</td>
</tr>
<tr>
<td>Pink fossiliferous chert</td>
<td>66</td>
<td>10.8</td>
</tr>
<tr>
<td>Gray fossiliferous chert</td>
<td>30</td>
<td>4.9</td>
</tr>
<tr>
<td>Brown/pink fossiliferous chert</td>
<td>7</td>
<td>1.1</td>
</tr>
<tr>
<td>Tan/brown/gray fossiliferous chert</td>
<td>18</td>
<td>2.9</td>
</tr>
<tr>
<td>Pink/gray fossiliferous chert</td>
<td>16</td>
<td>2.6</td>
</tr>
<tr>
<td>White and gray chert</td>
<td>2</td>
<td>0.3</td>
</tr>
<tr>
<td>White chalcedony</td>
<td>58</td>
<td>9.5</td>
</tr>
<tr>
<td>Pink chalcedony</td>
<td>3</td>
<td>0.4</td>
</tr>
<tr>
<td>Burgundy jasper</td>
<td>3</td>
<td>0.4</td>
</tr>
<tr>
<td>Brown jasper</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Fossilized wood</td>
<td>2</td>
<td>0.3</td>
</tr>
<tr>
<td>Dark gray vesicular, granular</td>
<td>17</td>
<td>2.7</td>
</tr>
<tr>
<td>Gray rhyolite</td>
<td>4</td>
<td>0.6</td>
</tr>
<tr>
<td>White quartzite</td>
<td>5</td>
<td>0.8</td>
</tr>
<tr>
<td>Brown weathered</td>
<td>51</td>
<td>8.3</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>610</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

In conclusion, we can see that most of the flakes are relatively small bifacial specimens that represent thinning and sharpening of curated tools. The absence of large Allendale chert flakes precludes any interpretation of large scale reduction of this material at the site. Similarly the absence of cortical and low counts of interior flakes suggest that no early stage reduction of any material took place at the site. A few rhyolite flakes indicate that tools from the Piedmont were curated or traded into the area and then transported to the site. Based on collections from Berkeley County, just north of the project area (e.g. Anderson et al. 1982; Green and Brooks n.d.) it is rather surprising that none of the Black Mingo Formation orthoquartzite appears in the assemblage. Manchester chert, a purple fossiliferous chert from Sumter County is similarly conspicuous by its absence. Thus the Fish Haul debitage is relatively homogeneous with respect to lithic material and activities. Although at least twenty percent of the debitage exhibits evidence of thermal alteration, it seems most likely that these flakes were struck from tools that had been thermally altered. They do not appear to represent a result of post-depositional factors and may reflect optimizing strategies employed to overcome the impurities and imperfections common to the dominant lithic material utilized.
Based on analysis of the flaked stone tools, debitage and other lithic materials several conclusions are drawn. The assemblage is surprisingly homogeneous with respect to functional categories of lithic material, and most likely represents several, short term occupations of hunter-gatherers rather than specific task uses.

Bifacial Technology and Implications for Mobility

Hafted bifaces/projectile points which most likely served as multi-functional tools (Ahler 1971) are the dominant formal tool class. Typologically these tools sort into three size related groups which have been recovered from stratified deposits in the North Carolina Piedmont and Mountain provinces as well as sites in Georgia and South Carolina (Oliver 1981).

Based on the most consistent morphological attributes, haft element length and width, the Fish Haul specimens defined as Savannah River Stemmed, Small Savannah River Stemmed, and Gypsy Stemmed types correlate with several recurrent site occupations during portions of the Late Archaic or Early Woodland Stallings phase of ca. 2000 B.C.-1000 B.C. It is stressed here that the concept of tool life cycles is well recognized. However, since all of these point types exhibit blade attrition and distinctive haft element ratios when recovered from stratified contexts, they appear to represent three distinct types as opposed to one point type that is extremely curated. Based upon the typological data, it is proposed that most, if not all, occupations at the Fish Haul site date to the latter portions of the Late Archaic period ca. 2000 B.C.-1000 B.C. This position has been supported by recently received radiocarbon dates of 1770 B.C., 1760 B.C., and 1330 B.C. (this report).

With the exception of one rhyolite Gypsy Stemmed point, all of the complete hafted bifaces are manufactured from Allendale chert. Over 65% (n=393) of the debitage recovered from the site is Allendale chert. Few of the flakes are large and none are cortical, which suggests that no early stage reduction took place at the site. The absence of pressure and notch flakes corresponds well with the flaked tool classes which are primarily percussion flaked. Late stage preforms are also absent from the assemblage. The absence of large bifaces (or bifacial cores) which could serve as sources of lithic material for the production of additional tools is rather unexpected. This suggests that only formal tools -- hafted bifaces -- were carried to the site or that other tools were curated to and from the site.
Curated tools as well as flake tools produced from curated bifaces may have been used at the site.

At least half of the debitage and one-third of the hafted bifaces exhibit evidence of thermal alteration. Results of experimental studies (Tower 1984) indicate some disagreement regarding the qualities heat treatment imparts to edge holding properties. It is likely that edge attrition was greater as a result of thermal alteration. Thus heating chert enhances its flaking qualities yet the process diminishes other desirable qualities. One projectile point and a few flakes of rhyolite demonstrate that at least one tool had to have been transported or traded from the Piedmont. The quartz debitage originated in the same area or the interior Coastal Plain. A few cortical flakes suggest that cobbles of this material were reduced or transported to the site as early stage bifaces.

This limited assemblage further evidences prehistoric needs for a versatile, dependable tool kit that was both easily transportable and maintained. Goodyear's (1979) arguments for selection of high grade siliceous materials by early Holocene hunter-gatherers thus may be applied to later Archaic-Woodland groups. The selection of relatively high-quality Coastal Plain cherts would have been just as essential for creation of durable Late Archaic hafted bifaces as it had been during the Early Archaic.

The use of Allendale chert for all three varieties of projectile point types in the Fish Haul assemblage contrasts with results of previous analyses of temporally comparable assemblages. At Stallings Island, Georgia lithic materials used for Savannah River points change from an overwhelming reliance on "slate" to quartzites and cherts in chronologically later types (Bullen and Greene 1970). Assemblages from the North Carolina Mountains and Piedmont exhibit a temporal trend from Carolina slate in the early Late Archaic materials to predominance of chert (Mountain) and fine-grained metavolcanic materials (Piedmont) during the Early Woodland (Oliver 1982). This trend suggests that local materials were used during the Late Archaic and that an increase in extralocal materials was apparent during the Early Woodland.

Based primarily on survey data, expectations for trends of lithic material utilization have been proposed (Cable and Cantley 1979; Goodyear 1979; House and Ballenger 1976; Taylor and Smith 1978) which have been substantiated by subsequent research (Anderson and Schuldenrein 1985; Blanton 1983, 1984; Novick 1985). Based on these proposals it is anticipated that lithic material diversity was high during the Early Archaic and decreases during the Middle Archaic relying mainly on local materials (particularly quartz) depending upon material availability near site locations. There is a
continued use of local materials, especially slates and metavolcanics, during the Late Archaic, followed by an increase in material diversity during the Early Woodland. Excavations of multi-component sites on the interior Coastal Plain (Anderson et al. 1982) illustrate these same general trends.

Thus the homogeneity of the Fish Haul assemblage was rather unexpected. This lack of variability is the result of site location, in relation to sources of lithic material, and mobility patterns. It seems most likely that the tasks requiring flaked stone tools were conducted with multifunctional hafted bifaces that were sharpened and rejuvenated at the site. Other tools may have been used and then transported from the site. Specific lithic material types may represent directional patterning reflecting season cycles (Reher and Frison 1980) or exchange/trade (Goad 1980). If people were returning to the site from a number of different locations a greater amount of variability among lithic materials would be anticipated. In addition to Allendale chert which outcrops along the Savannah River, we would then anticipate the curation of tools made from materials that occur in the Piedmont (e.g. rhyolite, tuff) and the interior Coastal Plain (e.g. Manchester chert, orthoquartzite). It has been proposed that groups stopped at lithic material outcrops on the interior Coastal Plain in order to retool (Anderson et al. 1982), however, none of this diversity is present in the Fish Haul assemblage. The absence of other lithic material types suggests that the Fish Haul lithics were deposited by peoples coming from the west or northwest where Allendale chert was the most readily available material.

Given the virtual single-point origin for the Coastal Plain cherts, examination of diachronic patterns of raw material selection at sites like Fish Haul where tight controls over stratigraphic orderings, chronological (radiometric) placements, and a low variance of site function through time should provide additional insights about mobility patterning. Apparent trends of decreased frequency of particular materials through time, in combination with increasingly emphasized maintenance strategies, reduced initial tool sizes, etc. (Anderson 1979; Claggett and Cable 1972), could be indicators of decreased access to the quarry sites resulting from hypothesized "hardening" of band territorial boundaries or increased socio-political control of those sources during the Early-Middle Woodland periods.

In combination with data from other sites, situated at or more proximate to actual quarry or production sites (Goodyear and Charles 1984), the Fish Haul data provide insights about the "terminal" processes of biface maintenance reduction and discard behaviors at small sites. The
collections likewise offer significant opportunities to examine questions of typology of lithic tool forms, mentioned previously, the actual functions of hafted bifaces in a systemic context, and factors influencing their eventual entry into the archaeological record due to breakage or exhaustion as viable edged implements (Schiffer 1976; Collins 1975). Analysis of the projectile points, or hafted bifaces, and large stone from Fish Haul suggests that maintenance of bifacial tools was a repeated task at the site.

Implications for Bipolar Reduction

The assemblage is dominated by a bifacial technology where only one possible bipolar fragment was recovered. This quartzite cobble was reduced by the bipolar technique. Bipolar technology has been reported in regional contexts, most in temporally later associations (Blanton et al. 1986; Cable and Cantley 1979; Tippitt and Marquardt 1984). Kelly 1986; see also Smith 1986:14) proposes that the bipolar technique is a response to stress in areas where lithic material is scarce. Since lithic resources are scarce in the Fish Haul vicinity application of this model is plausible. Therefore, during any temporal period in this area, we might anticipate bipolar reduction of expended tool fragments or reduction of an occasional find as an optimizing strategy making the most of a scarce resource.

Bipolar cores and debitage have been reported at a variety of sites (Cable and Cantley 1979), but in association with Yadkin ceramics on the interior Coastal Plain. Blanton et al. (1986) reported the use of the bipolar technique from Early and Middle Woodland contexts in Sumter County, South Carolina within the interior Coastal Plain. They argue that the use of this technique is a response to the pebble quartzites that were exploited from local drainages. Bipolar debitage of crystal quartz has also been reported from the Savannah River vicinity (Tippitt and Marquardt 1984).

Consequently, along the coast we may expect evidence of the bipolar technique as a response to stress on lithic resource availability or, alternatively, as a method to reduce small nodules which may have been transported into areas where a scarcity of stone was anticipated. Additional research in the area may contribute to our understanding of the use of bipolar reduction in different regions and through time.

Other Aspects of the Lithic Assemblage

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Only one tool, a Small Savannah River point (ARCH 423), was recovered in association with a feature, Feature 28, a pit with Stallings Island sherds, charcoal, and charred hickory nuts. The other tools were recovered from general excavation contexts. Many of the tools and debitage were thermally altered. Additionally, on the basis of several burned flakes and tools it is apparent that chert was thermally altered but at too high a temperature, burned accidentally during activities, or burned in post-depositional contexts across the site. The recovery of hammerstones in a locale where such materials are rare suggests that these were curated items left at the site. In addition to stone working, the evidence of battering on the hammerstones may represent activities such as food processing and wood working.

Summary

In summary, the lithic assemblage from the Fish Haul site, with its unexpected material and compositional homogeneity, provides insights into the late stages in tool life cycles. Most tools are curated hafted bifaces made of Allendale Chert. Allendale chert dominates the debitage assemblage and represents bifacial flakes most likely removed while sharpening hafted biface margins. The recovery of one rhyolite biface and associated debitage, as well as debitage of other materials, provides some evidence for mobility and exchange/trade. Hammerstones left at the site represent cached tools in an area of scarcity. The homogeneous Fish Haul lithic assemblage adds to our understanding of the formation of small sites, which in this case represents a series of short term, hunter-gather residential occupations.
OTHER PREHISTORIC ARTIFACTS
Michael Trinkley

Shell

Stallings and Thom's Creek shell middens are prolific producers of culturally altered shell. While whelk are most frequently found altered (Trinkley 1980c:209-214), DesJean (1985a) and South and Widmer (1976:46-50) note the presence of possible working on other shells such as clam and cockle. It has been presumed that on the stone-poor coast other more abundant sources, such as shells, were used.

Only two shell artifacts were recovered from Fish Haul, and both were probably decorative rather than functional. One is a heavily eroded oyster shell which measures 1 3/4 inches (4.6 centimeters) in length and 1 7/16 inch (3.7 centimeters) in width. A hole, about 9/32 inch (0.7 centimeter) in diameter, has been drilled in the hinge area, presumably for suspension. The second example is a clam shell fragment, also heavily eroded, which measures about 1 3/16 inch (3 centimeters) in length by inch (2.5 centimeters) in width. A hole, measuring about 9/32 inch (0.7 centimeter), has been drilled through the shell, about 1/4 inch (0.6 centimeter) from the outer edge. A portion of this edge has been broken off the specimen.

Although a number of the whelks evidenced holes to remove the meat, none suggested either intentional preparation for use or opportunistic use. All of the shells appear to represent the collection of individuals for food.

This absence of shell tools may be related to the relatively large lithic collection from Fish Haul. At the portion of Lighthouse Point subjected to 1/4-inch (0.6 centimeter) screening 20 lithics were recovered for a density of one item per 45 cubic feet (1.3 cubic meter), while 25 worked shell specimens were recovered for a density of 1 item per 36 cubic feet (1.0 cubic meter). At Fish Haul, the density of lithic items in the two prehistoric blocks is about one item per 3.6 cubic feet (0.1 cubic meter). The abundance of stone tools at Fish Haul may have negated the need for shell tools.

Alternately, the nature of the site, rather than the presence of stone sources, may determine the need for shell tools. Study of the whelk tools at Lighthouse Point suggested their use to abrade or scrape a relatively soft item, such as skins or wood (Trinkley 1980c:213). DePratter (1979b:20) favors the interpretation that these tools were adzes, used in wood working. Since no stone adzes or other
similar cutting tools were recovered from Fish Haul, no activity which required their use apparently took place at the site.

Hones

Pottery hones have been recovered from almost every Stallings and Thom's Creek site reported and the tool is found into the Middle Woodland in South Carolina and to the Proto-Historic at Kings Bay in Georgia (DesJean 1985c). Both Michie (1979:64-67) and Thomas et al. (1979:44-46) discuss a number of wear patterns on pottery sherds, although the "v" or "u" shaped groove is most common and is most appropriately called a hone. Michie terms this wear pattern "groove abraded" and notes that this "tool appears to have been utilized in the manufacture of bone pins" (Michie 1979:67). Such a conclusion is reasonable as this type of sherd tool has been almost exclusively found on sites which also evidenced abundant worked bone.

At Fish Haul 151 hones were recovered; 124 (82.1%) were on Stallings sherds (primarily plain - 75%) (Figure 56H-L), 14 (9.3%) were on Thom's Creek sherds, one (0.7%) was on a Deptford sherd, and 12 (7.9%) were on sandstone or siltstone (Figure 56M-N) and hence assignable to a cultural period based only on stratigraphy. Eleven (91.7%) were recovered from Zone 2, Level 2, or below and are therefore most likely associated with the Stallings occupation. The twelfth stone hone was found on the surface and its cultural association is therefore problematical. Of the 151 hones, 119 or 79% were recovered from the Stallings occupation in either the 1982 or 129-141 blocks. Between the two blocks 48 hones (32%) were recovered from the 1982 block (1 hone per 25 cubic feet [0.7 cubic meter]) and 71 hones (47%) were recovered from the 129-141 block (1 hone per 12.5 cubic feet [0.4 cubic meter]). The greater incidence of hones in the 129-141 block is striking, although there are too few data to venture an explanation.

It is unusual that this density of hones is found at a site which yielded no worked bone. At Lighthouse Point the ratio of bone pins to hones was 1:2 (106:248), at Stratton Place the ratio was 1:4 (1:4) (Trinkley 1980c) and at Bass Pond the ratio was about 1:12 (7:87) (Michie 1979). The failure to recover bone pins at Fish Haul may be related to poor preservation conditions at the site, which lacks a shell midden to neutralize the acid soil. Animal bone at Fish Haul was found primarily in feature contexts with shell, which undoubtedly assisted in the preservation process. Curiously, features have been poor producers of bone pins. Of the 106 pins at Lighthouse Point, none were recovered from features and of the seven specimens from Bass Pond, only 3 (43%) were found in a single feature (Michie 1979:63). Of the 13 pins
from Test Block 4 at Sapelo only 2 (14%) came from pits (Williams 1968:274-275). Although 37 bone pins recovered by Haag from Bilbo in 1957, none were found in features (Dye 1976). It is therefore possible that bone pins were present at Fish Haul, but have simply not been preserved.

Alternatively, the sherd hones may have been used to prepare and work materials, other than bone, which have an extremely short lifespan in the archaeological record. If previous speculations are correct and these hones were used to work bone pins which were subsequently used in the production of nets (DePratter 1979b:19; Trinkley 1980c:218-219), a material such as wood is a feasible substitute for bone. Green wood has about the same strength as bone and wooden netting needles could be quickly produced using sherd hones. These wooden artifacts, however, would be largely invisible in the archaeological record -- even if they were discarded into features. Because the Stallings faunal remains suggest that the occupants of Fish Haul were collecting at least some fish best caught in nets, this alternative explanation is viable. Bone pins may have been the preferred tool at sites of longer duration, while more temporary tools may have been sufficient at camps of short duration.

Baked Clay Objects

The only fired clay artifacts recovered from the Fish Haul excavations are 35 intact and fragmentary baked clay objects, all but two from the 1982 block. The failure to recover daub from prehistoric contexts is perhaps an indication that structures, such as the one postulated for the 1982 block, were ephemeral and not intended to last more than one visit. Anderson et al. (1982:323) note that daub was common at Mattassee Lake, apparently originating in and around hearths even in the absence of wattle and daub structures. It is probable that the sandy soil at Fish Haul precludes the natural firing of clay in and around hearth features.

Most of the baked clay objects (33 of 35) are small fragments. The two intact specimens are similar and consist of compact balls of clay about 1 3/4 inches (4.5 centimeters) in diameter. The only other recognizable form appears to a disc (Figure 56 O-Q). The specimens exhibit a fine paste with few or no inclusions. The objects have been thoroughly fired in an oxidizing atmosphere and have buff to light reddish-brown colors. Fragments exhibit a highly contorted paste, consistent with the interpretation that they were hand made by squeezing lumps of clay.
These items have been found at a number of Stallings and Thom's Creek sites (DePratter 1979b:19; Trinkley 1980c:428; Williams 1968) and may occur into the Refuge and later Woodland (Anderson et al. 1982:320; Trinkley 1982). Possible functions include use as "boiling stones" or as cooking stones in a prepared pit. Both interpretations have convincing aspects -- grooves and punctations found in the balls would assist their removal from pots, but they also have been found in large numbers in several pits. The work at Fish Haul does not significantly contribute to a better understanding of this situation, although it is certainly of significance that 30 of the 35 baked clay balls are found in the 1982 block. The remaining three fragments are found in square 141-10R50.

Work by Duma (1972) suggested that the phosphate content (expressed as \(P_2O_5\)) of ceramics could be used as an indication of their use. Phosphorus is a natural constituent of the clays used to produce pottery, and the manufacture and firing of the vessels tends to distribute the compound throughout the paste. Once fired, however, the clay retains the ability to bind phosphate ions permanently. Because of the porosity of clay, organic substances the vessel contained will tend to pass through the clay and the vessel will "become imbued with the organic substance" which is recognized as an increase in the phosphate content of the clay (Duma 1972:128).

This technique has the ability to recognize the use of a clay pot to store or routinely prepare organic substances, such as food. In the Stallings phase such an examination is not likely to be very useful, since it would simply demonstrate deductively what is already suspected inductively. The technique, however, may be useful in the study of the baked clay objects, for if they were used as "boiling stones" they would be expected to come into contact with food in a liquid state which could significantly contribute to their phosphate enrichment. Alternatively, if the baked clay objects were used as "roasting stones," it is likely that their contact with organic substances, and hence their uptake of phosphate, would be considerably less.

As a preliminary test of this idea three Stallings sherds and fragments from a single baked clay object were submitted for phosphate analysis to Hahn Laboratories in Columbia, South Carolina. Table 11 provides the results of these tests.
Table 11. Analysis of phosphate content of Stallings sherds and a baked clay object.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Phosphate (as P₂O₅)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stallings sherd (ARCH 398)</td>
<td>.435%</td>
</tr>
<tr>
<td>Stallings sherd (ARCH 398)</td>
<td>.745%</td>
</tr>
<tr>
<td>Stallings Sherd (ARCH 398)</td>
<td>.465%</td>
</tr>
<tr>
<td>Stallings baked clay object (ARCH 149)</td>
<td>.240%</td>
</tr>
</tbody>
</table>

These results reveal phosphate levels of 0.435 to 0.745% in Stallings sherds, with the variation probably the result of differential contact. Duma (1972:128) suggests organic enrichment yielding phosphate levels of 0.50 to 0.615%, entirely consistent with these results. The baked clay object, however, yields a phosphate level of only 0.240%, similar to Duma's non-enrichment examples. It appears likely that at least this one baked clay object was not used as a "boiling stone," but may have more likely been used as a "roasting stone." Further investigation of this problem requires the examination of a larger sample of baked clay objects and sherds (for control).

The horizontal distribution of these artifacts in the 1982 block shows a strong concentration to the southeast, with 16 specimens found in square 1982-70R110. No clay balls are found in the squares of the posited structure (1982-80R90-100). The vertical distribution resembles that observed for other artifact classes, with the bulk of the baked clay balls originating in Zone 2, level 3 (33% of the total). Levels 2 and 4 account for an additional 24% and 18% respectively.

Summary

It is apparent that there are many more artifact classes absent from the Stallings occupation at Fish Haul than are present. Although the trait list approach, as part of what Harris (1968:394) terms the "mentalistic" or neo-Freudian culture and personality school, has largely fallen out of favor in archaeology today, it is still useful to compare the artifact inventory of a site such as Fish Haul to one such as Stallings Island. While it normally may be impossible to understand the sociocultural meaning of a particular trait to the people who used or manifested it, the trait list is still a useful tool for the visualization of cultural diversity.

Looking only at the "Technological and Artistic Activities" outlined by Fairbanks (1942), and disregarding the pottery and lithic complexes, Fish Haul exhibits none of
the 25 bone complex traits, none of the five shell complex traits (although Fairbanks did not include whelk tools), one of the two fiber complex traits, and only three of the eight design complex traits (and all of those are found on pottery alone). If the lithic industry (discussed in the previous chapter) is included, Fish Haul exhibits only one of the three traits in the rough stone complex, two of the seven chipped stone complex traits, and none of the 11 ground stone complex traits. Fish Haul has failed to produce steatite disks, bone tools, or shell tools, all common at many other sites in the Savannah drainage. This sparseness of artifacts has certainly contributed to the conclusion that these sites are "limited occupation[s]" (DePratter 1979b:37).

The few non-ceramic and non-stone tool artifacts present include personal decorative items (shell gorgets), waste sherds with the secondary function of a specialized fabrication tool (probably used in the production of nets), and easily produced baked clay balls (probably used in cooking). The items missing from the list are ones which may be more indicative of long term or even permanent occupation, with the accompanying diversification of activities.
HISTORIC ARTIFACTS

Michael Trinkley and Debi Hacker

Introduction

The 1986 excavations at the Fish Haul site have produced 25,163 historic period artifacts, the bulk of which date from the nineteenth century. More specifically, we believe that, with few exceptions, these remains are attributable to the freedmen living in Mitchelville from 1862 until the early 1880s or to the blacks who continued living in the kin-based community into the early twentieth century. Although the dating of these remains reveals evidence of the late nineteenth-early twentieth century kin-based Mitchelville community, most of the remains from this study are clearly associated with the freedmen occupation in the 1860s and 1870s.

The investigations at Mitchelville have revealed four structures and intensively excavated one. In addition, excavations in six other areas produced variable quantities of historic artifacts. We have chosen to discuss these remains in one section, in spite of their dispersed distribution, because of their technological and temporal uniformity. Following the descriptive statements, we have dealt with the topics of dating, patterns, and status and in each case we offer these observations by structure and other block unit, as appropriate.

The previous excavation section provides a thorough discussion of the various blocks and features, but this data is synthesized here for the convenience of those using this section:

39-40-47-48 Block (175 square feet [16.3 square meters]) - This block exposed a probable pier (Feature 13) and a wall trench for a tabby wattle and daub Mitchelville structure which had been robbed or removed in the late nineteenth century.

91-92 Block (250 square feet [23.3 square meters]) - Situated on the marsh bluff, this block revealed a large secondary midden of black sand, shell, and abundant artifacts. This midden is unusual because it contained earlier artifacts, such as creamware and pearlware, and items of very high status intermingled with items more typical of Mitchelville. Intrusive into the midden were two large pits (Feature 10 and 11), which appeared to have been used for cooking.

110-123 Block (350 square feet [32.6 square meters]) - This block exposed a portion of a Mitchelville structure with a tabby wattle and daub chimney (Feature 3). This chimney,
which appeared to be repaired, was the only architectural feature found in the block. Feature 27 was a near sterile pit of undetermined function.

129-141 Block (600 square feet [55.8 square meters]). This is primarily a prehistoric block, although a few historic artifacts were found in the upper zone.

130-131 Block (325 square feet [30.2 square meters]) - This block produced few historic remains, excepting those associated with Features 7 and 8. Feature 7 is a trench, of unknown function, which is intrusive into Feature 8, a large pit used for trash disposal. This pit may represent military activities at the site, rather than the refuse disposal practices of the freedmen.

1982 Block (700 square feet [65.1 square meters]) - Like the 129-141 block, these units have produced primarily prehistoric remains. The historic material recovered has been found primarily in the uppermost zone.

160-161 Block (950 square feet [88.4 square meters]) - Investigations in this block revealed the remains of two Mitchelville structures. The first, evidenced by a small, crudely built brick chimney base (Feature 25), was apparently constructed of tabby wattle and daub with a poured tabby floor. This first structure did not stand long before it was torn down and the debris buried in two pits (Features 5 and 6). A second structure, characterized by a larger, better constructed brick chimney (Feature 4), was built and occupied for a longer period of time. In the rear yard of this structure was a small midden area of animal bones and burnt oyster shell (Feature 26).

177 Block (100 square feet [9.3 square meters]) - This unit was situated at the edge of a recently filled slough and few historic artifacts were recovered.

218 Block (255 square feet [20.9 square meters]) - This block appears to be situated in the front yard of a structure or perhaps near a Mitchelville street. Historic artifacts are abundant, although no features were identified.

Descriptions and Interpretations

The 25,163 historic artifacts from the Fish Hall excavations will be discussed using South's (1977) artifacts groups (e.g., kitchen, architecture, etc.) since such an approach allows the quantification and discussion of artifacts in a broad functional framework. Several modifications of South's original classificatory scheme are worthy of mention. First, following the lead of Garrow (1982b:57-66), Colono and Catawba or River Burnished ceramics will be discussed with (and tabulated in) the Kitchen
Artifact Group. In addition, the stub stem pipes have been included in the Tobacco Artifact Group. Second, for reasons similar to those offered by Garrow for the placement of stub stemmed pipes in the Tobacco Artifact Group, we have placed snuff tins in the category as well (see also Trinkley 1986:55-56). Third, for the purposes of this site we have chosen to place military buttons not in the military objects class of the Activities Group but rather in the Clothing Group. We have done this largely based on the historical documents which fail to reveal any substantial military presence at Fish Haul, but which document the extensive use of military uniforms by the contrabands. Military insignia other than buttons have been left in the Activities Group because it seems unlikely that freedmen would have been given these items.

A large quantity of the historic artifacts from Fish Haul have required some form of conservation by Chicora prior to curation by The Environmental and Historical Museum of Hilton Head Island. Ceramic and glass artifacts did not require stabilization after the initial washing; reconstruction was conducted with a butyl acetate glue reversible with acetone or boiling water.

The bulk of the recovered objects requiring conservation were made of ferrous metal. All ferrous objects (except nails, which were so numerous as to require sampling) were treated in one of two ways. After the mechanical removal of gross encrustations the artifact was tested for sound metal by the use of a magnet. Items lacking sound metal were subjected to multiple baths of tap and then distilled water to remove chlorides. The baths were continued until either a silver nitrate test (Plenderleith and Werner 1971:201) or a conductivity meter indicated a level of chlorides no greater than 1.0 ppm. This technique was also used for fragile metal artifacts, such as tin cans. These items were eventually given a micro-crystalline wax coat, not only to seal out moisture, but also to provide some additional strength. Items which contained sound metal were subjected to electrolytic reduction in a bath of sodium carbonate solution in currents no greater than 4.5 volts DC (Hamilton n.d.) for periods of 5 to 20 days. When all visible corrosion was removed, the artifacts were wire brushed and placed in a series of tap and distilled water soaks, identical to those described above, for the removal of chlorides. When the artifact tested free of chlorides, it was air dried and a series of phosphoric (10%) and tannic (20%) acid solutions were applied. The artifacts were oven dried at a temperature of 200°F (93°C) for 20 minutes, then dipped in a molten micro-crystalline wax solution, and then placed back in a heated oven for 5 minutes to allow the excess wax to drain off.
Normally, the types of non-ferrous objects (copper, brass, silver) recovered from Fish Hall would not require conversation unless they evidenced active corrosion (such as bronze disease in the case of cuprous artifacts). However, Chicora undertook the treatment of virtually all non-ferrous remains to ensure their stability in the Museum's collections. Artifacts were subjected to electrolytic reduction in a sodium carbonate solution with up to 5 volts DC for periods of 1 to 24 hours. Hand cleaning with soft brass brushes or xxxx-grade steel wool followed the electrolysis. Afterwards the surface chlorides were removed with baths in distilled water. The cuprous artifacts were dried with a series of alcohol baths and were then coated with a 50% solution of Incralac thinned with toluene. Non-cuprous artifacts, such as sterling or coin silver, were dried, buffed, and stored. Following treatments all non-ferrous artifacts were handled with cotton gloves, so as to limit the artifact's exposure to moisture and salt.

The small amount of leather recovered from the marsh was first soaked in successive tap water baths to remove chlorides. The leather was also mechanically cleaned to remove mud and rootlets. Afterwards a small quantity of ammonium hydroxide was added to neutralize the acid found in the marsh environment. The bulk of the water was removed by blotting and the specimens were placed in a series of alcohol baths to dry the leather. Once removed, the alcohol was allowed to evaporate and the specimens were bathed in a solution of warm British Museum Leather Dressing. Upon removal they were blotted and allowed to air dry (see van Soest et al. 1984).

Only one provenance, an auger test in the marsh, yielded wood and cork which required conservation. While still largely experimental, we utilized the sucrose technique recently discussed by Parrent (1985) with excellent results.

Kitchen Artifact Group

Unit excavations produced 8767 Kitchen Group artifacts, while the features contributed another 832 artifacts for a total of 9590. These included 2395 ceramics (27.3% of the group total), 1776 melted glass fragments of undeterminate function (20.2% of the group total), 1261 fragments of wine or ale bottles (14.4% of the group total), 604 fragments of alcoholic bottles (6.9% of the group total), 72 specimens of non-alcoholic bottle glass (0.8% of the group total), 242 fragments of panel bottles (2.8% of the group total), 29 food or condiment container fragments, seven pharmaceutical glass specimens, 1776 fragments of unidentified bottle or container glass (20.2% of the group total), 454 glass fragments of indeterminate function (5.2% of the group total), and 25 sherds of Colono ware (6) or Catawba (19) (0.3% of the group total). Drinking containers included 134 tumbler fragments.
(1.5% of the group total), 44 goblet fragments, 16 syllubub fragments, and four glass cups or mugs, and one metal cup. Seven milk glass vessel fragments and one glass pitcher fragment were also recovered. Metal food cans were represented by 680 specimens (7.7% of the group total). Eating and serving utensils were represented by 25 items (0.3% of the group total). Bottle closure items included one crown cap, three fragments of lead foil, one threaded metal cap, and one lightening closure. Other remains included 21 kettle fragments, 12 pot or pan fragments, one appliance (probable stove) foot, and one fireplace hook.

The ceramics included a variety of primarily nineteenth century types. Earlier ceramics included a single sherd of plain white delft (mean ceramic date of 1720, range of 1640-1800) (Noel Hume 1970:105-112; South 1977:211-212), two fragments of lead glazed slipware (mean ceramic date of 1733, range of 1670-1795) (South 1977:211), and 19 sherds of undecorated creamware (mean ceramic date of 1791, range of 1762-1820) (Noel Hume 1970:123-128; South 1977:212). The creamwares are recognized by an off-white (cream colored) paste and a distinctive yellowish lead glaze which exhibits a greenish color where thickly puddled (Brown 1982:15-16; Norman-Wilcox 1965:139).

Pearlware, characterized by a cream colored paste and a blue to white glaze, was perfected by Josiah Wedgwood in 1779 (Noel Hume 1970:128; Price 1979; South 1977:212). The most common type is undecorated (N=216), which probably represents fragments of an edge decorated ware. Decorated pearlwares include 32 blue hand-painted (Figure 57A-B) (mean ceramic date 1800, range of 1780-1820), 13 polychrome hand-painted (mean ceramic date of 1805, range of 1795-1815), 60 annular ware (Figure 57C-D) (mean ceramic date of 1805, range of 1790-1820), 23 blue transfer printed (Figure 57E-G) (including the willow pattern) (mean ceramic date of 1818, range of 1795-1840), and 76 edged wares (Figure 57H-I) (73 blue, three green) (mean ceramic date of 1805, range of 1780-1830) (Noel Hume 1970:128-132; South 1977:212).

The edge decorated wares included the shell-edge motif, as well as other molded designs typical of pearlwares, such as plumes (Price 1979:17). Most of the pearlware edge decorated wares are well painted (Figure 57I), which suggests a 1780-1795 date range (Brown 1982:18; Noel Hume 1970:131; Price 1979:18), although the better painted wares continued into the nineteenth century. The annular decorated fragments likewise suggest an earlier date range because of the earthen color palette (Noel Hume 1970:131; Price 1979:18). The blue transfer printed pearlwares are found in a dark cobalt blue, as are the handpainted specimens. The polychrome hand painted pearlware specimens exhibit earthen colors (Noel Hume 1970:128-129; Price 1979:20-21).
Figure 57. Kitchen Artifact Group. A-B, Blue handpainted pearlware; C-D, annual and common cable pearlware; F-G, blue transfer printed pearlware; H-I, edged pearlware; J-L, Blue transfer printed whiteware; Q, non-blue transfer printed whiteware with underglaze polychrome handpainting; R-S, edged whiteware; T-V, stampec whiteware, V, soft body white porcelain.
Five pearlware ceramics evidence maker's (or possibly size) marks. A number of blue transfer printed specimens are printed with "Mount Vernon - the seat of the late Genl Washington" on the reverse and one specimen is impressed with a capital "N" (Figure 57F). This impression could not be identified as a marker's mark so it probably represents either a size designation or the artisan. The reference to "the late Genl Washington" indicates a post 1799 date and Sanford suggests "American views," such as Mount Vernon, were popular in the 1820s and 1830s (Trisha Sanford, personal communication 1985).

Two plain pearlware specimens bear the crown and circle motif of James and Ralph Clews, who operated the Cobridge works in the Staffordshire District from 1818 to 1834 (Godden 1964b:151-152). Boger (1971:73) notes that the Clews produced a good quality ware, primarily for the American trade.

An unidentified flower or star motif has also been observed on an undecorated pearlware ceramic. A similar mark is observed with a printed mark for T. Fell and Co. (Bell 1971:141, mark m45). Although it is not clear if this mark represents a size designation or is exclusively associated with T. Fell, it appears to date between 1817 and 1890.

The final example of marked pearlware is an impressed "C" on a dark blue transfer printed pattern. While this may indicate a size or craftsman, it is more likely to indicate that the vessel was produced in Cobridge and is Staffordshire (Bell 1971:25). Unfortunately, this is not useful for dating the piece.

A single example of yellow-glazed earthenware with a red transfer print was recovered from Fish Hall. Miller describes this ware as "a type of creamware or pearlware distinguished by an overall yellow glaze" (Miller 1974:1). These wares were produced from about 1785 to 1835 (mean ceramic date of 1810) (Miller 1974:59) and are found in nearly all the common creamware and pearlware forms except complete dinner services. The most common form was the jug or pitcher, while next in popularity was the mug, which was frequently transfer printed (Miller 1974:44). This pottery is often called "canary yellow" by collectors because of its background color.

The largest category of ceramics from Fish Hall consists of whiteware (N=1244). The difficulty distinguishing between whiteware and ironstone has been previously discussed by South (1974:247-248), who uses an "ironstone-whiteware" category, and Price (1979:11), who uses a "whiteware" category which includes ironstone. Both researchers point out that differentiating between whiteware and ironstone using vessel hardness (or degree of vitrification) is an
uncertain or even invalid approach (cf. Worthy 1982). South remarks that,

[t]he hardness, which is a major means of distinguishing these types, is so variable that often a vessel with a hardness of earthenware will have "Ironstone China," or some similar designation as part of its mark (South 1974:248).

Such a situation is present at Fish Hall. Consequently, the collection is discussed under the term whiteware, although there are a few examples (N=28) which evidence greater vitrification and which some researchers might prefer to categorize as ironstone.

Undecorated whiteware includes 791 specimens (including the 28 fragments or more vitrified ceramics). Price notes that while undecorated whitewares "were probably introduced somewhat earlier [than decorated varieties], undecorated whiteware vessels were most common in the period following the Civil War" (Price 1979:22). Rather than using the broad category of "whiteware" for dating all specimens, regardless of decoration, we have chosen to use the dates offered by Bartovics (1978) and Orser et al. (1983). Plain whiteware therefore has a mean ceramic date of 1872.5. Other decorative motifs include nine molded (mean ceramic date of 1885), 121 blue transfer printed (Figure 57J-L) (mean ceramic date of 1872.5), 114 non-blue transfer printed (Figure 57M-Q) (mean ceramic date of 1875), six green edged (mean ceramic date of 1828), 70 blue edged (Figure 57R-S) (mean ceramic date of 1853), 32 blue hand-painted (mean ceramic date of 1840.5), 43 polychrome handpainted (mean ceramic date of 1848), 28 annular ware (mean ceramic date of 1865.5), three sponge printed (mean ceramic date of 1853) and 26 stamped (Figure 57 T-U) (mean ceramic date of 1853). In addition a single sherd was recovered with an unidentifiable blue decoration. These motifs are discussed in detail by Price (1979), although a few motifs bear further comment.

The non-blue transfer prints at Fish Hall include red, brown, purple, and black. A single example of a purple transfer print with yellow, green, and red under glaze handpainting was also recovered. The stamped motif, which is polychrome, usually with a fairly stylized floral design, is given the same mean date as the sponged motif because Price (1979:20) notes that the two are commonly found together.

The absence of several popular early twentieth century whiteware ceramics may be useful in providing an indication of the site's terminal date. No polychrome decal or decalcomania wares, with a beginning date of 1901, or tinted
glaze whitewares, with a beginning date of 1911, were found (Bartovics 1978). This suggests that the excavated site areas were not occupied into the twentieth century.

Seven whiteware ceramics evidence at least partially legible maker's marks. Two Clews impressions, previously described for the pearlwares, were identified on whitewares sherds. These Staffordshire specimens were produced prior to 1834 (Godden 1964b:151-152). Several examples of printed "Celtic" on a brown transfer print (called Venetian Pattern) were found, one with an impressed "L". Godden notes that "Celtic China" was produced by John Denton Baxter of Hanley in the Staffordshire District between 1823 and 1827 (Godden 1964b:61-62, 135). The impressed "L" cannot indicate the name of the town in which the ware was produced (Bell 1971:25), so it may designate size for carftsman.

A post-1837 British Royal Arms printed motif combined with "J.G. Meakin Ironstone China" was found on an undecorated whiteware. Godden (1964:427) indicates that Meakin began operations in 1851 at the Eagle Pottery and Eastwood Works, Hanley (Staffordshire). Although the identical design is not illustrated by Godden, a similar motif dates to about 1890. The absence of "England" added to the mark may indicate a date prior to the McKinley Tariff Act of 1891.

Two ceramics with partial marks clearly indicate only their place of manufacture — Burslem and Stoke on Trent. Burslem, one of the Staffordshire Potteries, was the home of Josiah Wedgwood from 1759-1769 until he moved to Etruria (Boger 1971:48, 366-367). Although a number of potters operated from Burslem during the nineteenth century, John Wedge Wood most closely matches the faint impression above Burslem. Wood operated from 1841-1844 (Godden 1964a:22). Stoke on Trent is a federated town in North Staffordshire which contained a number of potters.

The final mark, found on a purple transfer printed whiteware, is incomplete and has not been identified. The stamped mark includes only "... 00LISCRO ... ."

A single burnt earthenware also evidences an impressed mark, which will be discussed here for convenience. The mark incorporates an anchor and "DAVENPORT." While Godden does not illustrate an identical mark, he does indicate that the uppercase mark post-dates 1805 and that the wares were produced until 1887 (Godden 1964b:189).

A distinction is made between the whitewares and the semi-porcelains or "Hotel Ware," which is stronger, more vitrified, but still opaque and hence not a true porcelain. These semi-porcelains post-date 1870 (George Miller, personal
communication 1985; Ramsey 1947:109). The two examples from Fish Haul both have a black transfer print.

Yellowware, distinct from the yellow-glazed earthenwares of the eighteenth century, is simple kitchen and tableware with a buff or yellow paste and a clear glaze (Ramsey 1947:7). Both plain specimens (N=60) and ones decorated with bands of white, blue, and black (N=21) are recovered (Ramsey 1947:150-151). Foshee (1984:100) suggests a date range of 1830 to 1880, while Bartovics (1978) suggests a range of 1826-1880, for a mean date of 1853. The samples from Fish Haul appear to be from American factories, but none are marked. Typical vessel forms include round rim oval bakers, square bakers, nappies (shallow, open serving dishes with flat bottoms), bowls (from 1/2 pint to 4 gallons), lipped bowls, chamber pots, pie plates, covered butter pots, bed pans, custard cups, and mugs (1903 Robinson Clay Product Company catalog reprinted in Blair 1965).

The Fish Haul collections contain 21 examples of redware, an early form of low fired earthenware made from red colored clays. Glazes may be found on one or both surfaces, or the vessel may be unglazed. Glazes found at Fish Haul include clear (N=7; lead), black (N=12; iron and manganese oxides), and green (N=1; copper oxides) (Brown 1982:20-21; Lasansky 1979:5; Ramsay 1947:128). Seven unglazed specimens are also present. These redwares were locally produced during the entire nineteenth century and are therefore difficult to date. In Pennsylvania redware production began in 1780 and continued to 1904 (Lasansky 1979:6).

Other earthenwares include burnt specimens (N=87) and unidentified sherd (N=4). The burnt specimens are all refined earthenwares, probably pearlwares or whitewares, but the paste and glaze have been damaged to the point that an identification is not possible. The unidentified items are small and/or atypical specimens.

Porcelains are fine-grained, highly vitrified, white bodied wares which are usually translucent. Three types are present at Fish Haul. The first, represented by only one specimen, is an example of the deteriorated Chinese traded termed Canton (Noel Hume 1970:261-262). South (1977:210) provides a mean ceramic date of 1815 and date range of 1800 to 1830. The second type includes 11 examples of a cream colored soft paste porcelain (Ramsay are later in date than the Chinese specimen. Nine of the specimens exhibit a worn over glaze handpainted decoration. The largest collection of porcelain (N=33) consists of soft paste specimens with a sharp white color (Figure 57V). These examples probably represent American late nineteen century porcelain.
Two major categories of stoneware are present at Fish Haul: alkaline glazed (N=359) and salt glazed (N=95). Seven additional specimens represent a relatively shiny brown Albany slip glaze. The alkaline glazed stonewares are discussed by Burrison (1975) and Greer (1977, 1981). This glaze, distinctively Southern, was developed about 1910 in Edgefield District, South Carolina and it spread into North Carolina, Georgia, Florida, Alabama, and Texas. The glaze consists of an alkaline flux (such as wood ashes or slaked lime) combined with silica (such as clay, sand, or glass) and water. The colors range from cream to browns in oxidized pots and from pale yellow-greens to deep olive in the pots fired in a reducing atmosphere. The glaze, which is hard and durable, exhibits a variety of textures depending on firing conditions, temperature, and preparation techniques.

Greer notes that,

> the alkaline glaze would probably never have become so widely used if the South had not been separated from industrialized northern areas of this country during the Civil War and so economically depressed after the war that it remained rural and remote for several decades (Greer 1981:203).

It should not be surprising to find an abundance of this ware at Mitchelville and Ramsey suggests that it was even available during the war years,

> the war intensified this tendency to crude simplicity, as the tremendous scarcity of manufacture goods developed the domestic pottery industry. The potters were exempt from military service, so great was the demand for their ware (Ramsay 1947:89).

Salt glazing was introduced in England during the late 1600s, but all of the examples from Fish Haul appear to represent nineteenth century samples of probable industrial, wheel thrown pottery. The process and types of salt glazed pottery are described by Greer (1981:180-192). The texture of salt glazing may vary from a very fine salt texture with a thin glaze to a well-developed "orange peel" texture to an extremely heavy salt texture with runs and agglutinations. Colors (reflecting impurities in the clay) include pearl gray (several with cobalt decoration) and orange.

Several examples of salt glazed ale bottles with cream bodies and a tan wash on the necks are observed. Wilson notes that ale, a strong, fermented malt beverage, had a higher alcoholic content than beer and was able to be
transported more easily (Wilson 1981:7). By 1805 the Scottish firm of William Younger was packaging its ale in salt glazed stoneware bottles and shipping them to the United States. Wilson also notes that few bottles bear the impressed stamps of their manufacturer, but this does not allow association with particular breweries. One stamped impression from "GROSVENOR/4/GLASGOW." Wilson notes that,

[t]his firm was first known as the Bridgeton Pottery and was built in 1869 by F. Grosvenor. The Pottery came to be called Eagle Pottery and the firm to be known as F. Grosvenor & Sons. It was still in operation in 1923 (Wilson 1981:130).

One salt glazed bottle has a gently sloping shoulder and is finished with a narrow, sloping collar without a ring, (Figure 58A). This nearly whole specimen has a greenish gray color, suggestive of a calcium rich clay (Greer 1981:192).

The last category, that of clay or slip glazes, includes only those pieces having no evidence of saltglazing, e.g., Albany and Bristol slips. Greer notes that these slips were becoming significant by the beginning of the nineteenth century and the Albany slip was discovered in 1825 (Greer 1981:194).

The major types of pottery from Mitchelville are summarized by Table 12. Refined earthenwares are most common, although stoneware tends to compose almost 10% of the collection.

Seven of the nine blocks have sufficient sherds to warrant application of South's Mean Ceramic Date Formula (South 1977:217-218). The dates range from 1836.3 for the 91-92 block to 1869.3 for the largest historic block, 160-161. Ignoring the 91-92 block for the moment, the earliest Mitchelville date is 1855.3 from the northernmost 39-40-47-48 block. Reference to Table 13 reveals that this date is earlier than the expected beginning date for Mitchelville because of the pearlware ceramic and the extremely small sample size. It is likely that this date simply reflects a time lag in use of ceramics. The remaining five Mitchelville dates cluster from 1866.4 to 1869.2, a 2.9 year span. This seems to be very tight dating, particularly since each date relates to different site area (or structure). If the historic date range of Mitchelville is accepted as 1862 to 1880, its mean historic date is 1870.5. This mean historic date is only 1.2 years later than the mean ceramic date for the 160-161 block and only 2.5 years later than the mean of the five clustered mean ceramic dates.
Table 12. Major types of pottery from Mitchelville (including both excavation units and features).

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whiteware</td>
<td>1244</td>
<td>78.7%</td>
</tr>
<tr>
<td>Pearlware</td>
<td>420</td>
<td></td>
</tr>
<tr>
<td>Creamware</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Yellow-glazed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Yellowware</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Redware</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Lead glazed slipware</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Delft</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td><strong>Total Earthenwares</strong></td>
<td>1886</td>
<td>78.7%</td>
</tr>
<tr>
<td>Salt glazed stoneware</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>Alkaline glazed stoneware</td>
<td>359</td>
<td></td>
</tr>
<tr>
<td>Slip glazed stoneware</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td><strong>Total Stonewares</strong></td>
<td>461</td>
<td>19.2%</td>
</tr>
<tr>
<td>Semi-porcelains</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Canton porcelain</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Soft porcelains</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td><strong>Total Porcelains</strong></td>
<td>48</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

The mean date from the 91-92 block is anomalous. Feature 10, within the 91-92 block, produces a mean ceramic date of 1835.9, only 0.4 year different than the excavation units. This block contains 100% of the creamware, 98% of the pearlware, and the only delft found in the site excavations. The rather sizable collection of whiteware from the block (which if considered alone would yield a mean ceramic date of 1867.3) provides a TPQ of 1826 to 1830, based on the polychrome hand-painted whitewares. The ceramics support the previous assessment that this midden, formed from the disposal of garbage having a considerable temporal span, was deposited on the bluff sometime after about 1830. We believe that the mean ceramic date for the whitewares (1867.3) may provide a good indication of its period of disposition.

The next collection to be considered in the Kitchen Artifact group is the container glass. The 1261 fragments of wine or ale bottles include fragments of an olive green color which appear black in reflected light. Bottles with thicker walls, gentle lines, and kick ups are attributed to champagne, wine, or brandies. Those with thinner walls, pronounced shoulder, and a flat base were probably stout bottles (the presence of stoneware ale bottles has been
Table 13. Mean ceramic dates for the larger Mitchelville blocks.
previously discussed). Although both are present, the stout bottles appear more common, possibly because of their lower cost. One probable stout bottle is marked "DYOTTsville/GLASS/WORKS/PHILA" on its base. The colorful "Dr." Dyott is discussed by McKearin and McKearin (1948:468-470) and Thoulouse (1971:171) notes that the "Dyottsville" mark was used from 1833 until at least 1926 (see also Newman 1977:101).

The collection termed simply alcoholic bottles includes beer, whiskey (or other liquor), and bitters. Beer bottles tended to be recognized by transparent green or amber glass with strong shoulders and a slightly bulbous neck. Beer, because of its unstable nature, was not a transportable commodity until the significance of pasteurization was recognized by Adolphus Busch in 1873. Wilson notes that after that, "[n]ational distribution of his pasteurized product began immediately" (Wilson 1981:1). By 1881 the Charleston, S.C. firm of James Cosgrove was distributing three brands of ale, two brands of stout, and three lager beers (Annual Price List and Circular of James Cosgrove, S.C. Historical Society).

Whiskey was usually transported in barrels or kegs and repackaged by the local vender in glass containers (Wilson 1981:13-14). For this reason the 1881 Cosgrove price list contains one-half pint, pint, and quart amber flasks for sale (Annual Price List and Circular of James Cosgrove, S.C. Historical Society). Whiskey bottles might be colorless or amber glass, although the shoo-fly flask is characteristic (see Wilson 1981:16). One such reconstructable vessel was recovered from the Mitchelville excavations. Several bottle fragments in blue-green transparent glass evidence a molded brick pattern. Although no similar bottle has yet been encountered, Spillman (1833:88) notes that one whiskey bottle was molded in the shape of a house with a shingled gable roof and that this style was imitated by a variety of bottlers into the twentieth century. Square or tapering "case bottles" (or "French squares") were used for schnapps and gin (Wilson 1981:17-18), several of which have been recovered from these excavations. One case bottle reveals the name "DUNBAR % CO.," which apparently is a reference to the (S.O.) Dunbar and Company of Tauton, Massachusetts, which sold Wormwood Cordial (Lord 1969:133, 152). This square bottle, with beveled edges, is known as a "French Square" and was introduced to the market shortly after 1861 (Lorrain 1968:44).

Bitters, as a product, are only a step away from the "patent" and proprietary medicines of the nineteenth and early twentieth centuries. Bitters were made from a variety of botanical substances, aromatic flavorings, alcohol (up to 40%), and occasionally sugar. A variety of cures were claimed and Wilson notes,
bitters could be consumed without censure or guilt by women or others finding themselves in an environment influenced by the temperance movement. Doubtless there were guileless souls who took it regularly, sincerely believing in its medicinal value, as well as confirmed drinkers who cared not at all about its health benefits as long as its alcoholic content held up (Wilson 1981:24).

Several bottles have been definitely identified as Drake's Plantation Bitters. Drake's Plantation Bitters were packaged in the shape of a log cabin with a hop roof. Two sides have molded logs, while the two remaining sides were flat to allow placement of paper labels. One roof face contains the molded inscription, "S. T. DRAKE/1860/PLANTATION/X/BITTERS." These bottles date from 1862 to 1885 (see Spillman 1983:89, Switzer 1974: 36-40; Wilson 1981:24).

Midway between alcohol and medicine were also the various proprietary or "patent" medicines, frequently packaged in panel bottles (Figure 58B-E). While these concoctions frequently contained a high percentage of alcohol, Wilson notes that it would be a mistake to assume these preparations were primarily consumed for their alcohol. He notes that nineteenth century living conditions were such that there were a "plethora of fevers and aches" to which proprietary medicines were routinely applied (Wilson 1981:39). That these "medicines" were frequently used as intended is evidenced by Cramp (1911, 1921, 1936). A number of reconstructable panel bottles were recovered, including both panel and ball neck panels, and with sloping-collar, prescription-lip, and patent/extract lip finishes. Unfortunately, none of the labels had inscriptions, nor do any indicate the bottle maker. Glass color includes clear and light green. Although Lorrain (1968:40) states that lettered panel bottles appeared about 1867, Jack Wilson, Jr. (personal communication 1986) reports finding lettered panel bottles in sealed contexts dating to the mid-1860's.

The relatively small quantity of non-alcoholic bottle glass includes primarily soda (and possibly mineral) water bottles of transparent green to blue-green glass. Bottle bases recovered were both round and flat bases. The round bases suggest cork closures, while one specimen still evidence part of a "lightening" stopper wire (patented in the United States in 1882) (Figure 58F). A single crown cap stopper found in the collections was first used in 1892 (Lorrain 1968:42). These bottles date from the second half of the nineteenth century, with their popularity in Charleston, South Carolina, at its height from the 1840s.
through the late 1980s. The James Cosgrove circular of 1881 remarks that,

[w]ith the commencement of the warm weather our Soda Water, Sarsaparilla and Ginger Ale will be in demand. Last season many firms not directly in the liquor business handled these goods with great success (Annual Price List and Circular of James Cosgrove, 1881, p. 4, South Carolina Historical Society).

Cosgrove offered soda water at the wholesale price of about 2 cents a bottle, but specified that "the prices do not include bottles or cases, they are to be returned, and are considered our own property, and purchasers are required to make good all loss of bottles" (Annual Price List and Circular of James Cosgrove, 1881, p. 8, South Carolina Historical Society). Cosgrove dispensed this soda water in bottles imprinted with his firm's name and location (Robinson and Holcombe 1970:6-8) to the retailers and local vendors. This distribution system is of significance as it appears that only well established firms would be inclined to order imprinted bottles and go into this business. One soda water bottle from Mitchelville evidences the molded lettering "JOHN KNECHTEL/HILTON HEAD." Information on this firm has not yet been obtained, although Lord (1969) does not list Knechtle as a suter which suggests a post-1865 date. It is interesting that Hilton Head, which was relatively isolated from major commercial centers, developed this type of merchant.

The identified food or condiment glass included several bottles similar to the "gothic" pickle jars illustrated by Wilson (1981:89) and Switzer (1974:50-57) (Figure 58-G). Also recovered was a fragment identifiable to Lea and Perrins, which Wilson (1981:134) dates from 1858 to 1890 and which Lord (1969:134) dates to as early as 1837. In addition, six canning jar fragments, post-dating 1858 (Lorrain 1968-40), were identified. The failure to identify a larger number of canning jars (cf. Lorrain 1968:40) may relate to the economic and social condition of the freedmen. Although the knowledge of canning spread rapidly among some groups, cookbooks did not include directions for canning until the 1880s (Toulouse 1977:99) and one of the WPA goals of the early twentieth century was to encourage canning and home hygiene among rural blacks (Bloxom 1982).

The very small quantity of pharmaceutical glass (Figure 58H-K), especially when compared to the quantity of proprietary medicine bottles, suggest that "real" medicines were much less common than "off-the-shelf" cures. The identified items include a small, brown vial of clear glass with a flanged lip and an intact homeopathic vial of light green glass with a thickened, plain-lip finish. Recovered
Figure 58. Kitchen Artifact Group. A, salt-glazed ale bottle; B-E, panel bottles; F, soda bottle neck with "lightening" wire stopper; G, gothic type food container; H-J, pharmaceutical glass; L-M, stemware; N, "Sawtooth" pressed milk glass; O-P, tumblers; Q, mug.
from the surface (and not included in the previous tabulations) is a larger medicine or chemical bottle with a slightly thickened, plain lip finish (Figure 58J).

The sherds of Colono or Catawba pottery bear special, if only brief, attention. The most cogent published discussion of these wares is provided by Wheaton et al. (1983:225-250), who suggest that the low-fired earthenwares were produced by both black slaves for their own use and by Indians for sale or trade. The two may be distinguished topologically, with the formerly called Colono and the latter Catawba (cf. Ferguson 1985). While there are a number of attributes separating the two wares, thickness and paste are of primary utility given the small specimens from Mitchelville. The Colono sherds tend to be thicker and have a coarser paste than the Catawba sherds, which are very similar to the paste of modern or dated Catawba vessels.

If Wheaton et al. (1983) are correct in their assessments, as we believe they are, then it may not be unexpected to see the use of Catawba vessels. Terry notes that,

[s]ince the eighteenth century the Catawba had relief upon the production of their unique style of pottery as trading implements. As the fur trade declined, pottery production increased in economic importance. By 1900 the pottery trade was the principal means of income for many Catawbas living on the reservation (Terry n.d.:3).

Clearly, the vessels were available during the entire nineteenth century. Presumably more evidence of them is not found because the freedmen, released from the forced use of this style of pottery, chose to use other more commonly accessible, vessels.

Wheaton et al. (1983:225, 239) note that Colono pottery appears late in the seventeenth century, peaks in popularity (or at least abundance) during the eighteenth century, and appears to die out by about 1830. In spite of this, Colono pottery is found in very small quantities at Mitchelville. The pottery may indicate heirloom pieces that were disposed of, just as the pearlware indicates continued use of a dated ceramic ware. An alternate explanation, with some historical support, is that Colono ware continued to be produced up to the Civil War, at which time freedmen simply abandoned its manufacture and use in favor of more accessible, and inexpensive, glazed ceramics. Colono ware pottery has been tentatively identified from the ditch fill at Somerset Place Plantation in North Carolina. Since cleaning this ditch system was a major task on the antebellum plantation, these
finds suggest that the pottery may be found in the post-bellum period in North Carolina (Terry Harper, personal communication 1986).

It is certain that Africans, probably familiar with traditional crafts, continued to be illegally imported into the Beaufort area up to the Civil War. This is evidenced by a letter written on February 17, 1865 by John S. Bogert, a Union officer stationed on Hilton Head. He wrote, "I have two original africans in my Regt. They came over in the Bark [illegible]" (South Carolina Historical Society Manuscripts Collection). In addition, blacks apparently continued to make pottery past 1850 and probably up to the 1860s. This is evidenced by a single statement following the "verbatim conversation" with Uncle Albert Carolina. The statement, part of the WPA slave narrative program, was collected by Genevieve Chandler at Murrells Inlet in 1937. Uncle Albert Carolina was reported to be 87 at that time, which means he was born sometime around 1850. At the end of his narrative Chandler adds the parenthetical statement that, "[a] description followed of how his grand-parents built a kiln of clay pots and baked them" (Rawick 1972:2:198). It is regrettable that the description was not recorded by Chandler or that it was not retained in the edited copy. An examination of the WPA narratives at the Manuscripts Division of the Library of Congress failed to identify Chandler's original, unedited version or any further information. The brief mention does, however, indicate that blacks were still manufacturing pottery into the mid-nineteenth century. It also supports the contention by Wheaton et al. (1983:238) that the pottery was fired above ground.

The drinking containers from Mitchelville represent a mixed lot, including tumblers, mugs, goblet or wine glasses, and syllubub glasses. The goblets and syllubub glasses suggest high status stemware, although most of the goblets are actually inexpensive pressed glass. Only one fragment, representing a partial centrally knopped stem and bucket bowl, is blown from lead metal (based on a hydrofluoric acid and ammonium sulphide spot test) (Figure 58L). McNally illustrates a very similar piece, noting that,

[while this shape was typical for british stemware in the first quarter of the 19th century ..., this glass was deposited in the 1830s or the 1840s (McNally 1982:126).]

He further notes that this "antique" style "fascinated and sold well for the increasingly tradition-conscious British glass industry" into the mid-nineteenth century. As this piece comes from the 91-92 block it probably represents an older, high status item removed from a plantation house. The two partially reconstructable feet (both from the 161-162
block) are very low, almost disc shaped, and mold made from purple or amethyst glass which dates from 1880 to 1925 (Newman 1970:74) (Figure 58M).

The tumblers include both lime and lead metal (again based on a hydrofluoric acid and ammonium sulphide spot test), but most are pressed glass. One specimen from the 161-162 block is a tumbler base of lead metal which was of off hand manufacture (Figure 580). This example is a fluted style typical of the eighteenth and early nineteenth centuries (McNally 1982:124). This high status item almost clearly was removed from a plantation house.

A second tumbler example from the 161-162 block is of lime metal, made by press moulding (which post-dates 1827 (Figure 58P)). The tumbler exhibits a "fine rib" pattern similar to an example illustrated by McNally (1982:138). He comments that the "fine rib" pattern was a press-molded imitation of cut motif known as "finger cutting" found on British cut glass of the late eighteenth century (McNally 1982:138).

An example of a mug from the 161-162 block is also worthy of comment. The item is colorless lead metal and is press-moulded with a simple cross-hatch pattern (Figure 58Q). Lorrain (1968:39) notes that pre-1850 pressed glass was of the "Lacy" pattern and McKearin and McKearin (1948:395) suggest that very little pressed glass was made of lead metal after the 1860s. It seems likely, therefore, that this item was manufactured between 1850 and about 1865 and that it represents a high status item removed from a plantation structure.

A fragment of milk glass from the 39-40-47-48 block appears to be an example of the Sawtooth pattern of pressed tablewares and the piece may have been a spoonholder (Figure 58N). McKearin and McKearin (1948:394-395), 401, Plate 210-7) suggest that pressed glass tablewares were introduced in the 1840s and that by the 1860s the simple patterns, such as Sawtooth, were giving way to more elaborate styles. These late nineteenth century elaborate styles are not represented in the Mitchelville collections, so these wares may have been taken from plantation houses, or, more likely, may have been purchased from store keepers who were passing off outdated merchandise.

Tin cans are abundant from Mitchelville, being found in four of the block excavations and five of the historic features. As discussed by Rock (1984) cans may be extremely useful emparl indicators for the mid to late nineteenth century. The hole-in-cap can provides a TPQ of 1820, stamped or flanged can ends provide a TPQ of 1847, machine soldered side seams provide a TPQ of 1883, and a double side seam provides a TPQ of 1888. Unfortunately, in the Mitchelville
collection it is difficult to distinguish between hand and machine soldering. The 161-162 and 110-123 blocks both provide evidence double side seam can fragments which provide good evidence that at least some trash was being disposed in these areas into the 1890s. Features 8 and 13 both contain evidence of lapped side seams and hence probably were deposited before 1888.

Intact, or nearly intact, cans are rare from Mitchelville, but examples of 3 1/4 (h) by 3 (d) inch (8.3 by 7.6 centimeter), and 7 (h) by 4 1/2 (d) inch (17.8 by 11.4 centimeter) cans were found. Other fragments suggest a round can between 4 and 5 inches (10.1 and 12.7 centimeters) in diameter and a 3 by 4 1/2 inch (7.6 by 11.4 centimeters) rectangular can of unknown depth. The 3 1/4 by 3 inch can is the correct size for an evaporated milk can and cans between 4 and 5 inches often contained fruit. The rectangular can does not fit the dimensions of sardine cans and it is therefore likely that it was a tapered tin, post-dating 1875, which contained something like corned beef (Lord 1975:65-66; Rock 1984).

The presence of these can fragments clearly reveals the use of "processed" and preserved food items by the Mitchelville inhabitants. Rock (1984:102) notes that by 1863 items such as sweet corn, chicken, turkey, duck, geese, fish, and beef were routinely canned, along with condensed milk. To that list Lord (1975:65) adds oysters, peaches, and pigeons. Prices were inflated by Hilton Head's remote location (American Missionary Association Archives, H6266), and it is likely that canned foods were considered luxury items.

The 25 utensils from Mitchelville include 11 handle fragments, three serving utensil handle fragments, two forks, six fragmentary spoons, and three fragmentary knives. The bulk of this collection consists of iron metal (N=14, 56%), although two brass (8%), two silver plate (8%) and two silver (8%) are also present. The remainder of the collection is made up of five bone handle fragments, probably from iron forks or knives.

The iron utensils are all representative of typical nineteenth century specimens. The spoon bowls are primarily oval, although a pointed oval specimen is present. The single fork is a two tine example which was originally fitted with a bone, wood, or ivory handle. Handles, probably of spoons, tend to be spatulate. The brass tablespoon has slightly upturned tipped fiddle handle and short front midrib. The shoulders are chamfered and flared. The bowl is oval and the overall length is 8 1/2 inches (21.6 centimeters). The fork is very similar, having a slightly upturned tipped fiddle handle with short front midrib and
chamfered flared shoulders. The four tine fork measures 7 1/2 inches (19.1 centimeters).

The two silver plated items include a handle fragment, possibly from a tablespoon, which exhibits a slightly downturned fiddle handle and very slightly flared shoulders. The other plated item is a fragment of an oval teaspoon bowl. The silver items include a spoon and a handle fragment. The spoon has a squared (possibly reworked spatulate) handle and an oval bowl with an oval drop. Marked on the handle back in Roman letters is "B.W." in a rectangle. This may be a mark for Bancroft Woodcock of Wilmington, Delaware, who was working from 1732 to 1817 (Belden 1980:454). The fragment is of a downturned spatulate handle. On the handle back is an illegible (worn) mark in a rectangle. A third, similar, coin silver handle fragment was looted from the site subsequent to our excavations. Inscribed in the handle front, in script, is EMS. On the back of the handle is marked in Roman letters SPEAR & JONES in a rectangle. This firm is not listed by Belden (1980), Burton (1942), or Thorn (1949), so the mark probably represents the distributor or merchant rather than the silversmith. Elizabeth Evans (personal communication 1986) of the Georgia Historical Society reports that the firm of Spear and Jones, a jewelry and watch store, was located in Savannah on the south side of Monument Square. They were advertising in 1841 and 1842 newspapers.

While the iron utensils are clearly of common nature and, because of mass production, inexpensively available, the silver plate and silver items, being handcrafted, are high status and of greater expense. It seems likely that these items were removed from plantation houses and found their way to Mitchelville. Two of the silver pieces came from the 91-92 block, the depository for a number of antebellum items, many of high status. The other two excavated pieces, however, came from the 161-162 block, clearly the house of a Mitchelville citizen. The final example was looted from the vicinity of the 110-123 block, also the location of a Mitchelville house site.

It will be noted from these discussions that nearly a quarter of the recovered utensils are handle fragments, which seems a rather high percentage. While we suppose that accidental breakage, or even willful destruction, is possible, it seems more likely that these artifacts represent an intentional modification of a metal utensil (probably spoons and forks). These utensil handles may be tools used to produce the rush and palmetto baskets characteristic of low country blacks today. Dale Rosengarten notes that,

[f]or splitting the palmetto into strips and for making a space in the coil through which to pull the palm binder, basketmakers use a sewing awl they call a
"bone" or a "nail-bone." Earlier sewers made this tool from an actual animal bone. Nowadays, most Mt. Pleasant basket makers make their bones from metal teaspoons. They break off the bowl, hammer the neck flat and file it to a rounded point, then smooth and polish the surface by thrusting it repeatedly into the dirt (Rosengarten 1986:8; several "bones" are illustrated by Rosengarten on page 9).

Rosengarten notes that this basketmaking tradition developed from native African crafts during the antebellum period and was fostered as a means of self-support during the postbellum period (Rosengarten 1986:14-25; see also Vlach 1978). It is therefore reasonable to believe that the Mitchelville occupants were making baskets and these artifacts may provide archaeological evidence of that activity, for which no more concrete evidence remains.

Of the kettle, pot, and pan fragments, most are body fragments, although examples of feet, handles and lugs are all present. While some of the items are heavy, thick kettle fragments, the majority appear to represent thinner (and presumably cheaper) wares than are seen in many antebellum collections. Reference to the 1865 Russell and Erwin catalog (Russell and Erwin 1980) reveals only cast iron items, although by 1902 the Sears catalog lists a variety of stamped pans (Sears Roebuck 1969). Woodhead (1981:5) also notes that while eighteenth and early nineteenth century sites have quantities of cast iron pots, late nineteenth century sites more commonly contain sheet metal pots, and these differences appear to be correlated with cooking processes. Although cast iron pots are well suited for use on open fires, the sheet metal vessels are not, and the "advent of these containers on archaeological sites suggests the use of stoves or ranges rather than open fires" (Woodhead 1981:6).

Architectural Artifact Group

Excavations at Mitchelville produced 13,916 Architectural Group artifacts, 13,050 from unit excavations and 866 items from features. These remains include primarily window glass (3269; 23.5% of the group total) and machine cut nails (8092; 58.1% of the group total). Other remains include two wrought nails, 18 wire nails, 1191 unidentifiable nails (8.5% of the group total and 12.8% of the nails), 118 spikes (0.8% of the group total), 95 gimlet screws (0.7% of the group total), 116 ceramic doorknob fragments (0.8% of the group total), five samples, one sash screw pulley, six rim knob lock parts, two keyhole surrounds, two drive pintels, 24
but hinges, one strap hinge, one hook hinge, one T-hinge, one hasp fragment, and one glazing point.

These remains are very useful in providing an impression of the Mitchelville structures and the archaeologically recovered remains tend to parallel those observed in the photographs of Mitchelville (Figures 18-21). The doorknobs include both agateware (known as "mineral") and porcelain (Russell and Erwin 1980:64-66) specimens. The keyhole surrounds (metal escutcheons) and doorlocks are similar to those of the mid to late nineteenth century (Russell and Erwin 1980:1-21, 68). The iron sash screw pulley was used for moving windows (Russell and Erwin 1980:63) and the single zinc glazing point recovered would have been used to hold the glass light in the frame (Russell and Erwin 1980:225). Hinges include a variety of styles, although the most common were cast iron broad and narrow butts, with both fast and loose joints (Russell and Erwin 1980:116); these items primarily would have been used to mount doors. The hand-wrought hook hinge would have been used with a pintle, probably for a shutter while the T-hinge could have served the same function (Russell and Erwin 1980:112-114). Strap hinges are more often used for utility purposes, but could be used either with a door or window shutter.

All of the screws are flat head gimlet types, ranging in length from 3/4 inch (1.9 centimeters) to 2 inch (5.1 centimeters). Although Walker (1971:87) notes that gimlet point screws were not introduced until 1834 and were not standardized until 1841, they apparently became popular by the 1860s. The Russell and Erwin (1980:126-127) catalog of 1865 devotes four pages to screws. While these screws largely may have been used to install the door butt hinges, one hinge was found with a machine cut nail used as a fastener.

The 118 spikes included specimens from 3 inches (7.6 centimeters) to 7 1/4 inches (18.4 centimeters) in length. The smaller specimens were distinguished from machine cut nails on the basis of shank thickness, which is about twice that of machine cut nails. The most common lengths were 4 1/2 to 4 inches (11.4 to 12.7 centimeters). These may have been used in construction, or may represent items salvaged from the nearby military post.

The three types of nails recovered from Mitchelville include wrought, machine cut, and wire. Of the 9303 nails, only two were hand wrought and these were not sufficiently well preserved to determine their size. The hand wrought nails date from the seventeenth through nineteenth centuries and Nelson notes that, "it is not uncommon to find a few hand-wrought nails used well into the nineteenth century" (Nelson 1968:3). The shanks are rectangular in cross-section and the heads are the round "rose head" form.
"Modern" machine cut nails account for 86.9% of the collection, although only 1614 (19.9%) are sufficiently intact to allow penny weight measures. These nails were first manufactured in the late 1830s and have uniform heads and shanks with burrs on the edges (Nelson 1968:7).

Eighteen wire nails were recovered by this study, 17 coming from the 161-162 block. The wire nails were first widely available in the 1850s, but were apparently not common until the 1870s (Nelson 1968:9-10). They received only brief mention in the 1865 Russell and Erwin (1980:253) catalog and were not illustrated. Wire nails have round ends and round, pointed shanks. Seventeen of the specimens are common wire nails and one, which may be a recent intrusion, is a finishing nail.

Because different size nails served different functions, it is possible to use the relative frequencies of nail types to indicate building construction details. Nails were early designated by their penny weight, which compared the weight of a nail to that of a silver penny. Gradually the term came to designate length rather than weight, but the equivalence varied over time and it was not until the 1890s that penny weights were thoroughly standardized (Orser et al. 1982:675). To avoid confusion, Table 14 lists both the penny weight size, Standard Average European (SAE) size, and metric range for the nails which were sufficiently complete for analysis. Only specimens from the 39-40-47-48, 110-123, 91-92, and 161-162 blocks will be considered. All but the 91-92 block represent structural remains, while the 91-92 block appears to be a secondary midden deposit. Also included in Table 14 are Feature 5 (rubble filled pit) and Feature 8 (trash pit). The table as organized, however, provides few clues to the construction of the various structures with a consistent peak at only the 8d size (excepting 91-92 block). One of the few commonly accepted rules in the nail length is, "to have the nails full three times as long as the sheathing Board is thick" (Bettesworth and Hitch 1981:2:n.p.). Within certain broad limits the size of nails used to perform a certain task was flexible, depending on the carpenter and the availability of nails. This variation is reflected in Orser et al. (1982:677). As a rough guide, however 2d to 4d nails were commonly used to fasten small timbers and shingles; 6d to 8d nails were used for sheathing or siding; 9d to 12d nails were used for framing; and 16-40d nails were used for heavy framing. Table 15 illustrates the number and percentage of machine cuts within the study blocks by probable function.

Because the 1961-162 block represent the largest excavation of a Mitchelville structure, the distribution of nails by function for this block is of particular interest. Within that block about 14% of the nails were used for small
Pennyweight | SAE | Metric Range | 30-40 | 47-48 | Block 110-123 | Block 161-162 | Block 91-92 | Feature 5 | Feature 8
---|---|---|---|---|---|---|---|---|---
2d | 1" | 23-28 | 4 | 28 | 3 | 14 | 11 | 11 |
3d | 1 1/4" | 29-34 | 8 | 56 | 4 | 18 | 16 | 16 |
4d | 1 3/4" | 35-41 | 72 | 255 | 17 | 79 | 62 | 63 |
5d | 2" | 41-47 | 12 | 70 | 18 | 63 | 49 | 50 |
6d | 2 1/4" | 48-53 | 12 | 110 | 25 | 116 | 113 | 115 |
7d | 2 1/4" | 54-59 | 7 | 50 | 27 | 125 | 87 | 88 |
8d | 2 1/2" | 60-65 | 30 | 217 | 55 | 355 | 248 | 254 |
9d | 2 3/4" | 66-72 | 8 | 56 | 17 | 79 | 85 | 86 |
10d | 3" | 73-79 | 12 | 85 | 31 | 143 | 150 | 161 |
12d | 3 1/4" | 80-85 | 9 | 63 | 11 | 51 | 14 | 75 |
16d | 3 1/2" | 86-95 | 5 | 35 | 5 | 23 | 29 | 30 |
20d | 4" | 96-108 | 1 | 5 | 0.8 | 0.8 |
20d | 4 1/2" | 109-120 | 1 | 5 | 0.8 |
20d | 5" | 121-132 | 1 | 1 |

Table 14. Whole machine cut nails by size and block.

<table>
<thead>
<tr>
<th>Function</th>
<th>30-40-47-48 Block</th>
<th>110-123 Block</th>
<th>161-162 Block</th>
<th>91-92 Block</th>
<th>Feature 5</th>
<th>Feature 8</th>
</tr>
</thead>
</table>
Small timber shingles (2d-5d) | 54 | 38 | 42 | 19 | 4 | 138 | 14 | 6 | 4 | 8 | 9 | 15 | 27 | 3 |
Siding siding (6d-8d) | 54 | 38 | 50 | 19 | 5 | 489 | 49 | 7 | 19 | 44 | 4 | 19 | 34 | 5 |
Framing (9d-12d) | 29 | 20 | 4 | 59 | 7 | 317 | 32 | 3 | 21 | 46 | 7 |
Heavy framing (16d-40d) | 5 | 3.5 | 8 | 17 | 40 | 4 | 1 | 7 | 12 | 7 | 1 |

Table 15. Whole machine cut nails by size and block, by function.
timbers or probably shingles, 50% were used for siding, 32% were used for framing, and 4% were used for heavy framing, perhaps setting the sill plates or constructing the roof framing. These figures closely resemble those found for the 110-123 block. The sample of nails from the 39-40-47-48 block may be too small for comparisons, but the structure appears to have emphasized the use of small nails. This tends to support the previous assessments that it may have been a relatively flimsy wattle and tabby daub structure which may have utilized a wall trench.

Because the 91-92 block provides no archaeological evidence for a structure, it is not surprising that the nail function distribution does not resemble other, structural patterns. The emphasis on 6d to 12d nails suggests that scrap wood (such as sheathing and light framing) may have been dumped, or burned, in the block area. Similarly, Feature 8 (a trash pit) contains primarily nails under 2 1/2 inches in length which might be found in small pieces of scrap wood. Feature 5, which represents a tabby rubble filled pit, exhibits a range of nail sizes more similar to the structural deposits than the trash deposits, probably because it received debris directly from the demolition of a structure. The emphasis on relatively smaller nails is similar to that observed for the 39-40-47-48 block, perhaps because both structures were built using a wattle and tabby daub technique.

The category of window glass includes 3269 fragments of primarily light green rolled glass. These specimens were classified as window lights based on thickness, degree of clarity, color, and lack of curvature.

Recently, the use of flat window glass as a dating tool has been advanced by Roenke (1978), Adams (1980), and Orser et al. (1982). Basically, window glass tends to increase in thickness throughout the nineteenth century. It has been further demonstrated that this thickness change is variable in different parts of the United States either because of differences between glass makers or because of recycling the glass panes. Orser et al. (1982:652) offer a regression formula for calculating the date of window lights based on thickness:

\[ Y = 41.46x + 1762.76 \]

where 41.46 is the slope of the line, 1762.76 is the y-intercept, x is the modal glass thickness, and Y is the mean date. They also suggest a correction factor of + 53.75 years, based on the Millwood data. The formula yields the results in Table 16 (Orser et al. 1982:661). It should be noted, however, that the formula for flat glass is probably curvilinear rather than linear, as there are practical limits of both thinness and thickness (Orser et al. 1982:665).
Table 16 also shows the range of window glass thickness from several excavation blocks at Michelville, indicating a modal value of window glass in the range of 1.7 to 1.8 millimeters (excluding the 39-40-47-48 block). Using the transformed dates (advanced by Orser et al. 1982), this suggests structures with mean dates of 1886.99 to 1891.14, obviously too late by at least 25 years.

Given the large sample sizes from the 161-162 and 110-123 blocks, we feel that the unimodal peak in both samples at 1.7-1.8mm clearly indicates the original construction in late 1862 or early 1863. Consequently, we suggest that for the purpose of Michelville, the regression formula should be corrected by a factor of +27.68 years, which would place the modal glass thickness between the years of 1860.92 and 1865.07 (see Table 16). Such a revision would suggest that repairs to the structures stopped between 1892 and 1897. The 39-40-47-48 block represents a somewhat different situation. The glass thickness mode of this block is at 1830.29 to 1838.58, with a second light peak at 1859.31 to 1863.46. Only one piece of glass post-dates 1880. While this anomalous situation may be the result of the small sample size from this block (N=47), the difference may also be attributable to the nature of the structure and the possible use of salvaged materials.

Furniture Artifact Group

The Furniture Group consists of only 148 artifacts, 146 (98.6%) from excavation units and two from features. Identified items include five brass tacks, three brass escutcheons (Figure 59A-B), seven lamp parts, two brass drawer pulls (Figure 59C), one iron drawer handle, three cut tacks, one brass trunk bumper guard (Figure 59D), three pieces of worked marble, and 123 fragments of lamp chimney glass.

The chimney glass is uniformly clear, usually very thin, often with plain rims. Several examples of crimped or fluted rims, however, were identified (Figure 59G). These crimped or fluted motifs are copies of the highly popular "pearl-top" design first employed by the George A. MacBeth Co. in 1883. After MacBeth's merger with the Thomas Evans Co. in 1899, the MacBeth-Evans Glass Company became the nation's largest producer of lamp chimneys (Lewis and Haskell 1981:119-120). The few crimped examples at Mitchelville, then, post-date 1883.

A number of lamps, using a variety of burning fluids, included chimneys to improve the combustion process. The first such lamp was the Argand, initially marketed in the 1780s, which burned camphine oil (a mixture of turpentine and alcohol). A shade, to minimize shadows, was added by the
<table>
<thead>
<tr>
<th>Glass Thickness (mm)</th>
<th>Transformed Dates</th>
<th>39-40-47-48 Block</th>
<th>110-123 Block</th>
<th>161-162 Block</th>
<th>218 Block</th>
<th>Revised Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>1857.97</td>
<td>5 10.6</td>
<td>1 0.8</td>
<td>20 0.7</td>
<td></td>
<td>1830.29</td>
</tr>
<tr>
<td>1.1-1.2</td>
<td>1857.97-1866.26</td>
<td>13 27.7</td>
<td>2 1.6</td>
<td>59 2.0</td>
<td></td>
<td>1830.29-1838.58</td>
</tr>
<tr>
<td>1.3-1.4</td>
<td>1870.41-1874.55</td>
<td>8 17.0</td>
<td>11 8.6</td>
<td>167 5.5</td>
<td></td>
<td>1842.73-1846.87</td>
</tr>
<tr>
<td>1.5-1.6</td>
<td>1878.70-1882.85</td>
<td>8 17.0</td>
<td>24 18.7</td>
<td>383 12.7</td>
<td>2 8.7</td>
<td>1851.02-1855.17</td>
</tr>
<tr>
<td>1.7-1.8</td>
<td>1886.99-1891.14</td>
<td>9 19.1</td>
<td>50 39.0</td>
<td>841 27.8</td>
<td>8 34.8</td>
<td>1859.31-1863.46</td>
</tr>
<tr>
<td>1.9-2.0</td>
<td>1895.28-1899.43</td>
<td>22 17.3</td>
<td>748 24.8</td>
<td>5 21.7</td>
<td></td>
<td>1867.60-1871.75</td>
</tr>
<tr>
<td>2.1-2.2</td>
<td>1903.58-1907.72</td>
<td>3 6.4</td>
<td>14 10.9</td>
<td>459 15.2</td>
<td>3 13.0</td>
<td>1875.90-1880.04</td>
</tr>
<tr>
<td>2.3-2.4</td>
<td>1911.87-1916.01</td>
<td>1 2.1</td>
<td>2 1.6</td>
<td>239 7.9</td>
<td>3 13.0</td>
<td>1884.19-1888.33</td>
</tr>
<tr>
<td>2.5-2.6</td>
<td>1920.16-1924.31</td>
<td>1 0.8</td>
<td>70 2.3</td>
<td>2 8.7</td>
<td></td>
<td>1892.40-1896.63</td>
</tr>
<tr>
<td>2.7-2.8</td>
<td>1928.45-1932.60</td>
<td>1 0.8</td>
<td>24 0.8</td>
<td>24 0.8</td>
<td>2 8.7</td>
<td>1900.77-1904.92</td>
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<tr>
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</tr>
<tr>
<td>3</td>
<td>1945.04</td>
<td></td>
<td></td>
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</tbody>
</table>

Table 16. Regression dates for flat glass with transformations (after Orser et al. 1982: Table 132) and flat glass thickness at Mitchelville blocks.
1830s, although the Argand lamp, often without a shade, continued to be popular throughout the nineteenth century. By the mid-nineteenth century a variety of burning fluids were available, including kerosine (which appeared in the early 1860s) (Bishop and Coblentz 1979:107-109).

Evidence of both camphine (or other fluid) and kerosine lamps has been obtained from Mitchelville. The presence of fluid burning lamps is documented by the discovery of a small metal cap with attached chain from the 110-123 block, which was placed over the wick of a camphine burning lamp to keep the highly volatile fuel from evaporating (Figure 59E). Kerosine lamps, based on the occurrence of broken parts, were more common. A complete brass burner was recovered from the 218 block (Figure 59F). The wick turner was stamped "HOLMES, BOOTH & HAYDEN/WATERBURY, CONN." While on the base of the burner were stamped three patent dates: February 18, 1862, August 19, 1862, and February 19, 1867. Lord (1969:137) lists this as a firm supplying brass lamps to Civil War sutlers, and notes that it was organized about 1855.

Arms Artifact Group

This artifact group includes 76 items from block excavations and an additional seven specimens form the feature excavations. Recovered were 23 percussion caps, 17 lead shot, seven minnie balls (Figure 59J-K), one Williams cleaner bullet (Figure 59L), 10 .22 caliber shells, four .38 caliber shells (Figure 59M0, two .12 gauge shotgun shells, seven fragments of melted lead four pieces of lead scrap, four gunflints, two trigger fragments, and one trigger guard.

Three types of percussion caps were identified: 16 were the "top hat" variety commonly used on military arms, six Eley's percussion caps used for revolvers, and a single cap in a large game or punt gun size (Moore 1963:77). Percussion caps were developed between 1808 and 1816 and were adopted for military use by 1845. The copper cap, continuing a minute amount of priming compound, was placed on a nipple pierced with a hold leading to the powder charge. The cap was struck by the hammer, mounted above and behind it (Johnson and Haven 1943:33-35). Of these remains, 13 had been fired and 10 apparently had been lost; all were probably deposited during the period just before or during Mitchelville's occupation.

The lead shot recovered by this study ranges from a size 9 (0.08 inch ([2.03 millimeters]) to a .64 caliber (0.65 inch [1.67 centimeter]). Most of the lead shot (N+14) ranges from the size 9 to 00 buckshot (0.34 inch [8.64 millimeters]) and was probably used in shotgun shells or in buckshot cartridges. Two balls were probably used in a .69 caliber musket. Johnson and Haven note that the "load and the weapon it was used in - the "Brown Bess" musket - were typical of
Figure 59. Furniture, Arms, and Clothing Artifact Groups. A-B, brass furniture escutcheons; C, brass drawer pull; D, trunk hardware; E, brass wick cap; F, brass and iron burner; G, crimped lamp chimney glass; H-I, gunflints; J-K, .58 caliber minie balls; L, .58 caliber Williams Cleaner bullet; M, .38 caliber cartridge; N-R, Type 23 porcelain buttons; S-U, Type 21 metal buttons; V-W, black glass buttons; X, Type 19 bone button; Y, Type 22 shell button; Z-FF, military buttons.
the military small arms and cartridges of the period up to
the general adoption of rifled percussion-cap arms about the
middle of the nineteenth century" (Johnson and Haven
muskets were used by both sides during the early part of the
Civil War and that there were "nine models of smoothbore U.S.
flint locks made at government armories or by contract after
1800, most in .69 caliber" (Coggins 1962:31). Both
compressed (produced by large manufacturers) and molded
(produced in the field or by small firms) minnie balls were
identified (Collins 1966:22). The Williams cleaner bullet
was .58 caliber and a hole in its base was fitted with a lead
disc holding a zinc plug. Coggins notes that when fired,
"the washer was jammed up against the base of the bullet and
expanded, scraping the bore clean" (Coggins 1962:30).

The .22 and .38 caliber cartridges are all rim fire
types, which were developed in the later 1850s and were
common from the 1870s to the 1890s (.22 caliber rim fires are
still found) (Johnson and Haven 1943:39, 42). While the
previous arms are likely to have been contributed by the
Union presence on Hilton Head, these remains almost certainly
date to the Mitchelville occupation. The two 12 gauge
shotgun shells post-date 1870 and may date from the early
twentieth century.

Melted lead and lead scrap were included in the arms
category because of their possible use for bullet production
(Jerre Weckhorst reported that a collector removed a bullet
mold from the site) or as flint wraps (Hume 1970:220-221).
Four gunflints were recovered from the site, providing
further evidence of the use of muskets at the site. While
these remains may have been contributed by the military, it
seems equally likely that they were owned by freedmen who
either purchased the obsolete weapons cheaply, removed them
from plantation houses, or scavenged them from the supplies
left by the retreating Confederates.

The four gunflints (or blade flints) are all well made
and prismatic. Two are a gray to dark gray or black (one
with banding Figure 59H), while the other two are
translucent honey to yellow-brown color (Figure 59I). The
former may represent English flint, while the latter appear
to be French (Emery 1980:149). Hamilton notes that while the
English did not start making blade flints until the 1790s,
they rapidly took the market away from the French in the
early nineteenth century because of their superior technique
(Hamilton 1980:138-141). The presence of the two probable
French flints suggests that these remains may have been
heirloom pieces. Kent (1983:Table 2), however, notes the
continued presence of French gun flints at North American
sites up to at least 1850, although they comprise only a
small percent of the market by that time.
Clothing Artifact Group

Recovered from the excavations at Fish Haul (Mitchelville) are 272 clothing items (255 from block excavations and 17 items from feature excavations). Included in this are 215 buttons (including military buttons removed from the Activities Group because of their probable use by the freedmen, 22 beads, 10 buckles, nine shoe grommets, four scissors, three thimbles, three button link loops (found on military buttons), one strap catch (probably for suspenders), one straight pin, one brass hook, one brass cuff link, and one zipper.

Buttons from Mitchelville include 145 specimens which may be placed in South's button taxonomy (South 1964), 20 military buttons (which we are not placing in South's topology because of their specialized nature), 37 buttons which cannot be assigned to any of South's classifications, and 13 buttons which are unidentifiable.

The non-military buttons are detailed in Table 17 and it may be seen that two types, 21 and 23, comprise 53.3% of the collection. It is likely that these two button types served different functions with the porcelain styles used on shirts and undergarments, while the metal type was used on primarily pants. The different sizes reflect the different functions both between groups and within a group.

The porcelain style, known as "small china" by collectors, is common throughout the nineteenth century and Luscomb (1967:183) notes that most were between 3/8 and 3/4 inch in size. She notes that while white is most common (Figure 59N-0), all colors may be found. We have identified brown, khaki, and black in these collections, in addition to three "calico buttons." The calico style mimics calico fabrics and the button designs become popular by the 1840s. Luscomb notes that almost 600 patterns are known; those from Mitchelville include two geometric dot-and-line patterns (Figure 59P) and a triple line woven pattern. The largest American manufacturer, Charles Cartledge and Company (New York), operated from 1848 to 1856, producing about 100 patterns (Luscomb 1967:31).

A number of the glass buttons from Mitchelville (all of which appear to be from women's clothing) are black (Figure 59V-W). While Luscomb (1967:111) questions whether glass was ever used to limited jet, a popular nineteenth century mineral button, it seems likely that the black glass styles may have ridden on the success, popularity, and high fashion of jet.
<table>
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<th>DESCRIPTION</th>
<th>NO.</th>
<th>OTHER</th>
</tr>
</thead>
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<tr>
<td>7</td>
<td>spun brass, eyecast in place</td>
<td>1</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>9</td>
<td>brass with stamped design, well-soldered eye</td>
<td>3</td>
<td>9/16&quot;, 1&quot;</td>
</tr>
<tr>
<td>12</td>
<td>one piece cast iron</td>
<td>5</td>
<td>9/16&quot;, 5/8&quot;, 11/16&quot;</td>
</tr>
<tr>
<td>15</td>
<td>bone disc, one hole</td>
<td>2</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>18</td>
<td>stamped brass, words on back</td>
<td>4</td>
<td>1/2&quot;, 3/4&quot;, 13/16&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOUTH'S TYPE NO.</th>
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<th>NO.</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>bone, 5-hole</td>
<td>5</td>
<td>9/16&quot;, 5/8&quot;, 11/16&quot;</td>
</tr>
<tr>
<td>20</td>
<td>bone, 4-hole</td>
<td>34</td>
<td>12-9/16&quot;, 9-5/8&quot;, 9-11/16&quot;, 3-3/4&quot;, 1-15/16&quot;</td>
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<tr>
<td>21</td>
<td>two piece iron with sunken panel, 4-hole</td>
<td>2</td>
<td>9/16&quot;, 5/8&quot;</td>
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<tr>
<td>21</td>
<td>two piece iron with sunken panel, 2-hole variant</td>
<td>5</td>
<td>3/8&quot;, 7/16&quot;, 5/8&quot;</td>
</tr>
<tr>
<td>22</td>
<td>shell, 4-hole</td>
<td>2</td>
<td>7/16&quot;, 5/8&quot;</td>
</tr>
<tr>
<td>22</td>
<td>shell, 2-hole variant</td>
<td>5</td>
<td>1-1/8&quot;, 4-1/8&quot;</td>
</tr>
<tr>
<td>24</td>
<td>porcelain, convex F&amp;B, sunken panel, 4-hole</td>
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<td>3/8&quot;, 7/16&quot;, 9/16&quot;</td>
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<td>24</td>
<td>two piece hollow iron with loose eye</td>
<td>3</td>
<td>1/2&quot;, 3/4&quot;, 1&quot;</td>
</tr>
<tr>
<td>24</td>
<td>machine stamped brass front, iron back and eye</td>
<td>2</td>
<td>7/8&quot;</td>
</tr>
<tr>
<td>34</td>
<td>cast brass, shell disk, glass set</td>
<td>1</td>
<td>7/16&quot;</td>
</tr>
<tr>
<td>35</td>
<td>glass with brass set holder</td>
<td>1</td>
<td>9/16&quot;</td>
</tr>
<tr>
<td>24</td>
<td>porcelain not type 23, 4-hole</td>
<td>7</td>
<td>7/16&quot;</td>
</tr>
<tr>
<td>24</td>
<td>porcelain not type 23, 2-hole</td>
<td>2</td>
<td>7/16&quot;, 1/2&quot; (white black)</td>
</tr>
<tr>
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<td>porcelain, brass eye (pin head shank)</td>
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<td>1/2&quot;</td>
</tr>
<tr>
<td>35</td>
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<td>3</td>
<td>1/2&quot;, 9/16&quot;, 3/4&quot;, NR CO/GOOD YEARS PAT, GOODYEARS PAT</td>
</tr>
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<td>glass with brass eye molded in place</td>
<td>7</td>
<td>7/16&quot;, 9/16&quot;, 5/8&quot;</td>
</tr>
<tr>
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<td>glass, self shank</td>
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<td>9/16&quot; (black)</td>
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<td>glass, 1-hole</td>
<td>1</td>
<td>7/16&quot; (black)</td>
</tr>
<tr>
<td>35</td>
<td>two piece stamped brass, 4-hole</td>
<td>4</td>
<td>9/16&quot;, 11/16&quot;, (3 with front rim design or words)</td>
</tr>
<tr>
<td>35</td>
<td>two piece stamped brass, 2-hole</td>
<td>2</td>
<td>5/8&quot;, 1&quot;</td>
</tr>
<tr>
<td>35</td>
<td>two piece stamped brass, 1-hole</td>
<td>2</td>
<td>9/16&quot;, 11/16&quot;</td>
</tr>
<tr>
<td>35</td>
<td>two piece stamped brass, slit eye</td>
<td>2</td>
<td>9/16&quot;</td>
</tr>
<tr>
<td>35</td>
<td>stamped brass front, iron back, 2-hole</td>
<td>1</td>
<td>11/16&quot;</td>
</tr>
</tbody>
</table>

UID fragments 13

Table 17. Non-military buttons recovered from Mitchelvllle.
Another unusual category includes the hard black rubber buttons, which were produced beginning in 1851 when Nelson Goodyear secured his patent for an improvement in the manufacture of hard rubber. One specimen from Mitchelville was also imprinted with "NR CO.," a reference to Novelty Rubber Company of New Brunswick, New Jersey which operated from 1855 to 1870 (Luscomb 1967).

While most of the buttons clearly date to the Mitchelville occupation, a few may represent earlier specimens. Type 7 buttons are more common in eighteenth century contexts than in nineteenth, while Type 9 and 12 buttons are reported by South in only pre-1800 contexts. Type 15 bone buttons seems to span the late eighteenth and early nineteenth centuries. Not unexpectedly, based on the temporal placement of other artifacts, many of the buttons recovered from the 91-92 block are early specimens. Of the 10 identifiable buttons, one is the single Type 7 pewter specimen, one is a Type 9, one is a Type 15 single hole bone button, four are Type 18 buttons, two are Type 19 5-hole bone specimens (Figure 59X), and one is Type 22 shell button (Figure 59Y). The four Type 18 buttons are particularly revealing. All are gilt buttons, made prior to 1850 and two, manufactured by Lewis and Tomes, date from the 1820s to 1830s (Luscomb 1967:78-79, 118).

The military buttons represent examples of primarily Union forces and the 20 specimens represent 11 types, eight of which are represented by a single button type. Both Albert (1969) and Wyckoff (1984) were used to identify the buttons, although Albert's type numbers will be used.

Not unexpectedly, the most common (N=8) button was the General Service with a spread eagle and lined shield (Type GI94) (Figure 59Z-AA). This style was adopted in 1854 for enlisted troops and continued to 1902. The only make identified from the collection is "WATERBURY BUTTON CO." of Waterbury, Connecticut. This name began to be stamped on buttons in 1849. Two other specimens were simply marked "EXTRA QUALITY." Two sizes are represented: 9/16 inch (1.33 - 1.47 centimeters) and 3/4 inch (1.80 - 1.96 centimeters). The next most common type are Navy buttons, post dating 1852. All but one show an eagle resting on a horizontal anchor, three cannon balls below, with 13 stars encircling a lined field. Three, typed as NA113, have the eagle facing left and the anchor fluke in front of the wing. One, typed as NA112, shows the anchor fluke behind the left wing (Figure 59BB). Type NA116 lacks the cannon balls, but is otherwise similar to NA113.

Two examples of the Infantry Officer's button, both post-dating 1851, were recovered. One (Type GI85B) contains a small Roman "I" and the shield, while the other (Type GI89) has the letter "I" with curved serifs on a recessed shield.
A single officer's button for the Dragoons was also recovered. The button (Type DR4) shows a letter "D" on a recessed shield. The single General Staff button recovered from Mitchelville, could not be typed (Figure 59CC). The button is similar to those shown by Albert (1969) and is convex with a spread eagle which is holding three arrows in its right talon and an olive branch in its left. The background is lined with 16 stars and there are no stars in the shield (which is a blend of all three types -- the spade, union, and eared). The diameter is 9/16 inch (1.45 centimeters). On the reverse is stamped "HORSTMANN'S/NY 7 PHI." While Luscomb (1967:100) identifies Horstmann as military outfitters operating from the 1860s to the present in New York and Philadelphia, she does not identify this mark as being used.

A button of the New York 71st Regiment was recovered (Figure 59DD). The specimen has the number 71 within a wreath of laurel and oak leaves, on a lined field (Type NY61). Another button has been attributed to the First Georgia Volunteers, possibly Company A, known as the Irish Jasper Green (Albert 1974:135; Type GA18). The specimen has an eagle, perched above a harp with the inscription "IJG" above the device (Figure 59EE). On the reverse of the button is stamped "BENEDICT & BURNHAM," button makers from 1834 to 1843. A final button, lacking positive identification, is a single piece cast gold gilt brass button (South's Type 8) with a hand and knife motif (Figure 59FF). On the reverse is "WARRANTED/BEST QUALITY." A similar, although more elaborate, motif is shown on Massachusetts Volunteer Militia buttons by Albert (1969:166-169; Types MS33 to MS40).

A second significant artifact category within the Clothing Group is that of beads, included here rather than in the Personal Group following South (1977). Otto notes that beads in general, but especially faceted hexagonal beads, "may prove to be reliable indicators of slave status on Old South plantation and farm sites" (Otto 1984:74) and the previously discussed historical background provides several accounts of freedom continuing to wear beads.

The beads recovered from Mitchelville, listed in Table 18, include eight faceted specimens, although 10 are large wire wound round specimens exhibiting a considerable range in size (0.6-1.0 by 0.8-1.3 centimeters) and a heavy patina. Similar specimens are reported by Otto (1984:Table 3.19) and Lewis (1978:Figure 45, top row, third from the left).

Five artifacts in the Clothing Group are related to sewing: four scissor fragments (Figure 60A-C), three thimbles (Figure 60D-E), and a single straight pin. The thimbles are all utilitarian brass examples typical of the mid-nineteenth century on (Johnson 1982:5). The four scissor fragments are all slightly ornamented ladies' scissors similar to those
<table>
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<th>Number</th>
</tr>
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<td>10</td>
</tr>
<tr>
<td>Wire wound, donut shape, 127 by 50 mm, clear, light green glass, Type Wld--</td>
<td>1</td>
</tr>
<tr>
<td>Drawn tube, medium size, clear, bright navy, Type 1a19</td>
<td>2</td>
</tr>
<tr>
<td>Drawn tube, large size, clear, emerald, faceted, Type 1f3</td>
<td>6</td>
</tr>
<tr>
<td>Drawn tube, large size, clear, emerald with opaque soft blue core, faceted, no type</td>
<td>1</td>
</tr>
<tr>
<td>Drawn tube, large size, dark opaque body, 9 stripes--alternating 2 white, 1 yellow/gold, Type 1b--</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 18. Beads recovered from Mitchelville (Kidd and Kidd 1970 type designations).
illustrated by Johnson (1982:9) and Russell and Erwin (1980:369). These remains are representative of light household sewing, and the scissor styles, while feminine, are relatively plain (cf. Whiting 1923).

The brass zipper, manufactured by Talon, was recovered in the upper level of the 130-131 block. This specimen post-dates 1913 (Robertson 1974:209) and may represent a late contamination of the site. It is included, however, because the historical data reveals continued occupation of portions of Mitchelville into the early twentieth century.

Personal Artifact Group

The Personal Artifact Group includes 55 specimens, 51 from block excavations and four from features. Recovered are five umbrella ribs, two specimens of purse hardware, one earring, one brass bar pin, one glass jewelry piece, one finger ring, one religious medallion, two bone comb fragments, one decorative bone toothpick fragment, one bisque animal figurine, one stamped picture surround, one key fragment, five coins, two ruler hinges, two knife fragments, one ink well fragment, one pen nib, one brass paper brad, eight slate pencils, and 16 fragments of slate tablets.

The rib fragments are rather heavy and have therefore been termed umbrella, although Johnson (1980:16) notes that in the second half of the nineteenth century fashions changed and women began to carry longer, more elaborate parasols. While these specimens clearly date to the occupation of Mitchelville, it is not certain whether they represent ribs for a waterproof umbrella or a fashionable parasol.

The purse fragments provide unusual temporal sensitivity. Prior to the 1880s women's fashions dictated the use of full skirts with concealed pockets for carrying essential items. After that time (with skirts becoming slimmer) the use of "reticules" became more common and leather purses were introduced in the 1880s (Johnson 1980:21). The two items recovered from Mitchelville include a purse handle fitting and a purse frame. The earring fragment probably post-dates 1830, while bar pins or brooches were popular at the end of the nineteenth century and beginning of the twentieth (Johnson 1980:13).

The religious medallion, of stamped brass, is from a Catholic rosary (Figure 60F). On the front is the Virgin Mary and the Sacred Heart of Jesus, pierced with seven lances, signifying the seven sorrows of Mary. Around the sides is the phrase "MATER DOLOROSA", Latin for "Sorrowing Mother." On the reverse is Jesus, carrying his cross. While such an item may have been acquired solely as a curiosity without any knowledge of its meaning, O'Connell (1879:159) notes that the Rev. Thomas Quigley had a mission in 1853 on
Figure 60. Clothing, Personal, Tobacco, and Activities Artifact Groups. A-L, scissors; D-E, brass thimbles; F, rosary piece; G, bone toothpick; H, brass picture surrounds; I, brass bar pin; J-K, ruler hinges; L, pen nib; M, finger ring; N-P, kaolin tobacco pipe bowls; Q-S, kaolin pipe stems; T, red clay "T.D. pipe; U-V, brass saw screws; W, glazed, painted porcelain doll's head; X-Y, military insignia; Z, unidentified brass.
Hutchinson's Island in Beaufort District with a congregation of 400 black slaves and in the spring of 1860 a Catholic church was dedicated in the town of Beaufort. This clearly suggests a Catholic presence among the Sea Island blacks, although Madden, quoting a postbellum period account, notes,

"the colored people of the city [Charleston] and adjoining islands have entered different religious sects since their emancipation. I have remarked great indifference about our holy Religion owing to the prejudices they have imbibed from sectarian preachers . . . "Hilton Head had "completely gone" down since Father O'Connell's departure. Of the small congregation of blacks once there, there is not one remaining." There are a few white Catholics still remaining on the island and they are visited twice a month (Madden 1985:112-113).

This last statement also suggests the presence of white Catholics on Hilton Head prior to the Civil War, so the rosary may have been removed from a plantation house after the island whites left in 1861.

The bone combs are common double-tooth hair combs typical of the eighteenth century, although as Noel Hume notes, they, "continued to be used by the poor until the very late nineteenth century, generally in bone" (Noel Hume 1970:174-175). By the 1860s other materials, such as vulcanite (hard rubber, similar to that used in Goodyear's Patent buttons), were used and the combs became known as "lice combs." The bone toothpick fragment is highly carved, but is very similar to an example illustrated by Johnson (1980:28).

The picture surrounds (Figure 60H) are made of very thin stamped brass and were used in both daguerreotype and ambrotype picture frames either as a preserver frame or mat (Williams 1972:34-43). The daguerreotype was popular from about 1840 to 1860 and cost about $2.00 (including the frame, mat, and hinged case). The ambrotype, also popular during the mid-nineteenth century, was even less expensive because it was basically a glass negative and no print was ever made. Five coins were collected from the Mitchelville excavations—all U.S. Indian head pennies. From Feature 5, which date the demolition of the first 161-162 structure and the construction of second, larger house, an 1862 cent was recovered. A second penny, also 1862, was found in the 161-162 block. The 218 block produced an 1864 coin and the 110-123 block produced two, which may bracket the structure occupation, one from 1863 and another from 1891.
The ruler hinges (Figure 60J-J) are from small carpenter's rules, similar to those advertised in the 1865 Russell and Erwin (1980:168) catalog. These rules folded both horizontally and vertically to reduce a 1 foot scale down to a compact 3 inches, or a 2 foot scale down to 6 inches. These were high status vest pocket items, not likely to be lost by a military carpenter. We believe they represent items obtained either from local merchants, or from plantation houses.

The freedmen's desire for and practice of literacy may be evidenced by the pen nib (manufactured by Esterbrook and Co. and described as a "Lawyer's Pen," number 339), (Figure 60L), ink well, slate pencils, and slate tablet fragments. The 1865 Russell and Erwin catalog lists a variety of "school slates" in both square (rectangular) and oval frames, as well as slate pencils, sold in boxes of 100. Lead "writing pencils" were also advertised. In 1869 slate pencils cost 17 1/2 cents a gross (.1 cent each), while lead pencils cost 20 cents a dozen (2 cents each) (American Missionary Association Archives, H7625). Lord (1969:151) notes that Richard Easterbrook supplied steel pens beginning in 1858. The paper brad is identical to "McGill's Patent T Fasteners" produced by Holmes, Booth and Hayden is the nineteenth century (Asher and Adams 1976:73).

**Tobacco Artifact Group**

The tobacco category includes 221 items, 206 of which were recovered from the block excavations. These remains include 150 kaolin (white ball clay) pipes (67.8% of the group total), 62 kaolin pipebowl fragments (28.6% of the group total), four red clay pipe bowl fragments, one red lead glazed stub stemmed pipe bowl fragment, one unidentified ceramic pipe bowl fragment, and three metal snuff can fragments.

Of the 62 kaolin pipe bowls, 27 (43.5%) are decorated, while only one of the four red clay bowls is decorated. All of the bowls are of the Irish style made in standard molds from about 1850 through 1910 (Aylo 1979). The white kaolin decorated bowls include a plain "TD" pipe, six fluted examples with a leaf design used to camouflage the molds seams (Figure 60N-O), nine additional fluted examples which do not include the mold seam, one with flutes and decorative swirls, one with horizontal fluting, one with a floral motif at the mold seam line, one geometric design incorporating the mold seam, one vertical gothic geometric pattern, one fragment with raised dots, one with a cross-hatched shield motif on each side of the bowl (Figure 60P), and four unidentifiable molded design fragments.
The "TD" pipes have been discussed by Hopkins (1937), Humphrey (1969), and Walker (1966). Whatever the origin of this mark might be, by the mid-nineteenth century several makers were using it as a style and the D. McDougall and Co. of Glasgow were advertising them as "Plain T.D." 1.10 per gross in ca. 1875 (Sudbury 1980:45-46). Fluted examples were very common among the styles recovered from a 1852 sundries dealer in Old Sacramento (Humphrey 1969:20-23) and 16 of the Mitchelville specimens have a vertical fluted design, while one is horizontally fluted. Wilson (1971) illustrated several pipebowls with raised dots and records one bowl with a similar motif accompanied by scroll-work (Wilson 1971: Figure 30I) from a nineteenth century western site.

The pipestems recovered from Mitchelville range from slightly less than 4/64 inch (1.6 millimeters) to 6/64 inch (2.3 millimeters) in bore diameter. Of the 150 stems, 121 (80.7%) are plain; the remaining 29 are impressed with a marker's name, decorated, or otherwise altered.

Fourteen of the specimens were manufactured by the D. McDougall Company of Glasgow. McDougall pipes are the most common at Mitchelville, bearing witness to the fact that the company was the "largest export manufacturer" of pipes in the mid-nineteenth century. The firm opened in 1846 and continued in business until 1967 (Humphrey 1969:17-18). Single specimens of pipes produced by Peter Dorni (Figure 60R), W. White (Figure 60Q), Gambier, and Murray-Davidson were also recovered. Peter Dorni was a French pipemaker in the mid-nineteenth century whose wares were widely imitated for export to the United States (Omwake 1969). W. White and Sons were the largest manufacturer of pipes during the middle to late nineteenth century (700 varieties were being produced in 1867), but they were not exported in large quantities (Humphrey 1969:18). The W. White pipestem at Mitchelville has "78" impressed preceding the manufacturer's name; Humphrey (1969:18) suggests this may have been a style number. Gambier produced pipes in Paris during the nineteenth century and was best known for figurine bowls. The mark "GAMBIER/PARIS" is impressed around the stem perpendicular to the long axis (Humphrey 1969:17). A pipestem impressed "DA . . ." probably belongs to Davidson, who bought out his employer, Murray, in 1862 (Humphrey 1969:15).

Two pipestems evidence ribbing which would have led to the bowl. One is marked in a pattern similar to the Peter Dorni style, but because of the extensive copying of Dorni pipes it is not certain who might have produced this specimen. Six pipestems evidence a clear lead glaze over the stems which has produced a light yellow color. One specimen has red sealing wax at the tip, presumably to soften the
bite. Finally, one specimen is impressed "A" on one side and "T" on the other (Figure 60S).

The stub stemmed pipe bowl fragment is small, but is made of a red clay with clear lead glaze. It is a fluted pattern and a portion of the rim reed piece is present. Three of the four red clay (terra cotta) pipebowls are plain, but the fourth is a "TD" motif with encircling stars (Figure 60T). Humphrey (1969:25-30) discusses these as "13-Star Patriotic Pipes" and Walker (1966:89) briefly mentions them in his "TD" study.

Activities Artifact Group

While not the largest, the Activities Group, which contains 881 artifacts, is the most diverse category at Mitchelville. Examples of construction tools, farm tools, toys, fishing gear, storage items, stable and barn items, miscellaneous hardware, machinery items, and military objects are present in variable quantities. These items are detailed in Table 19. Most are self explanatory and few are temporally sensitive, so little discussion will be offered.

The brass saw screws, with two exceptions, are flat head types illustrated by the 1865 Russell and Erwin (1980:103) catalog. One of the two exceptions is shown in the Russell and Erwin catalog as a "Fancy, Eagle". The other style is crown motif over "S.B." and encircled by "S. BIGGEN & SON/SHEFFIELD" (Figure 60LL). This firm is not listed by McKinstry (1984). Although not included in these tabulations because they are surface finds, Mitchelville has also produced four saw blade fragments (originally one piece), two axe heads (one New Jersey pattern and one Ohio pattern), and one claw hatchet (these items are illustrated in Russell and Erwin 1980:203).

The two marbles recovered from Mitchelville are both made of a white stone and measure 13/16 and 15/16 inch (2.04 and 2.32 centimeters). The larger specimen is painted with four closely spaced red lines (one wide, three narrow) and there closely spaced black lines (one wide, two narrow) which intersect at right angles to divide the marble into four sections. Walker (1971:184) notes similarly painted marbles from several sites which overlap in dates from 1859-1863. He suggests that "stone marbles painted with parallel lines were likely in use during that time" (Walker 1971:184).

Examination of the miscellaneous hardware category reveals a large number of brass items, especially when compared to the number of miscellaneous iron pieces. While items such as copper and brass nails, brass sheets, copper wire, and brass rivets could be obtained from Russell and Erwin (1980), it seems more likely that these items may have been scavenged from the military post, perhaps at Seabrook.
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<td>Stable and Barn Items</td>
<td>wheel rim fragments</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>hand wrought ring</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>harness ring</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous Hardware</td>
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<td>15</td>
</tr>
<tr>
<td></td>
<td>brass nails</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>brass rivets/roves</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>brass washers</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>brass road</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>wrought rod stock</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>iron nuts/bolts</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>iron washers</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>iron corner brace</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>iron bar stock</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>iron rod stock</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>iron pipe</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>iron rivets</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>iron wire fragments</td>
<td>8</td>
</tr>
<tr>
<td></td>
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<td>669</td>
</tr>
<tr>
<td></td>
<td>UID lead based metal</td>
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<tr>
<td></td>
<td>copper wire</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>copper strip</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>copper pipe</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>stove pipe fitting</td>
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</tr>
<tr>
<td></td>
<td>chain links</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>eye bolt</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>hook assembly</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>padlocks</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
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<tr>
<td></td>
<td>flower pots</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>picture hanger hook</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>railroad spikes</td>
<td>3</td>
</tr>
<tr>
<td>Military Objects</td>
<td>fuse fragments</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>brass gromets, tent</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>military emblems</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>brass scabbard tip</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>tent peg</td>
<td>1</td>
</tr>
<tr>
<td>Machinery Items</td>
<td>UID parts</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 19. Activity Group artifacts from Mitchelville.
Landing where there was a major dry dock operation for ship repair. Alan Albright (personal communication 1986) notes that copper and brass nails and rivets were commonly used in ship building during the nineteenth century. Likewise, the presence of three railroad spikes suggests the dismantling of the railroad tracks at the Hilton Head post and on the wharf.

The military items recovered from Mitchelville are rather sparse, given the site's proximity to the Hilton Head post and its possible use as an encampment site prior to the creation of a freedmen's village. The fuse fragments are probably remnants from the November 1861 bombardment by Federal forces. The grommets and tent peg may have been deposited by Union troops, or may represent use of tents as temporary shelters by freedmen. One photograph of Mitchelville shows the adaptation of a tent into a relatively permanent structure by an enterprising freedman (National Archives Still Picture Branch, 165-C-141).

One of the brass emblems is a rank designation, similar to those illustrated by the 1864 Schuyler, Hartley and Graham (1985:54, 65) catalog and described as gilt metal (Figure 60).

Dating Synthesis

The previous discussions have indicated that a number of artifacts may provide temporally sensitive information with which to date the various Mitchelville structures and that this approach is limited by only the sample size of each block excavation. Prior to discussion of the various blocks it may be useful to briefly review the historical dates for the property. Construction of Mitchelville had begun by late 1862 by blacks using supplies provided by the government and work probably continued intermittently through 1867. The five year period from late 1862 through 1867 should be considered the flourishing of the village, while the period from 1868 to 1880 represents a gradual shift to an agrarian economy. Beginning in the 1880s the village began to decline in prosperity, and by the twentieth century, it may have resembled a nucleated, kin-based community. The remnants of Mitchelville continued to about 1920.

The mean date for the village, then, is about 1871, using a beginning date of 1862 and a terminal date of 1880. It must, however, be recognized that some structures continued to be occupied through about 1920, providing a mean date of 1891 if the nucleated kin-based community is included.

This synthesis will briefly examine the dating of structures in the 39-40-47-48, 110-123, 160-161, and test pit
blocks. In addition, we will briefly discuss the 91-92 and 218 blocks.

39-40-47-48 Structure

The mean ceramic date for this structure is 1855.3, although the presence of amethyst glass in the collection provides a TPQ of 1880. The window glass from this unit suggests two date modes: 1830-1838 and 1859-1863. As previously discussed, we believe this structure was constructed sometime about 1862 and was removed shortly after 1880, probably to open up more land for the kin-based farming activities which characterized Mitchelville in the late nineteenth and early twentieth centuries. While the presence of an early mean ceramic date and window glass may indicate an early nineteenth century structure was refurbished or re-occupied, we believe it is more likely that materials were salvaged from earlier structures to construct this building. It is clear, however, that a larger sample should be obtained from this anomalous structure.

110-123 Structure

The mean ceramic date for this structure is 1868.7, 2.3 years earlier than the mean historic date for the village. Coins from this structure date 1863 and 1891, suggesting its occupation into the later phases of Mitchelville's existence. This late date is supported by the presence of tin can fragments with a TPQ of 1888 and window glass which suggests repairs possibly going into the 1880s.

160-161 Structure

The structure yields a mean ceramic date of 1869.3, only 1.7 years older than the mean historic date for the village. Glass artifacts, such as amethyst colored glass and a lightening closure, provide TPQs of 1880 and 1882 respectively. Tin cans with double side seams provide a TPQ of 1888 and crimped lamp chimney glass indicates a TPQ of at least 1883. The window glass, while suggesting a modal date of 1858-1863, also suggests repairs dating to 1896 and the presence of wire nails suggests building activity (such as repairs) post-dating the 1870s.

This structure, like the preceding 110-123 example, yields a mean ceramic date which appears as much as 7 to 10 years earlier than the probable mean occupation date. This almost certainly is the result of the combination of several factors. Researchers have previously discussed the "time lag" between a ceramic's mean date and when it actually entered the archaeological record. At Mitchelville, because of the wage labor system between 1862 and 1867, we speculate that the freedmen engaged in almost unbridled consumerism for
several years. It was not until the military post was closed, and the source of wage labor disappeared, that the freedmen's purchasing power declined. Consequently, although the structures were occupied from 1862 to perhaps 1890, most durable goods, such as ceramics, were purchased between 1862 and 1867.

Test Pit Structure

Although the structure revealed by the test pits has received little attention, it is appropriate to mention it in these discussions. The structure's mean ceramic date is 1867.6, although this does not include three fragments of semi-porcelain, the largest amount of this ware recovered from any structure. Ramsay (1947:109) notes that this ware has a TPQ of 1885, although Hughes (n.d.:175) suggests that the British firm of G. Grainger & Co. introduced a true semi-porcelain at the 1851 Great Exhibition.

91-92 Block

While not representative of a structure, the remains found in this block are interesting because of their apparently early date. The mean ceramic date for the block is 1836.3, although if the whitewares are considered without regard to the earlier delft, creamwares, and pearlwares, the mean date is 1867.3. Other artifacts found in this block tend to date to the first third of the nineteenth century. One exception is a bottle fragment with an applied lip, which provides a TPQ of 1850.

While obviously representing a collection of remains of considerable duration, it appears that this midden deposit is not as old as might be supposed. Previous work in this block area recovered only whitewares and embossed panel bottle with a mid-1860s TPQ (Trinkley and Zierden 1983:30-31).

218 Block

This block also does not represent structural remains, although we feel it is in close proximity to a structure. The mean ceramic date of the remains is 1867.8 and an 1864 penny was recovered. In addition, a TPQ of 1867 is provided by the patent date on a brass lamp burner.

Pattern Analysis

Up to this point we have used South's artifact groups and classes as simply a convenient, logical means of ordering data. In this section we will use these functional categories for an "artifact pattern analysis" developed by South (1977), who believes that the patterns identified in the archaeological record will reflect cultural processes and
will assist in delimiting distinct site types. South has succintly stated that, "we can have no science without pattern recognition, and pattern cannot be refined without quantification" (South 1977:25). The creation (or rather identification) of patterns in historical archaeology is not an end in and of itself, but rather it should be one of a series of techniques useful for comparing different sites with the ultimate goal of distinguishing cultural processes at work in the archaeological record.

There can be no denying that the technique has problems, some of which are serious, but no more effective technique than South's has been proposed. Garrow (1982b:57-66) offers some extensive revisions of South's original patterns, which will be incorporated in this study. Even at the level of a fairly simple heuristic devise, pattern analysis has revealed five, and possibly seven, "archaeological signatures" -- the Revised Carolina Artifact Pattern (Garrow 1982b; South 1977), the Revised Frontier Pattern (Garrow 1982b; South 1977) the Carolina Slave Artifact Pattern (Garrow 1982b; Wheaton et al. 1983), the Georgia Slave Artifact Pattern (Singleton 1980; Zierden and Calhoun 1983), and the Public Interaction Artifact Pattern (Garrow 1982b); as well as the less well developed or tested Tenant/Yeoman Farmer Artifact Pattern (Drucker et al. 1984) and the Washington Civic Center Pattern (Garrow 1982b), which Cheek et al. (1983:90) suggest might be better termed a "Nineteenth Century White Urban Pattern." Several of these are summarized in Table 20. A careful inspection of these patterns reveals surprisingly no overlap in the major categories of Kitchen and Architecture which suggests that these two categories are particularly sensitive indicators of either site function (including intra-site functional differences) or "cultural differences" (see Cheek et al. 1983:90; Garrow 1982a:4; South 1977:146-154).

Table 21 presents the artifact patterns for the structures in the 39-40-47-48, 110-123, 160-161, and test pit blocks. Of these four areas, the data from the blocks are most reliable because of both the large number of artifacts which comprise the sample and the area extent of excavations (the artifact density in this block is the highest of four being considered).

Although it would be nice if the data presented in Table 21 clearly fit into one of the various patterns summarized in Table 20, there are several anomalies. There is considerable variation among the four structures -- 13.4% to 41.0% (27.6% variation) in the Kitchen Group, and 52.9% to 81.4% (28.2% variation) in the Architecture Group -- although there were areas of fairly consistent agreement. For example, at each of the structures the Architecture Group is the largest artifact category, followed by the Kitchen Group. The Furniture Group ranges from 0 to 1.1%, although the two best
### Table 20. Various archaeological pattern comparisons.

<table>
<thead>
<tr>
<th>Artifact Group</th>
<th>Revised Carolina Artifact Patterna</th>
<th>Revised Frontier Artifact Patternb</th>
<th>Carolina Slave Artifact Patternc</th>
<th>Georgia Slave Artifact Patternd</th>
<th>Piedmont Tenant/ Yeoman Artifact Patterne</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen</td>
<td>51.8-65 0%</td>
<td>35 5-43 0%</td>
<td>70.9-84.2%</td>
<td>20 0-25.8%</td>
<td>45 6 (40 0-61 2)</td>
</tr>
<tr>
<td>Architectural</td>
<td>25 2-31 4%</td>
<td>41.6-43 0%</td>
<td>11.8-24.8%</td>
<td>67.9-73 2%</td>
<td>50 0 (35 8-56 3)</td>
</tr>
<tr>
<td>Furniture</td>
<td>0 2-0 6%</td>
<td>0 1-1.3%</td>
<td>0.1%</td>
<td>0 0-0.1%</td>
<td>0 4</td>
</tr>
<tr>
<td>Arms</td>
<td>0.1-0 3%</td>
<td>1 4-8.6%</td>
<td>0 1-0.3%</td>
<td>0 0-0.2%</td>
<td>-</td>
</tr>
<tr>
<td>Clothing</td>
<td>0 6-5 4%</td>
<td>0 3-1 6%</td>
<td>0.3-0.8%</td>
<td>0 3-1.7%</td>
<td>1.8</td>
</tr>
<tr>
<td>Personal</td>
<td>0 2-0 5%</td>
<td>0 1%</td>
<td>0.1%</td>
<td>0 1-0 2%</td>
<td>0 4</td>
</tr>
<tr>
<td>Tobacco</td>
<td>1 9-13 9%</td>
<td>1.3-14.0%</td>
<td>2.4-5.4%</td>
<td>0 3-9.7%</td>
<td>-</td>
</tr>
<tr>
<td>Activities</td>
<td>0.9-1 7%</td>
<td>0 5-5 4%</td>
<td>0.2-0.9%</td>
<td>0.2-0.4%</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Sources:

aGarrow 1982  
bGarrow 1982  
cGarrow 1982  
dSingleton 1980:216  
eDrucker, et al 1984:5-47 (no range was provided, but has been partially reconstructed for the Kitchen and Architectural Groups)
### Kitchen Group

<table>
<thead>
<tr>
<th>Item</th>
<th>39-40</th>
<th>47-48</th>
<th>110-123</th>
<th>161-162</th>
<th>Test Pits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramics</td>
<td>8</td>
<td>220</td>
<td>1047</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Colono/River Burnished</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Bottle Glass</td>
<td>70</td>
<td>622</td>
<td>3262</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Melted Glass</td>
<td>0</td>
<td>20</td>
<td>1770</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Tumbler</td>
<td>0</td>
<td>12</td>
<td>105</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Glassware</td>
<td>1</td>
<td>0</td>
<td>62</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Tableware</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Kitchenware</td>
<td>41</td>
<td>127</td>
<td>174</td>
<td>82</td>
<td></td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>111</td>
<td>13.4%</td>
<td>1013</td>
<td>25.4%</td>
<td>6415</td>
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</table>

### Architecture Group

<table>
<thead>
<tr>
<th>Item</th>
<th>39-40</th>
<th>47-48</th>
<th>110-123</th>
<th>161-162</th>
<th>Test Pits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Window Glass</td>
<td>48</td>
<td>128</td>
<td>3010</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Nails</td>
<td>683</td>
<td>2309</td>
<td>5190</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Spikes</td>
<td>0</td>
<td>40</td>
<td>62</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Construction Hardware</td>
<td>2</td>
<td>23</td>
<td>96</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Door Lock Parts</td>
<td>1</td>
<td>7</td>
<td>113</td>
<td>0</td>
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<tr>
<td><strong>Subtotal</strong></td>
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<td>81.1%</td>
<td>2507</td>
<td>62.9%</td>
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### Furniture Group

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<th>110-123</th>
<th>161-162</th>
<th>Test Pits</th>
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<tr>
<td>Furniture Hardware</td>
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<td>96</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>0</td>
<td>0%</td>
<td>46</td>
<td>1.1%</td>
<td>96</td>
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</table>

### Arms Group

<table>
<thead>
<tr>
<th>Item</th>
<th>39-40</th>
<th>47-48</th>
<th>110-123</th>
<th>161-162</th>
<th>Test Pits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musket Balls, Shot</td>
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<td>9</td>
<td>17</td>
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</tr>
<tr>
<td>Gun Parts</td>
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<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Cartridges</td>
<td>0</td>
<td>1</td>
<td>14</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Percussion Caps</td>
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<td>0</td>
<td>20</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
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<td>0%</td>
<td>11</td>
<td>0.3%</td>
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### Clothing Group

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<th>110-123</th>
<th>161-162</th>
<th>Test Pits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buckles</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>1</td>
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</tr>
<tr>
<td>Thimbles</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Buttons</td>
<td>8</td>
<td>72</td>
<td>125</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Scissors</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
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<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Hook &amp; Eye Fasteners</td>
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<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Glass Beads</td>
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<td>8</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Shoe Gromets</td>
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<td>6</td>
<td>0</td>
<td>0</td>
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<tr>
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<td>1.2%</td>
<td>86</td>
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### Personal Group

<table>
<thead>
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<th>39-40</th>
<th>47-48</th>
<th>110-123</th>
<th>161-162</th>
<th>Test Pits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coins</td>
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<td>0</td>
<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Personal Items</td>
<td>4</td>
<td>0.4%</td>
<td>20</td>
<td>0.5%</td>
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</table>

### Tobacco Group

<table>
<thead>
<tr>
<th>Item</th>
<th>39-40</th>
<th>47-48</th>
<th>110-123</th>
<th>161-162</th>
<th>Test Pits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco Pipes</td>
<td>11</td>
<td>36</td>
<td>90</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Stub Stem Pipes</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Snuff Cans</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>11</td>
<td>1.2%</td>
<td>39</td>
<td>1.0%</td>
<td>91</td>
</tr>
</tbody>
</table>

### Activities Group

<table>
<thead>
<tr>
<th>Item</th>
<th>39-40</th>
<th>47-48</th>
<th>110-123</th>
<th>161-162</th>
<th>Test Pits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Tools</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Farm Tools</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Toys</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Fishing Gear</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Storage Items</td>
<td>5</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Stable and Barn</td>
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<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Misc. Hardware</td>
<td>19</td>
<td>244</td>
<td>292</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Military Objects</td>
<td>0</td>
<td>5</td>
<td>17</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>24</td>
<td>2.7%</td>
<td>263</td>
<td>6.6%</td>
<td>341</td>
</tr>
</tbody>
</table>

**TOTALS**                     | 905   | 3986  | 15,665  | 293     | 20,849    |

Table 21. Artifact patterns at Mitchelville.
samples suggest that this Group might be expected to account for about 1%. The Arms Group is low, about 0.3%, while the Clothing Group is relatively high -- above 1.0% at each site. The Personal Group ranges from 0 to 0.5% and the two best samples suggest a range of 0.1 to 0.5%. Tobacco Group remains, for an ex-slave population, seem somewhat low, ranging from 0.7 to 1.2% although Singleton (1978:113) notes a similar situation at Colonels Island, Georgia and suggests that tobacco may have been difficult to obtain in the postbellum period. Finally, the Activities Group ranges from 2.2 to 7.8% and the two largest samples still reflect a range of 2.2 to 6.6%.

We believe it may be possible, at least tentatively, to suggest some explanations for these data and bring some order to the complexity of Mitchelville's patterning. A chi-square statistic for the four areas (examining only the Kitchen, Architecture, Clothing, Tobacco, and Activities artifacts because of sample size) revealed significant differences ($\chi^2 = 761.8$, significant at the 0.001 level). Even the 161-162 block and test pits evidence a significant difference (again excluding the Furniture and Personal classes; $\chi^2 = 42.494$, significant at the 0.001 level). However, 39.6 of the $\chi^2$ of 42.494 results from the Activities Group, suggesting that the Activities Artifact Group is responsible for the differences between the two areas. If the Activities artifacts are removed from consideration, $\chi^2 = 1.187$ and $p = 0.78$, demonstrating that there are no significant differences between the artifact patterns of the 161-162 and test pit areas, exclusive of the Activities artifacts. The empirical ranges for the Kitchen and Artifact Groups were plotted on a chart similar to that used by South (1977:147) along with the observed data from the four blocks (Figure 61). Several observations became immediately apparent. Although we were not able to plot the predictive pattern ranges, it was apparent that there would be little overlap (if any) between the Carolina Slave, Revised Carolina, Revised Frontier, and Georgia Slave Patterns. All four represent fairly tightly clustered empirical ranges, with the Carolina Slave Pattern exhibiting the greatest variability. The Piedmont Tenant/Yeoman Farmer pattern, in comparison, exhibits considerable variability and, in fact, even the empirical range overlaps that of the Revised Frontier Pattern. While we take no position on the appropriateness or viability of the Piedmont Tenant/Yeoman Farmer Pattern, its present range seems to reduce its heuristic value.

Two of the Mitchelville blocks (161-162 and the Test Pits block) tend to cluster just within or at the edge of the Piedmont Tenant/Yeoman Farmer Pattern and probably close to the 95% predictive range for the Revised Frontier Pattern. Another of the Mitchelville blocks (110-123) is found close to the Georgia Slave Pattern and probably within its 95%
Figure 61. Pattern ranges for Kitchen and Architecture Artifact Groups.
predictive range. The final block (39-49-47-48) is isolated and clearly anomalous.

It is easiest to discuss and dispense with the 39-40-47-48 block first. Although it has a low Kitchen Group when compared to the Architecture Group, the areas of Clothing, Personal, Tobacco, and Activities are not low. Although there are any number of explanations for this pattern (sample size bias, excavation area bias, structure function, etc.) we believe the explanation may be found in the structure's relatively short period of occupation. As South notes,

"[a] short occupation span would . . . produce a higher Architecture to Kitchen Group ratio, with a virtual absence of Kitchen Group artifacts anticipated" (South 1977:158).

We suggest that additional excavation in the vicinity of this structure, while perhaps slightly increasing the Kitchen to Architecture Group ratio, would reveal a simple structure occupied for a very brief period in Mitchelville's history.

The 110-123 block appears to be closer to the Georgia Slave Pattern in its Kitchen-Architecture ratio than to anything else. Closer examination, focusing on the other artifact groups, reveals that the 110-123 block fails to fall into the range of any of the Georgia Slave Artifact Patterns except for Tobacco. In every other category Mitchelville exhibits higher percentages -- in some cases (Furniture and Activities) substantially higher. While the 110-123 structure seems "top heavy" in architectural remains, the remaining artifacts do not suggest an extremely impoverished lifestyle. We feel several factors may explain the observed pattern, including substantial repairs to the structure over time (inflating the architectural category) and a middling economic status.

The final two collections, from 161-162 and the test pits, exhibit very similar Kitchen-Architecture ratios and probably represent nearly identical homesteads, supported by the chi-square statistic. If there was any degree of homogeneity in Mitchelville, which we doubt, the 161-162 block may represent the typical structure. The artifact patterns from these two structures exhibit some similarity to both the Revised Frontier Pattern and the Piedmont Tenant/Yeoman Farmer Pattern.

The similarity of the 160-161 block to a generalized "tenant" pattern is understandable as the two are closely linked, both culturally and economically. It seems likely that a number of Mitchelville tenants moved on to become either tenants or small yeoman farmers (see McGuire 1985).
The similarity between the Mitchelville data and the Revised Frontier Pattern is perhaps, at first, less simple to understand. A careful reading of Lewis's (1976:13-16) explanation of the frontier model, however, makes its applicability to Mitchelville easier to understand. Lewis notes that, "the frontier model deals primarily with cultural change among intrusive cultures faced with adaptation to a frontier situation" and that it has largely developed from the study of colonization (Lewis 1976:13).

Amy Friedlander (personal communication 1986) suggests that the question of black jewelry use may be a significant research topic. She correctly notes that by placing beads in the Clothing Group and other jewelry in the Personal Group (South 1977:95), archaeologists are ignoring that these objects (both beads and other jewelry) are clearly ornamental. It would be more reasonable, in the future, to place beads in the Personal Group. Such an approach at Mitchelville would increase the Personal artifacts to 0.2% in the 161-162 block and to 0.7% in the 110-123 block, while reducing the Clothing Artifact Group to 0.9% in the 161-162 block and to 1.9% in the 110-123 block. Viewed in this manner the Mitchelville blocks reveal levels of Personal artifacts which are within or exceed that of the Revised Carolina Artifact Pattern, which suggests that the freedmen actively acquired personables, such as jewelry.

Viewed as a total complex then, jewelry may provide insight on a significant Afro-American trait (see Otto 1984:174-175). Friedlander also suggests that the freedmen's use of jewelry may be analyzed at several levels of meaning (Amy Friedlander, personal communication 1986). At one level the blacks may have been mimicking the master class, adopting and exaggerating traits they observed among the plantation whites. The adoption of these traits may have assisted the freedmen to distance themselves from the plantation experience of slavery. At another level, however, the use of jewelry (and perhaps even the specific items) may be a retention of an earlier tradition similar to the survivals of Colono ware (Ferguson 1980) and black naming practices (Gutman 1976).

It obviously would be useful to not only obtain larger samples from these Mitchelville structures, but also to obtain samples from the postbellum structures not in Mitchelville (such as the nearby Drayton slave row, which continued to be occupied by freedmen) and from late nineteenth century tenant farmer structures in the Mitchelville vicinity. This tentative development and study of patterns exhibited by the Mitchelville data provides a starting point for our study of the changes brought about by the Port Royal Experiment and the gradual development of a Yeoman farmer class among the freedmen.
Status and Lifestyle Observations

We have previously mentioned the not too occasional high status items which found their way into the archaeological record at Mitchelville. Many of these items, such as furniture, tableware, stemware, and an occasional personal item, may have been removed from plantation houses (either by the blacks directly, or by soldiers who then bartered the items with the freedmen for goods and services). Such items, while perhaps providing some information on lifestyle and comfort, provide little evidence of status. As previously mentioned in the historical discussions, status differences were not immediately observable in any of the Mitchelville photographs, although several photographs did reveal the presence of plantation furniture in Mitchelville. Miller (1980) has recently suggested a technique for the analysis of ceramic collections to yield information on the economic value of the assemblage, which as Garrow notes, "theoretically provide a means of roughly determining the economic position of the household that used and discarded the ceramics" (Garrow 1982b:66). While this technique could revolutionize our perceptions of economic status of historic peoples, it has not been embraced by all historical archaeologists. It is limited to the cream colored wares (and a few other ceramics) of the nineteenth century, its methodology has not been perfected, and index values do not exist for all of the decoration/ware types for all of the time periods. In spite of these problems it, like South's pattern analysis, provides another significant analytical technique.

Miller's (1980) ceramic index values have been used for several of the Mitchelville structures, but it is appropriate to mention some of the biases or problems which may be reflected in the outcome of the study. First, sample size was not as large as used by Miller (1980) from his test sites or as large as used by Garrow (1982b) at the Washington, D.C. Civic Center. In the case of the 161-162 block, however, the sample probably approaches 100% simply through the extent of the excavations (although rear yard excavations were not extensive). At the present time we have no controls for sample sizes. Second, Miller's index is based on pricing data from English (primarily Staffordshire) potters. We do not know how closely American potters paralleled these price indices or what affect the increasing American industry may have had on this economic system by the end of the nineteenth century. We are unable to control for this potential bias, except to note that all of the marked ceramics from Mitchelville were English. Third, related to this problem are the large quantities of "white ironstone" which began to be produced in the 1850s and sold for prices equal to transfer prints. Miller suggests that, "[f]rom the mid-19th century, there appears to be a weaker relationship between
final cost of the vessels and their decoration" (Miller 1980:4). Fourth, as has been noted by other researchers, it is often necessary either to use different years' indices for a single collection or to make other assumptions about the pricing of unlisted decorative techniques (cf. Cheek 1986).

Prior to examining the application of Miller's indices to the 161-162 block there are several other useful observations which may be offered concerning the ceramics based on the minimum vessel study. It is clear that the Mitchelville inhabitants were not purchasing sets of china, although the idea of sets may have originated in the mid to late nineteenth century (Garrow 1982b:107). By 1880 a 112 piece transfer printed set of ironstone china cost only $10.00 and a 142 piece setting cost only $18.00. Semi-porcelain wares were more expensive and the Haviland enameled china with gold bands cost $77.00 for a 142 piece set (Morey, Churchill and Morey 1880). The failure to identify sets may be related to the economic status of the Mitchelville citizens, or it may be more complex and related to a cultural or ethnic pattern of food preparation and consumption habits. Review of the historic documents indicates that large quantities of tin plates, cups, and other items were being imported into Mitchelville, although references to any sort of china are absent. The archaeological record reveals little ironstone, presumably of higher price than whiteware, but does indicate the presence of tinware items as suggested by the historical data. Miller (1980:10) notes that tinware was lower in price than even plain CC ware. For whatever reasons (economics, culture, or ethnicity) the freedmen do not seem to have been spending much money on tableware.

Application of Miller's technique to the 161-162 block ceramics is shown in Table 22. The index values for this collection range from 1.00 to 1.29, although three of the four categories cluster between 1.00 and 1.12. Only the tea cups and saucers reveal noticeably higher status ceramics, based primarily on the high incidence of transfer printed pieces. Miller (1980:32), however, notes that while these printed wares were expensive, their popularity declined from the 1850s to the 1880s. It is possible that the abundance of those items may be due to a merchant "unloading" unpopular merchandise to the freedmen. If the index of these items was reduced to the same level as the Ironstone (2.50), then the average value of the collection would be reduced to 1.72, which at least on the surface appears more reasonable. Alternatively, these decorated wares may have been removed from a plantation house and may not reflect common wealth at all.

Table 23 examines the percentages of flatware, hollow ware, serving pieces, and utilitarian items from the 161-162 collection, while recognizing that tea cups and saucers can be split apart and used for two functions.
### PLATES

<table>
<thead>
<tr>
<th>INDEX VALUE</th>
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<th>NUMBER</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
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<td>ww, undec.</td>
<td>1.00 (1874)</td>
<td>12</td>
<td>12.00</td>
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<td>1.00 (1874)</td>
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<td>2.00</td>
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<td>1.00 (1862)</td>
<td>1</td>
<td>1.00</td>
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<tr>
<td>pw, undec.</td>
<td>1.00 (1862)</td>
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<td>1.00</td>
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<tr>
<td>yellowware</td>
<td>1.00</td>
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<td>2.25</td>
</tr>
<tr>
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<td>2.25 (1874)</td>
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Average value = 1.10

### TEA CUPS/SAUCERS

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<th>NUMBER</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ww, undec.</td>
<td>1.00 (1871)</td>
<td>6</td>
<td>6.00</td>
</tr>
<tr>
<td>ww, poly stamp</td>
<td>1.17 (1871-sponged)</td>
<td>1</td>
<td>1.17</td>
</tr>
<tr>
<td>ww, blk tp</td>
<td>4.50 (1856-1881 average)</td>
<td>1</td>
<td>4.50</td>
</tr>
<tr>
<td>ww, blue tp</td>
<td>4.50</td>
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<td>4.50</td>
</tr>
<tr>
<td>ww, red tp</td>
<td>4.50</td>
<td>*</td>
<td>9.00</td>
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<tr>
<td>ww, purple tp</td>
<td>4.50</td>
<td>*</td>
<td>4.50</td>
</tr>
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<td>ww, poly hp</td>
<td>1.17 (1875)</td>
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<td>1.17</td>
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<td>2.50 (1871)</td>
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Average value = 2.39

### BOWLS

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</tr>
</thead>
<tbody>
<tr>
<td>ww, undec.</td>
<td>1.00 (1858)</td>
<td>4</td>
<td>4.00</td>
</tr>
<tr>
<td>ww, blue stamp</td>
<td>1.10 (1855)</td>
<td>1</td>
<td>1.10</td>
</tr>
<tr>
<td>ww, annular</td>
<td>1.30 (1855)</td>
<td>1</td>
<td>3.90</td>
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<td>1.30 (1855)</td>
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<tr>
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Average value = 1.12

### PITCHERS

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</tbody>
</table>

Average value = 1.00

Table 22. Miller index values for the 161-162 block collection.
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<thead>
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<th>PLATES</th>
<th>INDEX VALUE</th>
<th>NUMBER</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ww, undec.</td>
<td>1.00 (1874)</td>
<td>4</td>
<td>4.00</td>
</tr>
</tbody>
</table>

Average value = 1.00

<table>
<thead>
<tr>
<th>TEA CUPS/SAUCERS</th>
<th>INDEX VALUE</th>
<th>NUMBER</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ww, poly hp</td>
<td>1.17 (1875)</td>
<td>2</td>
<td>2.34</td>
</tr>
<tr>
<td>ww, poly stamp</td>
<td>1.17 (1871-sponged)</td>
<td>1</td>
<td>1.17</td>
</tr>
<tr>
<td>ww, undec</td>
<td>1.00 (1871)</td>
<td>1</td>
<td>1.00</td>
</tr>
<tr>
<td>Ironstone, undec</td>
<td>2.5 (1871)</td>
<td>1</td>
<td>2.50</td>
</tr>
<tr>
<td>Yellowware</td>
<td>1.00</td>
<td>1</td>
<td>1.00</td>
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Average value = 1.34

<table>
<thead>
<tr>
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<th>PRODUCT</th>
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<tbody>
<tr>
<td>ww, undec.</td>
<td>1.00 (1858)</td>
<td>5</td>
<td>5.00</td>
</tr>
<tr>
<td>ww, annular</td>
<td>1.30 (1855)</td>
<td>4</td>
<td>5.20</td>
</tr>
<tr>
<td>Yellowware</td>
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<td>1.00</td>
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<tr>
<td>Blk. lead glazed</td>
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Average value = 1.11

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</tbody>
</table>

Average value = 1.00

Table 24. Miller index values used for the 110-123 block collection.
Tableware 31 67.4%
Plates (18-58.1%)
Bowls (10-32.3%)
Other (3-9.7%)
Tea & Coffeeware 10 21.7%
Utilitarian/Storage 46 10.9%

Table 23. Shape and function of ceramics from the 161-162 block.

The profile that emerges is very similar to the slave pattern observed by Otto (1984:68-69), with 67% of the items being tablewares. The slight tendency favoring plates is somewhat more typical of the overseer pattern and may indicate that food preparation and serving habits were beginning to change among the freedmen.

As a comparison, the next largest historic block, 110-123, was examined. While there were again occasional matches of cups and saucers, there was no evidence for the purchase of sets. An examination of the ceramics using Miller's indices reveals ceramics ranging from 1.00 to 1.34 in economic scale (Table 24). While the values are uniformly lower for this block, teawares again reveal higher values than the other forms, suggesting that Mitchelville occupants had a consistent source for more decorated teawares.

Table 25 reveals an emphasis on tablewares, similar to the 161-162 and Otto's (1984:68) slave sites, as well as a dependence on bowls, another feature frequently found at slave sites.

Tableware 15 71.4%
Plates (3-20.0%)
Bowls (11-73.3%)
Other (1-6.7%)
Tea & Coffeeware 5 23.8%
Utilitarian/Storage 21 4.8%

Table 25. Shape and function of ceramics from the 110-123 block.

A different situation is apparent in the 91-92 block, which has demonstrated its origin as a secondary midden
<table>
<thead>
<tr>
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<th>ASSIGNED (date)</th>
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<td>2.36</td>
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<td>7.74</td>
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<td>1.25 (1855)</td>
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<td>8</td>
<td>10.00</td>
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<td></td>
<td>3</td>
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<td>1.50</td>
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<tr>
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<td>3</td>
<td>4.50</td>
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Average value = 1.35

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<tr>
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<td>1.30</td>
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<tr>
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<td>1.10 (1858)</td>
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<td>4</td>
<td>4.40</td>
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<td></td>
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Average value = 1.22

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<td>2.00</td>
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<td>1.97</td>
</tr>
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<td>pw, blue tp</td>
<td>3.34 (1814-1846 average)</td>
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</tr>
<tr>
<td>pw, yellow glazed tp mug</td>
<td>4.00 (1857)</td>
<td></td>
<td>1</td>
<td>4.00</td>
</tr>
<tr>
<td>pw, annular mug</td>
<td>1.97 (painted 1814-1846 average)</td>
<td></td>
<td>2</td>
<td>3.94</td>
</tr>
<tr>
<td>porcelain, blk tp</td>
<td>4.00 (1875)</td>
<td></td>
<td>1</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24</td>
<td>59.87</td>
</tr>
</tbody>
</table>

Average value = 2.49

<table>
<thead>
<tr>
<th>SERVING BOWLS</th>
<th>INDEX VALUE</th>
<th>ASSIGNED (date)</th>
<th>NUMBER</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>pw, blue hp lid</td>
<td>-</td>
<td></td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>ww, blue edge lids</td>
<td>-</td>
<td></td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 26. Miller index values used for the 91-92 block collection.
deposit. Table 26 illustrates the results of applying Miller's (1980) economic scaling to the collection. The results of the study must be reviewed with caution, however, since we have had to expand the indices beyond the limits of CC ware to include the quantities of pearlware identified from the block. In addition, we have used indices from several time periods. The average values range from 1.22 to 2.49, only slightly higher than the Mitchelville structures, although the teawares again exhibit higher status items than either the plates or bowls.

We thought the whitewares, which were probably added to the midden later in time than the pearlwares, might have a tempering effort on the average index values. Averaging the pearlware plates alone yields a value of 1.49, only slightly higher than the combined creamwares - pearlware - whiteware total of 1.35. The values for this collection, however, are still surprisingly low. In spite of the quantity of decorated wares this assemblage does not appear to represent high status plantation main house refuse.

If the function of the various ceramics is examined, as illustrated in Table 27, the collection reveals that while it is similar to Otto's (1984:68) slave pattern, it is approaching the distribution observed at an overseer's house. If the tablewares are examined by function they are found to very closely parallel the pattern Otto (1984:69) found at the overseer's house. Finally, if the ceramics are examined only by surface decoration (ignoring the type of ware), all decorative types are represented in nearly similar quantities - banded is represented by 15%, edged by 23%, hand painted by 15%, transfer printed by 25%, and undecorated wares by 22%. While this is not similar to what Otto (1984:64) suggests will be found at a planter's kitchen, it falls in the range of what might be found at either a slave or overseer's site.

<table>
<thead>
<tr>
<th>Tablewares</th>
<th>49</th>
<th>62.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plates</td>
<td>(35-32.4%)</td>
<td></td>
</tr>
<tr>
<td>Bowls</td>
<td>(11-22.4%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>(3-6.1%)</td>
<td></td>
</tr>
<tr>
<td>Tea &amp; Coffeeware</td>
<td>24</td>
<td>30.4%</td>
</tr>
<tr>
<td>Utilitarian/Storage</td>
<td>6</td>
<td>7.6%</td>
</tr>
</tbody>
</table>

Table 27. Shape and function of ceramics from the 91-92 block.

The analysis of ceramics from the 91-91 block provides subtle clues concerning the origin of the midden. While all of the remains have had a "feeling" of higher status, the study of the ceramics suggests the status as only slightly higher than that observed at several of the Mitchelville structures. No intact or reconstructable remains were found,
which suggests that not all of the debris were moved to the 91-92 block from their original location. The high kitchen to low architecture ratio, which is suggestive of the Carolina Slave Pattern, is also suggestive of what might be expected from privy debris (Lewis and Haskell 1981:31-33), or any similar deliberate deposit of waste material. It is tempting to suggest that the 91-92 block, at the periphery of the Mitchelville village, may have served as the village dump from 1862 to 1867. Reference to the historical data indicates that the Mitchelville Council of Administration had the power to,

> clean the streets . . . , [and to] establish wholesale sanitary regulations (Reid 1866:91).

Its short duration, early in the village's history, might explain the presence of a number of high status goods, removed from plantation houses in 1861, but quickly broken or otherwise discarded. In spite of these high status goods, the act that all village garbage was included would tend to temper the economic scale and to give the assemblage a mixed appearance.

The historical evidence has previously suggested that while the Hilton Head post was active, traders were not allowed to sell alcohol to the freedmen, although by the 1870s it appeared that alcohol was readily available. The minimum glass vessel count was examined for the 161-162 block to determine the significance of alcohol bottles in the collection. The results are presented in Table 28. The container form analysis suggests a substantial quantity of the bottle glass came from alcohol bottles (including wine, ale, stout, and liquor). Yet, given the extent of archaeological studies in this block and the length of site occupation, the 51 recovered bottles would not seem to represent an extraordinary alcohol consumption. Alcohol does, however, seem to have been the preferred purchased beverage.

<table>
<thead>
<tr>
<th>MNI Count</th>
<th>%</th>
<th>% Bottles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Bottles</td>
<td>7</td>
<td>5.2</td>
</tr>
<tr>
<td>Medicine Bottles</td>
<td>23</td>
<td>17.2</td>
</tr>
<tr>
<td>Bitters Bottles</td>
<td>3</td>
<td>2.2</td>
</tr>
<tr>
<td>Soda Bottles</td>
<td>22</td>
<td>16.4</td>
</tr>
<tr>
<td>Alcohol Bottles</td>
<td>51</td>
<td>38.1</td>
</tr>
<tr>
<td>UID Bottles</td>
<td>7</td>
<td>5.2</td>
</tr>
<tr>
<td>Glasses/Tumblers</td>
<td>19</td>
<td>14.2</td>
</tr>
<tr>
<td>Other Tableware</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>134</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 28. Major glass forms from the 161-162 block.
Otto (1984:78-79) found that the slave site he studied tended to be similar to the overseer's in the quantity of alcoholic beverage glass (52-58%), while the owner's kitchen refuse exhibited a higher quantity (72%), which suggests a reasonable relationship between wealth and the status of drinking. On the other hand, the owner, presumably because of better health care, less strenuous work, and better sanitation, deposited fewer medicine bottles (17%) than did either the slaves (31%) or the overseer (43%). These data suggest that alcohol consumption may have gone down among the freemen, as did the use of proprietary medicines. Whether this decline (if real) is the result of changing cultural or work patterns, or simply the reflection of having to purchase items that previously were supplied as part of a ration, is at present unknown.

If our assessment that the 91-92 block functioned as Mitchelville's dump from 1862 through 1867 is correct, then we would not expect to see large quantities of alcohol bottles. In fact, the block contained only four alcohol bottles (all wine), one soda bottle, two unidentified bottles, and four glasses/tumblers. Although the alcohol bottles comprise 57% of the sample, only four bottles are represented and the variety is very limited (perhaps representing what could be removed from plantation houses by either blacks or the troops).

When the artifacts from Mitchelville are viewed as an entire assemblage, it becomes apparent that the freedmen were actively participating in a cash economy and were beginning to purchase (or otherwise acquire) higher status goods than they previously owned. Although the assemblage reflects a prevailing poverty which continued to typify black farmers and tenants into the twentieth century, we do not see evidence in the archaeological record for a slave artifact pattern simply being transported into freedom. Nor is there any evidence that the citizens of Mitchelville were worse-off than before freedom. The wholesale cost of items shipped by New York suppliers to Mitchelville store owners (prior to addition of the retail profit) was from 108% to 557% higher in price than identical goods, also brought on the New York market and shipped by The American Missionary Association. The wholesale Mitchelville prices are also 105% to 308% higher than the retail prices charged Louisiana Freedmen at plantation stores, under the careful scrutiny of the Freedmen's Bureau (Seagrave 1975:118-119). It is probable that the Mitchelville blacks would have been better off than they were had it not been for profiteering by the merchants.
Summary

We have previously discussed the historical documentation in terms of its relevance to the archaeological data and offered a series of archaeological expectations based on the historical sources. It is appropriate in this summary to examine those expectations.

It was anticipated that a number of high status goods and arms would be found in the archaeological record, the result of blacks scavanging, looting, or bartering. We have, in fact, identified a small number of high status items, such as fancy jewelry, furniture hardware, lead crystal, silver utensils, fancy buttons, an expensive folding rule, and transfer printed ceramics. There are a sufficient number of these goods to clearly indicate that the freedmen had greater access to them than they did as slaves, but there is no evidence of opulence. The arms found at Mitchelville reveal the use of muskets, as well as more modern weapons, so there may be evidence of scavanging, looting, or bartering, but the quantity of arms is not unusually high when compared to antebellum slave sites. This study provides little evidence of the freedmen procuring military equipage (particularly abandoned Confederate arms), which is unexpected.

We believe there is evidence in the archaeological record of the freedmen's introduction to a consumer economy. There are luxury goods (or remains of these goods), such as tin cans, calico buttons, brass lamps, tumblers, and abundant ceramics. The artifact patterns from Mitchelville demonstrate that the freedmen possessed more furniture than typical for slaves or yeoman farmers, clothing items at the uppermost range of the slaves and yeoman farmers, more personal items than antebellum slaves (and possibly as many as are found at antebellum higher status sites), and many more activities items than typical of the antebellum slaves (perhaps because the freedmen were self-reliant and/or yeoman farmers). Miller's economic scale, however, does not reveal any evidence of particular wealth based on the ceramics, which are relatively plain and simple. While the freedmen had more possessions than they had as slaves, the possessions were relatively inexpensive.

Otto (1984:171-175), based on excavations at a number of antebellum slave and free black house sites, has suggested a tentative pattern of "Afro-American archaeological visibility." This pattern includes ceramics which are primarily banded, edge, or undecorated wares, and which are primarily serving bowls. This pattern has been found in Otto's own study at Cannon's Point Plantation, at Black Lucy's Garden (Baker 1978), and at Parting Ways (Baker 1978). The abundance of the banded motif is explained by relative
costs and the emphasis on bowl forms is explained by a reliance on one-pot, slow-simmer meals. The pattern also includes abundant evidence of medicine bottles which contained calomel or mercurous chloride, and blue, faceted beads.

These "artifactual characteristics" are not uniformly present at Mitchelville. Although plain pearlwares and whitewares dominate the collection, banded ceramics are not common (accounting for only 5% of the Mitchelville collection), and transfer printed ceramics account for nearly 16% of the total. There is clearly a shift away from banded or annular wares -- perhaps part of the freedmen's effort to distance themselves from the plantation experience (and similar to their rejection of "negro cloth" and hesitancy to plant cotton). Alternatively, this may represent an attempt to emulate plantation whites by adopting the ceramics that they were not permitted to use as slaves. Likewise, bowl forms, which account for 41% to 53% of the tableware forms at Parting Ways, Black Lucy's Garden, and Cannon's Point, account for only 34% of the tablewares at Mitchelville. If "form follows function," then this may suggest that the dietary pattern of the Mitchelville freedmen was different from that typical of slaves and antebellum free blacks. Medicine bottles, which account for 31% of the glass at Cannon's Point, account for only 17% of the Mitchelville glass, and very few vial forms are present. While freedom may have promoted better living and working conditions and hence less need for medicine, it seems as likely that other purchases were given a higher priority. Only the presence of blue, faceted beads clearly continues into the postbellum and may evidence elaboration to include a variety of ornamental features. Personal decoration, like ceramics, may be an effort among the freedmen to imitate the master class, or it may represent a significant African tradition.

There is archaeological evidence that another type of good, previously supplied by the owner, was not as abundant in postbellum times. Tobacco pipes are observed to range as high as 9.7% of the artifact pattern on Georgia slave sites, yet they account for only about 0.7% of the Mitchelville artifacts. This appears to represent a "luxury" of slavery that was less significant in freedom.

The suspected absence of military influence on Mitchelville is largely supported by the scarcity of military hardware (excluding buttons). Most of the military objects found at Mitchelville were shell and fuse fragments, probably from the November 1861 bombardment of the island. Only one trash pit appears possibly related to military trash disposal practices. Military buttons, as expected, are quite numerous and are probably the result of distributing surplus military clothing as part of the relief effort.
We speculated, based on the historic records, that there might be a change in the refuse disposal practices of the freedmen because of the military influence. We have identified the 91-92 block as the probable location of a community dump. Refuse disposal practices have not been clearly identified, however, since little work was conducted in either the front or rear yards associated with structures. Rear yard trash disposal has been identified from one house site, although it is not particularly dense and it almost appears to represent a "trash pile" rather than a uniformly scattered midden deposit.

The Mitchelville structures, in most respects, closely resemble our expectations based on the historic record. They do, in fact, exhibit considerable individuality and variability in construction style and detail. They have left clear archaeological signatures, with about 54-63% of the recovered artifacts typically being architectural, although in no case were archaeological features present to allow the reconstruction of house size or structural details. Brick and tabby chimneys are more common than was suggested by the historical documentation.

The individual abilities, tastes, and resources of the freedmen are perhaps best exemplified by contrasting the structures observed in the 110-123 and 161-162 blocks. Although both exhibit about the same proportion of architectural remains, the 161-162 structure probably contained more windows and had a brick fireplace. The 110-123 structure had fewer windows and was built with a tabby wattle and daub chimney. This tabby wattle and daub construction technique dates to the eighteenth century and was not used by mid-nineteenth century antebellum planters. Yet it is clear that the technique had been kept alive by the blacks.

The archaeological evidence also supports our expectation that there would be evidence of salvaged building materials and refurbishing of structures. The structure in the 38-40-47-48 block appears to have been torn down in the 1880s, leaving robbed builder's trenches. The 161-162 structure reveals two building episodes, with the second structure apparently more substantial and most likely an improvement over the first. The bricks used in both structures were salvaged from previous buildings. Window glass from most structural remains suggests some repair into the 1880s and the 39-40-47-48 structure may have been built using glass salvaged from an antebellum source.

Although occupation into the twentieth century was anticipated at Mitchelville, this work found almost no evidence of occupation past about 1890. This indicates that none of the structures thus far investigated was occupied into the period of the kin-based community. While it would
be helpful to have access to data from this later time period, the information collected in this study may be relied on as indicative of the period from 1862 until the 1880s.
Introduction

The vertebrate faunal collection from the Fish Haul site analyzed for this study consists of more than 4471 bone elements and fragments that weigh 11.7 pounds (5297.1 grams). The faunal material is from two components at the site, the prehistoric Stallings component and the late nineteenth century historic component associated with the town of Mitchelville. The prehistoric Stallings component possessed faunal remains in both the thin midden and the features it had associated with it. The historic component, associated with the town of Mitchelville, produced faunal material in both features and midden zones associated with former houses that formed part of the town. The faunal collection was obtained from the prehistoric midden and house midden zones by screening soil through 1/4 inch (0.6 centimeter) mesh screen. The bone samples from the features were recovered by water flotation and screening soil through 1/16-inch (0.2 centimeter) mesh screen. This report provides a description of the animal species found in these bone samples, the results of the zooarchaeological analysis of the remains, and a comparison of the data obtained from the two components with that for other sites of the appropriate time period from the coast of the Carolina Province.

The Carolina Province, the transitional zone between the tropical fauna of the southern Atlantic and the temperate fauna of the northern Atlantic, lies between Cape Hatteras, North Carolina and Cape Canaveral, Florida (Briggs 1974; Ekman 1953). Hilton Head Island, on which the Fish Haul site is found, is part of the Sea Island section of the coast that lies south of the Santee River into northern Florida. With the area north to Cape Fear, North Carolina forming the northern embayed section (Emery and Uclup 1972). Along the edge of the Continental Shelf, the warm Florida Current flows northward bringing tropical marine species north as far as Cape Hatteras. Closer inshore, the cold Labrador Current flows southward, and temperate marine species may be found in these cool waters as far south as Cape Canaveral.

The Sea Islands possess a relatively uniform temperature, rainfall, topography, and vegetation cover. The seaward side of each of the Sea Islands is usually lined with coastal beaches, and dunes which sometime reach a height of seven or eight meters (Johnson et al. 1974; Mathews et al. 1980). Maritime oak forests and some pine forests grow behind the dunes. Freshwater creeks and ponds are occasionally found on these islands. The fringes and sometimes the interiors of the Sea Islands often possess
extensive salt marsh systems. The mainland side of the typical Sea Island also has extensive salt marshes cut by tidal creeks that drain into large sounds, which in turn flow into the ocean between the Sea Islands. The maritime forests, freshwater creeks, salt marshes, and sound define a number of diverse habitats that were exploited by both the Prehistoric and Historic inhabitants of the area.

Analytical Techniques

The faunal collection from the Fish Haul site was studied by the authors using standard zooarchaeological procedures and the comparative faunal collections housed at the Historic Sites Section, Department of Cultural Resources and the Museum of Natural History in Raleigh, North Carolina. The bone material was sorted to class, suborder, or species, and individual bone elements were identified. The bones of all taxa and other analytical categories were also weighed and counted. The Minimum Number of Individuals (MNI) for each animal category was determined by using paired bone elements and age (mature/immature) as criteria. A minimum distinction method (Grayson 1973:438) was used to determine the MNI for each of the two archaeological components at Fish Haul Creek. This method provides a conservative MNI estimate based on the total faunal assemblage from each cultural component (Stallings and historic late nineteenth century in this case) at a site.

As a measure of zooarchaeological quantification, MNI has a number of problems (Grayson 1973:438; 1984:28–92; Klein and Cruz-Uribe 1984:26–32). How one aggregates the MNI will affect the number of individuals calculated. If MNI is calculated based on the entire site, the number will be smaller than if it is calculated for each excavation unit and totaled for the site. Use of MNI emphasizes small species over large ones. For example, a collection may have only a few large mammals, such as deer, and scores of fish, yet, the amount of meat contributed by one deer may be many times greater than that contributed by a score or two of fish.

Given the problems associated with MNI as a zooarchaeological measure, an estimate of biomass contributed by each taxa to the total available for use by the inhabitants of a site is also calculated. The method used here to determine biomass is based on allometry, or the biological relationship between soft tissue and bone mass. Biomass is determined using the least squares analysis of logarithmic data in which bone weight is used to predict the amount of soft tissue that might have been supported by the bone (Casteel 1978; Reitz 1982, 1985; Reitz and Cordier 1982; Reitz and Scarry 1986; Wing and Brown 1979). The relationship between body weight and skeletal weight is expressed by the allometric equation \( Y = ax^b \), which can also be written as \( \log Y = \log a + b (\log X) \) (Simpson et al.
In this equation, \( Y \) is the biomass in kilograms, \( X \) is the bone weight in kilograms, \( a \) is the \( Y \)-intercept for a log-log plot using the method of least squares regression and the best fit line, and \( b \) is the constant of allometry, or the slope of the line defined by the least squares regression and the best fit line. Table 29 details the constants for \( a \) and \( b \) used to solve the allometric formula for a given bone weight \( X \) for each taxa identified in the archaeological record.

Biomass was used to identify the 10 species/taxa which probably contributed the greater part of the total meat available for consumption by the inhabitants of each archaeological component. Likewise, the identified species for both the Stallings and the Mitchelville faunal collections were summarized into faunal categories based upon vertebrate class and gross habitat preference. Other studies conducted include examination of the selected mammal bone elements for evidence of butchering (saw, cut, and chop marks, and burning); and analysis of the distribution of selected mamamal bone elements by location as part of the skeleton.

**Identified Fauna**

Before considering the results of the zooarchaeological study of the faunal remains recovered from the Stallings and Mitchelville components, the general use and habitat preference for each identified species will be considered.

**Domestic Mammals**

Two animal species, cow (Bos taurus) and pig (Sus scrofa), are the only domestic mammals identified in the collection. No dog (Canis familiaris) remains were noted in either the prehistoric or historic faunal collections, nor were the remains of any domestic Caprines, either goat (Capra hircus) or sheep (Ovis aries), present in the historic faunal sample.

Pigs are one of the most important domestic mammals used for food in the southeastern United States (see Reitz 1987; Reitz and Scarry 1986:69-70). Pigs require little care, as they can be allowed to roam free, or they can be penned. Their diet can consist of a variety of food resources, including seeds, roots, fruits, nuts, mushrooms, snakes, larvae, worms, eggs, carrion, mice, small mammals, kitchen refuse, feces, and grain. Pigs store about 35% of the calories they consume, and can gain about 2 pounds (0.7 kilograms) for every 15 to 25 pounds (5.6 to 9.3 kilograms) of feed (Towne and Wentworth 1950:7-8). Within 18 months, a pig can gain up to 200 pounds (74.6 kilograms), of which about 120 pounds (44.8 kilograms) can be consumed. Dressed, a pig carcass can yield up to 65 to 80% meat. An idea of the
<table>
<thead>
<tr>
<th>FAUNAL CATEGORY</th>
<th>log a</th>
<th>b</th>
<th>r²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammal</td>
<td>1.12</td>
<td>0.90</td>
<td>0.94</td>
</tr>
<tr>
<td>Bird</td>
<td>1.04</td>
<td>0.91</td>
<td>0.97</td>
</tr>
<tr>
<td>Turtle</td>
<td>0.51</td>
<td>0.67</td>
<td>0.55</td>
</tr>
<tr>
<td>Snake</td>
<td>1.17</td>
<td>1.01</td>
<td>0.97</td>
</tr>
<tr>
<td>Chondrichthyes (Shark)</td>
<td>1.68</td>
<td>0.86</td>
<td>0.85</td>
</tr>
<tr>
<td>Osteichthyes (Boney Fish)</td>
<td>0.90</td>
<td>0.81</td>
<td>0.80</td>
</tr>
<tr>
<td>Non-Perciformes</td>
<td>0.85</td>
<td>0.79</td>
<td>0.88</td>
</tr>
<tr>
<td>Siluriformes (Catfish)</td>
<td>1.15</td>
<td>0.95</td>
<td>0.87</td>
</tr>
<tr>
<td>Perciformes (Sea Bass, Bluefish, etc.)</td>
<td>0.93</td>
<td>0.83</td>
<td>0.76</td>
</tr>
<tr>
<td>Sparidae (Porgy)</td>
<td>0.96</td>
<td>0.92</td>
<td>0.98</td>
</tr>
<tr>
<td>Sciaenidae (Drum)</td>
<td>0.81</td>
<td>0.74</td>
<td>0.73</td>
</tr>
<tr>
<td>Pleuronectiformes (Flounder)</td>
<td>1.09</td>
<td>0.89</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Derived from Table 4 in Reitz (1985: 44).

These variables are used to solve the formula $Y = aX^b$ or $\log Y = \log a + b(\log X)$; where $Y$ is the biomass in kilograms, $X$ is the bone weight in kilograms, $a$ is the $Y$-intercept, $b$ is the slope, and $r^2$ is the proportion of total variance explained by the regression model (cf. Reitz 1985:44; Reitz and Scarry 1986:67).

Table 29. List of allometric values used in this study to determine biomass in kilograms based on bone weight expressed in kilograms.
possible size of the pigs that were available to the inhabitants of Mitchelville can be gained from the average weight of 140 pounds (52.2 kilograms) for 4,000 southern pigs slaughtered in 1860 (Fogel 1965:206 in Reitz and Scarry 1986:70). Pork preserves very well, is satisfying due to its high fat content, and is a good source of thiamin (Towne and Wentworth 1950:249).

Although cattle (Bos taurus) has been an important meat source during the history of the southeastern United States, it is in many ways a more burdensome meat resource (Reitz and Scarry 1986:70). Cows give less of a return for the energy input provided to raise them (Towne and Wentworth 1950:7-8). Cows feed on grain and grasses, and will not produce good weight gains without quality and quantity sources of either. Also, cattle store only 11% of the calories they consume and yield only 50 to 60% dressed meat. Balanced against the greater labor required to raise cattle above that required for swine and the fact that beef does not preserve as well as pork (Tomhave 1925:275), there is a demand for fresh beef and for cattle hides (Rouse 1977:32). Also, a number of other foods, such as milk, cheese, butter, and buttermilk, can be obtained from cattle.

Wild Mammals

The most numerous of the wild mammals in both assemblages is the white-tailed deer (Odocoileus virginianus). A variety of uses exist for the different parts of this animal, so that almost all of a deer was utilized prehistorically by the Indians in some manner (Runquist 1979:169; Swanton 1946:249). Deer metatarsals were used as beamers and split to make needles; ulnae were used as awls; and antlers were made flakers, projectile points, and fish hooks (Swanton 1946:249; see also Trinkley 1980c). Rattles, flutes, bracelets, and beads were also made from deer bone (Swanton 1946:249). Sinew and entrails were manufactured into bow strings, rawhide, throngs, and "thread" (Swanton 1946:249). Deer brains were combined with green corn to tan leather (Lawson 1967:217). The skins, hooves, and antlers were rendered into glue. Heads, skins, and antlers were used as decoys in hunting and as status/clan indicators. Hides were sewn into clothing, and used as coverings for houses/doors (Swanton 1946:249). Presumably, the only use that the occupants of Mitchelville had for deer was as a food resource, and perhaps for hides. In general, the deer's preferred habitat is the edge of deciduous forests and open forests, although they will move to mudflats around marshes to feed on the grasses found there.

Two rabbit species are common to the study area, the eastern cottontail (Sylvilagus floridanus) and the marsh
rabbit (*Sylvilagus palustris*). Besides being used by the Indians for food, the skins of rabbits were made into robes (Swanton 1946:250). Rabbit innominates and scapulae were used as beads by the Indians (Wilson 1984:519). Probably, the historic inhabitants of Fish Haul Creek used rabbits for food. Rabbits occupy a number of different habitats, but are usually found in thickets, in overgrown fields, and along the edge of forest clearings and forest edges. Important to rabbits in their choice of habitats is access to escape cover offered by thickets, weed patches, and dense high grass. The marsh rabbit generally prefers damper ground than does the eastern cottontail, and is somewhat more likely to be found in locations near marshes.

Raccoon (*Procyon lotor*) bones are present in small numbers in both the Stallings and nineteenth century historic faunal assemblages. Raccoons served as a food resource for the Indians, the furry skin was used for clothing, and claws were utilized as ornaments (Swanton 1946:250). The raccoon remains found in the historic faunal assemblage presumably served as a food resource. This mammal is able to adapt to a variety of habitats, although they prefer wooded areas near water.

The fox squirrel (*Sciurus niger*) is present only in the prehistoric Stallings faunal material. The fox squirrel prefers heavily forested habitats, or forests with mature hardwoods and an understory of smaller trees and shrubs, although they can sometimes be found in more open forest and among large trees at forest edges. During prehistoric times squirrels were used as food, the skins as clothing, the entrails for bowstrings, and the claws for ornaments (Swanton 1946:250).

Remains of the opossum (*Didelphis virginiana*) are present in small quantities in the nineteenth century Mitchelville bone sample from Fish Haul. The opossum was probably used as a food resource. The preferred habitat of the opossum, a nocturnal animal, is wooded areas near water, but they are often found in and around human settlements.

### Domestic Birds

Chickens (*Gallus gallus*) are the most abundant bird identified at the site. The only other possible domesticated birds present are the turkey and Canadian goose, which are discussed below. Chickens, like pigs, can be raised either by letting them run loose or by penning them. Besides serving as a meat resource, chickens also supplied eggs that could be consumed.

The Canada goose (*Branta canadensis*), as a wild species, winters along the Carolina coast (Potter et al. 1980:79).
The Canada goose was also domesticated during the late 1800s, and by the end of the century standards of excellence for Canada geese as a poultry breed had been established (America Poultry Association 1874; Johnson and Brown 1903). Although it could not be determined by examining the bone elements if the specimen was wild or domesticated, the Canada goose remains present in the historic faunal sample at Fish Haul were placed in the domesticated bird category based on a reference in the historical records concerning the presence of domesticated geese and turkey on Hilton Head Island during the 1860s (Todd 1886:104-105).

Wild Birds

Several species of wild birds are present in the Fish Haul faunal assemblage, but only ducks (Anas spp.) and the turkey (Meleagris gallopavo) are present in both the prehistoric and historic bone samples. During the prehistoric era, the turkey was almost as useful to the Indians as the deer. The animal was used as a food resource, and its bones were fashioned into tools such as awls, beamers, and spoons. Beads and other ornaments were made from various skeletal elements, primarily the phalanx of the wing and the long bones. Feathers were prized for making headdresses and cloaks, and in the manufacture of arrows (Swanton 1946:250). Lawson (1967:17, 25, 31, 153, 216, 227) noted that the Carolina Indians used turkeys as a food resource, that turkey feathers were made into garments, and that "the soft down on a Turkey's rump" was used to treat open sores. Wild turkeys are able to survive in a number of different habitats, but they generally prefer forested areas.

The turkey remains found in the Mitchelville faunal sample are assigned to a domestic species, although wild species of turkey could be represented. By the late 1800s, standards of excellence for turkeys as a poultry breed had been established (Johnson and Brown 1903). The turkey utilized during the historic period probably served primarily as a food resource.

The only other birds present in both faunal assemblages at Fish Haul are unidentified migratory waterfowl, ducks (Anas spp.). The waterfowl would have been used as a food resource, and for its feathers during the prehistoric era, and primarily as a food resource in historic times. A number of duck species, including the mallard (Anas platyrhynchos), black duck (Anas rubripes), common teal (Anas crecca), blue-winged teal (Anas discors), American wigeon (Anas americana), and northern shoveler (Anas clypeata), commonly winter along the Carolina coast and a small number may live year-round on the coast (Potter et al. 1980:83-90).
The common loon (Gavia immer) is also a migratory waterfowl that is a common winter resident in Carolina coastal waters from October until May (Potter et al. 1980:39-40). Loons obtain their food, primarily fish, by diving and pursuing their prey underwater. They move on land only with great difficulty, and can only take flight by pattering along the surface of open water for a considerable distance. Remains of the common loon were found only in the prehistoric Stallings faunal sample, and undoubtedly represent a food resource.

One bone element from a tern (Sterna spp.) was recovered in the nineteenth century historic faunal assemblage at Fish Haul. A number of terns inhabit the coast of Carolina during all or part of the year, including Foster's tern (Sterna forsteri), common tern (Sterna hirundo), roseate tern (Sterna dougallii), sooty tern (Sterna albatross), bridled tern (Sterna anaethetus), least tern (Sterna albifrons), royal tern (Sterna maxima), sandwich tern (Sterna sandvicensis), and Caspian tern (Sterna caspia) (Potter et al. 1980:176-183). Terns are slender birds that inhabit beach and dune areas, and that feed by diving from the air upon insects and small fish. The specimen from Fish Haul may represent a food resource or a source of feathers. The least tern, a common summer resident of the Carolina coast, was once nearly exterminated by plummage hunters (Potter et al. 1980:179).

The last bird species positively identified in the bone samples from the site is the rock dove (Columbia livia). This introduced species is found in all but the remote parts of the Carolinas, and are most numerous in urban habitats (Potter et al. 1980:188). The rock dove is included with the Wild Birds because there is no evidence that the bird was eaten by humans. Rock doves were probably domesticated at one time, but they have since gone wild and become a commensal (Elizabeth Reitz, personal communication 1986).

Aquatic Reptiles: Turtles

The diamondback terrapin (Malaclemys terrapin) is a turtle found in an estuarine setting that feeds on marine molluscs (Obst 1986:113). The subspecies Carolina diamondback terrapin (Malaclemys terrapin centrata), which inhabits the Atlantic Coast from North Carolina to Florida (Obst 1986:214), is probably the turtle represented in the prehistoric and historic faunal collections at Fish Haul Creek. The diamondback terrapin was an important food resource in the southeast that became an accepted delicacy throughout the United States during the nineteenth and early twentieth centuries (Obst 1986:113, 183). The taste of diamondback terrapin flesh is considered to lie between that
of chicken and fish. It was only the enactment of protective legislation 60 years ago that prevented the extinction of the diamondback terrapin (Obst 1986:113).

Another turtle present in small quantities in the historic faunal collection is the mud turtle (*Kinosternon* spp.). This turtle also dwells in the water, although it is usually found in fresh water (Obst 1986:109). Mud turtles were possibly used for food.

**Pisces**

Remains of fish are an important part of both faunal assemblages at Fish Haul. The only predominately freshwater fish identified are the bullhead catfish (*Ictalurus* spp.), with one species, the yellow bullhead catfish (*Ictalurus natalis*), being positively identified in the Mitchelville bone sample. The yellow bullhead is found in pools and backwaters of sluggish streams, usually in areas of heavy vegetation (Lee et al. 1980:442). The most common freshwater catfish found in the sluggish waters and low salinity areas of South Carolina estuaries is the white catfish (*Ictalurus catus*) (Wenner et al. 1981).

The remaining fishes identified in the collection are primarily marine species that either spawn in the estuary or use the area as a nursery (Boschung et al. 1983). The most abundant family in the prehistoric and historic collections are drums (Sciaenidae). The only drum species positively identified is the black drum (*Pogonias cromis*). This species is commonly found over sand or sandy mud in bays and estuaries (Boschung et al. 1983:623). Other members of the drum family include silver perch (*Bairdiella chrysoura*), seatrout (*Cynoscion* spp.), spots (*Leiostomus xanthurus*), red drum (*Sciaenops ocellatus*) and star drum (*Stellifer lanceolatus*). All are commonly found in bays and estuaries.

One specimen of the sheepshead (*Archosargus probatocephalus*) was recovered in the prehistoric Stallings bone sample at Fish Haul Creek. The sheepshead usually is found in muddy, shallow water or over oyster beds (Boschung et al. 1983:613).

The remaining marine fish specimens, both present in the nineteenth century Mitchelville faunal material, are flounder (*Paralichthys* spp.) and shark (*Chondrichthyes*). The southern flounder (*Paralichthys lethostigma*), is a common estuarine and offshore inhabitant (Boshcung et al 1983:741-742). Generally speaking, sharks are found in estuaries throughout the Carolina Province only during the warm months (Dahlberg 1975; Schwartz and Burgess 1975). Common estuarine sharks include the dusky shark (*Carcharhinus obscurus*), bull shark
(Carcharhinus leucas), and the bonnethead shark (Sphyraena tiburo) (Boschung et al. 1983:340-346).

Commensal Species

Commensal species, animals commonly found near human occupations as pests or vermin, identified include the rat (Rattus spp.) and hispid cotton rat (Sigmodon hispidus). In addition to rats, snakes and amphibians are included among the commensal species. The snakes found in the prehistoric bone assemblage are the rattlesnake (Crotalus spp.), copperhead or cottonmouth moccasin (Agkistrodon spp.), and mud snake (Farancia spp.). The copperhead, cottonmouth moccasin, and mud snakes are all found near marshes (Linzey and Clifford 1981:80, 125, 128). The canebrake rattlesnake (Crotalus horridus atricaudatus) is found near water such as swamps and bayheads (Linzey and Clifford 1981:132). The snake remains from the historic faunal sample are from water snake (Nerodia spp.). The other commensal species identified is the toad (Bufo spp.), which is present in the nineteenth century Historic component.

Prehistoric Faunal Remains

The vertebrate faunal remains recovered from the Stallings component at Fish Haul consist of 603 bone elements and fragments that weigh 0.6 pound (274.2 grams). A total of 58 crab bone elements, almost all claw fragments, that weigh 1.4 ounces (40.9 grams), are included in this total. The Minimum Number of Individuals (MNI), number of bones, weight of bone, and biomass calculated using allometric formulae for each identified taxa and/or species is presented in Table 30. MNI and biomass calculations by faunal category are summarized in Table 31, and Table 32 lists the 10 species/taxa that contribute the most to the total biomass calculated for the prehistoric faunal sample.

Wild mammals comprise the largest group based on both MNI and biomass calculations. Included in this group are deer (Odocoileus virginianus), raccoon (Procyon lotor), rabbit (probably Sylvilagus palustris, the marsh rabbit, although the cottontail (Sylvilagus floridanus) could be represented), and eastern fox squirrel (Sciurus niger). Deer, raccoon, and rabbit are species that could be found near the marsh, although only the marsh rabbit prefers the wetlands. Deer would normally be found in the vicinity of the maritime forests, especially along its edge, and raccoons would usually be found near fresh water sources near forest edges. Both species only occasionally visit the marsh area. The eastern fox squirrel almost certainly would be associated with the maritime forest, probably in the open forest and in the large trees at the forest edge. The cottontail rabbit
<table>
<thead>
<tr>
<th>SPECIES</th>
<th>MNI</th>
<th>NUMBER OF BONES</th>
<th>WEIGHT gm</th>
<th>BIOMASS kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>White-tailed Deer, Odocoileus virginianus</td>
<td>2</td>
<td>11.76</td>
<td>40</td>
<td>107.3</td>
</tr>
<tr>
<td>Raccoon, Procyon lotor</td>
<td>1</td>
<td>5.88</td>
<td>4</td>
<td>5.6</td>
</tr>
<tr>
<td>Rabbit, Sylvilagus spp.</td>
<td>1</td>
<td>5.88</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Eastern Fox Squirrel, Sciurus niger</td>
<td>1</td>
<td>5.88</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Unidentified Mammal</td>
<td>-</td>
<td>-</td>
<td>13</td>
<td>8.0</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>5</td>
<td>29.4</td>
<td>60</td>
<td>122.1</td>
</tr>
<tr>
<td>Turkey, Meleagris gallopavo</td>
<td>1</td>
<td>5.88</td>
<td>3</td>
<td>4.0</td>
</tr>
<tr>
<td>Common Loon, Gavia immer</td>
<td>1</td>
<td>5.88</td>
<td>2</td>
<td>2.8</td>
</tr>
<tr>
<td>Duck, Anas spp.</td>
<td>1</td>
<td>5.88</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Unidentified Bird</td>
<td>-</td>
<td>-</td>
<td>19</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>3</td>
<td>17.7</td>
<td>25</td>
<td>13.7</td>
</tr>
<tr>
<td>Carolina Diamondback Terrapin, Malaclemys terrapin centrata</td>
<td>3</td>
<td>17.65</td>
<td>57</td>
<td>41.0</td>
</tr>
<tr>
<td>Unidentified Turtle</td>
<td>-</td>
<td>-</td>
<td>35</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>3</td>
<td>17.7</td>
<td>82</td>
<td>50.1</td>
</tr>
<tr>
<td>Drum, Sciaenidae</td>
<td>2</td>
<td>11.76</td>
<td>16</td>
<td>8.9</td>
</tr>
<tr>
<td>Sheephead</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Archosargus probatocephalus</td>
<td>1</td>
<td>5.88</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Unidentified Fish</td>
<td>-</td>
<td>180</td>
<td>10.0</td>
<td>0.19</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>3</td>
<td>17.7</td>
<td>197</td>
<td>19.2</td>
</tr>
<tr>
<td>Rattlesnake, Crotalus spp.</td>
<td>1</td>
<td>5.88</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Copperhead/Moccasin, Agkistrodon spp.</td>
<td>1</td>
<td>5.88</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Mud Snake, Farancia spp.</td>
<td>1</td>
<td>5.88</td>
<td>14</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>3</td>
<td>17.7</td>
<td>16</td>
<td>1.6</td>
</tr>
<tr>
<td>Crab</td>
<td>-</td>
<td>-</td>
<td>58</td>
<td>40.9</td>
</tr>
<tr>
<td>Unidentified</td>
<td>-</td>
<td>-</td>
<td>155</td>
<td>26.6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>17</td>
<td>100</td>
<td>603</td>
<td>274.2</td>
</tr>
</tbody>
</table>

Figure 30. Minimum Number of Individuals (MNI), number of bones, weight, and estimated meat yield by species for the Stallings component.
<table>
<thead>
<tr>
<th>FAUNAL CATEGORY</th>
<th>#</th>
<th>MNI</th>
<th>BIOMASS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>kg</td>
</tr>
<tr>
<td><strong>Prehistoric Component</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild Mammals</td>
<td>5</td>
<td>29.41</td>
<td>1.92</td>
</tr>
<tr>
<td>(Deer, Raccoon, Rabbit, Fox Squirrel)</td>
<td></td>
<td></td>
<td>66.52</td>
</tr>
<tr>
<td>Wild Birds</td>
<td>3</td>
<td>17.65</td>
<td>0.13</td>
</tr>
<tr>
<td>(Turkey, Loon, Duck)</td>
<td></td>
<td></td>
<td>4.50</td>
</tr>
<tr>
<td>Fishes</td>
<td>3</td>
<td>17.65</td>
<td>0.24</td>
</tr>
<tr>
<td>(Drum, Sheepshead, Unidentified Fish)</td>
<td></td>
<td></td>
<td>14.90</td>
</tr>
<tr>
<td>Aquatic Reptiles</td>
<td>3</td>
<td>17.65</td>
<td>0.38</td>
</tr>
<tr>
<td>(Diamondback Terrapin)</td>
<td></td>
<td></td>
<td>13.17</td>
</tr>
<tr>
<td>Commensal Species</td>
<td>3</td>
<td>17.65</td>
<td>0.026</td>
</tr>
<tr>
<td>(Rattlesnake, Copperhead/Moccasin, Mud Snake)</td>
<td></td>
<td></td>
<td>0.90</td>
</tr>
<tr>
<td>TOTAL</td>
<td>17</td>
<td>100</td>
<td>2.886</td>
</tr>
</tbody>
</table>

| **Historic Component** | | | |
| Domestic Mammals       | 9  | 19.15| 33.89   |
| (Cow, Pig)             | | | 84.08  |
| Domestic Birds         | 7  | 14.89| 0.64    |
| (Chicken, Turkey, Canada Geese) | | | 1.59   |
| DOMESTIC TAXA TOTAL    | 16 | 34.0 | 34.53   |
| Wild Mammals           | 5  | 10.24| 1.39    |
| (Deer, Raccoon, Opossum, Rabbit) | | | 3.45   |
| Wild Birds             | 3  | 6.38 | 0.06    |
| (Duck, Tern, Rock Dove) | | | 0.15   |
| Aquatic Reptiles       | 6  | 12.77| 1.15    |
| (Diamondback Terrapin, Mud Turtle) | | | 2.85   |
| Fish                   | 12 | 25.53| 3.02    |
| (Drum, Black Drum, Catfish, Flounder, Shark) | | | 7.49   |
| WILD TAXA TOTAL        | 26 | 55.3 | 5.61    |
| Commensal Species      | 5  | 10.64| 0.156   |
| (Rats, Toads, Snakes)  | | | 0.39   |
| TOTAL                  | 47 | 100  | 40.306  |

Table 31. Summary of Stallings and Mitchelville faunal categories expressed as counts and percentages for MNI and biomass.
prefers high grass or thickets away from wetlands. Deer consist of at least two individuals, one adult and one subadult. The other wild mammals are each represented by a MNI of one adult.

The next largest group based on biomass computations are the fishes, with at least two unidentified drums (Sciaenidae) and one sheepshead (Archosargus probatocephalus) being present. Drum are relatively large predatory fish that are most common near the mouths of intertidal creeks where they feed (Cain 1973). The sheepshead, on the other hand, would be rather common within the intertidal creeks, usually being found in muddy shallow waters or near oyster beds (Boschung et al. 1983:613). The numbers of each identified fish species present in the prehistoric faunal collection indicate that their capture was by hook-and-line or gigging. Mass recovery of fish by nets or seines is certainly not indicated by the variety or number of fish remains.

The next most common class of vertebrate animals that represent potential food resources are the aquatic reptiles, comprised solely of the Carolina diamondback terrapin (Malaclemys terrapin centrata). The Carolina diamondback terrapin inhabits the estuarine area, being found near shell bottoms and oyster beds where it feeds (Sandifer et al. 1985:202). This terrapin is diurnal, with maximum yields being available during their breeding season of May and early June (Quitmeyer et al. 1985:20), although the diamondback terrapin is present in the marsh on a year-round basis in some quantity.

The wild birds rank next in terms of biomass. One terrestrial species, the turkey (Meleagris gallopavo), and two waterfowl, an unidentified duck (Anas spp.) and the common loon (Gavia immer), each represented by a MNI of one, are present. Turkeys are a terrestrial bird, and usually are found in forested areas, although they are able to survive in a number of different habitats. The common loon is seldom found far from water (Potter et al. 1980:39). They feed by diving for their food, usually fish, and pursuing their prey underwater. Also, loons can only take flight from the surface of open water. The common loon is a common winter resident of the Carolina coastal waters between early October and mid-May, although nonbreeding loons occasionally remain throughout the summer. Ducks, of which seven different species commonly winter on the Carolina coast, are also migratory waterfowl commonly found between September and May (Potter et al. 1980:77, 83-90). However, some duck species, including the American wigeon (Anas americana) and the northern shoveler (Anas clypeata), have been sighted during June along the Carolina coast.

The commensal species identified in the prehistoric component at Fish Haul are comprised only of snakes. These
include rattlesnake (*Crotalus* spp.), copperhead/cottonmouth moccasin (*Agkistrodon* spp.), and mud snake (*Farancia* spp.). All are likely to be found near both estuarine and palustrine areas near the site.

Considering the top 10 species/taxa in terms of the total biomass calculated for the prehistoric component (Table 32), three are primarily terrestrial -- deer, raccoon and turkey. Six species/taxa, which include drum, unidentified fish, common loon, sheepshead, and mud snake, can be tied to the esturine environment which is located adjacent to the site. The rabbit present can be identified with either the esturine/marsh system, if it is marsh rabbit, or with the terrestrial habitat if the rabbit is the eastern cottontail. In order to investigate questions concerning variety and degree of specialization exhibited by the prehistoric vertebrate faunal assemblage, measures of diversity and equitability were calculated for both MNI and biomass based on the identified species present (Table 33).

In general, the calculation of such measures for small samples such as the Stallings faunal assemblage from Fish Haul is frowned upon (Grayson 1984). It is felt, however, that information can still be obtained from this exercise, as long as it is recognized that the results of the diversity and equitability computations for the Stallings faunal collection are preliminary. The Shannon-Weaver index of diversity (Shannon and Weaver 1949:14) calculated for biomass is rather low (1.244 where the highest possible value is 4.99). Biomass also exhibits an equitability index (Pielou 1966; Sheldon 1969) that is almost midway (0.4850) between low equitability (approaching 0.0), where one or a few species are more heavily used than other species, and high equitability (approaching 1.0), where an even distribution of species indicates a normal pattern of a few abundant species, a moderate number of common species, and many rare species. These figures indicate that a few species contributed the most to the total biomass derived from the vertebrate fauna identified in the prehistoric component. The MNI diversity measure (2.1909) and equitability index (0.8542) are both higher than the measures calculated for biomass. These MNI calculations indicate that while a few species account for the great portion of the biomass total, a rather diffuse (Cleland 1976:59-73) pattern of faunal procurement that took a number of different vertebrate species from both the estuarine/marsh and terrestrial forest, forest edge and cleared/overgrown habitats was employed.

Considering the question of seasonality, deer, raccoon, rabbit, Eastern fox squirrel, turkey, Carolina diamondback terrapin, drum, sheepshead, and presumably the unidentified fish would be available year round. The snakes identified would probably have been absent during the winter months between October/November and March. The migratory waterfowl,
<table>
<thead>
<tr>
<th>Species</th>
<th>Biomass Rank</th>
<th>MNI Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PREHISTORIC COMPONENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White tailed deer</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Diamondback terrapin</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Drum</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Unidentified fish</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Raccoon</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Turkey</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Common loon</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Sheepshead</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Rabbit</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Mud snake</td>
<td>9</td>
<td>4</td>
</tr>
</tbody>
</table>

| **HISTORIC COMPONENT**   |              |          |
| Cow                     | 1            | 6        |
| Pig                     | 2            | 1        |
| Drum                    | 3            | 2        |
| White tailed deer       | 4            | 7        |
| Diamondback terrapin    | 5            | 4        |
| Unidentified fish       | 6            | -        |
| Chicken                 | 7            | 2        |
| Shark                   | 8            | 10       |
| Catfish                 | 9            | 4        |
| Raccoon                 | 10           | 10       |

Table 32. Rank of the ten most prominent fauna species by biomass and MNI for the Stallings and Mitchelville components.
The Shannon-Weaver formula for determining the diversity of a sample is

\[ H = -\sum p_i \ln p_i \]

where \( H \) is the measure of diversity, and \( p_i \) is, in this case, either the MNI or the Biomass of each species divided by the total MNI or total Biomass for the sample. Thus, for each identified species that has a MNI count, \( p_i \) is calculated by dividing the MNI for that species by the total number of MNI from the sample. The diversity measure \( D \) is the sum of all the \( p_i \) multiplied by the natural log (\( \ln \)) of each \( p_i \). A similar procedure is used to calculate the Diversity index for the Biomass, substituting the Biomass figures for MNI in the above explanation.

The Sheldon formula for determining the equitability of a sample is

\[ H' = H/\ln N \]

where \( H' \) is the measure of equitability, \( H \) is the Diversity measure calculated for the sample, and \( N \) is the total number of cases, observations or, in this situation, species for which MNI or Biomass were calculated in a sample. Equitability is simply the Diversity measure divided by the natural log (\( \ln \)) of \( N \), the number of species for which MNI were calculated or the number of species for which Biomass calculations were made.

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>DIVERSITY</th>
<th>EQUITABILITY</th>
<th>N</th>
<th>MNI</th>
<th>BIOMASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prehistoric</td>
<td>2.1909</td>
<td>0.8542</td>
<td>13</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Historic</td>
<td>2.5142</td>
<td>0.7911</td>
<td>24</td>
<td>47</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>DIVERSITY</th>
<th>EQUITABILITY</th>
<th>N</th>
<th>BIOMASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prehistoric</td>
<td>1.2440</td>
<td>0.4850</td>
<td>13</td>
<td>2.696</td>
</tr>
<tr>
<td>Historic</td>
<td>1.2851</td>
<td>0.4099</td>
<td>23</td>
<td>39.736</td>
</tr>
</tbody>
</table>

Table 33. Diversity and equitability of the MNI and biomass for the prehistoric Stallings and historic Mitchelville components.
ducks and the common loon, are theoretically present on the Carolina coast only during the fall, winter and early spring between September and early May. However, the small number of each (MNI = 1) present in the faunal collection does not rule out the possibility that the remains represent either a duck or common loon that summered on the coast. In summary, the vertebrate remains present in the prehistoric Stallings component at Fish Haul Creek indicate that the site could have been occupied and/or used during any of the four seasons.

Comparison of Fish Haul's Vertebrate Fauna with other Prehistoric Assemblages

There are only a few vertebrate faunal collections from sites in the coastal areas of South Carolina, Georgia, and northern Florida that date to the same period as the Stallings component at Fish Haul, and even fewer still from this time period that report findings in any form other than MNI or MNI based computations. One of the few collections that are directly comparable to the Stallings collection is the faunal assemblage from the Lighthouse Point shell-ring, where a total of 28 species representing five classes of vertebrates with a total of 97 MNI were identified in the 5023 bone fragments recovered from the site (Runquist 1980). Lighthouse Point is a Thom's Creek site near Charleston, South Carolina that immediately post-dates Stallings. By faunal category, Wild Mammals compromise 46.4% of the MNI, Fish 20.6%, Wild Birds 15.5%, Turtles 13.4%, and Commensals 4.1%. Comparing these figures with those for the same faunal categories from the Stallings component at Fish Haul listed in Table 31 shows that there is a more even spread of individuals among the faunal categories at Fish Haul. Although this may be due to the differences in the simple size of the two assemblages, it might suggest that faunal exploitation strategies conducted at small sites such as Fish Haul differ from those associated with large shell midden sites. Differences in time between the two assemblages, however, may also be contributing to the differing patterns noted for Fish Haul and Lighthouse Point.

Historic Faunal Remains

The late nineteenth century historic faunal collection from Fish Haul consists of 3868 bone elements and fragments that weigh 13.5 pounds (5,022.9 grams). These totals include 46 crab claws that weigh 1.1 ounces (32.8 grams). The Minimum Number of Individuals, number and weight of bone, and estimated meat yield (biomass) for the historic faunal sample are presented in Table 34. A summary of the MNI and biomass calculations for seven faunal categories has been listed in
Table 31, and Table 32 ranks the top 10 species/taxa by the biomass each contributed to the total biomass computed for the Historic component.

As would be expected, domestic vertebrates -- pig (*Sus scrofa*), cow (*Bos taurus*), chicken (*Gallus gallus*), turkey (*Meleagris gallopavo*), and Canada goose (*Branta canadensis*) -- account for a vast majority of the total historic component's biomass. Although cow represented over 39% of the total biomass, only 6.4% of the total Minimum Number of Individuals identified are cow (MNI = 3). Pig accounts for a little more than 24% of the total biomass, and 12.8% of the total number of individuals present (MNI = 6). Chicken has a different pattern, providing less that 1.0% of the total biomass, while possessing 10.6% of the total Minimum Number of Individuals for the historic component (MNI = 5). Turkey accounts for only a small percentage (2.1%, MNI = 1) of the total number of identified individuals and for only a small percentage (0.17%) of the total biomass. Canada goose likewise accounts for only a small portion of the number of identified individuals (2.1%, MNI = 1) and of the total biomass (0.09%, 0.05 kg). Turkey and Canada goose are included with the domestic bird category based on their being grouped with chickens and pigs in at least one historic account. It was reported by one Union soldier shortly after Hilton Head Island was captured from Confederate forces that "...geese, turkeys, pigs and chickens were killed and eaten whenever we wanted them" (Todd 1886:104). As noted earlier, by the late nineteenth century turkeys and Canada geese had both had standards of excellence established for them as breeds.

The second most important faunal category according to biomass (with 3.02 kilograms) are the fish, which are first in the total Minimum Number of Individuals (MNI = 12) identified for the historic component. Fish identified include drum (*Sciaenidae*), black drum (*Pogonias cromis*), catfish (*Ictalurus spp.*), yellow bullhead catfish (*Ictalurus natalis*), shark (*Chondrichthyes*), and flounder (*Paralichthys spp.*). All of the identified fish are large predatory species that are common in the deeper waters of the esturine system and/or in the bays and sounds around Hilton Head Island (Cain 1973). These fish do not occur in quantities sufficient to warrant a supposition that they were procured by nets or seines. All were probably obtained as individuals by use of hook and line or perhaps by gigging.

Wild mammals still comprise a small part of the faunal collection from the Historic component at Fish Haul Creek. This category ranks third behind domestic mammals and fish in terms of biomass (3.45 kilograms), and it ranks fifth in terms of numbers of individuals (MNI = 5). Wild mammals present include deer, raccoon, opossum, and rabbit. Raccoon and opossum are common scavengers that are drawn to crops,
Table 34. Minimum Number of Individuals (MNI), number of bones, weight, and estimated meat yield by species for the historic Mitchelville component.
trash deposits, hen houses, and similar features that are found around human settlements. Deer, while usually found in forests and along forest edges, also are drawn to certain crops grown by people.

As with the prehistoric assemblage, aquatic reptiles are present in the nineteenth century Mitchelville faunal sample. The Carolina diamondback terrapin and mud turtles—(Kinosternon spp.) are the two species identified in this category. Carolina diamondback terrapins are found in the estuarine/marsh areas adjacent to the site. Diamondback terrapin apparently comprised a good portion of a slave's diet in coastal areas dating back to before the nineteenth century (Quitmeyer 1985b:20). During the late nineteenth and early twentieth centuries the diamondback terrapin became a gourmet item, as well as continuing as a part of the diet of more "common" folk (Obst 1986:183). Although they are occasionally found in estuaries, mud turtles are usually found in freshwater areas (Reitz and Scarry 1986:43). Mud turtles are diurnal, that is they are most active during the day, they enjoy basking in the sun, and they tend to sleep in mud bottoms (Obst 1986). These turtles could be caught by handlines, traps, or by hand.

In general, few wild bird species are present in the historic bone sample. One individual each of duck (Anas spp.), tern (Sterna spp.), and rock dove (Columba livia) account for only 0.15% (0.06 kilograms) of the total historic biomass, although they represent 6.4% (MNI = 3) of the total number of individuals identified. The duck is a migratory waterfowl usually present on the Carolina coast between September and May, although an occasional individual has been noted in the summer. Presumably, the duck would have been gathered from the marsh. Terns are near year round residents of the coast (Potter et al. 1980:176-183). Although terns are usually associated with beach/dune habitats, it is not improbable that they could also be found in the marshes, and perhaps even as a commensal around the town of Mitchelville. Rock doves are normally found in urban settings (Potter et al. 1980:188), and are probably closer to being a commensal species than a wild one. Certainly, given the small number of individuals, and the small quantity of bone elements identified for these species, wild birds do not appear to have been actively included within the faunal resource procurement system of the historic nineteenth century inhabitants of the site.

The true commensal species include rat (Rattus spp.), the hispid cotton rat (Sigmodon hispidus), toads (Bufo spp.), and water snake (Nerodia spp.). It is not known if these were utilized as food resource by the historic occupants of the site, but the small numbers of individuals (MNI = 5) and the small amount of biomass that they comprise
(0.156 kg, 0.39% of total biomass) argues against their use as a food resource. The various houses and structures that comprised Mitchelville would have served as good habitation sites for these commensal species both during and following its occupation by the freedmen.

Although crabs are not a vertebrate fauna, they are present in the historic faunal sample from Fish Haul. A total of 46 claw fragments that weigh 32.8 grams were noted in the collection. Crabs are found on mud, shell and sand bottoms in the salt and brackish waters, especially in the estuaries and the mouths of tidal creeks around sea grass. Most are taken between March and November (Freeman and Walford 1976). Most of the crab are probably blue crab (Callinectes sapidus) (Turner and Johnson 1972:182).

Table 32 summarizes the 10 most prominent fauna species/taxa with respect to their contribution to the total biomass from the historic component at the site. Two domestic species rank first and second, cow and pig, although cow ranks only sixth when MNI are considered as compared to the pig's first place. Another domestic species, chicken, ranks seventh on the biomass list and second when MNI are examined. Fish species take the third (drum), sixth (unidentified fish), eighth (shark), and nineth (catfish) positions in the biomass rankings. The Carolina diamondback terrapin, an aquatic reptile found in the marsh, is the fifth ranked species based on biomass, and the fourth ranked according to MNI. Two wild mammals, deer (fourth) and raccoon (tenth), are the other two species that place in the 10 species ranked according to biomass.

Diversity and equitability indices were calculated for the total biomass and MNI present in the historic component (Table 33). The diversity measure for biomass is low (1.2851) and the equitability is below .50 (0.4099). For MNI, the diversity (2.5142) is in the midrange of the scale (which goes to 4.9), and the equitability (0.7911) is toward the high end (1.0) of the scale. This is interpreted to indicate that a few species contributed the greatest portion of the total biomass, but that a number of species were exploited on a regular basis in addition to the three domestic species of cow, pigs, and chickens. The most important faunal categories after the domestic taxa are fish and aquatic turtles.

The bone modifications exhibited by the pig and cow bones in the historic faunal collection were examined for evidence of sawing, cutting, chopping, and burning (Table 35). Of the 19 pig bones that evidenced modification, there were seven instances of sawing (36.8%), seven instances of cutting (36.8%), five instances of chopping (26.3%), and three instances of burning (15.8%). For the 20 cow bones that had been modified, 15 had been sawed (75%), four had
been cut (20%), two had been chopped (10%), and four had been burned (20%). The 19 modified pig bones represent only 7.5% of the total number of pig bones identified in the historic faunal collection, and the 20 modified cow bones total 20.6% of the cow bones present. If one assumes that sawed bone are indicative of purchased meat segments or meat segments given as rations, then it would appear that beef was more likely to be obtained through purchase or as a wage ration than pork. As indicated in the historical accounts considered in the historical background section of the report, and the generalized discussion of cattle and pigs that opened this section, it is probable that most of the pork present in the historic component is homegrown, with certain cuts, such as hams, being available for purchase or as part of a person's wages. The low number of both cow and pig bones that have been burned indicate that little roasting of either meat was being done.

The distribution of identified bone elements by body segment for the cow and pig remains from Fish Haul is shown in Table 36. The cow distribution is somewhat misleading as nine of the 11 head elements are miscellaneous molar fragments, 1 is a right mandible body fragment, and the other is an immature atlas. With this in mind, it is apparent that most of the beef remains are represented by sides of beef incorporating ribs and/or vertebra, and rump roasts. For the pig bones, only 15 of the 79 head bone elements are miscellaneous teeth. The bone element distribution for the pig bones is distributed among the cranial segments, sides of pork that possess ribs and/or vertebra, feet, hindlimbs, and forelimbs in descending order. The pattern exhibited by the beef and pork bone element distribution is taken to support the earlier supposition that beef was probably obtained through purchase or as rations, while most of the pork, although available through purchase and as rations, was probably homegrown.

**Block 91-92 Areas and Features 10 and 11**

Before comparing the results of the analysis of the Historic faunal collection with a small number of other faunal studies, the remains from the historic midden in the 91-92 blocks, which includes Feature 10 and Feature 11, will be considered. Tables 37 and 38 list the number and weight of bones, and the allometric biomass for each species/taxa identified in the midden zones in the 91-92 block, and Features 10 and 11. The 91-92 block midden zones possess all the remains identified as rat, hispid cotton rat, tern, and yellow bullhead catfish. Features 10 and 11 possess all the remains identified as Canada goose, duck and flounder. All the remains of the following species are found in either
BONE ELEMENT

SAWED  CUT  CHOPPED  BURNT

Pig, Sus scrofa:

4 rib fragment  
2 rib fragment  
1 sternum fragment  
1 cervical vertebra fragment  
1 lumbar vertebra spine fragment  
2 left distal humerus fragment  
1 left proximal radius  
1 proximal humerus shaft  
1 left proximal immature femur shaft fragment  
1 right ilium  
1 right medial ilium  
1 right medial ilium  
2 longbone frag.  
19 TOTAL 7 7 5 3

Cow, Bos taurus:

3 rib fragment  
4 rib fragment  
1 thoracic vertebra spine fragment  
1 lumbar vertebra  
1 immature lumbar vertebra  
2 lumbar vertebra epiphyses  
3 vertebra frag.  
1 right proximal humerus shaft fragment  
1 right proximal femur  
1 right distal tibia shaft fragment  
1 longbone fragment  
1 small longbone (?) fragment  
20 TOTAL 15 4 2 4

1- sawed on both the proximal and distal ends, very thin, like a slice of ham.
2- sawed medially (down the middle of the body of the bone, rather than across the body.
3- sawed on both the proximal and distal ends.

Table 35. Bone modifications on pig and cow in the Mitchelville collection.
<table>
<thead>
<tr>
<th>BONE ELEMENT GROUP</th>
<th>COW</th>
<th>PIG</th>
<th>DEER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heads, 1st and 2nd Cervical Vertebra</td>
<td>11</td>
<td>79</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>16.17</td>
<td>40.31</td>
<td>-</td>
</tr>
<tr>
<td>Vertebra, Sternum, and Ribs</td>
<td>29</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>42.64</td>
<td>25.51</td>
<td>33</td>
</tr>
<tr>
<td>Forelimbs</td>
<td>2</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2.94</td>
<td>5.10</td>
<td>-</td>
</tr>
<tr>
<td>Forefeet</td>
<td>3</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>4.41</td>
<td>1.02</td>
<td>-</td>
</tr>
<tr>
<td>Hindlimbs</td>
<td>18</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>26.47</td>
<td>10.71</td>
<td>67</td>
</tr>
<tr>
<td>Hindfeet</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>1.02</td>
<td>-</td>
</tr>
<tr>
<td>Feet</td>
<td>5</td>
<td>32</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>7.35</td>
<td>16.33</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>68</td>
<td>196</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 36. Bone element distribution for the cow, pig, and deer remains from Mitchelville.
<table>
<thead>
<tr>
<th>SPECIES</th>
<th>NUMBER</th>
<th>WEIGHT</th>
<th>BIOMASS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OF BONES</td>
<td>gm</td>
<td>kg</td>
</tr>
<tr>
<td>Cow, Bos taurus</td>
<td>14</td>
<td>134.8</td>
<td>2.17</td>
</tr>
<tr>
<td>Pig, Sus scrofa</td>
<td>86</td>
<td>275.8</td>
<td>4.14</td>
</tr>
<tr>
<td>White-tailed Deer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odocoileus virginianus</td>
<td>1</td>
<td>4.0</td>
<td>0.09</td>
</tr>
<tr>
<td>Raccoon, Procyon lotor</td>
<td>3</td>
<td>6.1</td>
<td>0.13</td>
</tr>
<tr>
<td>Rabbit, Sylvilagus spp.</td>
<td>1</td>
<td>0.6</td>
<td>0.02</td>
</tr>
<tr>
<td>Opossum, Didelphis virginiana</td>
<td>1</td>
<td>0.4</td>
<td>0.01</td>
</tr>
<tr>
<td>Rat, Rattus spp.</td>
<td>6</td>
<td>1.4</td>
<td>0.04</td>
</tr>
<tr>
<td>Hispid Cotton Rat, Sigmodon hispidus</td>
<td>1</td>
<td>0.2</td>
<td>0.006</td>
</tr>
<tr>
<td>Unidentified Mammal</td>
<td>139</td>
<td>349.2</td>
<td>5.11</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>252</td>
<td>772.5</td>
<td>11.716</td>
</tr>
<tr>
<td>Chicken, Gallus gallus</td>
<td>2</td>
<td>2.0</td>
<td>0.04</td>
</tr>
<tr>
<td>Tern, Sterna spp.</td>
<td>1</td>
<td>1.2</td>
<td>0.02</td>
</tr>
<tr>
<td>Rock Dove, Columba livia</td>
<td>2</td>
<td>0.4</td>
<td>0.009</td>
</tr>
<tr>
<td>Unidentified Bird</td>
<td>11</td>
<td>2.5</td>
<td>0.05</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>16</td>
<td>6.1</td>
<td>0.119</td>
</tr>
<tr>
<td>Carolina Diamondback Terrapin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaclemys terrapin centrata</td>
<td>171</td>
<td>149.4</td>
<td>0.91</td>
</tr>
<tr>
<td>Mud Turtle, Kinosternon spp.</td>
<td>1</td>
<td>1.0</td>
<td>0.03</td>
</tr>
<tr>
<td>Unidentified Turtle</td>
<td>9</td>
<td>6.6</td>
<td>0.11</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>181</td>
<td>157.0</td>
<td>1.05</td>
</tr>
<tr>
<td>Drum, Sciaenidae</td>
<td>79</td>
<td>115.2</td>
<td>1.30</td>
</tr>
<tr>
<td>Black Drum, Pogonias cromis</td>
<td>1</td>
<td>3.9</td>
<td>0.11</td>
</tr>
<tr>
<td>Catfish, Ictalurus spp.</td>
<td>11</td>
<td>3.1</td>
<td>0.06</td>
</tr>
<tr>
<td>Yellow Bullhead Catfish, Ictalurus natalis</td>
<td>6</td>
<td>1.7</td>
<td>0.03</td>
</tr>
<tr>
<td>Shark, Chondrichthyes</td>
<td>1</td>
<td>3.5</td>
<td>0.37</td>
</tr>
<tr>
<td>Unidentified Fish</td>
<td>111</td>
<td>45.0</td>
<td>0.64</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>209</td>
<td>172.4</td>
<td>2.51</td>
</tr>
<tr>
<td>Water Snake, Nerodia spp.</td>
<td>1</td>
<td>0.3</td>
<td>0.004</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>1</td>
<td>0.3</td>
<td>0.004</td>
</tr>
<tr>
<td>Toad, Bufo spp.</td>
<td>1</td>
<td>0.1</td>
<td>-</td>
</tr>
<tr>
<td>Crab</td>
<td>3</td>
<td>0.7</td>
<td>-</td>
</tr>
<tr>
<td>Unidentified</td>
<td>635</td>
<td>348.0</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>1298</td>
<td>1457.1</td>
<td>15.399</td>
</tr>
</tbody>
</table>

Table 37. Number of bones, weight, and estimated meat yield by species for the 91-92 block.
<table>
<thead>
<tr>
<th>SPECIES</th>
<th>NUMBER OF BONES</th>
<th>WEIGHT</th>
<th>BIOMASS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow, <em>Bos taurus</em></td>
<td>18</td>
<td>347.4</td>
<td>5.09</td>
<td>36.272</td>
</tr>
<tr>
<td>Pig, <em>Sus scrofa</em></td>
<td>55</td>
<td>364.3</td>
<td>5.31</td>
<td>37.839</td>
</tr>
<tr>
<td>Unidentified Mammal</td>
<td>75</td>
<td>128.8</td>
<td>2.08</td>
<td>14.822</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td><strong>148</strong></td>
<td><strong>840.3</strong></td>
<td><strong>12.48</strong></td>
<td><strong>88.93</strong></td>
</tr>
<tr>
<td>Chicken, <em>Gallus gallus</em></td>
<td>11</td>
<td>4.5</td>
<td>0.08</td>
<td>0.570</td>
</tr>
<tr>
<td>Canada goose, <em>Branta canadensis</em></td>
<td>5</td>
<td>2.6</td>
<td>0.05</td>
<td>0.356</td>
</tr>
<tr>
<td>Duck, <em>Anas</em> spp.</td>
<td>5</td>
<td>1.4</td>
<td>0.03</td>
<td>0.214</td>
</tr>
<tr>
<td>Unidentified Bird</td>
<td>26</td>
<td>4.1</td>
<td>0.07</td>
<td>0.500</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td><strong>47</strong></td>
<td><strong>12.6</strong></td>
<td><strong>0.23</strong></td>
<td><strong>1.64</strong></td>
</tr>
<tr>
<td>Carolina Diamondback Terrapin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Malaclemys terrapin centrata</em></td>
<td>22</td>
<td>25.0</td>
<td>0.27</td>
<td>1.924</td>
</tr>
<tr>
<td>Mud Turtle, <em>Kinosternon</em> spp.</td>
<td>1</td>
<td>0.7</td>
<td>0.02</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td><strong>23</strong></td>
<td><strong>25.7</strong></td>
<td><strong>0.29</strong></td>
<td><strong>2.07</strong></td>
</tr>
<tr>
<td>Drum, <em>Sciaenidae</em></td>
<td>24</td>
<td>29.6</td>
<td>0.48</td>
<td>3.42</td>
</tr>
<tr>
<td>Catfish, <em>Ictalurus</em> spp.</td>
<td>3</td>
<td>0.3</td>
<td>0.006</td>
<td>0.042</td>
</tr>
<tr>
<td>Flounder, <em>Paralichthys</em> spp.</td>
<td>1</td>
<td>0.5</td>
<td>0.01</td>
<td>0.071</td>
</tr>
<tr>
<td>Shark, <em>Chondrichthyes</em></td>
<td>1</td>
<td>1.1</td>
<td>0.14</td>
<td>0.998</td>
</tr>
<tr>
<td>Unidentified Fish</td>
<td>602</td>
<td>25.1</td>
<td>0.39</td>
<td>2.779</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td><strong>631</strong></td>
<td><strong>56.6</strong></td>
<td><strong>1.026</strong></td>
<td><strong>7.31</strong></td>
</tr>
<tr>
<td>Water Snake, <em>Nerodia</em> spp.</td>
<td>3</td>
<td>0.5</td>
<td>0.007</td>
<td>0.050</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td><strong>3</strong></td>
<td><strong>0.5</strong></td>
<td><strong>0.007</strong></td>
<td><strong>0.05</strong></td>
</tr>
<tr>
<td>Toad, <em>Bufo</em> spp.</td>
<td>1</td>
<td>0.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Crab</td>
<td>25</td>
<td>22.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Unidentified</td>
<td>450</td>
<td>161.6</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1328</strong></td>
<td><strong>1119.8</strong></td>
<td><strong>14.033</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 38. Number of bones, weight, and estimated meat yield by species for the historic Features 10 and 11 in the 91-92 block.
the 91-92 block midden zones or Features 10 and 11: shark and mud turtle. Otherwise, both proveniences have remains of the species identified for the other historic features and midden zones at the site -- cow, pig, chicken, deer, raccoon, rabbit, opossum, rock dove, Carolina diamondback terrapin, drum, water snake, and crab. The presence of the shark remains indicate that Feature 10 was possibly formed during warm weather, as sharks are generally found in estuaries throughout the Carolina Province, which includes Hilton head Island, only during warm months (Schwartz and Burgess 1975; Dahlberg 1975).

The 91-92 block midden also has four of the 19 pig bones and three of the 20 cow bones that had been modified. Although the 91-92 block midden and Features 10 and 11 are relatively rich when compared with the faunal remains from similar proveniences in other areas of the site, it does appear that the activity which created the remains they contain dates to the later nineteenth century historic component that is identified with the freedmen's town of Mitchelville. It is probable that some kind of group activity involving more than one household from Mitchelville occurred in the vicinity of the 91-92 block midden and Features 10 and 11. What activity cannot be determined based on this study of the faunal remains from these proveniences.

Comparison of the Historic Faunal Assemblages with other Faunal Samples

Given that the nineteenth century archaeological remains at Fish Haul are not a plantation (here used to include planter, overseer, and slave habitations) or tenant farm, it is probable that the faunal collection will more closely resemble faunal samples from urban rather than plantation or other rural settings.

Although it would be desirable to compare the data from Fish Haul to a wider variety of site types, such as nucleated agricultural villages, temporary and permanent habitation areas of civilian support populations employed by the military, or ethnic urban neighborhoods, there is little archaeological or historical information about the faunal assemblages of such sites that is in a form that can be used in this study. Reitz (1984:14-15) proposed a number of hypotheses about the vertebrate faunal composition of the diet of urban and rural sites that date from the late eighteenth into the middle of the nineteenth century. In general urban residents apparently utilized more domestic meat than did rural people and they used a wider range of different species, especially domestic birds. As a consequence, wild animals were utilized to a lesser extent at urban sites and fewer wild species were exploited. Table 39 compares the MNI percentages determined for each of the seven
<table>
<thead>
<tr>
<th>FAUNAL CATEGORY</th>
<th>URBAN</th>
<th>FISH HAUL CREEK</th>
<th>RURAL</th>
<th>SLAVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Mammals</td>
<td>31.0</td>
<td>19.1</td>
<td>18.3</td>
<td>20.5</td>
</tr>
<tr>
<td>Domestic Birds</td>
<td>22.6</td>
<td>12.8</td>
<td>4.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Wild Mammals</td>
<td>8.0</td>
<td>10.6</td>
<td>19.8</td>
<td>24.7</td>
</tr>
<tr>
<td>Wild Birds</td>
<td>6.2</td>
<td>8.5</td>
<td>3.1</td>
<td>2.1</td>
</tr>
<tr>
<td>Aquatic Reptiles</td>
<td>5.8</td>
<td>12.8</td>
<td>13.7</td>
<td>10.4</td>
</tr>
<tr>
<td>Fish</td>
<td>16.2</td>
<td>25.5</td>
<td>36.8</td>
<td>36.6</td>
</tr>
<tr>
<td>Commensals</td>
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<td>10.6</td>
<td>4.3</td>
<td>2.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Data for the Urban, Rural, and Slave categories are derived from Reitz (1984:Table 7).

Percentages calculated for Fish Haul have turkey and geese placed in the Wild Bird category and dove placed in the Domestic Bird category in order to conform to Reitz's (1984) classification and resultant calculations.

Table 39. Comparison of the Mitchelville faunal categories by percent with Urban, Rural, and Slave faunal category patterns
general historic faunal categories (Domestic Mammal, Domestic Bird, Wild Mammals, Wild Birds, Aquatic Reptiles, Fish, and Commensals) at Fish Haul with composite percentages computed by Reitz (1984:24) for Urban, Rural and Slave contexts in the southern Atlantic Coastal Plain. In only one category, Commensals, is the MNI percentage from Fish Haul similar to the Urban Pattern. However, the Mitchelville data is similar to the Rural pattern only for the Domestic Mammal and Aquatic Reptile categories. For Domestic Birds and Fish, Mitchelville lies intermediate between the Urban and rural patterns when MNI are considered.

Comparison of the Fish Haul percentages with the pattern defined by Reitz for Slave faunal assemblages (Table 39) shows even fewer congruences than with the Urban or Rural patterns. Only for Domestic Mammals are the MNI percentages similar. For all other categories -- Domestic Birds, Wild Mammals, Wild Birds, Aquatic Birds, Aquatic Reptiles, Fish, and Commensals -- the Fish Haul data and the Slave Pattern are different. It is here that the differences in the lifeways of the black freedmen and slaves can begin to be seen. It may be that the differences between the Fish Haul MNI percentages and those of the Urban, Rural, and Slave faunal patterns reflect status and wealth, rather than locational factors.

The differences between the Mitchelville faunal collection and the Rural/Urban Patterns may be due to historical and geographical factors. Mitchelville was established on a Sea Island adjacent to a marsh esturine system, a location not enjoyed by any of the Urban sites used by Reitz (1984:3, 1987), but similar to that of most of the sites included in the Rural Pattern (Reitz 1984:4-5, 1987). Mitchelville was also established to fill a need to house the freed slaves that traveled to Union lines during the Civil War. Once the military support of Mitchelville was withdrawn, the town declined. While the military was present, the freedmen had access to rations and wages to purchase meat segments and live animals that they did not have as slaves, and which they gradually lost after the military departed.

The Fish Haul faunal assemblage can also be compared with that from a hypothesized freedmen/ex-slave site, Colonel's Island, located on a former plantation (Singleton 1985:299-302). This site is definitely a rural site, and has a faunal sample with 46 individuals. A diet derived from foraging is indicated, as nondomestic foods, including deer, raccoon, opossum, fish, and sea turtle, contributed 98% of the meat to the diet (Reitz 1978:342 in Singleton 1985:302). These Fish Haul data certainly do not compare favorably with Colonel's Island, as 85.7% of the meat total at Fish Haul is supplied by domestic species.
In summary, the composition of the late nineteenth century Mitchelville faunal assemblage at Fish Haul does not conform to any of the faunal assemblage patterns noted for urban, rural, or slave sites of the southern Atlantic coast. Probably the historical factors that led to the founding of a small urban site next to an estuarine setting, the fact that the inhabitants enjoyed a status that they did not have before as slaves or later after the Union forces left the area, and that the inhabitants had access to wages to purchase meat segments or live animals, or could receive meat segments as part of the rations issued by the Union army to those employed by them, until the military presence on Hilton Head Island ended, are responsible for the unique pattern exhibited by faunal collection from Fish Haul.

Conclusions

In general, faunal samples that do not contain at least 200 individuals or 1400 bones are usually deemed too small for reliable interpretations (Grayson 1979; Wing and Brown 1979). From Fish Haul, the prehistoric Stallings faunal collection possesses neither 200 individuals nor does it have at least 1400 bones. Therefore, the discussion of interpretations and patterns based on the Stallings material has to be viewed as preliminary. Thus, while it appears that a generalized faunal resource procurement system based on a diffuse strategy of resource utilization in both terrestrial and estuarine/marsh habitats was operational at the site in prehistoric times, the small size of the Stallings faunal collection precludes a definite statement to that effect. Likewise, information derived from the species present in the collection cannot rule out utilization of the site by the Stallings's people during any of the four seasons of the year.

Although the number of individuals present in the late nineteenth century historic faunal collection from Fish Haul also does not number at least 200, the collection does possess 3868 bone elements and fragments. While not eliminating all doubt about interpretations set forth for the historic faunal remains, there is probably a good basis for accepting the findings derived from the analysis of this material. Although it was originally expected that the historic faunal collection would exhibit a pattern similar to that found in urban faunal assemblages of the southern Atlantic coast, a pattern that differed from generalized urban, rural and slave faunal remains was defined. While historical factors might have contributed to the rather unique pattern for the historic Fish Haul faunal material, there is also the possibility that traits associated with status and/or wealth possessed by the inhabitants of Mitchelville, and not by people of the Urban, Rural, or Slave categories, may be responsible in part for the observed pattern. Until more data is available for both urban and
rural status and ethnic groups in antebellum and postbellum southern society, the true meaning of the faunal resource utilization pattern exhibited by the historic Fish Haul faunal collection will not be discerned.
ETHNOBOTANICAL REMAINS

Michael Trinkley

Introduction

During the 1982 excavations at Fish Hall a Stallings feature was excavated from the 1982 block which produced ethnobotanical remains, including primarily wood charcoal and hickory nutshell (Trinkley and Zierden 1983:34-36). Examination of handpicked samples from the Stallings occupation zone yielded evidence of abundant pine and small quantities of oak, yaupon, cedar, willow, and possibly ash. Based on the success of this preliminary study and the desire to examine further the Stallings phase subsistence strategy at the Fish Hall site, quantities of charcoal were handpicked from the 1/4 inch [0.6 centimeter] screens and features which evidenced dark, humic soil were sampled by flotation and waterscreening. This strategy produced handpicked charcoal samples from 88 unit proveniences and from 44 feature proveniences. In addition, waterscreening samples were obtained from 12 of the 24 features and flotation samples were obtained from seven features.

A series of 13 handpicked samples from excavation units and 27 handpicked feature samples were examined by this analysis, representing 15% of the unit proveniences and 61% of the feature proveniences. Handpicked specimens usually provide little information on subsistence since they primarily represent wood charcoal large enough to be readily collected during either excavation or screening. The handpicked samples, however, may provide ecological data through examination of the wood species present. In the course of such a study it is assumed that charcoal from different species tends to fragment similarly (so that no species naturally produces smaller pieces of charcoal and hence would be less likely to be represented) and that charcoal will be collected in the same proportions found in the archaeological record. While this method probably gives a fair indication of the trees in the site area at the time of aboriginal occupation, there are several factors which may bias any environmental reconstruction based solely on charcoal evidence. These biases include selective gathering by site occupants and differential self-pruning of the trees.

Flotation samples are expected to yield more sensitive subsistence information and samples from 0.4 to 0.7 ounce (10 to 20 grams) are usually considered adequate, if no bias was introduced in the field. A series of eight flotation samples, representing all seven features from which flotation samples were collected, are included in this analysis.
The major issues to be investigated involve evidence of subsistence resources, the presence of non-food plants in the assemblage, and the use of fuel woods. Both prehistoric Stallings and historic Mitchelville collections are included in the study.

Procedures and Results

The eight flotation samples were prepared in a manner similar to that described by Yarnell (1974:113-114) and were examined under low magnification (7 to 30x) to identify carbonized plant foods and food remains. Remains were identified on the basis of gross morphological features and seed identification relied on Schopmeyer (1974), United States Department of Agriculture (1971), Martin and Barkley (1961), and Montgomery (1977). All float samples consisted of the charcoal obtained from 5 gallons (23 liters) of soil (by volume). The entire sample from this floated amount was examined, except for the Feature 10 and 26 samples which were so large that a subsample of approximately one-third was used. The results of this analysis are provided in Table 40.

Ignoring the uncarbonized component in each sample, the Stallings collections are composed primarily of wood charcoal, although Features 12 and 18 contain relatively abundant hickory nutshells. Seeds are not common, but Feature 18 evidences single specimens of knotweed (Polygonum sp.) and three-seeded mercury (Acalypha sp.). Feature 12 evidenced two fragmentary seed coats.

The abundance and characteristics of hickory trees has been discussed in the Introduction of this report, but briefly there are three hickories common in the Beaufort area -- bitternut (Carya cordiformis), water (C. aquatica), and mockernut (C. ovalis). These species occur on a variety of soil types, from dry woods to rich or low woods to swamp lands. In South Carolina they fruit in October, although seeds are dispersed from October through December (Bonner and Maisenholder 1974:269; Radford et al. 1968:363-366). Good crops of all species are produced at intervals of up to three years when up to about 16,000 nuts may be produced per tree (Bonner and Maisenholder 1974:271) and the nuts may be successfully stored.

In addition to the presence of hickory nuts, the flotation samples indicate the presence of knotweed (Polygonum sp.) and three-seeded mercury (Acalypha sp.). Knotwood is an annual or perennial herbaceous plant which can be found in a variety of habitats, including dry, open ground, wet or swampy ground, and disturbed ground. Species flower and fruit from May through November (Radford 1968:406-414). This plant may be indicative of a disturbed habitat (e.g. Yarnell 1974:117), although the presence of a
<table>
<thead>
<tr>
<th>Provenience</th>
<th>Wood</th>
<th>Uncarb</th>
<th>Shell</th>
<th>Bone</th>
<th>Sherd</th>
<th>Hickory Nutshell</th>
<th>Seeds</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>wt %</td>
<td>wt %</td>
<td>wt %</td>
<td>wt %</td>
<td>wt %</td>
<td>wt %</td>
<td>wt %</td>
<td>wt %</td>
</tr>
<tr>
<td>Stallings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td>Feature 12</td>
<td>4.75</td>
<td>30.7</td>
<td>6.81</td>
<td>44.0</td>
<td></td>
<td>1.58</td>
<td>10.2</td>
<td>2.32</td>
</tr>
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<td>9.17</td>
<td>84.1</td>
<td>1.23</td>
<td>11.3</td>
<td>0.05</td>
<td>0.13</td>
<td>1.2</td>
<td>0.33</td>
</tr>
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<td>4.55</td>
<td>32.1</td>
<td>0.18</td>
<td>3.32</td>
<td>23.4</td>
<td>0.01</td>
</tr>
</tbody>
</table>

|            |      |        |       |      |       |                 |       |       |
| Historic Mitchelville |      |        |       |      |       |                 |       |       |
| Feature 10, s1 | 67  | 61.8   | 86.0  | 10.83 | 13.8  | 0.14            | 0.2   |       |       | 0.01  | t    | 78.59 |
| Feature 13, s1 | 1.87| 56.0   | 1.47  | 44.0  |       |                 |       |       |       |       | t    | 3.34  |
| Feature 14   | 15.76 | 61.5 | 9.58  | 37.4  |       |                 |       |       |       |       | 0.28 | 1.1  | 25.62 |
| Feature 26   | 59.11 | 91.0 | 3.28  | 5.0   |       | 2.62            | 4.0   |       |       | 0.01  | t    | 65.02 |

| a | Analyses of Feature 17, N3, Zone 1 and Zone 2 were combined to produce a sample over 10 grams
|   | t - trace (less than 0.01 gram or less than 0.1%) |

Table 40. Flotation sample components, weight in grams.
A single chenopod (Chenopodium sp.) and one violet (Viola sp.) seed were recovered from Feature 10. Chenopod (also known as pigweed or goosefoot) is an erect, annual herb, frequently found as a weed in rich cultivated soils. The plant flowers and fruits from June through December (Radford et al. 1968:418-420). Chenopod is frequently found at prehistoric sites and appears to have been a significant aspect of the diet. Yarnell notes, however, that a possible distinction between chenopodium and other weedy food plants is that it may have grown as a volunteer in garden plots under active cultivation at the time, whereas the other plants may have taken over former garden plots (Yarnell 1976:269).

Morton (1974:44) notes that the chenopod has been used in South Carolina as a vermifuge (its active ingredient is an unsaturated terpine peroxide). In addition, the edible portions are a good source of calcium, iron, riboflavin, and ascorbic acid.

The violet, represented by a single seed, is an herbaceous perennial or winter annual, most species of which are not native to North America. Favretti and Favretti (1978:126) report violets in North American gardens from the seventeenth century, and Martin remarks on the folklore of the common blue violet (V. papilionacea),

[t]he Confederate violet, a color variation of the common blue violet, is white with purple veins. It is called the Confederate violet, because it is so commonly seen growing around the doorways of Southern homes (Martin 1984:57).
Chasmogamous flowering and fruiting of most species occurs from March through May or June, but cleistogamous fruiting will continue until frost (Radford et al. 1986:723). Species may occur naturally in a variety of habitats and may also be cultivated.

The dogwood (Cornus florida), seeds of which were recovered from Feature 14, is usually found as a small, understory tree. The tree prefers light, sandy soil, but may be found on marsh soils along stream banks (Fowells 1968:162-163). Dogwood fruits from September through October and the seeds are dispersed throughout November (Brinkman 1974:337).

The handpicked samples also were examined under low magnification (7 to 30x) with larger pieces of wood charcoal identified, where possible, to the genus level, using comparative samples, Panshin and de Zeeuw (1970), and Koehler (1917). Wood charcoal samples were broken in half to expose a fresh transverse surface. The results of this analysis are shown in Table 41, which is organized by provenience.

In the Stallings samples wood charcoal is abundant and consists almost entirely of pine. Only three samples evidence other identified woods (hickory in one case and oak in two others). Thirteen of the sixteen collections evidenced hickory nutshell, a finding similar to the situation observed in the flotation samples. The Stallings levels in study squares from the 1982 and 129-141 blocks, with only one exception, reveal consistently high levels of hickory nutshell, averaging about 40% of the total recovered charcoal by weight. Of the eight Stallings features examined, six have hickory nutshell levels averaging 24% of the total recovered charcoal by weight. Only one sample contained evidence of acorn.

Two samples, both feature fill, provided evidence of carbonized seeds. Feature 21 contained two hawthorn seeds (Crataegus sp.). The hawthorn is a small tree or shrub which produces a fleshy fruit used as food. The fruits form from August through October, but may disperse throughout the winter (Radford et. 1968:558-562). Hawthorns occur on sandy, xeric woodland soils as well as on alluvial ground. Feature 22 produced a single seed of Juniperus sp., tentatively identified as southern red cedar (J. silicicola). The southern red cedar and red cedar (J. virginiana) are quite similar, but the former is more common in the Coastal Plain. Both are medium sized trees which produce seeds by October-November (Radford et al. 1968:43).

The Mitchelville samples evidence an abundance of pines, followed in abundance by oak, maple, and hickory. Nine of the 20 samples are composed entirely of pine. Pine is found both in architectural contexts and as a fuel. There is
Table 41. Analysis of hand picked samples, by percent.

<table>
<thead>
<tr>
<th>Provenience</th>
<th>Pinus sp.</th>
<th>Carya sp.</th>
<th>Quercus sp.</th>
<th>Acer sp.</th>
<th>VJD wood</th>
<th>Rosin</th>
<th>Tar</th>
<th>Coal</th>
<th>Carya nutshell</th>
<th>Quercus nut</th>
<th>Seeds</th>
<th>Total Sample weight, g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stallings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1982-70R110, Z.2, L.2</td>
<td>53.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>40.4</td>
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<td></td>
<td></td>
<td>16.44</td>
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<td>10.04</td>
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<td></td>
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<td></td>
<td>5.02</td>
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<td>4.78</td>
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<td>11.3</td>
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<td>31.5</td>
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<td>1.58</td>
</tr>
</tbody>
</table>

a Crataegus sp. (Hawthorn) - 2 seeds
b Juniperus sp. (Cedar) - 1 seed (probably J. silicicola)
c Prunus persica (Peach) - 1 pit
d entire sample is noncarbonized
little doubt that pine was the most common fuel at Mitchellville, even if it was not the fuel of choice. Coal is found in only one of the 20 samples.

Although a small quantity of hickory nutshell is found in one sample (Feature 13, S half), the only probable food remain is the single peach pit (*Prunus persica*) found in unit 162-40R30, Zone 1, Area A.

**Discussion**

The Stallings flotation and handpicked ethnobotanical samples are dominated by wood charcoal and a single plant food remain -- hickory nutshells. This analysis provides good evidence for a fire sub-climax pine forest with minor numbers of oak, hickory, and cedar. It is also likely that the Stallings occupation was sufficiently disruptive of the environment to promote the growth of weedy plants. Four seeds were recovered from flotation, yielding 0.7 probable weed seed per 1.0 gram of plant food remains. This is a low density when compared to a site such as Salts Cave where gardening or incipient plant husbandry was being practiced (Yarnell 1974), but the density is similar to other Stallings sites.

The only plant food remains found at Stallings and Thom's Creek sites have been hickory nutshells and acorn (Trinkley 1974, 1976; Trinkley and Zierden 1983) and in each case acorn is so rare as to suggest accidental inclusion. As previously discussed, the hickory is a high quality protein with a caloric value equal to that of most meats. It appears reasonable, given the ubiquity and abundance of the nutshell fragments, to interpret the Stallings people as utilizing hickory as a major food source. In addition to the hickory nutshell, the handpicked specimens yielded two hawthorn seeds, which provided further evidence of Stallings subsistence activity. Yet Smith cautions that, "in no way do the carbonized plant remains represent a true summary of the diet of occupants of the sites" (Smith 1985:122).

The hickory nuts suggest a fall or winter occupation (October-December), although they may be collected and stored. In March 1670, Indians of South Carolina's central coast presented the English with "plenty of Hickery nutts" (Carteret, quoted in Waddell 1980:39), clearly indicating storage for at least three months duration. A similar account reveals the protohistoric storage of acorns into April (Waddell 1980:39). The hawthorn also suggests a fall or winter occupation, but the fruit may be dried for longer storage. Both knotweed and three-seeded mercury tend to seed from summer through winter. The cedar seed, likewise, is suggestive of a winter occupation. The ethnobotanical remains seem clearly to suggest that at least some activities took place at Fish Hall in the fall or winter months.
Occupation at other seasons, of course, cannot be ruled out based on this evidence.

The plant remains from Mitchelville reveal a habitat little changed from the prehistoric period. Wood charcoal dominates the collections, with pine being most abundant. Woods of lesser significance include oak, maple, and hickory, all of which would have been locally available. Coal is found as 39% of the weight of a single sample, suggesting that Mitchelville occupants used wood fuel almost exclusively. Pine was the most common fuel probably because of its availability and ease of procurement. This is consistent with the generalized historical data. Reynolds notes that wood was the primary fuel of the South during the 1870s and that it was not until the late 1880s and early 1890s that coal became abundant (Reynolds 1942:5-6). Even during this period it is likely that Hilton Head residents continued to rely on wood and the rate of wood use for South Carolina increased by 112% from 1879 to 1918 (Reynolds 1942:Table 6).

Although pine burns quickly and produces heavy smoke, it is easy to ignite and easy to split for wood burning stoves. Pine also has about 80% of the heating value of coal (U.S. Department of Agriculture 1919:30). The other woods probably being burned -- oak, maple, and hickory -- yield 84%, 73%, and 97% of the heat of coal respectively. Only hickory yields significantly more heat, and it was probably more difficult to procure on Hilton Head. Hickory also tends to be difficult to ignite and more difficult to split.

Because of local availability, pine was also used in the construction of Mitchelville structures. Although the sapwood of pine tends to have little or no natural decay resistance, the heartwood is very resistant because the wood may contain up to 15% resin (Pansin and de Zeeuw 1970:457; Scheffer and Cowling 1966:151). This accounts for the preservation of non-carbonized structural remains from the Feature 3 chimney footing. Other structural evidence is provided by the quantity of melted tar obtained from post hole 1 in square 123-40R50. This tar is probably from either a bitumin roof or the repair of a roof.

The Mitchelville sample provides little information on plant foods used by the freedmen. The only food remain recovered is a single peach pit. Hilliard notes that, "[t]he peach was the favorite fruit in most of the South and was prized as a food either fresh, dried, or preserved" (Hilliard 1972:180). Fogel and Engerman (1974:11) mention the use of peaches by slaves and the peach is one of only three dried fruits offered for sale by Ely and Tackaberry at their Mitchelville store.
The presence of a chenopod and violet seed from Feature 10 suggests that the feature was adjacent to some weedy vegetation and was open and in use some time from June through December. The chenopod has also been reported to have been used as a vermifuge, although the single seed may more likely suggest a disturbed habitat.

The failure to recover carbonized plant foods, while disappointing, is not altogether surprising. Work at the Campfield slave site yielded only squash (Cucurbita sp.), hickory and walnut, and chinaberry (Melia arzedarach), in addition to a number of weed seeds (Trinkley 1983b). The squash is the only cultigen, and the nuts probably represent "snack foods" of little dietary importance. The chinaberry represents an example of a probable vermifuge or insect repellant. The weed seeds include several of the Brassicaceae or mustard family and may indicate the presence of pot herbs. Gardner (1982) has identified only corn (Zea mays), rice (Oryza sativa), and the peach from the Yaughan and Curriboo slave sites.

It appears that plant foods are often only minimally preserved in the archaeological record of slave sites. At all the sites thus far studied and reported wild plant foods do not appear to have made a noticeable contribution to the diet. Those plants that did contribute to the diet seem to be limited to a few cultigens.

At Mitchelville the plant foods being used and their probable preparation techniques greatly reduce the opportunities for the remains to enter (or be preserved in) the archaeological record. The historical data from Mitchelville reveals the presence of six plant foods: sweet potatoes and corn were reported as being grown in gardens, and rice, flour, grits (corn), pepper, and allspice were offered for sale. In addition it is reasonable to expect the cultivation of both pot herbs and medicinal or herbal plants. Of the known foods, only corn, rice and possibly pepper might be carbonized and observed in the archaeological record. But the preparation techniques for these foods, discussed by Genovese (1972:548-549), suggests that few items would have been exposed to potential carbonization since they were mainly boiled or fried (for further observations see Trinkley et al. 1985). A further factor limiting the recovery of ethnobotanical remains is the use of wood (probably from fireplaces) as fertilizer (see Nordhoff 1863a:11).

In summary, the Stallings samples suggest that the primary subsistence resource may have hickory nuts, although fleshy fruits were gathered as well. The non-food plants identified in the Stalling collection suggest a pine dominated forest with areas of disturbed ground. The primary fuel came from the abundant pine resources. At Mitchelville
plant foods are poorly represented, although the non-food plants suggest a forest type similar to that observed in the Stallings collections and an equal, if not greater, reliance on pine for fuel. The identification of either a Mitchelville privy or well would contribute significantly to the ethnobotanical record, but no such features have thus far been reported.
CLAM SEASONALITY

Cheryl Claasen

Introduction

Quahog shell (Mercenaria mercenaria) from Fish Haul was first examined by the author in 1982. At that time, four individual shells from Feature 2, in the south central portion of square 1982-80R100, Level 3, were examined and found to indicate collection in the months from February through April (Trinkley and Zierden 1983:13, 38). This assessment will be revised in this paper which presents the analysis of 137 additional quahog shells from both the Stallings and historic Mitchelville components. While the prehistoric Stallings Period people collected quahogs in December, the historic occupants apparently collected from October to November. Sixteen hours of work are represented.

Method of Determining Seasonality

While the technique employed has been described in several places to date (Claassen 1982, 1983, 1986a), the control used for this project has only recently been developed and represents a revised version of the one found in those publications.

Briefly, quahog valves are cut in half, if whole, or are ground on an edge if fragmented, to expose an internal sequence of annual growth increments. A year's growth is comprised of two growth increments, one colored white and representing fast growth, the other colored grey, representing slow growth. A suite of environmental and physiological stimuli converge on the animal to determine whether growth will be calcium-rich, thus white in color or calcium-poor, thus grey in color. While an individual animal can be in either fast or slow growth at any time, a population of animals will be primarily in fast growth (100%-88%) in the months of January through May, 0% to 22% in June through November, and in transition (67-89%) in December according to a 3 year long control made of quahogs collected and killed in Bird Shoals, North Carolina. To date the percentages of 23-66% have not been observed in a modern population from this area.

Growth patterns between individuals are distinctive enough that opposite valves of the same individual are occasionally recognized, as are multiple shell fragments from the same animal. This uniqueness in growth patterns permits
the use of fragments and the calculation of minimum numbers of individuals.

As stated, the method compares population percentages of archaeological shells and modern shells killed on a known day. The determination of distinct shellfish populations in a shell midden is fraught with difficulty. For the purposes of this technique, it is necessary to assume that shells found within a small area and contiguous to each other or shells contained in a small sealed feature were, in fact, members of the same biological population, and represent a single death assemblage. Additional clues for making this determination can be gleaned from artifactual, soil, and species clustering data and, in fact, such interpretations have been made by Trinkley in submitting these samples for analysis.

Research on the control collection used to interpret the group percentages is currently underway. The National Science Foundation has funded three years of monthly collecting (50 animals each month) from Bird Shoals and the necessary analysis, which began in September of 1985. At this time (August 1986), all shell collected from September 1985 through May 1986 have been analyzed and have been used in interpreting the samples from Fish Haul. With 27 months of collecting ahead, the control (Figure 62) will undoubtedly be revised and the figures of 23-66% be observed. For this reason, the interpretation offered in 1982 needs revision as will those offered at this time. It is, however, believed that seasonal changes will not be required.

Seasonality of Shellfishing for Quahogs During the Stallings Period

Quahog shells from four presumed steaming pits have been examined (Table 42). The interpretation of Feature 2 shells as collected from February to April, must be retracted at this time. Three of the four shells or 75% were observed to be in fast growth (white colored shell at margin) at the time of their death. The other three samples represent December shellfishing.

<table>
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<td>4</td>
<td>75</td>
<td>December ?</td>
</tr>
<tr>
<td>17</td>
<td>18</td>
<td>83</td>
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<td>18</td>
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<td>79</td>
<td>December</td>
</tr>
<tr>
<td>23</td>
<td>19</td>
<td>84</td>
<td>December</td>
</tr>
</tbody>
</table>

Table 42. Seasonality of clams in Stallings features.
Figure 62. Quahog control sample and typical cross section of shell
The conclusion of December shellfishing is in keeping with the results of shellfishing seasonality from other prehistoric middens in North Carolina as revised in Claassen (1986b) and elsewhere in South Carolina.

Seasonality of Shellfishing for Quahogs During the Historic Period

Quahog shells from three historic features and three excavation proveniences were examined (Table 43).

<table>
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<td>31</td>
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<td>25</td>
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<td>40</td>
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<td>50</td>
<td>October-November ?</td>
</tr>
<tr>
<td>162-40R40, Zone 1</td>
<td>19</td>
<td>53</td>
<td>October-November ?</td>
</tr>
</tbody>
</table>

Table 43. Seasonality of clams in Historic features.

None of these percentages have been observed in the modern control. I predict that future work with the control will find the percentages shown in Table 43 to fall in October and November indicating that the historic occupants shellfished in late fall and into December.

Discussion

One hundred and thirty-four new shells have been utilized in this study of quahog collecting at Fish Haul. With the addition of four shells examined in 1982, 70 shells from the Early Woodland Stallings Component and 68 shells from the historic component are included.

The Stallings people of 1300 to 1700 B.C. appear to have collected quahogs in December, the historic people in October-November. Although the control collection by which month of death has been determined is expected to require revision two years from now, I do not expect this impression of seasonal shellfishing of quahogs to be altered significantly. Historic peoples appear to have gathered quahogs in the fall and people four thousand years ago to have gathered quahogs at the beginning of winter.
I have been careful to specify that this work on season of collecting relates only to the quahog. Oysters may have been collected at a different time. A letter written by a missionary school teacher in the village in April 1867, specified that "we are not going to eat any more oysters after this month" (Martin 1977:68). Work with oysters will be required to address this issue.

The utility of the minimum number of individuals statistic has also been addressed in this study. Typically, shell valves are divided into left and right sets and the larger of the two sets taken to indicate the minimum number of individuals. In this project I attempted to pair whole valves within the same feature and was successful in only four cases. The surficial sculpture and the internal growth structures further indicated that the vast majority of whole valves and marginal fragments were from unique individuals. Using simply the largest valve side set in each case would have grossly underestimated the number of individuals present in the collection from Fish Haul. Formula are available in the population ecology literature for estimating the size of an "original" population. I encourage workers to calculate MNI for shellfish by using at least surface sculpture, if not actually estimating the original number of shells collected.
OYSTERS FROM THE FISH HAUL SITE

David Lawrence

Introduction

Oysters have not been fully utilized in the past in deciphering environmental use by, and behavior of, humans at coastal archaeological sites. Oysters may yield information concerning: (1) source areas -- intertidal vs subtidal gathering, mudflat vs creekbank gathering, (2) behavior during gathering -- site and nature of shell culling, (3) uses of the oysters -- foodstuffs vs agricultural lime vs building materials vs objects of curiosity, (4) seasonality of gathering -- via a ligament growth model developed by the author, and (5) other areas -- including attachment to man-made structures.

With these thoughts in mind, oyster shells from the Fish Haul site (38BU805) were examined. At the author's request, Chicora Foundation, Inc. submitted 40+ left valves from individual samples of appropriate size. Although the use of left valves does preclude analysis of left/right valve sorting during culling and shucking, it does yield the maximum information possible from manageable samples of the oyster shells. Trinkle provided summaries of archaeological context for each of the four samples, and these are repeated here, at the beginning of the discussion of individual samples.

Criteria for Environmental Sources of Oysters

All oysters in the 38BU805 collections belong to the still living species Crassostrea virginica (Gmelin). In the present-day southeastern United States, crassostreid oysters are most common in the intertidal zone along creek banks. In these settings, extreme clustering and crowding of these organisms are common, with other oysters serving as the most common substrate (Battle 1891; Dean 1891). Oysters here tend to be thin-shelled, elongate, and show large left valve attachment areas in response to the crowded conditions. Oysters living in muddy, soft-bottom intertidal flats may also develop as thin-shelled, elongate forms in clusters. However, in my experience, these less crowded oysters show smaller attachment areas (see also Galtsoff 1964: Figures 19, 20). Oysters from subtidal channels and creeks more commonly occur as single individuals, not clusters. Such animals display ovate to subovate shell outlines, and may develop thicker individual valves. Increased left valve cupping, and small attachment areas, also commonly reflect growth as scattered individuals in the subtidal zone.
Oyster associates add to these criteria of environmental differentiation. Along the southeastern coast, competition among organisms for space and other resources has led to the numerical abundance of oysters in the high intertidal zone, since organic diversity increases down the intertidal-to-subtidal gradient. Thus oyster associates increase in number subtidally. Many leave distinctive traces on the oyster shells because of their life habits as epibionts or endobionts. Examples include the perforations and internal galleries of clionid sponges (Hartman 1958; Lawrence 1969), the dumbbell-shaped perforations and oyster-produced blisters caused by polydorid bristleworms (Lunz 1941), encrusting bryozoans (Galtsoff 1964: Figure 387), and attached barnacles. Barnacles and still other organisms may be recognized without the presence of skeletal remains because the oysters are xenomorphic -- they faithfully replicate their substrate on left valve attachment areas. Growth interference may also lead to the recognition of nearby taxa from distinctive shell geometries outside of the attachment area.

Thus elongate and thin-valved oysters with well-developed attachment areas and few shell epibionts and endobionts do typify the highest intertidal settings. Ovate and thick valves with small attachment areas, left valve cupping, and many preserved associates do characterize the subtidal environment as a source. Some of the Fish Haul oysters show all characteristics of subtidal oysters except for the normal associates, leading to a degree of uncertainty about exact source. Given the sum of their characters, however, a subtidal origin is still the most likely one for the cases noted in the following discussions.

**Ligament Seasonality Model**

Although external shell rings have been recognized in some oysters, details from the more internal ligament region of these organisms are more likely to be well-preserved in materials from archaeological and geological contexts. Periodic growth fabrics in oyster ligaments have been recognized for a number of years and have been primarily used to estimate the age at death of these organisms in both present-day and ancient settings (Bjerkan 1918; Haskin 1954; Nelson 1942; Poisson 1946; Stenzel 1971). I use a functional/seasonal interpretation of these recurrent fabrics, one which involves analysis of both topographic highs and lows in this region plus the relative width of the mid-cardinal area, and one which has the topographic high and narrow mid-cardinal area about the pivotal axis of the shell during the coldest months of the year. The model has withstood blind tests in present-day oysters and is continually being refined. Stated most simply: oysters showing the same stage of ligament development died at the
same time of the year and estimates of this season are possible.

Examined Samples

Feature 26

"Historic period; rear yard refuse. Primarily oysters, many burnt; clams present but rare; animal bones present, many of them burnt."

Sample of 64 valves. Small size is a very distinctive feature of these oyster shells. Of the entire valves, only 18 show a height in excess of 6.5 cm. Twenty of the valves, all small, show some degree of darkening or graying. Although dead oyster shell can darken by residence within reducing environment muds, the color tones and surface textures of such shells are different than those of this sample. In an archaeological context, I concur with the supplied burnt shell interpretation of these individuals.

Organisms do not occur attached to, or penetrating, the valve interiors, and the simplistic interpretation is that all of these oysters were gathered while alive. Any culling of dead shells took place away from the location of Feature 26. Given the vagaries of preservation, enough marginal valve chippings are present to suggest that these oysters, especially the unburnt, had their valves forcibly separated with the meats used as foodstuffs. Evidence of forceful entry on the burnt valves is equivocal.

The environmental sources of these oysters are difficult to unravel. The main of the burnt valves show the ovate outline and valve thickness typical of subtidal habitats, yet lack evidence of oyster associates common in such settings in the present day Carolina biogeographic province. Barnacle "ghosts" and evidences of both clionid sponges and polydorid bristleworms do occur on the unburnt shells but are not at all common. Only one of these latter valves shows the outline, thickness, and associates typical of subtidal oysters in the southeast today. Despite the presence of some relatively small attachment areas, the majority of the unburnt valves suggest intertidal origins, with their relatively thin and elongate valves. At least two of the individuals lived attached to mussel shells, with the latter most prominent in the highest intertidal settings -- although attachment to dead shell cannot be ruled out. In sum, the unburnt shells were collected from primarily intertidal settings and the smallest and burnt shells suggest but do not demand subtidal origins. Local and present-day data, on oyster associates within the intertidal gradient in Port Royal Sound, might be sought to help resolve the question of subtidal origins.
Season of gathering is not easily established, because the majority of these individuals did not live through three complete growing seasons, at which time ligament growth fabrics become most evident. However at least some individuals, including both burnt and unburnt valves, clearly suggest late summer-fall (September-December) gathering.

Feature 18

"Stallings period steaming pit; large. Oysters predominant; clam, ribbed mussel, stout tagelus, periwinkle, knobbed whelk, cockle, barnacles, and a single mud dog whelk."

Sample of 79 valves. Oysters larger than those of Feature 26, overall. At least 10 show darkening by burning, as in Feature 26. Burnt valve interiors, plus many of the unburnt individuals, show anastomosing to reticulate patterns of tiny tubes outlined by carbonate or silt-sized sediment; these patterns are herein interpreted as post-burial and fungal/plant in origin. No obvious marine or estuarine oyster associates have penetrated or settled upon the valve internal cavities, and but one individual shows penetration of the ventralmost ligament area by clionid sponges. Thus all but this one specimen are interpreted as gathered while alive. No burnt valves, which include two clusters, show unequivocal evidence of forceful entry; marginal chippings are preserved on a sufficient enough number of the unburnt valves to suggest that they were shucked with meats used as food.

Uncertainties do exist for the environmental sources of these oysters, for the same reasons cited in the description of Feature 26. Intertidal individuals do, however, occur in the sample. Of the decipherable ligament fabrics, the main suggest late summer-fall (September-December) gathering although at least 8 specimens display ligament geometries typical of the cooler months of the year.

Feature 23

"Stallings phase; small pit filled with shellfish. Oysters, rare clams, cockles, stout tagelus, ribbed mussel, and a few knobbed whelk."

Sample consists of 40 individuals; valves are of moderate size for the species. In outline and valve thickness many of these oysters suggest subtidal origins but, as with the historic period samples, they lack the prominent shell epibionts and endobionts typical of oysters from such
habitats today. A minority of the valves may have come from intertidal settings but the evidence is not conclusive.

Known associates of living oysters do not occur on valve interiors, and the specimens were gathered while alive. Marginal chippings and internal scrapings indicate forceful entry between the valves, suggesting use as foodstuffs.

The ligament areas indicate fall (October-December) gathering. At least seven of the individuals show saltations of the ligament region, with this event taking place two to three months before gathering. These features normally indicate stressful intervals of time, and are here interpreted as a response to an unseasonable (high temperature?) summer. Regardless of interpretation, the co-occurrence of these features on multiple shells suggests a single year source for these shell materials.

Feature 10

"Historic period; large circular pit. Abundant shell and refuse. Single oysters, clam, occasional whelk fragments; single oyster drill; fish bone abundant."

The sample consists of 76 individuals plus two fragments of "dead" shell. The collection includes both subtidal and intertidal oysters which were gathered live and shucked via forceful entry. There is no evidence of shell heating or burning. Both the cooler winter/early spring months and fall (September-December) times of gathering are suggested (but not demanded) by the ligament growth fabrics.

Comments on the Heated Shells

Although the two samples of oysters subjected to heating come from archaeologically quite different time periods, they show or suggest some similarities worthy of note. Oyster shells can obviously be "thrown" into hot coals of a fire both before and after shucking. Yet in both the Stallings phase and historic period samples, forceful valve entry cannot be demonstrated for the most darkened shells. This observation may be an artifact of preservation, but it also may represent a true picture of the original context of the shells. The possibility exists that, in situations involving the baking or steaming of oysters, the fire itself was used in the culling process. Darkened oysters from Feature 26 are the smallest individuals; they would have yielded relatively little meat and can be viewed as "unworthy" of detailed food preparation techniques. Similarly, the most darkened oysters from Feature 18 include the sample's only clusters, which require extra time for separation, cleaning, and the like. A
similar argument could be raised for the results vs efforts in preparing these oysters for cooking. Of course other uses, including burning for lime, cannot be ruled out from the material at hand. It has been fascinating to study these "fired" shells, and realize how poorly we understand them.
CONCLUSIONS

Stallings Occupation

A series of three broad research topics were originally proposed for the study of the Stallings occupation at Fish Haul, including culture history, settlement and subsistence. The research conducted at Fish Haul to date has exposed 1700 square feet of primarily Stallings occupation zones and an additional 540 space feet of light, mixed prehistoric and historic occupation. The Stallings phase is represented by 1481 sherds (over 1-inch in diameter), 21 bifaces, 10 large stone tools, 616 flakes, two shell ornaments, 135 hones, and 35 baked clay objects. Also included in our study of the Stallings phase were 12 features attributable to the occupation which produced faunal, ethnobotanical, and shell samples. A series of three highly reliable dates have been obtained from the site: 1770±90 B.C., 1730±60 B.C., and 1330±80 B.C.

The Stallings assemblage from Fish Haul does not contain all of the various types of artifacts found at larger Stallings sites, but is otherwise typical. Some artifacts, such as bifaces, have been recovered in greater abundance at Fish Haul than at other coastal sites. The pottery was primarily punctated, although plain specimens accounted for slightly more than a third of the collection. Of considerable typological significance was the radiographic evidence that a coiling technique was used by the Stallings phase potters. The transition from modeling to coiling probably occurred late in the Stallings phase and the presence of this technique at a site dating to ca. 1800 B.C. is entirely reasonable given our knowledge of ceramic technology among succeeding Thom's Creek potters. The pottery fails to evidence any firing defects, suggesting that the wares were produced elsewhere. Lithics include primarily the Small Savannah River Stemmed type, with fewer numbers of earlier Savannah River Stemmed and later Gypsy Stemmed. The assemblage, like the pottery, suggests manufacture elsewhere, with the points brought to the site in finished form. Once at Fish Haul the points were subjected to resharpening and eventual discard. The source of the raw material is clearer for the lithics than for the pottery, with most of the stone considered to be "Allendale" chert. Little evidence of stone from the Piedmont or from other drainages is present. Few lithic artifact types are present, suggesting a limited range of activities requiring stone tools. While most points provided evidence of use as knives, a few may have been used as spears, which suggests an economy oriented to animal procurement and processing for food. There is little evidence of tools which might be used to process skins.
The presence of hones suggests that pins, probably of wood, were being produced at the site, possibly for making nets. The baked clay objects were subjected to a phosphate test, which suggests they came into little contact with organic materials. Because of this, a pit-roasting function has been suggested over their use in boiling. This seems reasonable since the Stalling pottery was certainly capable of being placed directly over a fire.

The subsistence strategy of the Stallings people at Fish Haul is detailed in the previous discussions of both faunal and ethnobotanical remains. A brief mention will also be made regarding the shellfish contribution in these discussions.

The faunal remains provide no evidence of seasonality, but they do reveal, simply, that while a few species account for the greater amount of meat, the Stallings people had a diffuse pattern of procurement that took a number of different vertebrate species. The most significant species in the Stallings component were deer, diamondback terrapin, and fish.

The ethnobotanical remains suggest that one food source -- hickory nuts -- was heavily exploited. Nutshell fragments were common in features and even in excavation units. In contrast, other wild plant foods, such as acorn or fleshy fruits, were nearly absent in the samples. These data reveal a probable late fall-early winter period of gathering and focal economy (in contrast to the faunal remains.)

The entire Stallings component produced only 393.5 pounds (178.2 kilograms) of shellfish, primarily oyster, and 243.5 pounds (110.3 kilograms) or 62% came from Feature 18. Using the allometric regression formula for oyster, developed by Quitmyer (1985a), this yields 46.5 pounds (21.1 kilograms) of meat, with Feature 18 contributing 29 pounds (13.2 kilograms). This, by far, exceeds the biomass contribution of the faunal resources, and even if compared to expected meat yield of the two deer was not an inconsequential contribution to the diet.

Merging these data into a synthesis of Stallings subsistence at Fish Haul is difficult and open to considerable controversy. What appears to be evidenced is a predominance of shellfish and hickory nuts, in addition to a significant number of fish. Higher vertebrates are not abundant, although deer did provide a notable contribution to the diet. The diet appears to be consistently diffuse, with the exploitation of a number of different coastal zone resources and a reliance on none.

The perceived diet is well balanced, with the
vertebrates and hickory nuts high in protein and the oyster and other shellfish high in carbohydrates. This combination also provides a number of significant vitamins and minerals. This is not, however, to suggest that periods of inadequacy were not known and that disease, particularly of parasitic origin, was not common (see Rathbun et al. 1980).

The diet, specifically the hickory nuts and clams, provide strong evidence for a late fall-early winter occupation. Such a conclusion is consistent with the faunal collection. The site may represent a segment of a definite seasonal round, or it may reflect simply the short-term occupation by highly mobile bands. Evidence from Fish Haul clearly reveals repeated site visits by small groups, but we are not yet in the position to suggest that all of these visits were during the same season. It seems likely that Fish Haul was repeatedly occupied because of its environmental situation which apparently provided access to abundant hickories, in addition to the estuarine resources of shellfish and fish.

A single Stallings phase structure was found during these studies. Evidenced by a series of post holes in a "D"-shaped pattern, this small "hut" suggests an impermanent structure oriented toward the marsh breeze, which is not inconsistent with the late-fall or early winter season given the temperate coastal climate.

In summary, between about 1800 and 1300 B.C. a number of small bands moved through the Fish Haul area, bringing with them the artifacts they would need for their short stay. They built only impermanent structures, perhaps occupied for only a few days or weeks. They subsisted on primarily shellfish, hickory nuts, and fish, as well as opportunistic catches of other vertebrates. This reconstruction may give rise to DePratter's (1979b) characterization of "limited occupations," although Fish Haul does not appear to be a "marginal area." Perhaps a better characterization is Stoltman's (1972:51) "limited segment of a diversified settlement system."

Later Prehistoric Occupations

It is interesting that evidence of occupation through the Early, Middle, and Late Woodland periods is present at Fish Haul, although in no case does the presence rival that of the earlier Stallings people. In fact, only the Deptford component suggests more than a single, brief encampment.

Cultural remains definitely attributable to the Deptford occupation include only pottery. No small "Deptford stemmed" points (Trinkley 1980a) were recovered, no features with
Deptford remains were recovered, and no information on Deptford subsistence was revealed. The Deptford pottery represents a fairly thin veneer over the site, although the Auger Test Survey suggests a denser concentration of Deptford remains in the vicinity of Auger Test 47. Likewise, there appears to be concentration of Thom's Creek pottery in the vicinity of Auger Test 225. It is therefore possible that further research (detailed below) will yield data on the later utilization of the Fish Haul environs.

Mitchelville

Mitchelville may be one of the most significant Afro-American archaeological sites in South Carolina. Historical sources revealed that the town was an autonomous black community established in 1862 by the Union forces on Hilton Head. Streets were laid out and houses were constructed on ½ acre lots by the blacks. An elected town government, entirely black, was established to develop sanitary, police, and school regulations. The village's occupants were supported primarily by wage labor ($4 to $12 a month, plus military rations, the cost of which might be subtracted from the wages) while the Hilton Head post was active until about 1867. During that time blacks became acquainted with a consumer economy, and stores and shops were established on the Island and specifically in Mitchelville. Public buildings, such as churches and possibly schools, were established. After 1867 the community was probably more agrarian, but it continued to thrive to about 1880. By the mid-1880s it is probable that the village was being transformed into a kin-based community, led by March Gardner and his son, G.P. Gardner, which continued into the twentieth century. By 1921 the "town" was divided among the five heirs of March Gardner.

The archaeological study of the site has yielded a large quantity of remains (over 25,000 artifacts) which provide a detailed, yet preliminary, reconstruction of the freedmen's lifestyle. At least four structures were examined, one intensively by the excavation of 950 square feet. This is the first archaeological study of a freedmen's village and it provides another perspective to previous studies of the "Port Royal Experiment." The presence of Mitchelville provides evidence of the ability of blacks to rule themselves absent the bonds of slavery. A Freedmen's Bureau officer in the South noted that the black "loves to congregate in families, in groups, in villages" (John Alvord, quoted in Gutman 1976:xxi). This strong social bond, in a part, may explain the cohesiveness of Mitchelville over at least 18 years.

The presence of specific, high status artifacts in the archaeological record suggest that plantation house goods found their way to blacks. Whether the goods, such as
ceramics, stemware, lead crystal, arms, and personal items, were directly looted by the blacks, or bartered to them by Union soldiers cannot be determined from the archaeological evidence. It seems likely that both forms of procurement took place, based on the historical record.

An examination of the artifact patterns exhibited by Mitchelville reveals that not only were a number of high status goods incorporated in the archaeological record, but that the freedmen owned possessions in excess of those typical of slavery. When compared to the Carolina Slave Artifact Pattern, Mitchelville evidences higher proportions of furniture, personal and clothing goods. Compared to the Georgia Slave Artifact Pattern, Mitchelville residents possessed more furniture and arms, and both clothing and personal items are within the upper range of the slave pattern. This demonstrates that the Mitchelville residents were not worse off than before slavery, but were clearly participating in the economy evidenced in the historical documents.

The artifact pattern exhibited by the most thorough excavation in Mitchelville reveals similarities to the recently proposed Piedmont Tenant/Yeoman Farmer Pattern (Drucker, et al. 1984) and the Revised Frontier Artifact Pattern (Garrow 1982b; South 1977). It is made clear that blacks were prospering (relatively speaking) and were beginning to change their economic position. The evidence from Mitchelville also suggests the possibility of pattern differences between structures, which may reflect differing status or simply economic well-being of the occupants.

The status of individuals, or their wealth, may also be viewed using Miller's classification of nineteenth century ceramics. This technique reveals consistently inexpensive plate and bowl motifs, although cups and saucers (teaware) have a higher economic scale. In spite of this, the ceramics suggest that food preparation and serving habits were beginning to change among the freedmen. There is a greater emphasis on plates and annular ware is no longer the predominant motif. The artifacts also suggest, as previously mentioned, that it may be possible to identify wealthier members of the community.

The faunal remains from Mitchelville provide significant data on the foodways of the freedmen. A few species, primarily the cow and pig, contributed the greatest portion of the biomass. Fish and turtles made notable, and consistent, contributions to the diet, as suggested by the historical record. Wild mammals, while utilized, appear hardly significant in the overall diet. Likewise, shellfish were collected (clam primarily in the late fall), but probably made a minor contribution to the diet. While pork was homegrown and slaughtered, beef was largely obtained...
fresh, probably as military rations.

While Reitz (1984; see Table 39 in this report) notes a dominance of wild species at rural and slave sites (73.4 and 73.8% respectively), the emphasis clearly shifts to domestic species (53.6%) at urban sites (wild species decline to 36.2%). Commensals increase from 4.3 and 2.8% at rural and slave sites to 10.4% at urban sites, perhaps a true reflection of "urbanness." The Mitchelville data falls midway between the Rural/Slave and Urban Patterns, except that the commensals suggest an urban environment. In other words, Mitchelville was urban, but relatively poor when compared to other urban sites and therefore somewhat more reliant on wild foods. This is, of course, documented by the historic records that talk of the near starvation by Hilton Head blacks.

These data, however, do not address the contribution of either plant foods or prepared foods (purchased in bulk or in cans from stores). The ethnobotanical record is very sparse, presumably because of food preparation and disposal techniques. The historic accounts provide some information on other food sources, which probably emphasized the grains -- rice and hominy.

The present work has only begun to examine the community patterns, social organization, and group dynamics of Mitchelville. Although Geismar (1982) has demonstrated the applicability of archaeology to the study of these topics, she also began with the advantage of more detailed historic accounts for Skunk Hollow than are available for Mitchelville. It is, however, intriguing to speculate that March Gardner and later his son, G.P. Gardner, provided a certain cohesiveness to the community and that the disintegration of the kin-based community is associated with the death of G.P. Gardner and/or his gradual loss of status. The topic may be amenable to more detailed study as a larger sample of structures is obtained and additional historical sources are identified (see below).

Future Studies and Research at Fish Haul

These studies have demonstrated that both the prehistoric and historic components of Fish Haul are clearly significant; not only have they yielded considerable data, but the research has demonstrated areas which require additional investigation. These brief comments are meant only to serve as a general guide to future work.

The Auger Test study revealed several concentrations of prehistoric remains which were not examined by this study, specifically the Deptford remains evidenced by Auger Test 47,
the Thom's Creek remains evidenced by Auger Test 225, and the concentration of Stallings remains at Auger Test 140-142. Each of these areas deserves at least minimal block excavation to determine the nature and extent of prehistoric occupation. An examination of Thom's Creek and Deptford remains may assist in obtaining a better understanding of their respective settlement and subsistence systems and may also reveal consistent attributes about the Fish Haul tract which made it attractive to prehistoric occupation. If these later Early Woodland occupations provide in situ remains, including features, they will be useful to explore aspects of material culture and cultural diversity. Evidence from several blocks suggests the presence of stratigraphic deposits, which combined with additional radiometric dating, would help refine our knowledge of the cultural sequence of the area.

Further research into the Stallings phase at Fish Haul is warranted, based on the currently available data. The 110-123 block should be extended to the north (into the area of greatest density based on the Auger Test Survey). These data will continue to assist in the refinement of our knowledge of Stallings settlement and subsistence. It will particularly be useful to have the data from the 140-142 area to compare with that obtained from the 110-123 and 1982 blocks. Further research in the Stallings component should enable additional structures to be identified and additional radiocarbon samples to be collected.

Fish Haul has demonstrated its ability to contribute data to a variety of significant questions. The larger samples of pottery, lithics, baked clay objects, and subsistence data will enable the studies tentatively outlined in this report to be continued and refined. As was originally emphasized, and amply demonstrated by this work, Fish Haul represents a uniquely well preserved site with demonstrated research potential. No similar site has been identified in the area's literature and no similar work has been conducted at any Stallings site on the South Carolina coast.

The Mitchelville site is likewise unique in South Carolina archaeology. While the site was originally much larger than the Fish Haul tract, it has been largely developed so that only in the "Fish Haul Subdivision" is it still undeveloped and largely unaffected by agriculture and vandalism (during the field work we observed archaeological looting of the site areas to the north and northwest by individuals in vehicles having South Carolina, Georgia, and Ohio license plates). Consequently, our knowledge of Mitchelville archaeology must, of necessity, come from the Fish Haul tract.

Research at Mitchelville should continue to expose the
anomalous structure observed in the 39-40-47-48 block, obtain a more complete sample from the 110-123 structure, and begin to more fully expose the structure found in the test pits. A program of more intensive testing should be directed to the identification and testing of structures between the test pits and the 39-40-47-48 block and the 161-162 structure and the area to the southwest. An effort should be made to obtain permission to explore the structure associated with the standing chimney in one of the outparcels. This structure appears to date from the late nineteenth century and may be related to the late occupation of Mitchelville.

Research at the various Mitchelville structures will enlarge the sample for Artifact Pattern analysis. Upon examination it may be possible to better understand the relationship between the Kitchen and Architectural Groups. It should also be possible to better understand the transition from slavery to freedom by comparing Mitchelville to antebellum slave sites. Mitchelville should also be compared to examples of small agricultural villages typical of the northern states, particularly New England. The significance of jewelry as part of the Afro-American continuum should be examined. Further research should emphasize perceived differences between antebellum free black/slave sites and Mitchelville. Of particular interest should be archaeological evidence which suggests that the freedmen were attempting to distance themselves from the plantation experience, as this may be the key to studying the black cultural transition from slavery to freedom.

Further research should continue to explore status, using not only Miller's ceramic indices, but also other artifact types. Further efforts should be made to distinguish the results of looting or bartering from the possessions acquired through wage labor. The study of status should be enlarged to examine several contemporaneous Mitchelville structures which have received extensive excavation. This approach will assist in the study of community organization and the intrastructural comparison of wealth and status.

While a considerable effort has been expended in the examination of historical documents relating to Hilton Head and Mitchelville, there are avenues which are still unexplored or which deserve further attention. Some sources, such as the Penn School records at the Southern Historical Collection, University of North Carolina, Chapel Hill, have not been examined because of time and funding restrictions. Only the local, period newspapers available at the Library of Congress were examined, although other numbers exist in other repositories and would likely contribute to a better understanding of Mitchelville. Surprisingly little was discovered about the town from an examination of military records, although two and a half days were spent reviewing
the National Archives collections. Finally, little was learned about the postbellum events in the town and it is possible that the vast amount of relatively uncataloged county or state archival documents may provide a more complete view, as might other late nineteenth century newspapers.

The present study should have clearly demonstrated that archaeological and historical investigations must be jointly utilized. In addition, future studies should incorporate the use of an individual trained in informant interviews and folk history to ferret out local sources and information in the rapidly dwindling black community.

The study of Mitchelville provides clear roots for the black community on Hilton Head, linking the abstract "Port Royal Experiment" to the land established by the federal government in 1862 as an experiment in self-government and democracy, and to the actual, physical remains of the village. In spite of "progress" and development, the experiment and its effects on the black community can be better studied nowhere else. It is appropriate to recall the words of Uncle Smart Washington, an ex-slave on St. Helena Island, who, angered by Northern speculators among the Sea Island blacks, said,

[w]e born here; we parents' graves here; we donne oder country; dis here our home. De Nort folks hab home, antee? What a pity dat dey don't love der home like we love we home, for den dey would neber come here to buy all way from we (quoted in Gutman 1976:471).
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