11-1976

Archeological Investigation at the Palm Tree Site, Berkeley County, South Carolina

Randolph J. Widmer

Archeological Investigation at the Palm Tree Site, Berkeley County, South Carolina

Description

An archeological investigation was conducted at the Palm Tree site, 38BK147, located on the Amoco Chemical Company's plant facility on the Cooper River in Berkeley County, South Carolina. The field work was done by the writer and David Ballenger of the Institute's staff during March and April of 1976. The laboratory analyses and reporting was accomplished, intermittently, during the early summer of that year. The research goals for this project were to investigate the adaptive strategies of this occupation in terms of the environment, and to develop models of settlement and adaptation. Intrasite artifact analysis, analysis of subsistence items and features, and intrasite comparisons were utilized to evaluate and describe the community pattern of this site and its adaptive significance in this environment. These data were then incorporated into more extensive intersite comparative analysis and synthesis to develop proposed settlement models. The archeological investigation indicated that extensive deposits of predominately Thom's Creek ceramics existed in situ below the plow zone of the site. Analysis of the frequency distribution and spatial occurrence of these ceramics revealed distinctive differences in decorative motifs from similar ceramic assemblages from coastal estuary sites on the Cooper River. A comparative analysis of ceramics from coastal sites which contained shell and interior lower Coastal Plain sites which do not contain shell was performed. Results of the experiment indicated a distinctive contrast between frequency distribution of certain motifs. Two models of settlement are presented to explain the distinctive distribution of these ceramic motifs, and an evaluation of these models in light of contemporary knowledge of this area is discussed.

Keywords

Excavations, Indians of North America, Ceramics, Amoco Chemicals Company, Cooper River, Berkeley County, South Carolina, Archeology

Disciplines

Anthropology

Publisher

The South Carolina Institute of Archeology and Anthropology--University of South Carolina

Comments

In USC online Library catalog at: http://www.sc.edu/library/

ARCHEOLOGICAL INVESTIGATION AT THE PALM TREE SITE, BERKELEY COUNTY, SOUTH CAROLINA

by

Randolph J. Widmer

Research Manuscript Series, No. 103

Prepared by the
INSTITUTE OF ARCHEOLOGY AND ANTHROPOLOGY
UNIVERSITY OF SOUTH CAROLINA
November, 1976

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

FOREWORD

This report and the archeological research that it represents is a direct result of the sincere concern of the Amoco Chemicals Company for the cultural resources that are present on that company's proposed plant site on the Cooper River in Berkeley County, South Carolina. The Amoco Chemicals Company, through its contractor, the consulting firm of Dames & Moore, provided funds for archeological assessment of the proposed plant site in compliance with applicable federal regulations. The Institute of Archeology and Anthropology at the University of South Carolina completed that assessment and found that one significant prehistoric site, the Palm Tree Site, would be destroyed by planned construction of a large building.

Subsequent geological investigations determined that the selected spot for this building was unsuitable for such a structure; the Palm Tree Site was therefore no longer endangered. The Amoco Chemicals Company, however, was more concerned with the cultural resources of the area than to let the matter drop upon completion of their necessary requirements. They wanted to know what this particular site might provide by way of cultural information if further investigated.

The Amoco Foundation Incorporated then made $3,000 available for the Palm Tree Site research described in this report through a grant to the Institute of Archeology and Anthropology. This concern for cultural resources is deeply appreciated, especially since it was not required by federal or other regulations, but simply by a sincere concern on the part of the company. Amoco has gone a step beyond its required duty.

It should be pointed out that, by contract with the Charleston Museum, the Amoco Chemicals Company has provided impact assessments of the historical structures on their property and has excavated one of those sites as well. They have also contracted with both the Institute and the Charleston Museum for similar assessments of impact on cultural resources along the right-of-way of their proposed East Cooper and Berkeley Railroad. The Company is now discussing ways to preserve and exhibit a large eighteenth century brick factory on their property and to excavate a prehistoric site along the railway.

All of this is deeply appreciated by all South Carolinians who are concerned with cultural resources and their preservation and interpretation. It is an outstanding example of the way that modern industry can develop its interests for the economic benefit of an area and at the same time be an asset to the preservation of the cultural heritage and environment of the State. Modern industry <u>can</u> develop compatibly with the environment and with the cultural heritage if there is mutual understanding of what is required of each and a sincere effort made to work together.

Robert L. Stephenson
Director and State Archeologist
Institute of Archeology & Anthropology
University of South Carolina
Columbia, South Carolina 29208

ACKNOWLEDGEMENTS

I would like to thank Dr. Wade Batson for taking the time to analyze the floral remains from this site. Thanks are also due to Stanley South, who was so kind as to provide me with unpublished data from the Charles Towne Landing site, on which so much of the comparative synthesis of this report is based, and who tolerated my "interrogation" of him through which means much of this data was obtained. Many of the ideas and conclusions would not have been possible without this data.

I would also like to thank Dr. Robert L. Stephenson for arranging for the botanical services of Dr. Batson. Without this initiative, one of the most significant results of this project would be absent. I would also like to thank Gordon Brown for his extra effort which was necessary to achieve the desired results with the less than ideal original graphic work which I presented.

I would like to thank the other members of the staff at the Institute for their help and assistance which was vital in the writing and preparation of this report.

Special thanks are also extended to Mr. Donald E. Burney, Executive Director of the Amoco Foundation, Incorporated for the grant that made this research possible; to Dr. Walter R. Quanstrom, Jr., staff ecologist of Standard Oil Company; and Mr. Porter G. Stevens, plant manager of Amoco Chemicals Company for their material assistance throughout this project. The overall support on this and related Amoco projects provided by Mr. Paul Grantz of the environmental consulting firm of Dames and Moore has been outstanding and our deep appreciation is expressed.

ABSTRACT

An archeological investigation was conducted at the Palm Tree site, 38BK147, located on the Amoco Chemical Company's plant facility on the Cooper River in Berkeley County, South Carolina. The field work was done by the writer and David Ballenger of the Institute's staff during March and April of 1976. The laboratory analyses and reporting was accomplished, intermittently, during the early summer of that year.

The research goals for this project were to investigate the adaptive strategies of this occupation in terms of the environment, and to develop models of settlement and adaptation. Intrasite artifact analysis, analysis of subsistence items and features, and intrasite comparisons were utilized to evaluate and describe the community pattern of this site and its adaptive significance in this environment. These data were then incorporated into more extensive intersite comparative analysis and synthesis to develop proposed settlement models.

The archeological investigation indicated that extensive deposits of predominately Thom's Creek ceramics existed *in situ* below the plow zone of the site. Analysis of the frequency distribution and spatial occurrence of these ceramics revealed distinctive differences in decorative motifs from similar ceramic assemblages from coastal estuary sites on the Cooper River. A comparative analysis of ceramics from coastal sites which contained shell and interior lower Coastal Plain sites which do not contain shell was performed. Results of the experiment indicated a distinctive contrast between frequency distribution of certain motifs. Two models of settlement are presented to explain the distinctive distribution of these ceramic motifs, and an evaluation of these models in light of contemporary knowledge of this area is discussed.

INTRODUCTION

In March 1975, an archeological survey of a tract of land located between Flagg and Grove Creeks, 12 miles north of Charleston in Berkeley County, South Carolina was undertaken to determine if any archeological sites would be adversely impacted by the construction of a proposed chemical plant by Amoco Chemical Corporation (Hartley and Stephenson 1975). At that time, only one prehistoric site was found which would require additional archeological investigation to mitigate the adverse effects of the construction project. This site, the Palm Tree site (38BK147), is located in an area which was selected for the construction of a storage tank field (Fig. 1).

Archeological information recovered during the initial survey suggested that this site was occupied primarily during the Deptford Phase (ca. 800 B.C. to A.D. 300). The site was estimated to cover about two or three acres, and the occupation appeared to be confined within a zone extending from the site surface to a depth of about one foot.

Such single occupation sites are extremely valuable for their potential to yield extensive information regarding past lifeways of a single group of people during a limited span of time. Investigation of this type of site allows the archeologist to isolate, describe, integrate, and explain various aspects of the economic and social systems utilized by the past inhabitants of a region, to adapt to a particular environment at a specific period of time. Results of such single occupation investigations can then be integrated into a sequence of cultural development within a region with the primary goal of describing and explaining the cultural change within this region and ultimately explaining long term cultural change in general (Leone 1972; Plog 1971, 1973). Additionally, such single component sites are individual components of larger cultural systems. It is therefore necessary to investigate each part or component of this system in order to comprehend the entire cultural system of which it is a part.

A pattern of cultural adaptation involving seasonal movements of people between a coastal environmental zone and a pine barrens environmental zone has been hypothesized for the Deptford Phase (Milanich 1972). According to this model, Deptford Phase inhabitants moved into the pine barrens zone during the fall months to gather acorns, hickory nuts, and faunal resources which were abundant in the river valleys during this time of year. This region however, according to Milanich, could not support year-round occupation utilizing the existing level of subsistence technology which was based on hunting and gathering. The inhabitants, therefore, returned to the coastal region during the remainder of the year where subsistence items were available on a more consistent basis.

The Palm Tree site is located within a pine barrens environmental zone, and the plan for mitigation which was proposed in the initial Environmental Impact Statement, suggested investigation of the archeological nature of this Deptford occupation within the framework of Milanich's

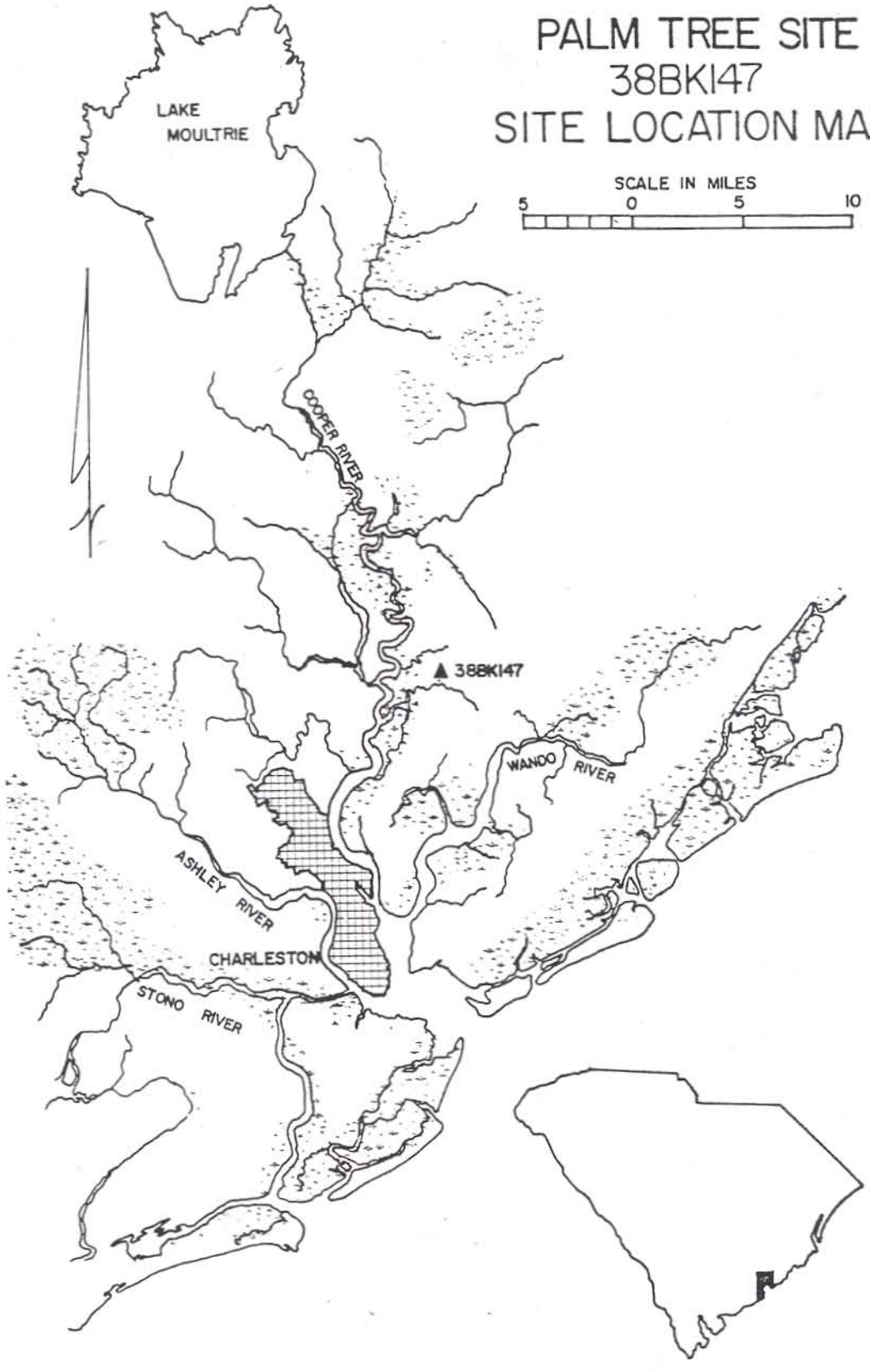

PALM TREE SITE
38BK147
SITE LOCATION MAP
SCALE IN MILES
5 0 5 10
LAKE MOULTRIE
COOPER RIVER
38BK147
WANDO RIVER
ASHLEY RIVER
CHARLESTON
STONO RIVER

FIGURE 1

model of movement and settlement, placing particular emphasis on specific pine barrens adaptation. This would be accomplished by the removal of the disturbed plow zone of the upper level of the site with earthmoving equipment, and subsequent recording and collection of pertinent archeological information. Such data include: type and nature of the community plan as revealed by house outlines, subsistence data obtained from faunal and floral remains from storage pits or cooking areas, and mapping and recording artifact concentrations which might reflect different economic activities. Following the suggestions in the initial mitigation proposal, a more specific research design was prepared which would explicitly outline and operationalize the original considerations.

Soil borings taken at the site after the Environmental Impact Statement was completed revealed that the site location was not appropriate for the construction of a storage tank field, however, the Amoco Chemical Company graciously agreed to continue the proposed investigations of the site due to its archeological significance.

PHYSICAL ENVIRONMENT

The Palm Tree site is situated on a high ridge which was formerly a barrier island erosional remnant, or possibly an ancient beach dune associated with Talbot Pleistocene marine formation (Colquhoun 1965). The site, and the ridge crest upon which it is situated is located equidistant between Grove and Flagg Creeks, approximately 1.25 miles east of the Cooper River (Fig. 1). The ridge crest drops off abruptly to form a broad, gently sloping "terrace-like" plain which extends approximately 0.5 miles westward to a point at which a treeless marsh plain is encountered. The vegetation on the terrace-like plain had been removed at the time of the investigation in conjunction with the proposed construction. Presumably, this area contained a mesic or slightly hydric forest community of either bottomland hardwood communities or swamp hardwood communities. The eastern margin of the site probably contained a mixed southern hardwood forest type, with swamp hardwood communities in the lowlying hydric pockets and depressions which occur frequently in this region. The northern and southern sides of this site are currently bounded by the marsh plains of Grove and Flagg Creeks.

An attempt to reconstruct the prehistoric environment of the East Cooper River area has been presented in detail elsewhere (Widmer 1976). The methodology utilized in this reconstruction will not be repeated here but a map of the environmental zones of this region is presented (Fig. 2).

The occurrence of different biotic zones in relatively close proximity to each other in the site vicinity relates directly to the richness and diversity of potential food resources available for exploitation by prehistoric populations. The interfaces between these biotic zones are particularly favorable habitats for certain species of upland game, the most important of which, in terms of prehistoric hunting economy, is the white-tailed deer.

The highest deer population density occurs where many small areas of varying vegetation are located. This situation produces maximum edge areas between biotic zones, a condition extremely favorable for deer (Smith 1975: 19). The bottomland hardwood associations provide the best deer habitat in the southeastern United States (Stransky cited in Smith 1975: 41). Moore (cited in Smith 1975: 39) estimates the deer population density in the bottomland area of the Savannah River in South Carolina to be approximately 50 per square mile. A wildlife habitat study of the nearby Francis Marion National Forest indicates an adequate and diversified habitat conducive to deer maintenance (U.S.D.A. Forest Service 1971). Plentiful browse is found in this area including tit, bay, blueberry, black gum, cane, greenbrier, gall berry, sweet pepper, blackberry, wild grape, yellow jasmine, red maple, honeysuckle, dogwood, and smilax. Mast for deer is provided by hickory, oak, beech, and dogwoods. Deer habitat would probably have been richer during the prehistoric period with the availability of much more mast since the pine tracts would be replaced by hardwood forest cover. There would still be numerous edge areas and transition zones providing ample browse to complement the

HYPOTHETICAL RECONSTRUCTION OF THE PREHISTORIC BIOTIC ZONES WITHIN THE EAST COOPER RIVER AREA

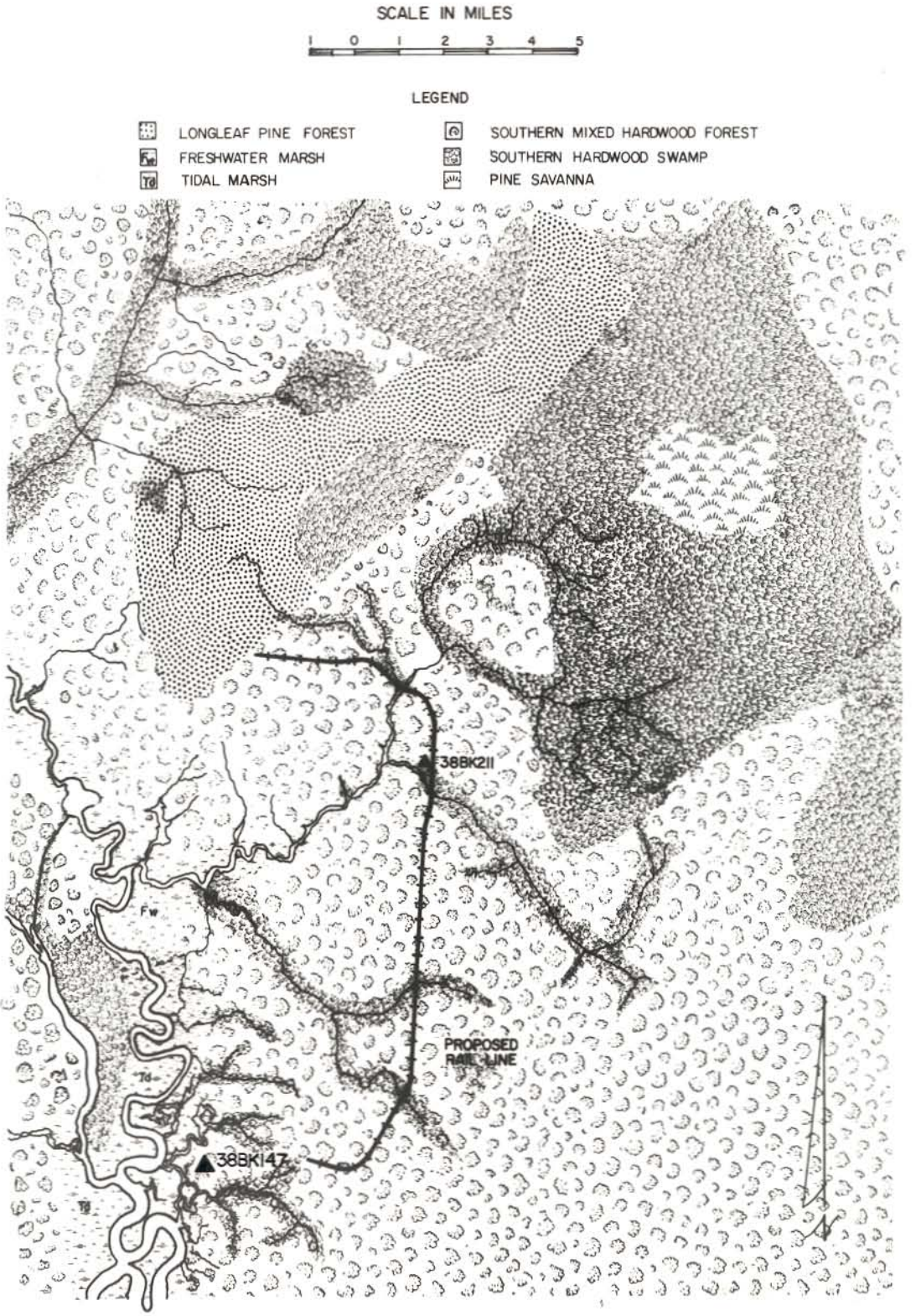


FIGURE 2

seasonally varied deer diet. This environmental situation also favors turkey, woodcock, wood duck, dove, squirrel, bobcat, racoon, opossum, and bear. The swamp regions would additionally provide habitats for wading birds (Dames and Moore 1975a: 23-24). All of these animals would have been available to prehistoric inhabitants of the area.

The tidal marsh adjacent to the site provides particularly attractive, seasonal habitats for migratory birds including various species of ducks, geese, and teal. These birds were important subsistence items of the Sewee Indians in the region of the Santee River delta during the early European contact period (Lawson 1952: 4) and were undoubtedly important subsistence items prehistorically. The migratory waterfowl would be attracted to the open marsh area primarily by the plentiful wild rice. Turtles and alligators inhabit this zone and would have been exploited by prehistoric populations.

The Cooper River is a known breeding ground for anadromous fish such as menhaden, rock, and herring (Dames and Moore 1975b: 109-111), and possibly sturgeon which are reported as having been commonly taken from North Carolina, Virginia, and Georgia rivers during the sixteenth through eighteenth centuries (Swanton 1946: 336-338; Larson 1970: 177-178). The occurrence of these species in the river would not have been adversely affected by fluctuation in salinity and should therefore have remained available to prehistoric inhabitants for exploitation.

Plant resources available for exploitation are equally abundant in the vicinity of the site and in the East Cooper River area. The hardwood forest tracts would have provided abundant acorns and hickory nuts during the fall. These items are extremely important in prehistoric economies in the southeastern United States (Caldwell 1958; Larson 1970). Numerous sixteenth through eighteenth century accounts testify to the importance of these subsistence items in the aboriginal economy (Hariot in Swanton 1946: 273; Hilton 1959: 47; Ashe 1959: 142-143; Lawson 1952: 12, 24). Other potentially exploitable species include palmetto berries, flesh of the sabal palm, and other fruits such as wild cherry, plums, and persimmons, all of which are known to have been utilized by Southeastern aboriginal populations (Larson 1970). Additionally, wild rice (Zinzaniopsis mileacea) and arrowhead (Sagittaria sp.) are reported as being abundant in the marsh adjacent to the Palm Tree site (Dames and Moore 1975b: 115-116). Arrowhead is reported by Swanton (1946: 292-293) to have been eaten by the Chitimacha, an Indian group living in coastal Louisiana. Swanton also notes the use of wild rice among Indians of the North Carolina and Virginia coastal areas (1946: 293).

This prehistoric environment as conceived above differs considerably from the previous generalizations of the prehistoric environment of the southeastern Coastal Plain. Larson (1970) includes the East Cooper River region in the Delta Section of his Coastal Sector. He concludes that the Delta Section offers few resources that would attract a large or stable aboriginal population, and considers only anadromous fish to have been potentially attractive to aboriginal inhabitants (Larson 1970: 34-35).

Milanich (1972: 110-111) would divide the survey area into a Pine Barren Biotype and a Pine Barrens River Valley Biotype, the latter being characterized by deciduous bottomland hardwoods which would favor seasonal exploitation of their nuts and associated fauna. He would not, however, consider that this region has a subsistence base capable of supporting year-round habitation.

While both of these hypothetical reconstructions and evaluations are valid as general characterizations for the southeastern Coastal Plain, they clearly demonstrate their inadequacy for interpreting and analyzing the culture-ecological adaptation to the specific environment found in a particular region. Furthermore, they indicate the need for specific detailed environmental reconstructions based on the full range of environmental research available for the area.

RESEARCH STRATEGY AND EXCAVATION PROCEDURES

The original mitigation proposal in the archeological report of the survey of the Amoco plant site (Hartley and Stephenson 1975) clearly warned of the uncertain nature of the archeological context and potential of the Palm Tree site, particularly concerning time and labor needed to recover the archeological data pertinent to the research goals. For this reason, a two-stage research strategy was implemented for the investigation of this site.

The first stage of the investigation would be a discovery phase. The initial survey investigation indicated several conditions which dictated the investigative procedure utilized in this stage of research, and resulted in the suggestion that the entire plow zone be removed with earthmoving equipment and that all archeological features exposed by the stripping be recorded and plotted (Hartley and Stephenson 1975: 9-10).

The second phase of the research strategy would involve the investigation of those features which were revealed during the first stage. A research design would then be developed which would be compatible with the archeological situation revealed during previous work. The specific research design is therefore not dependent upon unknown assumptions, but rather on the types of data known to be present at the site. This allows a much more efficient utilization of the data from the site for archeological purposes, and forms a more accurate basis for implementation of the general research goals in terms of planning and use of data recovery techniques.

Stage I Research

On March 18, 1976, an inspection of the site was made and artifacts were collected. The collection consisted primarily of potsherds which were restricted in distribution to the northwest corner of the cleared field. Previous to this field inspection, it was planned that a controlled surface collection would be undertaken for the purpose of relating the surface distribution of cultural material with possible underlying features. Because of the restricted occurrence of artifacts on the site, this technique was not used. Of the 19 sherds collected at this time, all but four were undecorated. Three of the decorated sherds belong to the Deptford ware group while the remaining sherd is associated with the Cape Fear ware group. The plain sherds while not necessarily diagnostic of any particular ware group are probably associated with the Thom's Creek ware group (South 1973a: 54-55). Although the decorated sherds recovered from the surface collections tend to substantiate the interpretation that the site represents predominately a Deptford occupation, the classification of the plain sherds (grit tempered) into the Thom's Creek ware group would tend to indicate a substantial occupation during this time period as well.

The removal of the plow zone took place March 22nd and 23rd. Because of the loose consistency of the sandy soil, furrows were left between each

drag pan cut (Fig. 3). This allowed for the largest area of undisturbed clearly visible subplow zone surface, since the drag pan tires would disturb the intact site soil. The width of the drag pan cuts was approximately six feet, with the width of the furrows ranging from two to three feet. In the event that pits, postholes, or other features might extend under these furrows, overlying soil could easily be removed by hand labor.

The initial observation and analysis of the stripped plow zone area (Fig. 4) revealed the following information:

1. The site as originally suggested, covers the entire 2 1/2 acre tract.

2. The site is almost entirely intact with a culture bearing stratum approximately 0.5 feet thick.

3. Structural data such as postholes are totally absent.

4. Fire hearths and pits were difficult to distinguish and minimally represented, if present at all.

5. The site is not restricted to a Deptford Phase occupation but includes occupations ranging from 2500 B.C. to A.D. 1000.

6. *In situ* ceramics are numerous and occur in spatially discrete clusters.

7. There is no readily discernable stratigraphic separation of the temporally distinct components.

8. The geological stratum underlying the site soil consists of red clay which occurs at irregular undulating depths ranging from one to four feet below the soil surface.

9. The locations of the surface artifact cluster previously mentioned and *in situ* subsurface ceramic deposits are mutually exclusive, which indicates that where archeological material exists on the surface, no material exists below it *in situ*. This further indicates that the plow zone is essentially sterile and that the culture bearing stratum has been covered by approximately 0.8 feet of soil, represented by the plow zone, subsequent to the last occupation of the site. There appears to have been less than 0.5 feet of soil accretion in most areas of the site during its occupational history.

10. No shell was found associated with the cultural deposits below the plow zone, nor was bone present due to poor preservation.

11. No lithic debitage was observed on the surface of the cleared subplow zone surface.

FIGURE 3. 38BK147 after removal of plow zone.

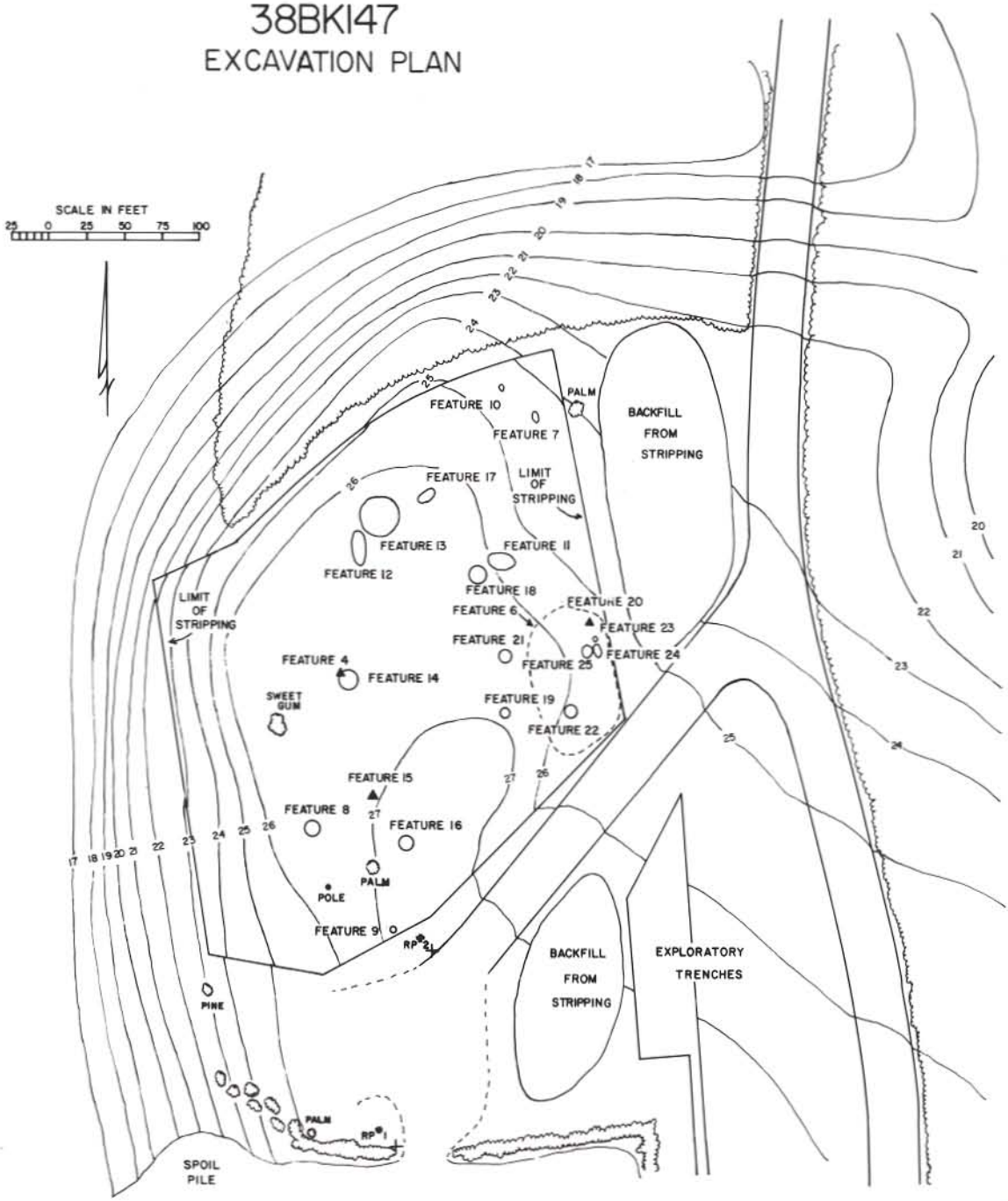

PALM TREE SITE
38BK147
EXCAVATION PLAN
SCALE IN FEET
25 0 25 50 75 100
FEATURE 10
PALM
FEATURE 7
BACKFILL FROM STRIPPING
FEATURE 17
LIMIT OF STRIPPING
FEATURE 13
FEATURE 11
FEATURE 12
FEATURE 18
FEATURE 20
FEATURE 6
FEATURE 23
FEATURE 21
FEATURE 24
FEATURE 25
FEATURE 4
FEATURE 14
SWEET GUM
FEATURE 19
FEATURE 22
FEATURE 15
FEATURE 8
FEATURE 16
PALM
POLE
FEATURE 9
RP #2
RP #1
BACKFILL FROM STRIPPING
EXPLORATORY TRENCHES
PINE
PALM
SPOIL PILE

FIGURE 4

12. The subplow zone was littered with burned tree stumps, as a result of being cleared for cultivation; pine, hardwood, and sabal palm palmetto were identified.

Based on the results of the Stage I investigation a specific strategy was developed to investigate the archeological data which were identified by this research. The primary emphasis would be placed on the location and investigation of ceramic scatters which initially were interpreted as activity areas and treated as features.

In addition to the stripping of the suspected site area on the large northernmost ridge and its associated cultivated field, an exploratory trench was cut along the highest portion of the southern extension of the field, a distance of approximately 800 feet. Three short trenches were also cut with the drag pan just south of the access road on the southern edge of the extensive stripped area and adjacent to the long trench. Only a single temperless plain sherd was collected from the exposed subplow zone surface of the three short trenches, while seven sherds were located in the extreme southern portion of the long exploratory trench. Two of these sherds are simple stamped and two are Cape Fear Cordmarked; the remaining three are temperless plain. These occurrences will not be discussed in this report, as there seemed to be no clustering of material, and the sherds do not seem to be associated with 38BK147.

Because the range of ceramics tended to indicate a predominately Stalling's and Thom's Creek ware group association, the specific investigation of the adaptive significance of this site was extended to Milanich's hypothesized Coastal Tradition (1972, 1973), rather than being limited to the Deptford Phase.

Investigation of the site would focus on testing the hypothesis of a Coastal Tradition as well as the transhumance model of adaptation. Investigation of the Coastal Tradition concept would concentrate on the change in adaptive strategy through time of the various archeological components represented at this site. This study will involve the comparative analysis of ceramic types and vessel form, artifact distribution, subsistence practices, activity areas and their distribution, and artifact density studies. Through the investigation of these data it is hoped that an evaluation of Coastal Tradition model can be presented.

Stage II Research

Since it was shown in the initial stage of investigation that there was no discernible stratigraphic separation of the cultural material, except in a few specific instances, it was decided that only horizontal control of features would be utilized. The method of investigation was to plot with transit and stadia, the apparent center of the sherd clusters, which were defined on the basis of the occurrence of at least four sherds in relatively close proximity. The center of the exposed cluster was then excavated to collect the associated cultural material. Each area

was excavated outward and to a depth to which no further cultural material was recovered. The approximate areal dimensions of the scatters were recorded and this defined the feature. Substantial soil samples were recovered to obtain possible paleoethnobotanical samples, microdebitage, and charcoal for radiocarbon determinations. These were always from subplow zone contexts and were retrieved, where possible, from single pot scatters in anticipation that these vessels might represent storage containers. Soil samples were also selected from areas which seemed to contain numerous charcoal flecks which might be remnants of former cooking activity. All worked lithic artifacts were provenience plotted. After the individual features were excavated, all remaining cultural material present on the surface of the subplow zone was collected and assigned a separate provenience.

One of the drawbacks of this procedure is that it assumes that the materials visible on the surface of the stripped subplow zone are typically representative, if not totally representative, of all features (i.e. sherd scatters) present at the site. It may be that in those areas of the subplow zone surface where no cultural material was seen, there could be numerous sherd scatters just below the exposed zone. This possibility was investigated by excavating a deep stratigraphic trench in an already stripped area of the site in which very little cultural material was present on the subplow zone surface (Fig. 3). This trench would determine if there were deeper-lying deposits not visible on the subplow zone surface. A drag pan was used to excavate this trench and the trench was stripped in 0.5 foot deep horizontal cuts until sterile clay was reached. The drag pan was followed on each cut and all material was collected and assigned a separate provenience. If features were noted during the stripping, the location would be noted. Although a few sherds were present on the exposed surfaces of the successive cuts, no sherd clusters were present. If the results of this deep stratigraphic test typify the depositional situation for the entire site, then it would appear that the initially exposed sherd scatters represent most, if not all, of the archeological activity at the site. Additionally, numerous bare areas void of cultural material, located in the center of the stripped area, were explored for the occurrence of possible concealed sherd scatters. No sherd scatters were uncovered here. A number of areas around single sherds were explored to determine if these might also be associated with undetected sherd scatters. No sherd scatters were revealed. These combined controls, while certainly not conclusive, generally tend to support the contention that the pattern of exposed cultural material present on the subplow zone surface is an accurate reflection of the archeological context of the cultural materials present at the site.

Although it was not possible to stratigraphically separate the individual sherd scatters when the material from the surface collections, the exposed subplow zone surface, and the deep stratigraphic trench are compared, there is a general indication that the cultural material existed in a stratified context at least to some degree. The listing below expresses this relative stratigraphic deposition.

Stratigraphic Analysis of the Ware Group Frequencies

	Number of sherds	Stalling's	Thom's Creek	Deptford	Cape Fear & Hanover	York
Surface	88	2.2%	65.9%	21.6%	9.1%	1.1%
Subplow zone	630	30.0%	49.6%	16.3%	4.1%	0
Deep trench	15	26.7%	73.3%	0	0	0
Total	733	26.6%	52.0%	16.7%	4.6%	0.1%

As can be seen from this table the frequency of the more recent ceramics diminishes in a consistent manner relative to the depth of the provenience groupings.

Another archeological problem topic which was not considered until the completion of the Stage I investigation, was the chronological relationship of sand, nontempered, and fiber tempered ceramics. Although fiber tempered ceramics clearly underlie sand tempered sherds on the Georgia coast and on the Savannah River (Williams 1968; Stoltman 1974; Peterson 1971; Caldwell 1971; Milanich 1976), there is some doubt about the chronological position of these ceramics along the South Carolina coast. This problem has been reviewed by Hemmings (1971: 53), who notes that fiber tempered sherds are infrequent north of Port Royal Sound, and that the shell rings north of this area contain predominately sand tempered sherds even though they are roughly contemporaneous with the Georgia shell rings which contain predominately fiber tempered sherds. Calmes (1968) has presented a case for the superposition of fiber tempered sherds over sand tempered sherds at the Hilton Head shell rings. Trinkley (1976: 11, figure 2) also points out the relative contemporaneity of sand tempered and fiber tempered sites along the South Carolina and Georgia coasts. David Anderson (personal communication) has noted from his distributional studies of the South Carolina Coastal Plain that there appears to be a statistically significant correlation of Thom's Creek ware group decorated ceramics and plain Stalling's ware group ceramics. The significance of this correlation is unknown, but it might possibly be due to the contemporaneity of these assemblages. South (1973b) also noted a similar relationship at the Charles Towne Landing site, where fiber tempered, sand tempered, and temperless plain sherds appeared to be associated in a similar context. It is hoped that investigations at 38BK147 might resolve some of the questions concerning the relationship of these early ceramic types on the South Carolina coast.

ARCHEOLOGICAL DATA ANALYSIS

Features

Since no grid system was utilized at the site for spatial control, provenience plotting with a transit and stadia was necessary for horizontal control of the data. These proveniences consisted of the following groupings: sherd scatters, all lithic artifacts, and pits or hearth areas. In all, 21 such features were recorded. The locations of these features have been provided in Figure 4 and a description of each feature is presented in Appendix A. Fifteen of the features were sherd scatters, three were lithic artifacts, and three were pits.

All lithic artifacts and pits were associated with sherd scatters with one notable exception. This is feature 10, a pit-like area situated in the northern edge of the exposed plow zone (Fig. 5). This feature was initially interpreted as a pit and was excavated to reveal its form, any associated cultural material, and to obtain fill for flotation. The feature outline consisted of a very uniform circular stained area with a smaller circular area over one edge of the larger circle. A ring of white sand encircled this discoloration. No discernible pit outline could be detected during excavation, and a sterile clay substratum was encountered in the eastern portion of the feature at a very shallow depth. Although no pit was discernible, a soil sample was recovered from this feature. A strong smell of insecticides was noted in the soil samples from this "pit" during the laboratory processing. This was severe enough to result in the hospitalization of one of the lab employees. Although the sample has not been analyzed to determine the type of substance responsible for this smell, it is assumed that this material resulted in the formation of the pit-like feature and was probably associated with the use of insecticides in recent agricultural activities that took place at the site, possibly resulting from a spill or other accidental application. It is surprising that these residues are still so potent below the plow zone after the termination of the cultivation of this field.

The sherd clusters and their associated features have been interpreted as activity areas and are considered to represent the occupational and exploitative areas utilized by the former inhabitants at this site. Each of the distinctive sherd scatters appears to represent the identical types of activity. These areas do not represent different activity areas of a single occupation, but instead appear to be unrelated and probably are due to intermittent occupation. However, only one of the scatters or activity areas contains sherds of a single ware group. This indicates that these areas might have been occupied repeatedly or that use areas of different occupations overlap. Since ceramic artifacts comprise almost the entire data base and define most of the features, the distribution and comparative analysis of these areas will be based almost entirely on the discussion and analysis of the site ceramics. Therefore ceramic analysis will form the basis for developing an interpretation of the cultural activities and community patterning present at the site.

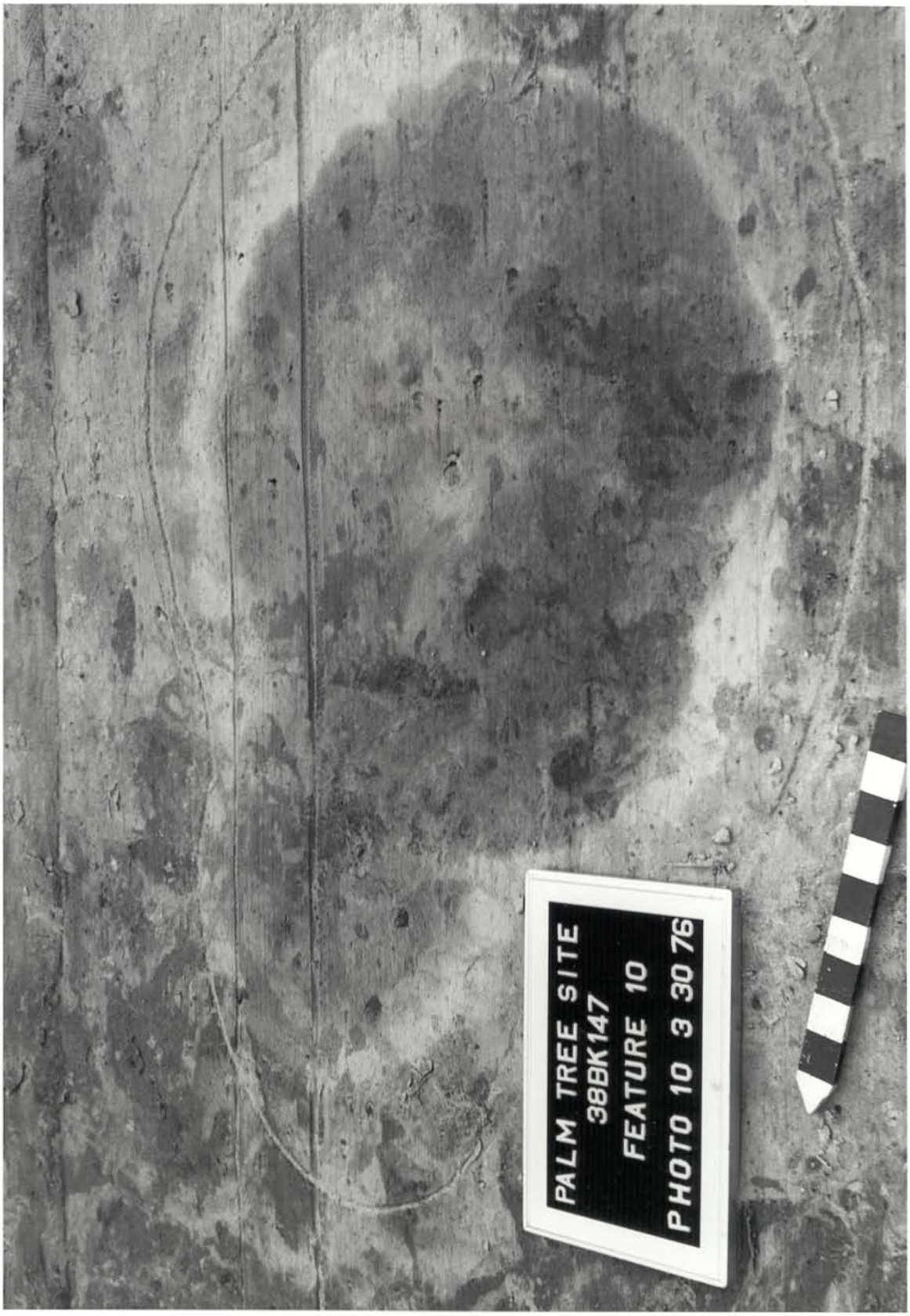


FIGURE 5

Ceramics

In all, 733 sherds are included in the ceramic assemblage. Of this total, 88 are from three surface collections, with the remaining 645 sherds collected from the subplow zone investigation. The frequency distribution of the *in situ* ceramics associated with features has been presented in Figure 6.

The taxonomy developed for the ceramics of the South Carolina coast by South (1973a: 54-55) was followed for ceramic classification. Because of the limited quantities of sherds representing the Cape Fear and Wilmington ware groups and the possibility of incorrect classification due to small sherd size, these ware groups are considered roughly equivalent. Four ware groups are represented in the *in situ* ceramic collection: Stalling's, Thom's Creek, Deptford, and the combined Cape Fear and Wilmington ware groups. The frequency distributions of these ware groups and their inclusive types have been presented in Appendixes B and C.

Only those sherds found *in situ* below the plow zone will be considered in the analysis. When broken sherds could be fitted, they were counted as one sherd. However, in many cases it was clear that several sherds were from the same vessel but could not be fitted. In such cases, each sherd was counted separately.

In order to attempt to negate the apparent skewing inherent in counting numerous sherds of the same vessel and to obtain a more accurate indication of occupational intensity, minimal vessel counts were established for each of the proveniences (Appendix D). These data provide the minimum number of ceramic vessels present in each provenience. The minimum number of plain vessels was determined solely from rim sherd counts since plain sherds, other than rims might be body sherds from the undecorated portion of decorated vessels. In most cases, the determination of the minimum number of vessels was easily accomplished. However, determining the minimum number of vessels for the Deptford ware group was not so easily done. To circumvent this problem, a series of measurements including check size, land thickness, check depth, and sherd thickness were made. When clusters of attributes were noted for several sherds, these were considered to have been from the same vessel. Comparison of the ware group frequencies obtained by sherd count with ware group frequencies obtained from minimal vessel count (Table 1) shows a relatively close agreement for all ware groups. This agreement of frequencies utilizing both measurements tends to support the initial interpretation of the activity areas being discrete units. This has relevance to the discussions of the community pattern which will be presented later.

Although the distinction between the Stalling's and Thom's Creek ware groups has been recognized and utilized in the ceramic analysis and classification, one of the goals of the research was to investigate the relationship of these two ware groups. Therefore, all discussion of these ware groups will be comparatively based. Specific basic data regarding frequency distribution and areal dispersion of these ware groups is presented in Figures 7 and 8.

PALM TREE SITE
38BK147

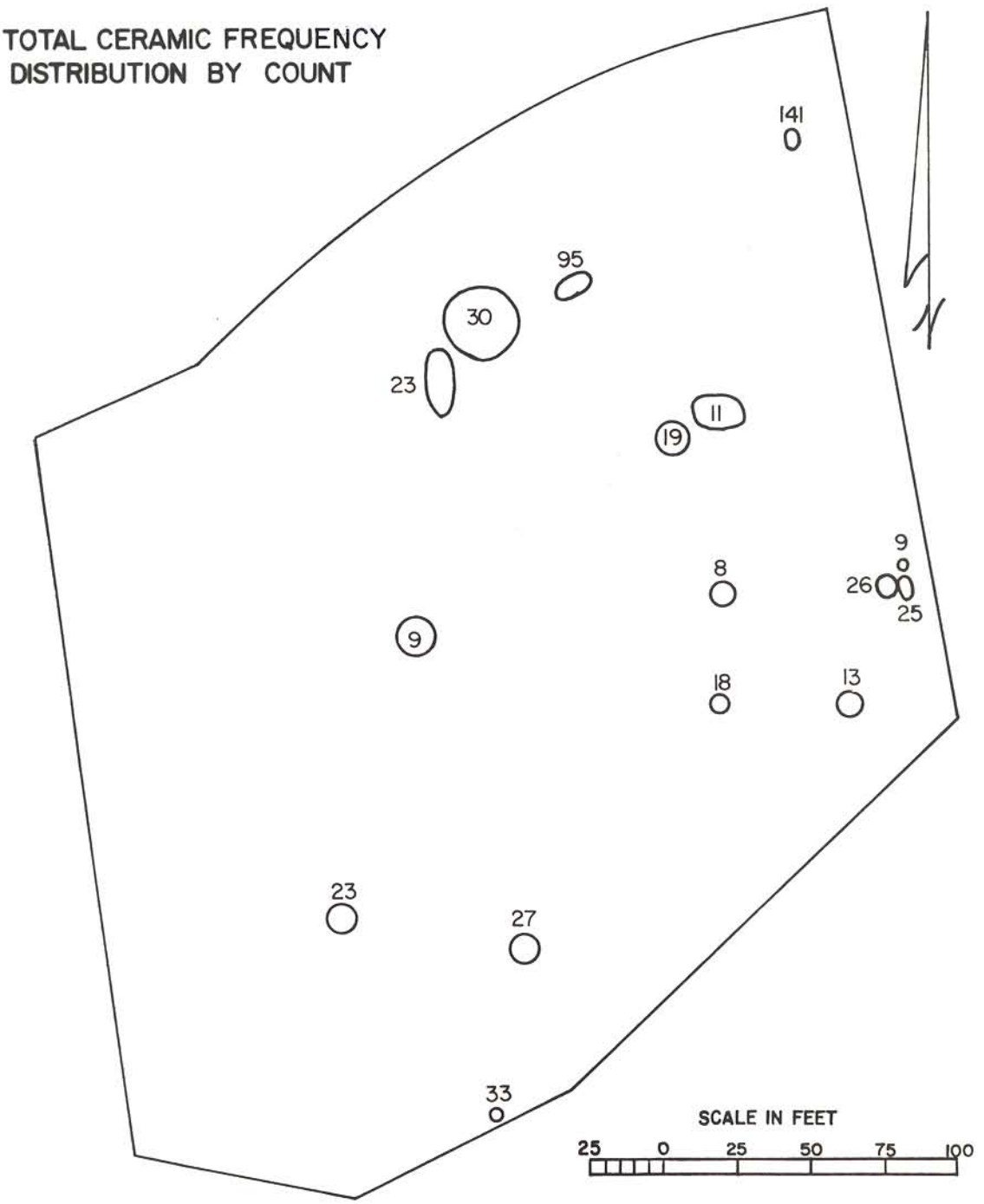


FIGURE 6

TABLE 1

COMPARISON OF WARE GROUP FREQUENCY OF IN SITU SAMPLE BY SHERD COUNT AND MINIMUM VESSEL COUNT, 38BK147

	Stalling's Ware Group		Thom's Creek Ware Group		Deptford Ware Group		Wilmington & Cape Fear Ware Group		TOTAL	
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Sherd Count	29.9	(193)	50.1	(323)	16.0	(103)	4.0	(26)	100.0	(645)
Minimum vessel count	20.0	(12)	58.3	(35)	16.7	(10)	5.0	(3)	100.0	(60)

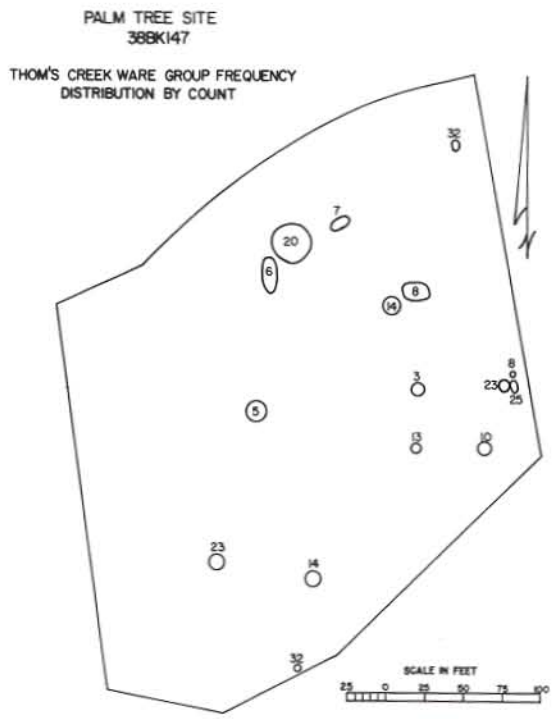


FIGURE 7

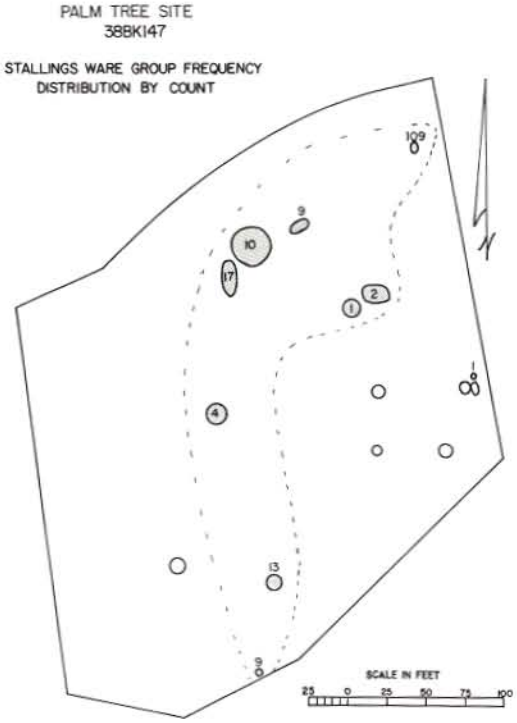


FIGURE 8

A strict formal typology was not developed for the ceramics of these ware groups due to the limited sample size, and lack of comparable data from this region. When previously designated types of similar ceramics from other areas are felt to be useful for investigating the problems being considered here, these were utilized. When there was uncertainty over the cultural significance of some types in this area or the usefulness of such types for investigating the problems addressed in this research, the sherds were separated into broad classes of decorative motifs within each ware group which are thought to provide a useful framework for achieving the stated research objectives.

Typologies and formal analyses of Stalling's ceramics (Crusoe and DePratter 1976) and Thom's Creek ceramics (Trinkley 1976) have recently been developed. Both of these studies point out the problem of the tremendous variability of surface decoration and the resulting difficulty in the development of a system of classification of these ceramics. Both studies see the need for a classification system for comparative and intrasite analysis. Because of this situation, all of the readily identified decorated sherds present at the site have been illustrated (Fig. 9). This provides the only clearly unambiguous and consistent descriptive "system" which exists for these two ware groups from this site. From this, anyone may select most of the decorative variables which might be meaningful to the problems being investigated. Admittedly, this system has obvious drawbacks, particularly when large samples of ceramics are involved. But for interior Coastal Plain sites which seem to have a low frequency of decorated sherds of these ware groups, such a method is desirable and easily accomplished. Trinkley's (1976) separation of shell punctated from reed punctated ceramics was found to be particularly useful in the intersite distributional studies of this research. However, the material from 38BK147 which would be typed as reed punctated under Trinkley's classification appears to have been produced with implements, other than reeds, which are reported to be the dominant decorative tools for non-shell punctation of the estuary sites (Sutherland 1974; Trinkley 1976: 23). For this reason, non-shell punctated sherds were simply classified as punctated.

In order to investigate the relationships between the ware groups, several comparative studies were performed. A comparison of the correlation of temper to surface decoration (Table 2) indicates a considerable overlap of decorative motif with temper type. Only drag-and-jab punctate, represented by two sherds of the same vessel and finger pinched decorative modes were restricted to other than fiber tempered wares. The obviously limited drag-and-jab sample makes any comparison meaningless; but the finger pinched mode (18 sherds from a minimum of three vessels) appears to be restricted to other than fiber tempered wares at this site. This is not necessarily indicative of a temporal division between Thom's Creek and Stalling's ceramics. Waddell (1965: 83) notes that finger pinched decoration is found on a fiber tempered sherd from the Chester Field site, and Griffin (1943, Table 1) listed three finger pinched sherds on fiber tempered ware.

A comparison of the frequencies of surface decoration between the two ware groups (Table 3) clearly reveals a similar relationship, by

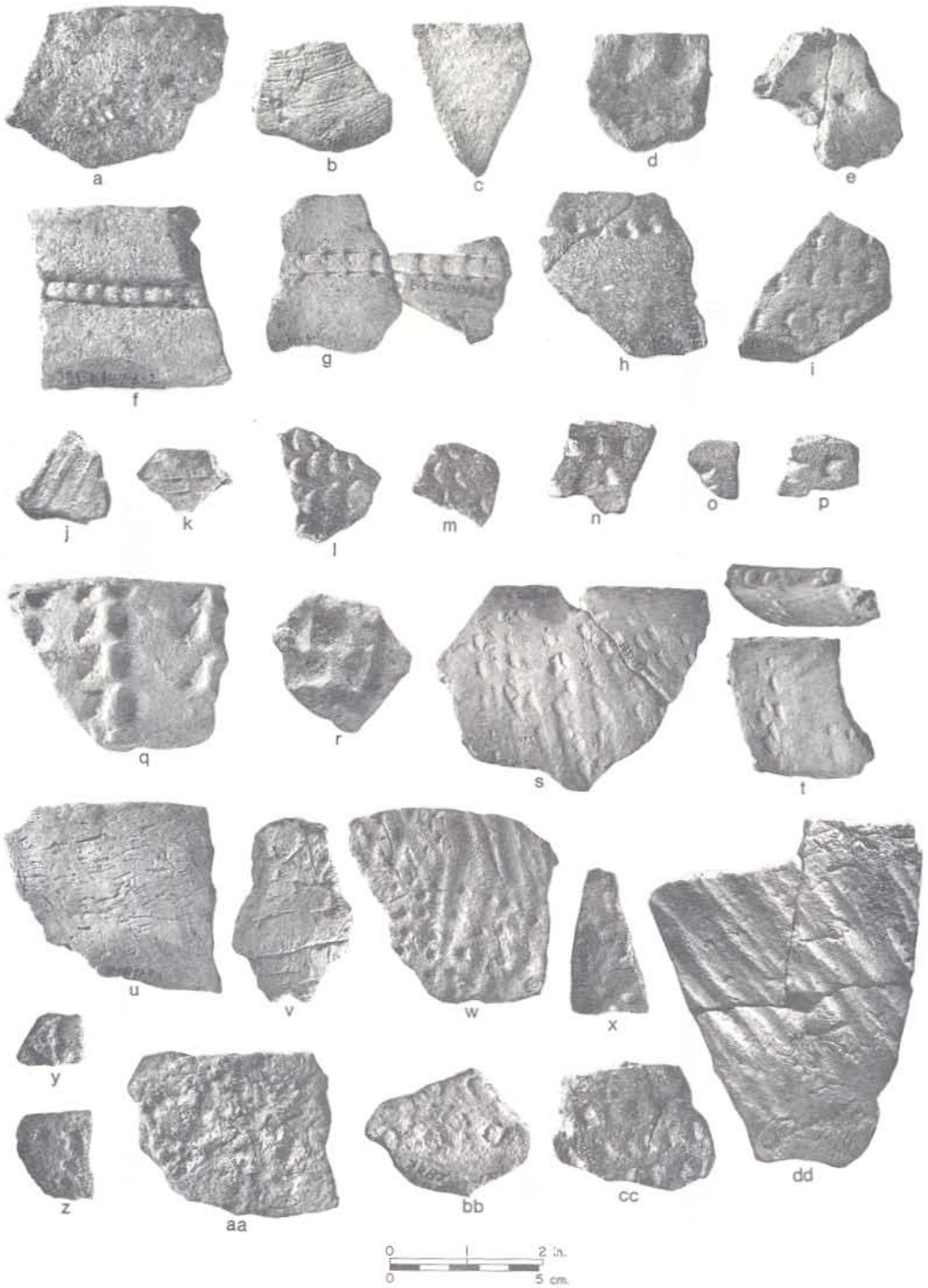


FIGURE 9. Stalling's and Thom's Creek Ware Group Sherds from 38BK147. a-c: Thom's Creek Plain; d-e, h-i, and l-p: Stalling's Punctate; f-g: Stalling's Drag and Jab Punctate; q-r: Awendaw Finger Pinched; s-t: Refuge Dentate Stamped; u: Stalling's Plain; v: Stalling's Incised; w: Stalling's Broad Simple Stamped with punctation; x: Stalling's Dentate Stamped; y, z-cc: Stalling's Punctate; dd: Stalling's Broad Simple Stamped.

TABLE 2

COMPARISON OF TEMPER WITH SURFACE DECORATION OF IN SITU SHERD SAMPLE, 38BK147

Decorative Mode	Fiber temper	Non-tempered	Sand/grit temper	Grog temper	Total
Plain	168	139	116	18	441
Punctate	12	2	13		27
Drag & jab punctate			2		2
Incised	1				1
Finger pinched		17	1		18
Broad simple stamped	10		3		13
Dentate stamped	2			12	14
Total	193	158	135	30	516

TABLE 3

COMPARISON OF DECORATIVE FREQUENCIES BETWEEN THOM'S CREEK AND STALLING'S WARE GROUPS EXPRESSED IN PERCENTAGES OF SHERD COUNT AND MINIMUM VESSEL COUNT FOR IN SITU SAMPLE, 38BK147

Ware Group	Decorative Mode: Plain	Punctate	Drag & Jab Punctate	Incised	Broad Simple Stamped	Dentate Stamped	Finger-pinched	Sub-total Decorated	Total
Stalling's (Sherd Count)	87.0	6.2	0.0	0.5	5.2	1.0	0.0	13.0	(N=193) 100.0
Thom's Creek (Sherd Count)	84.5	4.6	0.6	0.0	0.9	3.7	5.6	15.5	(N=323) 100.0
Stalling's (Minimum Vessel Count)	41.7	33.3	0.0	8.3	8.3	8.3	0.0	58.3	(N=12) 100.0
Thom's Creek (Minimum Vessel Count)	42.9	34.3	2.8	0.0	8.6	2.8	8.6	57.1	(N=35) 100.0

both sherd count and minimum vessel count tabulation. An almost identical dentate pattern was observed on both a fiber tempered and sherd tempered sherds. This might indicate the relative contemporaneity of these temper attributes, at least for this decorative mode. Additionally, there is no sherd cluster present at 38BK147 which contains fiber tempered ceramics to the exclusion of non-fiber tempered wares. The frequency relationships of Stalling's ceramics from noncluster and sherd cluster proveniences, closely follows that for Thom's Creek ceramics. Thom's Creek ceramics from noncluster, intact areas represent 15.7% of this ware group based on sherd count and 17.1% based on minimum vessel count while Stalling's ceramics from noncluster intact areas represent 7.7% of the ware group total when computed by sherd count and 16.7% when tabulated by minimum vessel count. This also tends to corroborate the close affiliation of these ware groups.

Stratigraphic comparison of the frequencies of Thom's Creek and Stalling's ceramics from the general subplow zone level and the deep trench (Table 4), although limited in confidence, indicate that there is no significant stratigraphic difference in ceramic frequency between these ware groups, and instead, shows a very similar frequency for both levels. The general subplow zone provenience was utilized for comparison since it would be more comparable in terms of quantity, and because there existed a random spatial sherd distribution in both proveniences.

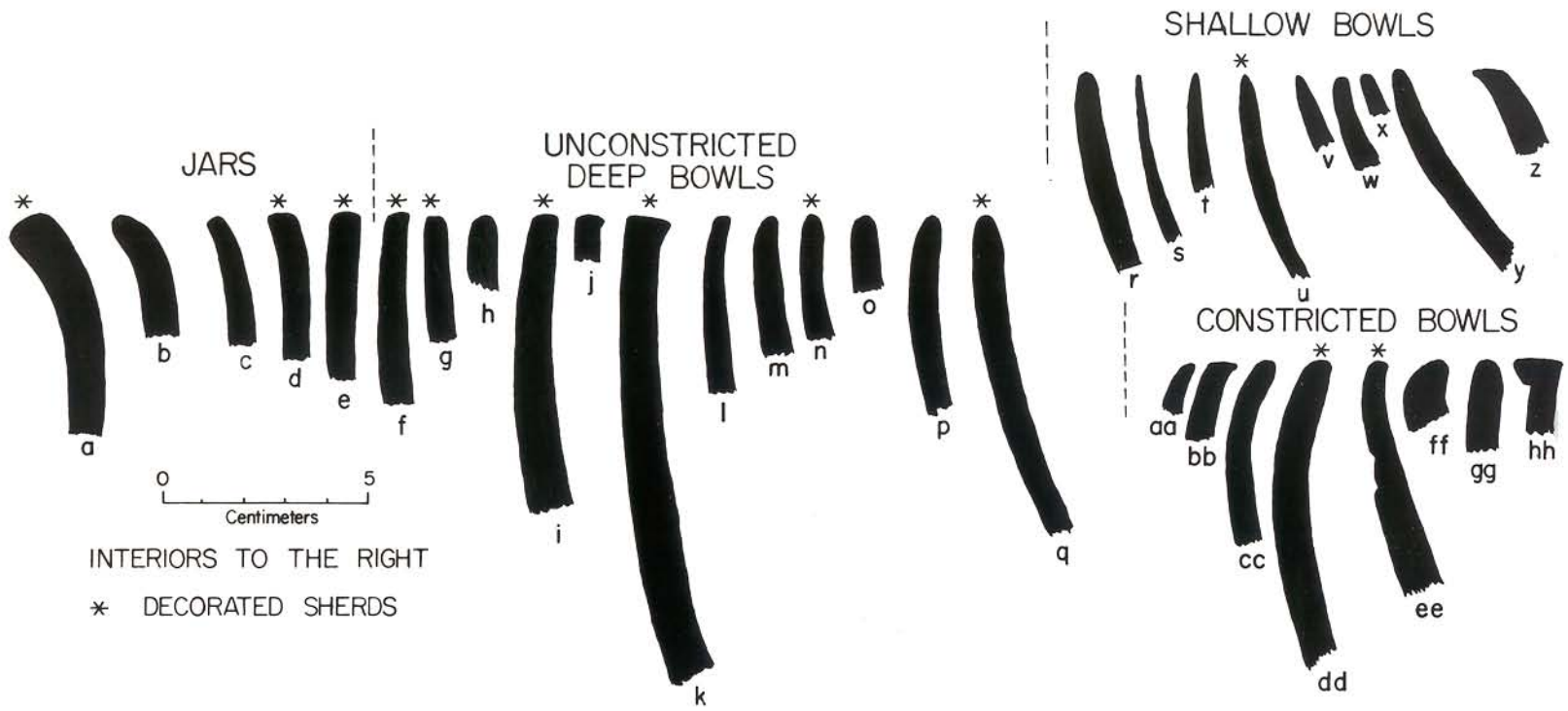
TABLE 4

STRATIGRAPHIC FREQUENCY DISTRIBUTION OF THOM'S CREEK AND STALLING'S WARE GROUP BY SHERD COUNT, 38BK147

	General Subplow Zone	Deep Trench	Total
Thom's Creek Ware Group	40 (75.4%)	13 (24.6%)	53 (100.0%)
Stalling's Ware Group	11 (73.3%)	4 (26.7%)	15 (100.0%)

Comparison of vessel form and size of these two ware groups reveals almost no differences. Vessel orifice diameters for the Stalling's ware groups, determined from four vessels, range from 25 to 35 centimeters with a mean and median of 32.5 centimeters. Vessel orifice diameter for Thom's Creek vessels based on measurements of 13 rims, range from 20 to 35 centimeters with a mean of 31.3 centimeters and a median of 35 centimeters. Vessel forms for both series overlap with few differences. A single rim sherd of an outflared, fiber tempered jar or bowl is present, and is absent on Thom's Creek ceramics, and there is a slightly higher frequency of constricted orifice vessels associated with the Thom's Creek ware group (Fig. 10). Surface decoration does not appear to be associated with different vessel shapes of these two ware groups.

CERAMIC RIM PROFILES, 38BK147



STALLING'S WARE GROUP: Stalling's Plain b,m,o,y,ff; Stalling's Broad Simple Stamped k

THOM'S CREEK WARE GROUP: Thom's Creek Plain c,g,h,j,l,p-t,w,x,z, aa,-cc,gg,hh; Thom's Creek Reed Punctate e,n,u (drag&jab var.) ee
Awendaw Finger Pinched i; Refuge Dentate Stamped f,dd

DEPTFORD WARE GROUP: Deptford Linear Checked Stamped d; Deptford Bold Checked Stamped a

WILMINGTON WARE GROUP: Hanover Fabric Impressed q

FIGURE 10

Despite the similarity of many of the attributes shared by both ware groups, there are some distinct differences between these ceramics. The most significant of these is the spatial distribution of the two ware groups (Fig. 11). The Stalling's ware group has a much more restricted distribution than the Thom's Creek ceramics. Particularly noticeable is the almost complete lack of ceramics of this ware group from the area near feature 6. This would suggest that although many of the characteristics of these two ware groups are similar, there is some distributional discontinuity present at the site. There appear to be no other differences in the distribution of decorative modes between these areas. The significance of this observation is unknown. A steatite rim sherd was found associated with a sherd cluster which contained only one fiber tempered sherd, while 32 plain sand tempered sherds representing at least two vessels were present in this cluster.

Although these differences have been noted between the ware groups, there is an overriding pattern of similarity between the two ware groups present at this site. This certainly indicates that there is little functional difference in the occupational history represented by these two ware groups at this site. It further suggests that if chronological differences do exist between these ware groups, it has little significance in relation to the cultural patterns and processes present at the site and indicates that the use of temper as a meaningful attribute of the ceramic assemblages at this site for chronological or intrasite culture process investigation is not warranted. Therefore, it is suggested that these two ceramic ware groups be considered as representing a single culture-historical component at this site.

The Deptford ware group assemblage from the Palm Tree site exhibits markedly different frequency distribution, areal dispersion, and form characteristics than those of the Thom's Creek and Stalling's ware group. The Deptford sherd assemblage from the intact portion of the site is represented by 103 sherds which comprise 16% of the total. Seventy-nine of these sherds are from a single vessel associated with feature 17. Two types, linear checked stamped and bold checked stamped, are included in this ware group. Formal characteristics closely follow the existing type descriptions for these ceramics (Griffin and Sears 1950).

The distribution of Deptford ceramics at the Palm Tree site is different from the Stalling's/Thom's Creek pattern. Deptford ceramics occur in no sherd clusters exclusive of other ceramic ware groups. Additionally, no area contained more than a single Deptford vessel. Minimum Deptford ware group vessel counts for the general subplow zone, exclusive of features, is 38.4%, a much higher total vessel count than for all intact proveniences and equal to the Thom's Creek count. These factors when considered together indicated that the Deptford activity at the Palm Tree site did not occur in discrete, spatially separate units, but instead tended to occur relatively uniformly, as represented by the ceramic distribution, in a restricted area (Fig. 12). This suggests that the occurrence of Deptford ceramics in sherd cluster proveniences cannot be attributed to cultural patterning or specific spatially distinct activities. Deptford activity at the site is, however,

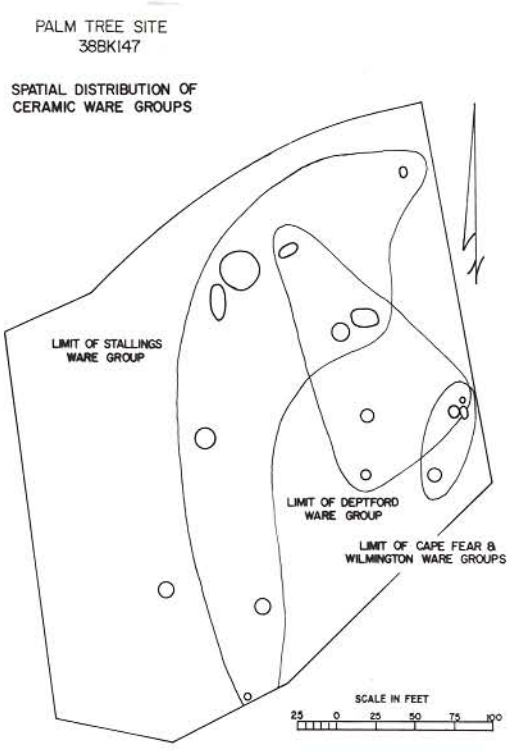


FIGURE 11

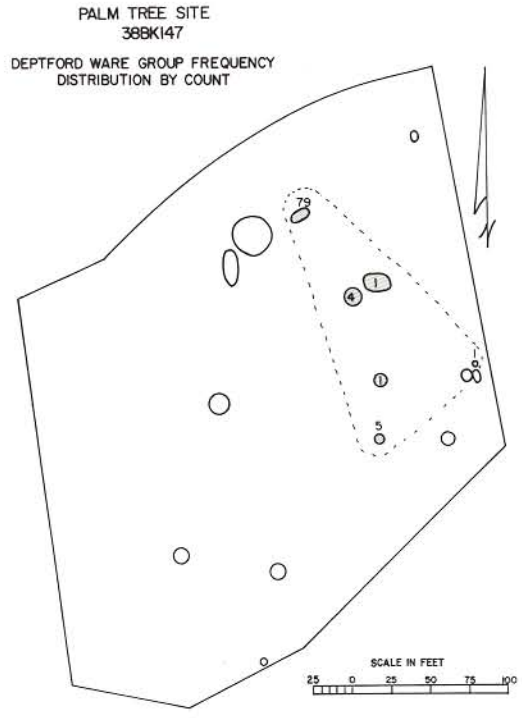


FIGURE 12

clearly confined to the area indicated in Figure 12. The shift in ceramic frequency distribution and location and composition, and the shift in vessel shape from bowls to jars (Fig. 11) which is documented at this site for the Deptford component, suggest a possible different cultural pattern and adaptive system during this occupation than that present in the earlier phases of occupation. This difference has distinct significance in the investigation of the concept of a Coastal Tradition which has been hypothesized by Milanich (1972). However, the Deptford component at this site is too diffuse and small to provide data which will help us understand this distinction, if any exists. It is hoped that the distinctive differences which have been noted at the Palm Tree site between the distribution of Deptford ceramics and that of the earlier occupations will stimulate further inquiry into this problem.

The Cape Fear and Wilmington ware groups are minimally represented at the Palm Tree site. Only 26 sherds of these two ware groups were found *in situ*. Cord marked surface decoration was found only on sand tempered ware, while fabric marking occurred predominately on sherd tempered ware with one sand tempered sherd having this decoration as well. The distribution of these two ware groups corresponds to an area within feature 6 (Fig. 13). Three Hanover fabric marked sherds were found in feature 25, and two Cape Fear cord marked sherds were located in feature 22. The tight clustering and the minimal sherd counts of both the Cape Fear and the Hanover ware groups in very close proximity suggest that these two wares are culturally related. One rim sherd from feature 25 (Figs. 10q, 14q) indicates a deep bowl form. The distributional patterning of the Cape Fear/Wilmington ware groups is similar to that of the earlier Deptford component but not as great in frequency and area.

Steatite Sherds

A large steatite bowl fragment was recovered from feature 9 (Fig. 14v). This sherd indicates a circular, open, flat-bottomed bowl. No other steatite was present at the site. The only associated artifacts were sherds as has been previously stated, and a single chert thinning flake.

Baked Clay Objects

Two baked clay objects were recovered from the site, one of these (Fig. 14y) is from the deep stratigraphic trench while the other (Fig. 14x) is from feature 6. Both fragments appear to have been cylindrical in shape, and have parallel grooves or channels on them. The fragment from the deep trench exhibits very contorted temperless paste. The fragment from feature 6 had a sandy paste. Since all the clay ball objects at this site were in a fragmentary condition, and were only minimally represented, it is suggested that there was a high rate of curation of these objects at this site. This is in marked contrast to

PALM TREE SITE
38BK147

CAPE FEAR & WILMINGTON WARE GROUPS
FREQUENCY DISTRIBUTION BY COUNT

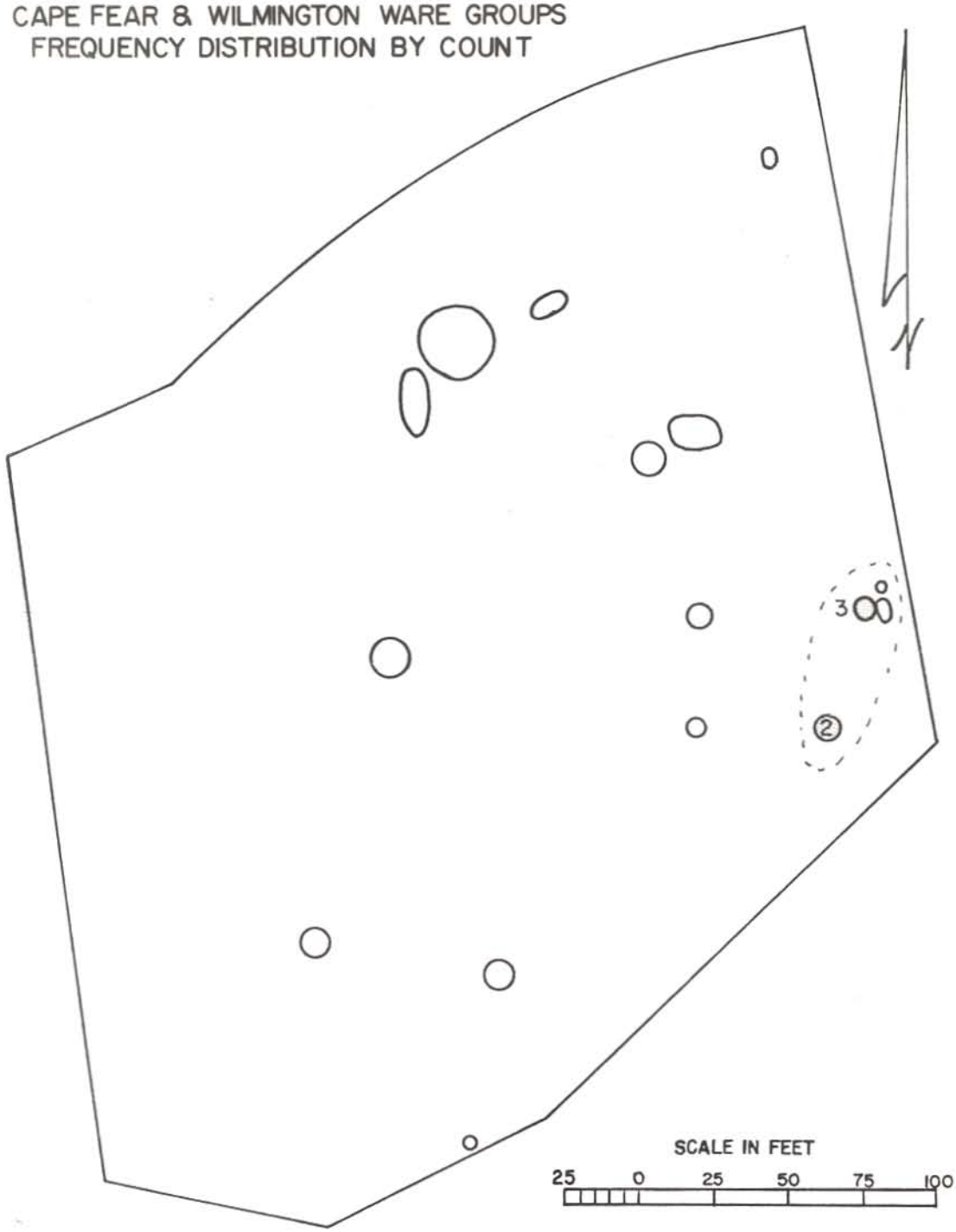


FIGURE 13

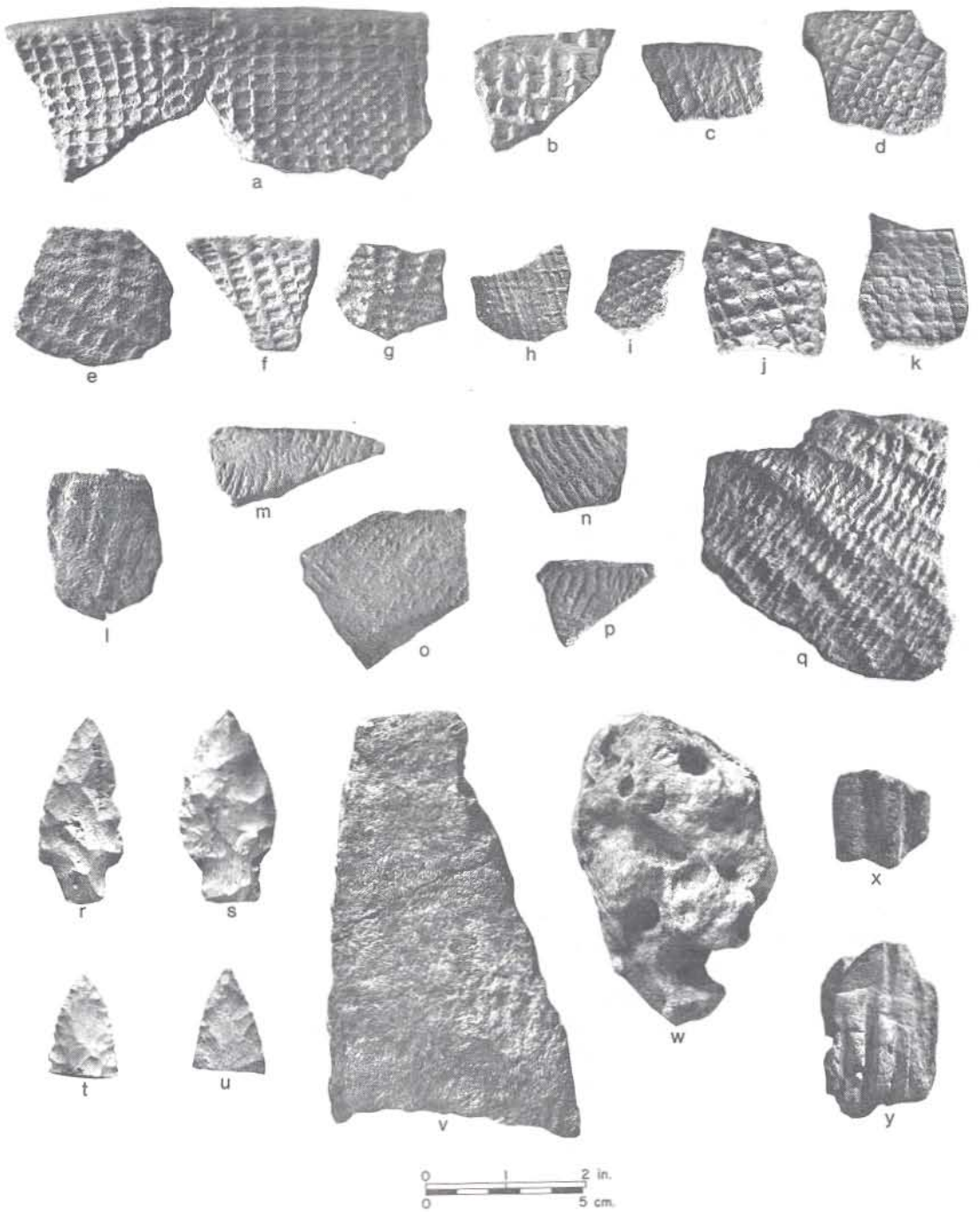


FIGURE 14. Sherds and Miscellaneous Artifacts from 38BK147. a-d, h-k: Deptford Bold Check Stamped; e-g: Deptford Linear Check Stamped; l: Ashley Complicated Stamped; m-p: Cape Fear Cord Marked; q: Hanover Fabric Impressed; r-s: Savannah River Projectile Points; t-u: Biface Fragments; v: Steatite Rim Sherd; w: Limestone Concretion; x-y: Baked "Clay Balls".

the frequency of such objects at the Charles Towne Landing site (South 1970, personal communication) where numerous clay ball fragments were found even though the sherd counts for both sites are quite similar. This would also tend to suggest, if the previous assumption is accepted, that there was a relative absence of clay for making such objects in the immediate area, or that different cultural processes were occurring at the Charles Towne Landing site than at the Palm Tree site. Since the patterning of other cultural materials at both sites is quite similar, the former explanation is considered more probable. Bias due to recovery techniques cannot be cited as a reason for the difference in frequency of occurrence, since identical investigative and data recovery techniques were utilized at both sites.

A pitted limestone concretion (Fig. 14w) was plotted *in situ* in feature 23. South (1970) has noted numerous such concretions at the Charles Towne Landing site where numerous clay ball fragments were located. He noted a general similarity of the surface of the clay balls with the form of the concretions and suggested that such concretions might represent prototypes or functional equivalents of clay balls. No other items of this type were found at the site and it is not known whether this object occurs naturally in this soil or was brought in by the former inhabitants. Numerous ferrous concretions were noted in the sandy soil at the site. Most of these concretions were concentrated in the northern portion of the site. These are not cultural in context and are reported as commonly occurring in some soils of the South Carolina coast (U.S.D.A. Soil Conservation Service 1971).

Projectile Points

Two projectile points were recovered from the Palm Tree site. One of these (Fig. 14s) is from the site surface, while the other point (Fig. 14r) was plotted *in situ* and labeled feature 4. Both points fall within the Savannah River type range (Coe 1964) and are similar to those reported from Stalling's and Thom's Creek components (Claflin 1931; Fairbanks 1942; Williams 1968; Bullen and Green 1970; South 1971; Stoltman 1974; Crusoe and DePratter 1976).

The point recovered from the surface was manufactured from chert and apparently was utilized as a knife rather than as a projectile point. Numerous step fractures are evident on the edges and some polish from wear is observed above the shoulder of one edge. Dimensions are: blade length 45 mm, haft lenght 12.3 mm, blade base width 24 mm, proximal haft width 18.5 mm, and thickness 11.7 mm.

The remaining projectile point (Fig. 14r) was chipped from opalized siltstone. This artifact exhibits little edge wear. The less durable raw material suggests a projectile point function. Dimensions for this point are: blade length 44.1 mm, haft length 11.4 mm, blade base width 25.6 mm, proximal haft width 11.5 mm, and thickness 11.7 mm. This projectile point was associated with a small sherd cluster, feature 14, which contained Thom's Creek and Stalling's wares.

Bifaces

Two chipped stone biface fragments are included in the lithic assemblage from the Palm Tree site. Neither fragment is associated with a sherd cluster. Each fragment was plotted *in situ* and assigned feature provenience. Both fragments have sharp, well formed edges with no evidence of wear. It is assumed that these tools were broken during resharpening. Their thin cross section and well executed form suggest use as a projectile point rather than as a knife or cutting tool. The feature 15 biface (Fig. 14t) is chipped from chert, while the feature 20 biface (Fig. 14u) is manufactured from opalized siltstone.

A small discoidal biface approximately 25 mm in diameter was collected from the site surface. This artifact was produced from chert and is of unknown function. No such artifacts have been reported from similar cultural contexts. It is assumed that this tool functioned as a scraping or cutting implement.

Lithic Debitage

Lithic debitage was extremely sparse at the Palm Tree site. Only a single waste flake was located on the surface of the plow zone. Eight lithic waste flakes were recovered during troweling of the sherd scatters. When one was encountered, 1/8 inch screen was used to sift the associated area to obtain a more comprehensive sample. Four extremely small thinning flakes were recovered from the flotation processing of soil samples from features 7, 8, and 18. The distribution of the lithic debitage is presented in Figure 15. All of the debitage is chert except a single opalized siltstone flake from feature 11.

The frequency distribution of debitage size (Table 5) clearly indicates that the lithics at this site represent resharpening of tools rather than manufacturing from raw material or finishing of blanks or preforms. This is indicated by the extremely small size of the flakes, and because all debitage consist of thinning flakes. The mean for debitage size is 98.1 mm^2 with a range from 8 to 216 mm^2, and a mode of 91 mm^2. A small angular chunk of quartz with an area of 300 mm^2 was recovered from feature 11. The significance of this item is unknown. There is no evidence of wear or battering, nor does it appear to have been produced culturally. However, this artifact is clearly not naturally occurring in this area and its function is enigmatic. The object was recovered from undisturbed context, and mixed stratigraphy or intrusive deposition are ruled out as explanations for its occurrence.

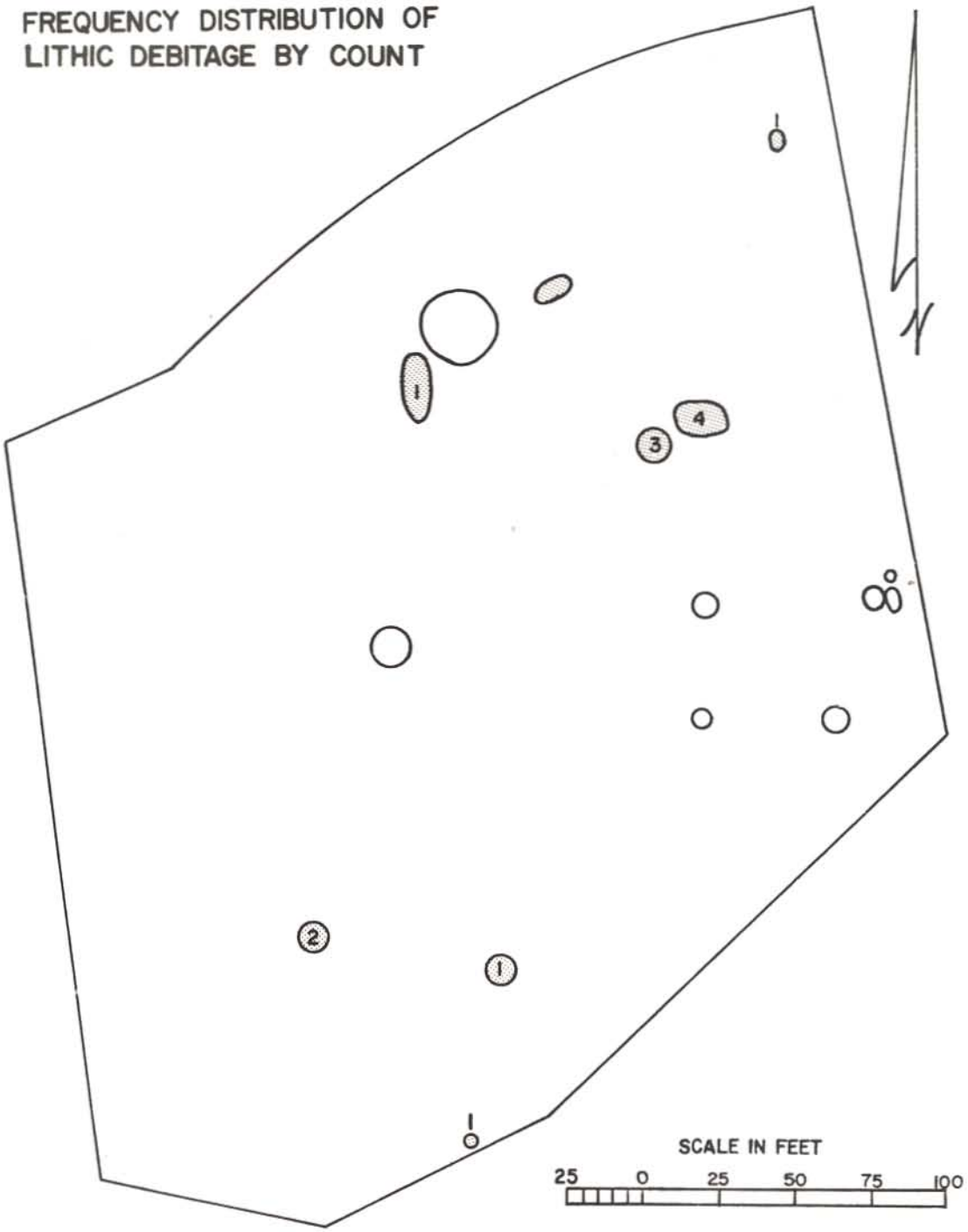
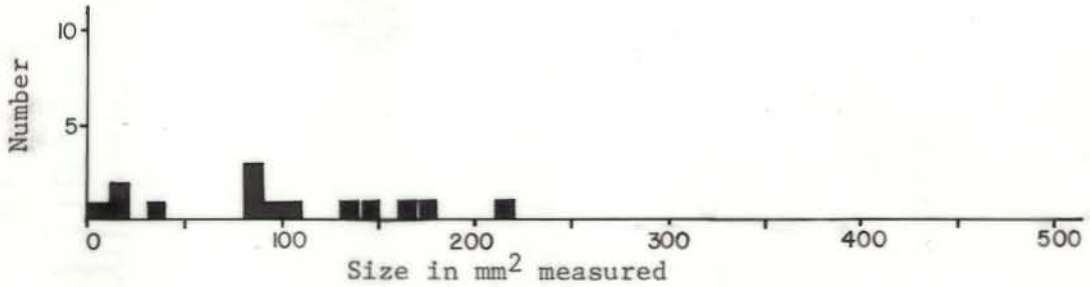

PALM TREE SITE
38BK147
FREQUENCY DISTRIBUTION OF
LITHIC DEBITAGE BY COUNT
1
4
3
2
1
SCALE IN FEET
25 0 25 50 75 100

FIGURE 15

TABLE 5

FREQUENCY DISTRIBUTION OF LITHIC DEBITAGE SIZE, IN SITU SAMPLE, 38BK147



ANALYSIS OF SUBSISTENCE DATA

Faunal Remains

No bone was preserved at the Palm Tree site. A few whitish, crumbly flecks, possibly disintegrating calcined bone, were observed in the matrix of feature 24. These, however, could not be recovered despite careful water screening. No other calcined bone was noted in the soil samples recovered from the site. Shellfish remains were completely absent at this site and were apparently not utilized by the previous inhabitants. The fact that shellfish resources were utilized by contemporary prehistoric populations in the estuary section of the South Carolina coast would tend to indicate that the lack of shell at 38BK147 is attributable to environmental rather than cultural factors. This environmental distribution of shellfish resources has important implications for settlement patterns for this cultural period.

Floral Remains

Although few clearly defined pits were observed at the Palm Tree site, flecks of charred plant material were noted scattered throughout the undisturbed areas of the subplow zone surface. Soil samples were retrieved from those areas which contained possible pits of single vessel scatters, on the assumption that these vessels might represent storage vessels or were broken during food preparation. Soil samples, consisting of two full 10 pound bags were recovered from six proveniences: features 7, 8, 10, 18, a possible pit within feature 18, and feature 24.

The loose sand sample was dry screened through 1 by 1.5 mm mesh. The screened sample was then floated in water to remove charred plant remains. It was also necessary to manually separate some of the carbonized remains from grit and sand particles.

The carbonized plant remains were identified by Dr. Wade Batson, of the Department of Biology, University of South Carolina. A preliminary analysis of these items is presented below.

Provenience	Scientific Name	Common Name
Feature 8	*Celtis* sp.	hackberry nut
Feature 17	*Cayra* sp.	hickory nut
	Prunus sp.	cherry or plum pit
	Crotalaria sp. or *Biplisia* sp.	crotalaria seed
Feature 18	*Vitis* sp.	grape seed
Feature 18 "pit"	*Cayra* sp.	hickory nut
Feature 24	*Celtis* sp.	hackberry nut

The cultural context of these items is unknown as one major problem exists in interpreting these items. This is, did the plant remains become charred during the time of their availability and use or at some time after their deposition at the site? It might have been the case that many of the seeds were not charred until a considerable time after their initial deposition on the site, possibly when the site was not occupied. These remains could also have been deposited by natural processes. This problem is particularly acute since the remains were not associated with well defined archeological features. Therefore, any interpretation of the subsistence data must be considered with reference to these problems.

Most certainly the hickory nuts were being utilized as food and were probably of considerable importance. The fragmentary nature of most of the hickory nut shells indicates cultural modification previous to fire. The remaining items might not have necessarily been utilized as food. The preservation of these seeds, however, was possible by cultural means, namely fire, and their presence at the site yields valuable data concerning environment and seasonality of occupation. Grapes and members of the Prunus genus ripen in mid- to late-summer, with the other items ripening in the fall. This would suggest that occupation of the site occurred at least during these seasons.

COMMUNITY PATTERN AND INTRASITE COMPARATIVE SYNTHESIS

The pattern of material deposition at the Palm Tree site indicates an intermittent occupation during the period of prehistoric utilization. This might be due to either seasonal utilization or simply to sporadic occupation not corresponding to seasonal variables, with each occupation lasting only a few weeks. The data do not conclusively confirm either of these possibilities. There are some implications which suggest the occurrence of both seasonal and short-term occupations of the site by small groups of people.

The distributional analysis of the sherd clusters, as well as the number of vessels represented by each feature are particularly relevant to this analysis. There is little doubt that these sherd clusters represent discrete activity areas. The question to be considered with regard to these clusters is, in what way do these activity areas reflect past activities which occurred at this site. Crucial to our understanding of this problem is a knowledge of the discard and breakage rates for ceramics. This is particularly acute in this instance since the sherd counts are low and because no other artifacts are well represented. Unfortunately, such information does not exist to serve as a model. Therefore, much of the reasoning for the development of this case is based on conjecture.

It seems likely that whatever remains are found within a tightly restricted area represent activity of a single group of people. Therefore, the occupation represents a continuous, ongoing cultural process which is not interrupted by abandonment of the site. The number of individual vessels should be representative of the length of duration of each occupation. The total minimum vessel count for each provenience (particularly for the combined Thom's Creek/Stalling's occupation) indicates a range from one to six vessels per sherd cluster (Appendix D), and suggests a somewhat bimodal distribution during this time period. The sherd clusters present at the combined features 12 and 13, which are most probably contiguous, indicate a minimum of nine vessels. This could be interpreted as representing a longer period of occupation. The increased area of these features further indicates the possibility of more extensive activity and a larger group of people. Sherd clusters such as features 8, 14, and 20 represent the other end of the continuum, the shortest occupations represented in an archeological context. The difference in the intensity of occupation as represented by minimum counts per cluster between Stalling's and Thom's Creek occupations is unknown and the problems involved in treating these separate ceramic series as distinct occupations have been reviewed earlier. There appears, however, to be a shift in occupational intensity through time. A table listing the number of sherd clusters containing ceramics of the temporally distinct ware groups reveals this pattern (Table 6).

TABLE 6

FREQUENCY OF SHERD CLUSTERS PER WARE GROUP

	Stalling's/Thom's Creek	Deptford	Cape Fear/Wilmington
Number of features per ware group	16	6	2

Also, the average number of vessels per cluster for each of the different ware groups decreases through time (Table 7).

TABLE 7

MEAN NUMBER OF VESSELS PER SHERD CLUSTER FOR EACH WARE GROUP

	Stalling's/Thom's Creek	Deptford	Cape Fear/Wilmington
Mean number of vessels per sherd cluster	3.07 (N = 13)	1 (N = 5)	1 (N = 3)

This suggests a dramatic change in the habitational and exploitative situation of this site through time. This is quite evident in Figure 11. One might argue that the occupational intensity is a function of the length of each cultural unit, since the combined Thom's Creek/Stalling's duration is much longer than either the Deptford or Wilmington/Cape Fear duration. However, this would not explain why the average number of vessels for each sherd cluster decreases significantly after the Thom's Creek/Stalling's phase utilization of the site. This also would tend to suggest, at least from the Palm Tree site case, that there is sufficient difference in the habitational patterns of the three distinct components, Stalling's/Thom's Creek, Deptford, and Cape Fear/Wilmington, to seriously question the utility of Milanich's Coastal Tradition (1972, 1973) for the interior portion of the lower Coastal Plain of South Carolina. It appears that whatever adaptive pattern was being utilized by the Stalling's/Thom's Creek occupants, it was not closely followed by the subsequent prehistoric occupations at the Palm Tree site. Only additional research in this area will document the exact nature of this difference.

As a generalization, it can be stated that the occupation of this site was more frequent and of longer duration between periods of abandonment during the Stalling's/Thom's Creek period. It seems that there must

have existed some natural resource in this area to have made this site particularly valuable from an exploitative standpoint for people to return on a continuous basis. During the later Deptford and Cape Fear/ Wilmington occupational periods, this importance seemed to diminish and the site did not become a focal point in the adaptive system of the inhabitants of this region. Unfortunately, the reasons for this selective site preference during the Stalling's/Thom's Creek phase can only be inferentially arrived at. Anadromous fish (an early spring resource) would be the outstanding resource not available elsewhere. Wild rice and migratory waterfowl also would have been of considerable importance in this area. If the floral remains can be considered indicative of the period of occupation of this site, then late summer and fall seem to have been the seasons of exploitation. However, this is only the minimal seasonal span represented by the data. The site might also have been occupied during the spring and winter, the period of availability of two important resources, migratory waterfowl and anadromous fish. The fact that both grape and hickory nuts were found in the same feature indicates a single occupation which lasted at least three months and possibly as long as six.

INTERSITE COMPARATIVE ANALYSIS: A TEST OF THE MODEL OF TRANSHUMANCE

One of the goals of the research was to view the Palm Tree site as a part of a larger adaptive system. One such system has been proposed for the Deptford phase. This is the model of transhumance (Milanich 1972) which was briefly outlined earlier. The Deptford component at the Palm Tree site is very small and probably not sufficient for use in the testing of this hypothesis. However, Milanich (1972, 1973) suggested the extension of this adaptive pattern to include Stalling's through Wilmington phases and has termed this the Coastal Tradition. This allowed the rather extensive Stalling's/Thom's Creek component to be substituted for the Deptford component to test this hypothesis.

Certain ceramic decorative attributes of the Stalling's/Thom's Creek ware groups appeared to be absent from the coastal shell bearing sites. Based on this initial observation, all known Thom's Creek components on the Cooper River drainage system containing decorated wares were identified and separated by the presence and absence of shell. Their distribution is presented in Figure 16.

The total lack of shell punctation at the Palm Tree site was quite striking. This mode is reported as being the most frequent decorative mode for the coastal Thom's Creek shell sites (Trinkley 1976). It was therefore decided to investigate this difference in distribution and utilize this information as a test to evaluate the hypothesis of transhumance proposed by Milanich, for the Thom's Creek/Stalling's phase in the Cooper River drainage.

The implication is that if there is a distinct distributional discontinuity between shell decorated and non-shell decorated ceramics, with the shell punctated ceramics being restricted to shell bearing sites, this would imply that there were two separate groups of people, one inhabiting a region in which shell was present and another which inhabited the interior portions of the lower Coastal Plain where shell was not present. One might argue that a mutually exclusive distribution of these decorative modes need not necessarily indicate that interior movements of people from shell bearing sites did not occur, but it does indicate that ceramics were produced locally and not carried on inward movements. This is not a feasible argument since the periwinkle could easily be incorporated into a tool kit. Also, freshwater gastropods such as *Campeloma lima*, which are reported from the Rabbit Mount site (Stoltman 1974: 135) could be used to produce such decoration and, therefore, a lack of available natural resources is not a viable explanation for the absence of this decorative mode. Also, the occurrence of shell punctation on Thom's Creek and Stalling's ceramics in the interior drainage of the Savannah River (Clafin 1931; Fairbanks 1942; Phelps 1968; Bullen and Green 1970; Stoltman 1974) indicates that nonoccurrence of this motif due to nonavailability of the natural resource in the immediate environment is a weak argument. This is even further

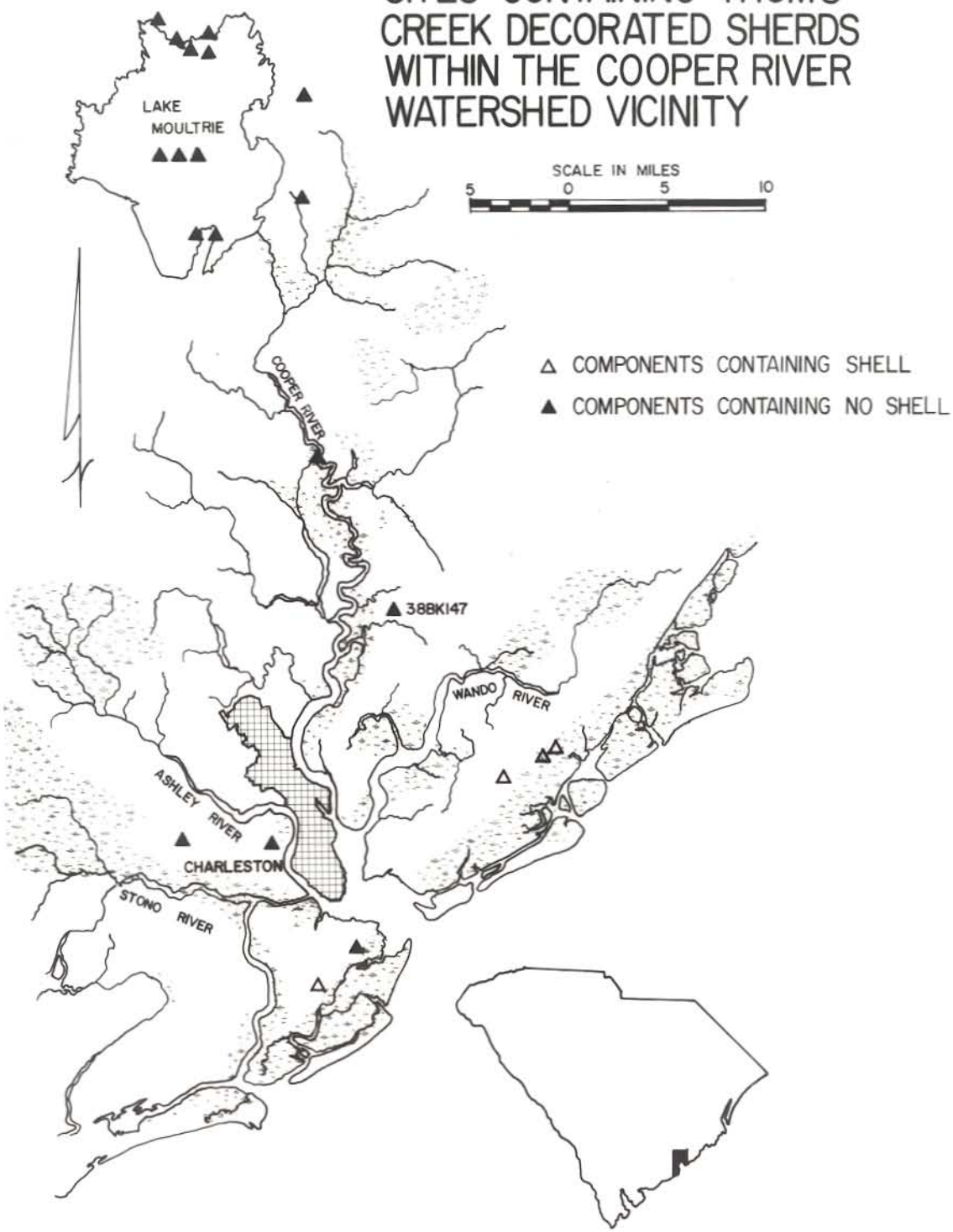

SITES CONTAINING THOM'S CREEK DECORATED SHERDS WITHIN THE COOPER RIVER WATERSHED VICINITY
SCALE IN MILES
5 0 5 10
△ COMPONENTS CONTAINING SHELL
▲ COMPONENTS CONTAINING NO SHELL
LAKE MOULTRIE
COOPER RIVER
38BK147
WANDO RIVER
ASHLEY RIVER
CHARLESTON
STONO RIVER

FIGURE 16

strengthened when it is noted that shell scraping is found on several sherds at the Palm Tree site (Fig. 10b). All these factors when considered together tend to indicate that if there is a completely exclusive distribution of shell decorated ceramics with shell and non-shell sites then this would indicate that little movement of people from the coastal region into the interior occurred, and further it suggests that this distribution is the result of at least two geographically distinct groups ot people inhabiting different environmental zones.

The frequency of surface decoration of Stalling's/Thom's Creek ceramics from four shell bearing coastal estuary sites were compared with those from 19 non-shell bearing sites on the Cooper River drainage. These sites are mapped in Figure 16.

Data from 17 of the 19 sites were obtained from reanalysis of surface collections which are currently located at the Institute; the Charles Towne Landing data is from Stanley South's analysis which is on file at the Institute; and the remaining site data is from the Palm Tree site. The shell bearing site data are from three surface collections analyzed by Trinkley (1976: 65) to which data from a surface collection conducted by the Institute subsequent to Trinkley's study was added. The data for the fourth shell bearing site, 38CH41, was combined from David Anderson's surface collection analysis (1975), an analysis of a surface collection performed by Eugene Waddell which is on file at the Institute, and the reanalysis of a small surface collection located at the Institute.

Only decorated sherds were used in the study. It is assumed that any of the decorative modes has just as much chance for selection as any other. The results of this frequency study are presented in Table 8.

TABLE 8

FREQUENCY DISTRIBUTION OF THOM'S CREEK DECORATIVE MODES ON SHELL AND NON-SHELL SITES

	Shell Bearing		Non-Shell Bearing		Combined Frequency	
	N	(%)	N	(%)	N	(%)
Non-Shell Punctate	93	(29.2)	195	(67.2)	288	(47.3)
Drag & Jab Punctate	16	(5.0)	6	(2.1)	22	(3.6)
Dentate Stamped	0	(0)	43	(14.8)	43	(7.1)
Shell Punctate	53	(16.7)	6	(2.1)	59	(9.7)
Incised	9	(2.8)	5	(1.7)	14	(2.3)
Finger Pinched	145	(45.6)	28	(9.7)	173	(28.5)
Broad Simple Stamped	2	(0.6)	7	(2.4)	9	(1.5)
TOTAL	318	(100.0)	290	(100.0)	608	(100.0)

Table 8 clearly indicates a dramatic difference in the distribution of three decorative modes; finger pinching, shell punctation, and dentate stamping, for shell bearing and non-shell bearing sites. Shell punctation was observed at only two sites which lacked shell, 38CH1 and 38CH62. Finger pinched ceramics were found at only three non-shell bearing sites; 38CH33, 38CH62, and the Palm Tree site. The distributional pattern of finger pinched and dentate stamped decorative motifs revealed by the study is corroborated by the distributional studies conducted by Anderson (1975).

The occurrence of finger pinched ceramics at the Palm Tree site somewhat contradicts the general interpretation of two distinct adaptive systems. However, the frequency of occurrence of this decorative motif for the combined Stalling's/Thom's Creek ware group at this site based on sherd count (18, 24.0%), or minimum vessel count (3, 11.1%), falls far below the combined frequency for both shell and non-shell bearing sites, particularly when minimum vessel counts are considered. This is particularly relevant since 14 sherds at the Palm Tree site were from the same vessel.

Comparative settlement data are almost totally absent from the non-shell bearing sites. Only one site, the Charles Towne Landing site (South 1970, 1971, 1973b) contains such data. The shell bearing site data are somewhat more complete and have been summarized by Trinkley (1976) for the larger coastal estuary sites. However, there is little information concerning the smaller coastal shell bearing sites other than that accumulated by Anderson (1975), and, the presence or absence of shell at the site was not used as a distributional variable.

The distribution of ceramics at the Charles Towne Landing site (South 1973b), closely parallels the clustering of material at the Palm Tree site. The major differences in this patterning appear to be related to the size of the areas, which are larger at the Charles Towne Landing site, and the frequency of clay balls, which are much more prevalent at the Charles Towne Landing site. At the Charles Towne Landing site, 10.6 percent (85 sherds) of the total Thom's Creek/ Stalling's ware group assemblage were decorated. This indicates that decorated ceramics make up only a small percentage of these wares. This parallels a 14.5 percent (75 sherds) decorated sherds found *in situ* at the Palm Tree site and indicates that decorated sherds of these ware groups are in a minority at these two non-shell sites. This suggests that this might be a pattern characteristic of non-shell bearing sites in the Cooper River drainage. Unfortunately, the uncertain collecting procedures of the other non-shell sites and the possibility of bias, which is particularly acute with plain sherds, precludes their inclusion in this study. Trinkley (1976: 65) notes that the percentage frequencies of decorated to non-decorated Thom's Creek ceramics are much higher for decorated sherds, although he clearly warns of the problem of bias in the collection procedure.

The coastal shell sites, however, include those which are larger than those so far reported for the interior portion of the lower Coastal Plain. The South Carolina coastal estuary shell rings (Calmes 1968;

Edwards 1969; Hemmings 1970, 1971) and many of the larger coastal shell middens (Trinkley 1974, 1976; Sutherland 1974; Michie 1973; Hemmings 1969), suggest a more intensive or sedentary occupation in keeping with the concept of the Early Formative stage (Willey and Phillips 1958; Meggars, Evans, and Estrada 1965; Ford 1966, 1969) and the development of sedentary habitation and village life. This formative development is not seen in the non-estuary region of the Cooper River drainage, nor is it seen in the cultural periods immediately following the Thom's Creek phase in the estuary zone. Because of the distinct differences in the site types in the estuary sector of the coast and the interior sector of the lower coastal plain which cannot be explained by transhumance between these two zones, two separate models of cultural adaptation have been presented for each of the respective areas.

ADAPTIVE MODELS FOR THE THOM'S CREEK/STALLING'S PHASE IN THE COOPER RIVER DRAINAGE

Milanich's hypothesis of transhumance as an explanation for the occurrence of presumably similar cultural material in two contrasting environments has been reviewed and negative implications have been presented. Alternative models of adaptation will now be discussed. As viewed here, there are indeed, as Milanich (1972) and Larson (1970) suggest, distinct environmental zones. However, the interior portion of the lower Coastal Plain in the Cooper River drainage is not so deficient in natural resources as these authors would suggest. A strong case for the quality of the environment in this region has been made elsewhere (Widmer 1976). Nor is there a lack of certain items in the estuary zone which are present in the interior. Only anadromous fish and wild rice would be available in the interior in quantities greater than those found in the estuary sector. The estuary sector contains a rich resource base which does not seasonally fluctuate and which is not available in the interior sector.

It is hypothesized here that this ecological zone allows the development of an adaptive system which favored sedentary life. This sedentary existence is evidenced by the large shell sites in the estuary sector. These sites functioned as base camps, and persisted for approximately 1,000 years. The smaller shell scatters, multicomponent shell middens, and possibly shell rings which contain Thom's Creek or Stalling's ceramics represent temporary, foraging or collecting stations associated with the larger more permanent sites. Because non-estuary resources such as deer, hickory nuts, acorns, and migratory waterfowl were also located in this sector there was no need to exploit the interior. This favorable estuary environment was dependent upon the position of the sea level, and after approximately 1000 B.C., this environment must have deteriorated in this region since no large sites of this type are currently reported containing Deptford ceramics. After this date, a dispersed settlement pattern not as closely tied to an estuary economy must have existed. This settlement pattern was probably related to the deterioration of the estuary system.

The inner portion of the lower Coastal Plain, even as far east as the Charles Towne Landing site on the Ashley River contained no estuary resources during the Thom's Creek/Stalling's period occupation (South 1973b, personal communication). The adaptive exploitative strategy and resultant subsistence pattern was much more intermittent and required continual movement as seasonal resources became available and were depleted in an area. The rich, continuously available estuary resources were not available, and so sedentary life was not possible. The formation of two distinct adaptive strategies involving at least two distinct groups of people developed in the Cooper River drainage. One was based primarily on estuary resources, and was located in this environmental sector; while the other was primarily non-estuary in resource utilization and located interior to the estuary sector. However, the estuary sector was not void of resources which were found in the interior and most of these items are indigenous to this area as well.

The estuary ecological sector can be considered to contain a sufficient resource base which allowed sedentary, or at least more permanent occupation than was previously the case.

The interior populations during this time were obviously restricted from interaction with populations in the estuary sector. This is demonstrated by the distribution of ceramic motifs. A separate adaptive system was developed to exploit the relatively rich, but only temporarily available, resources in the non-estuary interior regions of the lower Coastal Plain. Therefore, a seminomadic adaptive stragegy, possibly based on a seasonal scheduling pattern, but certainly of limited length of habitation at any one site was developed. The resultant settlement pattern is one of small sites with individual activity areas representative of short term utilization. This pattern has been identified at the Palm Tree site and at the Charles Towne Landing site. The environment in the interior of the lower Coastal Plain was not deficient in natural resources to preclude permanent inhabitation, but it did necessitate a dispersed, seminomadic settlement pattern.

An alternative hypothesis to the above, is that interior sites which contain no shell predate the large shell midden and shell ring sites, and that the decorative motifs found in the estuary shell sites but not found in the interior would represent a difference in time, and also the abandonment of the area as estuary resources became available with the establishment of the estuary because of a rising sea level. These motifs would have temporal significance and would have been used only during the shell utilization period. After the deterioration of the estuary zone, populations in these areas dispersed and moved back into the interior as well as remaining in the estuary area. This hypothesis can be partially tested by radiocarbon dating and relative dating of cultural material.

There is some evidence to suggest that the interior occupations are slightly earlier than the estuary occupations in the Cooper River drainage. This is an hypothesis favored by Crusoe and DePratter (1976: 14) and Waring (Williams 1968: 191). The work of Waring and Larson at the Sapelo Shell Ring (Williams 1968: 278) indicates that baked clay objects were found in lower levels at this site, were associated exclusively with plain ceramics, and were separated stratigraphically from decorated sherds. This has led Crusoe and DePratter (1976) to construct an earlier Bilbo I subphase which lasted from 2200 to 1700 B.C. for the Georgia coast. Baked clay objects have been reported for Daws' Island (Hemmings 1969), the Ford site (Calmes 1968), and the Marett mound (Trinkley 1974), but are not reported for shell bearing sites north of the Broad River. Mention of clay balls is absent from Fig Island (Hemmings 1970) and Spanish Mount (Sutherland 1974). Trinkley (1974: 19) notes that most of the clay balls recovered from the Marett mound were located in the 30 to 60 centimeter level. No clay balls have been reported from the four shell sites in the estuary sector of the Cooper River drainage discussed thus far. However, these sites have not received intensive investigation. The Palm Tree site contained two clay ball fragments and the Charles Towne Landing site contained numerous clay balls (South 1969, 1973b). A clay

ball is also reported for 38BK150 which is also located on the Amoco chemical plant site (Hartley and Stephenson 1975). Both the Palm Tree site and the Charles Towne Landing site contain a high frequency of plain ceramics, 85.5 percent and 89.4 percent respectively. This would tend to indicate, if the scheme developed by Crusoe and DePratter (1976) is applicable for this area, that the interior sites, at least Charles Towne Landing and Palm Tree, predate the shell bearing estuary sites. Additional support is provided by the much higher percentage of decorated sherds at the estuary sites as has been previously noted.

Both of these are hypothetical and at this stage have serious gaps. Increased control of chronology is very much needed to evaluate these models. The orientation of future investigation along problems which relate to these hypotheses will greatly increase our knowledge and understanding of the patterned archeological behavior which existed in this drainage system and aid in the explanation of the processes responsible for these archeological patterns. Until then, these models must remain hypotheses which will hopefully guide and stimulate future research in this region.

SUMMARY

The research conducted at the Palm Tree site has documented the archeological record of a previously uninvestigated prehistoric adaptive pattern which existed in this environmental sector during the Thom's Creek/Stalling's period. The research has provided an initial step for the understanding of the settlement system for this environment and has presented a strong case for the contemporaneity of the Stalling's and Thom's Creek ware groups, which have traditionally been considered separate in time.

Of greater significance are the tentative conclusions which have been derived from the investigation at the Palm Tree site which tend to indicate that previous models of adaptation hypothesized for this cultural stage on the Coastal Plain is not applicable to the Thom's Creek/Stalling's period occupation in the Cooper River drainage. Evidence from this site and comparative data from other sites in the region indicate that the concept of a Coastal Tradition (Milanich 1972, 1973) which persisted relatively unchanged through time is not applicable to the Cooper River drainage.

Two alternate models of adaptation have been presented. Although the data obtained from the archeological record at the Palm Tree site is insufficient to add to the investigation and testing of these models, the research conducted at the site will hopefully provide the impetus for directing future research along the entire Coastal Plain of South Carolina, and will form the starting point in terms of data for comparative study.

Important methodological gains have been realized in the investigation of the Palm Tree site. These include the effectiveness of mechanical stripping of the plow zone of this site to yield useable data despite the lack of clearly defined features. A relatively large and extensive inventory of botanical items were retrieved from areas which are not usually collected for such purposes. The recovery of these items, from probably the worst imaginable conditions for preservation, indicates that there is no reason for archeologists to refrain from the collection of these items because of *a priori* beliefs that such data do not exist.

It is hoped that this report will stimulate a new interest in this archeologically ignored region. Hopefully, some of the ideas presented here will be followed through, elaborated upon, refined, or rejected. To date, this type of directed research has been lacking in this area, and it is hoped that the non-shell bearing sites will receive their share of research activity since they are of vital importance to our understanding of contemporaneous shell bearing sites.

REFERENCES

Anderson, David G.
1975 Inferences from distributional studies of prehistoric artifacts in the Coastal Plain of South Carolina. Institute of Archeology and Anthropology, University of South Carolina, manuscript.

Ashe, Thomas
1959 Carolina, or a description of the present state of that country. In *Narratives of early Carolina, 1650-1708,* edited by A. S. Salley, pp. 138-159. Barnes and Noble, New York.

Bullen, Ripley and H. Bruce Greene
1970 Stratigraphic tests at Stalling's Island, Georgia. *Florida Anthropologist* 23: 8-23.

Caldwell, Joseph R.
1958 Trend and tradition in the prehistory of the eastern United States. *American Anthropological Association, Memoir* 88.

1971 Chronology of the Georgia coast. *Southeastern Archaeological Conference, Bulletin* 13: 89-92.

Calmes, Alan
1968 Test excavations at three Late Archaic shell-ring mounds on Hilton Head Island, South Carolina. *Southeastern Archaeological Conference, Bulletin* 8: 45-48.

Claflin, William H., Jr.
1931 The Stalling's Island mound, Columbia County, Georgia. *Papers of the Peabody Museum of Archaeology and Ethnology* 14(1).

Coe, Joffre L.
1964 The formative cultures of the Carolina Piedmont. *Transactions of the American Philosophical Society* 54(5).

Colquhoun, Donald J.
1965 Terrace sediment complexes in central South Carolina. *Atlantic Coastal Plain Geological Association, Field Conference Guidebook.*

Crusoe, D. L. and C. B. DePratter
1976 A new look at the Georgia coastal mound Archaic. *Florida Anthropologist* 29:1-23.

Dames and Moore Associates
1975a Environmental assessment report, proposed rail line, Berkeley County, South Carolina. Dames and Moore, Park Ridge, Illinois.

1975b Environmental assessment report, proposed chemical plant, Berkeley County, South Carolina for Amoco Chemicals Corporation. Dames and Moore, Chicago, Illinois.

Fairbanks, Charles
1942 The taxonomic position of Stalling's Island, Georgia. *American Antiquity* 7:223-231.

Ford, James A.
1966 Early formative cultures in Georgia and Florida. *American Antiquity* 31:781-799.

1969 A comparison of formative cultures in the Americas. *Smithsonian Contributions to Anthropology* II.

Griffin, James B.
1943 An analysis and interpretation of the ceramic remains from two sites near Beaufort, S.C. *Bureau of American Ethnology, Bulletin* 133: 159-167.

Griffin, James B. and William H. Sears
1950 Certain sand-tempered pottery types from the Southeast. *Prehistoric Pottery of the Eastern United States*. Museum of Anthropology, University of Michigan.

Hartley, Michael O. and Robert L. Stephenson
1975 The Grove and Flagg Plantation survey. *Institute of Archeology and Anthropology, University of South Carolina, Research Manuscript Series* 72.

Hemmings, E. Thomas
1969 An early ceramic site near Beaufort, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina, The Notebook* I(6-9):6-7.

1970 Preliminary report of excavations at Fig Island, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina, The Notebook* II(9-12):9-15.

1971 Emergence of formative life on the Atlantic Coast of the Southeast. *Southeastern Archaeological Conference, Bulletin* 13:51-55.

Hilton, William
1959 A relation of a discovery. In *Narratives of early Carolina, 1650-1708*, edited by A. S. Salley, pp. 37-61. Barnes and Noble, New York.

Larson, Lewis H.
1970 *Aboriginal subsistence technology on the southeastern Coastal Plain during the late prehistoric period*. Ph.D. dissertation, University of Michigan. University Microfilms, Ann Arbor.

Lawson, John
1952 *Lawson's history of North Carolina*. Garrett and Massie, Richmond.

Leone, Mark P.
1972 Issues in anthropological archeology. In *Contemporary archeology, a guide to theory and contributions*, edited by Mark P. Leone, pp. 14-27. Southern Illinois University Press, Carbondale.

Meggers, B. J., Clifford Evans and Emilio Estrada
1965 Early formative period of coastal Ecuador. *Smithsonian Contributions to Anthropology* I.

Michie, James L.
1973 Archeological indications for sea level 3500 years ago. *South Carolina Antiquities* 5:1-11.

Milanich, Jerald T.
1972 *The Deptford phase: an archeological reconstruction.* Ph.D. dissertation, University of Florida. University Microfilms, Ann Arbor.

1973 The southeastern Deptford culture: a preliminary definition. *Florida Department of State, Bureau of Historic Sites and Properties, Bulletin* 4:1-44.

1976 The radiocarbon-dated aboriginal culture sequence from St. Simon's Island, Georgia -- 2240 B.C. to A.D. 1650. Paper presented at the 1976 meeting of the Society for American Archaeology, St. Louis.

Peterson, Drexel A.
1971 The Refuge phase in the Savannah region. *Southeastern Archaeological Conference, Bulletin* 13:76-81.

Phelps, David S.
1968 Thom's Creek ceramics in the central Savannah River locality. *Florida Anthropologist* 21:17-30.

Plog, Fred T.
1971 *The study of prehistoric change.* Academic Press, New York.

1973 Diachronic anthropology. In *Research and theory in current archeology*, edited by C. L. Redman, pp. 181-198. John Wiley and Sons, New York.

Smith, Bruce D.
1975 Middle Mississippi exploitation of animal populations. *Museum of Anthropology, University of Michigan, Anthropological Papers* 57.

South, Stanley A.
1969 Baked clay objects from the site of the 1670 settlement at Charles Towne. *Institute of Archeology and Anthropology, University of South Carolina, The Notebook* II(1)3-16.

South, Stanley A.
1971 Archeology at the Charles Towne site (38CH1) on Albemarle Point in South Carolina. *Institute of Archeology and Anthropology, University of South Carolina, Research Manuscript Series* 10.

1973a Indian pottery taxonomy for the South Carolina coast. Paper presented at the 1973 Southeastern Archaeological Conference, Memphis.

1973b Clustering of the cultural components at the Charles Towne site (38CH1) from the yellow sand layer below the plowed soil zone. Institute of Archeology and Anthropology, University of South Carolina, map.

Stoltman, James B.
1974 Groton Plantation - an archaeological study of a South Carolina locality. *Peabody Museum, Harvard University, Monographs* 1.

Sutherland, Donald R.
1974 Excavations at the Spanish Mount, shell midden, Edisto Island, South Carolina. *South Carolina Antiquities* 6:25-36.

Swanton, John R.
1946 Indians of the southeastern United States. *Bureau of American Ethnology, Bulletin* 137.

Trinkley, Michael B.
1974 A report on the excavations at Marett mound, Edisto Island, South Carolina. *South Carolina Antiquities* 6:1-24.

1976 A typology for Thom's Creek pottery for the South Carolina coast. Unpublished M.A. thesis. Department of Anthropology, University of North Carolina.

U.S.D.A. Forest Service
1971 Wildlife habitat survey, Francis Marion National Forest, Witherbee Ranger District. U.S.D.A. Forest Service, Columbia, ms.

U.S.D.A. Soil Conservation Service
1971 *Soil survey, Charleston County, South Carolina.* Soil Conservation Service, Washington.

Waddell, Eugene G.
1965 A C-14 date for Awendaw Punctate. *Southeastern Archaeological Conference, Bulletin* 3:82-85.

Widmer, Randolph J.
1976 An archeological survey of the East Cooper River and Berkeley railroad, Berkeley County, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina, Research Manuscript Series* 100.

Willey, Gordon R. and Philip Phillips
1958 *Method and theory in American archaeology*. University of Chicago Press, Chicago.

Williams, Stephen (Editor)
1968 *The Waring papers*. University of Georgia Press, Athens.

APPENDIX A

FEATURE DATA, 38BK147

Feature	Dimensions in feet	Depth in feet	Minimum number of ceramic vessels	Ware Groups[1] represented	Comments
4 (Lithic Biface)					Single Savannah River Biface.
6 (Sherd Cluster)	95 x 55 (oval)		9	S, TC, D, CF, W	
7* (Sherd Cluster)	10 x 6 (oval)	0.5	7	S, TC	Single Stalling's Plain pot scatter with additional sherds. Lithic debitage present.
8* (Sherd Cluster)	5 (circular)	1.0	3	TC	Associated lithics, plain sherds might be from bottom of decorated vessel.
9 (Sherd Cluster)	5 (circular)	0.5	4	S, TC	Ceramics associated with steatite sherd and lithic debitage.
10 (Modern "pit")	3 (circular)				Insecticide spill associated with modern agricultural history.
11+ (Sherd Cluster)	19 x 13 (oval)	0.5	4	S, TC, D	Lithic debitage associated with cluster but none found with additional screening.
12 (Sherd Cluster)	25 x 8 (oval)	0.5	8	S, TC	Might be contiguous with Feature 13.

APPENDIX A (Continued) -- FEATURE DATA, 38BK147

Feature	Dimensions in feet	Depth in feet	Minimum number of ceramic vessels	Ware Groups[1] represented	Comments
13 (Sherd Cluster)	25 (circular)	0.5	12	S, TC	Might be contiguous with Feature 12.
14 (Sherd Cluster)	14 (circular)	0.5	4	TC	Adjacent to Feature 4, probably associated with it.
15 (Lithic Biface)					Non-diagnostic biface fragment in tree stump disturbance on surface of drag pan cut.
16 (Sherd Cluster)	10 (circular)	0.5	6	S, TC	Two groups of sherds might have been dragged north of this feature by clearing operations.
17*+ (Sherd Cluster)	13 x 7 (oval)	0.5	9	S, TC, D	Broken Deptford vessel, associated lithic debitage.
18*+ (Sherd Cluster [and pit?])	10 (circular) [2 (circular)]	0.5 1.0	4 -	S, TC, D -	A reddish irregular area was noted in the center of the cluster void of cultural materials, separate soil samples taken from pit and adjacent areas, lithic debitage associated with cluster; cluster might be contiguous with Feature 11.
19 (Sherd Cluster)	6 (circular)	0.5	7	TC, D	Might relate to Feature 6.

APPENDIX A (Continued) -- FEATURE DATA, 38BK147

Feature	Dimensions in feet	Depth in feet	Minimum number of ceramic vessels	Ware Groups[1] represented	Comments
20 (Lithic Biface)			1	TC	Non-diagnostic biface fragment.
21 (Sherd Cluster)	8 (circular)	0.5	4	S, TC, D	Might relate to Feature 6.
22 (Sherd Cluster)	9 (circular)	0.5	6	S, TC, CF	Within Feature 6.
23 (Sherd Cluster)	5 (circular)	0.5	4	TC, D	Within Feature 6, possibly related to Feature 24, associated limestone concretion.
24* (Pit)	7 x 5 (oval)	0.82	3	TC	Shallow basin-shaped reddish stained pit, numerous flecks of charcoal; pit clearly originates below the plow zone, and is overlain by Feature 25 but not associated with it. Reddish color not soluble in water, nor is it clay.
25 (Sherd Cluster)	8 (circular)	0.5	6	TC, W	Stratigraphically overlies Feature 24 but is just to the west.

* indicates soil sample recovered.

+ indicates screening with 1/8th inch mesh

[1]S = Stalling's; TC = Thom's Creek; D = Deptford, CF = Cape Fear; W = Wilmington

APPENDIX B

CERAMIC TYPE FREQUENCY DISTRIBUTION
COMBINED SURFACE SAMPLE, 38BK147

WARE GROUP	TYPE	TYPE TOTAL N(%)	WARE GROUP TOTAL N(%)
Stalling's	Plain	2 (2.3)	2 (2.3)
Thom's Creek	Plain	62 (70.5)	62 (70.5)
Deptford	Bold Checked Stamped	4 (4.5)	
	Linear Checked Stamped	4 (4.5)	
	Simple Stamped	11 (12.5)	19 (21.6)
Cape Fear	Cord Marked	1 (1.1)	
	Fabric Impressed	2 (2.3)	3 (3.4)
Wilmington	Hanover Fabric Impressed	1 (1.1)	1 (1.1)
York	Ashley Complicated Stamped	1 (1.1)	1 (1.1)
Total		88 (99.9)	88 (100.0)

APPENDIX C

CERAMIC TYPE FREQUENCY DISTRIBUTION IN SITU SAMPLE, 38BK147

	STALLING'S WARE GROUP					THOM'S CREEK WARE GROUP					
	Plain	Punctate	Incised	Broad Simple Stamped	Dentate Stamped	Plain	Punctate	Drag and Jab Punctate	Broad Simple Stamped	Refuge Dentate Stamped	Awendaw Finger-pinched
General Subplow Zone	13	-	-	-	-	37	1	-	1	1	-
Deep Trench	2	-	-	-	2	10	1	-	-	-	-
Feature 6	5	-	-	-	-	27	-	1	-	-	-
7	108	1	-	-	-	21	-	-	-	11	-
8	-	-	-	-	-	9	-	-	-	-	14
9	1	-	-	-	-	32	-	-	-	-	-
11	2	-	-	-	-	8	-	-	-	-	-
12	6	1	-	10	-	4	-	-	-	-	2
13	4	6	-	-	-	15	2	-	1	-	2
14	4	-	-	-	-	4	1	-	-	-	-
16	1	-	1	-	-	13	1	-	-	-	-
17	5	4	-	-	-	6	-	-	1	-	-
18	1	-	-	-	-	14	-	-	-	-	-
19	-	-	-	-	-	8	5	-	-	-	-
20	-	-	-	-	-	1	-	-	-	-	-
21	4	-	-	-	-	2	1	-	-	-	-
22	1	-	-	-	-	9	1	-	-	-	-
23	-	-	-	-	-	7	-	1	-	-	-
24	-	-	-	-	-	23	2	-	-	-	-
25	-	-	-	-	-	23	-	-	-	-	-
Total	168	12	1	10	2	273	15	2	3	12	18
Ware Group Total	193					323					

APPENDIX C (Continued) -- CERAMIC TYPE FREQUENCY DISTRIBUTION IN SITU SAMPLE, 38BK147

	DEPTFORD WARE GROUP		CAPE FEAR WARE GROUP		WILMINGTON WARE GROUP	Total
	Linear Checked Stamped	Bold Checked Stamped	Cord Marked	Fabric Impressed	Hanover Fabric Impressed	
General Subplow Zone	7	5	1	2	-	68
Deep Trench	-	-	-	-	-	15
Feature 6	-	-	1	1	16	51
7	-	-	-	-	-	141
8	-	-	-	-	-	23
9	-	-	-	-	-	33
11	-	1	-	-	-	11
12	-	-	-	-	-	23
13	-	-	-	-	-	30
14	-	-	-	-	-	9
16	-	-	-	-	-	2
17	-	79	-	-	-	95
18	-	4	-	-	-	19
19	5	-	-	-	-	18
20	-	-	-	-	-	1
21	-	1	-	-	-	8
22	-	-	2	-	-	13
23	-	1	-	-	-	9
24	-	-	-	-	-	25
25	-	-	-	-	3	26
Total	12	91	4	3	19	645
Ware Group Total	103		7		19	645

APPENDIX D

MINIMUM VESSEL COUNT IN SITU SAMPLE, 38BK147

	STALLING'S WARE GROUP					THOM'S CREEK WARE GROUP					
	Plain*	Punctate	Incised	Broad Simple Stamped	Dentate Stamped	Plain*	Punctate	Drag and Jab Punctate	Broad Simple Stamped	Refuge Dentate Stamped	Awendaw Finger-pinched
General Subplow Zone	1	–	–	–	–	2	1	–	1	–	–
Deep Trench	–	–	–	–	1	–	1	–	–	–	–
Feature 6	–	–	–	–	–	1	–		–	–	–
7	1	1	–	–	–	3	–	–	–	1	–
8	–	–	–	–	–	–	–	–	–	–	1
9	–	–	–	–	–	2	–	–	–	–	–
11	–	–	–	–	–	–	–	–	–	–	–
12	1	1	–	1	–	–	–	–	–	–	2
13	–		–	–	–	–	2	–	1	–	–
14	–	–	–	–	–	–	1	–	–	–	–
16	–	–	1	–	–	1	1	–	–	–	–
17	1	2	–	–	–	–	–	–	1	–	–
18	–	–	–	–	–	3	–	–	–	–	–
19	–	–	–	–	–	2	3	–	–	–	–
20	–	–	–	–	–	–	–	–	–	–	–
21	–	–	–	–	–	–	1	–	–	–	–
22	1	–	–	–	–	–	1	–	–	–	–
23	–	–	–	–	–	1	–	1	–	–	–
24	–	–	–	–	–	–	1	–	–	–	–
25	–	–	–	–	–	–	–	–	–	–	–
Total	5*	4	1	1	1	15*	12	1	3	1	3
Percentage	41.7	33.3	8.3	8.3	8.3	42.9	34.3	2.8	8.6	2.8	8.6
Total Ware Group	12					35					
Ware Group Percentages of total sample	(18.8)					(54.7)					

* based on rim sherds only

APPENDIX D (Continued) -- MINIMUM VESSEL COUNT IN SITU SAMPLE, 38BK147

	DEPTFORD WARE GROUP		CAPE FEAR WARE GROUP		WILMINGTON WARE GROUP	
	Linear Checked Stamped	Bold Checked Stamped	Cord Marked	Fabric Impressed	Hanover Fabric Impressed	Total
General Subplow Zone	3	2	1	1	-	12
Deep Trench	-	-	-	-	-	2
Feature 6	-	-	1	1	1	4
7	-	-	-	-	-	6
8	-	-	-	-	-	1
9	-	-	-	-	-	2
11	-	1	-	-	-	1
12	-	-	-	-	-	5
13	-	-	-	-	-	3
14	-	-	-	-	-	1
16	-	-	-	-	-	3
17	-	-	-	-	-	4
18	-	1	-	-	-	4
19	1	-	-	-	-	6
20	-	-	-	-	-	-
21	-	1	-	-	-	2
22	-	-	1	-	-	3
23	-	1	-	-	-	3
24	-	-	-	-	-	1
25	-	-	-	-	1	1
Total	4	6	3	2	2	64
Percentage	40.0	60.0	60.0	40.0	100.0	100.0
Total Ware Group	10		5		2	
Ware Group Percentages of total sample	(15.6)		(7.8)		(3.1)	100.0