INDIAN POTTERY OF THE CAROLINAS

OBSERVATIONS FROM THE MARCH 1995 CERAMIC WORKSHOP AT HOBCAW BARONY

Assembled and edited by
David *G.* Anderson
assisted by
John S. Cable, Niels Taylor, and Christopher Judge

Council of South Carolina Professional Archaeologists

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PREFACE

This volume was inspired by a workshop on "Prehistoric Ceramics in the South Carolina Area" that was held Thursday through Saturday, March 9-11, 1995 at the Baruch Institute on Hobcaw Barony near Georgetown, South Carolina. The workshop was sponsored by a Survey and Planning Grant awarded to the Council of South Carolina Professional Archaeologists (COSCAPA) by the South Carolina Department of Archives and History (SCDAH). Niels Taylor, an archaeologist with SCDAH, served as the project principal investigator. Chris Judge, an archaeologist with the Heritage Trust program of the South Carolina Department of Wildlife, served as local arrangements coordinator and handled all of the logistics for the workshop. Technical coordination was provided David G. Anderson and John S. Cable, of the Southeast Archaeological Center of the National Park Service and New South Associates, Inc., respectively. All four of the project organizers owe their employers a debt of thanks for appreciable support throughout the planning and implementing of the workshop, and for assistance in the production of this resulting volume.

The purpose of the workshop was to bring interested archaeologists together to examine prehistoric ceramic collections from South Carolina and adjacent areas. The goal was a "hands-on" workshop to acquaint the participants with the variability occurring in prehistoric ceramics in the general vicinity of South Carolina. The meeting proved wildly successful in this regard. Almost everyone attending brought materials. Throughout the course of the workshop some fifty boxes of ceramic artifacts were on display, spread out over some 25 3'x8' folding tables. The materials included virtually all of the type specimens used to classify prehistoric ceramics in North and South Carolina, a research collection that had never previously been assembled in one place. A great deal of time by all was spent moving around the tables examining and comparing the various specimens, an experience that may have been the most valuable part of the workshop.

A debt of thanks is owed to SCIAA, for extending the loan of the state prehistoric ceramic type collection to the meeting, and particularly to Bruce Rippeteau, South Carolina State Archaeologist, and Sharon Pekrul, SCIAA's collections manager, who used the opportunity to thoroughly update the collection's catalog. Likewise, R. P. Stephen Davis and David S. Phelps are to be thanked for bringing type collections from the University of North Carolina at Chapel Hill and from East Carolina University. Ken Sassaman, COSCAPA President when the workshop was held, and Chris Judge, his successor in 1996, deserve special thanks for assisting with overall project management.

Technical assembly and editing of this manuscript was conducted by David G. Anderson and John S. Cable, with logistical support as well as manuscript proofing provided by Niels Taylor and Chris Judge. Besides funding provided by the SCDAH, appreciable support throughout the project has been provided by the Technical Assistance and Partnerships Section of the Southeast Archeological Center (SEAC) in Tallahassee, Florida (formerly Interagency Archaeological Services Division). In particular, the encouragement of John E. Ehrenhard, SEAC Chief, and the technical advice of Virginia Horak, SEAC production editor, is deeply appreciated.

Over the course of the workshop, each participant made informal presentations on prehistoric ceramics in their respective areas, and the state of current research. Following each presentation round-table discussion occurred, continuing throughout breaks, during planned general discussion periods that were held at various points, and far into the night Thursday and Friday. Subjects were wide ranging, and included such topics as sorting and identification criteria, spatial and temporal distributions, and approaches to systematics and taxonomy.

A photographer was present throughout the meeting, who shot many of the specimens, although as a general rule the photography focused on materials that had not been previously illustrated in a professional publication. This triage proved necessary because so much material was brought that photographing every specimen would have likely taken weeks. The entire meeting was videotaped, and copies of the film were used to compile the detailed overview of the workshop, complete with transcripts and summaries of the various presentations, that comprises chapter 1 of this volume. Copies of the film, itself a historical document of sorts, are at the South Carolina Institute of Archaeology and Anthropology (SCIAA).

This volume consists of two main parts, a series of papers describing the workshop and current approaches to ceramic analysis and classification in the Carolinas, and an initial sorting guide to local ceramics, with major categories listed alphabetically by type. The technical papers consist of an extended overview of the workshop prepared by one of the organizers (Anderson), and a reflection on the events that took place during the workshop, and observations on ceramic analysis in the Carolinas in general, by one of the participants (Espenshade). The other two papers, by Lilly and Gunn and Eastman, are more technical in nature and describe research in particular areas.

The sorting guide contained within this manuscript is an admittedly preliminary effort, at present essentially the work of one author, David G. Anderson (with several contributions by Jane Eastman). An original goal of the workshop was the production of a comprehensive sorting guide for the Indian ceramics of the Carolinas. This remains our goal, although the workshop and its aftermath revealed the complexity of this task. It is now evident that a final guide is likely to run to several hundred pages, will require well over 100 plates and an equal number of distributional maps, and encompass three or four times as many types as are described here. Such an effort proved to be far beyond the resources provided for the workshop. What the workshop has done, however, besides bringing people and collections together in positive interaction (itself a major accomplishment), is to show us what is needed to produce such a guide (i.e., far more photography, artwork, and specific information on the materials occurring over the area), and provide clues as to how it should be organized.

A simple binomial taxonomic framework is used to describe the Indian pottery types found in the Carolinas in this guide. Beside the classic types, the descriptions include surface finish and paste categories, to aid in the sorting of unidentifiable materials. Once the approach we have taken here has been critiqued by our colleagues, (some of whom we hope will join us in this venture), we will proceed to work toward the larger goal of producing a more comprehensive sorting guide. We encourage our colleagues in the Carolinas and adjoining areas to contribute to this effort. Every contribution received will be edited and incorporated into the overall description for each category, and all of the authors will have the opportunity to examine and comment on the text that is produced. After another one or two rounds of writing, review, and revision, we will have a manuscript that will be submitted for formal publication, probably through one or both state archaeological societies in the Carolinas.

All three of the contributed papers in this volume, by Espenshade, Lilly and Gunn, and Eastman, include descriptions of ceramic types or series that occur in the Carolinas. This information is reproduced here exactly as received to indicate the kinds of information the organizers are interested in obtaining to assist in the production of a comprehensive ceramic sorting guide. This information will be incorporated into the descriptions that make up the second part of this manuscript. When the final sorting guide is produced, the authors contributing to each category will be listed at the end of each category, and they will also be listed as contributors and co-authors of the overall volume. We are presently actively soliciting this kind of information, and urge our colleagues to contact us if they need further information or instructions.

PART I.

Technical Papers on Indian Pottery of the Carolinas

The 1995 Ceramic Workshop: An Extended Overview

David G. Anderson

Introduction

The ceramic workshop was held at Hobcaw Barony near Georgetown from Thursday, March 9 to Saturday, March 11, 1995. People arrived over the course of Thursday afternoon and early evening, and much of the time was spent in laying out and then inspecting and talking about the ceramic collections brought to the meeting. Initially artifacts were laid out in one of the dorm rooms, but early in the evening they were moved into the main conference hall.

A number of major type collections were brought to the meeting, and when they were laid out a repeated comment was that this was the first time anyone present had seen so many materials together in one place. The South Carolina Institute of Archaeology and Anthropology (SCIAA) prehistoric type collections were delivered to and from the meeting by Chester DePratter, with a formal signing ceremony transferring responsibility to David G. Anderson, held in front of the dormitory. Major North Carolina type collections were provided by Stephen Davis of the Research Laboratories of Anthropology at the University of North Carolina, Chapel Hill, and by David S. Phelps of East Carolina University. In addition, nearly every participant brought smaller collections, from ongoing research projects, or related to specific research themes. The afternoon and early evening was spent examining unusual artifacts, such as a cord marked sherd with grog lumps that were fragments of cord tempered pottery.

Those attending the workshop included Natalie Adams, David G. Anderson, Paul Brockington, John Byrd, Olga Caballero, John Cable, Chris Clement, Stephen David, Chester DePratter, Leslie Drucker, Jane Eastman, Joel Gunn, Joe Herbert, Connie Huddleston, Chris Judge, Jerry (Tom?) Lilly, Todd McMakin, Mark Mathis, Alan May, James L. Michie, Bob Morgan, David Moore, Eric Poplin, Jill Quattlebaum, Wayne Roberts, Ken Robinson, Ken Sassaman, Steve Smith, Carl Steen, Bobby Sutherland, Scott Sutton, Niels Taylor, Lee Tippett. David G. Anderson brought his video camera, and he (assisted by Niels Taylor and Chris Judge) recorded approximately 12 hours of film over the course of the meeting, including all of the formal sessions as well as one informal discussion held late Thursday evening. These tapes were used to produce much of what follows; additional details on specific artifacts or sequences are included in the attached type descriptions and technical papers.

Thursday Evening Discussion

Late Thursday evening (from ca. 11:00 to just before midnight) an extended discussion on ceramic taxonomy was held in the kitchen of the main hall, by those still standing after a tiring day and evening of scientific exchange and socializing. Much of the light and heat was provided by David Anderson, John Cable, Chris Espenshade, and Ken Sassaman, with additional contributions by Niels Taylor, Steve Smith, Chris Judge, and others passing through. The exchange was filmed by Chris Judge, and a lightly edited transcript is presented here. Many of the issues touched on throughout the meeting surfaced in this discussion, and it is interesting to compare what was said at the start of the meeting with the observations noted at its end, on Saturday afternoon. That discussion concludes this paper.

When filming began, the group was discussing sorting criteria employed in the South Carolina area. John Cable was explaining his emphasis on fine-grained paste variation:

JOHN S. CABLE: The reason I came up with my fine-grained paste sorting criteria was because it looked like there was more variation than was indicated at first, and it seemed like it was stuff that we could capably monitor, so that's why I did it.

DAVID G. ANDERSON: What we can do is propose provisional sorting criteria that we would like people to monitor, and when a site comes up where we have the material in sealed context, we will able to test the taxonomy. All taxonomies, to quote Anna Sheppard, are provisional anyway, and they are not to be considered written in stone...they will change, they will evolve.

NIELS TAYLOR: You just quoted someone in a conversation!!

KENNETH E. SASSAMAN: I know the Ford-Spaulding debate rages on in our minds, the various permutations. I want to get at what these things mean culturally, and not just because they are convenient analytical units. I want to know why this variability is even important to us.

JOHN S. CABLE: What if it turned out that down the line I happened to be right about certain things...that there was some paste that we should have been monitoring, but we didn't, because it wasn't part of the existing system?

KENNETH E. SASSAMAN: We didn't because it wasn't part of a typological system. Paste variability is only going to have any significance to us in our understanding of the past if somebody connects it to something besides just sorting out potsherds. What does it really mean to us that paste varies? What are the techno-functional implications? That's the kind of question that to me is really important. What we call the stuff...don't get me wrong, but I don't care what we call the stuff...

JOHN S. CABLE: Well yes you do...you just about broke out in hives when I called that pottery [that everyone examined previously on one of the tables] Awendaw!

KENNETH E. SASSAMAN: Look in my dissertation...I don't use any type names in my dissertation. I call the pottery Group 1, Group 2, and Group 3.

JOHN S. CABLE: Yeah, I did notice that. In fact, it made me retch! It was very confusing for me!

KENNETH E. SASSAMAN: I was interested in using typology to get at a process.

JOHN S. CABLE: Well, for what you were doing that's exactly what was appropriate.

KENNETH E. SASSAMAN: So why are we so enamored with these typologies? Do we really need these taxonomies?

JOHN S. CABLE: Yeah. You need to call it something, I would think.

CHRIS ESPENSHADE: A series is meaningful culturally if its well-defined, and if we can agree upon it. That's part of what well-defined means, that we can all recognize it. It does mean something. It means a technological tradition was in place for a long time, a ceramic adaptation, if you will, that was in place for a long time. You can look at how that adaptation responded to surface decoration influences, cultural influences, all going back to Caldwell's different cultural areas banging up against each other. What was going on? Deptford people may say, send that fabric impressed over here, but we are going to make it on our paste. And it may be different further on up the coast, where people say, yeah, send that check stamped up here, but we're going to make it on our paste. The series is a legitimate taxa...but we don't know much about what it means.

JOHN S. CABLE: That's one thing that Philips always complained about...that there wasn't a consistent definition of series.

KENNETH E. SASSAMAN: What do you mean by it?

JOHN S. CABLE: Something that appears to be the predominant pottery tradition of a particular period in time.

STEVE SMITH: Doesn't our knowledge progress when there are competing theories?

KENNETH E. SASSAMAN: Sure, absolutely.

DAVID G. ANDERSON: Except for the past 15 years [in South Carolina] we've had competing theories, and what we have now are reports that make use of four or five different taxonomies, so without a guide to the reports and taxonomies we have no idea of what most people are taking about.

NIELS TAYLOR: Is uniformity a plausible goal of this workshop?

DAVID G. ANDERSON: I think we can monitor things. Whether we can all agree on what we call them is another thing! I think we can consistently monitor surface finish and paste. If we can't it really isn't science. If we can't sort the paste categories and the surface finish categories reliably and replicably...meaning that John can sort them and I can sort them...if we can't do that, then it isn't science. I think we can come up with criteria to sort that stuff on the tables [out there].

NIELS TAYLOR: If there comes a point in which we forget the goal of anthropology because all we think about is the technological minutia, that worries me...

DAVID G. ANDERSON: We are trying to understand human behavior. But we are saying that to understand it well we have to monitor, to observe, to take a natural history approach. We have to monitor and observe properly.

NIELS TAYLOR: But if we never deal with human behavior, if all we ever talk about is the minutia...?

DAVID G. ANDERSON: We do talk about behavior! We use these things we monitor to try to determine where people were in the past.

NIELS TAYLOR: When do we do that?

DAVID G. ANDERSON: We do it when we talk about why there is grog-tempered Refuge material on the lower Santee and sand tempered Refuge material on the lower Savannah. We talk about possible different ethnic groups.

KENNETH E. SASSAMAN: Chris [Espenshade] turns out stuff like that!

NIELS TAYLOR: I don't see much of it!

JOHN S. CABLE: That's kind of beside the point...that's our own shortcomings.

DAVID G. ANDERSON: We need to have consistency in our observation, measurement, recording, and description. We can address anthropological questions as a part of that, but if we don't have consistency... if we can't understand what John means or Chris means or Mike

Trinkley means... in describing the very artifacts, the very basic foundation that we are building everything else on, then we have a problem. What we are trying to do is come up with a way to consistently present the information that we dig up... and when we can do that and at least understand what we are all taking about, then we can build the anthropological interpretation.

NELS TAYLOR: Will lets try and do that then!

KENNETH E. SASSAMAN: I'm just worried that we are picking criteria that varies in ways that we don't understand and that varies in ways that aren't meaningful at all in terms of time, space, or technology. Paste, paste... there's a range of paste admixtures that will provide an appropriate technological end result... so there is a range of variability... we don't know that was tolerable within a group of people who made pottery. Are we coming up with criteria for sorting this stuff that are meaningless?

DAVID G. ANDERSON: Now think about it...if you take a look, most of the Mattassee Lake system is based on the preparation of paste types as well as surface finish.

KENNETH E. SASSAMAN: Right, right, in combination. That's important.

JOHN S. CABLE: Now think about it...there are changes that happen that seem to be fairly consistent...there is not a random situation of clays and pastes...you start out with fiber tempered, then pottery like what I called Horse Island, atempered, then you get into some stuff that is getting harder, the paste is harder, more compacted, your getting certain inclusions in it. They are moving toward something there...I think that is an evolution in paste development.

KENNETH E. SASSAMAN: Well, you've got everybody evolving along the same lines. This is the kind of stuff that bothers me. That's what I was trying to get at in my dissertation...there was variability within the Savannah River Valley that would have never been captured by any typological system, and that variability was important, because it was about process, and if that's what we are really after, cultural process, we've got to tear down the typology and not let the typology restrict us.

JOHN S. CABLE: Typology only restricts you if its circular. If you have a typology that is independent of your cultural studies, than it becomes a test of those.

KENNETH E. SASSAMAN: So your typology remains to be tested?

JOHN S. CABLE: As all do.

KENNETH E. SASSAMAN: If that's the way you view typology. I don't necessarily view typology as a hypothesis to be tested.

NIELS TAYLOR: Didn't you hear David's quote while ago?

KENNETH E. SASSAMAN: All I try to do is document the full range of variability in the vessels, particularly form, the technology of the vessels. I'm real big on form, and I know that Chris is too. When we use a vessel unit of analysis you see pottery in a whole different way than you do with sherds. But unfortunately we can't often do that. I can sympathize with John, who has a lot of little crummy sherds. That's the norm...

JOHN S. CABLE: Most archaeological work is done with crummy little sherds...but I think you can do a lot with sherds, and you don't. You would like to get vessels!

KENNETHE. SASSAMAN: Hold on! Your looking at the guy who spends 40 hours reconstructing a flake core from a bunch of flakes that almost nobody bothers to count or classify. I know I can get valuable information out of crummy little sherds just like I can out of crummy little flakes! I just don't use those crummy little flakes to come up with an overarching typology that everyone ought to apply! I'm afraid that problem-oriented, very specific attributes are being elevated to the level of taxonomy. Your stuff in the Francis Marion...does it mean anything beyond the ordering that you had to impose on it to make sense out of it for your particular needs there? I don't want it to be elevated to the level of taxonomy to replace what people like the Caldwells, the Warings [produced]. Those guys looked at everybody's stuff from all over the region and drew the generalizations that we now live with. Mattassee Lake notwithstanding, these are large scale regional comparative frameworks that I feel very comfortable with as a basic framework and taxonomy and that I use. Other than that, everything is problem-oriented and problem-specific, and at that level it doesn't matter what you call it, as long as you can put it into a context of time, space, and form.

CHRIS ESPENSHADE: What's happening is that the early chronologies that were developed and we've lived with for so long are starting to fall apart as we do more work.

JOHN S. CABLE: Like your work down in Beaufort?

CHRIS ESPENSHADE: Right. The mouth of the Savannah sequence doesn't work there. You can row a boat from Hilton Head Island to Savannah , but the mouth-of-the-Savannah sequence doesn't work on Hilton Head Island. Wilmington is going a lot further, Deptford is living for ever...up to A.D. 1000.

KENNETH E. SASSAMAN: But you are still using those type names. Because you like those type names?

CHRIS ESPENSHADE: Because it matches what everywhere else, in dated context and constellations of decorations and technologically, is called Deptford. That's what hopefully will come out here...we can sand the surface off a sherd, and hand it to somebody, and ask them what it is, and have them say "**Ah,** its probably Deptford."

KENNETH E. SASSAMAN: You mean cord marked too?

CHRIS ESPENSHADE: Any kind of sherd, any kind of Deptford sherd. You can take one from anywhere

KENNETH E. SASSAMAN: Yeah, a Deptford sherd is a Deptford sherd.

CHRIS ESPENSHADE: You could take cord marked, what I am calling Deptford from Hilton Head at A.D. 1000, and hand to someone and say "What do you think this is", and people could say "Deptford"...

KENNETH E. SASSAMAN: A.D. 1000?

CHRIS ESPENSHADE: Yeah, its late.

KENNETH E. SASSAMAN: What have you got that out of, a pit context?

CHRIS ESPENSHADE: No, out of little discrete midden piles.

KENNETH E. SASSAMAN: Oh, discrete middens, where that's all that is in them... That's as good as a pit feature.

CHRIS ESPENSHADE: So chronology is nice, but you can't just say, "We've got this chronology, lets talk about social relationships," because its falling apart. It falls apart on the edges... it may be good where it was defined, hopefully. What John's trying to do in the Francis Marion National Forest, as a first step, is to say that there are paste categories that don't quite fall into the established typology, but lets at least describe them now, and hopefully some day down the road we'll find a pit full of the stuff and nothing else and get a decent carbon date, and then maybe we'll know, and then we can patch up the chronology and typology for that area.

KENNETH E. SASSAMAN: I don't know that coarse tempered punctated pottery is late in the Thom's Creek time period. I don't know that its 3000 or 2900 BP, I don't know that it isn't 3300 or 3500 BP.

JOHN S. CABLE That's right, you don't. And that's the point.

DAVID G. ANDERSON: We need to monitor variability better than we're doing. Some of our taxonomy is going to be a hypothesis that we are fairly confident about now, and some of its going to be something that we are not going to know the answer to for 20 years. So we just need to monitor variability better than we are doing. We are trying to come up with a systematics that will enable us to do that, and that will also be something that people will buy into. What has happened in the past is that we have had systematics that people have proposed that for various reasons not everyone has bought into. As a result we have a proliferation of systematics in South Carolina.

KENNETH E. SASSAMAN: We have a proliferation of systematics in South Carolina because we have people working here who were trained from all over. They all converge in South Carolina!

JOHN S. CABLE: Any area that you do a lot of work in, and where you start to investigate a lot of sites, and not just a few sites, you will have a problem, that I have been trying to deal with. The solution that was developed back in the 50s was the type-variety system... they were trying to work out some way to describe the stuff, because they were beginning to see that there was a lot of variation that wouldn't be accommodated by the traditional system. Philips came along and did the same thing in the Mississippi Valley. I think that's why I see a need for it in the Francis Marion.

KENNETH E. SASSAMAN: If I get a good tight context for a date, I'm going to tend to believe it.

DAVID G. ANDERSON: By the same token you don't want to uncritically accept dates that fly in the face of 50 years of research, that are wildly off!

JOHN S. CABLE: You also don't want your biases to blind you!

DAVID G. ANDERSON: What [John and I have] are two slightly different systems. I tried to monitor paste variability using varieties. I came up with different varieties for paste categories within Refuge, for example. John has come up with a series system, where he calls all of the grog-tempered materials Wilmington whether it has a Refuge surface finish or a Wilmington finish.

KENNETH E. SASSAMAN: Maybe that's the part that bothers me...why use the names? Why not jettison the names?

JOHN S. CABLE: We could certainly change things for those of you that feel uncomfortable about that. You don't feel uncomfortable about certain kinds of surface treatments extending over long periods of time. I don't mind that you have those problems. We could take all of the grog tempered pottery that has fabric impressed and cord impressed finishes and call it Wilmington, that's what we traditionally do. And we could take all the pottery with dentate stamped that looks

just the same in paste, we could call it Refuge, and give it a variety name, such as "grog" variety. We could do that, and test it over time. If you want to keep the system intact. That doesn't bother me.

KENNETH E. SASSAMAN: I have no problem with things being attenuated in time, or with variability. I expect variability from systems that are not bounded, that are not normative. I'm the last one to force normative categories on this stuff. Its just that the names that exist, like Thom's Creek, refer to a series of surface finishes. I can't see that after 50 years of calling something that everyone agrees is Thom's Creek, calling it Refuge now because it has a Refuge-like paste... that's going to create a tremendous amount of confusion.

JOHN S. CABLE: I can see that, and what I have seen from looking at Spanish Mount, Sewee shell ring, and the Francis Marion, there's a lot of paste variation in what we traditionally call Thom's Creek. There's too much to accommodate by just calling it Thom's Creek. I tried that for a while and it finally flipped me out. I thought I knew what Thom's Creek paste was, but then I'd see [more variability]

KENNETH E. SASSAMAN: What you just said is true, but the exact same truth lies in the fact that if you call something one name because it has the same paste, you have just encapsulated a tremendous amount of surface variability. You have just collapsed surface variability under one type name that refers to paste. By the same token, I collapse a bunch of surface variability under a type name that I use to refer to surface variability.

JOHN S. CABLE: What you have done is lost any paste variation that might be there.

KENNETH E. SASSAMAN: So we must come up with a system that captures variation in paste. Then why don't we attach it to the end of what already have, paste variability?

CHRIS ESPENSHADE: Wait a second. You make a distinction in quartz aplastics, between coarse and very coarse and fine and medium, but you won't do it with grog. Anything with grog is going to be Wilmington, and that's wrong. There's differences in grog. There's a Refuge paste, apparently, in size, density, shape, and probably origin, some of its probably ground sherds. You've got Refuge, Wilmington, Hanover...nobody knows if Hanover exists [separately]. You are losing information.

DAVID G. ANDERSON: We need to monitor that kind of variability as well. We need to somewhat come up with a systematics that will monitor the variability and at the same time not make people uncomfortable. I made people uncomfortable with the type-variety system... nobody uses it .

JOHN S. CABLE: That's because you have to be a genius with a photographic memory to remember all the names!

DAVID G. ANDERSON: But the point is, we don't want to see variability—good attributes—go unmonitored because people are uncomfortable with the systematics.

JOHN S. CABLE: You think I don't have trouble looking at a typical Thom's Creek Punctate sherd and calling it Refuge? That is a problem! That is the point that I have been trying to make all along, that we can monitor more than we have in our system. I can't make you call something Wilmington Dentate Stamped.

[Several folks]: Because we won't!

DAVID G. ANDERSON: What we need is a systematics that we can all buy into. That's one of the goals of the workshop, is to come up with a systematics that will help minimize the confusion. I really think that is possible. I think we can all agree that we need to monitor surface finish and paste combinations or attributes. The trick is going to come up with names that we can live with!

KENNETH E. SASSAMAN: I'm just glad that I'm working in an area where nobody has worked from the outside.

DAVIDG. ANDERSON: Right, I'm the only person that ever did a pottery taxonomy there...there's only been one guy doing the pottery classification there, and you've followed on after that, so that's why there isn't any confusion. On the central coast we've had everyone from the good old boys of 50 years ago to Chris, Stan, Mike, John, myself...

JOHN S. CABLE: But we've got to work with it. It seems to me that if we're getting a circumstance where you are getting the same paste or similar paste over a large number of sites, with different surface finish, and they are distinctive enough to distinguish them from another group of paste-surface finish attributes, then we may have something.'

KENNETH E. SASSAMAN: You can reverse surface finish and paste and the same statement will be true.

JOHN S. CABLE: If you monitor the paste, I agree.

DAVID G. ANDERSON: What we have to be very careful about is that if paste is indeed behaviorally determined in some way, fine, but what scares to me to some extent is that some pastes may reflect local clay sources, just whatever people happen to pick up. You may have the same paste on a Thom's Creek and a Pee Dee sherd, and what do you do then? Do we call it all one series? Now you haven't proposed anything quite that radical yet...

JOHN S. CABLE: No. but I've been close!

DAVID G. ANDERSON: And that's what scares us!

KENNETH E. SASSAMAN: We haven't even gotten into this yet...I've said this to David repeatedly, I worry that we are not monitoring anything other than local geological sources for clay. What are we really looking at with the sandy stuff, is it really an intentional additive, or is there a range of tolerance that groups of potters that co-reside together realize? How much variability is there in these assemblages?

JOHN S. CABLE: But aren't you impressed with the consistency that you get with certain things...I mean, Deptford Check Stamped, time and time again

KENNETH E. SASSAMAN: Let me get you a Deptford Check Stamped that you are not going to want to see... I'll get you one that with what looks like a Thom's Creek paste!

JOHN S. CABLE: OK!

KENNETH E. SASSAMAN: Actually, you already saw it... I showed it to you earlier today. That real fine paste...

JOHN S. CABLE: Santee. And I think that there are some of those extant, just like with fabric impressed and cord marked.

KENNETH E. SASSAMAN: So what does that mean? A woman that married into the group from some place else where there was a preference? A pot that was curated from a site where the only clay that was available had fine sand? Or is it a technological choice?

JOHN S. CABLE: Or, is it possible that they were making some check stamped after Deptford? That's possible, right?

KENNETH E. SASSAMAN: Sure, absolutely. As David Braun's work shows or anybody who has done techno-functional analyses knows, its also possible that there is selection for certain pastes because they have certain functions. A cooking vessel has different criteria than a storage vessel or a serving vessel.

CHRIS ESPENSHADE: A striking thing for me is Stallings and Thorn's Creek coexisting for a long period of time, with probably the principal difference indirect versus direct heating, direct heat cooking. And we don't see that anywhere else? After that they only use one type of paste? I'm not so sure about that. Maybe what I am calling Refuge and Thom's Creek at Minim Island... There's a functional difference there, and they are coexisting, it is a single group.

JOHN S. CABLE: And you may very well have different design elements associated with two different functional pots, so you could get that kind of seriation. Isn't that important to monitor?

DAVID *G.* ANDERSON: We need to think about is how do we monitor in such a way that we can write a report and put out the information that our colleagues are going to read and say "Yes, I understand this" rather than say, "what a bizarre taxonomy" and throw the report on the shelf and never look at it again. We want to come up with criteria for monitoring variability that we are going to be comfortable with, that we are going to use.

NIELS TAYLOR: Then answer me this... why don't people make these kinds of statements? You just pointed this whole discussion in the direction of techno-functional studies. Why don't people make these kinds of statements more often.

KENNETH E. SASSAMAN: Given the kinds of sherds that John has out there, there is not much that he can do other than talk about the paste, the techno-functional criteria for certain paste selection. Vessel wall thickness... Chris and I both measure **3** cm below the lip, consistently, and every one needs to do that.... now that's a variable that people could measure consistently.

NIELS TAYLOR: Why?

KENNETH E. SASSAMAN: Its been shown to be tied to thermal conductivity...

CHRIS ESPENSHADE: A number of studies have shown thickness varies between series.

NIELS TAYLOR: So, basically, it all boils down to cultural history?

KENNETH E. SASSAMAN: No, no. I think that the variability that I would like to get at is techno-functional variability, is ethnicity, is cultural preference, and is variability at what used to be called ceramic sociology. [Interruption while a large roach ran across the floor] ...That's why people like Chris put it as "Yeah, we'll take your fabric impressed surface finish and put it on our paste". Well, this is important stuff to try to figure out! What are we looking at, matrilineal systems matrilocal residence, patrilocal residence, patrilineal systems? What's going on here? A woman marries into a group because of an alliance that has been long established that brings mates in from another group; she has a tradition that she was born into of tempering pots, she comes into an area everyone there is making pots on a local paste because of local availability and how they do it? I want to be able to answer those questions, I know Chris goes after these questions all the time.

NIELS TAYLOR: Obviously, that calls for the monitoring of paste.

KENNETH E. SASSAMAN: It calls for the monitoring of all the variables. But getting at these kinds of questions and how we **are** going to categorize this stuff may be independent things...that's how John sees it. I'd rather look at them as problem-specific situations where we want to try to figure out certain things...everything should be problem-oriented, that's the way things are supposed to work out. It doesn't necessitate an overarching taxonomy. It necessitates that we all recognize basic variability and know how to measure it. So back to what David has been saying, we need to agree on what needs to be measured consistently, and present it in all of our reports.

NIELS TAYLOR: So you **are** advocating the abandonment of large scale, uniformity of taxonomy?

KENNETH E. SASSAMAN: No, you are missing my point. But my attitude on typology is throw it out the window. It the most debilitating thing we've got. You put things into categories, and everything has to be shoved into it.

JOHN S. CABLE No, its that UMass talking! Amherst has got him down!

NIELS TAYLOR: How did I miss your point?

KENNETH E. SASSAMAN: I thought you were saying that I was advocating we have rigid typology and taxonomy.

NIELS TAYLOR: No, I was saying you were advocating the abandonment of that.

KENNETH E. SASSAMAN: Yes, I am.

JOHN S. CABLE: No, he's not really, he's just getting a little carried away!

NIELS TAYLOR: You mean its the beer talking!? [Laughter]

KENNETH E. SASSAMAN: No, try to find it in my dissertation...I used a paradigm in my dissertation, which isn't typology.

STEVE SMITH: What's your unit of measurement if you don't have some sort of taxonomy?

KENNETH E. SASSAMAN: It depends on the question I am asking...

DAVID *G.* ANDERSON: You had a basic unit in your dissertation...the ceramic series. You accepted the idea of the Stallings series. That may have been your macrocategory... you looked at many other things beyond that, but you did accept...

KENNETH E. SASSAMAN: Did I use the word series?

DAVID *G.* ANDERSON: The word Stallings is in your dissertation any number of places

KENNETH E. SASSAMAN: But I called it the Stallings culture...

DAVID G. ANDERSON: You accepted the original taxonomic classification.

JOHN S. CABLE: You're looking at a guy who wouldn't call it Refuge Punctate unless he accepted it at some level.

KENNETH E. SASSAMAN: Yeah, I believe that those people made those pots, and that there was a sociology among those people, that they had rules of inclusion and exclusion!

NIELS TAYLOR: In the [CRM Section] 106 world, would you advocate the development of typology on a project by project basis?

KENNETH E. SASSAMAN: Let me back up and salvage what I can from this. I agree that we need to have uniform language for describing things... we need to be able to agree on what we call things and report on things, so everyone's tables are consistent. When I go to your report I need to have some sense of what that is, whether its paste criteria, or surface finish criteria. When it comes time for me to address questions about what really went on a site, or what is the function of a site within a settlement system, let us discard those criteria and come up with meaningful units of analysis.

NIELS TAYLOR: But aren't you always going to have to refer back to those things?

DAVID G. ANDERSON: Perhaps, perhaps not. It depends on what questions you are asking.

KENNETH E. SASSAMAN: If its a chronological question I'll refer to the chronological aspects of it. If its a techno-functional question it may crosscut time in a different way. If its a cultural question, it may crosscut time, and function, and space.

NIELS TAYLOR: I guess what I'm thinking about is that we've got to come up with something out of this [workshop].

DAVID G. ANDERSON: What most people use systematics for, when they look at pottery, most people are interested in time. Most of the field work that is done is survey level or limited testing, and they want to be able to put a date on the site and have some idea of the general cultural context of that site. So most people use systematics with regard to ceramics for that purpose. When they go out and dig a large site and find whole vessels, then they get into other some other kinds of things, techno-functional analyses and so on. But what most people are going to use, and what we should be able to produce, is a guide for the traditional purposes of ceramic taxonomy, time and to some extent space.

KENNETH E. SASSAMAN: That's an important statement. If we can agree on that, then it eliminates a lot of the discussion that we are having now. We need to know that we are after here is to develop taxonomy for the purposes of chronology... if that's what we are doing it puts boundaries of what we are doing.

DAVID G. ANDERSON: But we need to monitor variability that can help us answer questions beyond that.

KENNETH E. SASSAMAN: Then that opens up that whole series of questions...

NIELS TAYLOR: But its clear that we can't develop a single statewide chronology... the chronology is going to vary from river basin to river basin.

DAVID G. ANDERSON: And even smaller portions within that... the mouth of the Savannah sequence in no way resembles the sequence at the Savannah River Site [in the upper Coastal Plain], which in very little way resembles the materials in the Russell Reservoir [in the central Piedmont].

JOHN S. CABLE: Times are moving on and people are changing their behaviors.

DAVID G. ANDERSON: Another thing to consider in the way of a product... We have a lot of people going out and collecting artifacts in this state as part of CRM. They are the primary data generators in this state. Many of them don't have a clue about how to accurately or systematically present their information.

KENNETH E. SASSAMAN: That's the real problem...

DAVID G. ANDERSON: That's not being overly condescending...its a simple fact. You can look at the misidentifications in all kinds of reports that come out. What we need is a guide so that people can consistently describe and report materials that they find. And since 90% of the work is finding "crummy little sherds" in a CRM framework, that's where a product like this will be very useful.

NIELS TAYLOR: So we can call this [the product we produce] "the crummy little sherd guide!"

DAVID G. ANDERSON: Well, no, I wouldn't want to go that far... its a sorting guide. Its a way to identify and report what we find, and to monitor variability that we, through various studies of varying levels of complexity, have demonstrated is important for chronology, for human behavior. Monitoring paste, I think, is tremendously significant, as are some aspects of surface finish, for monitoring behavior, for groups ranges. We have certain surface finishes that occur in only certain parts of certain drainages in this state... dentate stamping is common along the lower Santee, but very little of it occurs along the lower Savannah, where the Refuge series was originally defined. The linear check stamped on the lower Savannah River has a lot of simple stamping, or empty spaces, between the linear check stamped impressions, yet there is virtually none of that along the lower Santee. Finger pinching occurs along the central South Carolina coast and virtually no other place. We need to instruct people that this is the kind of variability that it is important to monitor and describe systematically so that we can all understand each others reports and use that data to generate anthropological conclusions. We don't have that right now, because some people call sand-tempered fabric impressed pottery Cape Fear, other people call it Deep Creek, other people call it Mount Pleasant, other people call it fabric impressed with paste type 37. Its a problem, because now we can't understand each other's reports. What we must do is understand each other reports!

KENNETH E. SASSAMAN: And be able to turn to a table and be able to say, this is something I want to include in my comparative statement, and be able to try to reach a higher level of understanding, that's the scary part, because if I go into a table and a punctated sherd that everyone else has called Thom's Creek is classified under Refuge, then I'm in trouble!

JOHN S. CABLE: Its not a big problem, because really he knows what it is... (!)

DAVID G. ANDERSON: With John's reports, every sherd has the associated attributes listed. He identifies them for each sherd because that all he finds are wretched little sherds... [laughter] sorry John... he has a description for every sherd. Of course, where you have 20,000 sherds or so its tougher to do that.

KENNETH E. SASSAMAN: Did you do that at Spanish Mount.

JOHN S. CABLE: Yes.

KENNETH E. SASSAMAN: How did that pan out?

JOHN S. CABLE: I didn't go into too much [analysis] because I didn't have time. Of course, I did find that there weren't thickened rims.

KENNETH E. SASSAMAN: Did you find any cord marked lips on the Thom's Creek stuff?

JOHN S. CABLE: No, nor simple stamped.

KENNETH E. SASSAMAN: The incidence of cord marked and simple stamped lips in the middle Savannah is incredible, but it is not very common elsewhere.

DAVID *G.* ANDERSON: Well, if anybody feels like retching as a result of the categories they've seen here, we need to develop categories that won't make people retch!

KENNETHE. SASSAMAN: I'm glad we talked about this tonight, because this is not the discussion we want to have tomorrow!

DAVID *G.* ANDERSON: Exactly... when we were setting this workshop up, Niels and Chris saw John and I fight for nearly 25 minutes about [the appropriateness of John's use of the category] Wilmington Dentate Stamped, and a couple of other things like that. We came to an agreement not to do this! If we did this in front of 40 other people they would tune us out!

NIELS TAYLOR: I'd like to point out that its ten to twelve, and I need to go to bed! [This ended the filmed discussion, although the conversation continued until ca. 1:30 am!]

Initial Introductions (Friday Morning)

Friday morning, March 10th, breakfast was served in the main hall at 7:00 am. Most people arrived and were done eating by 7:45, and for the next 45 minutes people milled around the some 100 trays and boxes of sherds looking at specimens and talking. About 8:30 am the meeting was called to order by Niels Taylor, who welcomed everybody on behalf of the South Carolina Department of Archives and History. He pointed out that the workshop was funded by a Survey and Planning grant to COSCAPA. Chris Judge's role handling local arrangements was acknowledged, and Niels noted that since the meeting was being filmed, everyone should speak up.

John Cable kicked off the technical discussion by noting that planning for the workshop had been underway for over a year. The workshop as originally conceived was directed to the prehistoric ceramics of central South Carolina coast. It was quickly decided to expand it to encompass a much wider area, however, to get as broad a perspective as possible, in terms of both the materials themselves, and the ideas and opinions of the researchers working with them. This was done, in part, because similar materials were found over large areas of the Carolinas.

John noted that pottery in the Southeast is difficult material to work with taxonomically, since so much of it is utilitarian ware. Thus, it is necessary to record and examine a wide range of attributes to identify significant categories. The development of a sorting guide for local prehistoric ceramics was stated as a long-range goal of the workshop, linked with a discussion of local sequences. While this was recognized as a difficult objective, a more immediate goal was to get people together to look at artifacts and talk about research problems. The success of this goal, he noted, was already evident from the vast array of ceramics that had been brought to the meeting, the number of attendees, and their enthusiastic interaction. A major goal is to bring some light into each of our different research areas through cooperative interaction.

I then followed up on John's comments briefly, talking about the need for a sorting guide, and asked that people provide pottery to photograph during the course of the meeting, since a

photographer was available. An hour-long session then followed, in which we went around the room and people talked about their concerns, that is, what they hoped would come of the meeting. I started it off by that we needed to develop replicable sorting criteria, so we knew what each of us was talking about, specifically with regard to paste and surface finish. I described my work along the lower Santee at Mattassee Lake, and along the central Savannah River on the Savannah River site. I also noted that in 1985 I developed the South Carolina prehistoric ceramic type collection currently on file at SCIAA, that was on the tables around us.

Joe Herbert noted that there were several overlapping classifications in use along the southern North Carolina coast, specifically the systems advanced by Haag in 1956, South in 1960, Phelps in the 1970s, and Loftfield's dissertation in the mid 1970s. For a single sherd there were thus several possible names. He hopes to evaluate these systems as part of his ongoing dissertation research at Chapel Hill. The interaction that would take place (and that had already occurred) during the workshop was viewed as extremely important. Just having the opportunity to have Dave Phelps look at South's Cape Fear materials, for example, and say "Its all Deep Creek" was important in refining his own perspective.

Jane Eastman described her research interest in materials from the Dan River basin in northern North Carolina Piedmont. Much of her research focuses on materials from the Upper Saratown site. She looked forward to getting the perspective of a wide range of scholars on the unusual materials from her research area. Steve Davis noted that a well-developed ceramic sequence was available after about A.D. 1000 for the east-central North Carolina Piedmont. He hoped to learn more about South Carolina pottery, to see if there were connections between the two areas. He noted that he had brought the illustrated specimens from The Formative Cultures of the Carolina Piedmont, as well as the type boards developed from the Cherokee project for the western North Carolina mountains, as well as examples of materials from the northern North Carolina Piedmont, such as the Haw and Dan River valleys.

Ken Robinson explained his interest in the Woodland cultures in the North Carolina mountains, where he worked with Ruth Wetrnore and David Moore. They have recently obtained some 15 dates, mostly on the Connestee phase, that range from A.D. 200 to 1000, This is later than the traditional range for this series, which is usually considered Middle Woodland, It now appears Connestee also encompasses the Late Woodland. Since he lives in Fayetteville, North Carolina, Ken is also interested in the ceramics of the Cape Fear region, and their relation to South Carolina ceramics.

Chester DePratter discussed his long-term interest in ceramic classification, beginning in the mid-1970s when he was able to go through the WPA collections from Chatham County, Georgia, and refine the basic ceramic sequence from the mouth of the Savannah River. He noted that there were many more type descriptions prepared during the WPA than ever reached print; the 1939 publications were a synthesis, and a compromise. Chester noted that there were serious problems we needed to deal with, particularly since virtually identical materials were found widely separated in time and space over the Carolinas, yet are called different things. How we are to address this problem is uncertain... Anderson's attempt at type-variety was one attempt to deal with this variability. He also noted that we need to consider what we are sorting, what attributes we should record.

Jill Quattlebaum noted that, since she worked with small CRM-generated collections from across the state, seeing the materials was important. Wayne Roberts noted that South Carolina ceramic types seemed to be associated more with personalities rather than with hard and fast sorting criteria. He noted that in historic preservation/CRM, he needed guidance about the materials that were being recovered to enable him to manage the resources better. Mark Mathis described his work with the various coastal North Carolina sequences. As he noted, he has to deal with ceramics because there is so little rock in the lower Coastal Plain. He jokingly noted that it didn't seem like

North Carolinians ever invented anything new, but that materials came together from the north and south and merged locally. Mark also noted that the use of different names for the same things was a major problem. As SHPO review archaeologist, he noted that for many reports he had trouble knowing what people were talking about, making evaluation of those materials difficult. Chris Clement said he was here to learn.

David Phelps started off by saying he was amazed... that he had never seen this much pottery from the Carolinas together in one place. The importance of conferences like this, to him, were that we actually get to see and compare the materials; publications never convey the information that actual specimens do. He brought the north coastal North Carolina type materials, based on his work since 1970. His goal has been to develop the sequence based on large collections from good, well-dated contexts. He felt that this sequence was fairly well established; the shell tempered Collington series, for example, had 18 associated radiocarbon dates. The more recent materials were, of course, better dated than the earlier materials. He felt that an important goal for the future would be the development of a brief sorting guide, perhaps a paragraph on each type with distribution maps and photographs.

Jim Michie said he came to learn what it was he was seeing on the ground. He would like to see a statement or publication come out of this conference that would help us identify what we are seeing... how do we sort it, define it, and use it to write their reports. John Byrd compared lumpers and splitters in biology and archaeology; most archaeologists seem to be splitters. One thing he noted was that few archaeologists seemed interested in reducing the numbers of types or attributes, or simplifying sorting. The more attributes that we define, the more splitting we are going to do. Unfortunately, we lack a taxonomic system that lets us lump when we need to, but split when we need to too. We need a system, not just more attributes to record. Perhaps a sorting key could be developed to narrow a ceramic down to a small range of possibilities. We need to move in the direction of standardizing our sorting criteria. Carl Steen noted that he had worked at Minim Island with Ken Sassaman in 1982, and that since then he had grown more and more hopelessly confused about South Carolina pottery, but that he hoped to become less so as a result of this workshop!

John Cable noted that he really loved Hohokam red-on-buff pottery, but that marriage had brought him back to the southeast in recent years, where he has worked extensively with the ceramics of the central South Carolina coast. It is his opinion that we need a taxonomy that is independent of context, that is, that we need to be able to identify pottery on the basis of its physical attributes. The chronology that we develop should be tested through more field work. He modified the Mattassee Lake type-variety system, to develop paste-based series categories to classify his pottery; he was forced to do that because his data came from survey collections, which were characterized by small sherds and samples. He believes that getting a handle on regional variance is important to understanding local materials, and variance within local collections. Bob Morgan said he was here to have the mysteries of South Carolina ceramic taxonomy revealed to him. He hopes to be able to see the same things that John, David, and others see in the pottery from the central coast. Having this data, to him, is crucial for the effective management of the sites on the Francis Marion National Forest.

Chris Judge noted that when he had visited Rucker's Bottom and Mulberry Mound in 1982, that he found there was no one single encompassing reference, or much of any references, for the late prehistoric materials in the South Carolina area. His subsequent MA research has dealt with late prehistoric materials from Mulberry Mound C, and he hopes that a sorting guide will some day be developed. Steve Smith noted that as a historic archaeologist he knows next to nothing about this material, and as a result of last nights debate he knows even less! He is looking for a cookbook, but has a suspicion that while we have all the cooks, what may be produced is several recipes, or a gumbo. He did hope that, if a sorting guide was produced, that it would be cross-referenced, giving the several names for a probable category, rather than one.

Joel Gunn said that the was concerned with attribute analysis, specifically the multivariate analysis of a constellation of attributes. One goal should be understanding the relationship between attributes, from a regional perspective. When we develop a useful data structure, there are a range of models that we might look at to understand and interpret the data. Jerry Lilly said he was here in a learning capacity. He hoped that the sorting criteria that were developed were linked to larger anthropological questions, such as change through time.

Ken Sassaman said that he didn't think of himself as a ceramacist, but someone more interested in questions of culture change and process, such as how social boundaries formed and changed over time. Ceramics are an important source of information to inform on these questions. He noted that the middle Savannah River exhibited a lot of paste and surface finish variation. He put more emphasis into techno-functional analyses, gluing sherds back together so he can proceed with his vessel form of analysis. If he is interested in promoting anything, it is a vessel form of analysis. He feels that we sometimes losing sight of the kinds of interesting anthropological questions that we can answer with these data.

David Moore said that he is interested in developing regional perspectives, that is, comparing ceramics within a region with those outside a region. For broad, regional comparisons, he finds he has to be a lumper, while for intra-regional analysis, being a splitter is important. He felt that names were less important than having clear descriptions of the material. Although he has been working with materials from the western North Carolina mountains, he has recently been focusing on the late prehistoric and early historic ceramics of the Catawba Valley. David said that he never got a feel for ceramics until he started handling materials and talking with various researchers, and he felt that workshops like this were important and should be held every few years. Alan May noted that he worked in the central Catawba Valley. As a museum person, he hoped that a product could be developed that the public could make use of to understand the archaeological record locally. Bobby Sutherland described some sites from the Horry County, South Carolina area that he is working with; he was glad for the opportunity to see the classic type materials as well as talk with the many researchers that were present.

Chris Espenshade noted his past work at sites such as Buck Hall, at Minim Island, at 38SU83 in Sumter County, and in Beaufort county. He noted that this workshop offered a good opportunity for understanding what people call things and why they call things the way they do. What was particularly important was that the workshop brought together people from over a large area; previously in his work he had to go and talk with people at their various institutions individually. He said that if we can't develop a sorting guide for the entire region, then we should develop sequences for specific areas, such as the central South Carolina coast, the lower Savannah River, etc. While he was impressed with the use of the type-variety system in the lower Mississippi valley, he felt that it would be difficult to apply here, because there was so much variability, with cultures bumping up against each other. He said we need to develop standards for describing materials such as grog or grit, perhaps using the Wentworth scale. He has developed comparison clay bars to illustrate what coarse sand actually is when it is present in the paste. He said we need to go beyond typology and chronology, to focus on techno-functional concerns. Finally, we need to put information out there for the public, who could care less about our typological arguments. Instead, we need to provide information about how pottery was made and used in various past cultural systems.

Lee Tippitt said that an ideal outcome for the workshop and the future would be a consensus regarding local pottery typology. An illustrated manual with descriptive narrative and maps would be valuable for both public and professionals alike. Connie Huddleston noted that there was a tremendous amount of variability in the ceramics from this part of the Southeast, and that good descriptions tend to be scattered through many reports. Having the knowledge in one place would be important. Eric Poplin noted that in CRM the ceramic data was important to making

management decisions. Looking at the artifacts is critical to understanding what people are finding and reporting, and to make sense of what we are seeing. Todd McMakin noted that in the Lower Mississippi Valley, where he had worked, that it seemed like there were more types and varieties then there were sherds to match them. Here it seemed that the pottery systems were established by different people, and it seemed one could pretty much chose the system one wanted to use. While new here, he looked to learn a great deal from the workshop. Olga Caballero said that she was hoping that folks would agree on some things, that was all, but that would be an important outcome. Paul Brockington said he was glad to have the opportunity to learn some things from everyone present.

A brief discussion followed the introductions. Niels Taylor noted that the one thing that stood out to him, from all the conversations he had heard, was that we often tend to forget that archaeology is anthropology. Much of what we do in ceramic analysis is chronology building. For him, an ultimate goal should be asking what this all means, what are the behavioral implications of the attributes we are examining? Chester DePratter got up and said that we have to be careful not to recreate our existing types. He reminded us that while the mouth-of-the-Savannah River sequence was originally intended to apply to a very small area. We have the people in this room who are able to examine questions of regional variability, and we should explore such questions. Ken Sassaman noted that while regional distributional data was extremely limited when many of these types were proposed, such data is available now, and we should incorporate that. I then talked about how, hopefully, we could produce a tangible product over the next couple of years. A very real need for a summary volume or sorting guide exists, since our descriptions are now scattered through several feet of reports, many of which were printed in fewer than thirty copies. Dave Moore noted that we should take advantage of the time here to examine the primary materials and discuss things. Dave Phelps said that it was also critical to prepare was a listing of where type collections are located, so people can find and look at comparative materials. The next 20 minutes were spent in general conversation and interaction as people wandered around the tables looking at the various materials that were brought to the workshop.

Individual Presentations

A series of more focused discussions of the materials and research directions underway in specific areas began starting about 10:100 am, lasting all day Friday and Saturday morning until about 11:30 am. The format was open and informal, with extended questions and comments from the floor.

David Moore. David started by noting that the ceramics from the headwaters of the Yadkin and the upper Catawba were traditionally described in terms of Lamar or proto-Catawba, and that there has been little detailed work until quite recently. Dave's research has focused on late ceramics to develop a regional chronology, and also to explore the De Soto route. One of his primary objectives at the workshop was to show everyone the Burke series of ceramics, which can be defined almost exclusively on the basis of one attribute, soapstone tempering, which ranges from small particles to large clumps. The paste is compact, with surface finishes dominated by curvilinear complicated stamping, incised, and burnished. Cazuela bowls with incising are common, the designs closely resemble Lamar Incised. It was clearly distinctive from Piedmont North Carolina ceramics, but similar to the materials he had seen in the mountains. The series has yet to be found in large samples in good context.

In the upper Catawba region, Moore currently sees three styles of curvilinear complicated stamping within the Burke series, although he cautions that these conclusions are preliminary and to some extent impressionistic. The earliest include figure 9s, keyholes, and some filfot, and apparently dates to the 14th and 15th centuries. They are followed by concentric circles and what he calls arcs and rays, that is, segments of circles, with larger, sloppier patterns. These are succeeded by larger, much sloppier patterns with more rectilinear designs that appear to date to the 16th and 17th centuries. There are similarities between the ceramics in the upper Catawba with

materials found in the Wateree valley and in northern Georgia. Moore sees this as representative of a movement of people into the area, perhaps at the same time that people moved to Town Creek. The Burke materials are not, however, Pee Dee ceramics. Filfot and rim rosettes are common in Pee Dee, but uncommon in Burke. Rays and arcs are common in Burke, but uncommon in Pee Dee; cazuela bowls are more common in the Burke series. Folded rims with punctations on the bottom of the fold are noted in the Burke series, something also noted on down into South Carolina on the Wateree. The attributes of the Lamar style that occur later on in North Carolina in the Hillsboro and Caraway series may derive from the Catawba Valley, not from Town Creek and the Pee Dee tradition.

Moving down the Catawba, there is less soapstone tempering, less burnishing, and more of the later, rectilinear complicated stamped material. How these changes relate to the historic Catawba occupation of region is uncertain, but he thinks that there is a connection. The occurrence of soapstone does not directly correspond to the location of soapstone outcrops, and there is no evidence for scavenging of earlier soapstone vessel sherds for temper. There are no identified Late Woodland predecessors for the soapstone temper in the Catawba River area. In the New River area of northwest North Carolina and Southwest Virginia, there is a soapstone tempered ware, Mark Mathis noted, but it is early (ca. A.D. 900-1000), with plain and fabric impressed pottery, and no complicated stamping. The distribution of soapstone tempered pottery is from northeastern Tennessee down the Catawba. The materials from the area of the Nelson triangle and the Nelson mound that Moore has seen in the Smithsonian are all Burke ceramics. Dave Moore has good 15th century dates from one site, but he is convinced the series extends into the 17th century.

Pisgah ceramics are quite different from Burke in terms of vessel form, complicated stamped design, and rim treatment. In particular, collared rims are not seen in Burke. Pisgah dates have a long range, from ca. A.D. 1000 to 1600, and represent another series that must eventually be subdivided. I noted that if the area of the Burke series was part of the province of Cofitachequi, it is interesting that the ceramics over the polity are so radically different, a pattern somewhat like that noted over the constituent chiefdoms of Coosa in Georgia, where distinct pottery phases occurred within the ethnohistorically defined chiefdom. I also noted that soapstone tempered sherds do occur, albeit quite rarely, at Mulberry, which may be the central town of Cofitachequi. Chester DePratter noted that the geographic extent of Cofitachequi is highly debatable (he thinks it is quite restricted, while Charles Hudson has it extending well into North Carolina), and there appears to be little evidence for Mississippian societies in the intervening area.

A lengthy discussion followed about the relationship of the Burke series with the New River series of soapstone tempered ceramics from southwestern Virginia. No evidence has been found to demonstrate that the Burke series could have come from the New River series. Moore noted that if soapstone tempering was important, then perhaps the pottery was derived from the north, where the New River series occurred. While the tempering was clearly important, he discounts its primacy and believes the vessel form and surface treatment are more significant cultural markers, and indicate a southerly origin. I noted that the pottery suggested similarities with the upper Savannah River Tugalo phase, suggesting other patterns of movement. Dave concluded by saying that the upper Catawba appeared to be relatively depopulated by the later 17th century, with the former inhabitants likely down river, in areas where Alan May is working.

Alan May. Alan described ceramics from a number of sites in his research area, the middle Catawba River Valley of extreme northern South Carolina and lower North Carolina. The assemblages that are found do not closely resemble those from the area further upriver that David Moore just described; soapstone tempered ceramics of the Burke series are extremely rare in the middle Catawba. The ceramics appear to be largely a local tradition, with little direct influence from surrounding areas. At Sprats Bottom, 38YK3, eighteenth century materials were found including fine cord marked and burnished pottery. Complicated stamped elements get sloppier and wider starting in about the 15th century. Earlier Woodland sites in the region of the state line are not well

defined at the present, making it difficult to determine how the materials evolved. There is no evidence for interaction between Africans and Native Americans, and no evidence for an Indian origin for Colono pottery locally. Alan believes the Catawba were making pottery the way they always did, and he noted that modem Cherokee pottery appears to derive from Catawba, in part, due to intermarriage between the two groups.

Chester DePratter Chester noted that we know very little about the immediate pre-Mississippian Woodland material from the central Wateree River Valley. Sometime in the mid- to late 13th century Savannah-like material appears, followed by early Irene-like material. Over time materials similar to those further upriver appear, large, crude complicated stamping. Along the Saluda River valley simple stamped materials with fine sandy paste have been found in pre-Mississippian deposits along the Saluda, in the general vicinity of the Blair and McCollum Mounds. There might be similar simple stamped materials at Mulberry and in the central Wateree, but there is little evidence for it. A major problem is that we have only one radiocarbon date for Pee Dee-like materials from the central Wateree, A.D. 1520±200.

A discussion of Late Woodland and Early Mississippian era simple stamping followed. Dave Phelps noted that about A.D. 800-900 an influx of simple stamping occurred in northern coastal North Carolina, and was curious about where the material might have come from. I noted the array of evidence generated in recent years—from Georgia (Vining), the upper Savannah River (Russell Reservoir/late Cartersville), central South Carolina (Mattassee Lake/Santee Simple Stamped and Walnut Grove/McClellanville Simple Stamped), and the Connestee area (late simple stamping from A.D. 500-1000)—that, taken together, demonstrates the existence of a late Woodland simple stamped horizon apparently extending from central Georgia to northern coastal North Carolina. Joe Herbert noted that Stan South has simple stamped materials, albeit shell tempered, in the Oak Island series and Loftfield has as well in the White Oak series. John Cable noted that material like Santee Simple Stamped occurs in Horry County, South Carolina. Steve Davis noted that sand tempered and crushed feldspar tempered simple stamped is a predominant surface treatment after about A.D. 1400 in the Hillsboro series. John Cable suggested that cord marked was a substitute for simple stamping in the Beaufort area; Chris Espenshade noted that the finish was there, albeit as a distinct minority.

I concluded the discussion (it was getting near lunch time) with the observation that dealing with fabric impressed and cord marked pottery in the South Carolina area offered a similar challenge to that provided by the exploration of variability in simple stamping. I described the work that Ken Sassaman and I had been doing on the Savannah River Plant, as documented in the SRS synthesis volume, and in the Aiken Plateau report. I specifically noted that we felt that the detailed attribute analyses that we had done, focusing on stamp size, shape, orientation, and spacing, showed it was possible to resolve temporally significant variability in these finishes. For the next 15 minutes before lunch everyone again milled around the tables examining ceramics, a process that continued during and after lunch as well over the next hour.

R. P. Steve Davis. Steve started the session up after lunch by talking about the upper reaches of the Haw and Neuse Rivers, in the Hillsboro area, while Jane Eastman talked about chronology of the upper Dan River. Pre-Late Woodland sites are rare in the upper Haw and Neuse River area, making it impossible at the present to understand Early and Middle Woodland ceramics of the Baden and Yadkin series. The Doershuck site is so badly looted that going back there is not considered a valid option to re-evaluate Coe's work. Steve does not think the area was abandoned, but was lightly occupied. He noted that recent work has tended to revise backward in time the ages of the ceramic assemblages examined. The Hillsboro series was defined based on excavations conducted from 1938 to 1941 at the Wall site. This site was thought to be the historic Occaneechi village visited by John Lawson in 1701, an interpretation that went unchallenged until the early 1980s. Work there since has shown that the major occupation dates to the 15th century; an absence of trade goods makes it appear entirely prehistoric. The Dan River series, originally thought to be

historic Sara, is also prehistoric, dating from ca. A.D. 1000 to 1500. He noted that one reason that archaeologists didn't recognize contact period sites until quite recently was that they were fairly ephemeral archaeologically; instead they keyed in on denser sites.

The Late Woodland is characterized by the Uwharrie series, provisionally dated to the centuries just prior to A.D. 1000. This series has never been formally defined, although it was mentioned in Coe's 1952 and 1964 publications (see Jane Eastman's paper, this volume). The Uwharrie series is characterized by fairly large straight sided net impressed, cord, or fabric impressed vessels, with large pieces of crushed quartz in the paste, and notching on the lip and broad diagonal incising below the rim. Over time these vessels tend to be more incurvate or excurvate. The interior of these vessels often show evidence of scraping. The Late Woodland tradition in the Haw/Neuse River area appears to be dominated by net impressed pottery, unlike areas to the south.

The Haw River series covers much of this part of the Piedmont after A.D. 1000, following the Uwharrie series. The Haw River series contains crushed quartz temper, heavy interior scraping, has smaller pots than Uwharrie, and flaring rims. In addition to notched lips, bands of finger-nail punctations are noted on vessel necks. Over time the vessel interiors tend to become better smoothed and the temper size decreases. After ca. A.D. 1400 the Haw River series is replaced by the Hillsboro series, which is a completely different complex that appears to be related to the Cashie and the Gaston series. The predominant surface treatment for the Hillsboro series is simple stamping, which is bold. Folded, notched rims are present. The origin of this simple stamped surface treatment is unknown. By A.D. 1600 the Hillsboro series has evolved enough to form a new series called the Genrette series, which is tempered with crushed feldspar. Simple stamping continues, with a little bit of check stamping and smoothed plain. Folded rims are absent, the simple stamps are finer and shallower. The Genrette series material is more friable or crumbly, suggesting it is more poorly made. The temper appears to be intentionally crushed, based on the angularity of the particles.

The final series is the Fredricks series, defined based on excavations at the Fredricks site, which is now believed to be the Occaneechi village. The pottery is very different from the Hillsboro series. Temper is predominantly fine sand. Surface finishes are either check stamped or plain, with the check stamping very shallow and faint, suggesting it was added when the paste was leather hard. Most of the check stamped jars have carefully applied grooves cut into the lip and running diagonally; this notching only occurs on these check stamped vessels. This assemblages represents the last aboriginal occupation of this part of North Carolina.

Over time tempering changes from crushed quartz with large particles in Uwharrie, to crushed quartz with smaller particles in Haw River; Hillsboro is a fine sand with a finely crushed feldspar. The Genrette series has slightly coarser sand and coarse crushed feldspar, while the Fredricks pottery is mostly a fine sand. Temper is quite variable from area to area within each series, with variation seemingly related more to space than time. In response to a question about how the crushed temper was prepared, Steve noted that at one Haw River phase site on the Haw drainage a rock hearth was found with hunks of granite present that, when burned and crumbled, yielded particles of feldspar that were like those in the pottery, albeit uncrushed.

Jane Eastman. Jane talked about upper Dan River materials from the late prehistoric and historic periods, primarily from SK1 and SK1a, two contact period sites from a single field. Uwharrie materials are present from the late prehistoric Dan River phase. Complicated stamped vessels with folded rims are present later, suggesting influences from elsewhere to the south and west. Net impressing continues through time. Vessels with large pieces of soapstone are also present in the protohistoric era, suggesting influence from the Catawba/Burke series. Changes over the course of the protohistoric era are now being recognized. Ca. A.D. 1650 plain vessels with brushed surfaces are present, on some vessels the brushing is over the entire exterior surfaces, on others just in the

neck area. Later, corncob impressions are more common, usually rolled around the neck on a plain vessel. Net impressing continues, but the net impressing becomes very fine, as opposed to coarser impressions earlier. By ca. A.D. 1680 check stamping becomes very common, with large jars and shallow bowls present, including cazuelas. There is a lot of variation in temper and surface treatment in the protohistoric period (the seventeenth century).

Ethnohistorically, the Sara have been reported in the Dan River area. The Haw River area was occupied in the contact era by the Eno, Shakeree, and the Occaneechi, which are regarded by Mooney as Siouan. The Sara may have moved in with the Catawba at the end of this period. The ceramic associations in the late prehistoric era in the Dan and Haw River areas appear to be more closely related with trends occurring to the north, in Virginia, than to the south. In the protohistoric era southerly associations are more prevalent.

David Phelps. The northern coastal area of North Carolina is the northern end of a zone of overlap that extends all the way to the Savannah River. In 1903 Holmes and subsequently Caldwell in 1958 (building on Holmes) placed the area within the Northern Tradition, which was characterized by conoidal vessels, cord marking, etc., and was originally used to define the Woodland period. Early pottery in the north coastal North Carolina area and to the north includes the soapstone tempered Marcy Creek series, which is common from Maryland and Virginia. Soapstone is not readily available in northern coastal North Carolina, however, and the temper is rarely observed early.

Croaker Landing pottery is the same as Marcy Creek, in that it is early, and includes crude tub-like forms with lug handles; both wares appear to copy the shapes of soapstone vessels. Its name derives from the site of the same name excavated in the 1970s. It lacks soapstone tempering, however, and instead is tempered with grog, or lumps of what appear to be sun-dried clay. This is the earliest appearance of clay/grog tempering, a paste that runs through the Late Woodland in the Carolinas. Dave believes the Croaker Landing series dates from ca. 1200-700 B.C., or perhaps slightly earlier. Dates as early as 1500 or even 1700 B.C. have been raised, but these may be too early. A discussion ensued on the dating of soapstone vessels and pottery; in the Stallings area pottery predates the appearance of soapstone vessels, while in northern coastal North Carolina it appears to be the other way around, with pottery copying the stone vessel shapes. The clay tempered Croaker Landing series is contemporaneous with fiber tempered and Marcy Creek pottery; Stallings picks up as one proceeds south, although punctated ware is not seen until one reaches South Carolina.

With Croaker Landing there is a cord marked type, although little is known about it. The relationship of this finish with Thom's Creek is unknown, although Thom's Creek pottery has cord marked decorations on the rims. The Northern Tradition cord marked, net impressed, and fabric impressed surface finishes come in at the end of the early ceramic tradition, probably around 1000 B.C.; Dave cautioned that there were precious few early dates. Vessel shapes are poorly documented, although bowls are known. The Early Woodland initiates the sand tempered tradition, which lasts for a long time. Dave uses the Wentworth scale to measure particle size. Deep Creek materials represent the earliest Woodland materials. Finishes also include simple stamping, which resembles Deptford materials, although check stamping does not occur north of the Cape Fear River during these early periods. While Dave believes Deep Creek (and Mount Pleasant) will eventually be subdivided, there is not enough evidence to do so at this time.

The Middle Woodland Mount Pleasant series was established based on work at Mount Pleasant Landing on the Chowan River. Fabric, net, and cord marking dominate the assemblages, although fabric impressing becomes far more common than previously, far overshadowing the cord and net finishes. The tempering, sand and pebbles, is like the Deep Creek paste, with more variation, and in some cases larger inclusions. Some Mount Pleasant assemblages have fine sand, others don't; geographic variation in paste is not well documented. Deep Creek and Mount Pleasant

are considered a continuum. Simple stamping drops out during Mount Pleasant, but Hanover ware comes in around A.D. 200. Hanover is not found north of the Tar River, however. Mockley shell tempered net impressed and cord marked ware from Virginia and Maryland are present in small quantities in northern coastal North Carolina, where it occurs with Mount Pleasant materials, and probably dates from ca. A.D. 200-800 (although in Virginia it goes back to perhaps 300 B.C.). The Mockley ware presence represents the introduction of shell tempering into this area. Both Mockley and Hanover are extreme minorities.

The Late Woodland period is much better dated and documented. The direct historical approach, tracing the location and movements of Algonkian groups, is a procedure used with later Late Woodland materials. In the Virginia-North Carolina border area is an Iroquoian enclave at present documented by the Cashie series, which with the Algonkian Collington series on the coast runs from the contact era back to about A.D. 800. The Collington series is dominated by fabric impressing and simple stamping; cord marked and net impressing drop out completely. Simple stamping increases over time and becomes predominant late in the sequence. Plain and incised wares are minor finishes; the incising is by itself, not added over another finish. The Collington materials are shell tempered, with mussel shell used in the interior Coastal Plain and oyster on the coast. The Collington phase ends around A.D. 1650 with permanent European colonization. A terminal phase has been advanced for the historic era, Indian Town (ca. A.D. 1650-1715), which looks like a very poorly executed shell tempered Collington ware, with simple stamped and rarely fabric impressed designs.

The Cashie series is remarkable because of the large size of the pebble tempering; it is surprising the ware even survives the firing process. The Jordan's Landing site is the type site for the Cashie phase. Dave noted, somewhat with tongue in check, that the last major battle of the Tuscarora War, on March 22, 1713 may well mark the terminal date for the classic Cashie series; Cashie wares were found in the fort battle site. The end of the Cashie ceramic tradition has been named the Indian Woods phase, after the reservation where the surviving Tuscarora were placed. With Cashie and sometimes with Collington, are also found very fine plain wares.

A discussion of Mike Trinkley's adaptation of Deep Creek and Mount Pleasant to the central South Carolina coast followed. Dave noted that Mike was the adoptee, not him. He thinks that Deep Creek is closely related to Deptford, however, and is representative of a sand tempered Early and Middle Woodland horizon stretching over a large area of the Carolinas and beyond; he would even call sand tempered cord marked material he has seen along the central Savannah Deep Creek. The temper variation in Mount Pleasant pottery is extreme, and many assemblages fit within it. Chris Espenshade said we need to start paying serious attention to clay sources, to see if that might explain some of the variation that is observed in local pottery assemblages. Deep Creek appears to be equivalent with the early Northern Tradition intrusion, while Deptford may be equivalent with the Gulf/southern tradition. The two series clearly overlap, and in fact are made in essentially the same way in at least some parts of the South Carolina area. I noted that what Dave was calling Mount Pleasant encompasses to a wide range of pastes, and reiterated Chris's point that we need to monitor and describe paste carefully; locally what I called Yadkin at Mattassee Lake would also fit within the Mount Pleasant series.

Mark Mathis. Mark proceeded to talk about the ceramics between the Cape Fear and Neuse River area of coastal North Carolina, using materials from a number of sites, including Broad Reach in Carteret County and the Flint site in Onslow County. Many of the ceramics in this area are identical to what Dave Phelps has found in northern Coastal North Carolina. Stallings, Thom's Creek, and Deptford are also present in small quantities. Fiber tempering is always plain ware, and rim sherds are rare, making assessment of the age of the material from lip shape difficult (i.e., thickened rims being earlier in the Stallings series). Thom's Creek material occurs, but whether shell middens from this time period were present is unknown, since sites dating to this time are assumed to have eroded out to sea or been submerged by sea level rise. Deptford check stamping is present but rare,

and decreases as one moves north. No Marcy Creek or Croaker Landing pottery has been observed south of the Neuse. Loftfield's Early Woodland New River series is present, and is the earliest recognized pottery; the New River materials are similar to Phelp's Mount Pleasant and South's Cape Fear materials. There doesn't seem to be much intentional addition of large pebble inclusions to pottery in the central coastal area.

Middle Woodland Hanover pottery is present and is readily recognized by the sherd/clay inclusions. Dates are rare, with only two in the ca. A.D. 450 range known. Shell tempered material is also present, and in fact some vessels are both shell and grog tempered. The shell tempered materials are referred to locally as White Oak by Loftfield, Collington to the north by Phelps, and Oak Island to the south by South. Loftfield's Onslow materials in the interior are identical to Phelp's Cashie materials to the north. Onslow is an extreme minority locally, where it tends to show up with the shell tempered ware. Shell tempering extends to the Cape Fear River, but drops off dramatically to the south, and is rare in northern coastal South Carolina. Mark has retained the White Oak/Oak Island distinction, as opposed to adopting the Collington terminology, because the culture which it is associated with locally is so poorly known (although it too appears to be Algonkian). Is White Oak the same as Oak Island? We don't know at the present. There are apparently significant differences in the incidence of surface treatments on shell tempered pottery over the coastal North Carolina area. Cord marked and net impressed shell tempered pottery is rare on the central coast, but appears to be present to the south, where plain, cord marked, net impressed, and fabric impressed were reported by South. Mark and David Phelps believe there is a gradient along the coast, but we don't have sufficient data to draw lines at the present. The area examined and sample sizes used by both South and Loftfield were described as quite small; eventually the coastal taxonomy needs to be revisited using the much larger datasets now available.

Some of South's Oak Island materials may be limestone/carbonate tempered (or what Mark called "hole tempered"); this ware occurs in low incidence in the central and southern coastal North Carolina area. Mark noted that Tom Hargrove had identified a limestone tempered ware similar to Natalie Adam's and Mike Trinkley's Wando series materials from Molasses Creek near Charleston. Simple stamped finishes like Deptford and Deep Creek are present in the series; it is coeval with Hanover in New Hanover County. Cord marking is also present in the series. Joe Herbert and Ken Robinson have also found similar materials. Loftfield's Adam's Creek is a fine sand tempered material that is observed in low incidence along the coast; Adam's Creek is similar to Phelp's Middle Town ceramic series (a Middle/Late Woodland ware). As one moves away from the coast in the central coastal area, shell tempering drops off dramatically, while Hanover sites appear everywhere. Almost every Hanover site also has fine sand tempered cord and fabric marked pottery associated with it. Either the same people are using the two series, or there is a remarkably similar adaptation. The fine sand tempered ware is like South's Cape Fear and appears temporally equivalent to Phelp's Mount Pleasant series.

Net impressing runs up through the Middle Woodland, but is uncommon in the Late Woodland, although it picks up in the Piedmont during this time. Simple stamping is an initial Early Woodland finish, and then a terminal Late Woodland finish in the central coastal area. Burnishing is very rare but present in late Woodland assemblages, and does not appear to be the same as South's Brunswick ware. Cord marking drops off, although any directionality to such a drop off is unknown.

Joe Herbert. Joe briefly described his work with south coastal North Carolina materials, working with existing materials collected by South, Loftfield, and others. His research is just in its infancy, but he hopes to evaluate the existing typologies.

Ken Robinson. Ken noted that he has worked with many collections in the upper Cape Fear River region, in Bladen, Cumberland, and Harden Counties. The predominant ceramics are cord and fabric impressed sand tempered materials. He has seen a few sherds of Marcy Creek, fiber

tempered, Thom's Creek, and Deptford linear check stamped materials. The area is likely to see a great deal of work in the years to come, both on Fort Bragg and along nearby highway corridors, Mark Mathis noted that there has been very little work conducted and reported in the interior Coastal Plain of North Carolina.

Carl Steen. Carl talked about a site he excavated within 200 m of the North Carolina line in northern South Carolina. Carl noted that, in addition to Deep Creek/Mount Pleasant cord marked and fabric impressed sand tempered pottery. A "hole tempered" fabric impressed pottery was also found, that resembled Mockley ware from Virginia.

Bobby Sutherland. Bobby described his work at a site in extreme northern Horry County, where linear check stamped pottery was found, together with a shell tempered simple stamped ware. Some complicated stamped pottery was noted at one site, although the type was unknown.

Jim Michie. Jim described his work in the northern coastal area, from Waccamaw Neck near Georgetown to Horry County. Fiber tempered pottery was extremely rare, but he has seen lots of Thom's Creek, Refuge Dentate Stamped, and Deptford Linear Check Stamped. The most common wares appear to be cord and fabric impressed. The Deptford paste is highly variable, from fine sand to extensive grit. Jim noted that the existing type descriptions are very difficult to work with, particularly the descriptions of paste. What is "fine" or "medium" sand? He talked about the lack of stratification in many Coastal Plain sites, making analyses difficult. He said we really need to work on sequence development in many areas, including the northern coast. Jim said he didn't know what protohistoric ceramics look like in his area.

A discussion of grog versus clay versus sherd tempering followed. Clay tempering to Anna Sheppard is sun-dried clay; sherd tempered is from ground up sherds, grog can be everything from sun-dried clay to ground up sherds. Chester noted that "sherd tempering" in the mouth-of-the-Savannah sequence included both obvious sherd fragments (only rarely observed) as well as thousands of sherds where the origin of the tempering lumps was unclear. Jane Eastman noted that she saw two vessels from a single feature at a site along the Neuse River, one clay and the other sherd tempered. A consensus emerged that we need to develop better type collections, conduct replicative experiments, and be more consistent in our classifications.

I introduced the discussion of the ceramics of the central South Carolina coast. I noted that there were four people, three present, who have worked on local ceramics, including myself, Mike Trinkley, Chris Espenshade, and John Cable. I noted that the work done to date along the North Carolina coast had played a major role in the development (or lack thereof) of the central coastal South Carolina sequence, hence the importance of the papers we had heard so far in the workshop.

Chris Espenshade.

Chris started off with his Sumter project (38SU8) analysis, where he did his first work with South Carolina ceramics. The assemblage was dominated by fabric impressed Yadkin materials with subrounded (not crushed) quartz temper, and a minor amount of linear check stamped. The dates on this material ran from ca. 520 to 180 B.C., much earlier than traditional dates for Yadkin. The association of the fabric and check stamped materials got him thinking about the overlap of the major cultural traditions. The central South Carolina coast is right in the middle of the overlap of the northern and gulf coastal traditions. Yadkin-like materials are uncommon in the northern Coastal Plain of South Carolina. The role of the Santee as a possible cultural boundary throughout prehistory was noted.

Speaking of the need to carefully monitor temper elements, Chris suggested that it could have been the size of the temper, not the actual kind of the temper, that may have been viewed as important by some groups. Chris also noted that pottery manufacturing was highly stylistically determined. Thom's Creek pottery was extremely well made, yet a wide range of manufacturing

procedures were used throughout subsequent prehistory. John Cable suggested weight may have also been important, and asked what sand tempered versus grog tempered pottery might weigh. He added that we need to explore the relationships between ceramic use and group residential mobility. Was Thom's Creek pottery made thin, yet highly compacted, to facilitate moving it around? Chris noted that with watercraft, carrying pottery may have only been a few meters to and from canoes. Ken Sassaman said that we need to explore the techno-functional implications of vessel size, thickness, temper size, and function.

Chris then talked about the Minim Island excavations and ceramic analysis. The site was a ca. 1 meter thick shell midden underlain by a sandy midden. The basal level had Thom's Creek and Refuge materials co-occurring in the same deposits dated to ca. 1440 B.C. The Thom's Creek pottery was thin, with shell scraped exteriors and interiors. The Refuge was thicker with coarse sand tempered paste. There was some overlap of paste between the two series, suggesting to Chris that they were contemporaneous, perhaps representing functionally distinct assemblages. No fiber tempered or finger pinched pottery was noted. Over that, in the shell midden, was a dense Deptford assemblage dated between ca. 600 and 250 B.C., and dominated by linear check stamped pottery. Above that was a check stamped assemblage with the addition of cord and fabric impressed pottery finishes. The paste, however, was identical to the Deptford materials, suggesting an adoption of the finishes by peoples who continued to make pottery in their traditional way. The site represents the last major Deptford shell midden known along the South Atlantic coast.

Chris argued that macrogroup affiliation of the terminal occupants was likely Deptford; he joked about Deptford men with Northern Tradition wives. He suggested the site reflected the merging of the two traditions, but the addition of a new finish on a traditional paste reflected the import of new ideas, or people, into the area. He suggested that the ceramics might tangibly symbolize the ability of people from these different groups or traditions to go back and forth, perhaps in times of need when resources were short in one area but not the other. In answer to a question from Carl Steen, Chris didn't think the site served as an aggregation loci (a traditional interpretation for Deptford shell middens), however, since the pottery was all made on essentially the same paste. If the site functioned as an aggregation site, pottery from different traditions would likely be present. Chris used the data from Minim Island to create a typologylchronology for the Francis Marion central coastal area. He also mentioned his work at Buck Hall on the coast. The overlap of pastes and finishes in the central coastal area, his work has shown, has created a great deal of confusion, although Chris has offered a possible explanation for some of what is observed in terms of cultural events.

David G. Anderson. I discussed my work at Mattassee Lake, stressing the large sample size (>27,000 sherds), the number of radiocarbon dates (15), and the stratified nature of the deposits. I noted that the analysis and reporting was deliberately directed to the development of a cultural sequence for the area; the only work prior to this was Stan South's 1960 and 1976 formulations, Chester's just published revision of the mouth-of-the-Savannah sequence, and some limited work from North Carolina, particularly by Coe. We had numerous artifacts as well as a number of features with sherds in them and good radiocarbon dates. I noted that just a few years earlier, in 1974 and 1975, I had looked at most of the sherds found to that time from the South Carolina Coastal Plain, giving me a good comparative perspective, although such a task would be nearly impossible now.

At Mattassee Lake I tried to come up with a classification system that would deal with the variability using as much as possible the prior 50 years of work that had been done. I didn't want to scrap names like Thom's Creek, or Wilmington, or Refuge, but at the same time I was frustrated because there was a lot of variability within those series. Some of the Refuge pottery, for example, had lumps of claylgrog present in the paste, unlike the type materials with sand paste that Chester

and Waring had described. The fact that the pottery didn't fit was confusing, as was the apparent mixture of southern/Gulf and northern tradition surface finish attributes.

My solution was to import the type-variety system from another area where I had worked, the lower Mississippi valley, using the traditional type names, or series names that had been developed in our area, but then adding a variety taxon to account for the variability that I saw. Thus, if I saw a Deptford sherd with sandy paste like the type site, I would call it Deptford, var. *Deptford*, but if it had a weird paste or surface finish, I would give it a new variety designation, such as var. Mattassee. I developed varieties for virtually every possible kind of pottery observed in the area. Unfortunately, while my descriptive efforts have been used and praised, no one locally has adopted the type-variety system. Since classification has seemingly become an end in itself in areas where the system has been adopted, such as the lower Mississippi Valley, this may not be such a bad thing. One legacy that the Mattassee Lake report and my subsequent efforts compiling the state type collections has left, however, is an extensive, well-documented comparative collection. This has proven quite useful down through the years in educating people about local ceramic variability, regardless of whether the specific variety names were used.

The last ten years have shown that local people prefer the traditional binomial pottery classification system developed by Ford and Griffin, and introduced at the first Southeastern Archaeological Conference in Ann Arbor in 1938, rather than the more complex type and variety classifications. While I suspect the use of the type-variety system may never catch on in the Carolinas, I believe the variability I was monitoring was critically important. Regardless of how we classify material, we need to continue to monitor paste and surface finish variability. I also believe that the original sorting criteria advanced in the Mattassee Lake report remain valid for local ceramics (and many of them are presented in this volume in the sorting guide). I then noted that our next speaker, John Cable, had done a great deal in recent years to advance our understanding of paste variation in coastal South Carolina ceramics.

John Cable. John started off by saying that I liked what he has done because he was able to largely duplicate my own work at Mattassee Lake! John described various materials he had found on the Francis Marion, going backwards in time from Mississippian (coarse sand paste) to Santee (fine sand paste) to Cape Fear (any sand tempered cord and fabric impressed pottery). John was able to separate the earlier "Cape Fear" taxa into Santee and Deptford materials; some of the cord and fabric marked materials associated with Deptford materials did, however, look somewhat different in pate from the Deptford material. The Hanover materials were a fine paste with grog and minimal sand. The Middle Woodland Deptford pottery on the central coast closely resembled the materials from the mouth of the Savannah. Deptford paste locally has very heterogeneous sand, not well sorted, and some specimens have lots of rose quartz inclusions. Much of the local Deptford-like material has clear quartz or sand present in the paste, that may be related to Deep Creek. Deptford paste may be as much as 40-50% sand, while some of the Cape Fear materials had only 10-20% sand present. Below that was Refuge, a fine paste material, some sherds of which had fine grog temper, while some were temperless or had fine sand present. The earlier Thom's Creek had fine and medium sand. John then used percentage figures for each series to show how sand inclusion size varied appreciated between the major series in the central coastal area.

John noted that the ceramics from the Francis Marion area had paste combinations that varied appreciably from assemblages in other areas, such as along the central or lower Savannah. This paste information can be serriated, and used in typological development. He explicitly believes that different pastes tend to point to discrete, behaviorally meaningful taxa. John noted that paste is an attribute that can be measured on a sherd of virtually any size, and hence is useful in CRM survey work. He also noted that we need to look at the variability in both paste and surface finish, and examine them separately, rather then combine them into one category. John believes paste can be used to effectively sort local materials. For example, he has observed two varieties of Thom's Creek based on paste, fine sand and coarse sand.

A general discussion followed for about 15 minutes. I noted that John's work has documented paste variability in series that have traditionally been lumped together. Regional variation in paste within Thom's Creek and Stallings wares was noted by Ken Sassaman and Chris Espenshade. John agreed that there was a lot of variation, and stated that our use of these basic taxa has precluded our examining the paste variability within these series. Another interesting pattern in the central Coastal Plain of South Carolina is the widespread appearance of fabric impressed pottery in the Middle Woodland, a pattern different from the area to the south, in the Edisto and beyond, where cord marking is much more common. John suggested that the Middle Woodland ceramics along the Santee appeared closely affiliated with materials to the north. Joel Gunn noted that he and Tom Lilly had also looked at the size of the inclusions in the paste with the materials from Osprey Marsh near Beaufort, over a sample of 1800 sherds spanning the prehistoric era. Using factor analysis they were able to resolve constellations of attributes. John noted that, over time, paste goes from fine paste in Thom's Creek to coarse paste in later Thom's Creek and in Deptford. Wilmington, in contrast, has fine paste with grog, while Santee has fine paste. Mississippian in turn is very coarse paste, and John has trouble at times sorting Deptford from Mississippian plain wares. John sees a fairly consistent relationship between surface finish and paste in the central coastal area. Joel wondered if there were changes in river regimes that might effect the clay sources available to these populations at various times in the past. Bob Morgan asked what historic period Indian ceramics looked like on the central coast. The consensus, unfortunately, was that we don't know much about these occupations as of yet, even though Indians are reported in the historic records from this area.

Wayne Roberts. Wayne said attending ceramic workshops was interesting given the level of detail people find to argue about. He brought out materials from a site in Mount Pleasant that was examined during a highway project. Wayne noted that our type sites are where they are because of the order in which they were excavated; thus we have Thom's Creek and Stallings Island up on the Fall Line, near the margins of the distributions for these series. He noted that the Molasses Creek site had been excavated, but no report has ever been written. In the Mount Pleasant area, apparently at Molasses Creek and definitely elsewhere, a "hole tempered" material has been found that resembles limestone tempered materials from east Tennessee. The material is like what Natalie Adams and Mike Trinkley call the Wando series. Natalie noted that they tested the material with hydrochloric acid and the distinctive fizz indicated it was a carbonate. The material had simple stamped and fine cord marked finishes. I noted that my 1974 and 1975 analysis of Coastal Plain ceramics had documented a few sherds of the ware near Charleston. Eric Poplin noted that he has found it on Edisto Island, and that Ron Anthony has found a couple of sherds on James Island. The ware tends to occur in the area where marl/phosphates were mined historically. Lee Tippitt noted that the Molasses Creek site material went to Florida with Bob Johnson and apparently has never come back. Natalie Adarns said that the pottery used to develop the Wando taxa came from one site; the materials included cord marked and one sherd of check stamped. She noted that the taxa will need to be refined or revised. There was some discussion about the need to get the collections from Molasses Creek back and date the materials. I concluded by noting that this is another example of very curious paste variability that occurs in the central South Carolina coast. We need to come up with ways to monitor this variability and develop names that we can live with. One solution has been to use varieties (Anderson), another has been to use series names to accommodate paste variability (Cable).

Chester DePratter. Chester started off by noting that the late prehistoric and protohistoric Indian ceramic complexes are not well documented in the South Carolina area at present. The massive assemblage that has been compiled from Santa Elena should provide a baseline for the sixteenth century materials. Chester also noted that the late materials don't jump right out at you; many are likely sitting unrecognized within existing assemblages. He went to find a Yamassee site documented historically, in fact, so he would know what Yamassee pottery looked like, to proceed with his analyses of early historic groups. Recognition of these materials is difficult; within the

Yamassee assemblage of several thousand artifacts, for example, less than 100 were large sherds or decorated in a distinctive fashion. If houses are widely separated, as they were at the Yamassee site, even the discovery of artifact concentrations can prove difficult. Chester said it was practically impossible to sort Yamassee from Irene materials; only by knowing the site was there, in fact, permitted its discovery. I repeated Chester's observation that we had probably already found a number of protohistoric sites, but just didn't know it yet. Chester noted that there wasn't a great deal of material in everyday household refuse, and certainly little diagnostic material, making surface detection, or discovery using shovel tests, extremely difficult. Chester hopes to eventually examine the early historic records and then ground truth possible site locations over a fairly large area of South Carolina.

Joel Gunn and Tom Lilly. Joel noted that the work at Osprey Marsh on Hilton Head Island produced a sample of about 2300 sherds. A detailed attribute-based analysis was conducted over this material. He said we need to consider how sherds relate to vessels, and learn to link the two forms of data. Part of the problem entails figuring out exactly what it is we need to be looking at. They have been working with a linguistic model of concept space, specifically how the attributes are combined, and whether there are limitation on the possible combinations. He and Tom were looking for distinctive contrasts in attributes or attribute groupings that have consistent/important meanings. Four basic dimensions of variability were examined: wall (i.e., thickness; ratio of thickness between bottom and top of pot), firing (i.e., color, color contrasts between inside and outside), paste (i.e., temper elements), surface finish (i.e., decorations). In the South Carolina area paste and surface finish are the primary dimensions examined in most ceramic analyses. It is unclear whether and to what extent pastes are environmentally sensitive, and hence more geographically restricted than surface finishes.

A very large attribute matrix was initially proposed, which dropped to a small number very quickly. Some of the attributes were eliminated because they occurred too infrequently. Another case would be where an attribute didn't correlate with anything else, and hence was not useful for developing a distinctive contrast. Other attributes were eliminated because they were perfectly correlated, or interchangeable for purposes of analysis; hence one could be used instead of both. Constellations of attributes were observed that correspond to known types, filling specific areas in concept space matrices, while other areas of the matrix were empty. A factor analysis was done on 1500 sherds using 16 attributes that survived the elimination process. There were ten significant factors that resulted. Joel stressed that this was not a statistical analyses, but more an exploratory data analyses. Each factor provided information about attributes that were positively and negatively correlated with each other. Some factors corresponded to known types. Equally interesting, however, were clusters of attributes that did not correspond to known types or assemblages. The procedure is a good way to explore variability, and perhaps find things that earlier generations of researchers may have overlooked.

One thing that has emerged from their work is that color is involved in what appear to be behaviorally significant groupings. John Cable noted that in the central coastal area Mississippian materials tended to be fired in a reducing atmosphere, while some earlier Woodland materials were fired in an oxidizing atmosphere. I commented that I was sympathetic to these kind of analyses as a way to tease out variability, noting that I had done these kinds of exploratory data analyses myself, looking at specific attributes (i.e., my Mattassee Lake cluster analyses). Joel remarked that using these kinds of procedures does not at all change the way we define types, but is only a new way to arrive at attribute groupings that may be behaviorally or temporally significant. A discussion of what color means followed; one observation was that care must be taken to distinguish post-firing changes in color, such as accidental burning. Color may also vary on different parts of a single vessel depending on firing conditions. Color may work best on an assemblage basis; few interior Thom's Creek sherds are dark colored (most are buff colored), for example, while many Mississippian sherds are dark colored.

A consensus emerged that use of a constellation of attributes, where practical, appears to be a better way to go about classification than using one or two attributes (i.e., surface finish or paste), as is done now. Steve Davis asked why factor analysis was used rather than nonparametric statistics over individual attributes. Joel responded that he wanted to look at all of the attributes collectively rather than at pairs of attributes at a time. The concept space exploration described previously was also a way (other than nonparametric analyses) of reducing the overall attribute list. A discussion of the use of dichotomous nominal variables followed, and how this made the use of binary opposition type attribute data appropriate for factor analysis. If a type is spread across several factors, it may hint at other explanatory mechanisms, such as techno-functional analyses. Factor analysis is a good way to quickly see if there is linear structure and/or redundancy in large datasets. Joel concluded by briefly noting that sea-level fluctuations and other environmental fluctuations might also profoundly influence cultural developments.

Chris Espenshade. Chris talked about assemblages in the southern coastal area of South Carolina in the general Beaufort county area. Chris's noted as an aside that his approach to typology is somewhat opposite that used by Joel, in that he looks at classic types first, and then looks at the attributes or characteristics that make up that type. Wilrnington-St. Catherines distinctions were briefly discussed, as well as the relationship of the Wilmington and Deptford materials, including cord marked materials. Chris argued that, except for the aplastics in the paste, the Deptford and Wilmington series were very similar technologically. He also suggested that Deptford (at least as represented by sherds with cord marking) may well occur later than traditionally assumed. The classic mouth-of-the-Savannah sequence, he noted, does not appear to work well in the Beaufort area. Chester DePratter asked Chris why the material was called Deptford if there was no check stamped present. Chris said because the paste was like that noted on Deptford materials at places like Minim Island, and even along the lower Savannah. Chester noted that he found a sand tempered ware at the mouth of the Savannah that he provisionally called Chatham County Cord Marked. It occurred in low incidence on many sites near Savannah, and is also found in the interior at Groton Plantation. He is not sure when it dates to, however.

Chris also looked at the occurrence of baked clay objects in the south coastal area, and noted that they seemed to occur with Stallings pottery, suggesting they were cooking stone/perforated soapstone object equivalents. A brief discussion of the relative thickness of Stalling and Thom's Creek pottery over the general region followed; it was agreed that there was appreciable variability, and that it should be monitored. At Stallings Island, for example, the Stallings pottery is very thin, while on the coast at the mouth of the Savannah it tends to be very thick. Thom's Creek pottery along the central Savannah River is sometimes very thick and crude, while along the Santee it tends to be thin and well made. Likewise, appreciable paste variation is also present in these series. What this variability means is currently unknown and, in fact, is very poorly documented.

Dave Phelps said that since the cord marked finish wasn't innovated in Deptford, it should better be called Deep Creek to emphasize its northern origin. He and Chris then had a somewhat heated discussion about how series names should be applied, and which taxa were appropriate for describing sand tempered cord marked wares in southwestern South Carolina (i.e., Deptford versus Deep Creek). Chris uses series and type names to refer to technological attributes, and believes the South Carolina material more closely resembles Deptford, and should be called that. Dave Phelps, in contrast, believes series names should also reflect cultural historical concerns. No real resolution was achieved, and I asked Chester to provide commentary that might resolve, or diffuse. the issue.

Chester DePratter. Chester DePratter talked about his work at the mouth of the Savannah and on Groton plantation upriver about 100 miles. His work with materials from the mouth of the Savannah area has included looking at surface collections from some 1400 sites, many single component, in the general Chatham County area, as well as re-examining the WPA era collections.

He noted that the mouth-of-the-Savannah sequence does not work well very far in either direction, and that as a result we have to be careful in making use of this sequence. There is very little Deptford Cord Marked at the mouth of the Savannah, to the extent that it was never defined by the original excavators. Thom's Creek is almost nonexistent (one sherd in Chester's experience), while Chatham County Cord Marked is very rare, and does not extend south of the Savannah. He also said that, oddly enough, there are few Deptford sites on the central Georgia coast. Chester also noted that around Port Royal sound there are far fewer prehistoric shell middens than on the Georgia coast.

Chester said his work at Groton Plantation was an attempt to explore how far upriver the mouth-of-the-Savannah ceramic sequence applied, and to examine the variability recognized there by earlier researchers such as Stoltman and Peterson. John Cable said that some of the sand tempered cord marked pottery he had seen in South Carolina was more like Cape Fear in paste than classic Deptford. Chester agreed, saying it was much grittier. Not comfortable with either the use of Deptford or Deep Creek terminology for local sand tempered cord marked material, Chester suggested it should perhaps be called something else. The Groton Plantation sequence is like that on the Georgia coast, but temper selection is very different. Wilmington pottery appears to largely drop out away from the coast. Fabric impressed pottery is rare along the coast, while sand tempered fabric impressed pottery is very common in the interior. The fact that we can't apply the Savannah sequence directly over large areas was not viewed as a problem. It suggests instead that we have a long way to go to develop reliable sequences in these other areas.

Ken Sassaman. Ken noted that a ceramic sequence has been developed for the central Savannah River by the two of us based on work on the Savannah River Site, and that it has been published in the SRS synthesis, and in the recent Aiken Plateau monograph. Ken talked about his research with fiber tempered (Stallings) pottery at length. He noted that his research problem was directed toward understanding why the spread of pottery took such a long time, not becoming widespread over the Southeast until some 1500 years after it first appeared in the general Savannah River area. He noted that he needed to evaluate existing chronologies for Stallings pottery, such as those by DePratter, Stoltman, and Waring if he was to proceed to explore the broader question about why and how pottery use spread. He agreed with Chester that about ca. 4200 B.P. was the beginning point for the coastal record in Georgia and South Carolina. In examining collections, he quickly verified a suggestion made by Waring in passing from his work at Bilbo that thickened lips were very early in the sequence. He used this finding, coupled with a detailed examination of variability in surface treatment over a wide range of sites, to come up with new temporal subdivisions for Stallings pottery, called Groups 1, 2, and 3. As an aside he described his experience in naming the MALA type ("the bane of my existence") as to why he doesn't want to name new types.

Ken then went through a detailed discussion of the evolution of Stallings culture and pottery, and the assemblages associated with each of the three groups. When it first appeared the pottery was almost exclusively plain with thickened lips (Group 1). The Stallings Island type site at 3700 BP, however, was not at the margins of the culture, as was noted earlier, but was instead the center of a vibrant culture (Group 2). He noted that cazuela vessels have been found in only two places in any great numbers, Stallings Island and Chesterfield, which had very similar assemblages. By 3500 BP Stallings Island was abandoned, and after this time there was a late phase (Group 3), with extensive variability in assemblage decoration, reflecting the dissolution of the classic Group 2 culture. Some sites have plain pottery, others were wildly decorated, and still others had both Stallings and Thom's Creek present.

Ken then talked about the Ogeechee River shell midden sites, and the looting that is occurring at these shell middens. He believes that some of the sites along the Ogeechee may represent the fissioning of people from the central Savannah about 3600 BP or so. He also noted that Frankie Snow has found a lot of fiber tempered pottery in south-central Georgia area, just as the material occurs well into North Carolina. Ken hopes that we will be able to break down the

appreciable variation in Stallings material over the region into a number of distinctive phases; his work is a first attempt to do this. In response to questions he noted that evidence for coiling is minimal in Stallings, and that Thom's Creek doesn't appear to predate ca. 4000 BP.

Ken then talked briefly about the later sequence from the middle Savannah and his work at 38AK157, specifically the work that he has done to differentiate Refuge and Deptford simple stamping, testing inferences about stamp size, shape, and orientation that I had advanced in the SRS synthesis sequence discussion. He sorted the ca. 180 vessels from the site and used a vessel unit of analysis to serriate the assemblage. The analysis indicated criteria did exist for differentiating Refuge from Deptford simple stamped (crude v-stamping, haphazard and possibly with a dowel on the former, versus U-shaped, evenly applied, perhaps with a paddle on the latter). Ken asked me if I wanted to continue the discussion focusing on the latter part of the sequence; I said that it had been widely published and, since it was late Saturday morning, that we would be better off devoting the remaining time to a general discussion.

Concluding Thoughts

After a roughly hour and a half lunch break, during which time we packed up all of the ceramics and loaded them into various vehicles for return to their respective institutions, we resumed discussion at the now bare tables. For the next hour and a half the discussion focused on what we had done, learned, and where we should go from here. A transcript of this discussion follows:

DAVID G. ANDERSON Can we all sit down again? We're all fed, relaxed, kind of mellow. What we'd like to do for the next roughly hour is try to come to some sort of consensus, to have a discussion on where we'd like to go from here. What I'm to do is start this off by giving my sense of where we should go from here, and then I'm going to sit down, and we'll just sit around the table and talk about various things.

Basically what we hope to come up with in a year and half or so is a nice illustrated guide to the ceramic prehistoric materials that are found in this part of the world. To do this we are going to need the help of a lot of you folks. John Cable and I will be primarily responsible for coordinating and pulling together information and soliciting contributions from you all. What we'd like to do is about a year from now have a draft manuscript to circulate and get comments on [the present volume is an attempt to meet this goal], and maybe it would be a good idea to meet again, to talk over the things that are developing as a result of that, as this process goes on.

I think that in terms of systematics for this manual, we have to acknowledge that there is a fifty year tradition of naming things in this area, and that while some things work very well, some things don't. Whatever we decide, however we decide to classify material, we need to acknowledge what people have called it in the past. We need to try to stick as much as possible to what is the established and convention, but where it needs to change we need to acknowledge that as well. As I said yesterday, I personally plan to sink a number of varieties that I came up with at Mattassee Lake. I have no intention of eliminating all of them, because I think some of them work very well, but some of them are very cumbersome, there is no point to them.

Another thing I think we need to do as a result of this, is to refine our existing type collections. Whatever we come up with for a guide, we need to have complementary type collections in repositories, to let us know what we mean by paste variability we feel we should be monitoring. What is fine grog, or sherd temper, or fine sand, or course sand? We need to have examples of this that people can go to. Publications are fine, but we really need to be able to hold in our hands and experience for ourselves, or listen to them and hear them talk to us, to appreciate the variability and to be able to make use of the sorting criteria. So I see the need for feedback in the production of the manual, the need for refining type collections, and to have more meetings like this down the line.

[Dr. Phelp's announced a willingness to hold a similar meeting in two years at East Carolina University, with Virginia colleagues involved, followed by sliding relationships with Georgia and Florida folks next time]

DAVID S. PHELPS Something that is really observable from the way we talked about things here, we don't use the same standards and terminology. We need to standardize the kinds of things we talk about—the technological attributes of pottery—so that everyone is talking the same language. How much grit can you stand? [laughter] So that is one of the things that I would suggest, that we adopt some sort of standards. I know we have type descriptions we have lived for years, but what someone calls clay temper someone else may call grog. They might be talking about the same thing and they might not—whether its sun dried or broken up sherds or fired ahead of time—these are the kinds of things we need to specify.

DAVID MOORE To a great extent the terms we use to describe our tempers depends upon where we work and the way things are defined. I think it would be very interesting for everybody to write up the descriptions of the way you use tempers. We need to know the range of things we are trying to standardize. It would be wonderful for me in the mountains to know that I'm using the terms the same way that someone on the coast is doing.

DAVID G. ANDERSON That's a real good suggestion, and that's why this is going to be a consensus-building effort in the production of the product as well as at this meeting; it shouldn't be John and I, a top-down approach, "this is going to be the way it is"—that would be a failure. To reinforce what you folks have said, once we do agree on categories, lets have examples of them in two or three repositories, so if we want to know what is meant by steatite and soapstone tempered we can actually go and hold specimens in our hands. ...In terms of where we go from here, maybe we can meet in conjunction with one of the state society meetings some time early to mid next year to hammer out things.... People should go away from here with the idea that they'll write up what they mean by tempers or what they feel would be an appropriate sequence for their area.

JOHN S. CABLE Wasn't that what you suggested initially, that we all get together and give fairly good descriptions of our sequences? [The volume we produce] would be a nice location to go to really get a good intra-regional idea of what is going on.

KENNETH E. SASSAMAN For each of those, everyone would want to have a distributional map, because it would be real important to have the geographical limits for which your sequence applies. And then it might be incumbent upon you and John, and maybe anyone else that wants to act as the grand synthesizers, to talk about where the sequences interdigitate, when they do and don't, and the problems that are still with use. I'm going to continue to call the cord marked I get with linear check stamped in Aiken County Deptford Cord Marked. Although I really don't dwell on that, I just say Middle Woodland cord marked pottery in my reports. We need to resolve those kind of things, I think we do, I think its important that we know that by using the term Deep Creek down here that we know its a northern influence, ultimately, that brought that tradition down here.

DAVID S. PHELPS When its associated with good Depford stuff it ought to be called Deptford Cord Marked. Its not Deep Creek potters making the stuff, its Deptford potters who have adopted a surface finish from somewhere else. I don't call the simple stamped that we get with Deep Creek Deptford Simple Stamped. I can in fact, lose that stuff in a Deptford collection, but it is being made by Deep Creek potters. Deep Creek, in my sense, really talks to a cultural reality, and some of those things that they do cross cultural lines, and those are the kinds of things we have to look at, and I'm really not suggesting that you call this stuff Deep Creek, because I use that as a mechanism for defining people that I can recognize in North Carolina. What we should do in conferences like this is to look at these influences, and when you put this together, David and John, there should be a section on what cross-correlates. And more specifically, for people who are going to do

typology, yes, Deep Creek correlates with Deptford, and whatever else it happens to correlate with across the board. That's the beauty of things like this, where you can really get together regional sequences, with their cross-correlations.

JOEL GUNN I think that the issue of distributions is so important that we should create a standard map and circulate it, and there should be a thing to fill out at the top about what time range this map applies to. I heard Ken say last night he was shooting for fifty years intervals...

JOHN S. CABLE He's not there yet! [laughter]

JOEL GUNN I think that is a reasonable and good goal now. Sea-level curves are down to 50 year intervals, and I don't think that is unreasonable thing to be able to get to with radiocarbon now. Maybe you could say something in the fill-out section of the maps as to what 50 year intervals they apply to.

DAVID G. ANDERSON Our mailing will include maps with a request for information about paste categories, the local sequence, and whatever else you want feedback on. You can make as many copies of the map as you want, and you can put down the dating. With the Mississippian sequence, in places we can get within 75-100 years, while with the Early Woodland we're lucky if we can get within 300-400 years. Just put on your maps where the stuff is, this is the range of it, and we'll try to sort that out.

KENNETHE. SASSAMAN Whenever you draw lines on maps like this there is always somebody who is going to be bent out of shape, who'll say, across that [boundary] line I've got an assemblage of X, Y, and Z. We've all got to understand that time and space is ragged, and the cultural process that produces [our distributions] are ragged.

DAVID G. ANDERSON When I tried to produce maps like this for the late prehistoric period in eastern North America, phase distribution maps, the comments I got were that "this was really terrible for my specific area" (unless they filled the map out themselves), but that it was the greatest thing they had ever seen for the big picture. I'm sure there will be problems with the details, but you folks are providing the details, so by and large we've got the best people. I'm not going to presume to know what is going on in the Catawba River Valley. If the guys from the Catawba provide it, its the best we can do at this time.

CHRIS ESPENSHADE I think we should get beyond basic presence/absence mapping, even at a given point in time. [We need to go] to saying not only is check stamped present at this point, 200 A.D., but it is representing 50% or more of the decorated assemblage, so we're not talking about that its turning up way up in North Carolina, but that it is always a minority type there. Its another level of information that will go beyond [just having] where the stuff has been found.

DAVID G. ANDERSON One of the things John Cable is really excellent at (I'm not going to volunteer him for this), is producing distribution maps on sites, using shovel test data, looking at the density of artifacts. We have in our two state area 40, 50, maybe 100 good sample points, where we have data we can look, such as the incidence of linear check stamping in an assemblage at Minim Island vs. Mattassee Lake compared with sites along the coast. We have the coordinates to produce a density map like that, that we may well be able to do. Otherwise we will think fiber tempered pottery is over the entire map, when in reality 97% of it is in South Carolina.

CHESTER B. DEPRATTER How many people here have written and published pottery type descriptions? (Anderson, Phelps, DePratter, and Steve Davis raised their hands). Its an astounding (low) number, don't you think? We're all talking about pottery and classification, and nobody is describing their stuff. Why is that? Is there something wrong with type descriptions that we don't want to commit to them, or [we don't feel they are] the way to describe the variability we are

seeing? We should all be able to put on paper descriptions that other people can use, but if there are only four of us that have ever published type descriptions, then that means either nobody else is seeing variability, or else they are uncomfortable with the variability as it currently has been described.

JOHN S. CABLE That's right. I'm not comfortable with the types.

KENNETH E. SASSAMAN Chester, the types that exist for the early pottery that I work with are so general that everything that I see will fit into something that already exists. So if its like defining a new species in biology, unless I know it mates and producing viable offspring, and new variability, I'm not willing to do that.

CHESTER B. DEPRATTER There are gaps. The original Wilmington type description included what we are calling Deptford Cord Marked, Wilmington Cord Marked, St. Catherines Cord Marked, and probably some Savannah Cord Marked. I mean, there's no doubt from the type descriptions and all the work I went back and did. And so, if we don't look at that and pick out [variability]—I've gone back and know where to pick, and there's a lot more variability than even I've seen because I looked at a really small sample—then we've got to be content with either lumping these things into meaningless groups or we've got to begin describing things that are from restricted areas from over the whole region. Even if later on we have to go back and say we really need to lump together Deep Creek and Deptford and other things into something larger, and we just acknowledge that. We say that Phelps 1982, talking about Deep Creek, is really talking about something that's related to something else David described at Mattassee Lake, and we can pull it all together. But if nobody is describing the variability they see in a way that we can eventually pull it together, then we are never going to get anywhere.

DAVID G. ANDERSON I think this is going to be a good opportunity for all of us collectively to put down a base statement and to refine some of what has been put forth in the past. We're going to produce something that a lot of folks are going to use, its going to be used widely by people in this room, contractors from New Jersey coming into the area, probably every avocational in the two or three state area is going to have this so they know what it is that they find when they go out collecting. Its a good place to put a baseline that as of 1995 or 1996, here's at least what we think about some things. And absolutely its going to be refined. If we have meetings and we are able to meet every two or three years, than probably in a few years we'll say its time to redo this.

CHESTER B. DEPRATTER The way we are going to do it now, what Chris found on Hilton Head its going to be called Deptford, when its on the lower coastal plain up in North Carolina and it has only check stamped and nothing else its going to be called Deptford-related, its going to show up as Deptford; what I found at the mouth of the Savannah is going to show up as Deptford, its going to look like there's this huge distribution.

CHRIS ESPENSHADE We need to go back to our arguments. That's the key here. No matter how much we map out, if we are not talking consistently, if Dr. Phelps is not using series the same way I am using series, then we are not going to be able to look at the maps and understand what is going on.

JOE HERBERT I think that the basic thing that I see is the attribute analysis. That's kind of where its hinging. To me its so striking when Stan South can write his type description of Cape Fear in 1960 and then in 1976 in The Notebook, and Dr. Phelps can be working on the same area during the same time period and walk over here in 1995 and look at those sherds, presumably for the first time, and say, "That's Deep Creek, that's not Cape Fear, that's not Middle Woodland, that's Deep Creek." That description has been on paper, and Dr. Phelp's is aware of that. Its looking at the sherds. We need to get past the point where we come together and look. There's

value in that, always, but until attributes are recorded, and the variability of attributes are tabulated and compared between the regions, we won't really see where the edges of these overlap areas are.

KENNETH E. SASSAMAN I think Chris is right, and I think this is the same problem we face in lithic typology and in naming new phases which combine all sorts of different attributes. I'll be the first to admit that I don't know, verbatim, what McKern and all these other people meant with the taxonomy labels that we throw around pretty cheaply these days. What is a variety exactly, what is phase, what is type exactly? What are all these things, are we all operating according to the same rules? If we can agree on the same rules, then we should have consistency in how we map the stuff out. I mean the fact that there's check stamped up there [in North Carolina], and down there in Florida, and you open up Jerry Milanich's Florida book, and he's got a big circle around Deptford, I mean, that means something. The fact that there are check stamped people all over the place. What does it mean and what do we all it, horizon? In lithics we call it horizon.

DAVID S. PHELPS We have never come to grips with a lot of our standard terminology for taxonomy, whether we are talking about pottery types, or horizon and tradition. We need to agree on the same terminology whether we are talking about attributes or cultures, or interconnections like horizon and tradition. While the series may mean something different to each of us. What we need to agree on, is what we as a working group for this particular area are talking about. At least will know what we are doing

DAVID G. ANDERSON That's where its very important to have feedback, consensus-building, and input from a lot of you folks. If there are differences in terms of terminology, we just spell that out very clearly. [For example] Deep Creek, whatever, is also known as such and such at Mattassee Lake, where it was described as this, and at the mouth of the Savannah it is called that. As someone said, how these sequences interdigitate, how these taxonomies interdigitate. We are not going to come up with a standardized revised taxonomy for this, I'm not looking for that at all [actually, I think I am]. What I am looking for, though, is consistency in describing and reporting things, to have some basis so that we understand what we are all talking about.

KENNETH E. SASSAMAN That sounds like contradictory statements. We want to have systematics for looking at systems, but we don't want to revise the way we describe things.

DAVID G. ANDERSON No. Where there are places where it can be done and it should be.

KENNETH E. SASSAMAN Then is our goal in the next few years, and with another conference or two to arrive at systematic language?

DAVID G. ANDERSON We are never going to be perfect, but at least we can consistently record paste or surface finish.

JOEL GUNN You might have consistent attribute descriptions, but not consistent series and phases and series descriptions. They have to be flexible.

TOM LILLY I think that can be mapped now, too. If you have two overlays of say, temper and surface finish, where those intersect in various regions, well then there is where we can decide what we shall call it.

JOHN S. CABLE I think paste is one of the most important things to agree on with all this description. We are not so bad regarding surface treatment, but I don't think we are very good at describing grain size or paste. I think we can all agree on using a particular scale, such as the Wentworth scale, which a lot of people use, if we use that, when we tum in our descriptions, people will be able to know what we are talking about.

DAVIDMOORE That's only half the problem though. That has to be settled first, but when you have Dr. Phelps using series to talk about geography and time and space, and Chris who uses the term series as a techno-functional representation. If we can standardize how the term series is going to be used.

JOHN S. CABLE Series has never been defined yet.

DAVID MOORE It seems like a fundamental thing we could accomplish.

DAVID G. ANDERSON That's something John Cable and I have been wrestling with. As John correctly noted, what I tried to do at Mattassee Lake was a series-variety system, instead of a type-variety system, because I didn't want to throw out fifty years of Thom's Creek and Refuge and Wilrnington, and those things. John has come up with an alternative where he focuses on either paste and surface finish criteria. I think what we are going to have to do is explore things like this. I honestly don't know what the solution would be at this point. I think we really need to see your contributions, really think about them, get feedback, go back and forth, and hopefully come up with something that can do the greatest good for the greatest numbers.

JOHN BYRD It seems like we can have our cake and eat it to, to some extent, if we think in terms of adding or expanding our current taxonomic system. Because what we are doing now is we are defining series like Deep Creek which is sand tempered and cord marked in eastern North Carolina dating from say 1000 B.C. to 300 B.C.. Sand tempered cord marked pottery that looks like Deep Creek that dates from A.D. 800 in South Carolina is not Deep Creek. It is just not, at least as my understanding about the series. But is still sand tampered cord marked and looks just like Deep Creek. We have a need, like DePratter said, to split and split more. We need to split a lot more, because there's all this variation that is patterned geographically and temporally down here, but at the same time we need a separate way to lump, that is separate from our series that is defined based on time and space and context. Something that is sand tempered and cord marked, whether it's from 300 B.C. in North Carolina or A.D. 100 or A.D. 1000 in South Carolina, it doesn't matter, they share the same attributes, so they can be lumped, by attributes, hopefully by a separate type of taxonomic unit than the series.

KENNETH E. SASSAMAN You are describing what Chris is doing, except Chris chose to use the term Deptford.

JOHN BYRD Which brought in the confusion, because he uses Deptford as a series.

KENNETH E. SASSAMAN If he had called it something altogether new and different, and said this is a technological tradition?

CHRIS ESPENSHADE We don't want to say that this is a series that runs up to the border where Dr. Phelps work starts, and it changes, but technologically its the same, but its called Deep Creek because we think its different people. He thinks its Deep Creek and I think its Deptford.

JOHN S. CABLE That's where we run into problems because we don't know that its the same or not. We don't know that.

JOEL GUNN Can't we devise a type name that doesn't automatically load for techno-functional or style, like some people say Deptford and the second term has to always to do with style and the third term always has to do with paste.

DAVID G. ANDERSON That's part of what John has been working with his approach to taxonomy on the central coast, where he puts emphasis on paste as one of his designations, and some of my varieties at Mattassee Lake were based on different paste distinctions. In some way,

whether we give it a formal variety name, or we call it Refuge Dentate Stamped with grog paste, and have a consistent criteria for that, we should acknowledge that variability. What I think we can agree on here is that we need to have consistent attribute-based sorting criteria, that we all need to be using the same paste (i.e., Wentworth-based)categories as descriptors, and when we talk about surface finish, we should have consistency, when we talk about cord marked, what do we mean by that, and have examples in type collections somewhere.

We can do that, so we can at least communicate about what it is we are finding; it is a cord-impressed surface finish with a certain type of paste, and we may want to provide a suggested series of rim attributes for people to measure, and maybe places to record thickness, and to use Munsell for color, and make suggestions like that. And say, when you do work here, and you find a reasonable sample, like a few hundred sherds, why don't you give us the attributes for them, and then, if we don't have a taxonomy worked out, you can do whatever you want. Although ideally we will be able to take those attribute combinations and put them into categories, like we can for 70-80 percent of what we find now, and we are very happy about; its the other 20-30 percent that is giving us heartburn.

PAUL BROCKINGTON This discussion is real interesting and giving me a flashback to the kind of things we talked about in graduate school. Many of us read the same stuff, by Spaulding and others. Are types discovered in the data, or are types created by a scientist trying to solve a problem or test a theory. We think we are a lot more sophisticated than those guys in the 1950s, but they were struggling with a lot of the same issues. I think we are maybe not much more sophisticated. I think we do have an understanding after 30 or 40 years of arguing that there are some types in the data, and we need to discover some of these things, and work it back to the theory and refine it and come up with new things. I don't think we will ever be able get to a typology that lasts, because our theories are always changing. Throughout the two days of discussions we have seen that our typologies work for some things and not for other. Our theories are in ferment. Chester is interested in ceramic typology because he wants to trace out how people moved around and where they lived; other people are interested in ceramic typology so they can understand how people were making pots, and whether women are making this or that tradition.

We are interested in these things for different reasons, so I don't think we can expect our typology, which is really a definition of our variables, to be one thing that is going to solve all of these theoretical issues. So I think we need to recognize that we are never going to ever get to solutions, some kind of Wentworth scale of ceramics that is going to last, or Moh's hardness scale. It makes the point that we need to go back to attributes, and work with the attributes we've got, and three years from now somebody comes up with a new attribute or a way that breaks up old attributes. If we look at the attributes that we are studying now, that Joel's measuring in his factor analysis , or that Chris is looking at—technological and manufacturing attributes added to stylistic—the stuff that John and David were talking about, how the grooves in incising were made, those are all new attributes that you are looking at because you are interested in new theories. I think we are just going to have to face the fact that every so often we are going to have to get together and show the sherds and talk about new attributes. We can set up a flexible typology system, but we ought to know that we are not going ever be able to agree, that its always going to be an evolving process.

CHRIS ESPENSHADE I disagree. There are all kinds of different analyses that we can do, with different attributes to look at, if I'm writing something techno-functional. But at the basic culture-history-typology-chronology level, we should be able to agree and specify what our best guesses at this point are for attributes, and we should all be able to say that we are all going to use the Wentworth scale.

PAUL BROCKINGTON I agree we can specify variables.

CHRIS ESPENSHADE And that should work out to where we can get chronology, and our chronology should become more and more detailed.

KENNETH E. SASSAMAN If that's what we agree that we are doing, that we are doing culture-history and chronology, it is useful.

CHRIS ESPENSHADE That is the baseline we need before we can do these other things.

DAVID S. PHELPS You can't do the rest without good firm foundations. The standard type description as recommended by the Southeastern Archaeological Conference includes a little segment toward the end where you talk about geographic and cultural relationships, which if everybody had thought about that, we'd probably have a lot fewer problems than we have. When you write a type description, you have to write it in the sense of association with other things in time and space. That's part of the description, it correlates with what you've found with what everybody else has found.

KENNETH E. SASSAMAN What is the definition of a type?

DAVID S. PHELPS Are you talking about arrowheads, or pottery?

KENNETH E. SASSAMAN Pottery in the Southeast. Did they define it in the southeast?

DAVID G. ANDERSON At the first Southeastern Archaeological Conference meeting in Ann Arbor [in 1938] they basically came up with the system that we have used for 50 years.

[Somewhat confused discussion of the terms "type" and "variety", omitted with the injunction to read the original SEAC newsletter, and papers by Phillips on the type-variety system.]

DAVID G. ANDERSON Chester has made a real good suggestion that, basically, since we have a number of geographic areas here, what we would like you folks to do, when you submit information to us, if there are more than one or two people working in an area, like John and I will work on the central coast, with Mike Trinkley and Chris, we would like you to coordinate among yourselves in your area, and try to work out agreement among yourselves, before you send it to us, or if you have to, send us your two or three competing viewpoints. That will give us a basis for believing that we are getting what you believe to be a consensus for that area. Is that approximately what you said?

CHESTER B. DEPRATTER Yes. Rather than you guys having to sort it out. You're going to get all this material from the people that are familiar [with it], and your going to be stuck with [trying to figure] out what is [going on].

DAVID MOORE It might be appropriate over the next year to have geographical meetings, covering more restricted areas, passing sherds around, going over each type.

JOEL GUNN One thing that has emerged from this is [an appreciation for] the last section of the type description, where you describe the geographical distribution; that doesn't come out of you sitting in your lab late at night, that comes from one of these discussions where several people are looking at things from places you might not think of.

KENNETH E. SASSAMAN When those guys set [the system] up they did that all the time... driving around in big Cadillacs, looking at sherds.

JOEL GUNN They had fewer sherds to look at!

KENNETH E. SASSAMAN It is probably true that James Bennett Griffin looked at everyone's stuff, everyone's stuff. Its impossible now. When we initially started doing this we thought about just bringing the central South Carolina coast, but its been really useful to see the North Carolina people here.

JOEL GUNN The modern approach is to scan in the sherd and have everybody look at it.

KENNETH E. SASSAMAN Well, is everyone on the Internet?

DAVID G. ANDERSON Unless anyone has any pressing things they want to talk about, I think we've come to the end... Well, Chris...

CHRIS ESPENSHADE I have just two things, they are short. One, I have put a sign up over here in hopes of getting some consistency in the way people describe paste. I make a sets of briquettes, clay bars, I take commercial clay and then I add temper, aplastics of known size, by the Wentworth scale. So you have, if you are looking at grog, you pull out a bar that has grog in it, and you say, Oh, this what granular size grog looks like, this is what very coarse grog looks like. You can take a fresh break on your bar, compare it to your sherd, put it under the microscope if you want to. The same thing with quart aplastics. To me that would be a great help. Eliminate some of these terms like grit and sand, where we don't quite know what sand or grit means, and everybody is using it differently. We need to do the same thing for grog, and not treat it like a consistent thing, which it is not. I've put a price of $10.00 for each set of bars.

JOHN S. CABLE How about bars that would show us percentage of clay inclusions?

CHRIS ESPENSHADE Lets start with this... this is baseline, just a beginning.

JOEL GUNN The amount of material in your bars that you use now, does that constitute something that you have known, like 10% of the bulk of the paste is inclusions.

CHRIS ESPENSHADE Its just something, that will look real good under the microscope, that you are going to see real well when its broken. Its totally subjective.

JOEL GUNN What kind of a standard will these bars represent now in terms of quantity of inclusions? If you can say that 10% of the volume is inclusion, than we can say it is less dense or more its dense than this standard bar.

CHRIS ESPENSHADE We can consistently measure that way.

DAVID MOORE That's a lot easier to deal with than 15-20% versus 30-35%.

DAVID G. ANDERSON I think that as a result of what you come up with, what you all contribute, we can give Chris feedback. We'd also like to see a few bars with minimal steatite tempering; we can provide him direction; it would be nice to have some of these other categories as well. Pebble vs. rose quartz vs. other things. You might wind up having a collection of 20-30 bars when you are all through, but I think it will be just fabulous. If we could then replicate them and put them in ten or twenty schools around here, it would probably do wonders for our literature. I think [what you are doing] is great, Chris, and we will try to provide you guidance. You said you had another thing to say, too?

CHRIS ESPENSHADE I just wanted thank you guys for organizing this (applause). David, and John Cable.

KENNETHE. SASSAMAN And Niels Taylor for getting $5000.00 to put this together. [applause] and Chris Judge for local arrangements. [applause]

CHRIS ESPENSHADE ...and Archives and History. We needed this. This is a real important thing. This has been money very well spent, and I appreciated being invited

LESLIE M. DRUCKER Its been more than ten years since the last one.

DAVID G. ANDERSON And half of us weren't talking to each other at that one! [Laughter] Well, this has been really great fun, and again, we will be in touch, and everybody travel safely. Remember, tip off [for round two of the ACC basketball tournament] is at 4:00 o'clock.

The meeting broke up at about 2:30 pm, and everyone left for home, taking the ceramic collections from the Carolinas that had, for the first time, been brought together and examined by a large proportion of the researchers working in the two states.

SOUTH CAROLINA PREHISTORIC POTTERY:

REFLECTIONS ON THE 1995 CONFERENCE AT GEORGETOWN, S.C.

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SOME THOUGHTS ON CONSISTENCY IN POTTERY DESCRIPTIONS

The March 1995 workshop on South Carolina pottery demonstrated a need for greater consistency in pottery analysis. The ways in which terms are defined and analyses are pursued needs to be consistent if regional comparisons are to be possible. This is not to say that everybody should have identical analyses, and that no other analyses should be pursued. Rather, there should be a consensus definition of major terms used in the basic description of pottery samples. Before issues of types, series, and technological traditions can be adequately discussed, the researchers must be able to understand and utilize each others' data.

An effort has already been made to convince regional researchers to utilize the Wentworth scale in describing aplastic content (a.k.a., temper). If regional researchers will consistently use this scale, we will be able to avoid ambiguous terms such as grit, sand, or gravel. The Wentworth scale describes material size by diameter:

Fine	0.25-0.125 mm
Medium	0.5-0.25 mm
Coarse	0.5-1 mm
Very Coarse	1-2 mm
Granule	2-4 mm

At the Georgetown meeting, I offered sets of bars for evaluating aplastic size. The bars were made of a fine commercial clay with aplastics of known size added. I term these SHPO bars to recognize the SC SHPO sponsorship and participation by the SC and NC SHPOs at Georgetown, and to emphasize that the SHPO should encourage research approaches that will improve regional archaeology. I shipped eighteen sets of SHPO bars, and 1 am glad to report that their use has been recommended by at least one SHPO archaeologist. I know that several of the key contract firms are using the bars, and I am considering making similar bars for shell-tempered bodies. The bars facilitate both macroscopic size sorting (e.g., during initial sherd sorting) and microscopic description during detailed analyses.

The terminology surrounding aplastics is also prone to vagueness. First, use of the term temper generally implies aplastics intentionally added to a clay body (Shepard 1980). In the Southeast, temper has been bastardized to include intentional additions and natural inclusions. Whenever possible, researchers should state what temper means in their reports. If you can demonstrate that an aplastic is intentionally added (e.g., crushed quartz in the Doerschuk Yadkin material), this should be noted. Likewise, if there is evidence that the aplastics are natural inclusions, this should be stated.

Researchers should avoid the use of "sand" or "grit" as a temper type. These terms have size implications in some systems, and their use can be misleading. Instead they should be labeled by Wentworth size class and material (e.g., fine quartz, coarse feldspar, very coarse indeterminate rock).

Grog is a term borrowed from modern potters and applied to many tempers including ground sherds, natural or incidental inclusions of fired or unfired clay, and natural iron inclusions. This is relatively simple to remedy by using the following:

> sherd-tempered for bodies with discernible crushed sherds (i.e., you can see sherd surfaces);
>
> grog-tempered: for bodies with distinct clay lump inclusions
>
> clay-tempered: for bodies of small or extremely weathered sherds in which an indeterminate temper (sherd or lump) is present.

Researchers should be careful to note if they believe that grog is a purposeful addition or a possible natural inclusion. I personally believe that Native Americans in South Carolina were not regularly preparing sherd or grog tempers any smaller than medium on the Wentworth scale. Medium and larger grog/sherd tempering provides the technological advantages without the extra effort needed to grind to smaller sizes. Researchers should be cautious about positing intentional addition of fine (or smaller) sherd/clay/grog.

I do not feel that sparse, fine to medium-sized lumps of highly ferrous material should be called grog, as Cable has apparently done with the Refuge series in Francis Marion Forest. His broad use of the term grog, encompassing crushed sherds in Wilmington and iron-rich lumps in the Refuge, seems to have biased his reconstruction of chronology and ceramic evolution.

SUGGESTED MINIMUM ATTRIBUTES FOR DETAILED CERAMIC STUDIES

The following attributes can reasonably be expected to have value in ceramic studies. I would encourage the SHPO to request the study of these attributes in South Carolina data recovery analyses. This is a minimal list and researchers should be encouraged to examine other attributes that they feel may prove important.

Aplastic type, shape (angular, subangular, subrounded, rounded, irregular, or organic), size (Wentworth), and density (count per defined view field) should be recorded. Minority aplastics should also be noted. Because Native Americans did not have standardized screens, minority aplastics can be important in recognizing the similarity between coarse quartz (very coarse minority) and very coarse quartz (coarse minority). In addition, minority aplastics are often natural inclusions that are linked to the source clay.

The degree of carbon retention should be recorded as a percentage value. The carbon retention is examined on a fresh break and comprises the percentage of the core cross-section composed of black or dark gray color. This attribute and the next can be used to recognize patterns in firing.

Core configuration refers to the major color layers within a core cross-section. The layers are described from the vessel interior to the exterior, again on a fresh break. Examples include homogeneous dark gray, tan-dark gray-tan, brown-red. Core configuration may reflect the orientation of the vessel during firing, the atmosphere of the firing, the intensity of the firing, and the post-firing use of the pot.

The dominant paste color should be recorded. Paste color is related to the clay and aplastics, and the temperature, duration, and atmosphere of the firing. Shepard (1980:217-218) observes that reduced firings tend to generate dark gray, light gray, or grayish brown bodies, while oxidized firings tend to yield yellows, tans, buffs, or reds.

Coil breaks should be recorded as present or absent. For most ceramic periods in South Carolina, it is not necessary to demonstrate that coil technology was used. Coil breaks are instead quantified as a general measure of how well the coils were melded during the forming of the vessel. Coil break frequency may be related to vessel strength, but this has not yet been demonstrated. Regardless, coil break data have been shown to vary by type/series.

Sooting should be recorded as present/absent. Sooting (excepting obvious post-breakage sooting) indicates vessel use over an open fire (Skibo 1992). As such, this attribute can be important in addressing form-function questions.

Use abrasions should also be recorded when present. These generally occur on the interior of a vessel, the apparent result of stirring/mixing (Hally 1983; Skibo 1992). This attribute also can be linked to form-function (storage vessels generally do not get stirred).

Vessel thickness should be measured 3 cm below the rim. This is not a magic number, but it is sufficiently below the rim to avoid measuring rim-specific phenomena. This measuring point has been used by myself, Ken Sassaman, and others (Sassaman 1993a, 1993b; Blanton et al. 1986; Espenshade et al. 1994a, 1994b; Espenshade and Brockington 1989); accordingly, there are good comparative data for many time periods. Thickness will be related to vessel function, clay attributes, and technological tradition.

Shoulder form and inferred vessel form should be recorded when feasible. The methods description should include the parameters followed in determining which sherds were sufficiently large to infer vessel form. All large rim sherds and vessel fragments should have their profile illustrated. When feasible, rim diameter should be measured. Because vessel morphology and size have been shown to reflect the primary intended functions of the vessel, the recognition of vessel forms can provide important data for site interpretations (Braun 1980; Hendrickson and McDonald 1983; Smith 1985).

Interior surface treatment should be described. This attribute sometimes can allow type/series distinctions to be made on sherds with plain or obscured exterior surface decoration.

Rim form should be recorded, distinct from shoulder form. Furthermore, the rim production step that led to the rim should be recorded. There are many ways to form a square rim including cutting, smoothing, scraping, paddling, burnishing. While rim forms often cross-cut types/series, rim production steps tend to be more sensitive.

WHAT IS A SERIES? WHAT DOES IT MEAN? HOW DO WE DEFINE ONE?

The Georgetown conference featured many differences of opinion, and it is clear that there is no consensus regarding series. In this section, I offer my opinion on what a series represents and how we can recognize a series. This definition is not the only possible opinion, but I feel it makes sense. I should note that my perception of a series has undoubtedly been influenced by the sites and collections I have examined. Throughout my career as a ceramicist, luck seems to have thrown me into transitional zones between major culture areas. I have looked at the Indian River area (transitional between St. Johns and Glades areas of Florida), the Kings Bay/Jacksonville area (transitional between the St. Johns and Deptford coastal areas), 38SU83 (transitional between Yadkin and Deptford areas), Minim Island (transitional between Deptford and Deep Creek areas), and south central Puerto Rico (transitional between the Vieques Sound and Mona Passage culture areas). I have come to strongly believe that only detailed technological and stylistic analyses can make sense of such transitions, and that the concept of series is critical to the analyses.

I would argue that a series represents the material manifestations of a well-established, well-adapted set of technological behaviors. A series is a successful local technological tradition. It is recognized by general consistency in aplastic content, firing, vessel forms, thickness, interior surface treatment, rim production steps, and vessel construction details. Allowing for the variability inherent in the household production of low-fired pottery, a series is a recognizable patterning of attributes. Specific attributes may overlap with other series, but the full tradition will be distinctive. A single attribute is not sufficient to define a series. For example, not all technological traditions that have some sort of clay/grog/sherd aplastic should be considered members of a given series; other technological differences should allow the separation of series (e.g., Wilmington and St. Catherines in the Savannah area). Minor variability in available clays and aplastics will not cloud a series. Importantly, it should be possible to identify and defend a series no matter what has been the history of regional research. Whether a series has been called, for example, Deep Creek, Deptford, or Deptford/Deep Creek, detailed analyses still allow the recognition of a single underlying series.

A series definition specifically does not consider surface decoration. Although there are generally only a limited number of surface treatments that occur within a given series, a given decoration may cross-cut series from different periods. As a technological entity, a series should not consider surface decorations.

A series must have temporal and spatial continuity. In the past, a focus on temper alone has led researchers to attempt to link series that lacked temporal and spatial

continuity. There will always be some similarities between the various series of an area due to the parameters/limitations of available clays and aplastics, but if similar technological manifestations are separated in time and/or space, they should not be assigned to the same series.

Series did evolve through time. The recognizable series in South Carolina, to date, show long periods of stability truncated by apparently rapid change. This appearance may be due in part to methodological approaches (pigeon-holing sherds into existing types/series), but it is probably truly characteristic of entrenched technologies.

The longevity of series and their apparently rapid change raise the issue of why a series ever changed. This is an area that has received little attention, except perhaps for Sassaman's work with the Stallings and Thom's Creek series. By the argument presented here, a local series should not undergo massive change unless one or more of the following occurred:

1. there was a major change in the availability/accessibility of key resources such as clay sources or fuel.
2. there was a major shift in the technological demands of the product, such as bigger, more complex, or more effective pots were needed.
3. a significantly better technology was introduced from outside the area (or discovered) that greatly increased the effectiveness of pottery manufacture or use.
4. a major technological change was necessary to demonstrate allegiance on a grand scale to another area, as possibly seen in the acceptance of shell tempering in some areas of Georgia in the Mississippian period.

For most of the series shifts in South Carolina, we have no idea why the change occurred. Although nobody has done the necessary experimentation, it is difficult to believe that Wilmington pottery was technologically superior to Deptford ware. Furthermore, the longevity of most series suggests that the technological traditions were successful in providing suitable pots.

In terms of prehistoric culture, what does a series mean? I have become increasingly convinced that series served as the stages upon which cultural interactions were displayed. It has long been recognized that many surface decorations were often produced within a single technological tradition. Deptford Plain, Deptford Simple Stamped, Deptford Cord Marked, Deptford Fabric Impressed, and Deptford Check Stamped are examples within the Deptford series. In addition, the presence and prevalence of surface decorations changes through time and space. Quite simply, the series generally is much more stable than decorative traditions, and the series is much less prone to change due to extra-regional influences.

In several papers and publications (Blanton et al. 1986; Espenshade and Brockington 1989; Espenshade 1986,1990; Poplin et al. 1993), I have suggested that the prehistoric pottery of South Carolina (and elsewhere) has at least two information packets. The series, as defined above, reflects the technological tradition of the group in which the

ware was produced. This is logical since a series represents a local adaptation to the resources and needs of the group. The surface decorations, I argue, reflect a different set of information. I have posited that the surface decorations mark the decorative tradition of origin of the potter. For example, the presence of a classic Deptford surface decoration (check stamping) on a classic Yadkin paste (tempered with coarse to very coarse crushed quartz) at Doerschuk indicates that a potter originating in a Deptford-linked group became a member of a Yadkin-linked group. The potter's membership in the new group is marked by the use of the local technological tradition (the series), and their affiliation of origin is marked by the surface decoration with which she/he marks the pots. Further, I have argued that this system was based on the need to maintain (and materially signify) links within and between major culture areas. These links limited the potential for frontier conflict and subsistence short falls.

To return to the Early Woodland example, I would argue that the time-space distributions show a slow acceptance of Northern and Middle Eastern (to borrow Caldwell's terms) potters in the local Deptford (Southern Appalachian decorative) technological tradition. This interaction was not unidirectional, as evidenced by Yadkin Check Stamped pottery in upper South Carolina and North Carolina. However, the dominant flow of people, over hundreds of years, was to the south.

While many (most?) of the conference participants would probably be hesitant to specifically agree with this model in print, the model is inherent in most of our approaches. One of the major products of the conference is to be time-space plots of types (surface decorations and series). If we don't feel that there is important cultural information in these distributions, why are we plotting them? Most of us have been well schooled and practiced in using types and series simply for temporal control, and we tend to ignore the more cultural side of the phenomenon. Occasionally we mention Caldwell's (1958) work (see also Anderson 1975) but rarely do we attempt to really address what the pottery meant and what it can tell us. If we look at the spatial and temporal distribution of series and types from the perspective offered above, perhaps much of the confusion will clear, and perhaps we will see that we have the data to begin reconstructing patterns of inter-regional interaction in South Carolina prehistory.

EXPLICITNESS IN BIASES

There are innumerable biases that enter into the processes leading from pottery use to archaeological recovery and analyses. These biases are often given no mention in ceramic studies, yet undoubtedly affect the recovered assemblage. Briefly, some of the important biases include:

1. Generally, only broken vessels enter the record at a site. There are exceptions (cached vessels, burial urns, houses that burned with vessels inside). We have little way of knowing how many whole vessels were transported to another location at the end of an occupation.

2. Vessel breakage rates will vary depending on the technological attributes of a vessel and its use. The frequencies of recovered types and/or vessel forms do not necessarily reflect the use assemblage during site occupation.

3. Sherd breakage rates will vary with location within the site and duration of exposure. All other things being equal, older sherds are more likely to have been damaged than more recently deposited sherds.

4. Major portions of broken vessels were often redeposited beyond the daily activity areas. The sherds we find in non-midden contexts often represent only an isolated sherd that was missed by the general site clean-up. In other cases, all of the sherds may have been moved from an activity area. Again, our recovered assemblage does not necessarily reflect the use assemblage.

5. Certain surface decorations and vessel forms are more readily recognized and sorted than others. It is extremely difficult to define minimum vessels for plain bowls, but relatively easy to define minimum vessels for Lamar incised cazuelas. When an analysis is done at the vessel level, it is unlikely that the minimum vessels or sample vessels are representative.

OTHER AVENUES OF POTTERY RESEARCH

There is little dispute that pottery serves as a valuable chronological indicator in South Carolina and its neighboring states. Researchers in the past have expended great effort in typing sherds and describing their attributes. This dual focus of culture history and typology has limited investigations into other areas of ceramic research. In this section, I offer some basic questions that can successfully be addressed through pottery analysis. I would suggest that data recovery investigations should move beyond typological descriptions, into more processual issues. One of the major benefits of the Georgetown conference should be a rethinking of ceramic studies and experimentation with different approaches. If we simply choose to focus on typology and chronology, the benefits of our analyses will soon diminish. There is a clear parallel between the state of Woodland shell midden archaeology, as discussed in the 1994 conference at Georgetown, and the state of regional ceramic analyses. In both cases, there should be a call to move beyond the traditional and routine analyses and approaches.

The recent work at Bass Pond Dam site underlines the risk of stagnation in pottery research. The Chicora Foundation recovered over 4,500 Thom's Creek sherds, but limited their description and remarks to a few pages (Trinkley 1993:160-162 and 172-177). The basic message was that the Bass Pond Dam material resembled the existing type descriptions. Was there no meaningful question that could be asked for a collection of 4,500 sherds? Is routine comparison with published type descriptions all that is appropriate at the data recovery level of investigation? I think many regional researchers would have been interested in knowing the numbers, types,

and sizes of constituent vessels. Consideration of use alteration would have been a major contribution. Attempts to link the material to local clay sources would have been valuable. When a good sample is in hand, shouldn't we be obligated to move beyond basic typology?

Presented below are some general issues. Obviously, more detailed research questions can and should be crafted relative to the context of the specific site to be studied.

Linking clay sources with series. With the exception of some informal experimentation by Trinkley (1973) on Woodland pottery and some of Espenshade's research with Colonoware in Beaufort County (Kennedy et al. 1994; Eubanks et al. 1994), very little effort has been made to examine clay resource selection. If basic types of clay sources can be linked to particular series, we could better address questions of regional variation and technological change. A basic start would be if archaeologists began collecting samples of suitable clays when they encounter them on survey or during excavation. Garrow & Associates is willing to store the samples. The archaeologists would simply need to record the location and depth of the deposit, and then gather a small (i.e., 1 liter) sample. As samples accrue, the data base will be available for any researcher to address clay resource questions. We may find, for example, that pottery production was a seasonal pursuit (as in many ethnographic communities), and defining likely clay sources may allow us to link elements of the local seasonal round.

Decorative mode/motif analysis. Several researchers in the region have begun to address the cultural information contained in the spatial/temporal patterning of specific decorative modes within a given type. Although little seems feasible with check-stamped, simple-stamped, or cord-marked pottery, the complicated stamped pottery of the Mississippian and the wide variety of surface treatments in the Stallings and Thom's Creek series should be suited to such studies. By focusing on minor variations within a type, we may be able to recognize intra-site and inter-site patterning relevant to questions of site use. Sassaman has suggested that decorative modes (e.g., type of stylus) may be temporally diagnostic within the Stallings series. In addition, a focus on decorative modes may provide evidence regarding the number of potters that produced the assemblage. For example, it is relatively straightforward to determine if the potter was analytically left-handed or right-handed with jab-and-drag decoration.

We have very little knowledge about how decorative modes varied within sites, and the significance of such variability. Saunders (1986) has suggested that social units can be discerned within Swift Creek sites on the Georgia Coastal Plain, based on the motif elements used in their paddles. A similar analysis of pottery from shell ring sites might prove valuable in addressing the evolution of shell rings.

Addressing pottery use and disposal behavior. Pottery is generally taken for granted as a convenient artifact for dating deposits. Classically, South Carolina archaeologists, myself included, have not really thought about how pots/sherds ended up in a deposit. The term "pot bust" is commonly used, but does anybody really believe that a pot bust represents a whole vessel that was broken and left

where it was broken? Cross-mend analysis is common in lithic artifact studies, but horizontal and vertical patterns of cross-mending are seldom addressed for sherds. John Cable and Joel Gunn have begun to address issues regarding shell midden accumulation, and it would be natural to address ceramic refuse as well.

Archaeologists often comment on the "few vessels represented" without giving any consideration to their vague premises about rates of deposition. What can the number of pots represented at a suspected oystering station tell us about the intensity or duration of site use? Of what relevance are data on ethnographic pot longevity (e.g., David 1972; David and Hennig 1972; DeBoer 1974; DeBoer and Lathrap 1979; Foster 1960; Longacre 1985)? Similarly, shouldn't we be paying more attention to ethnographically described patterns of ceramic refuse disposal (e.g., Deal 1985; Murray 1980)?

In addition to the ethnographic approach, another means of addressing pot mortality rates would be to examine suspected single-family, single-episode residential sites. There are sites in the coastal zone that most archaeologists would probably agree originated from a single family group living at a location for several months. When the amount of shell and bone, the types and frequencies of features, and the variability of various artifact classes all indicate such a site, we can then look at the vessel assemblage.

Likewise, it is time to focus more carefully on how pots were used. Sassaman (1993a) has proven the utility of such a focus in his studies of the early pottery of South Carolina. Attention should be paid to use alterations (sooting, interior abrasions) and performance attributes (porosity, strength, thermal shock resistance, heat conductivity, vessel form). We need to move beyond a simplistic notion that all pots were for cooking.

The use studies may prove extremely relevant in addressing situations of apparently contemporaneous production and use of two series (e.g., Stallings/Thom's Creek along much of the coast, Thom's Creek/Refuge at Minim Island, Deptford/Wilmington in Beaufort County). These co-occurrences run counter to the straightforward link we would like to see between cultures and material culture. The co-occurrences begin to make sense if the different series had different functions (for a similar study in Georgia, see Saffer 1979).

Pottery production sequences. In demonstrating pottery-making at field days and festivals, I have recognized that the general public is very interested in knowing how the Native Americans did things. With an acknowledged need within our discipline to make archaeology more accessible to the general public, I think that archaeologists should reconstruct the pottery production sequence (as well as shell/bone tool production, lithic technology, etc.) in popular reports and posters/displays. This will involve some efforts at identifying the types of clays used, and some replication and/or refiring of sherds to reconstruct firing temperature, oxygen atmosphere, and duration. Our reports often have the necessary data, but rarely do we see reconstructions of the process.

Context of vessel production. It is extremely rare that archaeologists can argue strongly for on-site production of pottery. The evidence is likely to very limited, such as a pot full of unfired clay from Minim Island (Espenshade and Brockington 1989). Archaeologists should be aware of possible indicators including: raw materials for tempering; unfired coils or vessels; tools (shells, pebbles) for burnishing, incising, smoothing, or scraping; broken vessels with ground-down rims that may have been used as supports for drying vessels; and spalls. Spalls are most commonly the result of overly fast firing of a vessel, and they can be considered good indicators of on-site firing. Spalls are generally thin, lanceolate to ovate fragments of fired pottery with intact exterior surfaces and a rough interior surface. Spalls commonly fall directly into the fire, and they often are very well fired, though poorly oxidized. They are easily misidentified as cortex flakes of some unidentified rock. In the absence of the spalled parent vessel, the spall can easily be missed.

TIME-SPACE POTTERY DATA
SITE: 38SU83
DATE RANGE: 600-200 BC

CONSTITUENT SERIES/TYPES:		
	Yadkin Fabric Impressed (n=325)	35%
	Yadkin Cord Marked (n=346)	37%
	Yadkin Simple Stamped (n=154)	16%
	Yadkin Check Stamped (n-115)	12%

ATTRIBUTES OF SERIES/TYPES: Yadkin series had a high density of medium to very coarse sub-angular quartz aplastics. Rim are either square or round, either smoothed with excess to the exterior or paddled with the excess to the exterior. The series averaged 9.2 mm in thickness. All vessel forms were very minor variations on a conoidal-based, deep bowl. Smoothed interiors are most common. Dark gray paste colors are best represented, and homogeneous gray core configurations are prevalent.

NOTE: This material could also be argued diagnostic of the Deptford series. The type material for Yadkin contained crushed (i.e., angular) quartz, but the 38SU83 had sub-angular quartz (like Deptford often does). If I am, in hindsight, to be consistent, the 38SU83 material should be considered Deptford until more Yadkin-area sites have been excavated to verify that the crushed quartz was not a Doerschuk idiosyncrasy.

I hesitate to mention that the Dunlap series may also make sense for 38SU83, given the technological attributes of the material. Unfortunately, we know very little regarding the extent of Dunlap-related material in the South Carolina Piedmont and the Interior Coastal Plain.

With regards to my arguments on frontier interaction, there is a slight difference between a Deptford tradition that accepts the Middle Eastern and Northern surface decorations at a high rate (72% of decorated sherds) and a Yadkin (or Dunlap-related) tradition that accepts Northern and Southern Appalachian surface decorations at a similar rate (63% of decorated sherds). Both scenarios show a high degree of interaction with people using extra-local surface decoration modes.

REFERENCE:

Blanton, Dennis B., Christopher T. Espenshade, and Paul E. Brockington, Jr.
1986 *An Archaeological Study of 38SU83: A Yadkin Phase Site in the Upper Coastal Plain of South Carolina.* Garrow & Associates, Inc., Atlanta. Submitted to the South Carolina Department of Transportation, Columbia.

TIME-SPACE POTTERY DATA
SITE: 38GE46, Minim Island
DATE RANGE: ca. 1400 BC

CONSTITUENT SERIES/TYPES:
Thorn's Creek Incised
Thom's Creek Scraped (n=253)
Thom's Creek Plain (n=300)
Thom's Creek Separate Punctate (n=9)
Thom's Creek Jab and Drag Punctate (n=5)
Thom's Creek Finger Grooved
Thom's Creek Cockle Impressed
Refuge Plain
Refuge Dentate Stamped (n=220)
Refuge Incised
Refuge Punctate (n=42)

ATTRIBUTES OF SERIES/TYPES: Thom's Creek had fine to medium subangular, quartz aplastics. Scraped interiors were prevalent. The walls are thin (mean thickness=6.0 mm). Coil breaks not common (21% had coil breaks). Smoothed rims most common; minority treatments include shell scraped and shell impressed. Moderate carbon core retention (50-60%). Tans and grays prevalent paste colors.

Refuge had coarse to very coarse, subangular quartz aplastics. Smoothed interiors were prevalent. Moderately thick walls (mean=7.8 mm). Coil breaks present on 50% of sherds. Stamped and smoothed rims prevalent; shell impressed rims also present. High degree of carbon core retention (80-100%). Tans and grays prevalent paste colors.

NOTE: These two series co-occur stratigraphically. There are a few examples of classic Refuge surface decorations on Thom's Creek pastes, and vice versa: 2 drag-and-jab on Refuge paste, 12 dentate on Thorn's Creek paste.

REFERENCE:

Espenshade, Christopher T., and Paul E. Brockington, Jr., compilers
1989 *An Archaeological Study of the Minim Island Site: Early Woodland Dynamics in Coastal South Carolina*. Brockington and Associates, Inc., Atlanta. Submitted to the Charleston District, U.S. Army Corps of Engineers.

TIME-SPACE POTTERY DATA
SITE: 38GE46, Minim Island
DATE RANGE: 600-250 BC

CONSTITUENT SERIES/TYPES: Deptford Check Stamped (n=3,125)
Deptford Simple Stamped (n=31)
Deptford Plain

ATTRIBUTES OF SERIES/TYPES: Aplastics are generally very coarse or coarse, subangular quartz. Sherds are relatively thick (8.7 to 9.3 mm). Smoothed and smoothed-over-stamping rims are typical. Interiors are most commonly smoothed, sometimes shell scraped. Paste colors are usually red and/or gray; mean carbon core retention is 50%. Straight-shouldered, deep, conoidal-based bowls are the common vessel form, occasionally with a slight constriction or flare near the rim.

NOTE: This is a classic early Deptford mix of surface decorations. It demonstrates a well-established local Deptford tradition before the arrival of extra-local surface decorations.

REFERENCE:

Espenshade, Christopher T., and Paul E. Brockington, Jr., compilers
1989 *An Archaeological Study of the Minim Island Site: Early Woodland Dynamics in Coastal South Carolina.* Brockington and Associates, Inc., Atlanta. Submitted to the Charleston District, U.S. Army Corps of Engineers.

TIME-SPACE POTTERY DATA
SITE: 38GE46
DATE RANGE: AD 100-300

CONSTITUENT SERIES/TYPES: : Deptford Check Stamped (n=1,420)
Deptford Fabric Impressed (n=565)
Deptford Cord Marked (n=76)
Deptford Plain

ATTRIBUTES OF SERIES/TYPES: In the upper levels of the shell midden at Minim Island, the Deptford series shows the incorporation of extra-local surface decorations (fabric impressing and cord marking). These types were produced on the identical paste as continued to be used for Deptford Check Stamped. Technological and stylistic attributes were highly similar for all three surface decorations within the Deptford series at this point in time.

NOTE: By AD 100-300, fabric impressing is a strong decorative element at Minim Island. It appears not as a new series with its own technology, but as a new decorative mode that was added to the existing ceramic technological tradition. Espenshade has argued that this is characteristic of the acceptance of extra-local people into the established local culture near the Deptford frontier.

In the Minim Island report, I used the term Deptford/Deep Creek to designate the component that included Deptford Check Stamped, Deptford Fabric Impressed, and Deptford Cord Marked. This designation was simply used to distinguish this component from the pure Deptford component. It was not my intent to create a new temporal/chronological division, or imply that Deptford/Deep Creek is a suitable series name. In hindsight, I should have been more formal and followed the established Deptford chronology.

REFERENCE:

Espenshade, Christopher T., and Paul E. Brockington, Jr., compilers
1989 *An Archaeological Study of the Minim Island Site: Early Woodland Dynamics in Coastal South Carolina.* Brockington and Associates, Inc., Atlanta. Submitted to the Charleston District, U.S. Army Corps of Engineers.

TIME-SPACE POTTERY DATA
SITE: 38CH644, Buck Hall Site
DATE RANGE: ca AD 1100 (or earlier?)

CONSTITUENT SERIES/TYPES: : Savannah Complicated Stamped var. Jeremy (n=312)

ATTRIBUTES OF SERIES/TYPES: Coarse quartz aplastics are most common; fine/medium or very coarse quartz aplastics are majority in a few sherds. Quartz is subangular. Thorough firing suggested by the relatively high frequency of homogeneous red (21%) and homogeneous tan (14%) core configurations. Thickness ranges from 5.5 to 10.5 mm for 17 sample vessels, with a mean of 7.91 mm. Moderate to severe overstamping was common. Interiors were most frequently smoothed, but semi-burnished was a strong minority treatment. Stamping was most commonly combined rectilinear and curvilinear elements. Very low frequency of rim or shoulder elaborations.

NOTE: The thought that Mississippian Complicated Stamped could have been present at Buck Hall by AD 1000 has been rejected by many researchers. However, the S.C. Pottery conference revealed the presence of complicated stamped vessels at such an early date in many sections of Georgia and North Carolina. Cable's dates from the Lake Ackworth site in Piedmont Georgia indicate post-Etowah complicated stamping by AD 950. Furthermore, since Buck Hall was published, Jeff Gardner processed a corrected C-14 date of AD 1140 for similar complicated stamped sherds at a nearby Awendaw Creek Mississippian site, 38CH134. I believe that eventually a circa AD 1000 start for complicated stamped pottery in the Forest will be accepted.

REFERENCE:

Poplin, Eric C., Christopher T. Espenshade, and David C. Jones
1993 Archaeological Investigations at the Buck Hall Site *(38CH644)*, Francis Marion National Forest, South Carolina. Brockington and Associates, Inc., Atlanta. Submitted to USDA Forest Service, Columbia, South Carolina.

TIME-SPACE POTTERY DATA
SITE: 38CH644, Buck Hall Site
DATE RANGE: AD 900-1100

CONSTITUENT SERIES/TYPES: : Santee Simple Stamped (n=98)
McClellanville Cord Marked (n=29)

ATTRIBUTES OF SERIES/TYPES: Fine/medium to coarse quartz aplastics, subangular. Red and tan pastes common, with dark carbon cores generally comprising less than 50% of the sherd cross-section. Interior surfaces are most commonly smoothed.

NOTE: These two types arguably represent a single series at Buck Hall. Their technological similarities mirror their spatial co-occurrence at the site. Neither of these types co-occurred with the Savannah Complicated Stamped pottery at Buck Hall.

REFERENCE:

Poplin, Eric C., Christopher T. Espenshade, and David C. Jones
1993 Archaeological Investigations at the Buck Hall Site *(38CH644),* Francis Marion National Forest, South Carolina. Brockington and Associates, Inc., Atlanta. Submitted to USDA Forest Service, Columbia, South Carolina.

TIME-SPACE POTTERY DATA
SITE: 38CH644, Buck Hall Site
DATE RANGE: AD 250-500

CONSTITUENT SERIES/TYPES: : Deptford Check Stamped (n=126)
Deptford Cord Marked (n=12)
Deptford Fabric Impressed (n=7)

ATTRIBUTES OF SERIES/TYPES: Very coarse, subangular quartz aplastics are most common; coarse comprise a strong minority. Relatively high degree of dark carbon retention (60-70% of cross-section), Thickness averaged 9.42 mm. Interiors were generally smoothed.

NOTES: The proportion of check-stamped, fabric-impressed, and cord-marked sherds at Buck Hall (87%/5%/8%) is notably different from that at Minim Island (69%/26%/4%). Buck Hall is dominated by check-stamped with small contributions from fabric impressed and cord marked, and Minim Island has fabric impressed as a very strong minority decoration. This fits Espenshade's model of intensive frontier interaction (at Minim Island) followed by more gradual interaction within the Deptford "heartland".

REFERENCE:

Poplin, Eric C., Christopher T. Espenshade, and David C. Jones
1993 Archaeological Investigations at the Buck Hall Site *(38CH644),* Francis Marion National Forest, South Carolina. Brockington and Associates, Inc., Atlanta. Submitted to USDA Forest Service, Columbia, South Carolina.

TIME-SPACE POTTERY DATA
SITES: Beaufort County Middle to Late Woodland Middens (see Table)
DATE RANGE: AD 100-1000

CONSTITUENT SERIES/TYPES: : Deptford Check Stamped
Deptford Cord Marked
Deptford Fabric Impressed
Wilmington Cord Marked
Wilmington Fabric Impressed
Wilmington Simple Stamped
St. Catherines Cord Marked
Savannah Cord Marked

NOTES: The Mouth of the Savannah sequence does not hold in Beaufort County. The Deptford series is much longer lived than commonly expected, and there is no evidence of a replacement of Deptford by Wilmington. Instead, Deptford and Wilmington co-occur, occasionally in contexts with St. Catherines series.

The C-14 dates and associated pottery suggests seven points:

1. A grog/sherd tempered, cord-marked type is present in Beaufort County by AD 1.

2. Deptford Cord Marked is present by AD 1.

3. Deptford Cord Marked was produced through AD 1000.

4. Deptford Check Stamped disappears by AD 100.

5. A coarse, sherd-tempered type is produced at least until AD 1000. It is labeled St. Catherines by Chicora and Wilmington by Brockington and Associates.

6. Wilmington Fabric Impressed and Deptford Fabric Impressed appear circa AD 400 and continue to be produced through AD 1000.

7. Wilmington Simple Stamped and Deptford-paste Simple Stamped appear circa AD 900. This represents the second occurrence of a Deptford Simple Stamped type in Beaufort County.

As more dates accrue, and as more attention is paid to technological attributes, the sequence may begin to make sense. As it stands now, it is clear that the classic Mouth of the Savannah sequence does not work in Beaufort County. The Beaufort County area saw a long period of co-existence of Wilmington and Deptford types, well into the Late Woodland.

Table 1. Recent Radiocarbon Dates for Beaufort County.

Context/Reference	Corrected Date	Associated Pottery Types
38BU2 (Espenshade et al. 1994a)		
Unit 5, Level 2	AD 680 +/- 80	Deptford Cord Marked Wilmington Cord Marked
Unit 18, Level 2	AD 90 +/- 50	Deptford Cord Marked
Unit 28, Level 2	AD 100 +/- 50	Deptford Cord Marked Deptford Check Stamped Wilmington Cord Marked
Unit 21, Level 2	AD 1+/- 50	Deptford Cord Marked Wilmington Cord Marked
38BU19 Feature 1 (Trinkley 1991)	AD 750 +/- 70	St. Catherines Cord Marked Wilmington Cord Marked ?? Deptford Cord Marked
38BU464 Feature 3 (Trinkley 1991)	AD 980 +/- 60	St. Catherines Cord Marked
38BU1214 Midden 15	AD 930 +/- 70	Deptford Cord Marked
38BU132 Unit 12 (Kennedy and Espenshade 1992)	AD 990 +/- 80	Wilmington Cord Marked Wilmington Fabric Impressed Savannah Cord Marked
38BU372 Unit 1 (Kennedy and Espenshade 1992)	AD 900 +/- 80	Wilmington Cord Marked Deptford Simple Stamped Deptford Cord Marked
38BU372 Unit 4	AD 440 +/- 80	Wilmington Cord Marked Deptford Fabric Impressed Deptford Cord Marked
38BU372 Unit 9	AD 990 +/- 100	Wilmington Cord Marked Deptford Cord Marked Deptford Fabric Impressed
38BU372 Unit 19	AD 510 +/- 60	Wilmington Cord Marked Wilmington Fabric Impressed Deptford Cord Marked
38BU1241 Unit 1 (Kennedy and Espenshade 1992)	AD 970 +/- 80	Wilmington Cord Marked Wilmington Simple Stamped
38BU832 (Espenshade et al. nd)	AD 10 +/- 50 AD 530 +/- 50 AD 600 +/- 50	Wilmington/St. C Cord Marked Deptford Cord Marked Deptford Fabric Impressed Deptford Check Stamped Wilmington/St. C Net Impressed

TIME-SPACE POTTERY DATA
SITE: 38BU2, Spring Island
DATE RANGE: 800-1100 BC

CONSTITUENT SERIES/TYPES: : Stallings Plain (n=249)
Thom's Creek Separate Reed Punctate (n=97)
Thom's Creek Jab-and-Drag Punctate (n=357)
Stallings Separate Reed Punctate (n=152)
Stallings Jab-and-Drag (n=52)
Baked Clay Objects (n=21)
Steatite slab fragments (n=6)

ATTRIBUTES OF SERIES/TYPES: The Thom's Creek series most frequently had fine, subangular quartz aplastics; medium aplastics also occurred. The series is marked by a general thinness (mean is 7.6 mm). Interiors were most commonly smoothed (contrast with scraped interiors on other Thom's Creek assemblages). Sooting present on 6 of 23 sample vessels. Bimodal data for core retention (0-30% n=11, 30-70% n=0, 70-100% n=15) suggest at least two major functions within this series.

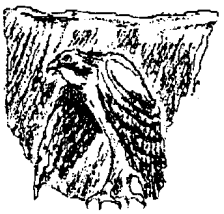
The Stalling series had fiber tempering with fine-medium quartz as a common minority inclusion. The Stallings sherds were quite thick (mean is 10.6 mm). Five of the 20 sample vessels had coil breaks. Floated interiors were prevalent, with smoothed interiors a strong minority. No sooting. Cores characterized by very high carbon retention.

NOTE: The attributes (core configuration, paste colors, sooting) of the two series and the spatial co-occurrence of Stallings series sherds, Baked Clay Objects, and steatite slab fragments suggest that the two series were being used for distinct functions. It is suggested that the Stallings series often saw use for indirect cooking, and the Thom's Creek series was often used for direct fire cooking. Their contemporaneous use at 38BU2 is interesting in light of Sassaman's (1993a) arguments regarding the spread and acceptance of new technologies.

REFERENCE:

Espenshade, Christopher T., Linda Kennedy, and Bobby G. Southerlin
1994b What is a Shell Midden? Data Recovery Excavations of Thom's Creek and *Deptford* Shell Middens, *38BU2,* Spring Island, South Carolina. Brockington and Associates, Inc., Atlanta. Submitted to Spring Island Plantation, Bluffton, South Carolina.

AN ANALYSIS OF WOODLAND & MISSISSIPPIAN PERIOD CERAMICS FROM OSPREY MARSH, HILTON HEAD ISLAND, SOUTH CAROLINA



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AN ANALYSIS OF WOODLAND & MISSISSIPPIAN PERIOD CERAMICS FROM OSPREY MARSH, HILTON HEAD ISLAND, SOUTH CAROLINA

INTRODUCTION

The Osprey Marsh site (38BU921) is a Woodland and Mississippian site located near the west end of Hilton Head Island, Beaufort County, South Carolina (Figure 1). It was excavated between March 7 to April 15, 1994, by Garrow & Associates, Inc. for the South Carolina Department of Transportation. These excavations were part of the Cross Island Expressway project (Roberts 1993). The site was originally identified in 1987 (Johnson 1987) and further evaluated two years later (Johnson 1989). A mitigation plan (Roberts 1993) was subsequently devised for the site as it was felt to qualify for the National Register of Historic Places.

The project required an explicit and broad interdisciplinary iramework to organize the efforts of many specialists including ceramicist, lithicut, malacologist, soil scientist, and floral and faunal specialists. As a part ot the overall perspective on the site, an extensive program of ceramic analysis was undertaken. 'The goals of the ceramic analysis included reevaluation of the existing types and a search for previously unidentified types. A factor analysis of ceramic traits was the means by which this was accomplished. This strategy was inspired by the many questions that have arisen in recent years regarding typological, chronological, and techno-functional variations in the coastal ceramic assemblage.

PHYSIOGRAPHY

Hilton Head Island (Figure 2) is in Beaufort County, which flanks Port Royal Sound on both sides. The island lies west of Port Royal Sound, and St. Helena Island, important in an early European settlement, is east of the sound. Hilton Head Island is one of many sea islands, or Beach Ridge barrier islands, that line the Atlantic Coast of the United States (Brown 1975; Kana 1984; Trinkley 1986:9). It possesses a bulbous up-drift end, to the north toward Port Royal sound in this case, and a spit on the down-drift end where sand is deposited. The unusual breadth of the island results from it being immediately downdrift from the Broad River delta and Port Royal tidal inlet, a significant source of beach building sediment. Hilton Head has a Pleistocene core that was deposited during Pleistocene sea level high stands (Trinkley 1986:10). Island formation resulted in poorly defined ridges and swales at elevation of between 3.1 and 10.7 m (5 and 35 feet) above mean sea level (amsl). Hilton Head Island also has an oceanward fringe of beach dune ridges resulting from Holocene high sea level stands. The island appears to be composed of several sea islands joined by the Holocene deposits. Broad Creek Marsh appears to separate two of the Pleistocene core areas. The Holocene seaward fringe obscures this separation of the island only enough to barely close the gap at the headwaters of Broad Creek Marsh within a few meters of the easternmost corner.

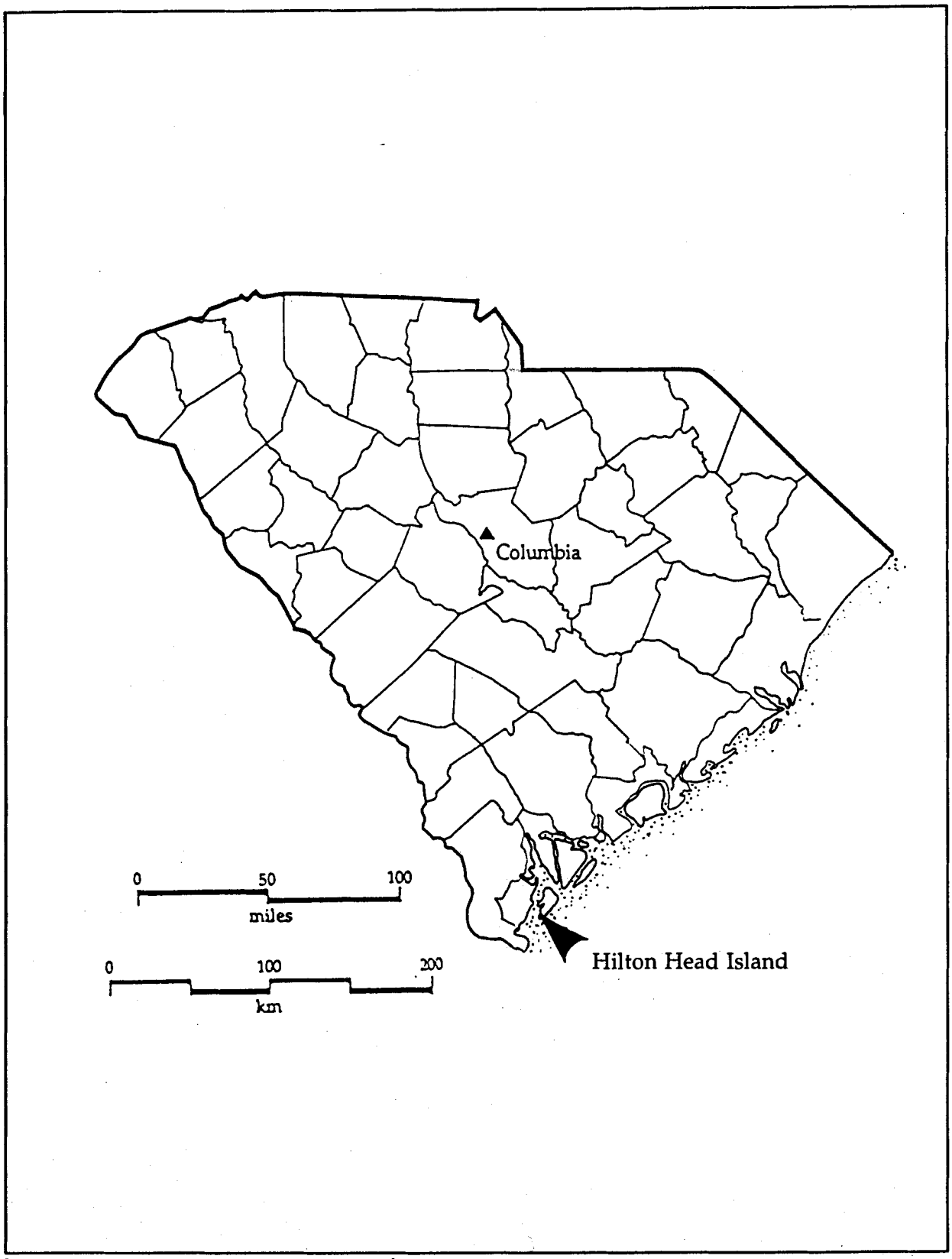


Figure 1. Hilton Head Island, Beaufort County, South Carolina.

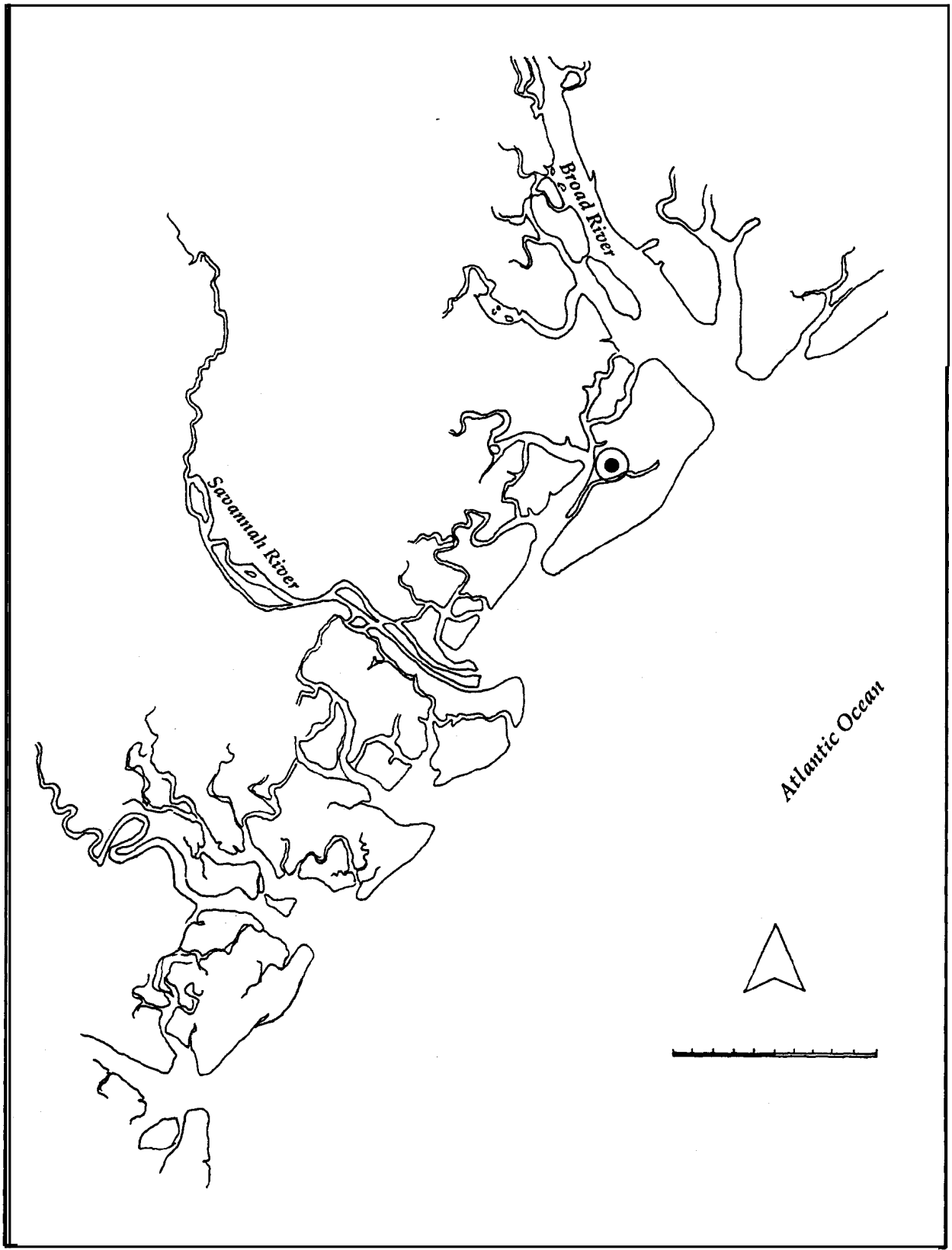


Figure 2. Location of Osprey Marsh.

Osprey Marsh is located on a system of two ridges and three swales presumably of Pleistocene origin. The south swale is related to Broad Creek Marsh, which probably eroded to sea level the large part of the south swale and several other similar swales to the south. Tiny Williams Creek on the north side of the site has channelized only one swale, the north swale. The channelization was apparently caused by a freshwater spring during prehistoric and early historic times. The central swale has no associated drainage although it does contain a special soil that results from a near-surface water table and colluvium from the north and south ridges. The north and south ridges were the primary targets of human occupation, although the central swale was occupied during low sea level stands.

Much of the interdisciplinary methodology involved reconciling data from land and sea aspects of a shorescape and treating the whole as a unit with the intervening waterline as a dynamic boundary. Ceramics from shell clusters and features were taken to represent a part of the human technological landscape of the region. While this project was located entirely on land, the presence of shell afforded a certain amount of remote information on the nearby intertidal zone and estuary components of the shorescape. DePratter demonstrated nearly two decades ago that Archaic sites can be found in the intertidal zone on present day tidal flats (Howard et al. 1980). Syntheses of these shorescape conditions are now providing useful information on global climate and regional environments of archaeological sites (Walker et al. 1994, 1995).

THE CERAMICS

Research Design

In the analysis of prehistoric ceramics, we concerned ourselves with looking at the distribution of sherd traits from the perspective of a number of alternative models. While we are aware that sherds are small fragments of formerly coherent vessels with form and function in the living system context of their makers, we assume we have little knowledge of form and that function is best determined by that form and associations with features in the archaeological context. Though some sherds recovered were quite large, these were rare and could only be treated qualitatively. The overwhelming number of ceramic specimens were small fragments discarded from the systemic context, the whole vessel, of which they were a part when in use. The first operating assumption used for this analysis was that ceramics are material sample fragments whose archaeological context is known. If large enough, these sample fragments can provide data pertinent to more profund interests in vessel form and function. However, since the majority of the Osprey Marsh assemblage was small fragments, an attempt was made to broaden the range of attributes considered from a single site in order to increase chances of associated attribute constellations that may in the future contribute to a study of vessel form and function at other sites. Thus, the strategy was essentially a pursuit of strong attribute delineations among high ceramic fragment frequencies.

Thwarting the development of a standardized ceramic classification system for South Carolina are overlapping type names, localized technological trait variants, and chronological incongruencies that need to be resolved (Hobcaw Ceramics Workshop 1995). The Osprey Marsh vessel fragment samples spanned a large part of the range of Woodland

and Mississippian period treatments traditionally recognized by ceramic typologists, but with some differences. It seemed to be a useful exercise to re-examine the technological aspects of ceramics in as broad and unbiased a fashion as possible. For example, no a *priori* assumptions were made about the chronological relationships of the traits. Are the traits that constitute the vessel fragments all contemporary or do they appear in a sequence of unrelated and non-overlapping periods? Are there intervening combinations of related and unrelated traits, and overlapping and non-overlapping periods?

The trait combinations were established on the basis of correlated presence on the ceramic sherds. More than one set of trait combinations can occur on the same sherd. This presumption allows for transitional forms between more stable types, if those types exist. The perspective is one of freely varying trait associations. The expectation was the identification of regularly associated ceramic traits. These trait constellations are not sherds themselves since there can be more than one set of trait combinations on a given sherd. Rather, the constellations of traits are "keramemes" (<Gk. *keramos,* clay), the smallest indivisible units that archaeologists can use to represent a ceramic fragment, or combine with other keramemes to identifiy a sherd. The results are rules for combining technological traits that may have been practiced for a time and may have cultural and/or functional meaning.

Methods and Goals

Two goals were of primary importance to this study. Identifying the cultural chronology of shell clusters, features, and strata excavated at Osprey Marsh required a clear understanding of the vertical and horizontal distribution of diagnostic artifacts, especially ceramics with their relative frequency and widespread distribution. Second, the ceramics of Osprey Marsh needed to be compared to those of other sites. To achieve these goals, a study was made of the sherds (n=1,790).

Sherds were coded on a form and computerized on a spreadsheet according to a scheme that allowed speed, accuracy, and consistency of observation on a broad range of attributes. Comparison of the cultural sequence to other sites in the region demanded the use of ceramic types. However, since these ceramic typologies are in flux (e.g., 1995 South Carolina Ceramics Workshop), observations were coded with emphasis on ceramic attributes independent of previously defined types. To facilitate the coding process, the observations were originally made on eight variables, each with several states. For example, temper was coded as several states: sand, grit, grog, or their various combinations. For analysis, these temper codes were then converted into three presence/absence variables, one for each state. This allowed us to make better analytical use of the data by providing unambiguous separation of each state into its own variable. Through factor analysis, types were identified as constellations of variables that were then rejoined with their traditional names or identified as previously untyped. Previously identified types were reviewed in site reports from the South Carolina and Georgia Coastal Zone and Coastal Plain (Anderson et al. 1982; Braley 1982; Coe 1964; DePratter 1979, 1991; Milanich and Fairbanks 1980; Sassaman et al. 1990; Trinkley 1981, 1983, 1986, 1990; and Waring and Holder 1968). Special emphasis was given to noting discrepancies between previously defined types and the factored types. This, in effect, allowed us to make use of the previously defined types as a communication device without presuming their validity. It also brought attention to potentially new, or

previously undefined, types. Types were then tabulated by strata and excavation unit to provide vertical and horizontal time/culture strata.

Based on initial impressions of this ceramic assemblage and on approaches to typing presented in some of the above mentioned studies, the difficulty of typing cord marked sherds became evident. Problems existing with typing cord marked, as well as check stamped, sherds have been recognized for some time (Anderson et al. 1982; Braley 1982). For this analysis, existing descriptions of cord marked types were reviewed and found to be ambiguous and inconsistent. The cause of the ambiguities seems to be that localized ceramic traditions vary considerably along the Georgia and South Carolina coast (Chester DePratter, personal communication 1995). Typologists agree that, at the mouth of the Savannah River, sherds that exhibit heavy cord marking and, particularly, large grog tempering fall into the Wilmington Cord Marked type. Likewise, cord marked sherds tempered with small grog inclusions are attributed to St. Catherines Cord Marked. Sherds that exhibit fine cord marking, often in criss-crossed application, and that have any combination of sand, grit, and grog tempering are attributed to Savannah Cord Marked. Therefore, in designing the coding scheme, there was a desire to open wide the lens of scrutiny on such cord marking attributes as direction of twist, fineness of cord, and technique of application. How these attributes might relate to other variables such as temper, color, or thickness of vessel wall was of particular interest.

Codes

A total of 2,292 prehistoric ceramic artifacts were recovered from the test units and excavation units. Of these, 1,760 sherds were large enough to yield useful data. ("Crumbs" were counted and weighed into the original inventory but were not labeled or subjected to further analysis.)

Fifty-one presence or absence codes (Table 1) were created for the ceramic analysis. The variables observed were: vessel portion, surface treatment, longitudinal and latitudinal measurements for decorated sherds, tempering, color contrast, and thickness of the vessel

Table 1. Variable States for Ceramic Observations.

Variables	Codes (0=Absent, 1=Present)						
Surface I	cord marked	fabric impressed	stamped	plain	incised	punctate	crisstrossed
Surface II	z-twist, check, burnished	s-twist, linear, brushed	simple	complicated	dowel marked		
Longitude (per cm)	1	2	3	4	5	6	7
Latitude (per cm)	1	2	3	4	5	6	7
Temper	sand	grit	big grog	small grog	grit/grog	grit/sand	sand/grog
Wall Thickness	0.5-0.8 cm	0.8-1.0 cm	1.0-1.2cm	1.2-1.4 cm	>1.4 an		
Color Contrast	red exterior	brown	red/black	red/black/red	black exterior	red	
Vessel Portion	body, plain	rim, plain	base, plain	abrader	body, combed	rim, combed	body, brushed

wall. The entire inventory was analyzed by two people and cross-referenced in order to maintain consistency. Each sherd, after being washed and labeled with its associated site, bag, and artifact numbers, was viewed under a combination of natural and artificial light with the aid of a magnifying glass. All measurements were made with steel calipers and recorded onto photocopied forms. Ample space was provided for comments. These data were then entered on Macintosh Excel spreadsheets for curation and analyzed using the SYSTAT statistical program.

The following are descriptions of the variables coded

Surface I. This variable is the first of two variables that indicates treatment of the surface, or exterior side, of the sherd. The exterior was identified by its opposition to the incurvate interior. The codes were designed to encompass both decorated and plain sherds. While decorated sherds proved obvious, identifying the exterior was important to the analysis of plain sherds (whose interior and exterior treatments are often the same) and of sherds with interior surface treatment (such as brushing or combing). Codes for fabric impressed, incised, and punctate were found to occur infrequently. Criss-crossing implies cord marking by at least two sets of markings made at near right angles to one another to form a cross-hatched pattern. This code was added to make a visual distinction from parallel cord marking.

Surface II. This variable represents a number of traits that fall secondary to those in Surface I regarding cord marked, stamped, and plain surface decorations. Among cord marked designs, the variable indicates whether or not the direction of twist on cord marked sherds is detectable and, if so, whether the mark was impressed by a Z-twisted (left) cord or an S-twisted (right) cord. Among stamped designs, the variable indicates whether or not the stamped design can be specifically identified and, if so, whether it is check stamped or linear check stamped. The absence of other stamped motifs (e.g., concentric circles, figure 8s, filfot crosses, etc.) in the Osprey Marsh assemblage simplified observations; should the observation system be employed in other regions, this variable would be modified to accommodate complex designs. Among plain surface treatments, this variable indicates whether the surface has been burnished or brushed.

Longitude. This variable refers to the grain of decorated sherds by measuring the number of occurrences within a cm of a particular, longitudinally oriented pattern (Figure 3). As it refers to cord marked sherds, this variable equals the number of parallel cords per cm as measured from the outside of a single cord mark. This coding scheme quantifies the traditional "heavy" or "fine."

As it refers to stamped sherds, this variable equals the number of stamped rows per cm. Check stamping that involves square, as opposed to rectangular or parallelographic, checks is difficult to orient. It is not important which measurement is the longitudinal and which the latitudinal since both are equal. If they differ, longitude is set to the longest dimension. Linear check stamping occurs with transverse lands intersecting longitudinal lands (DePratter 1991:170); the longitudinal lands can be seen as parallel rails with the transverse lands being the crossties. Longitude equals the number of longitudinal lands per cm.

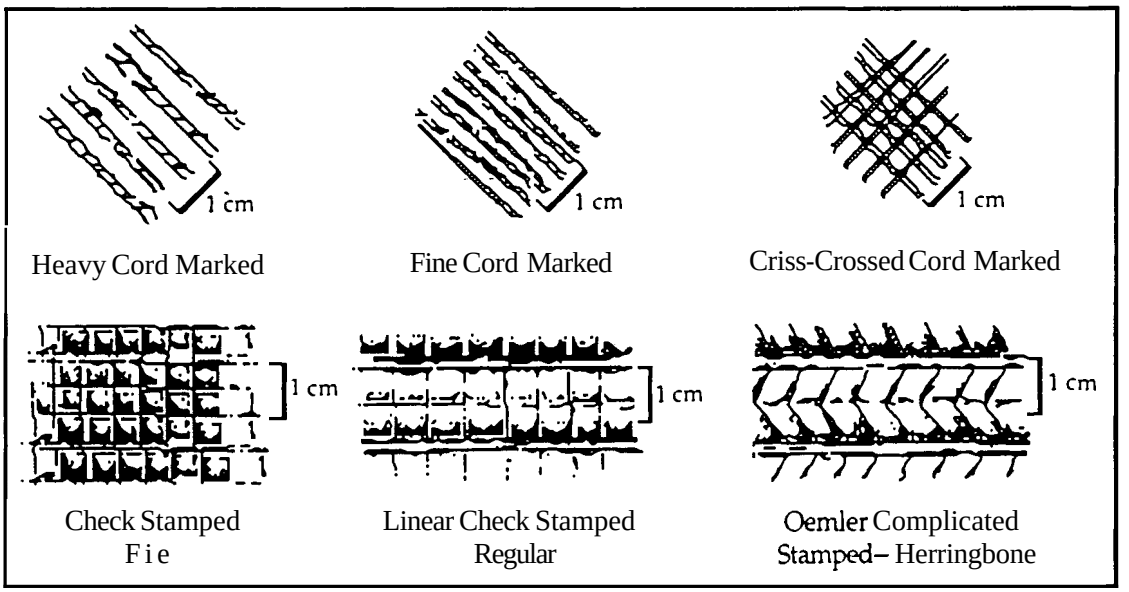


Figure 3. Orientation of Longitudinal Measurements on Decorations.

Latitude. This variable refers to the number of occurrences per cm of a particular pattern along the longitudinal axis. As it applies to cord marked sherds, this variable equals the number of twists, or impressioned knots, within a cm. Even on a single sherd this number may vary, so it is important to seek the tightest twist (i.e., the greatest number of twists per cm). On sherds tempered with a high percentage of sand, this often proves difficult. When the direction of the twist is elusive, the latitudinal measure is not reliable and, in our analysis, was coded indeterminate.

As it applies to check stamped and linear check stamped sherds, this variable equals the number of individual checks, or transverse lands, along the main axis (longitudinal lands). As mentioned earlier, highly symmetrical check stamping does not lend itself to orientation of longitude and latitude in which the measurements are the same. The transverse lands on linear check stamped sherds do not always adhere to a right angle with the longitudinal lands (see Figure 3, Regular versus Herringbone); nevertheless, their measurement is not affected. There are, however, rare cases in which both oblique and perpendicular angles of stamped design occur on the same sherd, alternating between lands. These exceptions comprise Oemler Complicated or Deptford Geometric Stamped.

Whether applied to cord marked or to stamped sherds, the combination of longitudinal and latitudinal measures indicates the degree of detail found within a sherd's surface treatment, or its grain. Measurements taken in this ceramic inventory were found to cluster. As a result, traditionally intuitive labels (e.g., "heavy" and "fine") were metrically defined.

Temper. This variable refers to the particles in sherds manifest either to the eye or to the touch. There have been questions as to what was intentionally added to paste to increase tensile strength and what occurred naturally in the clay source utilized. That distinction has been, for the most part, disregarded here in order to place emphasis on salient qualities for coding. Sand and grit were not graded by size, but grog was. The various combinations of these elements are not exhaustive for this variable (e.g., they do not include separate codes for grit/big grog and grit/small grog) nor do they grade particle size, but they provided an expedient means of coding. The significance of this variable is discussed with the factor

analysis. Future codes will incorporate the Wentworth scale as agreed at the 1995 South Carolina Ceramics Workshop at Hobcaw Barony.

Wall *Thickness.* This variable, as used in the Osprey Marsh analysis, indicates the thickness of the vessel wall as measured at its thickest point on a single sherd. It does not relate to the measurement taken at 3 cm beneath the rim of a vessel as is often performed on assemblages that possess numerous, large rimsherds (Espenshade 1984; Sassaman 1993b). The code intervals of this variable stemmed from preliminary measurements taken from a random selection of sherds. Though divided into arbitrary intervals, the codes encompass any thickness greater than 0.5 cm. Each interval spans from 0.2 to 0.3 cm in order to allow for variation of thickness within a single sherd. No prehistoric sherds were encountered that exhibited a vessel wall thickness of less than 0.5 cm.

Color *Contrast.* Color is somewhat intuitive since a single pot can exhibit several different colors resulting from localized variations in the firing and cooling process as well as from patterns in its use and post-depositional influences. Different techniques for firing and cooling were used, however, and this variable was designed to sense any subtle relationships between these techniques and the other variables that are known to be chronologically sensitive. Observing specifically the order of contrasts, or relative color, between the exterior, core, and interior of the vessel wall removes much of the ambiguity of color observations. We may hope to find in subsequent studies that contrast not only indicates possible patterns of construction technology and use, but that it also correlates with vessel form to enhance an understanding of the vessel's function. If this is accomplished, then the gap between the amount of information available from small plugs as opposed to that commonly obtained from larger vessel parts may be bridged.

The coded names presented above on Table 20 may require elaboration. Figure 4 illustrates the six codes that were used for the color contrast variable: 1) red exterior; 2) homogenous (brown); 3) red exterior/black interior; 4) red exterior, black core, red interior; 5) black exterior; and 6) homogenous red.

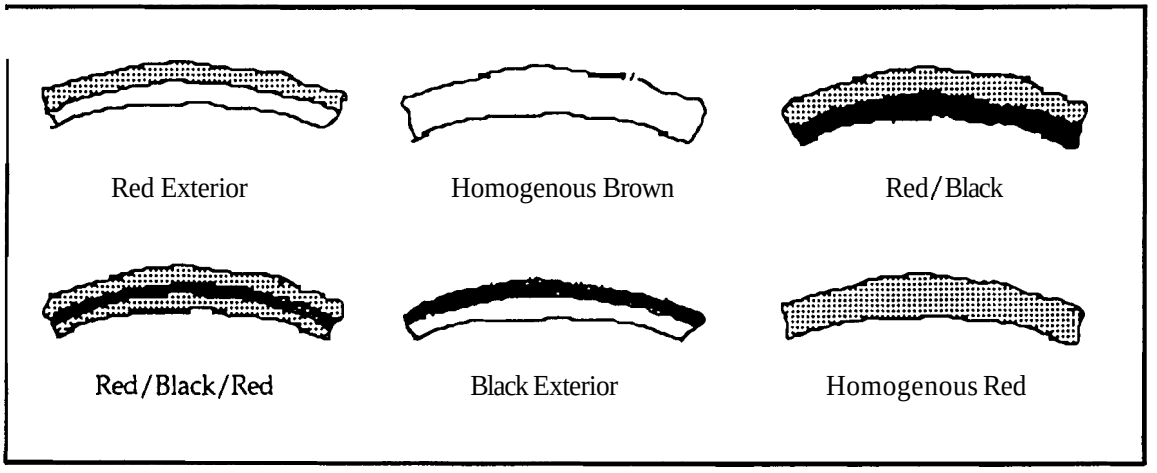


Figure 4. Coded Variations of Color.

Viewed in cross-section, a sherd exhibits a color pattern running parallel to the surface. Sometimes the color is homogenous such as red or brown. The exterior, which implies the outside surface, may be distinctly redder than the interior due to oxidation. This state

would imply that the pot was removed to the open air from the firing pit or kiln. The interior may, in some cases, be distinctly blacker than the exterior as a result of reduction. This state would imply that the pot was removed from the firing pit and placed mouth down preventing air from entering. Variations in these techniques create different color effects, so some of the more prevalent variations have been included in this coding scheme.

Vessel Portion. This variable indicates the portion of the vessel from which the sherd came and the treatment of the interior surface. For the most part, this variable was designed to flag rim sherds and modified sherds such as abraders. When large and incurvate enough, base sherds were easily identified. However, with smaller sherds that exhibit less curvature, there is often little distinction between a body sherd and a base sherd other than relative thickness. Instead of using the indeterminate code, however, such cases were lumped into the body sherd code. Treatment of the interior surface, including brushed (which was made with fine plant fibers, grasses, or hair) and combed (which was probably made with the marginal edge of the Atlantic Ribbed Mussel) were lumped into this variable in order to avoid the creation of another variable. An obvious incongruence is that an abrader is identified only as an abrader in this scheme and does not retain any observations made on its interior surface if it is visible. The small number of abraders rendered this incongruence insignificant.

Assessment of Coding

The coding scheme for the variables described above was designed specifically for the inventory from Osprey Marsh. It was useful for handling the large numbers of decorated ceramics from that coastal setting. The scheme's strength is in the quantification of detail found on sherds decorated with cord marking, check stamping, or linear check stamping. Its applicability to designs made from simple and complicated stamping, fabric impressing, incising, and yunctating was not tested. Among revisions to this scheme, it is suggested that the temper variable be divided into three variables: sand, grit, and grog. Each of these variables can then be coded separately by size. Sand can be graded by coarseness or by grain size; grit may be coded by size and/or shape and/or type (e.g., crushed quartz); grog can be coded by either size or autonomy within the paste, which aids in distinguishing natural clay inclusions from intentionally added tempering agents.

The presence or absence format provided some advantages and some disadvantages. The primary advantage is that by converting to presence or absence values for each ceramic attribute, the analysis becomes essentially nonlinear in character. This is an approach similar to that implemented in analysis of variance. An attribute can occur freely in combination with any other attribute. This approach also removes the influence of sizes of numbers since all states are either 0 or 1. We found a disadvantage in that the presence or absence matrix becomes laden with absence codes. For example, temper converted to six presence or absence variables, presence of sand, presence of grog, etc. This resulted in six presence or absence attributes only one of which could have a positive value on any given sherd; this reduces the apparent variance accounted for in the factor analysis. Without the usual guidance from variance statistics, interpretation becomes a matter of pragmatic results rather than following the usual guidance in theory from statistical thresholds (eigenvalues greater than 1.0, loadings greater than ±0.40).

The binary format generated a data matrix of 51 columns of presence or absence codes by 1,760 rows or sherds. The binary values were then written to an ASCII file and transferred to a SYSTAT system file for factor analysis. Eventually the number of codes treated by factor analysis was reduced to 18. Some codes were eliminated immediately because they rarely appeared in the inventory. Others were eliminated and/or combined with another because the factor analysis showed them to duplicate information. The ceramic traits that survived this process of elimination and combination appear in Table 21 in the next section.

Exploring Types Through Factor Analysis

Interpretation of factors involves searching through the matrix for numbers greater than 0.40 and checking their sign. The numbers in the matrix, called "loadings," indicate how well the code correlates with the factor which, in this case, is a coherent constellation of attributes resembling a ceramic type. Loadings of greater than f0.40 indicate that more than 16 percent (0.40^2) of the variance in a code is correlated with that factor. This is a rule-of-thumb threshold for including the variable in the factor. Some analysts feel more comfortable with a higher number such as f0.50. The low range of an important loading sometimes varies with the number of codes or number of cases. Experience with the method and careful consideration of the context of the analysis provide guidelines. In this analysis, because of the low variance being an artifact of the coding scheme, we found that loadings as low as ±0.30 had valid implications for ceramic types. We, therefore, used ±0.30 as the threshold to trigger our attention to an attribute combination.

Factors provide a means of looking for coherent constellations, or clusters, of ceramic attributes. Since no statistical significance is attached, the factors are analyzed more on the basis of intuitive relationships than on analytical correlations. Matters of statistical validity are raised later as constellations are recognized as potentially useful types. Constellations are based on multivariable, simultaneous relationships between attributes. As such they provide a perspective on coherent associations of characteristics that would otherwise escape notice. This is particularly the case in technologies such as nonindustrial ceramic manufacture in which traits may or may not be present in any particular specimen. This ability to overlook occasional lapses in coherence and yet press through to the broader patterns of association has made factor analysis the analytical tool of choice for numerical search operations such as that about to be described (Rummel 1970).

In terms of their internal structure, there are two basic kinds of factors; unipolar and bipolar. Unipolar factors can be readily recognized by the absence of opposing signs on the individual attribute loadings. A unipolar factor means that all high loadings represent high correlations with that factor and with each other. Unipolar factors appear predictably as the first factor, accounting for the most variance in many analyses. This is because in most metric-based data sets, the most coherent set of traits involve size. Thus, when some part of an object, say a projectile point, gets bigger in any part, it gets bigger in all parts. In this analysis the question of size was eliminated by converting all codes to presence or absence values and thus to the same number size. The resulting factor analysis is therefore one of those rare analyses in which the first factor is bipolar and meaningful in terms of the substance of the analysis.

More subtle relationships generally appear after the size factor has been removed. These frequently involve inverse relationships and thus the bipolar factor. Returning again to the

projectile point example, frequently as points become wider they are relatively shorter because of resharpening. Thus, width will be negatively loaded against length on the second factor. This works equally well with data such as ours in which the states of the variables have been converted to presence or absence. Since 1 represents presence and 0 absence, codes from the same related variable, color contrast for example, will automatically be negatively related to each other. **A** sherd cannot both, at least in our scheme, be homogenously brown and have a black exterior. The browns and blacks, however, may correlate either negatively or positively with other codes or other variables such as sand temper or small grog temper. If they are generally present together, brown and sand will appear together on a factor with the same sign. If brown or sand is nearly always absent when the other is present, the signs will be opposite.

The Factors

The variance statistics in the factor analysis are at levels that would ordinarily make the analysis suspect. However, the authors believe that the factors are valid for two reasons. First, traditional types are clearly apparent on some of the factors such as Deptford, Wilmington, and St. Catherines. Second, when attributes from the factors that account for the most variance are tested statistically by contingency tables, it is found that they were related by significantly high chi-square values ($p<.001$).

Four or five factors appeared to be important. The factor loadings for surface treatment and temper are listed in Table 2. **A** brief discussion of each factor follows in which its salient features are presented in terms of relationships between ceramic codes. We have two goals in this discussion: 1) to determine the characteristics that define already recognized types such as Deptford, Wilmington, St. Catherines, and Savannah in our sample of 1,760 sherds; 2) to investigate the possible presence of other previously unrecognized types in the sample.

Factor 1, Bipolar: Savannah Plain-Deptford V1. On the positive pole there is a constellation of codes: plain decoration, grit, and small grog. This is a typical set of features for Savannah Plain. The negative pole is characterized by indeterminate stamping, heavy linear check stamping, and grit and sand temper. This range of codes falls within the Deptford complex. It is referred to as Deptford Variety 1 because an only slightly different constellation of traits appears on another factor.

The appearance of these two constellations of traits on the first factor indicates that they are the most numerous and most coherent group of codes in the sample. It is also of interest that the two sets of attributes appear negatively related to each other. This indicates that the codes consistently do not appear on the same sherds. It suggests that Savannah Plain and Deptford V1 are technologically distinct.

Factor 2, Bipolar: Wilm/St.C/Sav Transition-Deptford V2. The positive pole correlates with heavy cord marking, small grog, and sand and grit tempering. This set of traits is somewhat ambiguous; heavy cord marking alludes to Wilmington surface treatment while small grog is indicative of St. Catherine's wares. Sand and grit tempering is yet a later development in this context, pointing to Savannah This factor implies that Wilmintrton, St. Catherines, and Savannah possess a common underlying technological relationship. The negative pole of the factor contains fine linear check stamping and sand temper, a second Deptford

Table 2. Factor Loadings for Analysis of Surface Treatment and Temper.

	Factors				
Codes	1	2	3	4	5
Heavy Cord	.30	**.40**	.07	.20	-.13
Fine Cord	-.01	-.27	**-.65**	**-.44**	.07
Criss Cord	-.03	.20	-.01	.10	**-.40**
Dowel Marks	.05	.12	-.08	.04	.07
Ind. Stamped	**-.39**	.14	.12	-.01	.06
Heavy Check	-.12	.11	-.10	.25	.07
Fine Check	.02	-.00	-.15	**.33**	.16
Heavy Linear	**-.35**	-.07	.20	.15	.07
Fine Linear	-.02	**-.38**	.18	.12	.07
Plain	**.34**	.18	**.38**	.26	.14
Burnished Plain	.09	-.14	.10	.08	**-.32**
Incised	.18	.18	.16	**-.36**	.24
Sand	.02	**-.80**	**.40**	.09	.02
Grit	**.35**	.04	**-.61**	**.53**	.23
Large Grog	.08	-.04	-.20	**-.40**	.09
Small Grog	**.46**	**.35**	**.33**	**-.38**	.25
Sand/Grit	**-.81**	**.40**	.02	-.03	.06
Grog/Sand or Grit	.18	.06	-.07	-.11	**-.81**
Percent Total Variance	8.8	8.3	7.9	7.1	6.6

Bold indicates loadings deemed important.

variety. Deptford Variety 2 is probably a late Deptford variety while Deptford Variety 1 is early.

The Wilmington, St. Catherines, Savannah pole of this factor could be read as the transition between St. Catherine's and Savannah, which is a significant time period at Osprey Marsh. It could indicate a mixing of St. Catherines and Savannah influences, a coalescence of the two types.

Factor **3,** *Bipolar: Savannah Plain-Savannah Cord.* The positive pole is a constellation of codes including plain decoration, sand, and small grog. Again, as in Type 1, Savannah Plain is represented, but it adds sand to the constellation and loses grit. The negative pole of the factor suggests that grit temper is associated with fine cord marking. This indicates Savannah Cord Marked.

The distinction between the Savannah Plain of this positive pole and the Savannah Plain at the positive pole of Type 1 lies between grit and sand. It may elucidate their interchangeability in the technology; this would be investigated by studying their spatial relationships in the site. If the Type 1 and Type 3 sherds occur together, they were probably technologically interchangeable; separately implies something else, perhaps distinct types or

times of use. It may also represent a flaw in the initial observations because grain size of sand and crushed quartz was not measured in the sample.

Factor 4, *Bipolar: Deytford Check-Wilmington.* The positive pole indicates that fine check stamping is associated with grit temper. These are standard traits of Deptford Check Stamped. The negative pole indicates that fine cord marking, incised decoration, and both large and small grog are regularly associated. Initial impressions pointed to either Wilmington or St. Catherines wares because of the tempering.

In reference to the negative Wilmington and St. Catherines pole, as presently understood, surface treatments of Wilmington and St. Catherines wares do not include incising (DePratter 1991:11), so this correlation is suggestive of a new type or variety. Attention called by the factor to this particular set of correlates led to a reanalysis of the sherds. Results of further inspection verified the initial observations and found there to be incised sherds with grog tempering. These sherds also exhibited a buff exterior, red, brushed interior, and a fine powdery paste. The particular sherds were recovered in association with Savannah Cord Marked sherds, and based on this analysis, they are considered to be a variant of Savannah wares, Savannah Incised. That large and small grog appear on the same type implies that the distinction is not a good sorting criteria in this case. The codes are not distinctive contrasts. Since small grog does occur alone (Types 1, 2, and **3),** we suggest that large grog may be the non-distinctive trait. This conclusion supports DePratter's contention that St. Catherines and Wilmington wares tend to overlap as one moves north along the coast from the mouht of the Savannah River (personal communication 1995).

Factor 5, *Biyolnr: Savannah-Savannah Cord/Burnished.* The positive pole, though minimal, correlates incised decoration with small grog temper. This reinforces inferred Savannah period use of incising noted in the previous factor. The negative pole found grog and either sand or grit temper to correlate with both criss-crossed cord marking and burnished plain. These traits are strong indicators for Savannah wares that include Savannah Cord Marked and Savannah Burnished Plain. This implies that the two types are not distinctive.

Since this factor is the last of the analysis that contained comprehensible correlates, it is the weakest of the set. Without lessening its significance, this weakness nonetheless means that its correlations are less obvious and certainly occur less frequently in this assemblage.

Summary of the Factor Analysis

The factor analysis successfully points to correlations between surface treatment and temper that are most significant in the assemblage. The following types were read from the correlations: Deptford Check Stamved, Deptford Linear Check Stamved. Wilmington Heavy Cord Marked, Savannah Plain, Savannah Burnished Plain, Savannah Cord Marked, and the previously unidentified Savannah Incised.

Throughout the process of finding variables that formed keramemes and that did not duplicate information, a number of variables were excluded. However, these "drop-outs" can be equally informative as to what ceramic traits operate in tendem with another. More extensive factor analyses on the data showed correlations of temper to color and surface treatment to thickness of vessel wall. In particular, sand tempered sherds often correlated

with the red exterior/black interior scheme indicative of Deptford and Wilmington wares. Likewise, heavy cord marking often co-occurred with a thick vessel wall (>1.2 cm).

The potential mixing of the St. Catherines and Savannah kerarnemes of Type 2 is intriguing. Since dates associated with the two types overlap, they either exist as the evidence of two ethnic groups, two subdivisions of an ethnic group such as moieties, or two functions within the same ethnic matrix. In any of these alternative hypotheses, situations could be imagined in which sharing of traits would appear. It could be something as complex as Wilmington folk dividing into two bands, but retaining marriage obligations.

Applications to Typing

In the following effort to type sherds from Osprey Marsh, the constellations of attributes brought to light in the factor analysis were used in conjunction with traditionally held characteristics of coastal ceramic types. Those attributes were reapplied to the initial codes to produce model code strings for each ceramic type. These strings were used as tallying references against the entire coded ceramic assemblage from Osprey Marsh. Tallies of ceramic types were then made by excavation unit and level. Random checking of types applied in this manner proved to be accurate for the most part. While types such as Deptford Linear Check Stamped and Savannah Plain were readily identified, however, the cord marked varieties of sherds required greater attention.

Cord marked specimens of Deptford and Wilrnington wares, as well as those of St. Catherines and Savannah wares, (Figure *5)* often exhibit similar longitudinal (width) and latitudinal (tightness of twist) dimensions for cord marks. For this reason, the grain (fineness) of the surface treatment does not provide a reliable means of discerning the chronological position of cord marked sherds. Temper can be just as treacherous since grit and sand tempering were used during both the Deptford and the Savannah phases, and even the distinction between large and small grog for differentiating Wilmington and St. Catherines sherds is not always clear. Another means of consistently identifying cord marked sherds is still wanting.

Of the 1,760 sherds analyzed, 49.6 percent (n=873) of the sherds were found to exhibit cord marking. Of that number, approximately 22 percent (n=191) were tempered with grog alone, into which fall the Wilmington and St. Catherines wares. The remaining 78 percent (n=682) were tempered with either sand, grit, sand and grit, sand and grog, or grit and grog. These sherds represent the Deptford and Savannah wares.

For the Osprey Marsh ceramic assemblage, the following period summaries present the traditional cultural-historical phase names, the numbers of sherds identified, and discussions of the varieties and types associated with that period. Table **3** is a summary of these results from a composite of the test units and for each excavation unit. The results were utilized in constructing the exploding diagrams in the excavation unit descriptions and in the shell cluster analyses below.

Refuge (n=38). There was a minor Refuge contingent scattered across the site. In addition to two Refuge Punctated sherds, there were 20 Refuge Plain and 16 Refuge Simple Stamped sherds identified. All of these wares have a considerable amount of grit tempering, but the exterior surfaces are smooth. The color tends to be buff or light gray. The punctates are

a) Deptford Cord Marked; b) Wilmington Cord Marked; c) St. Catherine~Cord Marked; d-e) St. Catherine~Cord Marked [w/ mend hole]; f) Savannah Incised; g) Savannah Cord Marked [fine]; h) Savannah Plain.

Figure 5. Cord Marked, Incised, and Plain Decorations.

Table 3. Inventory of Prehistoric Ceramics Excavated by Level at Osprey Marsh.

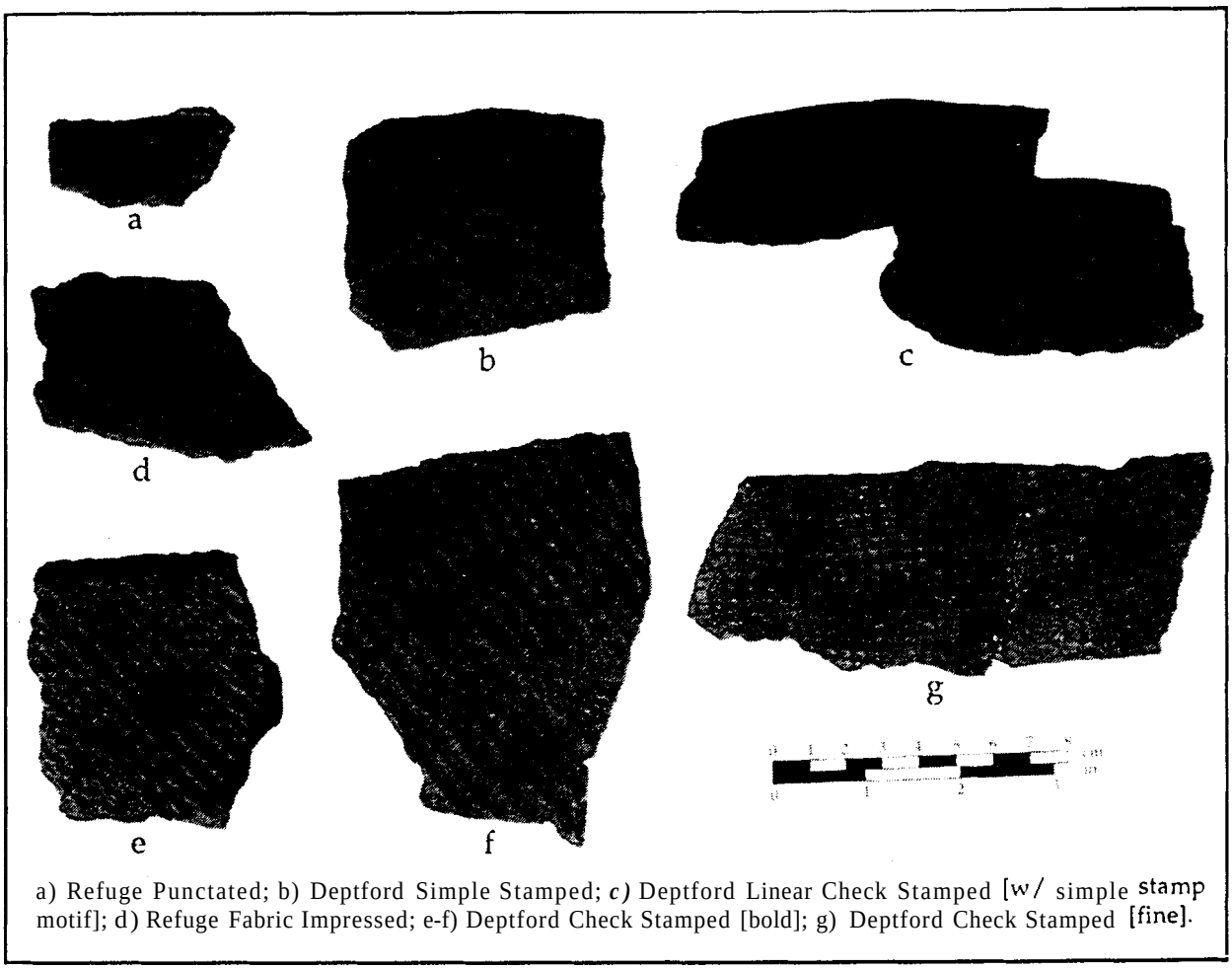
	EU1							EU1						EU3				EU6						Tat Units						
Ceramic Type	1.1	2.1	2.2	2.3	3.1	3.2	3.3	1.1	1.2	2.1	2.2	3.1	3.2	1.1	2.1	2.2	3.1	1.1	1.2	2.1	2.2	3.1	3.2	1.1	1.2	2.1	2.2	3.1	3.2	Total
Refuge Punctated			1												1															2
Refuge Plain	1	1		2							7	6				2		1												20
Refuge Simple Stamped					1			1			2	1			1	1					5	1						3		16
Deptford Check Stamped		6	2	1	9	6	5	2			2	1	2	1			1		1	6	1		2			1	3	1		61
Deptford Linear Check		3		i	l	9	3	2	2	7	22	12	13	3	1	1		3		2	1	1	2	3	1	2	1	1	2	1		144
Deptford Cord Marked		2	13		3	31	27	12			1	1	6	6	1	4	13	16	5			1						2			1	184
Oemler Complicated Stamped					30	7					2																				39
Wilmington Cord Marked		1	1			2			2	1	3	13	10							1	4		2	3		1		2	2		48
Wilmington Plain						3	1				1																				5
St. Catherines Cord Marked		2	2	1	2			32	9	32	11	8						6	14	11	1	3	1	2		3	3			143
St. Catherines Plain					2		3	1	1	8								7	14	13	1	10				1				61
Savannah Cord Marked	2	5	9		2		2	110	44	140	39	3		4	21	1		17	19	20	3	27	2	5	1	17	2	2	1	498
Savannah Plain		1	1					26	6	36	18	1		1	4			2	2	1	8	1	2	1	1	9	6	2	1	9	5		191
Savannah Check Stamped								3										1	2	1	4	5	7	7	1	1	1					42
Savannah Incised														1	1			2	1	4		5				1					15
Savannah Burnished								3	1	3	4							2	4			1									18
indeterminate Grog		3	1					13	2	7	6			7				3	3	5		1									51
indeterminate Stamped																					12	1									13
Indeterminate	5	17	11	19	I	2	4	24	1	27	20	2	I		I			1	0	4	5	1	2	5	2	3	2	8	3	5	1	204
Other										1											2										3
Total	8	41	48	85	69	38	55	217	72	295	139	51	9	18	46	20	9	71	83	108	64	83	25	15	9	16	20	12	3	1760

isolated and occur in a series of parallel rows and bound by a single incised border (Figure 6a). The simple stamped designs are shallow and appear to have been applied carelessly.

Results of this analysis indicate that both Refuge Plain and Refuge Simple Stamped types occur at Osprey Marsh with Deptford types in stratigraphic context. Though distinctions have been made between Refuge Simple Stamped and Deptford Simple Stamped (DePratter 1991:163; Sassaman 1993a:116; and Waring and Holder 1968:200), no Deptford Simple Stamped sherds were found. There was, however, a type that exhibited the use of a better quality stamping implement than that found on Refuge; but its parallel lands alternated between simple and low resolution linear check stamping (see Figure 6c). This type was found in association with Fine Deptford Check Stamped sherds and resembles the kind of aesthetic mutation that would span the bridge between simple and linear check stamping.

Deptford (n=429). There is a strong Deptford component at 38BU921 and the ceramics provide enough stratigraphic context to distinguish Deptford I from Deptford II. The earlier wares resemble Refuge wares in paste and temper: they are predominantly sandy and have grit tempering (which could be larger grains of sand), and they are generally thick (>1 cm vessel wall thickness). Refuge Plain typically occurs with Deptford Check Stamped (Figure 6, e and f, and Figure 7), Linear Check Stamped (Figure 6c and Figure 8, a, b, d, and e), and Deptford Cord Marked (see Figure 5a) in both Deptford I and 11 (DePratter 1979, 1991). During Deptford II, Deptford Complicated Stamped appears as the most illuminating distinction from Deptford I (DePratter 1991:11, 172).

At 38BU921, the distinction between early and late came not from Deptford Complicated Stamped, but from the presence of what has been termed both Deptford Geometric Stamped and Oemler Complicated Stamped (DePratter 1979:118; Waring and Holder 1968). This assemblage exhibits a variety of designs on wares that are similar in temper, paste, and thickness to Deptford II types. The designs include the herringbone pattern and variations



a) Refuge Punctated; b) Deptford Simple Stamped; c) Deptford Linear Check Stamped [w/ simple stamp motif]; d) Refuge Fabric Impressed; e-f) Deptford Check Stamped [bold]; g) Deptford Check Stamped [fine].

Figure 6. Punctated, Fabric Impressed, and Simple & Check Stamped Decorations.

on it that approach Deptford Linear Check Stamped (Figure 8, f-h). Another sample found in the excavations of EU 1, by which a presumed single pot is represented, consists of wide zones of cross-hatched designs bound by thick, parallel bands (Figure 8c). Consultation with other archaeologists aided in the identification of this variety of Oemler Complicated Stamped (Chester DePratter, personal communication 1994; Michael Trinkley, personal communication 1994).

This assemblage sheds light on the stylistic evolution of motifs used in the decoration of ceramics from Refuge to Wilmington. What might initially be seen as aberrance from known ceramic types becomes, upon closer inspection, progressive steps of aesthetic preference during the Early Woodland Period. One of the earliest types occurring at Osprey Marsh is Refuge Simple Stamped; its supposed aberrance at Osprey Marsh is a design that alternates between simple stamped lands and those that are semi-checked. Next, both in the assemblage and in the chronological sequence, Deptford Linear Check Stamped occurs; its aberrance is the above mentioned Oemler Complicated Stamped variant of the herringbone pattern in which parallel bands alternate between linear checks and linear diagonals (or half of the herringbone motif). The herringbone motif is present on wares that are sand and grit tempered, have relatively thin walls, and comprise the Oemler Complicated Stamped; but the same motif equal in proportions to Oemler is known to appear among Walthour Complicated Stamped varieties in the Wilmington phase. Rather than showing a true

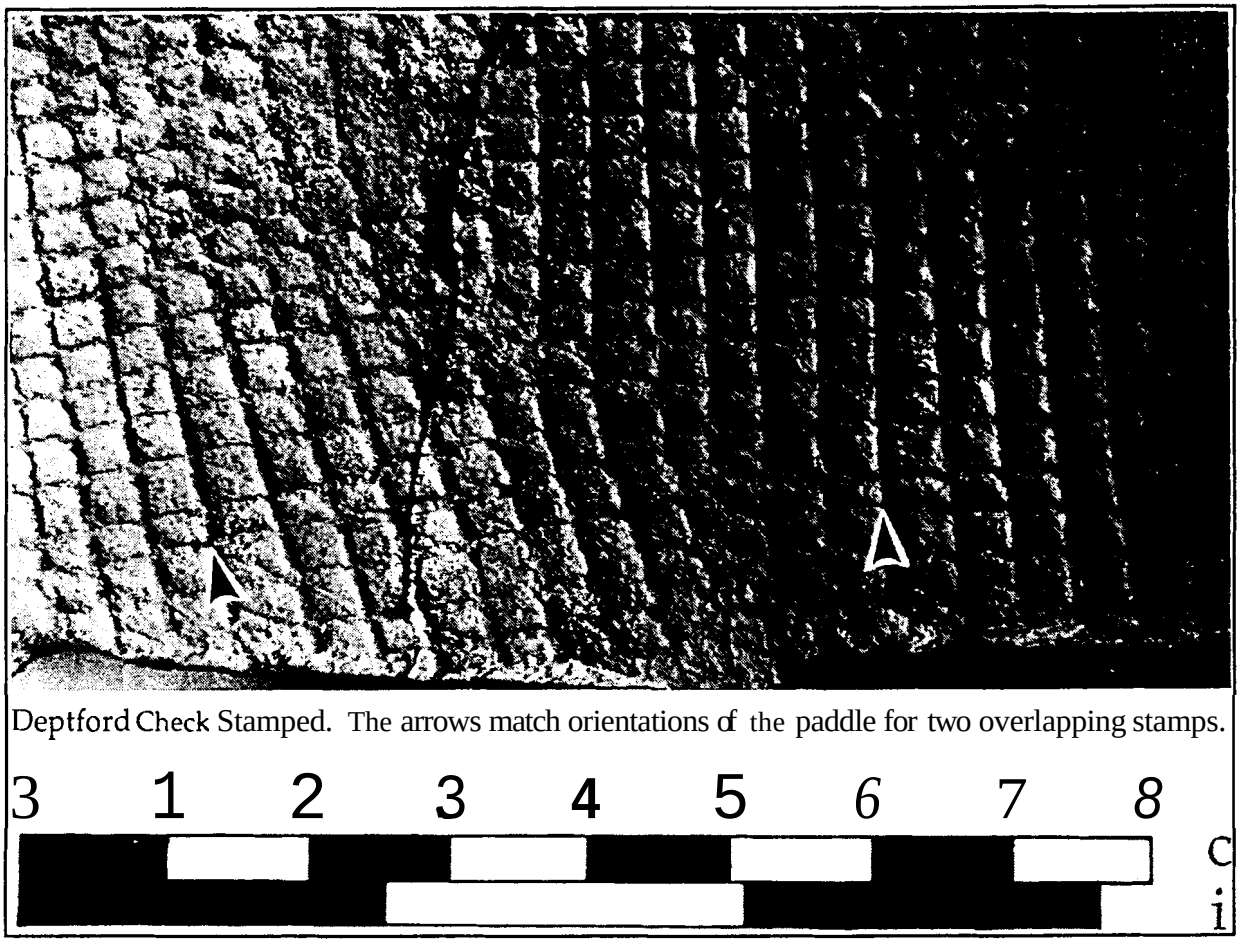


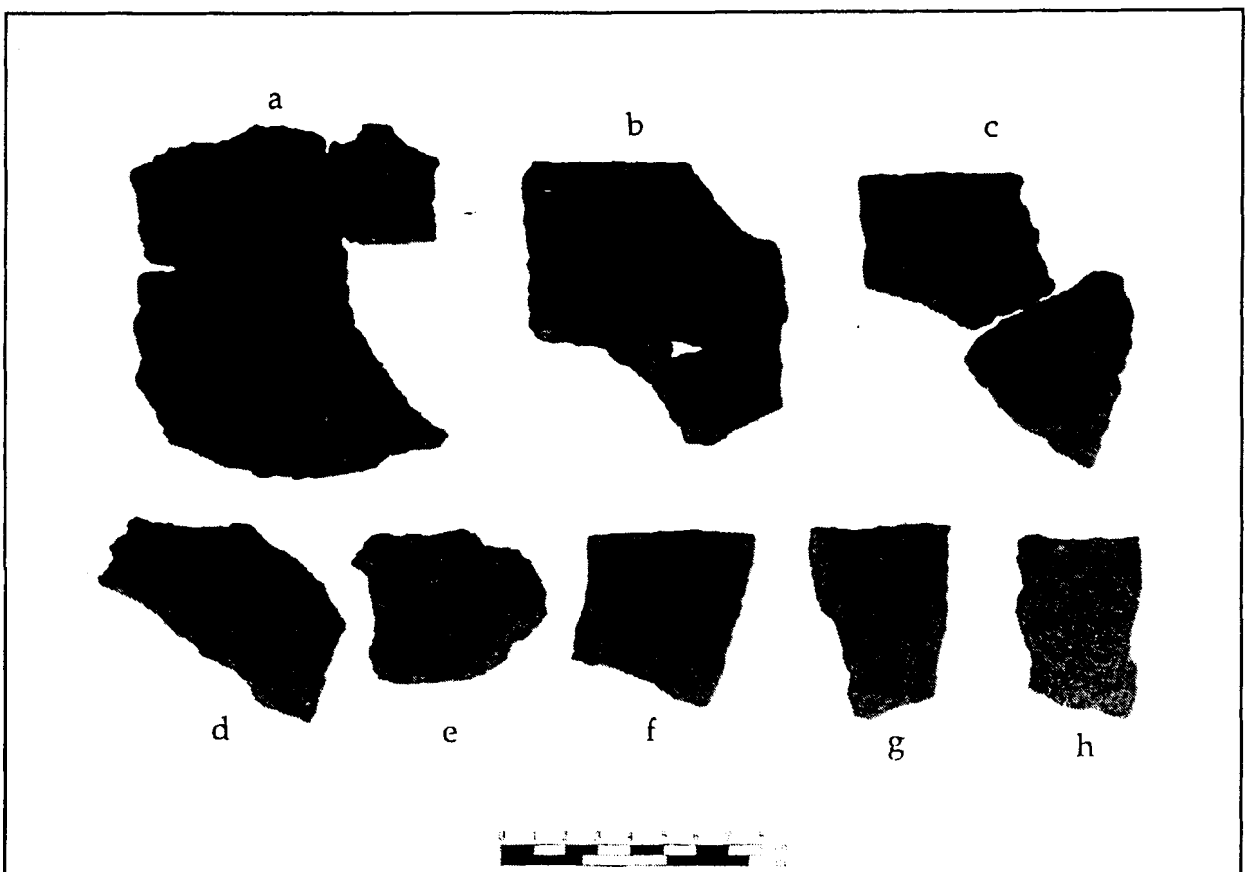
Figure 7. Detail of a Deptford Check Stamped Sherd.

evolution of ideas, the data from this aspect of the analysis reinforce a concept of a relatively long period of uninterrupted occupation.

Wilmington (n=53). This is a minor component relative to period sherd counts across the site. Wilmington wares were primarily identified by the presence of large grog tempering which yields a lumpy surface (DePratter 1991:177). The majority of sherds were of Wilmington Cord Marked (n=48) as found in Figure 5b. We found that many of the Wilmington sherds exhibited a strongly differentiated core color; interior and exterior surfaces tended to be reddish brown, and the core tended to be a dark gray.

For the most part, Wilmington sherds were stratigraphically mixed with the Deptford II levels. Deposits in loose sand lend themselves to slight disturbance immediately after deposition. However, the similarities of the two periods of cord marking (both heavy and fine) suggest that the transition from Deptford to Wilmington involved a switch from grit and sand temper to large grog temper with a relative retention of surface treatments. In this context, the late appearance of Deptford dates, and their overlap with Wilmington both here and elsewhere, is reasonable.

Sf. *Catherines* (n=204). In terms of sherd counts, this component was the third largest at Osprey Marsh and appears to be mixed almost invariably with the subsequent Savannah occupation. Among the prevalent surface treatments present for this period are cord



a) Deptford Linear Check Stamped [wet]; b) Deptford Linear Check Stamped [dry]; c) Oemler Complicated Stamped [geometric]; d-e) Deptford Linear Check Stamped; f-h) Oemler Complicated Stamped.

Figure 8. Linear Check & Complicated Stamped Decorations.

marking and plain. The latter is rare at Osprey Marsh. As is common for this type along the coast, St. Catherines sherds are tempered with grog inclusions that are generally smaller than those of Wilmington wares (DePratter 1991:180). The interior surface tends to be somewhat smoothed, sometimes having been combed with the margin of a shell. A couple of rims were found to exhibit holes 1.0 to 2.5 cm beneath the lip and from 0.4 to 0.7 cm in diameter (see Figure 5, d and e). These appear to have been either for mending the failing pot or for suspending it with cord.

Savannah (n=765). This component represents the other major period of sherd accumulation apart from the Deptford. Wares tend to be a mixture of fine sand paste tempered with varying sizes of grit and occasional grog inclusions. The interior surfaces are often combed or brushed, nevertheless having been carefully smoothed. While the most predominant surface treatment is cord marking (see Figure 5g), both plain and incised treatments appear (see Figure 5, f and h).

There is a possibility of horizontal stratification between EU 2 and EU 6 based on differential ceramic styles. Savannah Cord Marked occurs most frequently in EU 2, representing 71.5 percent (n=336) of the sample from that excavation unit, while Savannah Plain occurs relatively rarely (n=87) (see Table 3). In EU 6, the two types occur with nearly equal frequency. Since these variations do not intersect with any apparent stratigraphy, they

probably indicate horizontal stratification in the site with those who lived at EU 2 and EU *6* occupying the site at overlapping but slightly different times. Minority types may help resolve the temporal affiliation of the Savannah Cord Marked and Plain types. There is no previous report of incised varieties of the Savannah ware. Incising, however, does occur in the subsequent Irene phase. The greater presence of Savannah Incised in EU *6* suggests that the occupation there is later. Savannah Check Stamped sherds (n=42) were also found in EU *6* but only rarely (n=3) in EU 2. There is no similar guideline from which to infer the temporal orientation of Savannah Check Stamped since it occurs both in Savannah and earlier St. Catherines elsewhere. The carbon dates from the two EUs indicate that EU *6* was occupied around A.D. 1,000, between more extended occupations at EU 2 around A.D. 700 and A.D. 1,300. There is no particular indication, however, that the frequencies of carbon dates reflect the occupation densities. Both the Savannah Incised and Savannah Check stamped varieties should be given future attention as potential temporal diagnostics within the Savannah phase in future studies.

INTERPRETATIONS

The ceramic sequence for Osprey Marsh was viewed in the context of how comparable its radio carbon dates were with others from the Southeast, particularly South Carolina. The sequence of the site was also viewed in the context of changes in sea level (see Tanner 1993), an emphasis which first served in the identification of features found at Osprey Marsh (Gunn et al. 1995). The ceramic sequence is broadly consistent with the chronology proposed by DePratter (1979, 1991) for the South Carolina coast which he based on uncorrected carbon dates. Compared also with another set of carbon dates made available by Sassaman, the results were consistent.

At Osprey Marsh, an absolute chronology for ceramic types was developed from associated radiocarbon dates (Table 4). This chronology is by no means inclusive of all the data gathered; rather, dates relative to the Deptford, St. Catherines, and Savannah phases fall unsurprisingly into previously accepted ranges. No definition is given to the more elusive ranges for the Late Deptford and Wilmington phases. Oxidized Carbon Ratio (OCR) dating was also conducted and proved to be roughly consistent withthe radio carbon dates.

Table 4. Osprey Marsh Radiocarbon Dates.

Lab #	Provenience	Cultural Affiliation	Radiocarbon Age Years	Uncalibrated Calendar	Calibrated* Date	Calibrated Range* One-Sigma	
Beta	Fea./Bag #		B.P. ± SD	Date	B.C.-A.D	Begin	End
74620	Fea. 1 (65)	Deptford	2,700 ± 70	750 BC	830 BC	906 BC	803 BC
74621	under Fea. 4 (251)	Deptford	2,260 ± 60	310 BC	370 BC	391 BC	201 BC
74623	Fea. 5 (904)	Savannah	860 ± 50	A.D. 1090	A.D. 1214	A.D. 1161	A.D. 1248
74622	Fea. 7 (494)	Savannah	430 ± 50	A.D. 1520	A.D. 1449	A.D. 1435	A.D. 1483
74624	SC 20 (922)	St Cath	990 ± 50	A.D. 960	A.D. 1025	A.D. 1010	A.D. 1153

* Based on Stuiver and Reimer (1993) CALIB program using Dataset 1 (File INTCAL93.14C)

Tanner (1993) has developed methods that are sensitive to high sea stands as well as low. He has undertaken several studies of beach ridges in the Gulf of Mexico and Europe. While all of the studies reflect good agreement between period and magnitude of Late Holocene sea level changes, the most interesting study is of low wave energy along Danish beaches facing the Baltic Sea. Because of isostatic rebound from the last glaciation, these beaches have been slowly lifted away from wave action for the last 9,000 years. As a result, a highly resolved record of sea level can be deciphered by grain size analysis of relic beach sediments. Nine radiocarbon dates were used to calibrate the rate of uplift. The rate of uplift, then, becomes the calendar against which sea levels are measured.

Focusing on the last 4,000 years (Figure 9), it can be seen that sea level has risen about a meter above current levels at around 820 B.C., A.D. 100, and A.D. 1000. At other times it has dipped as much as 3 m below current levels. (This curve was obtained by smoothing approximately 50-year interval kurtosis values with a seven point running average and obtaining regression residuals to remove the effects of isostatic rebound. Though slightly out of synchronization with the existing South Carolina curve (Brooks et al. 1989:93), the number of peaks and valleys and their approximate coordination of dates compare favorably. The errors are probably within the margin of error of the methods used.

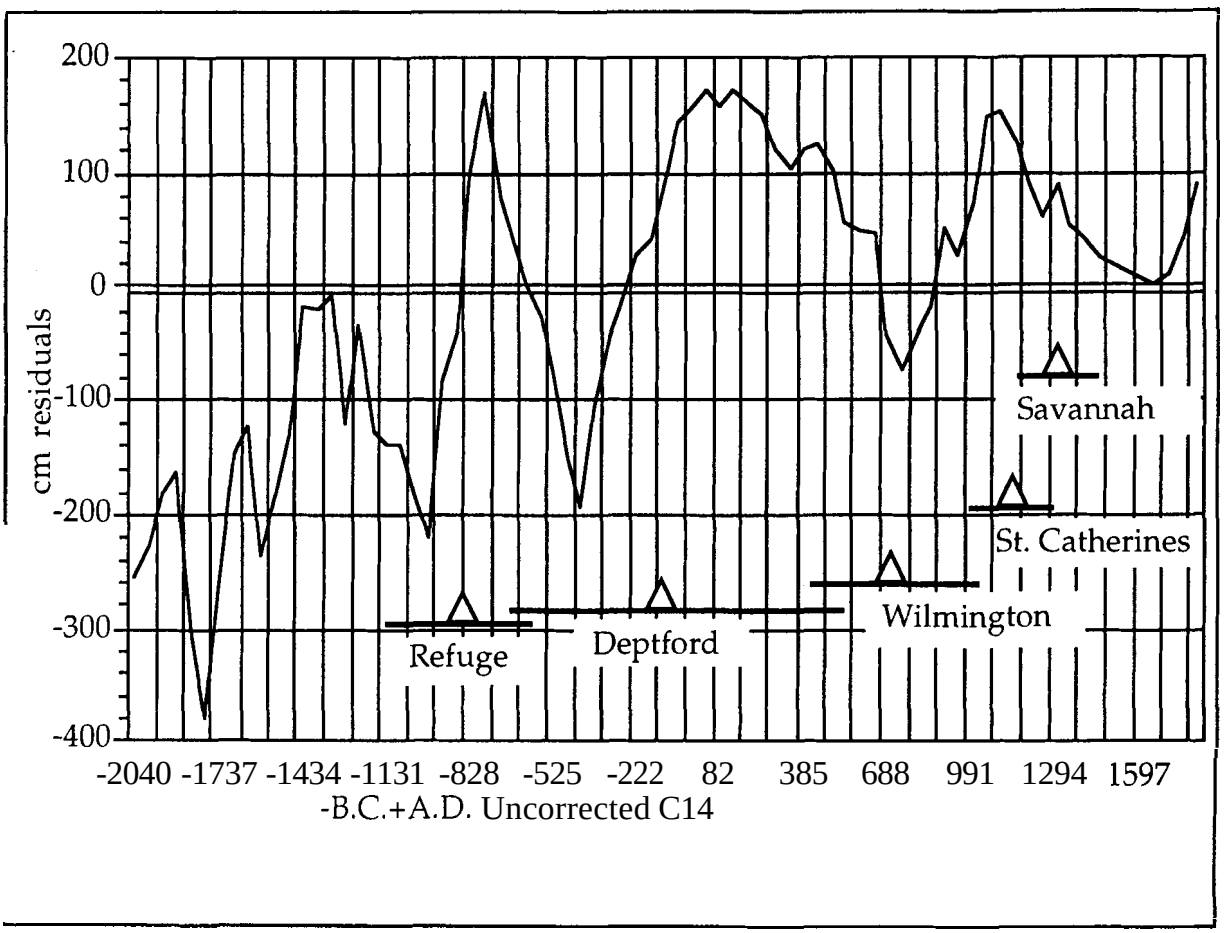


Figure 9. Sea Level Change (Tanner 1993) and the Cultural Sequence at Osprey Marsh.

By cross-referencing the ceramic chronology with rises and falls in sea level as presented by Tanner (1993), we have detected a corresponding pattern. It seems more than coincidental that the significant changes in ceramic types occur at changes in sea level. The ceramic wares that are prevalent at Osprey Marsh include Deptford, Wilmington, St. Catherines, and Savannah. Collectively these wares span a 2,000 year period from 550 B.C. to A.D. 1450. During that period, there are two significant sea level rises and one significant fall. At about A.D. 450, the sea level began drop from a level that was approximately 50 cm higher than it is presently. It dropped consistently until around A.D. 850, at which time it measured approximately 20 cm lower than it is presently. This sea level change corresponds to the shift from Deptford to Wilmington. The finer Deptford clays seem to have produced sherds that are thin and tempered with potentially naturally occurring sand and fine grit. The subsequent Wilmington clays have no sand, and the wares are intentionally tempered with large pieces of grog. St. Catherines wares, with small grog inclusions, seem a refinement of this grog tempering. Finally, during the Savannah phase, there is a corresponding rise in sea level. Savannah wares exhibit something of a return to a fine clay with sand and grit tempering as found during the previous rise period, or Deptford phase. But in some cases, Savannah wares still retain small grog tempering in addition to the sand and grit. Though these sea level changes do not lend themselves to images of massive tidal changes, they are significant by virtue of their causal effects on coastal erosion.

Having taken this as an hypothesis, what process would explain the variance of clay sources with sea level? We suggest that during rises in sea level, tidal erosion of the coast exposes strata containing fine clays. Geological studies along the South Carolina coast from Charleston to Hilton Head Island have shown that Paleocene sediments are separated by nonconformities that have various shallowing deposits (Colquhoun and Muthig 1991:244; Horton and Zullo 1991:8; Powell and Obermeier 1991:313-316). These deposits may contain any variety of fine to sandy clays (see Gunn et al. 1995:259-265). The sea level changes might imply that fine clays were exposed twice by erosion from the Middle Woodland period to the Mississippian period, and alternate upland resources utilized once during a fall in sea level. The clay in ceramics varies from homogeneously fine to naturally mixed with fine to medium sand. The weathering process would be more likely to produce clays of sufficient purity in older soils away from the immediate and young, unconsolidated coastal sediments. Weathering typically produces sandy clays at best. Could mining of these clays, if they exist (Hilton Head Island has an old island core) explain the sand and grit temper of Deptford and Savannah wares? A closer inspection of coastal clay sources coupled with trace element analysis of sherd samples may in the future show the significance of, and bring closure to, these questions.

MAJOR POTTERY TYPES FROM OSPREY MARSH

Refuge Plain
Refuge Simple Stamped
Deptford Check Stamped
Deptford Linear Check Stamped
Deptford Cord Marked
Oemler Complicated Stamped
Wilmington Cord Marked
St. Catherines Cord Marked
St. Catherines Plain
Savannah Cord Marked
Savannah Plain
Savannah Check Stamped
Savannah Incised

REFUGE PLAIN

Chronological Position. Early Woodland period, Refuge I-III phases (1100-400 B.C.) and Deptford I Phase (400 B.C.-A.D. 300). Consistent with other sites at the mouth of the Savannah River and adjacent areas, this category was found in stratigraphic association with Deptford types at Osprey Marsh.

Sorting Criteria. Despite a considerable amount of coarse sand and grit tempering, the exterior surfaces of this type are well smoothed at Osprey Marsh. Elsewhere, the finish may be roughly smoothed. Body sherds are generally thick (1.0 cm+), and their color tends to be buff or light gray, with little or no color differentiation in cross-section. Though rim and vessel form data were unavailable at Osprey Marsh, rims are traditionally straight, slightly flaring occassionally, lips are squared or rounded, body is of a conoidal jar or hemispherical bowl, and base is conoidal or rounded, occasionally with tetrapods.

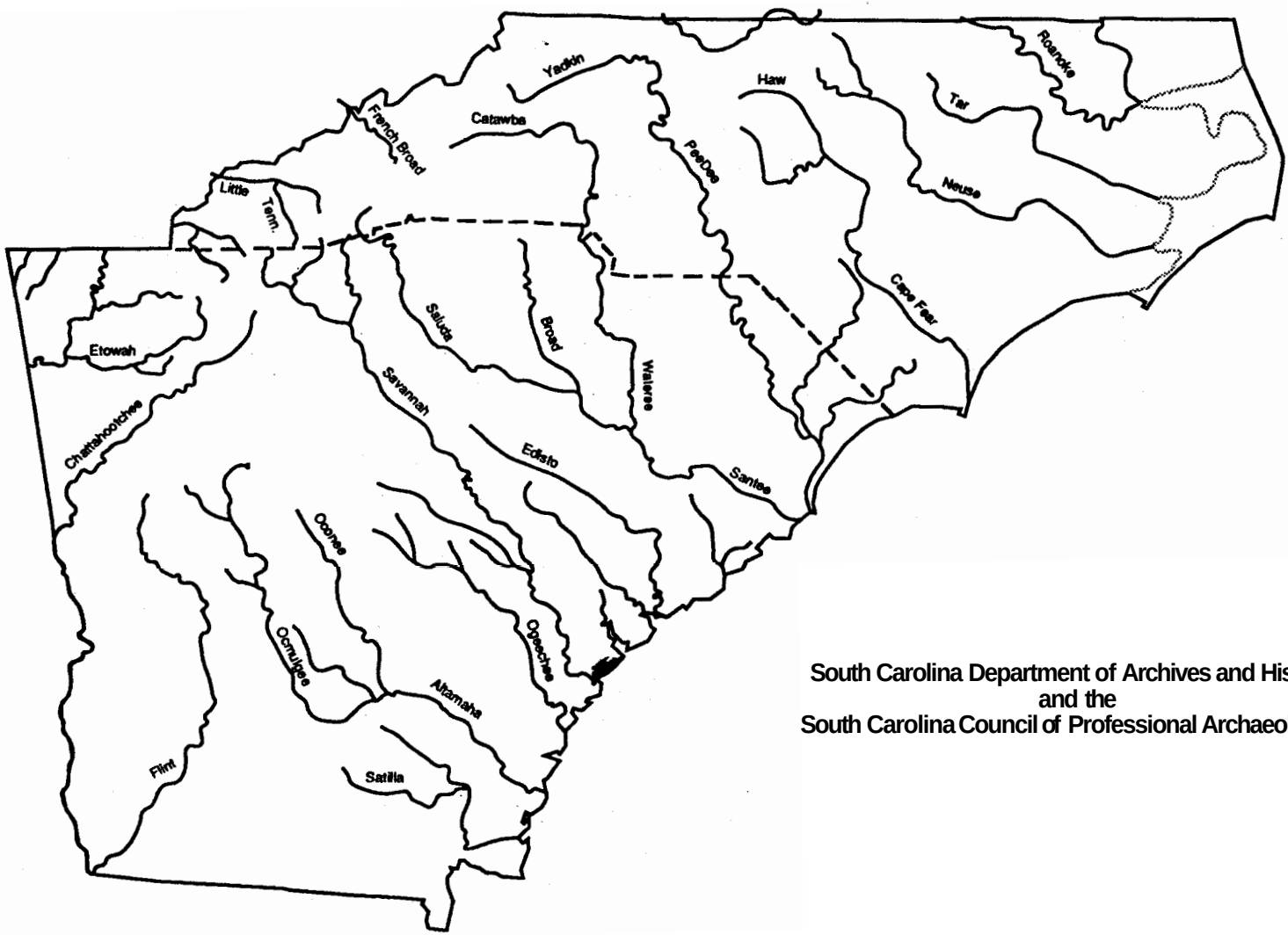
Distribution. Poorly documented. If consistent with Refuge Simple Stamped and Refuge Dentate Stamped surface finishes, this type tends to occur sparsely throughout the South Carolina coastal plain and partially into North Carolina, with concentrations along the lower Santee River making its occurrence at Osprey Marsh of note. If consistent with Refuge Simple Stamped and Refuge Punctated pastes, this type is more locally centered around the mouth of the Savannah River and extending south along the Georgia coast.

Background. First noted by Waring (1968), this type was described by DePratter (1979:122) for the north Georgia coast. Anderson et al. (1982:270) presented a review of Refuge Plain, there bringing to light some of the distinctions between mid-South Carolina coastal and north Georgia coastal pre-Mississippian period sand-tempered plain wares. Though small, the sample from Osprey Marsh (n=20) tends to fall unambiguously under the north Georgia coast context for the Early Woodland period.

Primary References. Anderson 1975; Anderson et al. 1982; DePratter 1979, 1991; Waring & Holder 1968.

REFUGE PLAIN

1995 Ceramics Conference: Prehistoric Ceramics of South Carolina and Adjoining Areas
March 9-11, 1995
Hobcaw Barony, Georgetown, South Carolina



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REFUGE SIMPLE STAMPED

Chronological Position. Early Woodland period, Refuge I-III phases (1100-400 B.C.) and Deptford I Phase (400 B.C.-A.D. 300). This category was stratigraphically contemporaneous with Deptford types recovered at Osprey Marsh.

Sorting Criteria. The simple stamped designs are shallow and appear to have been applied sloppily. There is considerable amount of grit tempering (subangular to rounded inclusions), often sandy, but the exterior surfaces are smooth. The color tends to be buff or light gray. Rims are traditionally straight, slightly flaring occassionally, lips squared or rounded, body conoidal jar or hemispherical bowl, and base conoidal or rounded occasionally with tetrapods

Distribution. Similar to Refuge Plain, this type tends to occur sparsely throughout the South Carolina coastal plain with concentrations along the lower Santee and Savannah rivers.

Background. Though distinctions have been made between Refuge Simple Stamped and Deptford Simple Stamped, primarily based on quality of manufacture, (Anderson et al. 1982:282; DePratter 1991:163; Waring & Holder 1968:200), no Deptford Simple Stamped sherds were found at Osprey Marsh. There was, however, a type that exhibited the use of a better quality stamping implement than that found on Refuge; but its parallel lands alternated between simple and low resolution linear check stamping. This type was found in association with Fine Deptford Check Stamped sherds and resembles the kind of aesthetic mutation that would span the bridge between simple and linear check stamping.

Primary References. Anderson 1975; Anderson et al. 1982; DePratter 1979, 1991; Waring & Holder 1968.

REFUGE SIMPLE STAMPED

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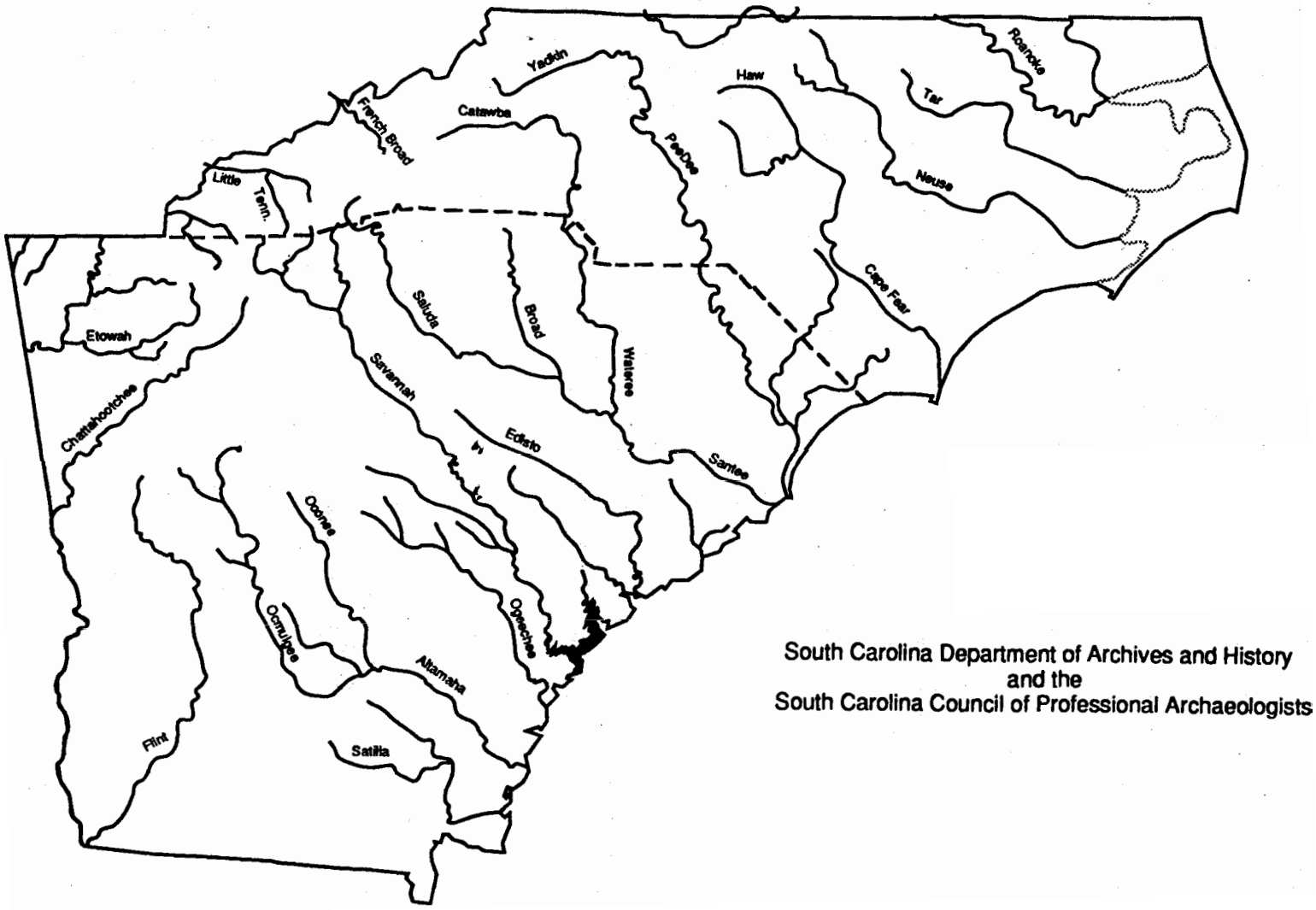

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DEPTFORD CHECK STAMPED

Chronological Position. Early/Middle Woodland periods, Refuge III Phase through Deptford II Phase (900 B.C.-A.D. 500). Several Oxidized Carbon Ratio (OCR) dates obtained from features relative to this type potentially extend the range to ca. A.D. 700.

Sorting Criteria. The paddle-stamped design is made up of raised lands intersecting to form squares, rectangles, and rhomboids of varying sizes ranging from 0.3 to 1.0 cm on a side, and 0.3 cm deep. These designs cover the entire exterior surface of the vessel and generally approximate a 90 degree angle to the rim which is usually square and stamped as well. The vessel body is typically cylindrical with slight tapering of the shoulders to the base, which is rounded or conoidal, occasionally with tetrapods. The paste is often compact and characterized by grit tempering (rounded inclusions). This type has been confused with Savannah Check Stamped.

Distribution. This type occurs throughout the coastal plain of South Carolina and Georgia, and has been recorded as far north as the southeastern coastal plain of North Carolina (Anderson et al. 1982:281; personal communication, C. Stein 1995). It tends to intergrade up the Savannah River with Cartersville Check Stamped of Northwest Georgia and the western Georgia Piedmont.

Background. This type was first called Deptford Bold Check Stamped by Caldwell and Waring (1939), and has since been compared with other types (e.g., Cartersville Check Stampedrelative to the Middle Woodland period and possessing the same, or similar, surface treatment. An extensive background has been provided by Anderson et al. (1982). The assemblage from Osprey Marsh (n=62) appeared to be consistent with the type as described for the mouth of the Savannah River, and included both "bold" and plain varieties. Study of the surface patterns on some of the sherds for paddled versus rouletted techniques provided inconclusive data, though it appears that both may have been used in preparing pots with clays of varying moisture prior to firing.

Primary References. Anderson et al. 1982; Caldwell & Waring 1939; DePratter 1979, 1991; Waring & Holder 1968.

DEPTFORD CHECK STAMPED

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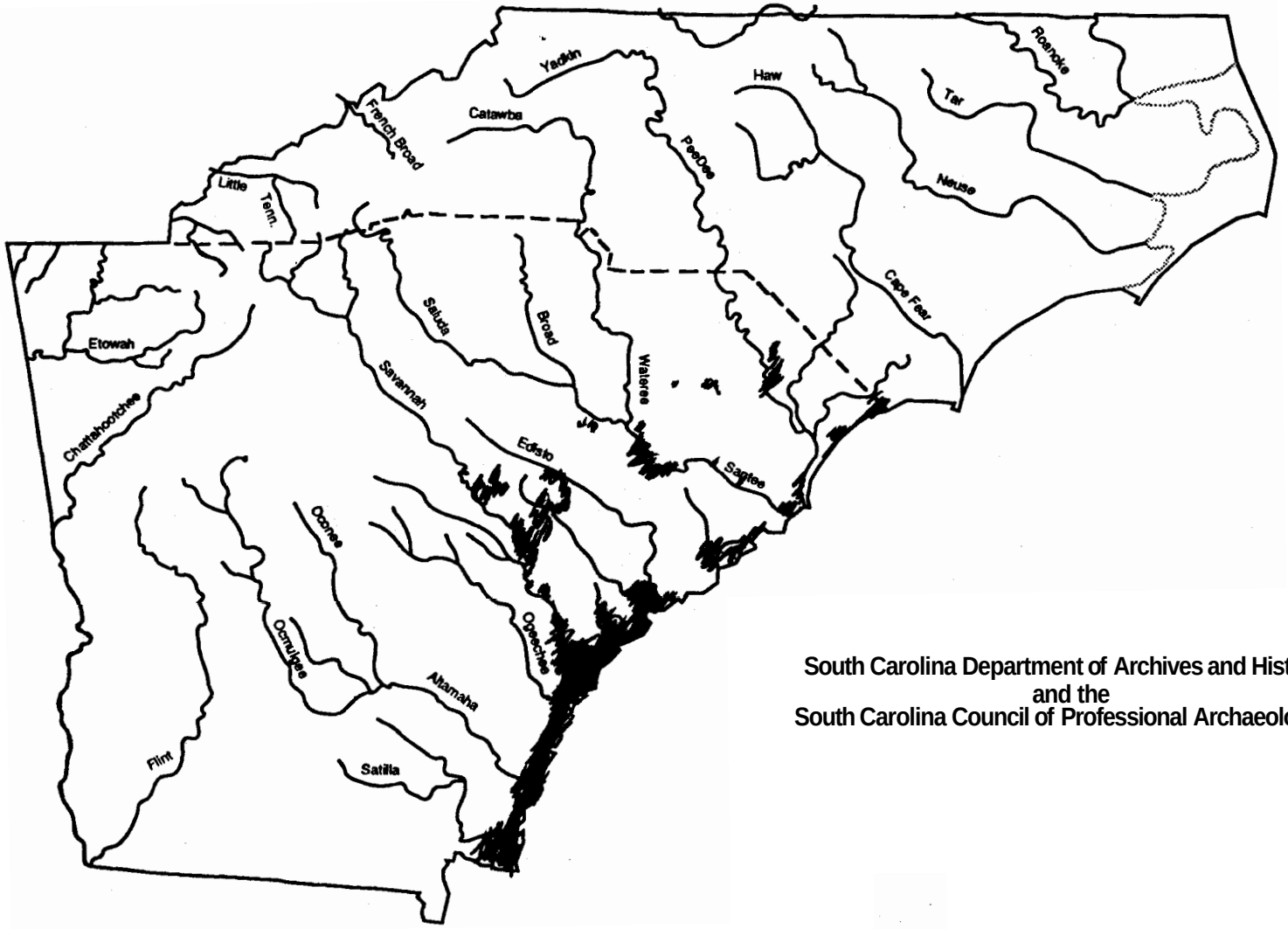

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DEPTFORD LINEAR CHECK STAMPED

Chronological Position. Early/Middle Woodland periods, Refuge III Phase through Deptford I Phase (900 B.C.-A.D. 300). This category is chronological different from Deptford Check Stamped due to its shorter range.

Sorting Criteria. This surface consists of longitudinal and transverse lands that form a grid similar to Deptford Check Stamped, but with the longitudinal lands being wider, unbroken, and generally parallel. The sizes of individual checks range from 0.3 to 1.0 cm to a side; the longitudinal lands tend to be 0.2-0.5 cm wide and are slightly higher than the thinner transverse lands. The designs appear either paddled or rouletted with occasional heavy overlapping. Interior surfaces are often well smoothed, but maintain a sandy touch. The paste tends to be hard and compact, less sandy than Deptford Check Stamped, and with few, if any, grit inclusions. Rims are straight to flaring slightly, usually squared and stamped; the body is cylindrical with a slight shoulder that tapers to a conoidal, or sometimes rounded, base.

Distribution. Throughout the South Carolina and Georgia coastal plain and into northern Florida. Local concentrations occur toward the mouth of the Savannah River and in the surrounds of Port Royal Sound. Occurrence of this type at Osprey Marsh is consistent with this distribution and suggests that, in fact, occupation was relatively heavy along the coast between Edisto Bay and northern Florida.

Background. First defined by Caldwell & Waring (1939) from data obtained from the Deptford shell midden and other sites in Chatham County. Anderson et al. (1982:277-78) discuss the strong resemblance that this type bears to Deptford Check Stamped, no doubt due to less emphasized longitudinal lands than the more southern coastal contemporaries; so strong are the similarities that the two types were lumped under a single type, Deptford Linear Check Stamped, for the Mattassee Lake sites. The assemblage from Osprey Marsh shows distinct differences between the check and linear check stamps. The sample (n=144) was the second largest category representing the Middle Woodland period after Deptford Cord Marked.

Primary References. Anderson et al. 1982; Caldwell & Waring 1939; DePratter 1979, 1991.

DEPTFORD LINEAR CHECK STAMPED

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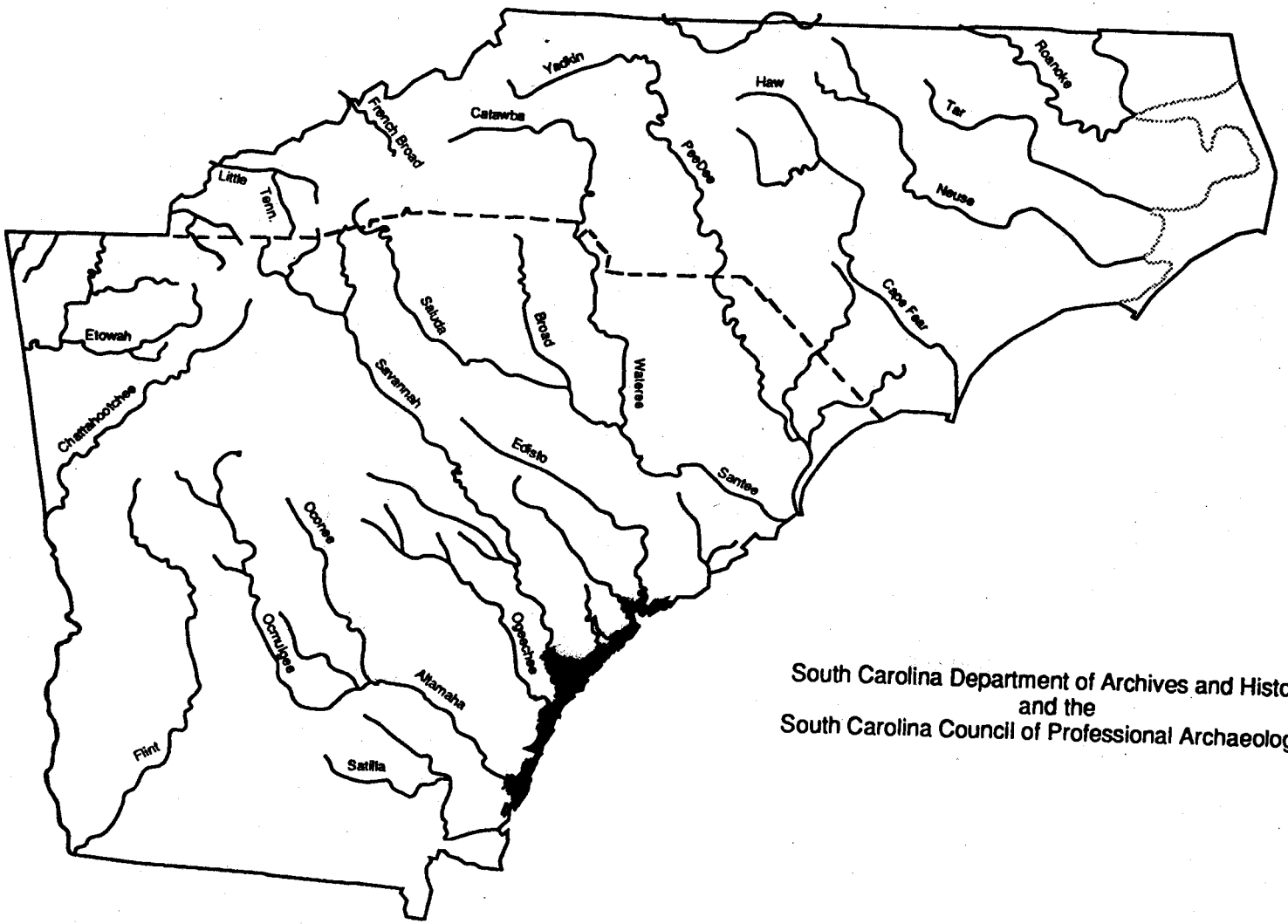

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DEPTFORD CORD MARKED

Chronological Position. Middle Woodland period, Deptford I-II phases (400 B.C.-A.D. 500). Stratigraphic contexts at Osprey Marsh suggest that this type was deposited earlier than the other Deptford types. A carbon sample from a tree root consistent with this level returned a calibrated date of 830 B.C. This pushes the range of Deptford Cord Marked to starting within the Refuge III Phase.

Sorting Criteria. Surface attributes tend to contain heavy cord marking (up to 0.3 cm wide) with loose S-twists predominating. Paste attributes are similar to Deptford Linear Check Stamped, with hard, slightly sandy paste with few grit inclusions. Rims tend to be poorly modelled and irregular, with interior surfaces that are casually smoothed. Cross-stamping is uncommon. Vessel forms resemble that of Deptford Check Stamped, cylindrical with slightly tapered shoulders and a rounded or conoidal base.

Distribution. Throughout the South Carolina and Georgia coastal plain and into northern Florida. Local concentrations occur toward the mouth of the Savannah River, inland, and in the surrounds of Fort Royal Sound.

Background. First identified and defined by DePratter (1979), this type has been mistaken for Wilmington Cord Marked despite the differences in paste attributes. Indeed, the similarities in cord marking (e.g., direction, width, and tightness of twist) would suggest that the two types share the same surface treatment on different pastes. However, the calibrated radio carbon date of 830 B.C. obtained at Osprey Marsh broadens the range for Deptford Cord Marked, as has been suggested for the mouth of the Savannah River by DePratter (1991:172).

Primary References. DePratter 1979,1991.

DEPTFORD COND MARKED

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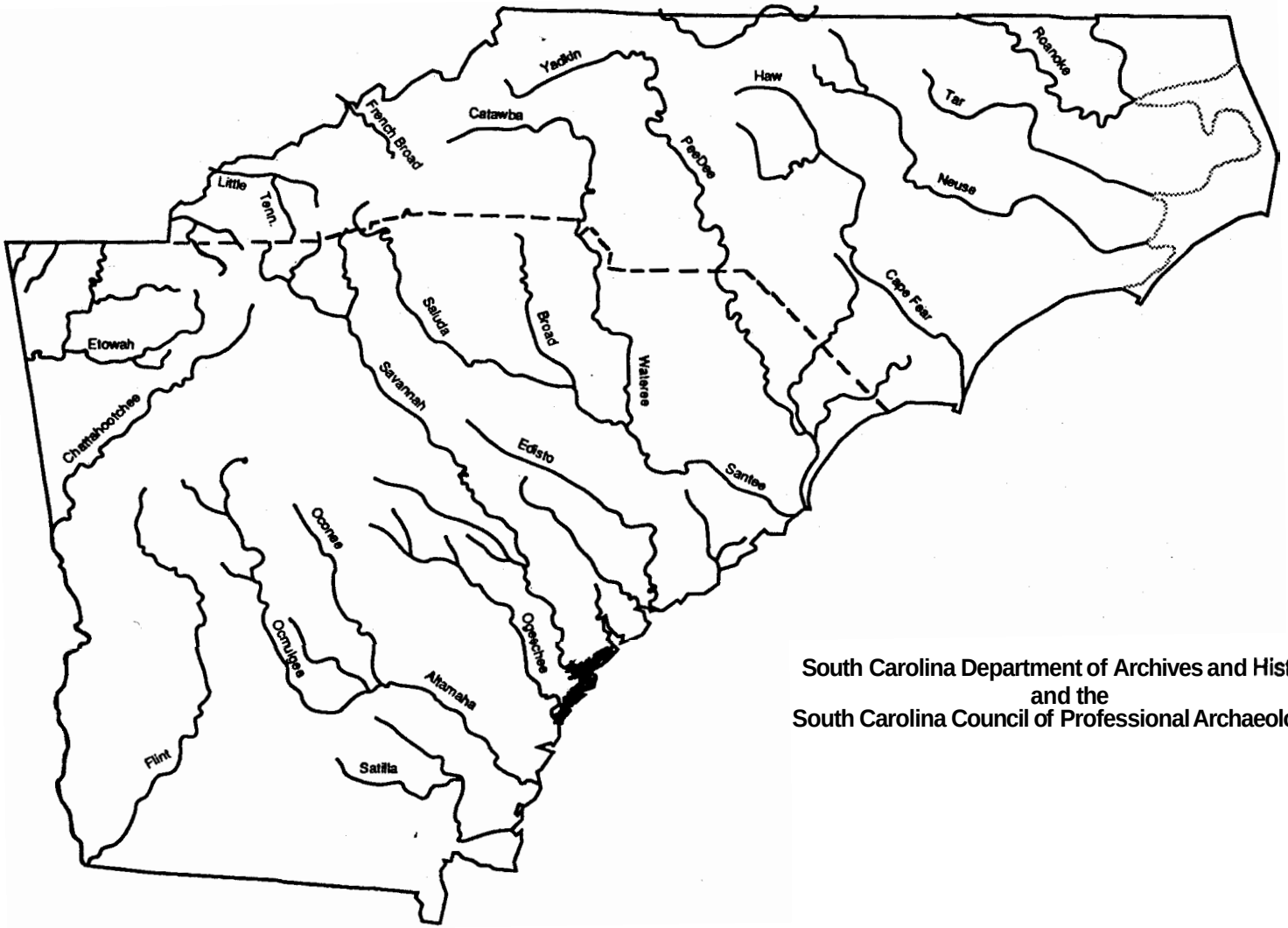

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OEMLER COMPLICATED STAMPED

Chronological Position. Uncertain, potentially Middle Woodland period, Refuge III Phase (900-400 B.C.). A lack of stratified sites has thwarted proper sequencing of this type (DePratter 1991:174). However, data recovered at Osprey Marsh indicate that it is coeval with Deptford Check Stamped and may fall late during Deptford Cord Marked, giving it a Middle/Late Woodland period range of ca.

Sorting Criteria. The designs include the herringbone pattern and variations on it which resemble Deptford Linear Check Stamped. Another sample consists of wide zones of cross-hatched designs bound by thick, parallel bands.

Distribution. Poorly documented. Occurrence along the north Georgia coast has been occasional and in poorly stratified context. It appears that this type is a relatively localized development from the more common Deptford Linear Check Stamped and may be restricted to Port Royal Sound and areas of the north Georgia coast near the mouth of the Savannah River.

Background. This type has also been known as Deptford Geometric Stamped (Waring 1968; DePratter 1979:118). This assemblage exhibits a variety of designs on wares that are similar in temper, paste, and thickness to Deptford II types.

Primary References. DePratter 1979,1991; Waring & Holder 1968.

OEMLER COMPLICATED STAMPED

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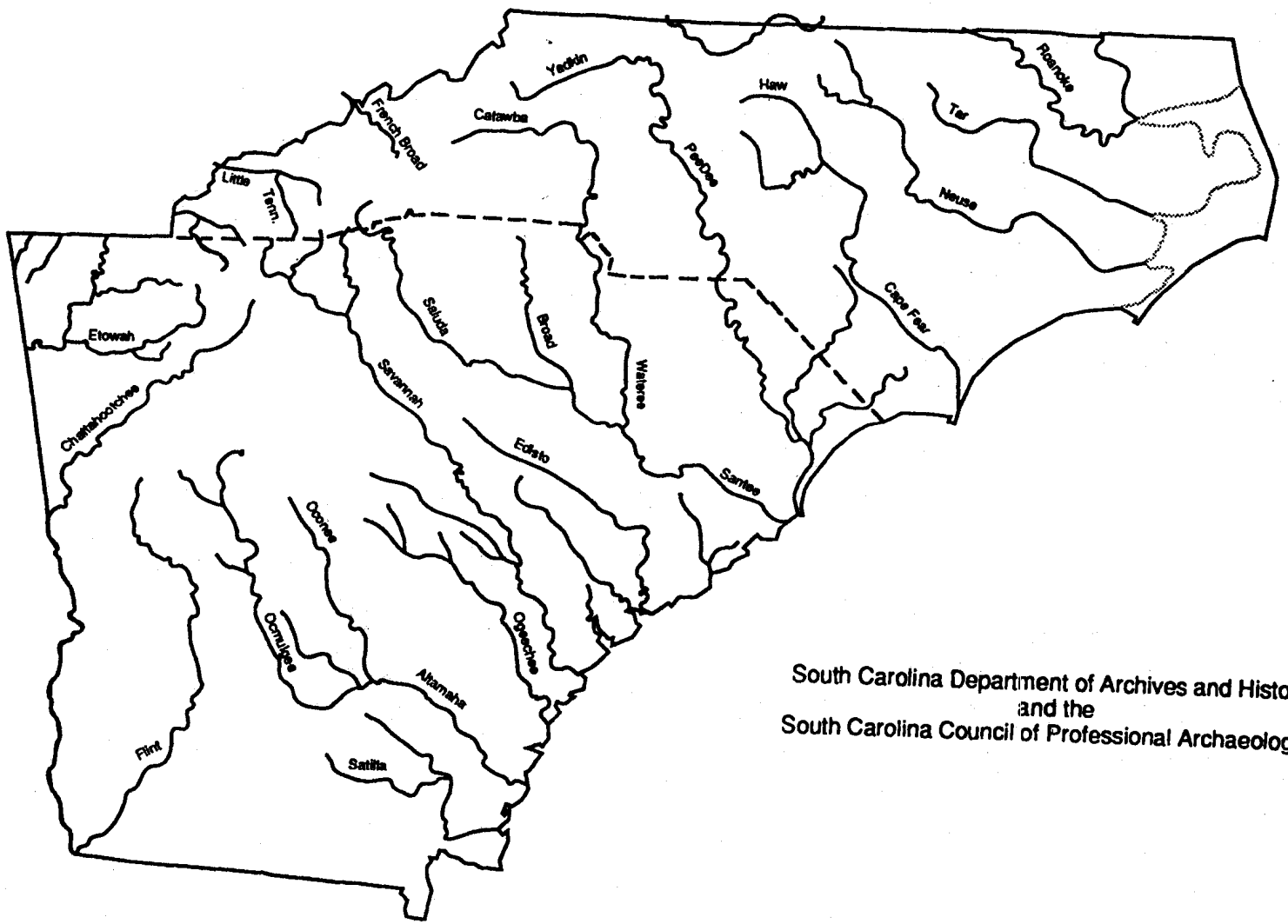

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WILMINGTON CORD MARKED

Chronological Position. Middle/Late Woodland and Early Missippian periods, Walthour and Wilmington phases (A.D. 500-1000).

Sorting Criteria. This type is typified by its large clay/grog inclusions, as large as 1.0 cm, which often effect the appearance of the interior surface. The designs appear to ahve been applied with a cord-wrapped paddle, and the cord is often heavy (up to 0.3 cm wide) and may possess either a Z- or an S-twist. Wilmington wares from Osprey Marsh exhibit a strongly differentiated core color; interior and exterior surfaces tended to be reddish brown, the core tended to be a dark gray.

Distribution. Moderately pervasive in the northern coastal plain of South Carolina and down the Santee River; also extends south along the coast to the mouth of the Savannah River, but tends to be generally more abundant north of the Edisto River. Locally, there is moderate frequency around Port Royal Sound, and the occurrence of this type at Osprey Marsh is consistent.

Background. This type has been described thoroughly by Caldwell & Waring (1939) and later DePratter (1979) and is currently thought to have developed out of Deptford styles. For the most part, Wilmington sherds were stratigraphically mixed with the Deptford II levels and features at Osprey Marsh. Based on these data, the transition from Deptford to Wilmington appears to have been gradual, intergrading from sand/grit to large grog tempering with a relative retention of surface treatment.

Primary References. Anderson 1975; Caldwell & Waring 1939 ; DePratter 1979, 1991; Williams 1968.

WILMINGTON COLD MARKED

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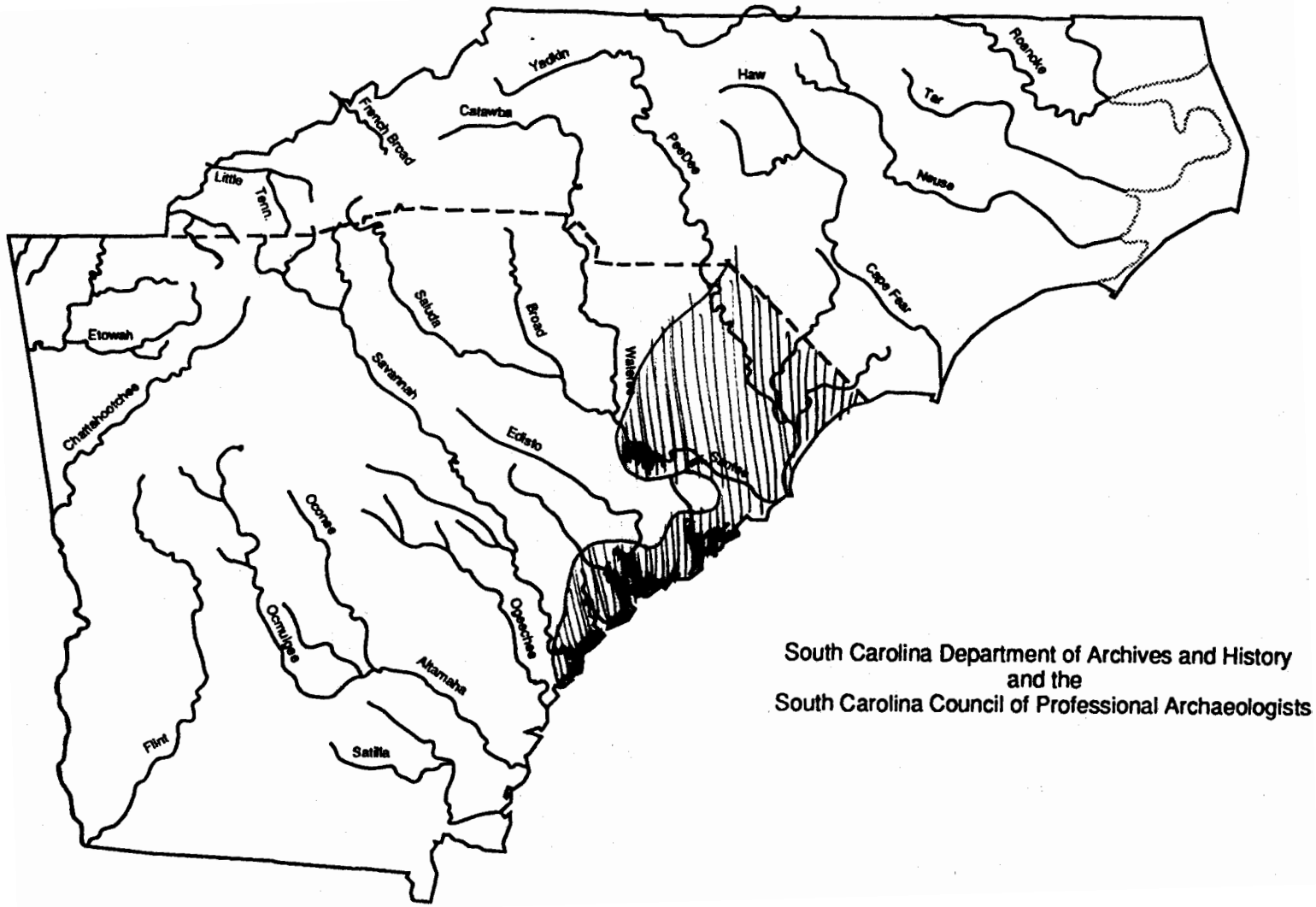

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ST. CATHERINES CORD MARKED

Chronoloeical Position. Early Mississippian period, St. Catherines Phase (A.D. 1000-1200).

Sorting Criteria. St. Catherines wares are tempered with grog inclusions that are generally smaller than those of Wilmington wares (DePratter 1991:180). The exterior surface is covered with medium to large cord impressions and is often cross-stamped. The interior surface tends to be somewhat smoothed, sometimes combed with shell. Paste is often powdery to the touch and ranges in color from grey to buff.

Distribution. In generally, this type is sparsely distributed along the Georgia coast and the vicinity of the mouth of the Savannah River. A low density scatter of sites possessing this type occur in the vicinity of Port Royal Sound.

Background. This type has been described thoroughly by DePratter (1979, 1991). No significant additions are made based on the Osprey marsh evidence.

Primary References. Anderson et al. 1982; DePratter 1979,1991.

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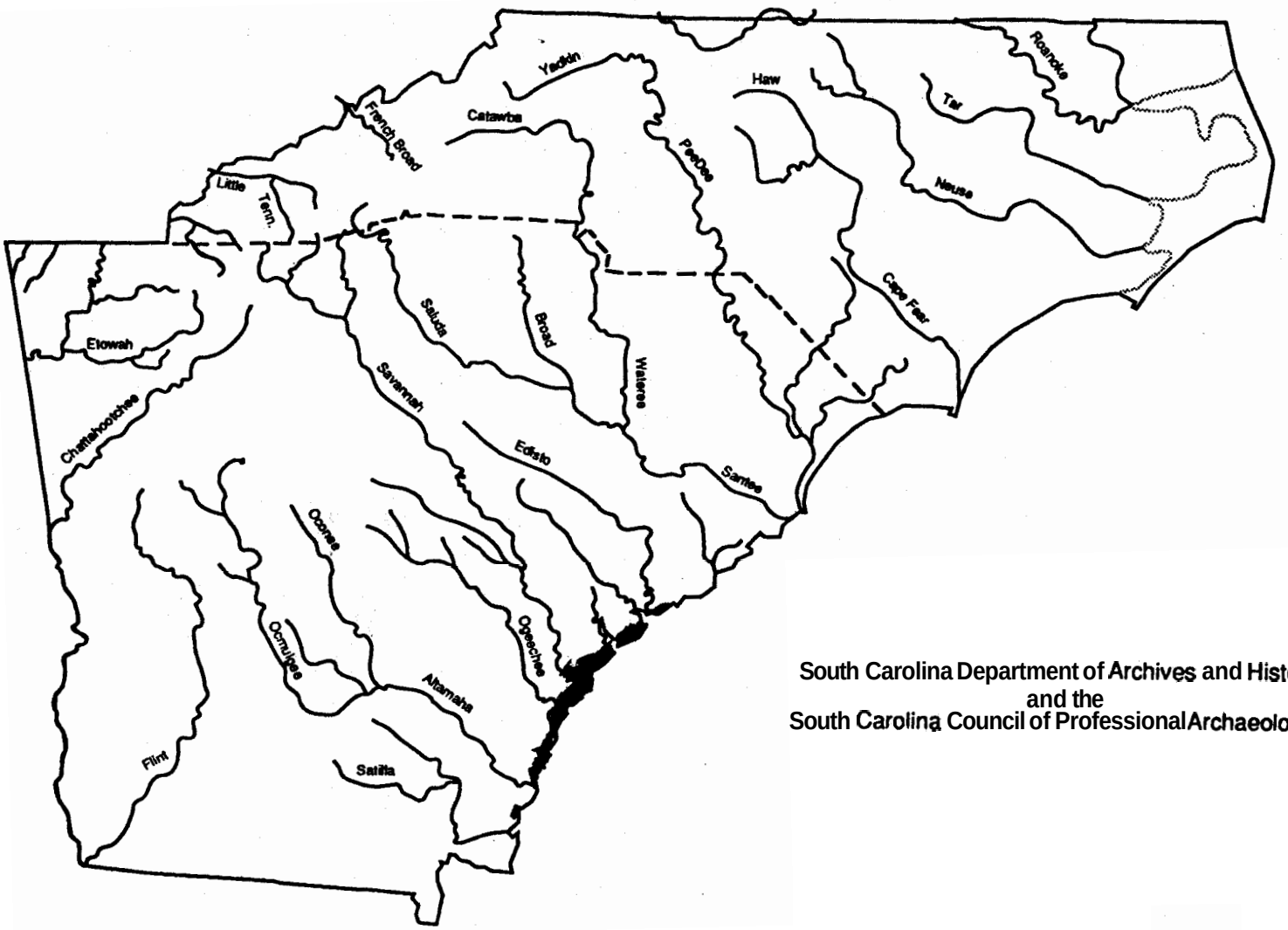

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ST. CATHERINES PLAIN

Chronological Position. Early Mississippian period, St. Catherines Phase (A.D. 1000-1200).

Sorting Criteria. Paste attributes match those of St. Catherines Cord Marked, very powdery at Osprey Marsh. The interior surface tends to be somewhat smoothed, sometimes combed with shell.

Distribution. Following the trend for St. Catherines Cord Marked, this type is distributed along the Goergia coast and into South Carolina as at least as far as Port Royal Sound.

Background. This type has aslo been described thoroughly by DePratter (1979, 1991). No significant additions are made based on the Osprey marsh evidence.

Primary References. DePratter 1979, 1991.

ST. CATHERINES PLAIN

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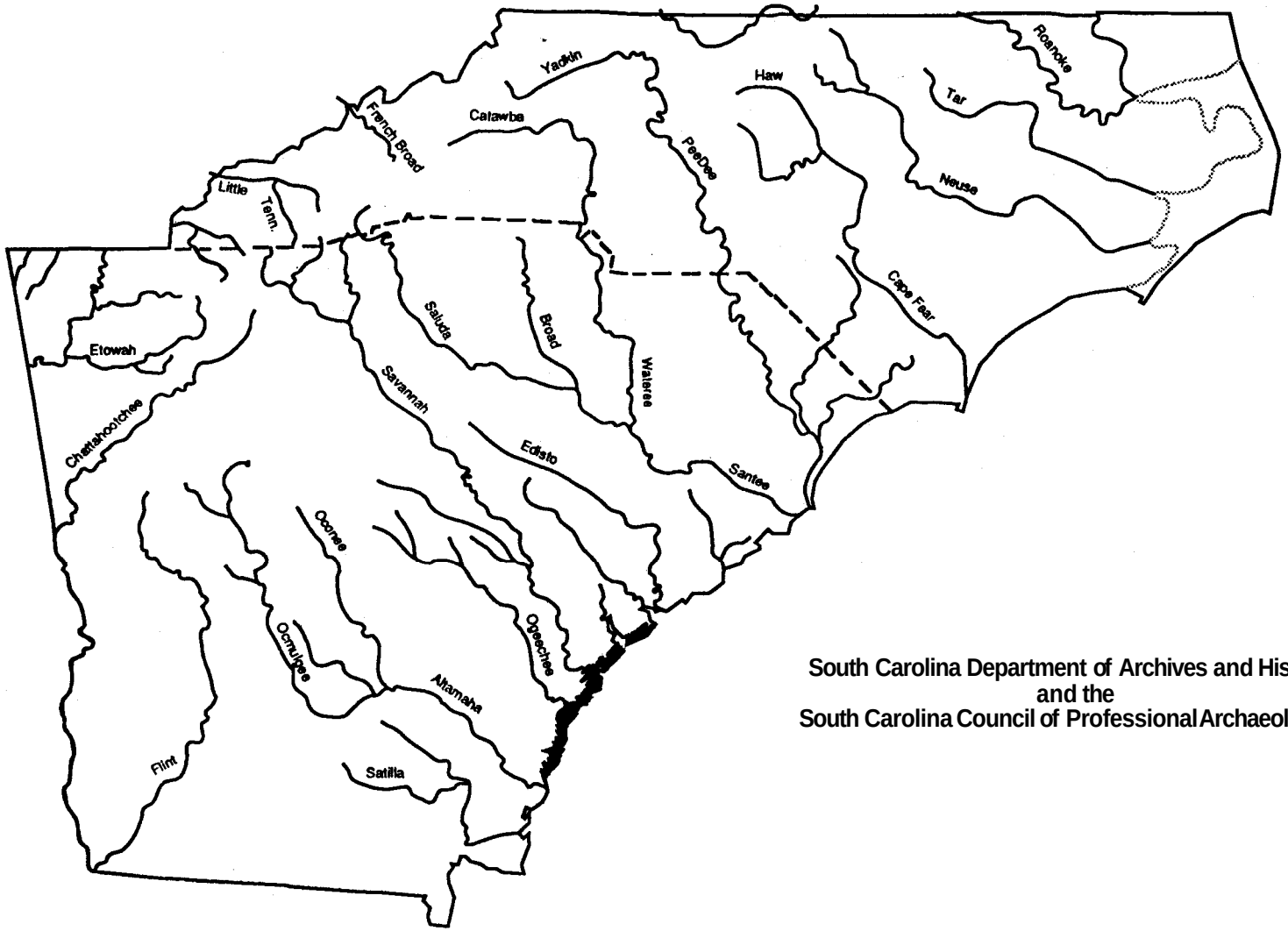

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SAVANNAH CORD MARKED

Chronological Position. Early/Middle Mississippian periods, Savannah I-II phases (A.D. 1200-1325).

Sorting Criteria. Savannah wares possess a hard, compact fine sandy paste and tend to contain varying sizes of grit (angular and subangular inclusions) and occasional grog inclusions. The interior surfaces are often combed or brushed to a well smoothed surface.

Distribution. Tends to be concentrated along the Southern Atlantic coast from St. Simons Island in Georgia to the South Carolina Islands around Port Royal Sound, extending also up along the Savannah River.

Background. This type was first defined by Caldwell & Waring (1939) and has been somehwat refined by DePratter (1979).

Primary References. Anderson et al. 1982; Caldwell & Waring 1939; DePratter 1979,1991.

SAVANNAH CORD MARKERS

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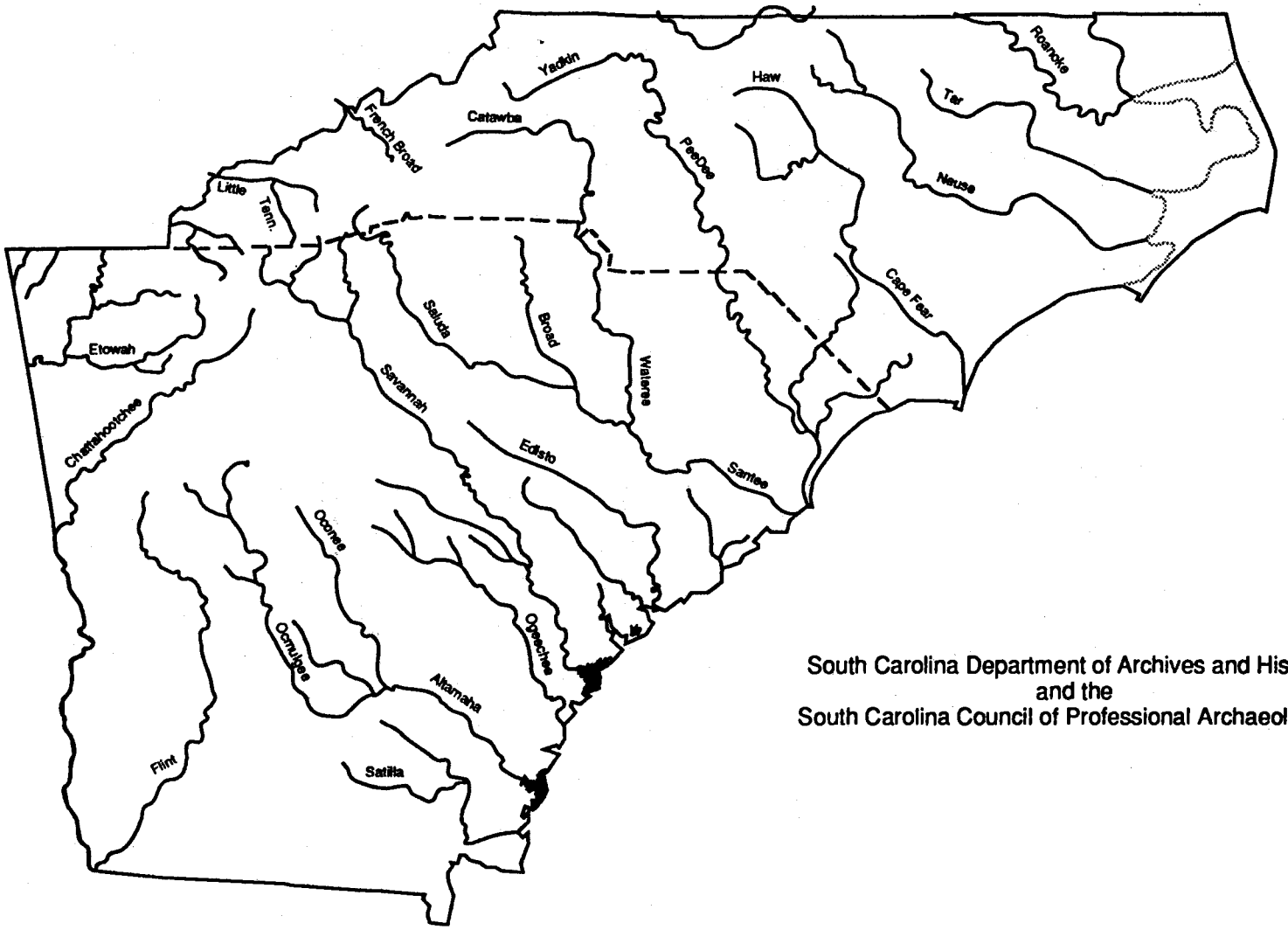

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SAVANNAH PLAIN

Chronoloaical Position. Early/Middle Mississippian periods, Savannah I-II phases (A.D. 1200-1325).

Sorting; Criteria. Savannah wares possess a hard, compact fine sandy paste and tend to contain varying sizes of grit (angular and subangular inclusions) and occasional grog inclusions. The exterior surface is well smoothed; the burnished plain specimens are often classified as a different type, Savannah Burnished Plain. The interior surfaces are often combed or brushed to a well smoothed surface.

Distribution. The distribution for this type is similar to that for Savannah Burnished Plain, with concentrations along the Gorgia coast and around the Savannah River.

Background. This type has been defined by Caldwell & Waring (1939) and has been somehwat refined by DePratter (1979, 1991). However, this may have been the type described by Clarence Moore (1897:26-28) from Georgia coastal mounds, which would make this its first documentation.

Primarv References. Anderson et al. 1982; DePratter 1979,1991.

Savannah Plain

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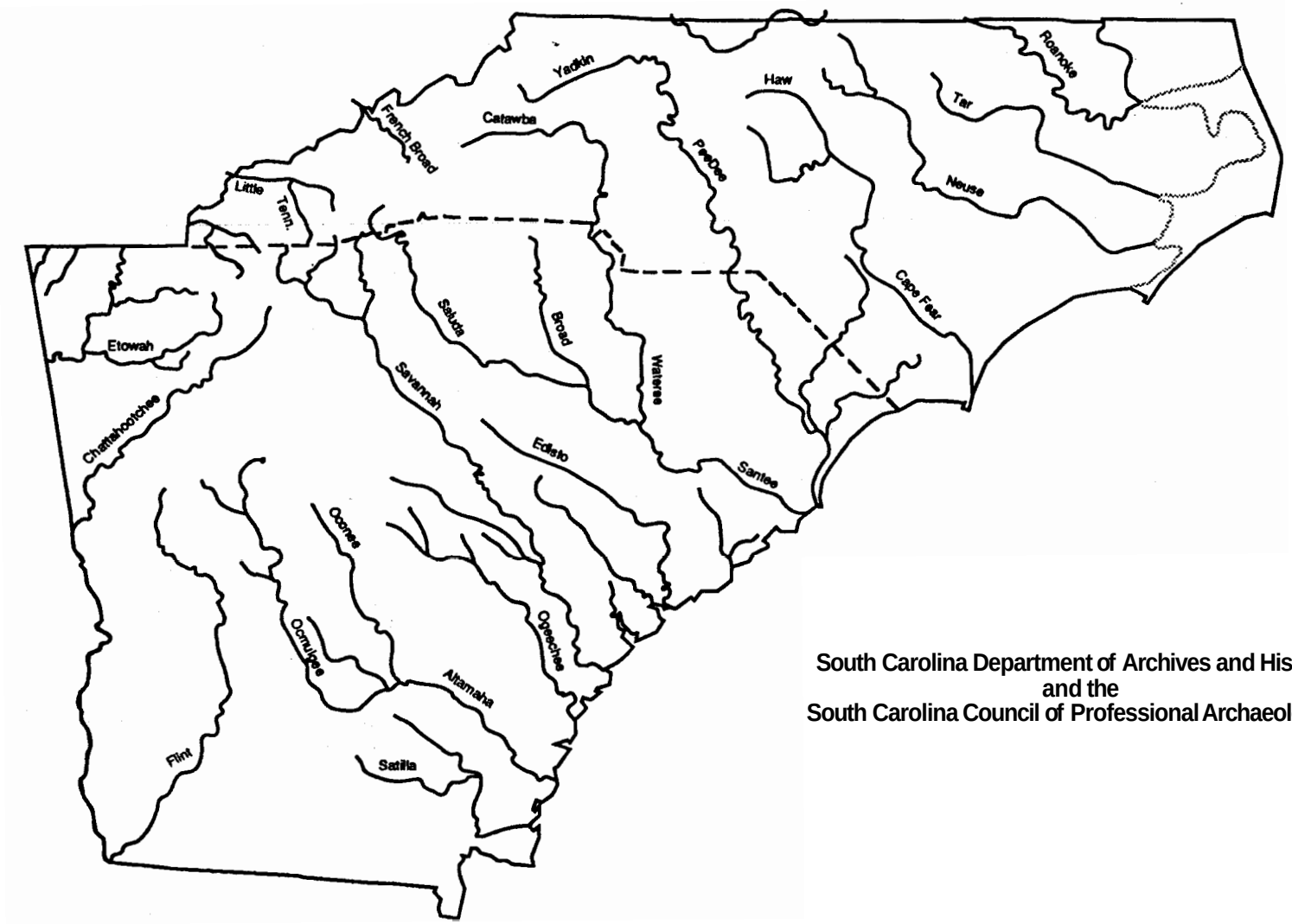

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SAVANNAH CHECK STAMPED

Chronological Position. Early/Middle Mississippian periods, Savannah I-II phases (A.D. 1200-1325). At Mattassee Lake where Anderson et al. (1982) noted a small sample of this type, the related Jeremy Phase ranges as late as A.D. 1400. One calibrated date from a Savannah Phase feature at Osprey Marsh was A.D. 1449.

Sorting Criteria. The check stamped surface over the entire vessel often appears smoothed, in some cases so burnished that the design underneath is obscured. The paste is hard, compact, and tempered with any combination of sand, grit, and small clay fragments that may be either added or natural inclusions; the color ranges from red to buff.

Distribution. Common throughout eastern Georgia, this type is poorly documented for South Carolina. It appears sparsely scattered along the coast with local concentrations south of Charleston Harbor to the Savannah River.

Background. First defined by Caldwell & Waring (1939), this type has been better documented for the Georgia coastal plain than for South Carolina. Anderson et al. (1982) have provided a succinct review of the related background, which places the variety Jeremy on this type at the Mattassee Lake sites.

Primary References. Anderson et al. 1982; Caldwell 1971; Caldwell & Waring 1939; Caldwell & McCann 1941; DePratter 1979,1991; Trinkley 1981; Wauchope 1966..

SAVANNAH CHECK STAMPED

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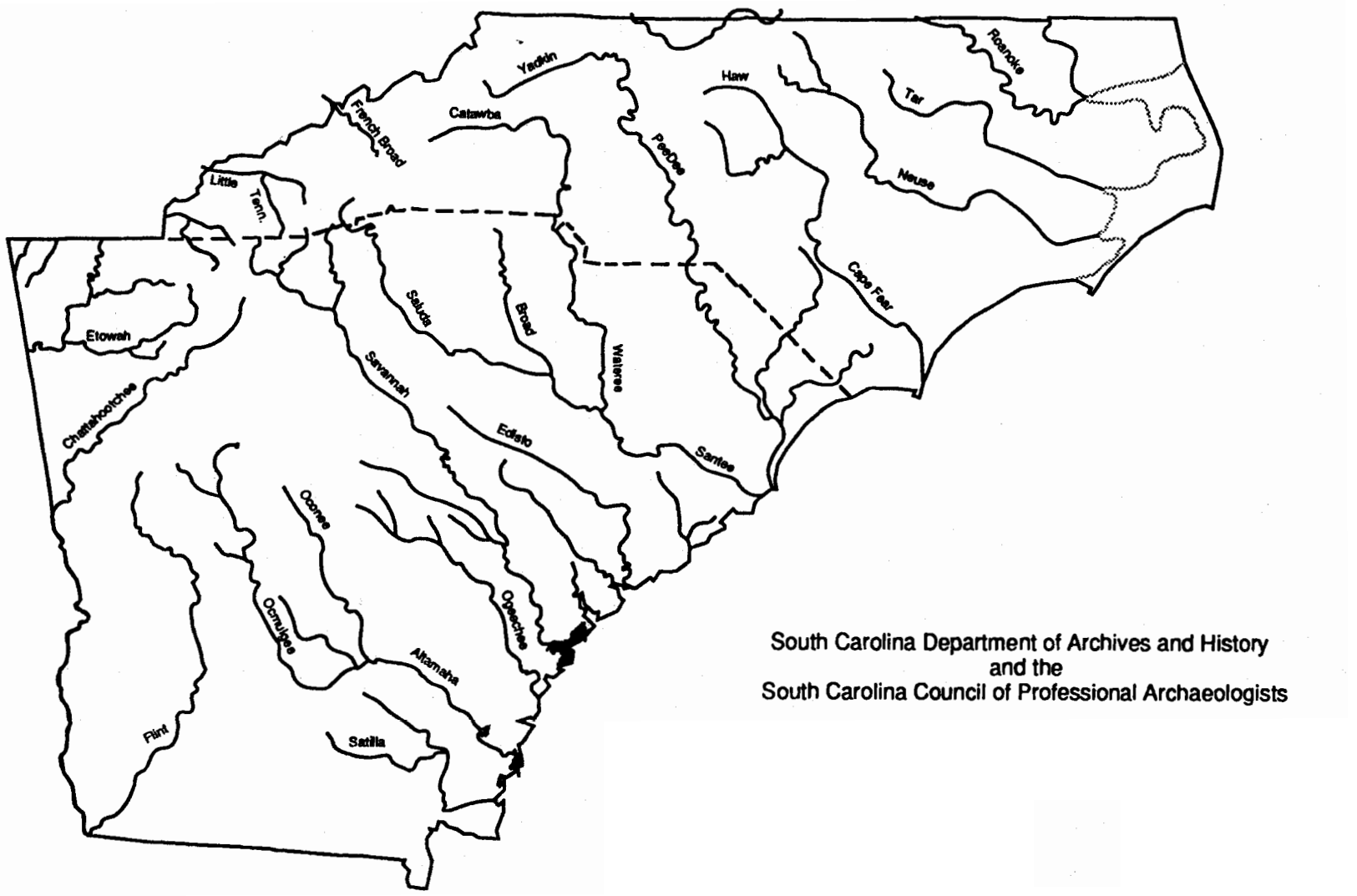

SAVANNAH INCISED

Chronological Position. Early/Middle Mississippian periods, Savannah I-II phases (A.D. 1200-1325). May range as early as A.D. 1450 based on data obtained at Osprey Marsh.

Sorting Criteria. Surface treatments exhibit thin, roughly parallel incised lines that are separated by approximately 0.5 cm and cross-hatched; the interior surface is brushed. The incisions appear to have been made with a sharp, rigid instrument no wider than 0.1 cm. The paste is fine and powdery, containing small clay inclusions, buff colored on the exterior, and red on the interior. The samples from Osprey Marsh exhibited a straight wall with slightly rounded lip. It is presumed that, like other Savannah Phase vessels, this type is a globular vessel with a well defined shoulder and rounded base.

Distribution. Poorly documented. The distribution of temperless or sand-tempered incised ceramics is lightly scattered throughout the coastal plain of South Carolina, and occasionally reported from areas in Georgia. If this type resembles other Savannah wares, this type may be concentrated around the mouth of the Savannah River.

Background. Not previously defined. A small sample (n=15) of this type was identified at Osprey Marsh, the majority of which belonged to the same vessel (Gunn et al. 1995). The type occurred in levels that also possessed numerous Savannah Cord Marked and Savannah Plain sherds. Two features at these levels produced Oxidized Carbon Ratio (OCR) dates of A.D. 908 and A.D. 1025, suggesting that this type may be more consistent with

Primary References. Anderson 1975; Gunn et al. 1995.

(SAVANNAH) INCISED

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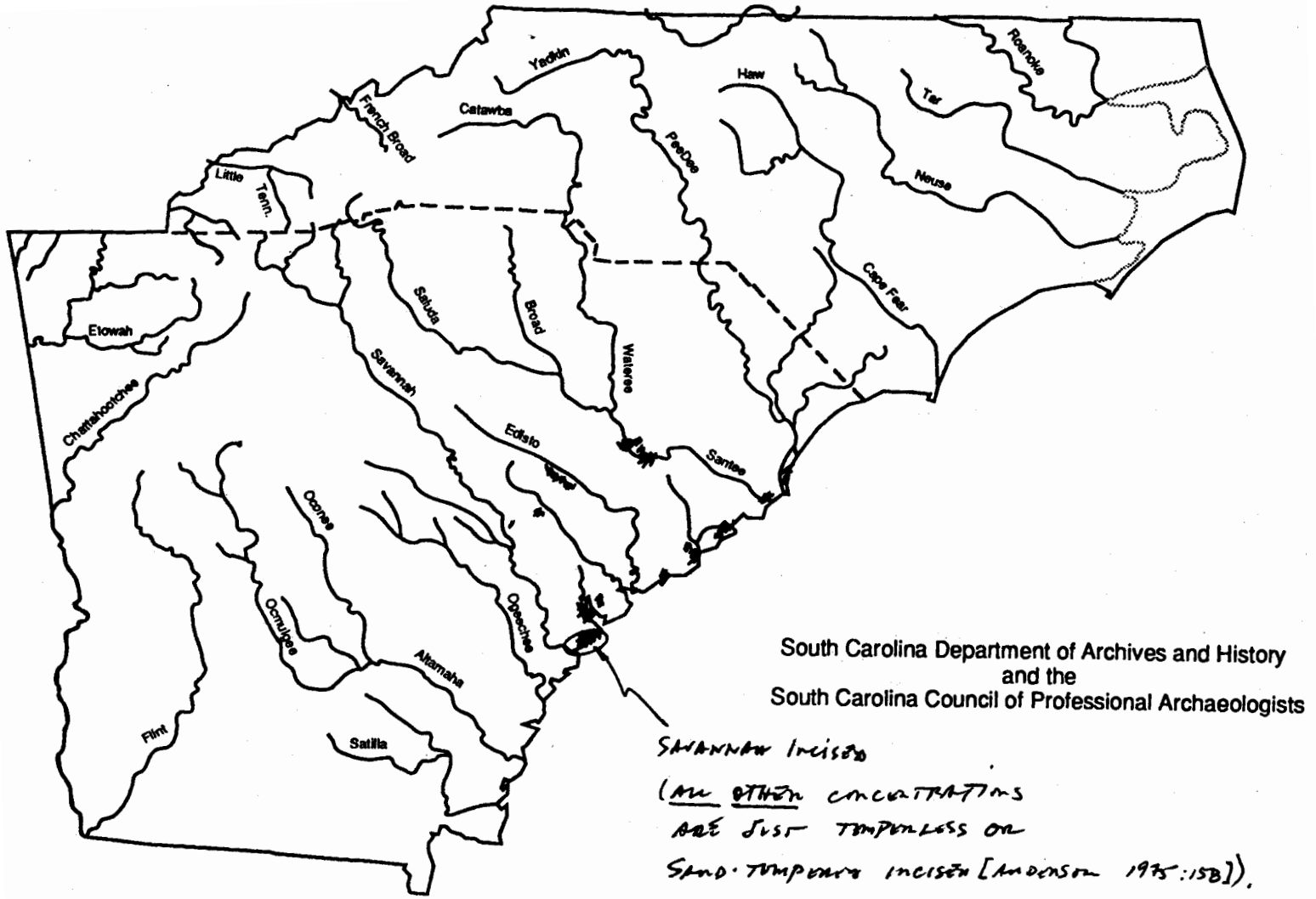
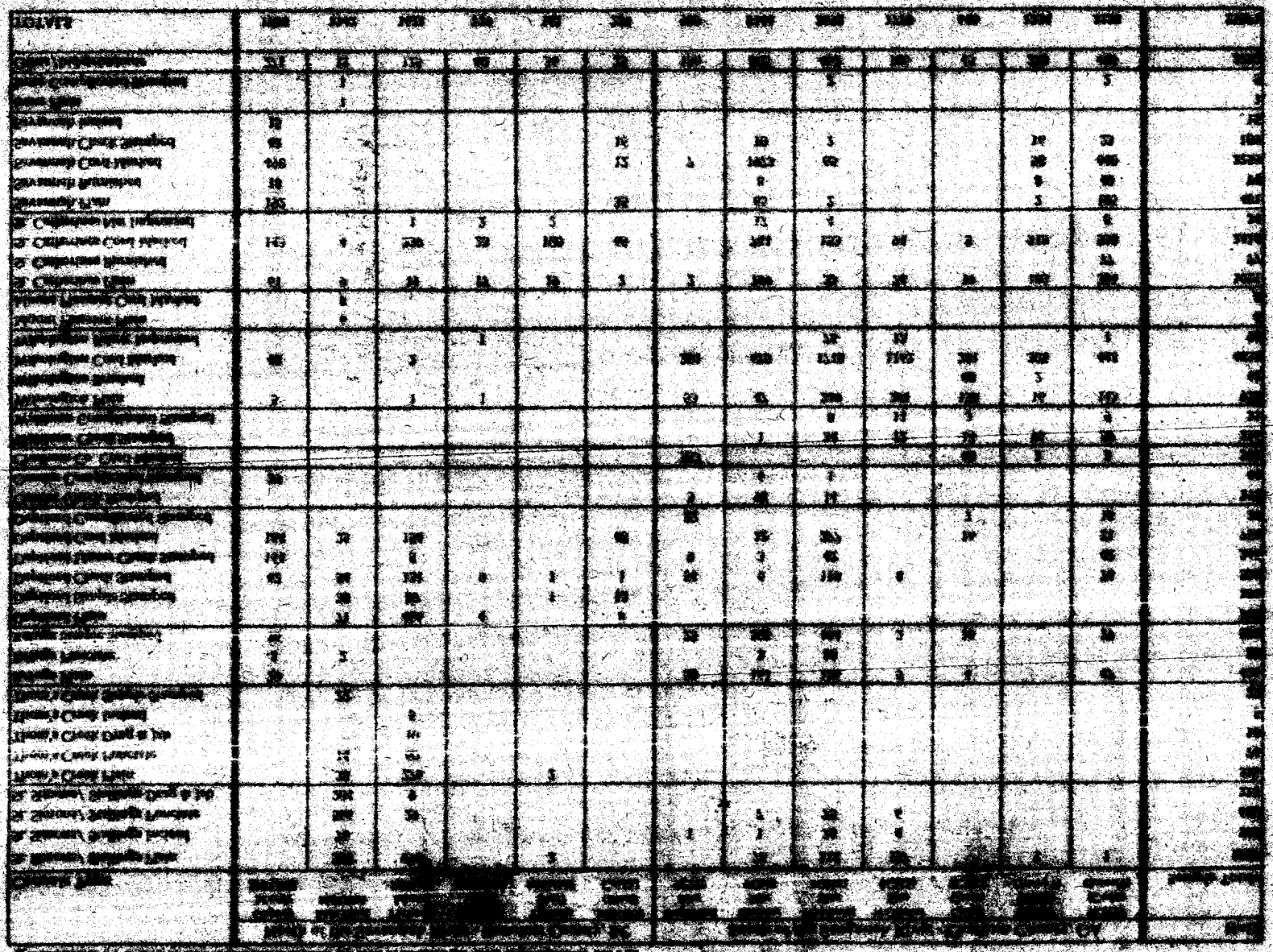
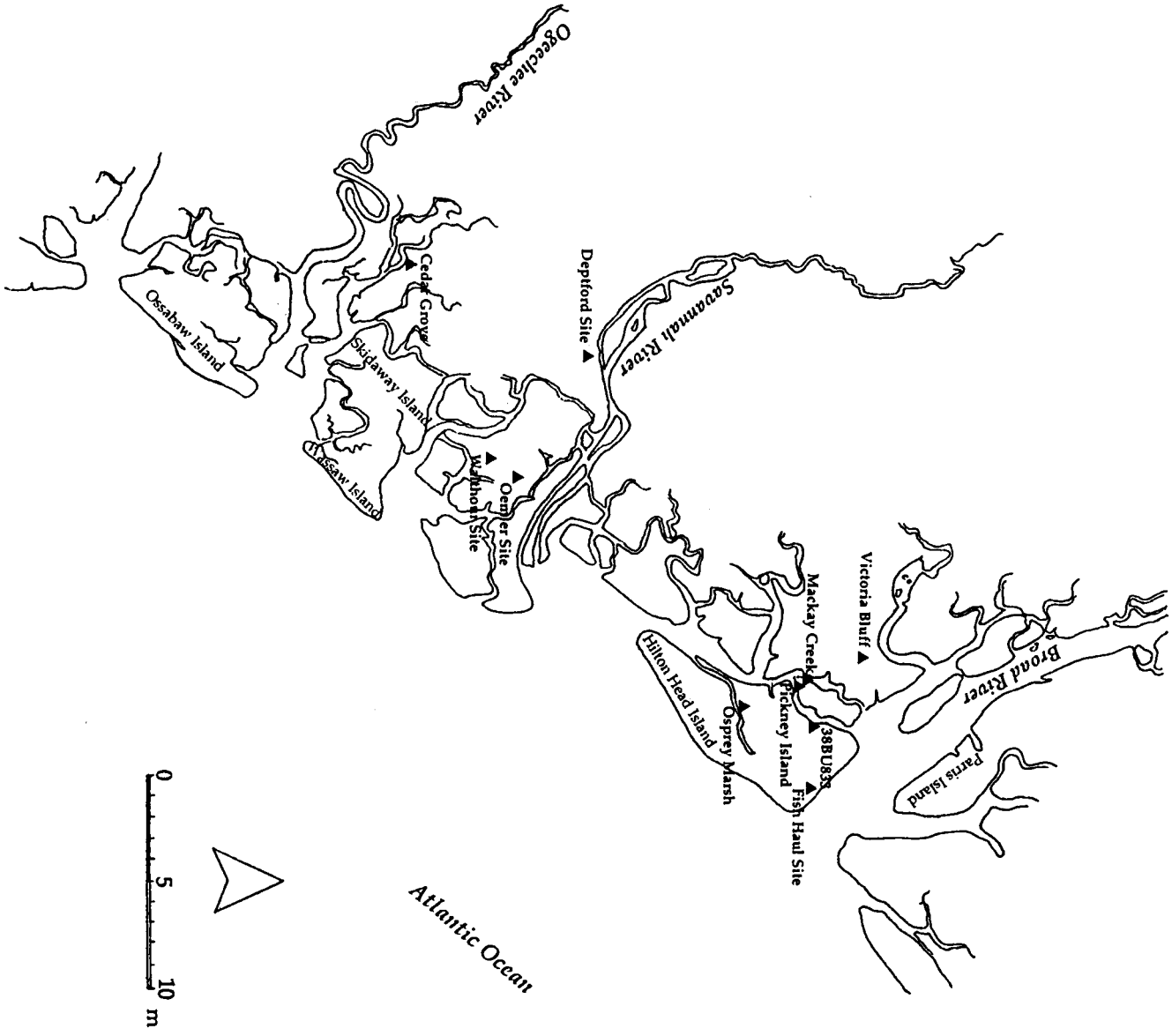


SAVANNAH INCISED
(ALL OTHER CONCENTRATIONS
ARE JUST TEMPERLESS OR
SAND-TEMPERED INCISED [ANDERSON 1975:158]).




Ogeechee River
Ossabaw Island
Cedar Grove
Skidaway Island
Hassaw Island
Wilmington Site
Oemler Site
Deptford Site
Savannah River
Victoria Bluff
Mackay Creek
Pickney Island
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Fish Haul Site
Hilton Head Island
Osprey Marsh
Broad River
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POTTERY OF THE UPPER DAN RIVER DRAINAGE

Jane Eastman

Introduction

The Upper Dan drainage is located in northern North Carolina and southern Virginia Piedmont. Its headwaters originate in the Blue Ridge region of western Virginia and flow into the Roanoke River in south central Virginia near the town of Clarksville. Broad, fertile floodplains have developed along the main channel of the Dan in northern North Carolina. A series of village sites were built on these floodplains from the Late Prehistoric through the Contact period. Seventeenth and eighteenth century documents indicate that a Siouan group known as the Sara occupied villages along the river in what is now Stokes and Rockingham counties, North Carolina. Two settlement locations are indicated: Upper Saratown at the confluence of Town Fork Creek and the Dan River in Stokes County and Lower Saratown downstream from the confluence of the Smith and Dan rivers in Rockingham County. These areas have been the focus of research at the Research Laboratories of Anthropology of the University of North Carolina at Chapel Hill since the 1950s.

The ceramics described below were recovered from block excavations conducted during the 1970s and 1980s by the Research Laboratories of Anthropology at archaeological sites in the vicinity of Upper Saratown. Excavations conducted during the 1970s and early 1980s were focused on Upper Saratown and were initiated in response to active destruction of the site by pothunters (Keel 1972, Ward 1980, Wilson 1983). A second phase of excavations in the area were conducted in 1988 as part of the Siouan Project research (Ward and Davis 1993). Archaeological investigations of the Upper Saratown vicinity have focused on three areas: a test trench at the Early Upper Saratown site (Sk1), a large excavation block at the Upper Saratown site (Sk1a), and smaller excavation blocks at the William Kluttz site (Sk6). The present study focuses on pottery from all features within the main excavation block at Upper Saratown. Within the test trench excavation at Early Upper Saratown, ceramic analysis was limited to pottery from features with a minimum of 250 sherds.

The chronological framework for the Late Prehistoric and Contact period in the region developed by Ward and Davis (1993) is presented below (Table 1). This chronological sequence applies to the upper Dan Drainage in the southern Virginia and northern North Carolina Piedmont and is based on work compiled by associates of the Research Laboratories of Anthropology and by the late amateur archaeologist Richard P. Gravely, of Martinsville, Virginia.

Table 1. Chronological Framework for the Upper Dan Drainage

Chronological Period	Phase	Date Range	Ceramic Series
Late Contact	Late Saratown	A.D. 1670 - 1710	Oldtown
Middle Contact	Middle Saratown	A.D. 1620 - 1670	Oldtown
Early Contact	Early Saratown	A.D. 1450 - 1620	Oldtown
Late Prehistoric	Dan River	A.D. 1000 - 1450	Dan River
Late Prehistoric	Uwharrie	A.D. 500 - 1200	Uwharrie

The Upper Saratown locality was occupied several times between A.D. 500 and 1700. Uwharrie phase components represent the earliest identified village components in the excavated

areas. Dan River phase features were identified within the main excavation block and at the Kluttz site, however, no architectural components have been associated with these features. A single Early Saratown phase component, consisting of five pit features and possibly five burials, was exposed in the smaller test trench excavation at Upper Saratown. A Middle Saratown phase village component with pit features, burials and associated architectural remains, is present in the main excavation block and a few Middle Saratown phase pit features have been identified from the test trench area as well. These latter features can not be associated with any village component. Two Late Saratown phase components have been identified at Upper Saratown. One of which is located within the main excavation block and has associated houses and palisade lines. The second component, located at the Kluttz site, does not have associated architectural elements. Ceramic assemblages characteristic of each temporal phase will be described below.

Uwharrie Phase

Uwharrie phase pit features were identified at two site components at Upper Saratown. One component has been identified in the main excavation block and consists of a palisaded village with between four and six small circular houses, seventeen pit features, and possibly five human burials. The type of subsurface pit features in this component are limited to small shallow basins and fairly shallow, cylindrical storage pits. A total of 328 sherds were recovered from these excavated pit features and five large vessel sections have been reconstructed from the pottery assemblage. The second component is less well understood and is represented by two pit features exposed in a smaller excavated test trench located approximately a quarter-mile from the Uwharrie village in the main excavation block. One of the features (Fea. 22-Skl) contained 767 sherds, all of which have been analyzed. Large rim sections of five jars and one nearly complete jar were reconstructed from this assemblage. The second feature (Fea. 28-Skl) was not among the sample of features chosen for analysis, but a partially reconstructed jar from the feature was described.

Though clearly a Uwharrie assemblage, the pottery from Fea. 22-Skl and the vessel section from Fea. 28-Skl is distinctive from the ceramic assemblage from the Uwharrie village component in the main excavation block. Both assemblages are characterized by jars with restricted necks and slightly everted or straight rims and conoidal or rounded bases. What distinguishes the pottery from the features in the test trench is the presence of folded rims. Four of the seven jars have folded rims and 46 percent of all other rim sherds in this assemblage have folded rims. No rims in the other Uwharrie assemblage at Upper Saratown were folded and, as a general rule, folded rims are not characteristic of the Uwharrie series. Another unusual feature of the assemblage from Fea. 22-Skl is that only one of the six vessels from the feature has a scraped interior. Of the sherds which do not comprise reconstructed vessels, more than half have scraped interiors (N=137, %=60), while the remaining 40 percent have plain or smoothed interiors. This ratio of scraped to smoothed vessel interiors is more characteristic of the following Dan River phase than of most Uwharrie phase assemblages. No absolute dates are available at this time for either Uwharrie component, but as Vessel 21 from Feature 22-Skl can be classified as Dan River Net Impressed, I suggest that the features from the test trench are part of a village component that postdates that from the main excavation block and may place the chronological position of Fea. 22-Skl and Fea. 28-Skl within a transitional period between Uwharrie and Dan River phases.

Most of the Uwharrie pottery from the main excavation block has net impressed exteriors, scraped interiors, and is tempered with sub-angular quartz particles. These attributes characterize more than 85 percent of the assemblage. Despite the differences in rim form and interior surface treatment described above, the assemblage from the test trench features shares general characteristics of vessel form, surface treatment, and temper with the main village component. Over 80 percent of the sherds from Fea. 22-Skl had coarse net impressed exteriors and sub-angular quartz temper. The partially reconstructed vessel from Fea. 28-Skl has a coarse net impressed exterior and coarse sand temper. Two unusual curvilinear complicated stamped Uwharrie vessels were identified in the assemblage from the main excavation block.

Dan River Phase

Twenty-nine pit features and five burials that date to the Dan River phase have been identified within the large excavation block at Upper Saratown. No architectural elements appear to be associated with these subsurface features. A wider range of feature types were identified in the Dan River component than in the Uwharrie components. In addition to cylindrical storage pits and shallow basins, deep bell-shaped storage pits were used during the Dan River phase. Other cylindrical pits may have been used primarily for refuse disposal. Two straight-sided pits may have been dug as burial pits, but no human bone was present. A unique Dan River phase feature was deep rock-lined posthole (diameter: 3.25 feet, depth: 5.01 feet) which may represent a ceremonial pole or gaming pole.

A total of 702 sherds were recovered from Dan River phase features, 627 of which were identified as Dan River series. From this assemblage ten vessels could be partially reconstructed: eight were restricted neck jars, one was a restricted neck cup or small jar, and the final vessel was a miniature jar. All eight larger jars and 86 percent (N=539) of Dan River sherds had net-impressed exteriors. The two smaller vessels and about ten percent (N=65) of Dan River sherds had plain or roughly smoothed surfaces. Other minority exterior surface treatments in this assemblage are cord-marked, cob-impressed, and brushed. Most vessel interiors were scraped or brushed (N=423, %=67.47), while about one-third were plain or smoothed (N=204, %=32.54). Fine sub-angular quartz particles and medium-to-finesand each account for about one-third of the observed temper. The remaining third of the assemblage was tempered with medium-sized quartz particles (N=53, %=8.45), coarse sand (N=70, %=11.16), miscellaneous crushed rock (N=21, %=3.35), and minor occurrences of coarse grit, and mixed quartz and feldspar. Over half of all vessels fell within the 6-8 mm thickness range, while one-third were thicker than 8 mm and about 10 percent were thinner than 6 mm.

Early Saratown Phase

Five of the sampled pit features from the test trench excavation date to the Early Saratown phase. With such a small number of features and limited excavation area, very little can be said about this phase. The distribution of surface material indicates an overall site of 2.5 acres, but as this is a multi-component site, the size of any single component is difficult to determine without additional excavation. Three of the five pit features were small, stratified storage pits, one was a shallow basin, while the fifth appeared to be a midden-filled depression. Five human burials from test trench may be contemporaneous with these Early Saratown features. Artifacts associated with these burials include shell beads, incised shell gorgets, and shell columella pins.

Many attributes in the ceramic assemblage, such as filfot scroll complicated paddle stamping, burnished cazuela bowl forms, and ceramic decorative techniques like notched applique strips, reflect a Middle Lamar influence and interaction with chiefdom-level culture groups in from the Pee Dee, Catawba, or Wateree drainages. Similarly, interaction with Mississippian groups from northeastern Tennessee and southwestern Virginia is evidenced by incised rattlesnake gorgets in the Lick Creek and Saltville styles found in three burials from the test trench excavation at Upper Saratown. A short-stemmed clay elbow pipe found in Fea. 2-Skl is similar to pipes found throughout the southeast during the late Mississippian period. The extent to which the occupants of the Early Saratown component at Upper Saratown were involved with these chiefdom-level communities is difficult to gauge, may not have extended much beyond trade of material goods as there is no evidence of mound building, specialized production, or social stratification at Upper Saratown.

More than eleven hundred sherds were recovered from these Early Saratown features. Of these, 439 belong to the Oldtown series. Dan River and New River series sherds were also present in the assemblage. The New River series is a shell-tempered late prehistoric ceramic complex found in the New River drainage in western Virginia. The presence of a New River sherd at Upper

Saratown strengthens the hypothesized connection between this area and western Virginia evidenced by the Saltville style shell gorgets.

The Oldtown series is characterized by a compact, well-kneaded paste with fine to very fine sand temper. Most Oldtown sherds in this assemblage were made from micaceous clays. A wide range of surface treatments are represented on Oldtown vessels from the Early Saratown phase component including net impressing (N=174, %=39.64), carved paddle stamping (N=136, %=31.21), burnishing (N=44, %=10.02), cord marking (N=40, %=9.12), and smoothing (N=39, %=8.88). Vessel interiors were typically smoothed (N=318, %=76.54), though most vessels with burnished exteriors also had burnished interiors. Vessel walls were relatively thin, with 87 percent of the assemblage measuring less than 8 mm thick. Vessel forms include jars with restricted necks, bowls with carinated or inverted rims, and small, plain hand-modeled cups. Nearly half of all rims were everted and folded (N=30, %=42.26). Attributes which distinguish this assemblage from later contact period Oldtown pottery assemblages is the high percentage of coarse net impressed sherds and paddle-stamped jars with folded rims. The use of paddles with filfot scroll carved designs appears to have been limited to the Early Saratown phase.

Middle Saratown Phase

One Middle Saratown phase component was identified at the Lower Saratown site (Rk1) and two have been identified at Upper Saratown. Four pit features in the test trench excavation at Upper Saratown comprise a Middle Saratown component and a second component with at least two houses, three outbuildings, a palisade, 48 pit features, and 12 burials was identified in the main excavation block (Eastman 1993,1994b). The ceramic assemblage from the main excavation block will be discussed below because it represents the largest sample.

The Sara continued to produce pottery with fine to very fine sand tempering and smoothed interiors until the time they abandoned the Dan River drainage around the beginning of the eighteenth century. Vessel forms made in the Early Saratown phase including jars with everted rims, small cups, cuspidors, and bowls with rounded or flat bases and incurved or carinated rims continued to be made in the Middle and Late Saratown phases. Jars with recurved rims appeared in Oldtown assemblages for the first time during the Middle Saratown phase. Most decoration, in the form of U- or V-shaped notches or dowel impressions focused on vessel lips or the lip/rim margin. Another decorative technique common during the Middle Saratown phase was circular reed punctations on the lip of plain, burnished and brushed bowls and some jars.

Over half of all sherds from the Middle Saratown assemblage were plain (N=1352, %=55.18). Brushing, as an exterior surface treatment, was most popular during the Middle Saratown phase (comprising about 14 percent of the assemblage). Jars with vertical bands of brushed lines running from below the lip to the lower body is characteristic of this phase. Burnishing continued to be a fairly popular surface finish in the Middle Saratown phase (N=273, %=11.14), though about 60 percent of burnished vessels were incompletely burnished. The use of carved paddles to produce textured designs on vessels continued, though the designs carved into the paddles had changed since the Early Saratown phase. The filfot scroll was replaced by a design consisting of concentric circles. Though simple stamping continued (N=62, %=2.53), check stamping was more popular (N=199, %=8.12). Nets continued to be used to texture vessel exteriors (N=132, %=5.39), but beginning in the Middle Saratown phase, nets had a noticeably finer texture than those used previously. Corn cob impressing, a minority surface treatment during the late prehistoric Dan River phase, regained a measure of popularity in the Middle and Late Saratown phases. A total of 43 sherds (%=1.76) and two partially reconstructed jars with cob impressed exteriors were present in the Middle Saratown phase assemblage.

Late Saratown Phase

Two Late Saratown phase components (A.D. 1670-1710) have been identified: one in the main excavation block at Upper Saratown and a second, later component at the neighboring Kluttz

site. Davis has described the ceramic assemblage from the Kluttz site (Ward and Davis 1993) and discussion here will focus on the former component. A total of 3,475 sherds were recovered from Late Saratown features in the main excavation block. The village component consists of four houses and a palisade which had been rebuilt as many as four times, with only slight changes in location. A total of 52 pit features and 26 human burials date to the Late Saratown phase.

Though the types of vessels being manufactured during the Late Saratown phase are very similar to those produced during the preceding phase, changes in the frequency of certain surface treatments, allows for distinction between ceramic assemblages from the two phases. However, in most cases, distinctions cannot be made on the basis of sherd comparisons. As was noted for the Middle Saratown phase, plain surfaces dominate the assemblage accounting for 44 percent of all sherds. All carved paddle stamping styles were more common during the Late Saratown phase than during the preceding Middle Saratown phase with check stamping accounting for 20 percent of all sherds (N=699), simple stamping making up 5 percent (N=178), and complicated stamping (concentric circle) comprising 1.29 percent (N=45). Net impressing using fine nets increased in popularity as an exterior surface treatment from the Middle to the Late Saratown phase, present on over 13 percent of sherds in the latter assemblage (N=455). More than ten percent of sherds were burnished (N=370). This percentage is roughly equivalent to its relative occurrence in the Middle Saratown phase. Only 46 sherds (1.32%) in the Late Saratown pottery assemblage were brushed.

A seriation chart of the relative frequency of Oldtown pottery types from six Saratown phase assemblages recovered from pit features at Upper and Lower Saratown is presented in Fugure 1. This chart illustrates changes in the relative frequency of Oldtown pottery types from the fifteenth to the early eighteenth centuries.

Uwharrie Series

Chronological Position: A.D. 500-1200. Nine radiocarbon dates associated with Uwharrie series pottery have been collected. Four of these dates fall within the A.D. 1000 to 1200 range, while three dates from the Yadkin River drainage fall between A.D. 1400 and 1600 (see Eastman 1994).

Distribution: Uwharrie ceramics are found throughout the North Carolina Piedmont and into South Carolina including the Dan River, Yadkin, Catawba, Broad, Haw, and Eno drainages. The Grayson series, defined for southwestern Virginia, is comparable to the Uwharrie series. Uwharrie Net Impressed sherds are the most common type in the series, accounting for between 50 and 90 percent of collections.

Background: This pottery type was first recognized in a surface collection from a sandbar at the mouth of the Uwharrie River where it empties into Lake Tillery in Montgomery County. This site was designated the Uwharrie site. No description of the site or ceramics has been published but a collection of sherds from at least five vessels is housed in the Research Laboratories of Anthropology of the University of North Carolina at Chapel Hill. The type was first defined by Joffre Coe (1952:307-308) and a collection from the Trading Ford site (31Yd1) was described the next year by Howell and Dearborn (1953).

Description: Vessel forms may be limited to somewhat globular jars with conoidal or rounded bases. Jar forms usually have low, broad shoulders and slightly restricted necks. Rims tended to be long and slightly everted or straight. Vessel necks and shoulders were often decorated with multiple parallel incised lines, brushed or scraped bands, or fingernail impressions oriented parallel or perpendicular to the vessel rim. Vessel lips were either flattened or rounded and often notched. Most vessel interiors are scraped. Vessel walls tend to be rather thick, usually between 6 and 10 mm thick. Uwharrie sherds are usually tempered with angular quartz particles or coarse sub-angular quartz sand and have a rough and gritty feel. These tempering agents were sometimes mixed with other types of crushed minerals like feldspar or mica.

Uwharrie Net Impressed

Description: The exterior surface of Uwharrie Net Impressed pottery has been textured by pressing coarse knotted nets into the wet clay. Often the net impressions are very clear and the space between knots varies from 4 and 6 mm, though nets are sometimes bunched and impressions unclear. After the exterior surface was textured in this manner the surface was often scraped or brushed, especially the area above the vessel shoulder. Sometimes a thin layer of moist clay was applied to the textured exterior surface before it was scraped.

Uwharrie Cord Marked

Description: Uwharrie Cord Marked pottery shares temper, paste, vessel form, and decorative elements with Uwharrie Net Impressed type described above. The exterior surface of Uwharrie Cord Marked sherds has been impressed with a cord-wrapped paddle. A large rim section of a Uwharrie Cord Marked restricted neck jar from the Upper Saratown locality has been reconstructed. The interior of this jar was smoothed, while other Uwharrie Cord Marked sherds exhibit the more common scraped interiors. The cord impressions on this vessel were carefully applied and uniform in direction. No overstamping is present and the cord marks are oriented oblique to the rim with continuous strands of cord up to 8 cm long. The cord is thick (2.5 mm diameter) and of a simple twisted structure. The cords are parallel to one another and spaced 1 to 3 mm apart. Other Uwharrie Cord Marked sherds exhibit more tightly-spaced and finer cords (as thin as 1 mm in diameter).

Uwharrie Brushed

Description: As noted in the description of the Uwharrie Net Impressed type, the exterior of many vessels were subsequently scraped. The Uwharrie Brushed type may represent sherds in which the brushing has obscured the original surface treatment.

Uwharrie Curvilinear Complicated Stamped

Description: Uwharrie Complicated Stamped sherds share paste, temper, and vessel form characteristics with other types of Uwharrie pottery. At least two Uwharrie Curvilinear Complicated Stamped restricted neck jars were recovered from features at the Upper Saratown locality. One jar had a long straight rim, while the other smaller vessel had an everted rim. Shallow notches on the lip of the larger stamped vessel was the only decoration present.

Comment: The same carved paddle was used to stamp both vessels. I have not been able to identify any other examples of this pottery type in other collections.

Uwharrie Simple Stamped

Description: One partially reconstructed simple stamped jar was present in the assemblage from Fea. 22-Skl from the test trench excavation at Upper Saratown. This vessel was tempered with angular quartz and feldspar particles. The vessel form is similar to other Uwharrie series jars, except that the rim was folded. The exterior surface, including the rim fold, was lightly stamped with a paddle carved with parallel grooves about 2.5 mm wide, separated by 3 mm. The portion of the vessel below the shoulder was overstamped and possibly lightly brushed or scraped. This jar was undecorated.

Comment: I have been unable to locate any examples of Uwharrie Simple Stamped sherds from other Uwharrie assemblages.

Uwharrie Plain

Description: Fragments of a hemispherical bowl with plain, smoothed exterior and interior surfaces was recovered from the surface of the Uwharrie site (Mg14), type site for the series. These sherds share paste characteristics with other Uwharrie Net Impressed and Cord Marked sherds from the site and are thought to be part of the same ceramic tradition, however this vessel is the only example of a bowl form within the Uwharrie assemblages examined. Sherds with plain exterior surfaces usually account for a small percentage of pottery assemblages from Uwharrie phase sites. No large Uwharrie Plain vessel sections were recovered from the Upper Saratown Locality.

Uwharrie Fabric Impressed

Comment: No Uwharrie Fabric Impressed sherds were recovered from the excavations at the Upper Saratown Locality. This type is common in collections from the Forbush Creek site and the Parker site (Newkirk 1978) in the Yadkin drainage. Vessels of this type from the Forbush Creek site are housed in the Research Laboratories of Anthropology and share the same vessel form, decorative elements, and paste characteristics with Uwharrie Net Impressed. The fabric used to texture the exterior surface of these vessels is very coarse warp and weft weave.

Dan River Series

Chronological Position: A.D. 1000-1700. The chronological position for the Dan River phase has been well-defined by radiocarbon dating. The calibrated intercepts for of forty-five dates associated with Dan River ceramics range between cal A.D. 1000 and 1450, with most between cal A.D. 1200 and 1450 (Eastman 1994a:29). A radiocarbon sample from Feature 18 at Upper Saratown (Skla) returned a calibrated intercepts that range from cal A.D. 1328 to 1391. Though the Dan River phase is late prehistoric, Dan River Net Impressed vessels continued to be manufactured as a minority ware throughout the contact period (Ward and Davis 1993).

Description: Dan River sherds are characterized by a compact, sandy paste that is tempered with sub-angular quartz particles (less than 4 mm diameter) and fine to medium sand. In most cases the vessel interior has been scraped and/or smoothed and temper particles do not protrude through vessel walls. Decoration was focused on the lip, lip/rim margin, and the neck of jars. Decorative elements include incised lines oriented parallel and oblique to the rim, brushed bands, fingernail impressions, various punctations and notches.

Distribution: The Dan River series occurs in the central North Carolina and Southern Virginia Piedmont incorporating the Dan and Yadkin drainages. It is comparable to the Haw River series defined for the Haw and Eno drainages in North Carolina Piedmont and the Wythe series defined for western Virginia.

Background: The Dan River series was first defined by Coe and Lewis (1952) from an assemblage of sherds recovered during test excavations at Lower Saratown (Rkl). At that time, Dan River pottery was thought to have been made by the Sara between A.D. 1625 and 1675. A re-analysis of ceramic collections housed at the Research Laboratories of Anthropology and additional fieldwork and analysis have led to a re-interpretation of the Dan River series as Late Prehistoric (Dickens, et al. 1987, Ward and Davis 1993).

Dan River Net Imuressed

Description: The exterior surfaces of Dan River Net Impressed sherds bear the impression of knotted nets. The nets are constructed of cords that are usually less than 1 mm in diameter and the knots are generally spaced 2 to 5 mm apart. The net impressions are typically clear, but in some cases have been lightly smoothed. Eight net-impressed vessels were partially reconstructed and all are jars with restricted necks and everted or straight rims.

Dan River Plain

Description: Two partially reconstructed vessels, a cup or small jar and a miniature pot, had plain exteriors. Both bore evidence of having been lightly brushed or scraped. A rim sherd from a third plain vessel also indicates a small orifice diameter. All of these vessels have smoothed or plain interiors. The miniature vessel and several other Dan River Plain sherds have been decorated with incised geometrical designs or cross-hatched lines. Paste characteristics are like those for Dan River Net Impressed sherds.

Oldtown Series

Chronological Position: A.D. 1450 - 1710 The Oldtown series was manufactured from the protohistoric through the beginning of the eighteenth century in the Dan River drainage. Some exterior surface treatments and decorative techniques were popular for only a limited period of time within the series duration. These will be indicated in the individual type descriptions.

Description: The Oldtown series is characterized by a well-kneaded paste that was usually tempered with fine to very fine sand and feels smooth to the touch. Interior surfaces were nearly always smoothed, but vessels with burnished exteriors were often burnished on the interior as well. More than 90 percent of all Oldtown sherds from Upper Saratown were between 4 and 8 mm thick. the most common vessel type was a restricted neck jar with an everted rim. Other vessel forms included small cups, jars with recurved rims, hemispherical bowls, and restricted bowls with inverted or carinated rims, and very small hand-modeled pots.

Distribution: The Oldtown ceramic series is associated with the Sara Indians who occupied the upper Dan drainage of the northern North Carolina and southern Virginia Piedmont from the protohistoric through the contact period. The largest and best known Oldtown ceramic collections are from the Upper and Lower Saratown site localities.

Background: The Oldtown series was first described by Wilson (1983:616) following his analysis of small samples of the pottery from Upper Saratown. He did not define individual ceramic types at that time because he felt his analysis incorporated too small a portion of the Saratown assemblages. Following his study of pottery collections from excavations at Lower Saratown and the William Kluttz site, Davis defined several Oldtown pottery types based on differences in exterior surface treatment including plain, brushed, burnished, simple stamped, check stamped, complicated stamped, and net impressed (Ward and Davis 1993). Both researchers agree that the Oldtown series developed out of the Dan River series.

Oldtown Net Imuressed. variety Coarse

Chronological Position: A.D. 1450 - 1620. Oldtown Net Impressed, var. Coarse pottery has been identified in only one Early Saratown pottery assemblage, that from the Early Saratown component from the test trench excavation at Upper Saratown. Its chronological position is presented as the same for the Early Saratown phase, but no radiocarbon dates are available for this variety.

Description: Oldtown Net Impressed, var. Coarse is distinguished from Dan River Net Impressed pottery by several attributes including the tendency for Oldtown vessel rims to be everted and folded. In addition, Oldtown paste generally has a high mica content, is tempered with fine sand, and is smooth to the touch. Nets used to roughen the exterior surface of these Oldtown pots had knots spaced about 5 mm apart and the cord used in the net was between 0.5 and 1 mm in diameter. Only one of the Oldtown Net Impressed, var. Coarse sherds from the Upper Saratown assemblage was decorated. The neck of this sherd was decorated with parallel incised lines oriented oblique to the rim. Several of the rim sherds had net impressions on the vessel lip. The vessel interiors were smoothed, but typically bore evidence of having been scraped and subsequently smoothed.

Distribution: As mentioned above, this type has only been identified at Upper Saratown.

Background: Though Wilson (1983:617) did not formally describe Oldtown ceramic types, he did describe the Oldtown series. Among the Oldtown series surface treatments he listed were net impressed and several specimens were illustrated. Davis described the Oldtown Net Impressed type based on an analysis of pottery from the William Kluttz site (Ward and Davis 1993:295). Following an analysis of this and other Oldtown assemblages, I felt it was prudent to split net impressed sherds in the Oldtown series into two groups based on the coarseness of the net used to texture the vessel exterior. The specimens illustrated by Wilson from the Early Saratown phase assemblage would fall under the coarse variety of Oldtown Net Impressed. The sherds from the Kluttz site described by Davis would be classified as Oldtown Net Impressed, variety Fine type. These latter sherds were made during the Middle and Late Saratown phases, but were most popular during the second half of the Late Saratown phase. These two types are distinguishable not only on the basis of coarseness of the net, but also on rim form and interior surface treatment.

Oldtown Complicated Stamped. varietv Filfot Scroll

Chronological Position: A.D. 1450-1620. Though Oldtown vessels with curvilinear complicated stamped surfaces were made throughout the contact period, the use of the Filfot scroll design appears to have been limited to the protohistoric Early Saratown phase.

Description: Three partially jars with filfot cross complicated stamped exteriors have been partially reconstructed. The same paddle may have been used to stamp two of the vessels, while the third was paddled with a different stamp. Both designs have four sets of four parallel lands and grooves forming a cross with distal ends that form loops. Typically the surface was overstamped to the point that the overall design was obscured. Two of the vessels were stamped when the clay was fairly wet, leaving deep, somewhat sloppy impressions. The third pot was stamped when the clay was drier and stiffer, creating more shallow impressions. When present, the rim fold was stamped. None of these partially reconstructed vessels were decorated.

Oldtown Plain

Chronological Position: A.D. 1450 - 1710. Although Oldtown Plain pottery was made throughout the Protohistoric and Historic periods in the Dan drainage, it was most common during the Middle and Late Saratown phases.

Description: Oldtown Plain pottery has exterior surfaces that have been smoothed prior to drying. Most interior surfaces have also been smoothed. All Oldtown vessel forms including jars, small conoidal cups, restricted bowl forms with incurvate or carinated rims and flat or rounded bases, and open, hemispherical bowls are represented in the Oldtown Plain assemblage. A range of smoothing is present which varies from roughly smoothed to carefully smoothed.

Oldtown Burnished

Chronological Position: A.D. 1450 - 1710.

Description: To create a burnished surface a clay slip is applied to a pot when it is at the leather-hard stage of drying. The surface is then rubbed with a hard, smooth tool like a cobble or piece of bone, to create a very smooth, sometimes polished surface. The burnished surface will bear linear facets from the polishing tool. During the protohistoric Early Saratown phase burnished exteriors occur only on bowls with inverted or carinated rims. In most instances the interiors of Oldtown Burnished bowls were also burnished. During this phase, decoration appears to have been limited to triangular-shaped notches or short parallel incised lines on the shoulder of carinated bowls and circular punctations on the lip of bowls with inverted rims. Later, during the Middle and Late Saratown phases, additional vessel forms were burnished. Hemispherical bowls and a vessel shape which Wilson (1983) referred to as a "cuspidor" were also burnished. A cuspidor has a flat base, wide shoulder, and an everted rim. As a general rule, cuspidors were not decorated. During the Contact Period the shoulder, rim, and lip of Oldtown Burnished bowls were decorated. Rims and shoulders were decorated with incised curvilinear or rectilinear designs sometimes combined with zones of punctations. Various types of notching and incising occurred on the lips or lip/rim margin of these burnished bowls. Repeating rectilinear incised designs on the rim of burnished cazuela bowls appears to have been a late development within Oldtown Burnished pottery.

Oldtown Simple Stamped

Chronological Position: A.D. 1450 - 1710.

Description: Simple Stamping occurred as a minor surface treatment throughout the temporal span of the Oldtown series. Wooden paddles with straight parallel grooves carved into them were used to texture the exterior surface of jars. The linear designs were applied to the surface of pots in two ways: the first indicating overstamping after the paddle was turned perpendicular to its original orientation creating a rough cross-hatched appearance; and secondly, unidirectional stamping with the grooves oriented oblique to the vessel rim, creating the appearance of lands and grooves spiraling around the pot. The grooves on overstamped vessels were generally much deeper than those created by the latter method. Both methods of stamping occur in Saratown phase assemblages with no apparent changes in popularity. At least two of the spiraled Oldtown Simple Stamped jars from the Early Saratown phase assemblage have applique strips just below the lip. Stamping on Oldtown Simple Stamped jars from Late Saratown phase components often extends onto the top of the lip creating a notched appearance.

Oldtown Cord Marked

Chronological Position: Cord-Marking remained a minority surface treatment throughout the Oldtown series, but was most popular during the Early Saratown phase, comprising 10 percent of that assemblage from the test trench excavation at Upper Saratown.

Description: No reconstructable sections of an Oldtown Cord Marked vessel have been identified from Upper Saratown. The rim sherds indicate that small to medium-sized jars were represented. These sherds can be distinguished from Dan River Cord Marked sherds on the basis of paste characteristics.

Oldtown Corncob Impressed

Chronoloeical Position: A.D. 1620 - 1710. Corncob impressing as an exterior surface treatment was most popular during the Middle Saratown phase (A.D. 1620-1670), but continued as a minority treatment until the end of the Late Saratown phase.

Description: Corncobs were used to decorate the neck of plain pots and as a surface treatment for small vessels during the Dan River phase, but during the Middle Saratown phase the entire exterior surface of large jars were being textured by rolling dried cobs over the wet clay. Two partially reconstructable Oldtown Corncob Impressed jars were recovered from Upper Saratown, one had a fingernail notches on the liplrim margin and the other had a folded and everted rim and was undecorated. Both jars had smoothed interiors.

Oldtown Complicated Stamped. varietv Concentric Circle

Chronolonical Position: A.D. **1620 - 1710.** This variety of complicated stamping occurs in Middle and Late Saratown phase components.

Description: This stamped design consists of four or five concentric circles. Considerable overstamping occurred in the application of this design to the vessel surface. Vessel interiors were either burnished or smoothed. Decorations on this variety of pottery is limited to notching of the liplrim margin.

Oldtown Net Impressed, variety Fine

Chronological Position: A.D. 1670 - **1710.** Net impressing using nets with closely-spaced, small knots or finely woven nets was first recognized in Middle Saratown phase components. This surface was more popular during the following Late Saratown phase.

Description: Most Oldtown Net Impressed, variety Fine vessels are thin walled jars (less than **6** mm thick) with smoothed interiors and everted rims, though one bowl form has been identified. The nets used to impress the surfaces of these pots have knots spaced about **3** mm apart that are about **2** mm in diameter.

Oldtown Brushed

Description: This surface treatment was produced by lightly scoring the smoothed clay surface with bundles of small twigs or straw. The direction of brushing tended to be either parallel to or perpendicular to the rim, though some sherds were brushed in various directions. One style of brushing was indicative of the Middle Saratown phase. This form of brushing consists of brushed bands oriented perpendicular to the rim. These brush marks begin just below the lip and continue down the vessel to the lower portion of the body. These brushed bands alternate with smoothed areas.

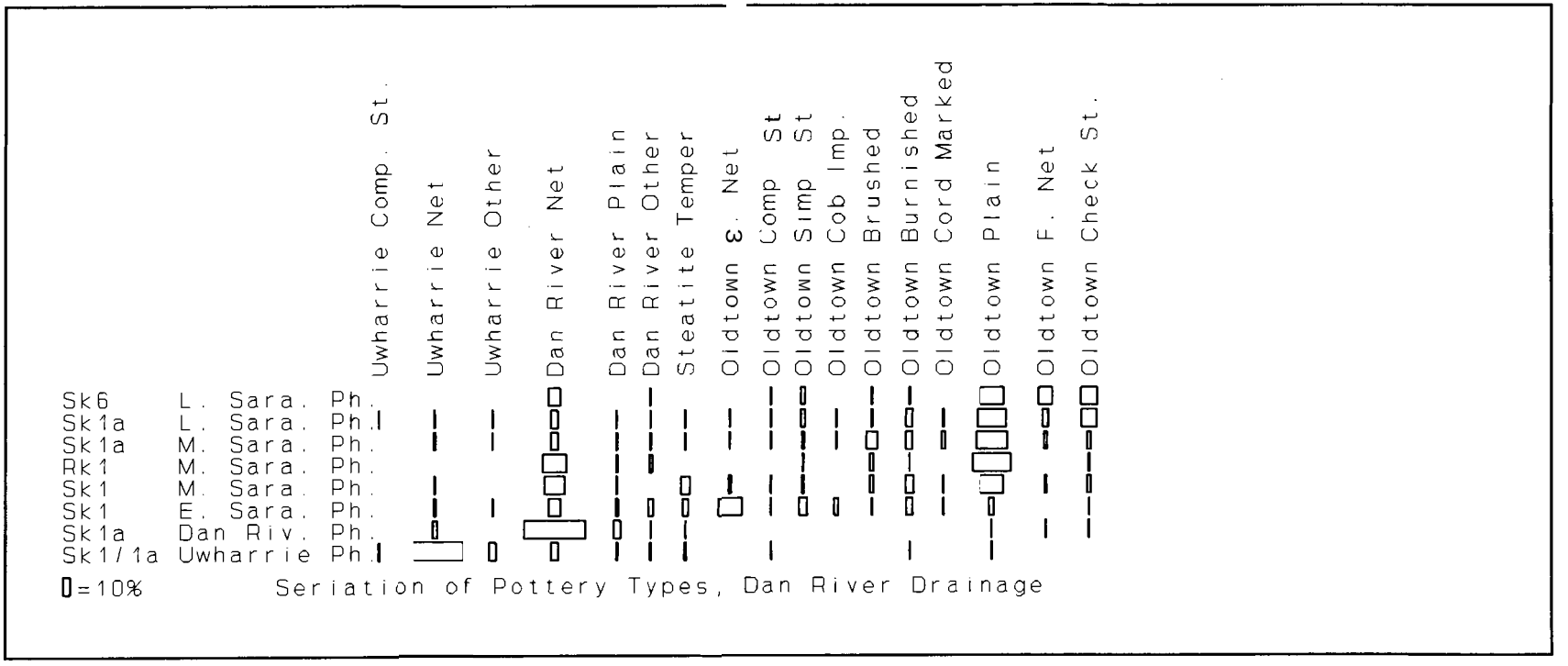

Figure 1. Seriation of Pottery Types, Dan River Drainage

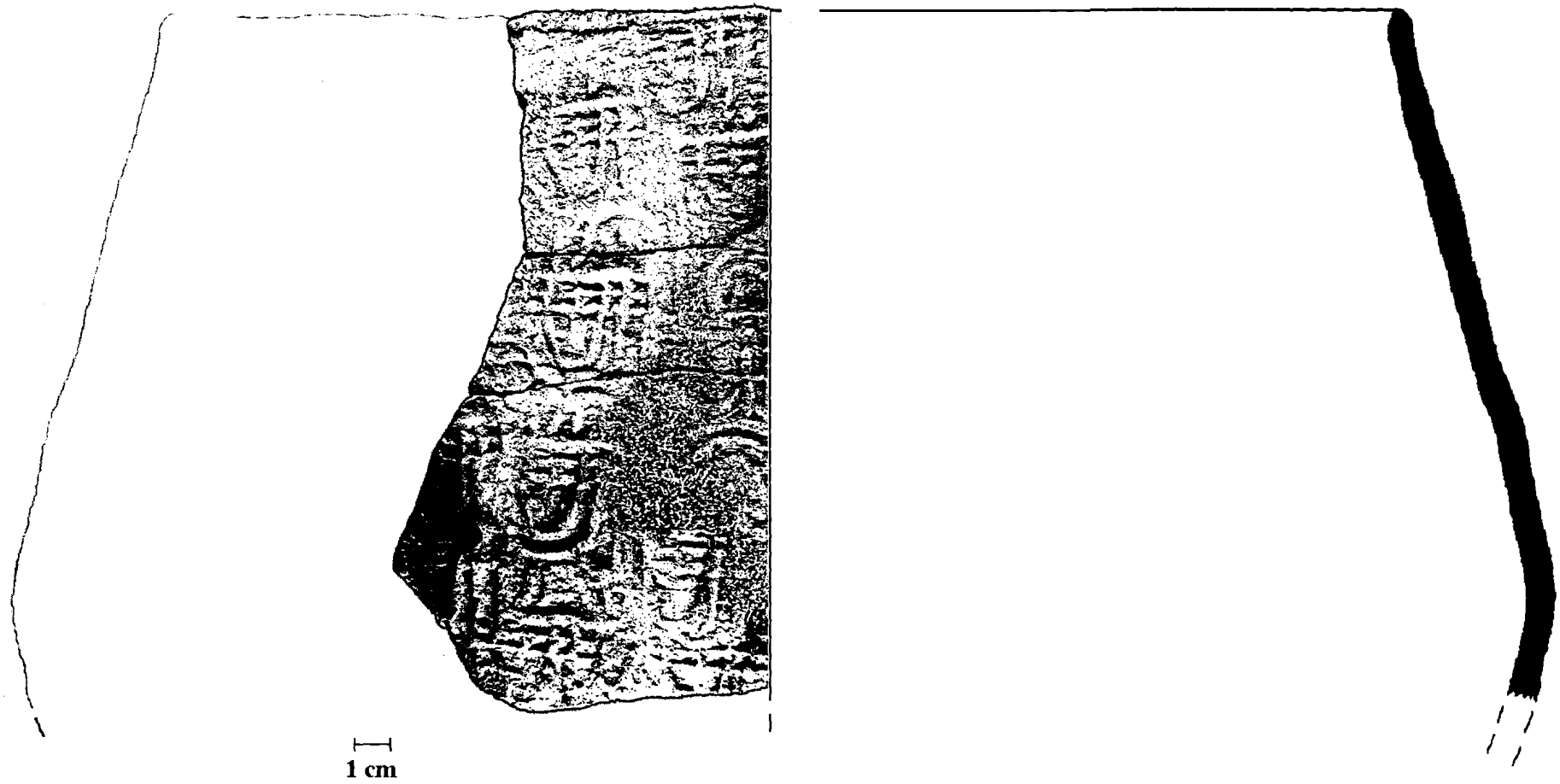

Figure 2. Uwharrie Curvilinear Complicated Stamped Vessel

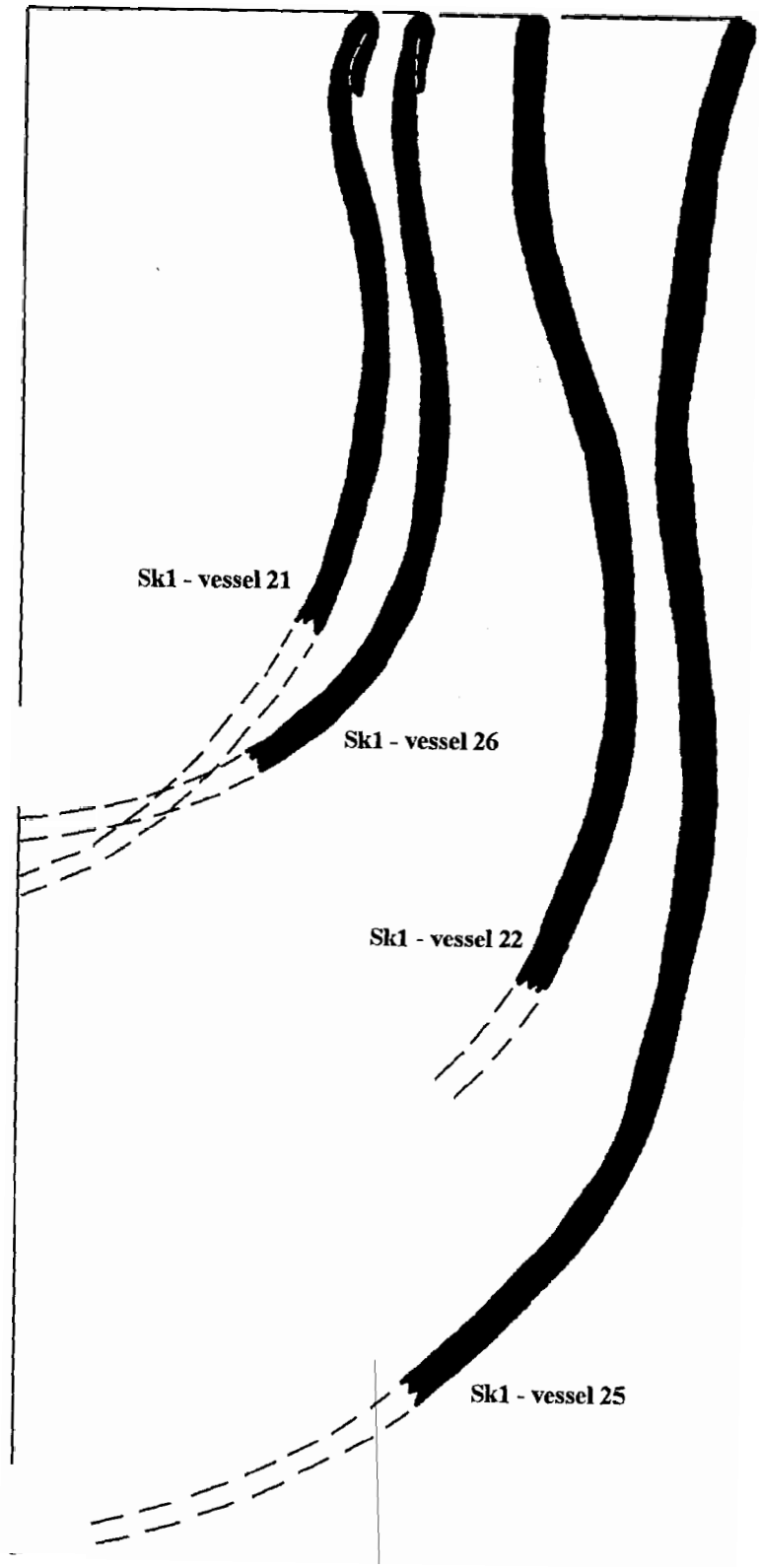

Figure 3. Uwharrie Vessel Profiles, Feature 22 - SK1

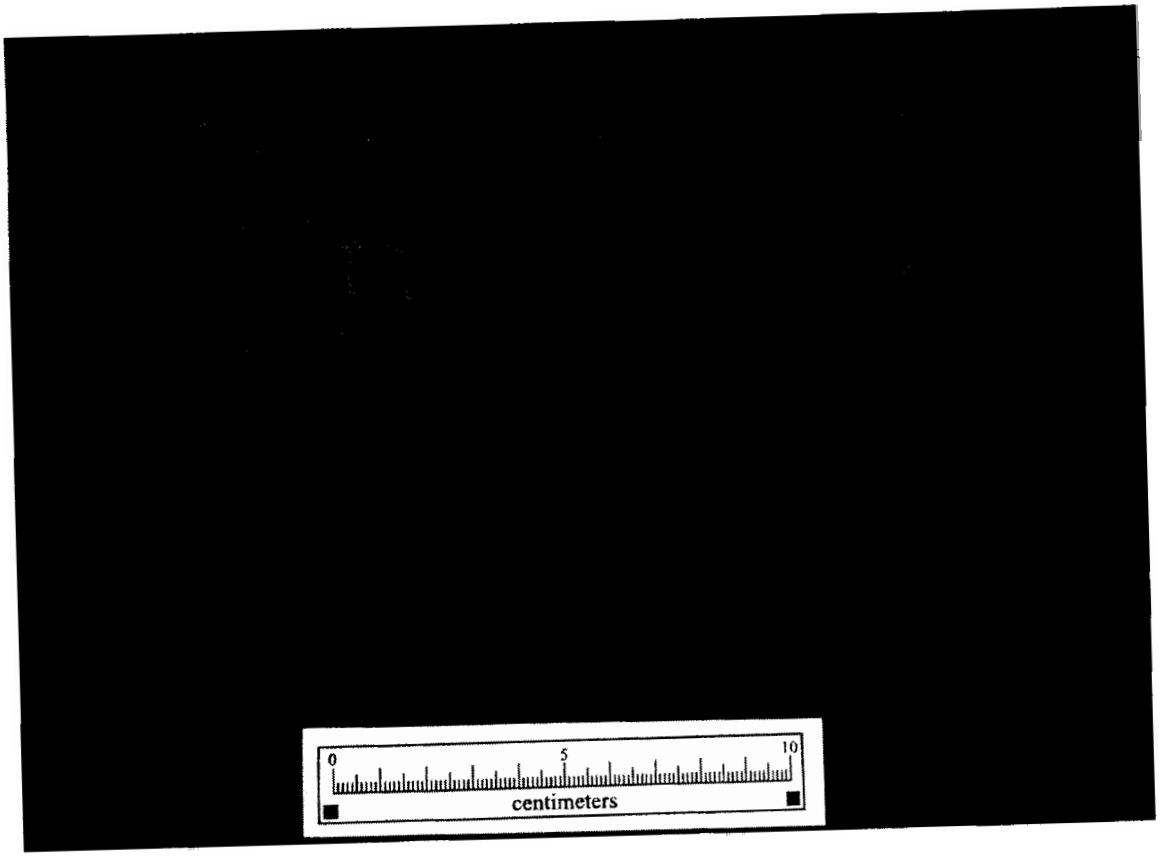

Figure 4. Oldtown Plain.

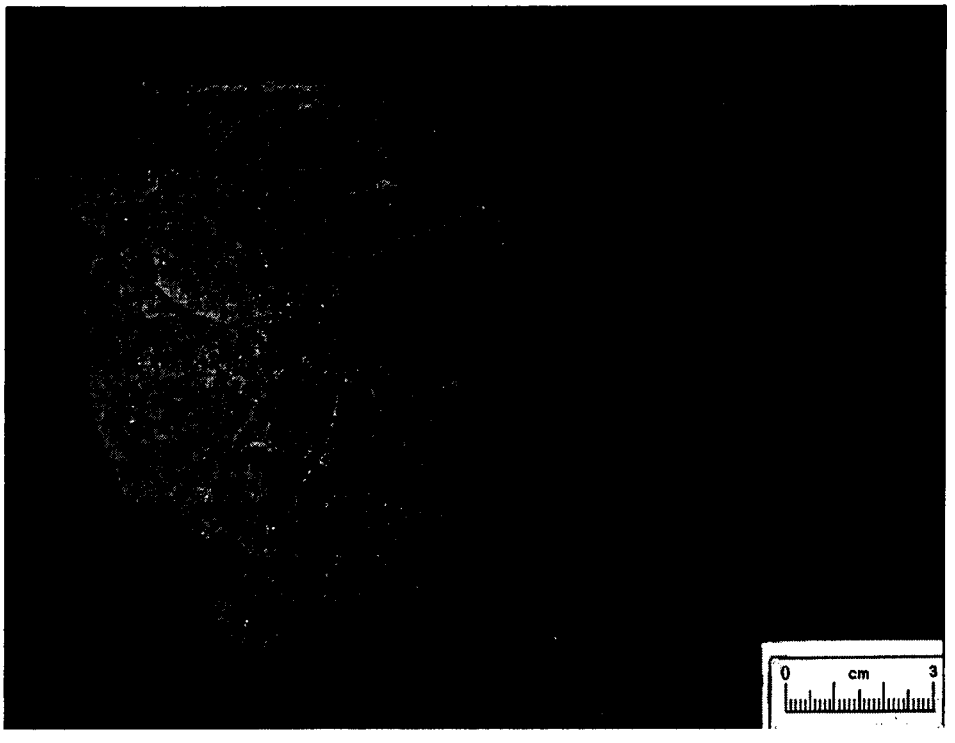

Figure 5. Oldtown Net-Impressed, var. Coarse

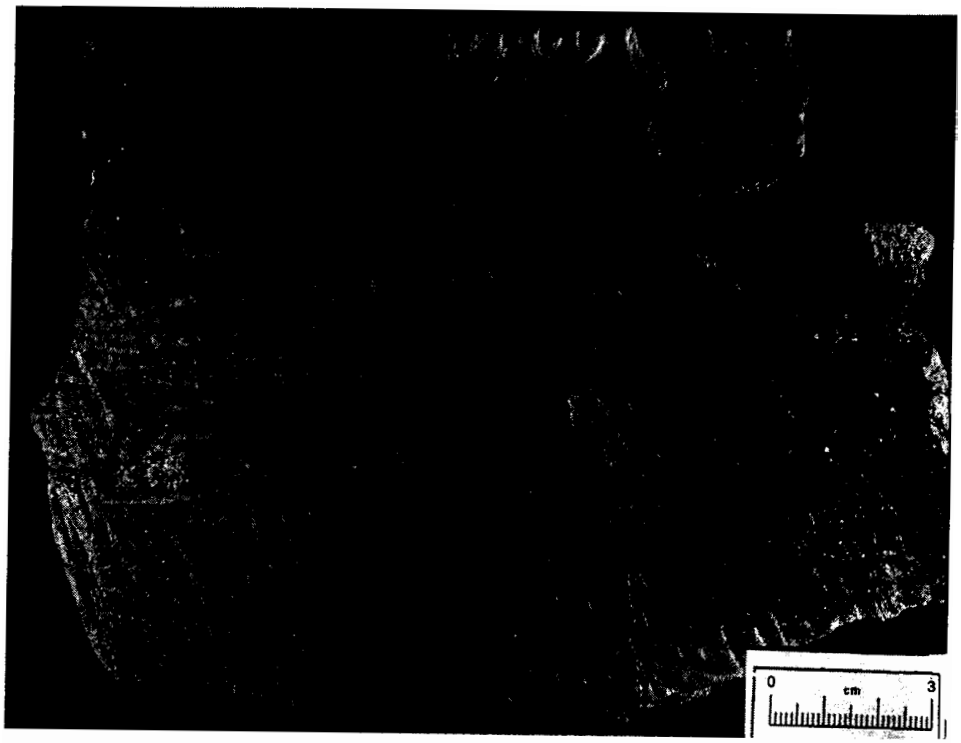

Figure 6. Oldtown Simple Stamped (overstamped)

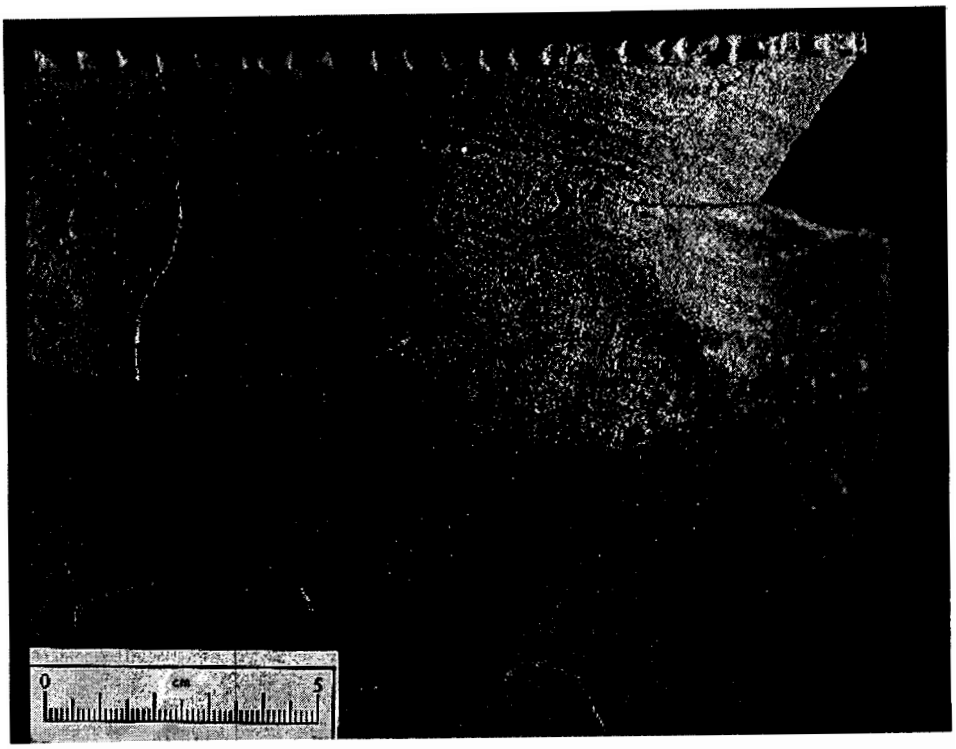

Figure 7. Oldtown **Simple Stamped (spiraled)**

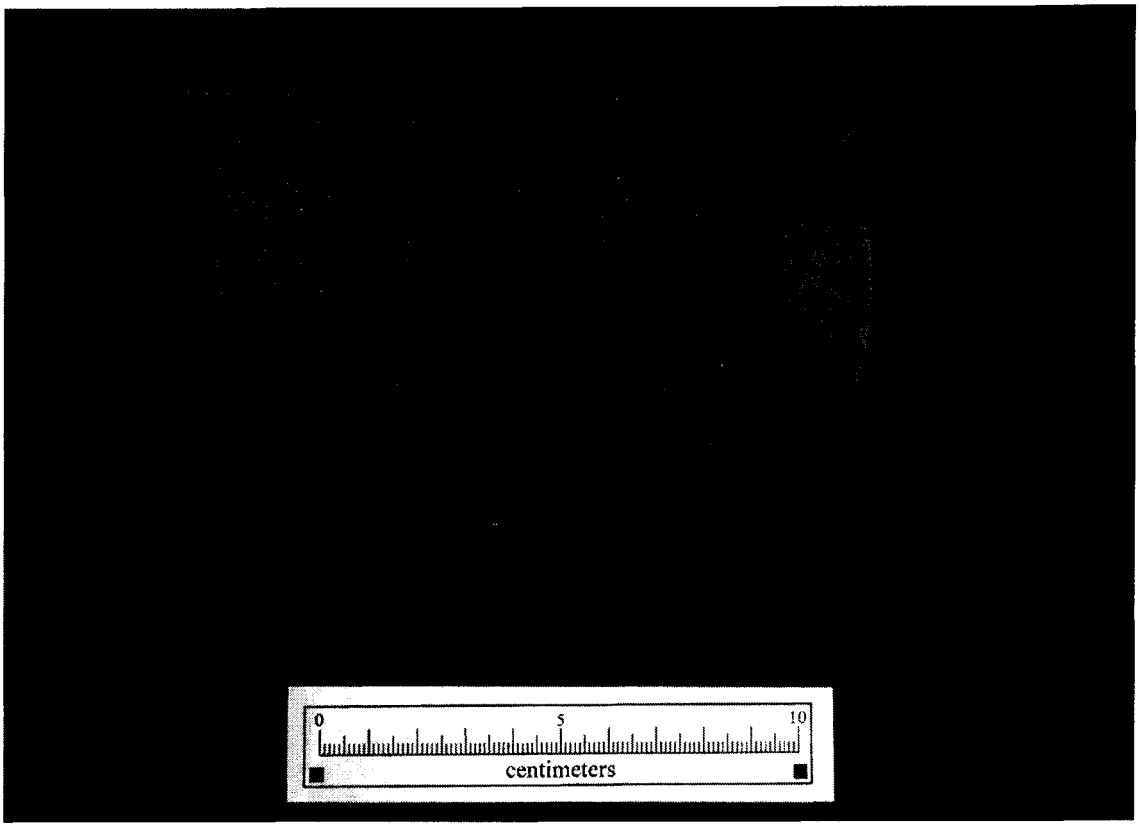

Figure 8. Oldtown **Complicated Stamped, var. Concentric Circle**

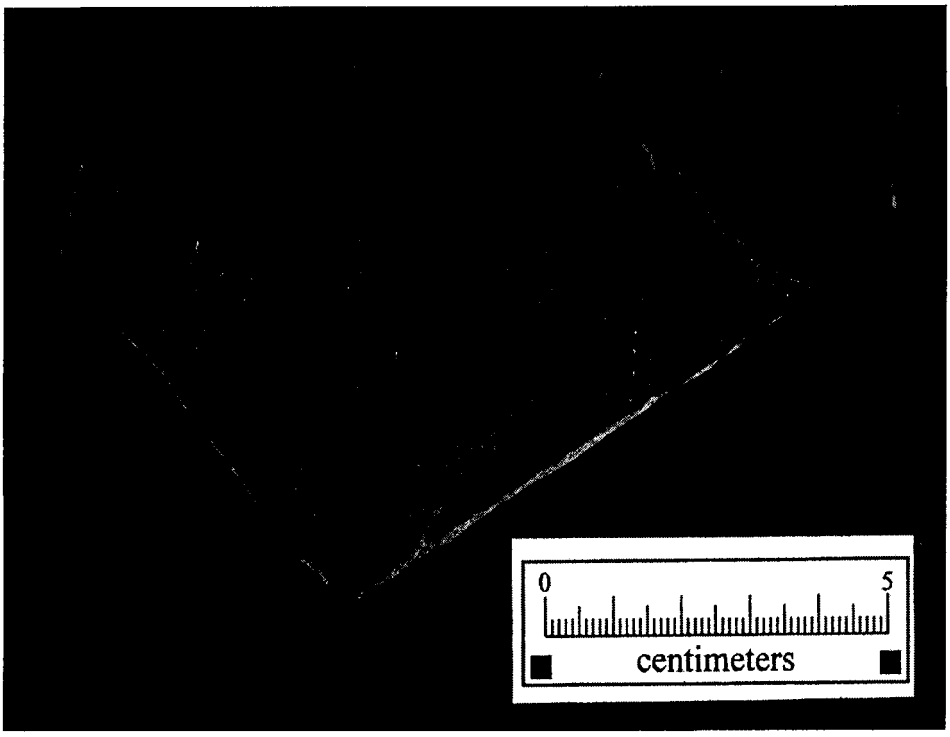

Figure 9. Oldtown **Brushed**

AN APPRAISAL AND RE-EVALUATION OF THE PREHISTORIC POTTERY SEQUENCE OF SOUTHERN COASTAL NORTH CAROLINA

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and

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DRAFT MANUSCRIPT
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PREHISTORIC POTTERY OF SOUTHERN COASTAL NORTH CAROLINA

Introduction

Over the last 30 years, tens of thousands of prehistoric potsherds have been collected from sites in the southern coastal region of North Carolina. Prehistoric pottery has been sorted, classified and reported in dozens of research and contractual reports and on hundreds of archaeological site forms. Archaeologists have routinely used pottery to estimate the temporal placement of site occupations, although absolute dates for pottery types from the southern portion of the North Carolina coastal region are scarce. With the exception of shell midden contexts, datable organic material is typically poorly preserved in highly perched, acidic, Coastal Plain soils and alternative dating methods, such as thermoluminescence, have just begun to be used. In the absence of an absolute chronology, researchers have relied on comparisons of the characteristics of pottery from adjacent regions (Haag 1958; South 1960, 1976) and seriation (Loftfield 1976) to establish local ceramic sequences. While the taxa (type names) composing the ceramic taxonomies which apply to pottery from the southern coast are different, many of the type descriptions (and the sherds themselves) are practically equivalent. In part, this may be due to the level of specificity with which types and varieties have been described. Type descriptions have typically been quite broad, potentially subsuming a great deal of variation in pottery characteristics. These conditions have made it difficult to distinguish certain types from one another, much less to determine the limits of their geographic distributions.

As a result, archaeologists working in the southern coastal region have been faced with choosing between one of several potentially applicable types to classify their pottery. While some have attempted to bring order into the classification process by creating hyphenated-hybrid types, the taxonomic ambiguity, lack of chronology, and geographic uncertainty remain a problem.

This paper represents an initial effort to resolve some of the problems in the classification of prehistoric pottery from the southern coastal region. While some new (as yet unpublished) dates for the Late Woodland, White Oak series can be cited, the resolution of chronological problems is largely beyond the scope of the present undertaking. The goal of this project is to assess the various taxonomies which might apply to pottery from the southern region with the aim of reducing ambiguity. This is accomplished by establishing a single taxonomy for the region, and by increasing the specificity of the type descriptions so that regional differences might become more apparent. In order to thoroughly assess the comparability of various types described for the region, each of the collections which formed the data bases for the original type definitions must be reanalyzed; a worthy task for future research, but one too large for the current paper. As an alternative, the assessments made in this paper rely largely on published type descriptions, illustrations, tabulated data and type collections. In addition, both authors have been conducting independent analyses of archaeological samples from sites in the southern coastal region. With this information, a tentative synthesis is offered. In some cases, this requires subsuming one type under another, in other cases, eliminating types altogether. In choosing between different taxa which have been used to describe practically identical pottery, three elements have been considered: (1) the comparability of descriptive data, (2) the priority of authorship of the descriptions, and (3) the consensus of usage of the taxon since its definition. This synthesis of classification is offered in a spirit perhaps best described by Shepard's statement, "... the incompleteness of ... data make of the pottery type a tentative, hypothetical class to be re-examined, corrected, and amplified from time to time as evidence accumulates; a class to be split or combined with another, redefined, or discarded. It is a category in the process of formulation instead of a fixed standard of reference" (1956:315).

Problematic Elements of the Current Taxonomies

Redundancy and Ambiguity

Four taxonomic sequences of prehistoric pottery have been developed, more or less independently, over the past 40 years for the coastal region of North Carolina (Haag 1958; Loftfield 1978; Phelps 1983; South 1960, 1976). Additional types have been defined (Crawford 1966; Green 1984; Hargrove 1996a), but are not routinely used. Three of the four studies (Loftfield 1976; Phelps 1983; South 1976) defined series of taxonomic types and advanced tentative culture-historical sequences for pottery from one of the three areas of the coast (northern, central and southern). Over the subsequent years, these three taxonomic sequences have been used, with varying degrees of fidelity, as if they represented prehistorically existent culture areas. It appears that the authors of the original taxonomic descriptions never intended that the regional segregation of sequences, which developed as a consequence of their independent research, be taken as sufficient evidence that similarly distinct culture areas existed prehistorically — at least, this intent is not explicitly set forth in their writing. Certain types within each taxonomy, to wit, are acknowledged by their authors as being equally appropriate for the classification of pottery from adjacent areas (and by implication, *vice versa).*

William Haag's (1958) study, *The Archaeology of the North Carolina Coast* was based on 14,426 sherds collected on the surface of 145 sites and in excavations at two sites, in each of the three areas of the coastal region. In these samples, he distinguished two series or ware types based on temper — "grit"[1] and shell. Within the grit-tempered class, Haag recognized three varieties including sand, grit, and clay-grit tempering. Five varieties of surface treatment were described as potentially sensitive temporal and geographic indicators, including plain, fabric-impressed, cord-marked, net-impressed, and simple-stamped.

As part of the investigation of 71 sites in the southernmost coastal counties in North Carolina (Brunswick and New Hanover) and the northernmost county in South Carolina (Horry), Stanley South (1960) developed a taxonomic sequence of four pottery series and seven types from surface collected samples (2,256 sherds). Since that time, South's sequence has been routinely used to identify pottery from, and temporal placement for, sites throughout the southern coastal area of North Carolina (south of the Neuse River). Several of South's types — Hanover and Cape Fear, for instance — are considered temporally diagnostic over a much broader area including the central and northern coastal region of South Carolina (Anderson 1975:187; Anderson et al. 1982:211; Trinkley 1978, 1990:18).

Thomas Loftfield's (1976) pottery type sequence for the central coastal area comprises a suite of five series developed from 10,757 sherds collected from 147 sites in seven counties in the New River basin. Sherds from the surface of 48 sites (N=8,794) were seriated and a chronological sequence established. Stratigraphic excavations were also conducted on three sites and the evidence from vertical provenience generally supports the seriation model. Loftfield's types, however, were developed independent of South's taxonomy, although several ware descriptions clearly refer to classes which are essentially the same. To date, Loftfield's taxonomy is not generally used outside of the New River drainage.

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[1] The term "grit-tempered" has been used as a descriptive title for wares tempered with aplastic particles (usually quartz) larger than coarse sand (.5–1 mm). The Wentworth size classification nomenclature includes two size grades larger than coarse; very coarse (1–2 mm), and granule (2–4 mm). The Wentworth terms are preferred to "grit" when referring to grain size and will be used throughout this study. The term "grit" also connotes angularity. In describing the angularity of temper particles, four categories are employed: angular, subangular, subrounded, and rounded.

David Phelps (1983) has developed a sequence of four pottery series for the northern coastal area based on numerous excavations (Phelps 1977, 1978, 1981a, 1981b). Phelps's taxonomy does not incorporate the types described by either South or Loftfield from the southern or central areas, although the similarities of the wares described from those areas are acknowledged (1983). Types defined by Phelps were not regarded as necessarily applicable to the central and southern areas of North Carolina and have not routinely been applied to assemblages from these areas.[2] Phelps's Early Woodland period Deep Creek series, however, is being used to identify and temporally sort samples from the central and northern portion of the South Carolina coast (Anderson et al. 1982:213; Trinkley 1990:16).

As the products of independent archaeological studies, these taxonomies reflect the contemporary historical contexts in which they were developed as well as the prehistoric patterns they are presumed to represent. Comparison of the type descriptions from each study indicates that some mutually exclusive elements exist among the definitions of certain ceramic types and variants from the geographic areas; that is, there appears to be sufficient evidence to support the maintenance of separate taxa for certain types in one area during certain periods of prehistory. For other types, however, descriptions are so similar that maintaining a separate taxonomic class exclusive to one area does not appear to be justified.

For example, the Middle Woodland, clay-tempered, Hanover type defined by South is almost certainly the same as the ware that Loftfield defined as Carteret. The Early Woodland sand-tempered New River type defined by Loftfield appears comparable to what Phelps has defined as Deep Creek. In addition to the equivalence of classes between areas, certain types have proven problematical even within the areas for which they were initially defined. The sand-tempered Cape Fear type, for example, was first thought by South to be a Middle Woodland type (300 B.C.–A.D. 1000). While the sand-tempered sherds described by South may date to the Middle Woodland, many sherds from the southern coast classified as Cape Fear could be as easily classified as Early Woodland Deep Creek or New River. Such ambiguity and redundancy has understandably become a problem for archaeologists conducting research in the central and southern coastal areas where these typologies, including as many as four potentially identical types, may be interchangeably used.

Floating: Chronology

Despite decades of archaeology in the coastal region, the temporal placement of many pottery series has not been clearly established. There is one associated radiocarbon date from the coastal region of North Carolina for the Early Woodland period (Deep Creek series) and only three dates for Middle Woodland period pottery types from the central and southern areas (Cape Fear and Hanover/Carteret, see Table 1).

Five Middle Woodland dates (Mount Pleasant phase) from the northern area, and several dates for Late Woodland period shell-tempered pottery types (Colington, Townsend and White Oak or Oak Island) have been reported (Eastman 1994a:19-22). The scarcity of absolute dates for the Early and Middle Woodland periods is, in part, due to the sandy, acidic nature of the Coastal Plain soils which rarely preserve datable carbonized plant remains. Also, few sites with buried stratified deposits have been found in this region. Shell-midden sites along the coastal margin have only rarely yielded vertically stratified or horizontally discrete deposits which might allow the association of datable organics with Early or Middle Woodland pottery. Clearly, additional dates are needed to improve the earlier portion of the sequence of pottery types in the coastal region.

[2] Exceptions do exist however, (e.g., see Wilde-Ramsing 1984).

Table 1. A Summary of Radiocarbon Dates for the Coastal Region of North Carolina.

Period	Pottery Series	Count	Date Range[1]
Early Woodland	Deep Creek	1	1120 BC
Middle Woodland	Hanover/Carteret	2	445–548 BC
Middle Woodland	Cape Fear	1	AD 1028
Middle Woodland	Mount Pleasant	5	AD 162–829
Late Woodland	Colington	16	AD 777–1648
Late Woodland	Cashie	4	AD 673–1444
Late Woodland	White Oak/Oak Island 1[2]	4	AD 426–876
Late Woodland	White Oak/Oak Island II	16	AD 886–1483
Late Woodland	Townsend	9	AD 775–1675

[1] Single dates are calibrated, ranges are one sigma (all data are from Eastman 1994a, 194b).
[2] Shell-tempered White Oak/Oak Island series dates are bimodal and shown separately here.

Uncertain Geographic Distribution

Phelps (1983:31) postulated a latitudinal (north-south) ceramic-area boundary near the Neuse River during the Early Woodland period, citing low frequencies of fiber-tempered ware (Stallings) and sand-tempered, check-stamped ware (Deptford) north of the Neuse River. As mentioned, however, Early Woodland Deep Creek series taxa, characteristic of the northern area of North Carolina, have been applied to assemblages from coastal South Carolina (Trinkley 1990). Deep Creek-like ceramics were found in South's (1960) Brunswick County survey, and comparable ceramics were identified as "New River" ware in Loftfield's (1976) survey on the central coast.

Evidence for culture area boundaries during the Middle Woodland period is ambiguous. The Mount Pleasant series, a sand- and "grit"-tempered ware characteristic of the northern area of North Carolina, has been applied to ceramics from the southern coastal area (Wilde-Ramsing 1984) and has been tentatively identified in assemblages from the northern part of coastal South Carolina (Trinkley 1990). The grog-tempered Hanover series is present from much of Carolinas' coast, but appears to be more frequent on sites south of the Pamlico River and north of the Pee Dee River, where it is thought to be either the same as, or very similar to, the Wilmington series from coastal South Carolina (Trinkley 1990).

Three culture areas in the coastal region have also been posited for the Late Woodland period. These conform to ethnohistorically recorded linguistic groups including the Siouan (south of the Neuse River from the coast to the fall line), Iroquoian (north of the Neuse River on the interior Coastal Plain), and Algonkian (north of the Neuse River on the outer Coastal Plain) dialects (Phelps 1983:36-39, Figure 1.8; Snow 197859). The ethnohistoric data on the spatial distribution of prehistoric linguistic groups has determined, to some degree, the archaeological pottery typologies.

Typological Generality

The ceramic taxonomies currently in use in the coastal region generally lack the descriptive specificity necessary for fine-grained analysis of temporal and spatial variation. Recent reanalysis of portions of Haag's (1958) and South's (1960) survey assemblages indicates that typological classes subsume a great deal of variability which may be temporally or geographically sensitive. The sorting criteria for many types consist of the presence or absence of specific tempering inclusions, but allow the subsumption of widely divergent expressions of temper size and

proportion in a single type. Similarly, broad categories exist for the various modes of surface treatment, such as cord marking and fabric impressing. Anderson and others (1982:212-213) encountered similar ambiguity in broad taxonomic classes which had been applied to assemblages from the central and northern coast of South Carolina, and determined that a more finely divided taxonomic classification system was necessary. In this study, it is felt that more precise description and the definition of additional varieties are necessary to address the problem of equivalency of types from different areas.

The Evidence for Geographic Regions

Judging from the ceramic evidence thus far analyzed, there appears to be little basis for maintaining a distinction between the southern and central areas of the coast. The sense that there was such a basis appears to have been largely an artifact of the independent development, and subsequent application, of two pottery sequences, South's for the southern region and Loftfield's for the central region. Based on current assessments of pottery from the coast, only the northern and southern regions are considered viable as potentially distinct cultural regions. For clarification, the dividing line for the northern and southern regions of the North Carolina Coastal Plain used in this study is a line drawn from Cape Lookout, on the Outer Banks, up the Neuse River drainage and thence inland. This line coincidentally falls at the approximate middle of the state's coastline, and coincides with several significant geophysical conditions.

The Neuse River is the southernmost of the broadly embayed rivers which empty into the Parnlico, Croatan, Albemarle, and Currituck Sounds that characterize the northern region of coastal North Carolina. South of Cape Lookout, the narrow barrier islands lie close to the mainland shore, separated by a slender strip of estuarine waters. The length of the Atlantic coastal shoreline from Cape Lookout to the South Carolina line is less than half the length of the shoreline of the Pamlico Sound alone. From Cape Lookout north to Virginia, there is roughly five times more mainland shoreline than from Cape Lookout to South Carolina.

In practical terms, the shoreline configuration of the southern region offers a measure of protection to the mainland shore, but limits the availability of estuarine resources. The broad, shallow sounds and extensive shoreline of the northern coastal region provide far more access to estuarine resources such as shellfish and schooling anadromous fishes, but expose habitations on the southern shores of the sounds to the heavy winds and wave action of winter storms. It has long been expected that these geographic differences would be reflected in the archaeologically visible expressions of prehistoric cultural activities in these two regions (Phelps 1983; South 1960).

Although the numerical data needed to develop a comprehensive regional synthesis of the prehistoric pottery sequence are limited, some sense of the spatial and temporal dynamics of specific ceramic attributes in these two regions can be suggested. Phelps (1983:26) suggested that an archaeological distinction between the culture groups who occupied the northern and southern coastal regions is distinguishable by at least the beginning of the Early Woodland period, at ca. 2000 B.C. Several specific ceramic elements and characteristics were cited in support of the argument. For example, the "southern Coastal Plain tradition" of fiber-tempered ceramics (Stallings) are found in increasing quantities towards the south, and only rarely north of the Neuse. Also, the use of dried or fired clay (Croaker Landing) and soapstone (Marcey Creek) tempering in the preparation of flat-bottomed vessels with lug handles, suggests an Early Woodland tradition found more frequently in Virginia and Maryland (Phelps refers to this cluster of traits as the "northern tradition").

Several other Early to Middle Woodland traits are considered to be spatially sensitive. Net-impressed surface treatment is considered a "northern tradition" trait and is rarely found south of the Neuse River. The geographic distribution of limestone or marl-tempered ceramics (Hamp's

Landing series), during the Early to Middle Woodland period, may be related to the distribution of limestone and marl outcrops, although this has not yet been fully investigated. While limestone and marl are associated with sedimentary formations in all 35 counties in the Coastal Plain of North Carolina, evidence thus far suggests that limestone or marl-tempered pottery is restricted to the region south of the Neuse River.[3] Punctating and check stamping are also techniques that are seldom observed in assemblages north of the Neuse. Thom's Creek Punctated and Deptford Check-Stamped wares occur only rarely, and almost exclusively, in the southern coastal area. During the Middle Woodland period, grog-tempered ceramics (Hanover series) are found in limited quantities north of the Neuse River, but are often the most frequently represented series in assemblages from sites south of the Neuse. Shell tempering appears to have been introduced from the north during the Middle Woodland period, perhaps as early as A.D. 200, but is uncommon south of the Neuse River until the Late Woodland period, after ca. A.D. 800.

During the Late Woodland period, simple stamping, found on shell-tempered ceramics to the north, is apparently absent to the south (also refer to the discussion of the Hamp's Landing and White Oak series below). Decorative incising and punctating is a relatively common feature of northern wares of the Late Woodland period, but extremely rare to the south. Burnishing, occasionally found in Late Woodland period assemblages to the south, does not appear to occur north of the Neuse until the time of European contact.

Some technological and stylistic characteristics do, of course, transcend both temporal and spatial boundaries. For instance, the Early Woodland "southern tradition" of simple stamping also occurs in the northern coastal region of North Carolina, but not in the Virginia Coastal Plain. Tempering with medium or coarse sand is a common trait in both the northern and southern regions of North Carolina during the Early Woodland, as is cord marking. Fabric impressing is more problematic. It occurs during the Early Woodland period in northern Georgia in the Dunlap series, as well as in northern Alabama (Longbranch series), Tennessee (Watts Bar series), and western North Carolina (Swannanoa series). Fabric-impressed surface treatment is also known for the Deep Creek series, but is much less common than cord-marked ware.

A Tentative Ceramic Sequence from the Southern Coast

The Late Archaic Period

The earliest pottery recovered from the southern coast is the fiber-tempered Stallings series (South 1976:28-29; Phelps 1983:26). Stallings Plain is found in small quantities as far north as the Albemarle Sound area (Phelps 1983:26), but is more common further to the south, in coastal South Carolina and Georgia (Griffin 1943). In some cases this fiber-tempered ware has been found in association with Savannah River points, soapstone vessel sherds, grooved net sinkers, winged atlatl weights and grooved axes. Fiber-tempered ceramics have been reported by South (1976) in Brunswick and New Hanover Counties, by Loftfield (1979a, 1979b) in Onslow County, by Wilde-Ramsing (1978) in New Hanover County and by Phelps (1975a, 1975b, 1976) in several northern coastal counties.

[3] Technically, limestone (rock composed entirely or chiefly of calcium carbonate) and marl (crumbly soil consisting of clay, sand, and calcium carbonate) are different. Both, however, are often found together in one of the eight sedimentary formations (representing the Upper Cretaceous through the Pleistocene and recent periods) which outcrop in 35 counties on the Coastal Plain of North Carolina (Berry 1947). While there may be slight differences in how the carbonates from each of these formations behave as ceramic temper, the investigation of such differences has yet to be conducted. For the purposes of this report, the term "limestone" is used to denote any calcium carbonate material, whether crushed rock or marl, used as temper.

South (1976:27) recovered a single soapstone-tempered sherd during his survey on the southeastern coast. No other reports of soapstone-tempered ceramics have been identified in the southern coast, although occasional soapstone bowl and pipe fragments have been reported. Marcey Creek, a soapstone-tempered pottery, appears in the assemblages of the Middle Atlantic Coast between 1500 B.C. and 1000 B.C. (Manson 1948), and is occasionally found at sites in the northern coastal region of North Carolina. That single sherd, found along the southeastern coast, does not necessarily warrant affiliation with a Middle Atlantic tradition. It is equally possible that it relates to the Late Woodland soapstone-tempering tradition of the Foothills and Piedmont of North Carolina and South Carolina.

Another potential Late Archaic type found in the northern coastal region is the clay-tempered Croaker Landing series. Phelps (personal communication 1996) suggests the possibility that Croaker Landing series may be contemporary with the Stallings series. No Croaker Landing series sherds have yet been identified in the southern coastal region, and the potential for relatedness of the Late Archaic, Croaker Landing series and the Middle Woodland, Hanover, clay-tempered series appears negligible.

The Early Woodland Period

The Thom's Creek series (Griffin 1945), comprises a sand-tempered, or temperless ware, originally thought to follow fiber-tempered ware at about 1300 B.C. (Stoltman 974:78,84). Phelps (1983) considers Thom's Creek to be related to the Early Woodland Deep Creek sand-tempered series from the northern coastal region, although Trinkley (1980; 1990), Sassaman (1993:68), and others argue that Thom's Creek is contemporaneous with fiber-tempered ware as early as about 2000 B.C. on the South Carolina coast. About 200 Thom's Creek Punctate type specimens were recovered in South's (1960) Brunswick County survey. Those specimens are described as having no tempering, being quite thin (3–6 mm), and exhibiting zones of linear punctation executed in a variety of ways, usually with hollow reeds (South 1976:24-25, Figures 10 and 11). Additional specimens of Thom's Creek in the type collections from the southern coast include incised and punctated examples, Awendaw Finger Pinched, and Allendale Stick-Bundle Punctated varieties.

A similar ware (temperless and thin) with characteristic tooling marks on the interior surface was also identified in South's survey. Specimens of this "Tooled Interior" series, however, also exhibit fabric-impressed, cord-marked and net-impressed exterior surfaces (South 1976:22). Replication studies suggest that the tooling marks characteristic of South's (1960) "Tooled Interior" type, result from scraping vessel interiors with a serrate-margin clam shell (such as a quahog, Mercenaria mercenaria) in order to thin the walls during construction. As the resulting regularly patterned striations commonly occur on the interiors of many types from several culture periods over the entire coastal region, interior tooling was not included as a diagnostic characteristic of any formal type in this synthesis.

The Thom's Creek series is followed in the coastal region of Georgia and South Carolina by the sand-tempered Deptford series (Caldwell and Waring 1939; Caldwell 1952:315). Phelps (1975, 1980), South (1976), Loftfield (1976), and others studying the prehistory of the Coastal Plain of North Carolina have recognized a transition from fiber- and soapstone-tempered pottery traditions of the Late Archaic into the Early Woodland sand-tempered, cord-marked wares and the apparent introduction of paddle stamping. Thom's Creek Plain, Thom's Creek Punctated, Deptford Bold Check Stamped, Deptford Linear Check Stamped and Complicated Stamped types have been found in minor proportions in assemblages from New Hanover and Brunswick Counties, but are not found only rarely north of the Cape Fear River above Pender County (South 1976; Wilde-Ramsing 1978). A single grog-tempered, Deptford Linear Check Stamped sherd was reported in South's (1962) survey. This led to the speculation that the Hanover and Deptford

traditions were possibly related (South 1976:40). If such an association exists, it must take into account the fact that types composing the Hanover series in North Carolina assemblages exhibit no carved-paddle stamping whatsoever, and are grog or clay tempered, not sand tempered.

At approximately the same time period (2000 to 1000 B.C.) sand- or grit-tempered cord-marked ceramics are found in both the northern and southern coastal zone of North Carolina as well as southward to the Savannah River. Deep Creek is the series name that Phelps (1983) has assigned to the Early Woodland sand- or grit-tempered ware from the northern North Carolina coastal region. The type was first recognized at the Parker site (31Ed29), in Edgecombe County, North Carolina, where it was found together with Stallings Plain and Marcey Creek Plain wares, as well as with the small, stemmed, Gypsy-type projectile points associated with the Late Archaic, Savannah River phase. Phelps (1983) indicated that the Deep Creek series is characterized by coarse sand or grit tempering and is primarily cord marked, although fabric impressing and simple stamping are also found. Phelps (1983:29-30) suggests that the Deep Creek series tradition probably had its origin in the Middle Atlantic, thus correlating with Evans' (1955) Stoney Creek series in southeastern Virginia. Phelps characterizes surface treatment techniques as potentially independent technological traits which might have originated in different areas, diffusing to coastal Carolina at different times. For example, the simple stamping which occurs in Deep Creek, may have been influenced by the Deptford simple-stamping tradition.

Phelps (1983) envisioned three periods within the Deep Creek culture phase. The first subperiod is characterized by a majority of cord-marked wares with some fabric-impressed vessels and fewer still simple-stamped specimens. Cord-marking and fabric-impressing techniques were introduced first from Virginia while stamping "was being introduced from the south," presumably from the Early Woodland simple-stamped traditions present in both Thom's Creek and Deptford series ware (Phelps 1983:29-30). The Accokeek and Popes Creek series (both sand-tempered Early Woodland types from the Potomac River region) may also be related.

Phelps (1983:31) noted that Savannah River materials from the Gaston site were dated to 1944±250 B.C. and infers that this may be a reasonable beginning date for the Deep Creek series. Trinkley (1990:16) opted to use the Deep Creek definition for comparable materials found in the northern coastal region of South Carolina and reports two associated radiocarbon dates — 120±130 B.C. and A.D. 210±110 — both somewhat later than originally suggested for the terminus of Deep Creek (Phelps 1983). If Trinkley's supposition — that Deep Creek extends well to the south at that time — is accurate, then it may be inferred that a Deep Creek, or Deep Creek-like, tradition persisted for about 1800 years, at least into South Carolina, or (b) that the beginning and ending dates of Deep Creek need to be refined. Clearly, additional dates are needed to help establish the temporal provenience of the types and varieties of Deep Creek series pottery.

The second subperiod of the Deep Creek phase (thought to begin about 800 B.C.) is characterized by a higher frequency of simple-stamped, net-, and fabric-impressed specimens. In short, it appears that cordmarking decreases during the Deep Creek II subperiod. The third subperiod of the Deep Creek phase (thought to have developed into the Mount Pleasant series sometime around A.D. 200) is characterized by a decrease in the frequency of simple-stamped specimens. This may correspond with the decline of Hamp's Landing (see below) and Deptford series wares and may reflect an increase in regionalization during the latter part of the Early Woodland and early Middle Woodland periods.

In the central and, possibly, southern coastal region, the Early Woodland sand-tempered equivalent of Deep Creek is the New River series, defined by Loftfield (1976). Phelps (1983) initially subsumed New River under Deep Creek, based on apparent similarities in paste and surface treatments. The New River series type definition included cord-marked, fabric-impressed,

plain, simple-stamped (referred to as "thong-marked"), and net-impressed types (in order of frequency) (Loftfield 1976:149-54), all of which also are found in the Deep Creek series. Net-impressing, however, a common feature to both the Deep Creek and later Mount Pleasant series to the north, is very rare in New River or later types along the southern coast. There are no radiocarbon dates for New River series ceramics and only one thermoluminescence date — 593±441 B.C., from site 31On542, in Onslow County (William H. Reid, personal communication, 1996).

The absolute differences between the New River and Deep Creek series appear nominal, and there is reason to question the utility of maintaining separate taxonomic categories for the two on other than geographic and historical grounds. On a sherd by sherd basis, paste characteristics and surface treatments appear comparable, but have not been examined in sufficient detail to make definitive comparisons. At the assemblage level, however, and particularly in the apparent relative frequency of surface treatments, differences do exist. These differences may ultimately have little relationship to the ceramic technology itself, but may derive from other cultural influences. Pending further research, therefore, we have retained the New River series for the southern region Early Woodland sand-tempered ware, but with the recognition that it may prove to be a regional variant of a larger tradition.

Loftfield (1983) initially suggested that South's Cape Fear series may be equivalent to the New River series, although the Cape Fear series was thought by South (1960, 1976) to be a Middle Woodland type. Phelps (personal communication, 1995) similarly suspected the presence of Early Woodland specimens among sherds classified as Cape Fear in the southern coastal region. Preliminary reanalysis of samples from South's study confirms the presence of New River series specimens.

Crawford's (1966:34) Lenoir series, is another series defined as being tempered with coarse sand or crushed quartz. It includes cord-marked, fabric-impressed and simple-stamped varieties, comparable to Deep Creek and New River. His seriation chart (Crawford 1966:101) offers support for an Early Woodland association, although a radiocarbon date of A.D. 720±100 (Beta-43628, calibrated to A.D. 786), from the Tower Hill site (31Lr1), suggests a Middle to Late Woodland association (Eastman 1991:4; 1994:53). The description, and particularly the cord-marked and fabric-impressed varieties, could easily fit into Phelps's (1983:32) Middle Woodland Mount Pleasant series, although the simple-stamped type is more likely an Early Woodland characteristic. Given this, and pending reanalysis of Crawford's collections, the Lenoir series is not, at this time, considered viable (see also discussion below for Tower Hill).

A recent addition to the Early Woodland sequence of the southern coast is a limestone- or marl-tempered series (Hargrove 1993; 1996). Referred to as Hamp's Landing, the series is characterized by angular voids resulting from the dissolution of calcium carbonate tempering particles. A few sherds recovered from shell midden context at the Broad Reach site (31Cr218) retain angular bits of crushed limestone or fossiliferous marl in freshly broken cross-sections (Figure 1). The crushed temper particles are generally about 1 mm in diameter, but range up to 4 mm. Usually, the density of tempering particles seems to be about 25 percent of the paste matrix. However, Hargrove (1993:136) has noted some sherds "with 20 or more voids per square centimeter." Platy or lenticular-shaped particles (fossiliferous shell) also occur, but are less common than the blocky or angular particles. In the vast majority of cases, the carbonates have been completely leached from sherds leaving only small angular voids in the matrix. Some examples also include <25 percent fine (<.5 mm), subrounded or subangular, quartz sand.

Hamp's Landing series sherds were recovered in excavation units from two areas at the Hamp's Landing site (31Nh142), in New Hanover County. Stratigraphic associations suggest a

late Early Woodland to early Middle Woodland temporal position for the series, both between and overlapping an apparently earlier Thom's Creek component and later Hanover and Cape Fear components (Hargrove 1993:20).

Hamp's Landing is very similar to the Wando series limestone-tempered ware found in the northern area of coastal South Carolina (Adams and Trinkley 1993). Excavations at several sites on the Seaside Farms Tract in Charleston County, South Carolina, yielded limestone-tempered sherds which form the basis of the type description offered by Adams and Trinkley (1993:65-71). The Wando series paste is described as containing abundant, rounded, limestone temper ranging in size from .5–6 mm. It's fine sandy texture is reportedly contorted due to larger limestone particles. Wando Cord Marked was malleated with a paddle wrapped with cordage which averages 2 mm in diameter and exhibits both s- and z-twist direction. Overstamping seems to be uncommon, no perpendicular cord impressions were observed, and no rims exhibit stamping on the interior. The Wando Check Stamped type was reportedly stamped with a paddle carved with grooves 5–6 mm wide, leaving rectangular lands 2–3 mm wide. Illustrations of these types, published thus far, leave some question as to the details of the structure of the surface treatment.

We consider the Hamp's Landing and Wando limestone-tempered series to be separate at this time for several reasons. The temper particles in the Hamp's Landing series are generally less than 4 mm in size and angular, while the Wando series temper is often as large as 6 mm, contorting the surface, and always rounded (Adams and Trinkley 1993:65-71). Hamp's Landing Cord Marked includes a variety that exhibits perpendicular cord impressions (possibly twined textile) while the Wando Cord Marked type does not. There have, as yet, been no check-stamped specimens of limestone-tempered ware found in the southern coastal area of North Carolina. Simple-stamping, not reported for the Wando series, appears to be common to Hamp's Landing, and has been found at sites in Carteret, Columbus, and Onslow counties.

The distribution of the Hamp's Landing series is difficult to assess at this point, but appears to correspond to the availability of limestone or marl deposits. Accessible surface deposits may be restricted to areas south of the Neuse River.

The Middle Woodland Period

Four primary ceramic series have been identified for the Middle Woodland period on the North Carolina coast: Mount Pleasant, Mockley, Hanover, and Cape Fear. In addition, several types have been defined which do not appear often in the literature, lack temporal or stratigraphic context, or are simply superfluous to more clearly defined and accepted types.

The Mount Pleasant series was defined for the Middle Woodland assemblage at the Freeman site (31Hf19), located on the Chowan River, in Hertford County (Phelps 1983:32). The series is characterized by several temper types including sand, granule-size (2–4 mm) inclusions (referred to as grit), and clay lumps (Phelps 1981:42). Surface treatments include fabric-impressed, cord-marked, net-impressed, and smoothed. Incising has occasionally been observed on otherwise plain specimens (Phelps 1983:32). Phelps (1983) suggests a date range for the Mount Pleasant series from A.D. 200 to A.D. 800 based on radiocarbon assays from the Mount Pleasant component at the Rush Point site (31Dr15), on Colington Island, which range from A.D. 81 to A.D. 950 (Eastrnan 1994a:24). The Mount Pleasant series seems to have many similarities with the Deep Creek series and has been interpreted as a direct antecedent of the Deep Creek ceramic tradition.

In Delaware and Virginia, the shell-tempered Mockley series defines the Middle Woodland Selby Bay Phase (Evans 1955:44; Egloff 1981; Barka and McCary 1976; Griffith and Artusy 1977:23), and dates from A.D. 200 to A.D. 900 (Wright 1973:21-22). The series was first defined

as consisting of cord-marked, net-impressed and plain varieties (Blaker 1963; Stephenson and Ferguson 1963:105-109). Vessels are typically medium to large, coil-built jars with thick walls, straight or slightly everted rims, and rounded or semiconical bases. A small percentage of Mockley sherds have been smoothed below the rim and decorated with broad, incised lines or punctations (Egloff and Potter 1982:103-104; Griffith and Artusy 1977:17-19; Opperman 1980:30; Potter 1982:124; Stephenson and Ferguson 1963:105-109; Steponaitis 1986:190).

Potter (1982:124) suggested that in the tidewater region of Virginia, cord marking was more common in the earlier part of the Middle Woodland period and net impressing more frequent in the later portion of the period. This pattern has not been well supported on coastal sites in Maryland, however, where the net-impressed type has been associated with early Middle Woodland dates (Wise 1975:25), and the cord-marked type seems to persist well into the Late Woodland period (Herbert 1995:20). Net-impressed, shell-tempered ware of any sort is rare on the North Carolina coast.

Specimens which conform to the descriptions of Mockley have been found in very small quantities across much of the northern North Carolina Coastal Plain, especially along the Chowan River and Currituck Sound, but very rarely south of Albemarle Sound. A few sherds have been tentatively identified in the central coastal area (e.g., Davis and Child 1996; Thomas Loftfield, personal communication 1996). Although shell tempering continues after A.D. 900, and is found as far south as the Cape Fear River, the incidence of cord marking and net impressing appears to decline sharply during the Middle Woodland. Other changes in the paste constituents and forms of vessels occur during the Late Woodland period. Evidence suggests that by A.D. 900, cord-marked and net-impressed, shell-tempered pottery (the Mockley series) had ceased to be made along the northern coast of North Carolina.

The hallmarks of Middle Woodland ceramics in the southern coastal region are the sand-tempered Cape Fear and grog-tempered Hanover series, both defined by South (1976) from his Brunswick and New Hanover County samples. According to South (1976), Hanover series specimens were tempered with crushed sherds. Examination of Hanover samples from coastal collections, however, indicates that many specimens appear to be tempered with variably sized (usually about 2 4 mm) lumps of clay, not clearly distinguishable as crushed sherds.[4] The inclusion of grog in Hanover series paste frequently produces lumps on the interior vessel surfaces which are often surrounded by small cracks (South 1976:16).

Three types of surface treatments predominate in the Hanover series from the North Carolina coast, cord-marked, fabric-impressed, and plain or smoothed. Two varieties of cordmarking are recognized. The first is distinguished by closely spaced or adjacent parallel cords usually oriented obliquely to the vessel rim. The second is characterized by two sets of widely spaced (2 4 mm), parallel cord impressions, each oriented obliquely to the vessel rim and perpendicular to one another. The latter variety may be interpreted as overstamping by paddling with a cord-wrapped paddle, or as the impression of a textile consisting of twined warp and weft

[4] It is usually assumed that such clay lumps are dried or fired prior to their being added to the clay paste, implying a separate and distinct temper-preparation process. While explicit evidence for this process has yet to be demonstrated, this interpretation logically qualifies the resulting clay lumps as a tempering agent — a purposefully produced, non-plastic additive made from previously fired clay. For this reason, the term "grog" is used here to denote both the clay lumps and crushed sherds diagnostic of the Hanover series. Should further study reveal that the clay lumps are a natural byproduct of the use of certain Coastal Plain clays, and not a tempering agent, the application of these terms will need to be reconsidered.

elements (see type descriptions).[5] Three varieties of impressed fabric are recognized, each a 1/1, weft-faced, interlaced or twined textile, characterized by one of three size grades of weft element diameter. Decoration is rare in both the Hanover and Cape Fear series, although a few incised sherds have been found.

South (1976:40) noted that the Hanover series exhibits paste characteristics similar to Wilmington Cord Marked, which closely follows the Deptford series ware on the Georgia coast (Caldwell 1952:316). Trinkley (1990:17) has also remarked on the similarity of Wilmington and Hanover, suggesting that they "may be viewed as regional varieties of the same ceramic tradition." Waring (Williams 1968:113-116) considered the Wilmington phase intrusive to the Carolina coast, but Trinkley (1990:17) has drawn attention to what he believes are Deptford-like traits in the Wilmington series as evidence of ***in situ*** development. Anderson (1975:187) has found Hanover series specimens distributed over much of the coastal zone of South Carolina, with a somewhat more abundant distribution north of the Edisto River.

Dates for Wilmington and Hanover series wares from South Carolina range from 135±85 B.C. to A.D. 1120±100, although some researchers prefer a date range of about 200 B.C. to A.D. 500 (Anderson et al. 1982:276). One radiocarbon assay of charcoal from a shell midden site (31Nh556) in New Hanover County, North Carolina has yielded a date of 1560±60 B.P. (Beta-7011, calibrated to A.D. 538; Eastman 1994a; Wilde-Ramsing 1982). Another assay of bone from the Broad Reach site (31Cr218) produced a date of 1420±90 B.P. (Beta-21423, calibrated to A.D. 445; Eastman 1994a:21).

Phelps has noted that grog-tempered, Hanover Cord Marked, and Hanover Fabric Impressed types, along with a fine sand-tempered ware with the same surface finishes, are frequently found in minor quantities in association with Mount Pleasant specimens in both the Tidewater and Inner Coastal Plain areas of the northern coastal region (cf. Robinson 1995). Grog-tempered ware usually outnumbers sand-tempered ware in the southern coastal assemblages and is common in assemblages from as far north as Hatteras Island on the Outer Banks in Dare County (David Phelps, personal communication 1996).

Loftfield (1976, 1983) has referred to grog-tempered wares as the Carteret series. As with Hanover, the Carteret series is tempered with either lumps of clay or crushed potsherds. The Carteret definition coincides in every respect with that of the Hanover series. In discussions of the Permuda Island site (31On196), Loftfield and Watson (1985:39) noted that Carteret "is essentially identical" to Hanover, although suggesting that it may be "a late Middle Woodland ceramic expression."

Crawford's (1966) description of the Grifton series also appears to be identical to the Hanover series. By virtue of both frequency of usage and temporal priority, it is recommended that the Hanover series be employed in classifying Middle Woodland, grog-tempered ware from the coastal region of North Carolina.

The other principal pottery series associated with the Middle Woodland in the southern coastal region is the Cape Fear series. As originally described, the Cape Fear series is characterized by "a high percentage of sand ... a rough sandy feel due to the grains standing in relief on the surface of the sherd ... [and the inclusion of] occasional large particle[s] of quartz sand" (South

[5] As this observation has been made on a very limited number of specimens, and experimentation has not yet been conducted to reproduce this surface treatment, it continues to be subsumed here as a variety of Hanover Cord Marked. If such surface treatments prove to be the result of impression with open, twined textile, and are found in additional samples, then a new type will be defined.

1976:18). South (1976:18) also noted that the larger quartz particles were incidental inclusions, not tempering, and recorded a range of sherd thickness from .4–1.2 cm. It may be useful, however, to revise the maximum downward to about .8 cm in order to help distinguish the Cape Fear series from the Early Woodland New River or Deep Creek Cord Marked types, which are also tempered with coarse, or very coarse, sand. Additional distinctions between the cord marking techniques characterizing these two series may be possible with future analyses.

Two types of surface treatments were originally recognized for the Cape Fear series, fabric-impressed and cord-marked. The range of fabrics impressed on sand-tempered Cape Fear sherds is virtually identical to those described for the Middle Woodland Hanover series. The classification used in this paper identifies three varieties of 1/1, weft-faced, interlaced or twined textiles, characterized by three size grades of weft diameter. The cord marking characteristics of the two varieties of Cape Fear Cord Marked also closely matches those described for the Hanover series.

Loftfield (1976:164) also identified a "wicker fabric"-impressed and cord-marked, fine sand-tempered ware, referred to as the Adams Creek series. According to the description, the sand was "small enough to be virtually invisible", although "in a few cases a fair amount of water smoothed gravel was included ... the gravel size rarely exceeded 1 mm and was usually less" (Loftfield 1976:164). While the original placement of Adams Creek in the upper end of the Late Woodland period was based on seriation, (Loftfield 1976:187), it was later proposed as a Middle Woodland ware related to the Cape Fear series (Loftfield and Watson 1985:13). It was also noted that the paste characteristics of Adams Creek were similar to those of the Early Woodland, New River series, but with larger "grit" inclusions, "tending to small gravel instead of the fine sands of the Early Woodland ceramics" (Loftfield and Watson 1985:13). Loftfield and Watson (1985:39) suggested that Adarns Creek wares "parallel the Mount Pleasant ceramics of Phelps (1983)."

As the Cape Fear and Mount Pleasant series definitions appeared to adequately subsume the Adams Creek series type descriptions, Adams Creek was not included as a sand-tempered series in this synthesis. Should further finds allow the definition and chronology to be clarified so as to distinguish the Adams Creek series from either Cape Fear or Mount Pleasant the taxonomy will be revised.

The Late Woodland Period

Archaeologists have generally interpreted the spatial dynamics of the Late Woodland period (A.D. 800–1600) of the coastal North Carolina from a direct-historical perspective. The descriptions of such historians as Mook (1944), Paschal (1953), and Feest (1978) have been used to document the locations of several Native American linguistic groups, including Algonkian, Iroquoian, and Siouan. The Carolina Algonkians, including the Secotan, Croatan, and Chowanoke, among others, were the southernmost of an Eastern Algonkian cultural and linguistic complex which spanned much of the middle and north Atlantic seaboard. They appear to have been an estuarine-oriented culture, occupying the Tidewater region as far south as the Cape Fear River (Loftfield 1975, 1976, 1991; Mathis 1995). Iroquoian speakers, including the Tuscarora, Nottaway and Meherrin occupied the inner Coastal Plain, north of the Neuse River, while Siouan-speakers such as the Waccamaw, occupied the area south of the Neuse River.

Phelps (1983) proposed three Late Woodland archaeological culture phases, each represented by its own ceramic series, which correspond to these linguistic groups and their historically documented geographic regions. The Colington culture phase and ceramic series, associated with the Algonkian speakers, the Cashie phase and ceramic series, associated with the Iroquoian speakers, and, the Oak Island phase and pottery series, associated with the southern Siouan speakers.

Colington phase (A.D. 800-1650) ceramics are shell-tempered and include (in descending order of frequency) fabric-impressed, simple-stamped, plain, and incised types (Phelps 1983). Simple stamping is considered to be a very late trait (David Phelps, personal communication 1996). The Colington series is similar to the Townsend series (Blaker 1963:14–22) and the Roanoke Simple-Stamped type (Blaker 1952:257) of southeastern Virginia (Phelps 1983:36-37; Egloff 1985:235). Rims are frequently decorated with incised linear and geometric patterns and, less often, with punctations. Vessel shapes include conoidal pots, hemispherical and simple bowls, and small beakers with everted rims.

The contemporary (A.D. 800-1650) Cashie ceramic series is associated with the Cashie phase, first identified at the Jordan's Landing site (31Br7, see Phelps 1983). The Cashie series includes fabric-impressed, simple-stamped, incised, and plain types tempered with sand and "small pebble-sized particles" which often protrude simultaneously through the interior and exterior surfaces of the vessel walls. Sand tempering is used exclusively in small, thin-walled vessels. Vessel rims are often decorated with punctations and occasionally with incisions and finger pinching. In some cases, incised and punctated designs are applied over a stamped or impressed surface finish. Vessel shapes include conoidal pots, hemispherical and simple bowls with an ovate-triangular orifice shape and a flattened, extended lip. Beakers, ladles and long-handled dippers also occur. Cashie Simple Stamped is thought to be equivalent to Gaston Simple Stamped (Coe 1964). In Virginia, the Branchville series (Binford 1964) in the Meherrin and Nottoway localities and the Sturgeon Head series (Smith 1971) are also thought to be related or equivalent.

Phelps (1983:39) proposes that during the 16th and 17th centuries the southern extent of the Algonkian culture, and the corresponding distribution of Colington ceramics, was just south of the Neuse River (cf. Loftfield 1975). Evidence has recently emerged which suggests that the distribution of Colington phase cultures during prehistoric times may have extended as far south as Onslow County (e.g., Bogdan and Weaver 1987; Loftfield 1990; Loftfield and Jones 1995; Mathis 1995). The evidence includes not only shell-tempered ceramics, comparable in many respects to the Colington series, but also mortuary and architectural features (i.e., ossuary burials and longhouses) typical of Algonkian culture found to the north. Evidence also suggests that, by the 15th century, the southernmost extent of the Algonkian societies had shifted north of its former range, perhaps above the Neuse River, and that some degree of integration with Siouan- or Iroquoian-speaking groups may have occurred by this time (Loftfield 1990; Mathis 1995).

The southernmost variant of Late Woodland, shell-tempered pottery from coastal North Carolina, was defined by South (1960) as the Oak Island series. Surface treatment types, reported in South's (1960) sample from sites surveyed in the lower Cape Fear River basin, include plain, cord-marked, fabric-impressed, and net-impressed variants. In samples from sites surveyed in the lower Parnlico and Neuse River drainages however, no cord-marked or net-impressed, shell-tempered ceramics, are recorded (Haag 1958). In the lower Cape Fear basin, 20 percent of the specimens reported are cord-marked and 10 percent net-impressed (South 1976:46-47). In addition, 49 percent of the northern sample was fabric-impressed, as opposed to only 1 percent of southern sample. Nearly 68 percent of the Cape Fear River basin sample is identified as having plain surfaces, a figure substantially greater than any subsequent collections of shell-tempered ceramics in the coastal region. Later, Phelps (1983:48) cited these differences as validation of the distinction between the northern Colington and southern Oak Island phases and ceramic types.

In an unpublished report of a survey of two small islands at the mouth of the White Oak River on the central coast, yet another shell-tempered type — White Oak Fabric Impressed — was defined (South 1962:26). A total of 1395 shell-tempered sherds were collected during the survey, 90 percent of which were impressed with a "plaited fabric or mat with a rigid warp and a more pliable weft" (South 1962:22). Also in the shell-tempered inventory were a small number of plain,

scraped and burnished specimens. The burnished type was defined as Swansboro Burnished. Only one cord-marked and no net-impressed, shell-tempered sherds were identified. In comparing this collection to those reported by Haag (1958) for sites north of the Neuse River, South (1962:28) concluded that the relative proportions of surface treatments indicated a closer relationship to the northern, rather than southern, coastal region.

The White Oak series was further defined in 1976 when it was applied to Late Woodland, shell-tempered pottery from the central coastal area (Loftfield 1976). The White Oak series included fabric-impressed, smoothed and plain, cord-marked, simple-stamped (originally described as "thong-marked"), and net-impressed types, in order of frequency (Loftfield 1976:157-163). The range of radiocarbon dates associated with the White Oak series is similar to that for the Colington series, with the exception of certain extreme and potentially erroneous assays (see the type descriptions which follow). The most recent date associated with the series (A.D. 1470±50, calibrated to A.D. 1449, Beta-52529) is from the Broad Reach site (31Cr218, see Eastman 1994a:49). The earliest assay on wood charcoal unquestionably associated with White Oak series pottery from the Hammocks Beach site 31On82 (Loftfield 1985) yielded a date of A.D 1150±90 (calibrated to A.D. 1253, Beta-11937, Eastman 1994b:21). Several other dates, of bone and plant remains recovered by flotation, however, indicate a likely range of from ca. A.D. 800 to A.D. 1500 (Eastman 1994a:25-26).

In his regional synopsis, Phelps (1983:48) suggested that White Oak be subsumed under the Oak Island series taxon, primarily on the basis of the historical precedence of South's (1960; 1976) Oak Island definition, the occurrence of surface treatments not found in the Colington series (i.e., cord-marked, and net-impressed), and the low frequency of fabric-impressed wares. Subsequently, Late Woodland, shell-tempered sherds from the southern coastal area have been classified as either Oak Island, White Oak, or even "Oak Island/White Oak."

In recent years, a substantial number of surveys and excavations have taken place on the southern coast, providing a better perspective of the types and range of surface treatments and paste characteristics, as well as the overall chronology and distribution of shell-tempered ceramics. Sites from which shell-tempered ceramics have recently been recovered in substantial numbers include 31On536, the Pelican Point (31On235), Magens Bay (31Cr267), Crystal Shores (31Cr268), Uniflite (31On33), Hammocks Beach (31On305), Flynt (31On82), Permuda (31On196), and Broad Reach (31Cr218) sites (Davis and Child 1996; Hargrove 1996b; Lautzenheiser et al. 1994, 1995; Loftfield 1979, 1985, 1987, 1989; Mathis 1993).

Also important are the preliminary results of recent reanalyses of previously classified collections from the southern coastal region which suggest that a substantial number of limestone-tempered Hamp's Landing sherds may have been mis-classified as the shell-tempered Oak Island series. The potential for misidentification of calcium carbonate tempering agents, which have been completely dissolved subsequent to artifact deposition, is significant. The shape of the voids remaining in the ceramic matrix is, in many cases, the only distinguishing characteristic between a limestone-tempered and shell-tempered sherd. Surface treatment, however, may also contribute significantly to the distinction between the shell-tempered and limestone-tempered pottery.

The Early or Middle Woodland period Hamp's Landing series includes cord-marked, simple-stamped, and net-impressed, types. Cord marking and net impressing are not associated with other Late Woodland period ceramics from the coastal region. Cord marking appears to emerge during the Early Woodland, continue into the Middle Woodland, and fade out of use before the end of the period (cf. Loftfield 1975, 1976). Net impressing, rarely observed in Early and Middle Woodland period assemblages from the southern coast, is absent in the Late Woodland assemblages from the northern and central regions. Simple stamping, commonly found in Early

Woodland period assemblages from both the northern and southern coastal regions, is absent during the Middle Woodland period, and re-appears in a diminutive form (narrower lands) during the latest part of the Late Woodland period in the northern coastal region. For these reasons, the White Oak series name has been selected for the Late Woodland shell-tempered ware from the southern region. As additional evidence accumulates, further modifications to the taxonomic system will be necessary.

If significant numbers of Hamp's Landing limestone-tempered sherds are found in the "shell-tempered" components of collections from the southern coast, then an Early to Middle Woodland presence, more prominent than previously thought, is implied for the southern coastal region. The inverse may also be implied; fewer shell-tempered sherds in southern collections might indicate a less prominent Late Woodland presence in the area. This, in turn, leads to further speculations, the strength of which will rely on further data analysis, additional samples, and a better understanding of the temporal position of existing types.

As described below, the *updated* White Oak series is characterized by a range of surface treatments including fabric-impressed, plain or smoothed (often smoothed-over, fabric-impressed), and burnished. Fabric impressing accounts for 90 percent or more of the series, followed by plain, smoothed, and occasionally, burnished. Vessel forms include hemispherical and globular bowls, conoidal jars and pots, and small nearly flat-based plates. White Oak series ceramics, as well as the Colington series to the north, appear to be restricted to sites with associated shell middens or sites in the immediate vicinity of shellfish resources along the salt water sounds and estuaries (Loftfield 1975, 1976; Phelps 1983).

Although the White Oak series is similar in many respects to Colington, it is retained as a separate taxon for the following reasons. First, if many of the simple-stamped sherds thus far reported as "shell-tempered" in the southern region are in fact limestone-tempered, simple stamping would not appear to be represented in shell-tempered samples south of the Neuse River during the Late Woodland period. Simple stamping does occur in the Colington series. Second, surface decorations, common to Colington, are all but absent in the White Oak series. Third, burnishing is not a characteristic of the Colington series, but is found in White Oak, although relatively rarely.

A possible White Oak variant, tempered with a combination of crushed shell and grog, is known from several sites on the central coast. All of the known samples which have this combination of tempers are fabric-impressed. Although the apparent combination of the two temper types might suggest a "transitional" ware between the Middle Woodland, grog-tempered Hanover series and the Late Woodland, shell-tempered, White Oak series radiocarbon dates suggest otherwise. A partial vessel of the type was recovered at the Broad Reach site (31Cr218) from a refuse pit radiocarbon dated to A.D. 1380±50 (calibrated to A.D. 1415, Beta-58946). Given the relatively common occurrence of this combination of temper types (estimated at 2–5 percent in central coastal, shell-tempered assemblages), it is tempting to define a separate series. For the present, however, we suggest these specimens be subsumed in the White Oak series as a variety of the White Oak Fabric Impressed type. This diverges slightly from the approach to typological systematics taken in this paper (presented below), but is considered the more prudent alternative for the present.

A fine, sand-tempered, fabric-impressed series is also represented in collections from the southern area. In the northern portion of the region, just south of the Neuse River, Loftfield (1975, 1976) identified this series as Adams Creek, and associated it with the latter part of the Late Woodland period (see also discussions above). Initially, he considered it possible that the series could be related to direct influences of the Iroquoian-speaking Tuscarora. However, Phelps (1983) demonstrated that the principal ceramic series associated with the Tuscarora is Cashie, a pebble or

"grit"-tempered ware. In addition, while the most common type in the Cashie series is fabric-impressed, the series also includes decorated and plain types. No decorated wares are reported for the Adams Creek series. Later, as noted above, Loftfield (1983:13) changed his opinion of the Adams Creek type, suggesting that it was more likely to be a variant of the Middle Woodland, Cape Fear sand-tempered series.

There is, however, some evidence to suggest that Loftfield's (1976) original type description and assessment of the temporal position of the Adams Creek series as a late, Late Woodland ware may be accurate. A fine sand-tempered, fabric-impressed ware, which appears to be distinct from the medium, sand-tempered Cape Fear series, is particularly common in the area immediately west of Cedar Island, at the mouth of the Neuse River. In this area, shell-tempered wares are all but absent at shell-midden sites, although characteristic Early and Middle Woodland types are common (Anthony and Drucker 1981; Loftfield 1976:193). Included in assemblages from this area are fine, sand-tempered, fabric-impressed ceramics. Nevertheless, given the ambiguity generated by Loftfield's later modifications of the original type description, his reinterpretation of its temporal position and the current lack of context for any of the fine, sand-tempered wares from the lower Neuse River basin, the Adams Creek series is considered too tentative to warrant inclusion in the current synthesis.

A Summary of the Taxonomic Sequence from the Southern Coast

The foregoing discussion has presented a preliminary sketch of the sequence of prehistoric ceramic traditions of the southern coastal region of North Carolina. From both environmental and cultural perspectives, the Neuse River basin appears to have been a "boundary" area between ceramic traditions to the north and south at several points in prehistory. During the Early Woodland period, fiber-tempered Stallings, or a related ware, is occasionally found in southern North Carolina coastal collections. The frequency of fiber-tempered specimens is higher in collections from the southern portion of this region and lower in northern collections. Fiber-tempered specimens have been found as far north as the Chowan basin and occasionally from sites in the inner Coastal Plain province, but such finds are rare. The Early Woodland Thom's Creek series, whose cultural center is located further south along the South Carolina coast, is also occasionally found in collections from the southern coast of North Carolina. While more common in Brunswick and New Hanover Counties, occasional specimens have been found as far north and west as Fort Bragg (Wayne Boyko, personal communication 1996). In general, Thom's Creek appears to be restricted in its northerly extent to the lower Cape Fear drainage. A new limestone or marl-tempered series, Hamp's Landing, has recently been proposed for the late, Early Woodland or early Middle Woodland period. The temporal position and geographic distribution of the Hamp's Landing series is, as yet, very tentative. It has been found in the lower Cape Fear drainage and along the coastal margin as far north as Carteret County. Hamp's Landing may be related to the Wando series found in Horry County South Carolina. The Deep Creek, coarse, sand-tempered series was defined from collections north of the Neuse River, but also be found in collections from the southern region, (the New and Cape Fear River basins), where is referred to as the New River series. Most previous analyses of collections from the southern coast did not distinguish between the coarse sand-tempered New River and the medium, sand-tempered Cape Fear series. For this reason, the frequency of the occurrence of New River or Deep Creek series sherds in collections from the southern region is not yet known.

The Middle Woodland period in the southern coastal region is dominated by two series comprising nearly identical arrays of surface treatment types. The Hanover series is grog tempered and the Cape Fear series is sand tempered. In the assemblages collected from the surface of sites in Brunswick and New Hanover Counties, South (1976) noted that about 75 percent of the Hanover series sherds are fabric impressed and 25 percent are cord marked. The proportions are reversed for Cape Fear series sherds with 36 percent being fabric impressed and 58 percent exhibiting cord

marking. This pattern is corroborated by subsequent survey data from surface collected assemblages from over 300 sites in New Hanover County (Wilde-Ramsing 1978). In the New Hanover County sites sample, about 65 percent of the Hanover sherds are fabric impressed and 25 percent are cord marked, while 30 percent of the Cape Fear series sherds are fabric impressed, 40 percent are cord marked (Wilde-Ramsing 1978:181).

Following Coe (1952:306) and Haag (1958:108), South (1976:40) assumed that fabric impressing was an earlier technology than cord marking. From this and other information, South concluded that the Hanover series was probably associated with an earlier culture phase than the Cape Fear series. Fabric impressing is no longer assumed to be the earlier of the two modes of surface treatment. Current evidence, provided by the Hamp's Landing and Deep Creek series, suggests the reverse on the Carolina coast. Sequencing these Early and Middle Woodland wares has proven difficult, as contextual data and absolute dates are, at present, sparse. An estimated temporal range for the Hanover series, based on radiocarbon dates from South and North Carolina is from about 200 B.C. to A.D 500. The single radiocarbon date for Cape Fear from the McClean mound (31Cd7) is calibrated to A.D. 1028 (Eastman 1994b:5). By comparison, the latest Mount Pleasant date is from the midden at Rush Point (31Dr15) and is calibrated to A.D. 1076. The relationship of the Mount Pleasant series and the Cape Fear series, however, is not well understood. Phelps (1983:35) equated the two, suggesting that they formed a single series. Haag (1958) described a similar "grit"-tempered series for the interior Coastal Plain, which may also have subsumed specimens now classifiable as Cape Fear. Potential differences in the paste and temper characteristics and the range of surface treatments exhibited in each series, however, have not yet been thoroughly investigated.

The Late Woodland period on the outer North Carolina coast has usually been synonymous with shell-tempered ceramics. The Colington series is found along the coastal margin in the northern region — the traditional territory of the Carolina Algonkians. The shell-tempered wares of the southern coast differ from the Colington series in a few respects. Simple stamping, and incised decorations have not been confirmed in the southern coastal shell-tempered assemblages, while they are common in the Colington series. Burnishing is occasionally seen in the shell-tempered wares of the southern coast, while not found in the Colington series. The "shell-tempered" component of assemblages from southern coastal sites, originally defined as the Oak Island series, have been found to include a number of specimens which are limestone or marl-tempered. The difficulty of distinguishing between these two tempering agents for sherds in which all the temper particles have been dissolved, is significant. Former analysts, unaware of the presence of a limestone-tempered component, would not necessarily have made the distinction. As the Hamp's Landing series has a well represented simple-stamped component, this throws into question all simple-stamped specimens previously classified as shell-tempered. A similar potential for confusion is noted for the shell-tempered, cord-marked specimens identified in southern collections. Cord marking is not found in the Colington series, but is a common type in the Hamp's Landing series. Cord marking may also prove to be an exclusively Early and Middle Woodland phenomena.

As originally defined by South and Loftfield, there appear to be no significant differences between the Late Woodland shell-tempered wares of the southern and central coastal regions (Oak Island and White Oak series). Both the Oak Island (South 1960) and the White Oak series, as described by Loftfield (1976), included cord-marked and simple-stamped components which may, in the event of reanalysis, prove to be limestone or marl-tempered. As the taxon "White Oak" was first applied to shell-tempered sherds (recently confirmed from reanalysis) from the mouth of the White Oak River (South 1962), the term White Oak has been selected to denote the shell-tempered ware from the southern region.

The foregoing taxonomic sequence and the type descriptions which follow are offered as a working hypothesis of the distinguishing characteristics of ceramic types from the southern coast of North Carolina. Several changes to the multiple taxonomic systems, which are currently in use in the region, have been suggested. These suggestions are viewed as the tentative steps toward resolving some of the more prominent taxonomic problems. The proposed revisions leave many questions which can only be addressed through the reanalysis of existing collections from the region. Larger problems, such as the scarcity of stratigraphic contextual data and the rarity of absolute dates, also require immediate attention. Both authors are independently pursuing research which may help to answer some of the questions that our suggested revisions beg. Comments from others involved in similar research pursuits in the region are most welcome.

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TYPE DESCRIPTIONS FOR THE SOUTHERN COAST OF NORTH CAROLINA

HAMP'S LANDING SERIES

(Hargrove 1993, 1996)

SERIES TYPES: Hamp's Landing Net-Impressed, Hamp's Landing Cord-Marked, Hamp's Landing Simple-Stamped

Equivalent Series

None, although portions of South's (1976) Oak Island series appears to have subsumed a number of specimens more accurately fitting the Hamp's Landing description.

Paste

Method of Manufacture. Smaller vessels appear to be pinch pots. While definitive evidence is lacking, larger vessels seem to have been hand-built by coiling, followed by drawing and paddling to thin and shape the vessel walls. Some evidence for mold supports (Rye 1981:63) may be detected on larger vessels.

Tempering. The Hamp's Landing series is a recently defined Early Woodland limestone or marl-tempered series. Most specimens are characterized by angular voids resulting from the dissolution of calcium carbonate tempering particles. A very few examples recovered from shell midden context, such as at the Broad Reach site (31Cr218), retain angular bits of crushed limestone or fossiliferous marl in freshly broken cross sections (Figure 1). Temper particles in these samples appear primarily to be crushed limestone, about 1 mm in diameter, comprising about 25 percent of the paste matrix. Platy or lenticular-shaped particles (fossiliferous shell) also occur, but are less common than the blocky or angular particles. In the vast majority of cases the carbonates have been completely leached from sherds, leaving only the voids of dissolved temper in the matrix. Some examples also include <25 percent fine (<.5 mm), quartz sand (subrounded or subangular particles).

Texture. Sherds may be smooth or moderately rough feeling depending on the amount of sand in the paste. In broken cross sections, the matrix may appear contorted, or poorly mixed, and include a moderate amount of organic material. In other specimens, the paste seems thoroughly mixed and well compacted. Impressions of organic material, primarily plant fiber, (reminiscent of fiber-tempered wares), are also frequently seen on interior surfaces.

Hardness. Specimens containing fine sand in the paste may be relatively hard, but most sherds are very light, soft, and easily broken due to their porosity.

Color. Brown or buff exteriors are commonly tinted with the orange hue characteristic of an oxidizing atmosphere. Interiors tend to be somewhat darker gray. Broken cross sections often exhibit an orangish brown zone near the exterior surface, with dark gray or black interiors.

Associated Radiocarbon Dating

No radiocarbon dates have yet been associated with the Hamp's Landing series. The stratigraphic provenience of Hamp's Landing sherds from the type site (31Nh142) indicate that, in general, examples were recovered between Thom's Creek and Cape Fear series ceramics (Hargrove 1993, also see discussion). This suggests an early Middle Woodland or late Early Woodland affiliation for the series.

Geographic Distribution

Since the Hamp's Landing series has only recently been recognized, its geographic distribution in the southern coastal region is uncertain. Examples have been identified in an area extending from Brunswick County, near the South Carolina line, to central Carteret County, just below the Neuse River. No examples have been identified further to the north (David Phelps, personal communication 1996). The series is found in small quantities at shell-midden sites along the sounds and estuaries, and at small sites adjacent to inland swamps, pocosins and small tributary streams in the outer Coastal Plain. This distributional pattern is similar to the pattern known for both Early and Middle Woodland period ceramics. No information is available regarding the distribution of Hamp's Landing in the interior Coastal Plain.

TYPE NAME: Hamp's Landing Net Impressed

Surface Treatment

Type of Modification. Impressed with knotted netting. In specimens from New Hanover County (31Nh690) knots are approximately 2-3 mm in diameter, and spaced about 4 mm apart (Figure 2). A spacing of 4-9 mm was noted on examples from site 31On254, in Onslow County.

Description. Very few examples of Hamp's Landing Net Impressed have been identified. Consequently, we offer this type description very tentatively. In the specimens recovered thus far, the paste matrix exhibits sparse and widely dispersed angular voids suggesting carbonate tempering. In some specimens, clay tempering and fine, subrounded, quartz sand (<.5 mm) comprises less than 25 percent of the matrix. The yams which compose the net are fine (1–1.5 mm) and do not appear to be plied cordage. The direction of the twist of the yam, if any, is not apparent.

Decoration

Technique. None observed.

Design. None observed.

Location. None observed.

Vessel Portion Form

Rim. Straight, slightly inverted or everted, and tapered.

Lip. Rounded.

Body. At present, several conjoined pieces of a vessel, from site 31Nh690, provides the basis for describing these attributes. The cojoined pieces suggest a small globular bowl, about 16 cm in diameter at the midsection and about 12–14 cm in diameter at the orifice as calculated from a 5 percent section of the circumference of the rim.

Base. Unknown.

Thickness. 6–8 mm.

Appendages. None observed.

TYPE NAME: Hamp's Landing Simple Stamped

Surface Treatment

Type of Modification. Two types of Hamp's Landing Simple Stamped are characterized by two varieties of parallel linear impressions (broad and narrow), stamped onto the exterior vessel surfaces. Stamping was presumably executed by the paddle-and-anvil technique during vessel construction.

Description. The broad variety of linear impression has been interpreted by Hargrove (1993:136, 1996) as "thong-marking." This interpretation is similar to Loftfield's (1976:149, 162) explanation of the New River Thong-Marked and White Oak Thong-Marked types as "malleated with a thong-wrapped paddle." While the broad linear impressions do look as if they might result from stamping with a paddle wrapped with thin, nearly equal-width, strips of cleanly cut hide, this is difficult to demonstrate conclusively. It is possible that other materials, such as cane splints, may have been impressed into the vessel surface (Figure **3).**

Variety 1 (Broad Impressions). The broad variety of Hamp's Landing Simple Stamped is characterized by parallel elements which are approximately 1 mm thick and 3.5 mm wide, spaced about 2 mm apart (211 cm element count) (Figure 4). Individual elements appear to have a roughly rectangular cross-sectional shape. On one reconstructed vessel section from site 31Cr264, the elements are oriented horizontally, or parallel to the lip and suggest the possibility that the ends of elements were tucked under themselves.

Variety 2 (Narrow Impressions). The narrow variety of Hamp's Landing Simple Stamped is characterized by parallel elements which are about .5–1 mm thick and .5–1 mm wide, with very little or no space between (Figure 5). Individual elements appear to have an essentially round cross-sectional shape, suggesting unspun plant fibers wrapped in multiple layers around a paddle. The illustrated example is from site 31On603.

An alternate interpretation is that the surface treatment exhibited by the Hamp's Landing Simple-Stamped, Variety 2 is not stamped, but brushed. If so, brushing would have been executed when the paste was quite wet and considerable pressure would have been applied to the brush.

Surface impressions are relatively deep and show no evidence of drag marks, however, further experimental studies are necessary to determine this. If replication indicates that the surface treatment is in fact brushed, then an additional type of Hamp's Landing will be added.

Decoration

Technique. None observed.

Design. None observed.

Location. None observed.

Vessel Portion Form

Rim. Rims include straight, slightly inverted, or slightly everted examples. Rim sherds, representing about 12.5 percent of orifice circumferences, suggest orifice diameters of at least 36 cm diameter.

Lip. Examples of lips include rounded or slightly rolled profiles on the everted specimens and paddle-flattened profiles on the straight and inverted specimens. Lip interiors are plain, scraped, or smoothed on most samples.

Body. Body sherds suggest moderately large vessels of indeterminate shape.

Base. Unknown.

Thickness. 5–7 mm.

Appendages. None observed.

TYPE NAME: Hamp's Landing Cord Marked

Surface Treatment

Type of Modification. Exterior vessel walls are impressed or stamped with parallel strands of 2-ply cordage (Figure 6). The impressions of plied strands of cordage appear as parallel cords with little or no space between cords. Usually, cords are oriented obliquely to the lip of the vessel and extend over the entire body from rim to base.

Description. Cords are typically 2-ply, z-twist, 1–2 mm in diameter, with an element count of 3 cords per 1 cm (3/1 cm count).

Decoration

Technique. None observed.

Design. None observed.

Location. None observed.

Vessel Portion Form

Rim. Rim specimens include straight and slightly everted forms (examples from 31Nh690, 31Cr218, 31Cr264, and elsewhere). An example from the Papanow site (31Nh690) has an estimated orifice diameter is about 36 cm, based on a 5 percent section of the circumference of the rim. Another cord-marked rim from the Hamp's Landing site (31Nh142) is inverted and rounded.

Lip. Flattened and impressed with cord, or plain and rounded.

Body. Unknown.

Base. Unknown.

Thickness. 4–12 mm (31Nh690, 31Cr218, 31Cr264).

Appendages. None observed.

TYPE NAME: Hamp's Landing Fabric Impressed

Surface Treatment

Type of Modification. Approximately 7 percent of the Hamp's Landing sherds from the type site (31Nh142) were identified as fabric-impressed (Hargrove 1992:137).

Description. Although several fabric-impressed sherds were reported, the structure of the fabric impressions was not described or illustrated. Examples of Hamp's Landing Fabric Impressed sherds are not known from other sites.

Decoration

Technique. Unknown.

Design. Unknown.

Location. Unknown.

Vessel Portion Form

Rim. Unknown.

Lip. Unknown.

Body. Unknown.

Base. Unknown.

Thickness. Unknown.

Appendages. Unknown.

HANOVER SERIES
(South 1960, 1976)

SERIES TYPES: Hanover Cord-Marked, Hanover Fabric-Impressed

Equivalent Series

Carteret (Loftfield 1976); Grifton (Crawford 1966).

Paste

Method of Manufacture. Vessel walls were probably coiled, although definitive coil fractures are infrequent. Opposite sherd margins are often beveled the same direction (producing sherds of rhomboidal cross-sectional shape) suggesting failure along the weakest points of the vessel walls where coils were annealed. Paddle-and-anvil construction is assumed, although few body sherds show clear evidence of paddle imprints on their interior or exterior surfaces. The absence of paddle impressions on vessel walls suggests that textiles may have been wrapped around, or applied to, the vessel surface, then paddled or impressed in some other manner. There is some suggestion that the conical bases of these vessels may have been formed by molding clay into a basket, or some other container lined with interlaced or twined fabric, and scraped on the interior to thin the basal walls. In some cases, inflection points in the contours of walls of larger vessels suggest sagging just above the upper extremity of a basal mold. Interior surfaces often show evidence of scraping, sometimes with a serrate-margin tool. South (1976:22) originally defined a separate type series consisting of sherds whose interior surfaces exhibited the striations resulting from scraping with a serrate margin tool such as a clam shell.

Tempering. The Hanover series was originally defined as "sherd tempered ware" (South 1960, 1976). In the samples analyzed thus far, crushed sherds or clay pellets, up to 6 mm in diameter, are estimated to comprise from 25 to 50 percent of the clay matrix.

While pottery tempered with crushed sherds is technically termed "grog tempered," the application of this term to the Hanover series requires that we expand to the definition to accommodate the inclusion of a range of possible tempers in addition to crushed sherds. General observations suggest three possible tempering agents for Hanover series pottery: (1) air- or sun-dried clay pellets, apparently made of the same clay as the vessel paste, (2) fired clay pellets, and (3) crushed sherds. Evidence for the first instance is observed in sherd cross-sections which exhibit a heterogeneous structure suggesting lumps of clay, of contrasting color, with weakly defined margins. Such a structure might result if dried clay pellets were mixed into wet clay; the

surfaces of the pellets absorbing water and fusing with the paste matrix. In cross section, such a sherd may break around or through the pellets, the surfaces of which should be more rounded than angular. The second temper preparation technique, using fired clay pellets, might result in more clearly defined pellet margins, since fired pellets would not absorb water at the same rate as the clay paste and so, would not fuse with the clay matrix prior to refiring. The use of pre-fired clay pellets might also be expected to result in greater color contrasts between the pellets and the paste. Sherds tempered with pre-fired pellets, might be expected to break around the rounded pellets more often than through them. Specimens of Hanover sherds show some tendency to break around lumps of clay in the paste, however, fired-clay pellets have never been observed in archaeological contexts in which Hanover sherds were found. Employing the third technique, crushed sherds or grog, may be identifiable as angular fragments, occasionally exhibiting former vessel surfaces. In cross section, sherds may tend to break around grog particles rather than through them. True grog, or crushed-sherd tempering appears to be relatively uncommon.

Texture. Texture is an important aspect of classifying Hanover series sherds. Sherds which include a considerable amount of organic material in the paste may feel soft and chalky. Some, however, may contain up to about 15 percent fine or medium sand (≤1 mm) which makes them feel somewhat heavier, rougher to the touch, more compacted, and harder. In instances where higher proportions of sand have been included, the potential for misidentification as a sand-tempered ware is considerable. Typically, the clay appears to have been only minimally kneaded. Lacunae created by contorted lamellae and pores created by the oxidation of organics typically render the sherds porous, light and fragile. The inclusion of clay pellets or grog often produces interior wall surfaces that are lumpy. Small cracks frequently radiate from these lumps, suggesting a differential contraction rate for the lumps and the surrounding clay matrix. Ferric or manganous concentrations, a common characteristic of the clay used in the manufacture of coastal pottery from the southern and central areas of North Carolina, are frequent in the Hanover series.

Hardness. Hardness varies with the amount of sand included in the paste and porosity. Porous sherds, which often tend to be thicker, are very soft and easily broken. Sherds from vessels with thinner walls may be more compacted, less porous and somewhat harder.

Color. Exteriors are commonly light tan or gray with an orange tint. Freshly broken sections may show fully oxidized walls or reduced interiors and oxidized exteriors. Interiors are commonly more gray, often only slightly darker than exteriors, but may be dark gray to black. Color may vary, however, across vessel bodies.

Associated Radiocarbon Dates

Hanover ceramics have been recovered from only two reliably dated and unmixed contexts in the southern coastal region of North Carolina: (1) 1560±60 B.P. (Beta-7011, calibrated to A.D. 538), from the Sidney Brook shell midden site (31Nh556) in New Hanover County (Eastman 1994a:27; Wilde-Ramsing 1982), and; (2) 1420±90 B.P. (Beta-21423, calibrated to A.D. as determined for human bone from Burial 8 at the Broad Reach site (31Cr218) in Carteret County (Eastman 1994:21). In the latter instance, the date is associated with a human burial containing two Hanover fabric-impressed vessels. Recently, thermoluminescence analysis was conducted on a Hanover sherd (unknown variety) from site 31On596, in Onslow County, yielding a date of A.D. 621 +/- 246 (W. H. Reid, personal communication).

Additional dates have been secured for Hanover Fabric Impressed from a small site at Fort Johnson, South Carolina. Two assays, from oyster shell, dated to 2130±100 B.P. (MRRI-88, A.D. 180, uncorrected), and 2100±60 B.P. (MRRI-89, A.D. 150, uncorrected) (South 1976:41;

South and Widmer 1976). These, and other dates from the region, fall within the expected time range for Hanover (ca. 200 B.C. - A.D. 800).

While the evidence is tentative at this point, there is some indication that cordmarking wanes in popularity during the early part of the Middle Woodland, with fabric-impressing becoming the dominate style. Fabric-impressing continues as the dominate technique into the Late Woodland (White Oak shell-tempered series) while cordmarking drops out entirely.

Geographic Distribution

Hanover ceramics are found throughout the southern coastal region of North Carolina. Hanover sherds have been reported as far west as Robeson County, along the Lumber River (Mathis and Gardner 1983) and along the Cape Fear River, in Cumberland County (Robinson 1986). To the north, small quantities have been reported along the Tar River, in Pitt County (e.g., Phelps 1977; Robinson 1995), and on Hatteras Island, in Dare County (Phelps, personal communication 1996). In general, the recovery of Hanover sherds is common south of the Neuse River at estuarine shell middens and numerous small sites adjacent to interior tributaries, swamps and pocosins. The distributional pattern is comparable to Early Woodland sites and ceramic series, although site frequency and sherd densities are much higher for the Middle Woodland period Hanover series.

TYPE NAME: Hanover Fabric-Impressed (South 1960, 1976).

Surface Treatment

Type of Modification. Fabric is impressed on exterior vessel walls and occasionally, lip surfaces and/or neck interiors during vessel construction when the clay is wet and pliable. Fabric is either applied directly to the vessel surface prior to paddling or wrapped around the paddle.

Description. The warp and weft elements may be about the same diameter, or the warp elements may be several times wider than the weft elements. The weft is often two-ply, z-twist cordage, but also sometimes appears to be single-ply yarn. Warp elements may be plied cordage, single-plied yams, or more rigid basketry material such as cordgrass or cane splints. Usually, one set of elements (probably the weft) predominates, almost completely covering the second set of elements. Plain weft-faced 111 interlaced fabric, appears to be most common. However, plain twining is also a possibility; the closeness of yam elements makes it difficult to determine with complete certainty. Several distinctive classes of fabric have been observed and are here defined as varieties of Hanover Fabric Impressed. Subsequent smoothing of surface impressions is not uncommon.

Variety I (Coarse Weft, Plain, 1/1 Interlaced or Twined). The plain interlaced or plain twined variety of Hanover Fabric Impressed exhibits weft elements that are closely spaced, along the warp elements, but which leave some space between wefts (Figure 7A). The warp is often semi-rigid basketry material such as cane splints or cordgrass. The warp of the illustrated example, is 2.5–3 mm in diameter, with 2–3 elements per cm. Examples of weft may include twined cordage (two-ply, z-twist) and single-ply yams (often s-twist), 1.5–2 mm in diameter, 3–411 cm count. The illustrated example is a conical vessel base from the Papanow site (31Nh690).

Variety 2 (Medium Weft, Weft-faced, 1/1 Interlaced or Twined). This variety is characterized by a weft-faced 111 interlaced, or possibly weft-faced 111 plain-twined fabric, constructed of medium thickness, flexible cordage (Figures 7B, 8, 9). By definition, the warp elements of weft-faced fabric are obscured by the closely spaced weft elements interlaced or twined with the warp elements. The structure of warp elements therefore, can only be observed in those rare instances where the weft of the fabric has worn through exposing the warp. While not usually visible, the structure of this variety of fabric suggests that semi-rigid basketry warp elements may have been used, however, plied cordage may also have been used in some cases for the warp elements. Warp elements are characteristically 3–5 mm in diameter, with a warp count of 211 cm. The weft elements are usually 2-ply, s-twisted cordage, 2 mm diameter, with a weft count of 3.511 cm. The sherd illustrated in Figure 7B is from site 31Bw10 and the example shown in Figure 8 is a rim sherd from 31On603, an upland campsite in Onslow County. This example does not appear to be marked with a single flat piece of fabric. It may have been malleated by a fabric-impressed paddle.

Variety 3 (Fine Weft, Weft-faced, 1/1 Interlaced ?). The structure of this fabric is, as yet, undetermined. Warp elements may be plied cordage or, more likely, serni-rigid basketry. The warp diameter of the illustrated example is about 6 mm, with a 1.511 cm count (Figure 10). It is not clear, in the illustrated examples that the weft elements are plied cordage, but examples with s-twisted, 2-ply weft cords are known. Weft elements are about 1–1.5 mm in diameter, and the count is 711 cm. The illustrated examples (Figure 9, A and B) seem to be overstamped, giving them a checker-board appearance. Examples of shell-tempered ware with a similar surface treatment, classified as White Oak Fabric Impressed, Variety 3, also present the puzzling characteristic of non-aligned, or non-parallel warp elements. This characteristic suggests the possibility that this may not be fabric impression at all, but some form of cord-wrapped stick impression, resulting from paddle stamping (see the description for White Oak Fabric Impressed Variety 3).

Variety 4 (Fine Weft, Open, Plain Twined Textile). This twined fabric is characterized by narrow diameter, s-twisted twining rows and warp (possibly two-ply cordage) which is thicker than the weft (Penelope Drooker, personal communication 1996). The illustrated example, from 31On603, is not impressed with a single piece of fabric, but was impressed repeatedly (Figure 11). The fabric can best be visualized using the impression at the narrowest part of the cast.

Decoration

Technique. Decorations are rare. However, a portion of one small vessel (Variety 3, orifice diameter 18 cm) from Broad Reach (31Cr218) exhibits broad, shallow incising on the rim, neck, and body. South (1976: 16) reports a vessel fragment with a horizontal row of punctations found on the rim, beneath the lip.

Design. The pattern of incising on the vessel from Broad Reach (31Cr218) includes two very roughly parallel, horizontal lines around the rim, beneath which is a pattern of interlocking triangles formed by intersecting perpendicular lines which extend down the body and terminate near the base at another single horizontal line. The incisions are shallow and seem hastily executed.

Vessel Portion Form

Lip. Most of the vessels represented appear to be large jars. Lips are often paddle flattened, leaving impressions on the flattened surface similar to those on the body of the vessel. Many examples also exhibit fabric impressions which also extend several centimeters down the interior of the rim. In these cases, the impressions are always oriented perpendicular to the rim. The incised example from Broad Reach exhibits shallow notches spaced about 3 cm apart. Comparable notching is also present on the rim of a vessel from Burial 8 at Broad Reach (Figure 9), dating to A.D. 445 (Beta-21423, calibrated).

Rim. Most rim sherds are straight, while slightly everted or inverted as vessel shapes are known.

Body. Most vessels appear to be large cooking jars with conical bases, although small vessels are known.

Base. Mostly conical; some apparently constructed within molds, presumably the basal portions of other ceramic vessels.

Thickness. Usually greater than 6 mm and less than 10 mm.

Appendages. None observed

TYPE NAME: Hanover Cord Marked (South 1960, 1976).

Surface Treatment

Type of Modification. Exterior vessel walls exhibit the impressions of either closely spaced parallel cords (Variety 1), or two sets of elements, composed of widely spaced parallel strands of 2-ply cordage, applied in such a way as to create a grid of perpendicular elements (Variety 2). Usually, cords are oriented obliquely to the lip of the vessel and extend over the entire body from rim to base.

Description. Cords are typically 2-ply, z-twisted, 1–2 mm in diameter, with 5 twists per cm, and 3–7 cords per cm.

Variety 1 (Stamped with Parallel, Closely Spaced Cords). Exterior vessel walls are impressed or stamped with parallel strands of 2-ply cordage. The impressions appear as parallel cords with little or no space between cords. Usually, cords are oriented obliquely to the lip of the vessel and extend over the entire body from rim to base. Cords are typically 2-ply, z-twist, 1–2 mm in diameter, with 3–7 cords per cm (3–7/1 cm count).

Variety 2 (Overstamped with Perpendicular Cords, or Impressed with Plain, Twined Textile). South's (1976:16) original description of Hanover Cord Marked assumed that the manner in which perpendicular cord impressions were created was by stamping with a paddle wrapped with plied cordage. Sherds with two sets of parallel cord impressions, consistently spaced and approximately perpendicular, may be interpreted as evidence of overstamping, with the paddle wrapped with evenly spaced 2-ply cordage. If the paddle was oriented in opposite directions when striking the soft surface of a wet vessel, then a pattern of perpendicular elements would result. Casts of a sample of "overstamped" Hanover Cord Marked Variety 2 sherds from the Papanow site (31Nh690) indicates that some vessels are impressed with a twined textile rather than

overstamped (Figures 12 and 13). With these specimens, the regularity which appears in the spacing of weft and warp elements results from an extra twist(s) in the cordage taken between each element around which the yams are twined. This holds the elements apart and results in an open, rather than a densely woven, fabric. Twining seems to occur in both directions (warp and weft). Overlaid fabrics appear to be the rule, giving the appearance of multiple layers of textile. Few pieces do not show this characteristic.[6]

Decoration

Technique. None observed.

Design. None observed.

Location. None observed.

Vessel Portion Forms

Lip. Lips often flattened and impressed with the same open-twined textile, not wrapped around, but impressed separately at about 15° angle sloping down to the exterior of the vessel. Unlike the fabric-impressed type, rim interiors are not marked.

Rim. Straight and very slightly everted.

Neck. None represented.

Body. Some portions of refitted wall sections indicate a curved body wall typical of jars and bowls, while other vessel sections suggest vessel shapes with flaring or almost flat, wide rims.

Base. One example of a refitted, conical-base vessel section, found at the Papanow site (31Nh690) shows the open twined textile, defined above as Variety 2, on the upper portion of the base and fabric impressing characteristic of Hanover Fabric Impressed, Variety 1, on the lower portion of the base (Figure 14). In the upper left portion of the cast, the warp elements of the interlaced or twined fabric (impressed around the base) seem also to be the horizontal elements in the open twined textile impressed on the upper part of this vessel.

Thickness. Body sherds range in thickness from 5–8 mm.

Appendages. None observed.

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[6] While the term "cord-marked" is an inaccurate descriptive title for a twined-textile impressed ware, it is being retained at this time because of the lack of definitive evidence about the nature of the surface finishing method. Further analysis may require that a new fabric impressed type be defined to subsume potential twined-textile impressed specimens.

CAPE FEAR SERIES

(South 1960, 1976)

SERIES TYPES: Cape Fear Cord-Marked, Cape Fear Fabric-Impressed

Equivalent Series

Unknown or none. The Cape Fear series appears to be quite similar to the Mount Pleasant (Phelps 1983), and possibly Adams Creek (Loftfield 1976) series.

Paste

Method of Manufacture. As with Hanover Fabric Impressed vessels, walls were probably coiled, but evidence is limited to broken sherds which exhibit rhomboidal cross-sectional shape.

Tempering. The Cape Fear series paste is tempered with 25–50 percent coarse (.5–1 mm) quartz sand (subangular grains). Broken cross-sectional faces reveal poorly kneaded clay with occasional larger, granule size (2–4 mm), quartz particles. Some specimens exhibit a considerable amount of organic material in the matrix. Voids in the matrix, apparent in both cross-sectional breaks and on the surfaces, are the result of oxidized organic inclusions.

Texture. Very sandy, rough-feeling texture on the interior. Sand is well cemented and does not tend to slough off under the touch.

Hardness. Well compacted, moderately hard, less easily broken than Hanover.

Color. Oxidized reddish brown on the exterior and more reduced, dark brownish gray on the interior.

Associated Radiocarbon Dates

Only one radiocarbon date has thus far been associated with Cape Fear series pottery. This was a pine wood charcoal sample excavated from the McLean Mound (31Cd7) in Cumberland County, North Carolina. The sample was taken from mound fill (14 inches below the surface) and associated with plain and fabric-impressed Cape Fear pottery. The assay, 980±110 B.P. (M-1354) is calibrated to A.D. 1028 (Eastman 1994a). Despite this date, Cape Fear is currently thought to be a Middle Woodland series.

Geographic Distribution

The Cape Fear series is, perhaps, the least well understood of the Woodland period ceramics on the southern coast of North Carolina. Sand-tempered sherds, classified as Cape Fear, comprise a significant part of collections from southernmost Brunswick and New Hanover Counties (South 1976; Wilde-Ramsing 1978). If some equivalence exists between the Cape Fear

and the Early Woodland New River series (as might be expected for certain types such as New River Fabric Impressed) then the Cape Fear series extends at least as far north as Carteret County on the coastal margin. If equivalence exists between the Cape Fear and some component of the Middle Woodland Mount Pleasant series, then this range might extend much further north. Whatever possible relationships may exist to sand-tempered series to the interior Coastal Plain are, as yet, unknown. Likewise, the southern extent of the Cape Fear tradition into South Carolina, and its relationship to Middle Woodland sand-tempered types from that region, has not been thoroughly explored.

TYPE NAME: Cape Fear Fabric Impressed

Surface Treatment

Type of Modification. Fabric impressions on the Cape Fear series are essentially identical to those exhibited in the Hanover series. Impressions occur on exterior vessel walls and, occasionally, lip surfaces and/or neck interiors. Fabric appears to have been applied either directly to the vessel surface prior to paddling or wrapped around the paddle as coils were annealed.

Description. The range of fabrics represented in the Cape Fear series is essentially identical to those described for the Hanover series. Fabrics most commonly appear to be weft-faced, interlaced or weft-faced plain twined weaves. Warp and weft elements are often about the same diameter. The weft element is often two-ply, z-twisted cordage while warp may be plied or unplied yarn, or semi-rigid basketry material.

Variety 1 (Coarse Weft, Plain, 1/1 Interlaced or Twined). This textile is a 111, interlaced or weft-faced plain twined fabric characterized by coarse (ca. 3 mm diameter) weft elements that are laced or twined with warps in such a way as to leave some space between adjacent weft elements (Figure 14A). Such textile has formerly been referred to in the archaeological literature as "plaited" or "wicker" fabric. The warp element structure has not been determined at this time, but is likely to be basketry. Warp diameters are usually about 2 mm, and warp elements are spaced about 1 cm apart (111 cm count). The weft is two-ply, z-twisted cordage, 3 mm in diameter, spaced about 3 elements per cm.

Variety 2, (Medium Weft, Weft-faced, 1/1 Interlaced or Twined). This textile is a weft-faced, 111, interlaced or twined fabric characterized by weft elements of moderate diameter, interlaced or twined with warp elements of approximately the same size (Figures 16 and 17). The warp is of indeterminate structure, with a diameter of about 6 mm, spaced about 1 per cm. Weft elements are yarns (apparently not plied) of indeterminate twist direction, 2–3 mm in diameter, spaced 2–3 per cm.

Variety 3, (Fine Weft, Weft-faced, 1/1 Interlaced or Twined). The fabric of Variety 3 is weft-faced, interlaced or twined textile characterized by small-diameter, tightly compacted weft elements interlaced or twined with much wider warp elements (Figure 15B). The warp elements are of indeterminate structure, measuring about 4 mm in width, spaced 1–2 per cm. Weft elements are thin yarns of indeterminate twist, apparently not plied, measuring 1–1.5 mm in diameter, spaced 7 per cm. As with Hanover Fabric Impressed, Variety 3, the structure of this fabric is not yet clearly understood. Warp elements often do not seem to be parallel, and frequent overlapping or over-stamped impressions make definitive identifications of the textile structure difficult. It is possible that this variety of surface treatment was created by stamping with a cord-wrapped-stick.

Decoration

Technique. Pinched-and-stamped lip surface. Fabric impressions often extend down the interior of the vessel neck.

Design. Same fabric as impressed on the surface.

Location. Uppermost surface of the lip and inside vessel neck.

Vessel Portion Form

Rim. Straight

Lip. One example from the Papnow site (31Hn690) exhibits a pinched-and-stamped lip decoration which flattens the uppermost surface of the lip. The straight lip appears to have been pinched between opposing thumb and forefinger, thinning the lip walls at regular intervals of about 2–3 cm while simultaneously paddle stamping or impressing and flattening the lip between the pinched spots.

Body. Unknown.

Base. Unknown.

Thickness. 8–9 mm.

Appendages. None observed.

TYPE NAME: Cave Fear Cord Marked

Surface Treatment

Type of Modification. Exterior vessel walls exhibit either the impressions of closely spaced parallel cords (Variety 1), or two sets of elements, composed of widely spaced parallel strands of 2-ply cordage, applied in such a way as to create a grid of perpendicular elements (Variety 2). Usually, cords are oriented obliquely to the lip of the vessel and extend over the entire body from rim to base.

Description. Cords are typically 2-ply, z-twisted, 1–2 mm in diameter, with 5 twists per cm, and 3–7 cords per cm.

Variety 1 (Stamped with Parallel, Closely Wrapped Cords). Exterior vessel walls are impressed or stamped with parallel strands of 2-ply cordage. The impressions of plied strands of cordage appear as parallel cords with little or no space between cords. Usually, cords are oriented obliquely to the lip of the vessel and extend over the entire body from rim to base. Cords are typically 2-ply, 1–2 mm in diameter, with 3–7 cords per cm.

Variety 2 (Overstamped with Perpendicular Cords, or Impressed with Open,

Twined Textile). This appears in every way to be the sand-tempered counterpart of Hanover Cord Marked, Variety 2. Exterior vessel walls are impressed with open, twined textile or struck with a cord-wrapped paddle in such a way as to create a grid of perpendicular sets of regularly spaced parallel cord impressions (Figure 18).

The cords in one set of elements average about .5–1.5 mm in diameter and, although not entirely clear, are probably z-twisted cordage, spaced 2–3 per cm. The cords in the second set of elements are slightly smaller in diameter (.5–1 mm) and are spaced about the same (2–3 per cm). The two sets of elements are obliquely or diagonally oriented at about 45° to each other in some sections, and nearly perpendicular in others.

Decoration

Technique. None observed.

Design. None observed.

Location. None observed.

Vessel Portion Form

Rim. Straight.

Lip. Straight and stamped or imprinted with cord-textile at a slight angle sloped to the interior.

Body. Unknown.

Base. Unknown.

Thickness. 5–8 mm.

Appendages. None observed.

WHITE OAK SERIES

(South 1962; Loftfield 1976)

SERIES TYPES: White Oak Fabric-Impressed, White Oak Plain, White Oak Burnished.

Equivalent Series

The Colington series (Phelps 1983) and the Swansboro Burnished series (South 1962).

Explanatory Note

The definition of the White Oak series provided by Loftfield (1976:157-163) included Cord-Marked, Fabric-Marked, Smoothed (Plain), Thong-Marked (Simple-Stamped), and Net-Marked types. However, the possibility of the inclusion of the recently identified limestone/marl-tempered Hamp's Landing Cord-Marked and Simple-Stamped types in the "shell-tempered" components of previously classified collections, brings into serious question the validity of the White Oak (shell-tempered) Cord-Marked and Simple-Stamped types. Neither cord marking nor simple stamping has been unequivocally identified among the shell-tempered components of large collections made at the Flynt site (31On305), Broad Reach (31Cr218), and elsewhere in the central coastal region. Specimens of Hamp's Landing (limestone/marl-tempered) Cord-Marked and Simple-Stamped types have been identified in these collections, however. Therefore, as defined here, the White Oak series includes only the Fabric-Impressed, Plain and Burnished types.

Paste

Method of Manufacture. Hand-built, paddle-and-anvil construction seems to have been used for the White Oak series ware. Fabric was impressed on vessel exteriors during shaping, either by wrapped paddle or by direct impressing.

Tempering. Temper consists of crushed marine shell, ranging in size from about 1–5 mm, mixed in varying proportions. In larger vessels, the temper is usually not finely size graded. Loftfield (1976:157) reports the use of clam shell as temper in some instances, but states that oyster shell appears to have been used more frequently. Observations of recent collections from the central coast suggest that a small species of marine mussel was commonly used, with lesser instances of scallop and, only rarely, clam.

Texture. In some examples, the clay seems to have been poorly mixed, with lumps and contorted lamellae observable in cross section. Other examples exhibit very well-prepared clay. A small amount of fine sand may have been added in some cases. The shell temper is almost completely dissolved in many sherds recovered from surface and non-shell-midden contexts. This results in a very porous matrix which seems light and easily broken.

Hardness. In most samples the clay appears to have been well compacted and thoroughly fired when built, but the porosity of the matrix after the shell leaches out may leave sherds soft and weak.

Color. Light browns and grays are the most common exterior color. Interiors often are somewhat darker gray. In cross section, cores are usually found to be about the same color as the interior of the sherd. However, in virtually all instances of whole or partial vessels, significant color differences are evident across vessel bodies, rendering sherd color useless as a typological attribute.

Associated Radiocarbon Dates

As of this writing, over 25 radiocarbon dates have been acquired for contexts associated with White Oak shell-tempered pottery (e.g., Eastman 1994a:25-26; Reid, et al. 1994; Hargrove 1996a; Davis et al. 1996). With some exceptions, notably from the Uniflite site (31On33) (Loftfield 1979), the dates cluster between ca. A.D. 800 and A.D. 1483. These dates are generally comparable to those acquired for the shell-tempered ceramics of the northern coastal region.

At the risk of erring on the conservative side, it may be more accurate to eliminate dates which are less reliable either from the standpoint of context (e.g., assays of wood charcoal recovered as "washings" in the water-screened fill, or of materials recovered from large pits or general stratigraphic contexts from which several different types of pottery were recovered), or from the standpoint of the assay itself (dates run before 1980 on materials other than carbonized plant remains). If this is done, the earliest date for White Oak is the A.D. 775–997 range from the Broad Reach site (31Cr218) calibrated to A.D. 888. The remaining dates overlap in a one-sigma-range of error which extends from A.D. 810 at the Flynt site (31On305), to A.D. 1483 at the Broad Reach site.

Geographic Distribution

White Oak ceramics, as defined, are found adjacent to the salt-water estuaries and sounds from the Neuse to the Cape Fear River. However, the frequency of White Oak decreases markedly south of Onslow County, and is relatively rare in the vicinity of the Cape Fear River. White Oak does not occur in appreciable amounts in the interior Coastal Plain. There is no firm dividing line between the White Oak series distribution and the Colington shell-tempered series, defined by Phelps (1983) for the northern coastal region. Taxonomic differences between these two series, however, do exist (see the discussion).

TYPE NAME: White Oak Fabric Impressed (Loftfield 1976)

Surface Treatment

Type of Modification. The exterior surfaces of this type were impressed with fabric of two different varieties. Loftfield (1976:158) suggests that the exterior vessel walls were "malleated with a plaited wicker fabric roll." The appearance of large vessel sections also suggests that fabric may have been applied directly to the exterior of the vessels, not wrapped around a paddle.

Description. As with the Hanover and Cape Fear types, fabrics impressions on the White Oak series wares are usually weft-faced, 1/1, interlaced or twined, or perhaps, weft-faced, plain twined weaves. Warp and weft elements are often about the same diameter. The weft element is often two-ply, z-twisted cordage, while the warp may be plied, unplied yarn, or basketry material. Semi-rigid warp elements usually range in diameter from 4–8 mm and flexible warps are usually somewhat smaller in diameter. In some instances, the fabric-impressed surfaces have been partially or wholly smoothed over. For fabrics of with rigid warps, also referred to as "wicker fabric" by Loftfield (1976:159), the impressions are always oriented with the warp elements parallel or nearly parallel to the rim. Impressions commonly occur on the interior of the vessel rim and neck as well, extending 3–15 cm into the vessel, commonly at a right angle to the lip. Rigid-warp fabric impressions are often seen on the lip, and have the appearance of cord-wrapped dowel impressions. In some cases, the lip impressions have been smoothed over, producing a flattened and thickened rim. Fabrics include:

Variety 2, (Medium Weft, Weft-faced, 1/1 Interlaced or Twined). This textile is a weft-faced, 1/1, interlaced or twined fabric characterized by weft elements with moderately large diameters, interlaced or twined with warp elements of approximately the same diameter (Figure 18). The warp is of indeterminate structure, with a diameter of about 4 mm, spaced 1 element per

cm. Weft elements are yarns (apparently not plied, but z-twisted) about 3 mm in diameter, spaced 3 per cm. The weft appears to be a soft, moderately well processed, plant fiber.

Variety 3, (Cord-wrapped-stick Stamped). This variety is characterized by surfaces which have been stamped or struck with a stick wrapped with thin cordage (Figure 20). The sticks measure about 5 mm in diameter, and may be spaced as much as 2 mm apart, although more often there is no space left between stick impressions. The cordage wrapping is narrow, z-twisted, single-ply yarn measuring about 1–1.5 mm in diameter, spaced 7 elements per cm. Large sherds with clear impressions may be needed to distinguish this surface treatment from a weft-faced interwoven or twined fabric-impressed type. The key to this distinction is the arrangement of the warp elements which, although they are nearly parallel and adjacent, do not

Decoration

Technique. Although an occasional stray punctation or incision has been observed on small sherds, there is no clear evidence of decorations on White Oak ceramics.

Design. None observed.

Location. None observed.

Vessel Portion Form

Rim. Rims on larger vessels are often slightly everted, although straight and tapered rims also occur.

Lip. Lips on the fabric-impressed types are often flattened and either smoothed or impressed with the same fabric as observed on the exterior of the vessel. Flattening of the lips often results in a small rolled flare which is extruded to either interior, or exterior, or both. In addition to stamping the rim surface, many examples show stamping down the interior of the vessel's walls from 5 to 15 cm. Whereas the fabric warp is almost always oriented parallel to or at a slight angle to the lip on the exterior of the vessel, it is always vertical or perpendicular to the lip on the interior of the vessel.

Body. Shell-tempered, fabric-impressed White Oak vessels are generally large. Rims from the Broad Reach site indicate vessels with orifice diameters ranging from 28–36 cm.

Base. Conical and rounded.

Thickness. 4–10 mm.

Appendages. None observed.

TYPE NAME: White Oak Plain (Loftfield 1976)

Surface Treatment

Type of Modification. Coil breaks are rare, suggesting that vessels were often hand moulded. White Oak Plain surfaces exhibit both unfinished plain and smoothed-over stamped or impressed surface varieties. Generally, the crushed-shell temper observed in White Oak Plain pottery has a smaller average particle size, and comprises a lower proportion of the matrix than the shell temper observed in the White Oak Fabric-Impressed type.

Description. The difference between the unfinished plain and smoothed varieties is generally slight. In the former, the surface appears to have been paddle malleated, then either smoothed with fingertips or a small, hard tool to produce a smooth surface. In some cases, a fabric-wrapped paddle appears to have been used to shape the vessel, with fabric marks later smoothed over. Often, remnants of the fabric marks and tools marks are vaguely visible as striations beneath the smoothed surface. Plain and smoothed surfaces are not uncommon on the bases of vessels which may otherwise have fabric-impressed upper surfaces. Interiors are smoothed, plain or scraped, with shallow scraping marks parallel to the rim.

Decoration

Technique. As with the fabric-impressed types, decorations are not found on White Oak ceramics, although occasional stray marks are observed.

Design. Non observed.

Location. None observed.

Vessel Portion Form

Rim. Rims are usually rounded or tapered and straight or slightly everted, rarely inverted.

Lip. Lips are smoothed and occasionally show scraping on the interior.

Body. White Oak plain vessels are frequently small cups, bowls, or plates, although larger vessels were suggested by Loftfield (1976:162).

Base. Rounded and flattened bases are common, indicating hemispherical bowl shapes and plates or platters.

Thickness. 4-9 mm.

Appendages. None observed.

TYPE NAME: White Oak Burnished (cf. Loftfield 1976:162)

Surface Treatment

Type of Modification. White Oak Burnished ceramics are comparable to, but less common than the Plain type, but with finer crushed shell temper. Individual small sherds may appear have no temper. The paste is generally very well compacted and hard.

Description. Surfaces are hard tool-smoothed to a sheen, probably using a small stone.

Decoration

Technique. None observed.

Design. None observed.

Location. None observed.

Vessel Portion Form

Rim. Rims are always rounded or tapered and straight or slightly everted, rarely inverted.

Lip. Lips are burnished smooth, with the burnished extending into the interior. No scrape marks, as on the plain types, are apparent.

Body. Burnished vessels are all small bowls or plates.

Base. Rounded and flattened bases are common, indicating hemispherical bowl shapes and plates or platters.

Thickness. 4-8 mm.

Appendages. None observed.

Figure 1. ***Hamp's Landing.*** Close-up cross-sectional view of a Hamp's Landing series limestone-tempered sherd. Note the angular limestone particles and occasional lenticular fossil shell fragments.

Figure 2. ***Hamp's Landing Net Impressed, Variety 1.*** Variety 1 is knotted net. This example is a fragment of a small, thin-walled bowl from the Papanow site (31Nh690).

Figure 3. ***Hamp's Landing Simple Stamped, Variety 1.*** Variety 1 is stamped with a wide-land stamp or what appears to be a paddle wrapped with thongs, cane splints, or other similar material. The illustrated example is from 31Cr264.

Figure 4. ***Hamp's Landing Simple Stamped, Variety 1.*** Both examples are rim sherds stamped with a wide-land stamp or paddle wrapped with thongs or cane splints. The illustrated examples are from 31Cr264.

Figure 5. ***Hamp's Landing Simple Stamped, Variety 2.*** The narrow variety (Variety 2) is characterized by parallel elements with very little or no space between. Individual elements appear to have a round cross-sectional shape and do not appear to have any regular woven pattern. Element shape suggests plant fibers, possibly spun yarn, wrapped in multiple layers around a paddle. The illustrated example is from site 31On603.

Figure 6. ***Hamp's Landing Cord Marked, Variety 1.*** This cord-marked variety is impressed or stamped with parallel strands of two-ply cordage. Both examples are from the Riegelwood site, 31Cb114. Example B shows the characteristic pores of dissolved limestone tempering particles.

Figure 7. ***Hanover Fabric Impressed.*** (A): ***Variety 1*** is stamped or impressed with coarse-weft, plain interlaced or twined fabric. In this example, from site 31Bw14, note that the exposed warp elements are not yarns or cords, but basketry. (B): ***Variety*** 2 is stamped or impressed with a 111, weft-faced, interlaced or twined fabric constructed of medium-diameter, flexible cordage. This example is from site 31Bw10.

Figure 8. ***Hanover Fabric Impressed, Variety 2.*** Variety 2 (medium weft diameter) is characterized by a wet-faced, 111, interlaced or twined fabric constructed of medium-diameter, flexible cordage. The warp elements are obscured by the interlaced or twined weft. The structure of this variety of fabric suggests that more rigid basketry warp elements may have been used, however, plied cordage may also have been for the warp elements. The sherd illustrated in this figure is a rim sherd from 31On603, an upland campsite in Onslow County (see also Figure 9).

Figure 9. A partially reconstructed Hanover Fabric Impressed, Variety 2, vessel from Burial 8 at the Broad Reach site (31Cr218), with notched rim.

Figure 10. ***Hanover Fabric Impressed, Variety 3.*** Variety 3 is characterized by small-diameter weft elements which articulate with warp elements of a much wider diameter. The examples shown have indeterminate warp structures and seem to include both two-ply and single-ply yarn elements. Specimen (A) is from the Papanow site (31Nh690) and specimen (B) is from the Broad Reach site (31Cr218).

Figure 11. ***Hanover Fabric Impressed, Variety 4.*** Variety 4 is a twined textile comprising weft and warp elements of about the same diameter. The structure of this variety of fabric has not yet been fully understood, but the weft appears to be single-ply, z-twisted yam. The structure of the fabric impressed on this vessel is best visualized at the narrow (upper) portion of the sherd. The specimen was recovered on the surface of site 31On603.

Figure 12. ***Hanover Cord Marked, Variety 1***. Variety 1 denotes the class comprised of open twined textile-impressed ware, which when impressed on the vessel surface appears as regularly spaced perpendicular cord impressions. Both specimens in this figure were recovered in excavations at that the Papanow site (31Nh690). The upper specimen is a section of the rim of a vessel which appears to be a broad shallow pan or plate.

Figure 13. ***Hanover Cord Marked, Variety 1***. This open twined textile impressed surface treatment appears as regularly spaced perpendicular cord impressions. Both specimens in this figure were recovered in excavations at that the Papanow site (31Nh690).

Figure 14. ***Hanover Fabric Impressed, Variety 1***. This example of a refitted, conical-base vessel section, found at the Papanow site (31Nh690) in the same excavation unit with a majority of Hanover Cord Marked, Variety 1, sherds, shows cordmarking on the upper portion of the base and the fabric impressing characteristic of Hanover Fabric Impressed, Variety 1, on the lower portion of the base. This vessel section suggests the possibility that these two textile types were integrated into a single woven object.

Figure 15. ***Cape Fear Fabric Impressed.*** (A): ***Variety 1*** is impressed with textile which is characterized by coarse-diameter weft, weft-faced, 111, interlaced or twined weave. Weft elements are integrated with the warp such that there is space between the weft elements. The warp structure in the example illustrated (A) is indeterminate, width about 2 mm, and spaced about 1 per cm. The weft is two-ply, z-twisted, cordage 3 mm in diameter, spaced about 3 per cm. (B): ***Variety 3*** is impressed with textile characterized as a fine-diameter weft, weft-faced, interlaced or twined fabric of thin weft elements interlaced with much wider warp elements. In the illustrated example (B), the warp elements are of indeterminate structure, measuring about 6 mm in width, spaced 3 per cm. Weft elements are thin single-ply yams of indeterminate twist direction, measuring 1–1.5 mm in diameter, and space 7 per cm. Both example specimens (A and B) were collected on the surface of site 31Bw8, during South's (1960) Brunswick County survey.

Figure 16. ***Cape Fear Fabric Impressed, Variety 2.*** This variety is impressed with weft-faced, 111, interlaced or twined fabric. Moderate-diameter weft elements are interlaced or twined with warp elements of approximately the same size. The warp is of indeterminate structure, width of about 6 mm, 1–2 per cm. Weft elements are single-ply yarns of indeterminate twist direction, 2–3 mm in width, spaced 2–3 per cm. The illustrated example was recovered in excavations at the Papanow site (31Nh690).

Figure 17. ***Cape Fear Fabric Impressed, Variety 2.*** This variety is impressed with weft-faced, 111, interlaced or twined fabric with moderate-diameter weft elements interlaced or twined with warp elements of approximately the same diameter. This example is from site 31On238.

Figure 18. ***Cape Fear Cord Marked, Variety 1***. Exterior vessel walls are impressed with open, twined textile. In this example, one set of elements are .5–1.5 mm in diameter, probably z-twisted, and spaced 3–4 per cm. The second set of elements has a slightly smaller diameter, .5–1 mm, and are interlaced or twined into the first at intervals of about 2.5–3.5 mm. In some cases, both sets of elements appear to be twined together. The two sets of elements appear to be obliquely or diagonally oriented at about 45° to each other in some sections, and nearly perpendicular in others. The illustrated specimens are rim sherds, with flattened, stamped lips, excavated from the Papanow site.

Figure 19. ***White Oak Fabric Impressed, Variety 2.*** This variety is impressed with weft-faced, 111, interlaced or twined fabric. Large-diameter weft elements are interlaced or twined with warp

elements of approximately the same diameter. The warp is of indeterminate structure, with a diameter of about 4 mm, and spaced 1 per cm. Weft elements are single-ply yarns, z-twisted, with 3 mm diameters, and spaced 3 per cm. The weft appears to a flexible, moderately processed, plant fiber. This example is a rim sherd which has been flattened on the lip, perhaps with a fabric-wrapped paddle, and then smoothed. Fabric impressions extended well down (5 cm) the interior of the neck of this vessel, recovered in Burial 8 at the Broad Reach site (31Cr218).

Figure 20. ***White Oak Fabric Impressed, Variety 3.*** In this variety, the textile is a small-diameter weft, weft-faced, interlaced or twined fabric. Thin weft elements are interlaced or twined with warp elements of a larger diameter. The warp elements are of indeterminate structure, measuring about 5 mm in width, spaced 2 per cm. Weft elements are thin, single-ply yams, z-twisted, measuring 1–1.5 mm in diameter, and spaced 7 per cm. The illustrated rim sherd is flattened on the lip, perhaps with a fabric-wrapped paddle. A small rolled lip is visible on the exterior. Fabric impressing extends down the interior of the vessel neck about 5 cm. This specimen was recovered from Burial 6 at the Broad Reach site (31Cr218).

Fig. 1

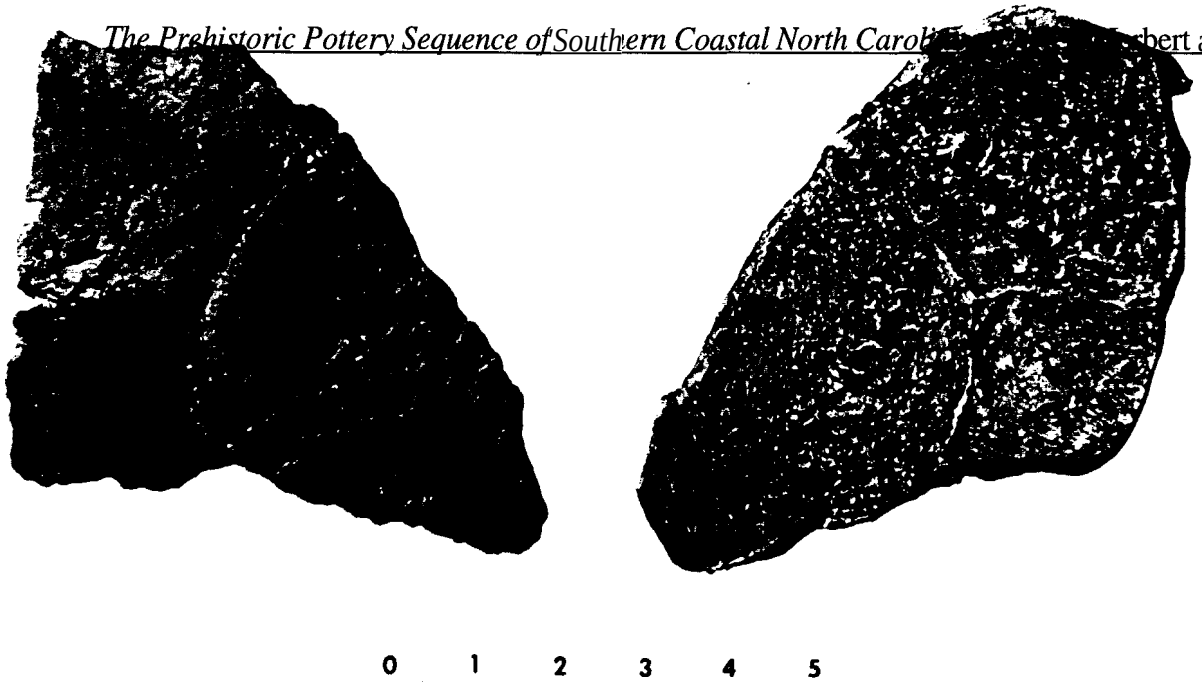


FIG. 2
Hamps Landing Net, Var. 1 (Knotted)

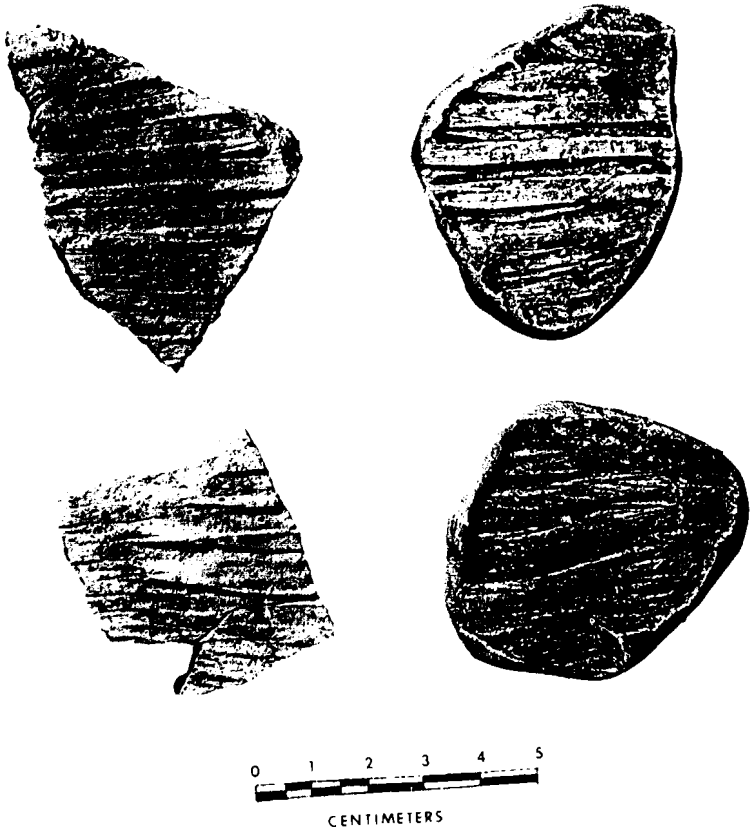


FIG. 3
Hamps Landing Simple Stamped, Variety 1

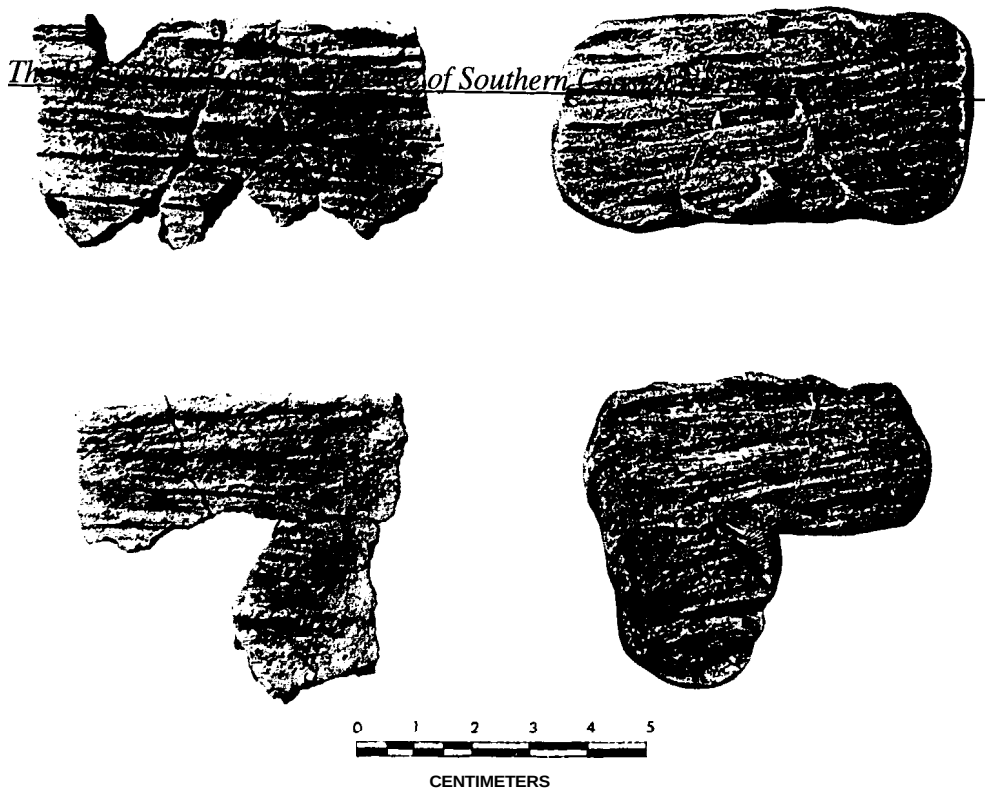


FIG. 4
Hamps Simple Stamped, Var. #1

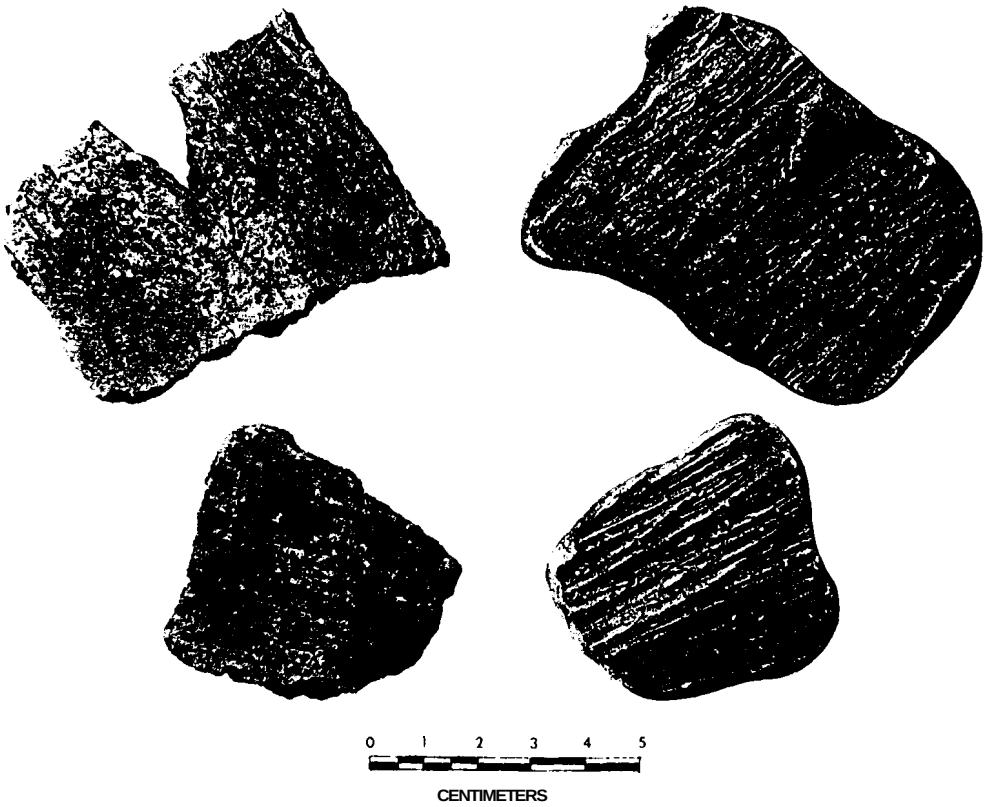


FIG. 5
Hamps Landing
Simple Stamped, Variety 2

We'll send this d.s.a.p

A: Hamp's Landing Cord Marked Variety 1 Ridgefwood Proj. 31CB114

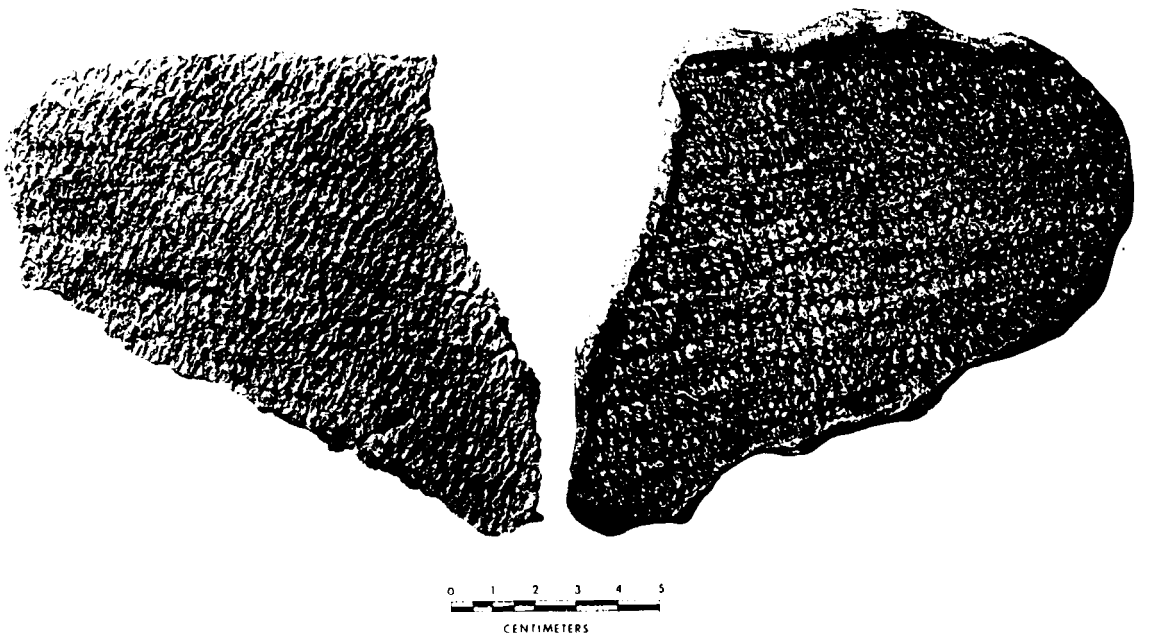
B: Hamp's Landings Cord Marked Variety 1 Ridgefwood Proj. 31CB114

FIG. 6

31 Bw 14 (A) Hanover Fabric, Var. 1
31 Bw 10 (B) " " Var. 2
Hanover Fabric, Variety #1

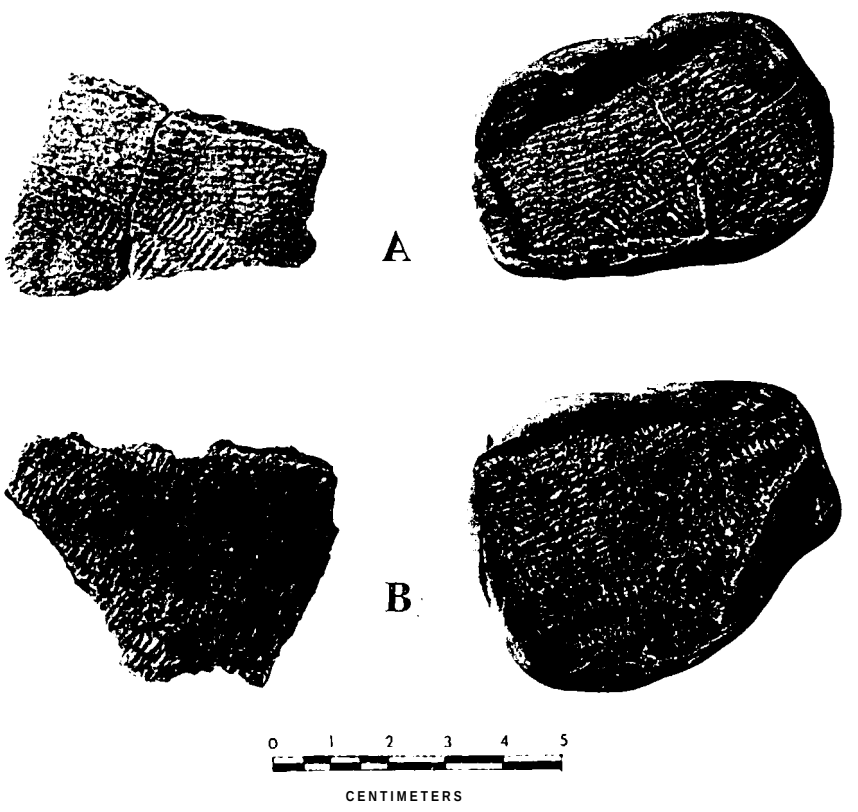
FIG. 7

FIG 8



Hanover
Fabric, Variety 2
31 On 603
Chadwick Shores

FIG. 10



31 NH 690 (A)
31 Cr 218 (B)
HANOVER FABRIC, VAR. #3

Surface: Fabric-Impressed
Paste/Temper: Fire-Hardened Clay, possibly Grog
Type/Ware: Hanover (South 1976)
C14 Date: AD 445 (AD 389-601, 1-Sigma Range)
Phase/Period: Cape Fear or Mt Pleasant/Middle Late Woodland
Context: Burial 8
Site/Type: 31CR218, Broad Reach/Shell Midden
Location: Carteret Co., NC
Collected by: M.A. Mathis, NC Office of State Archaeology
CM

Fig. 9

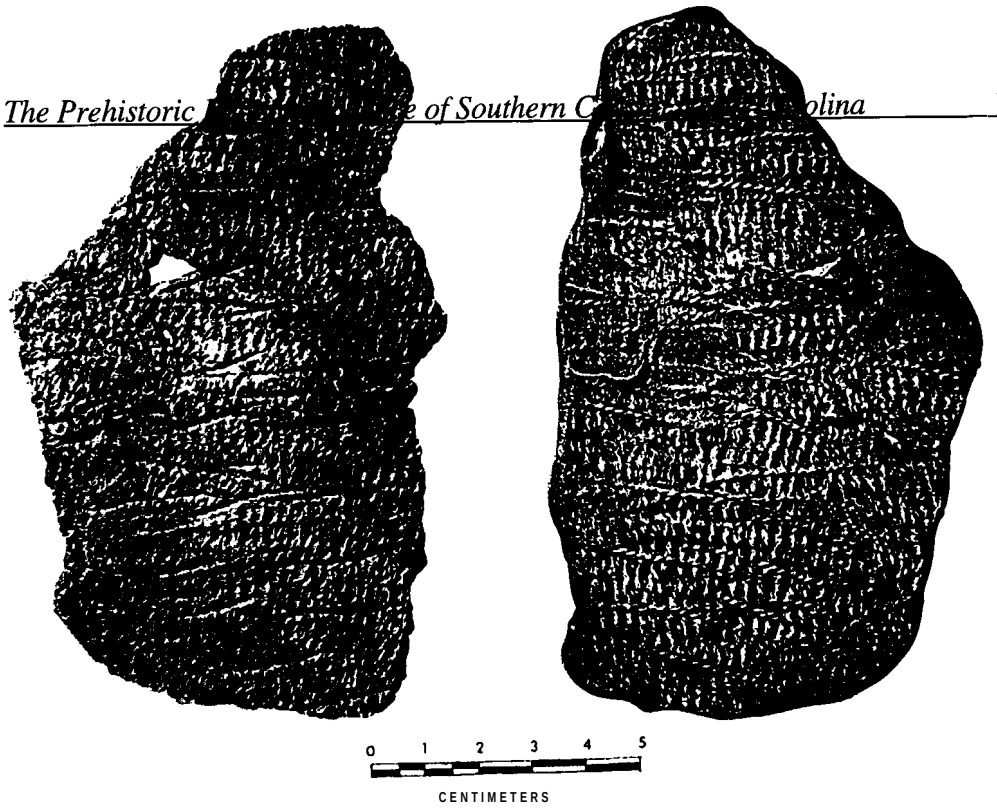


FIG. 11

Hanover, Variety 4
Fabric with interlaced cords
31On 603

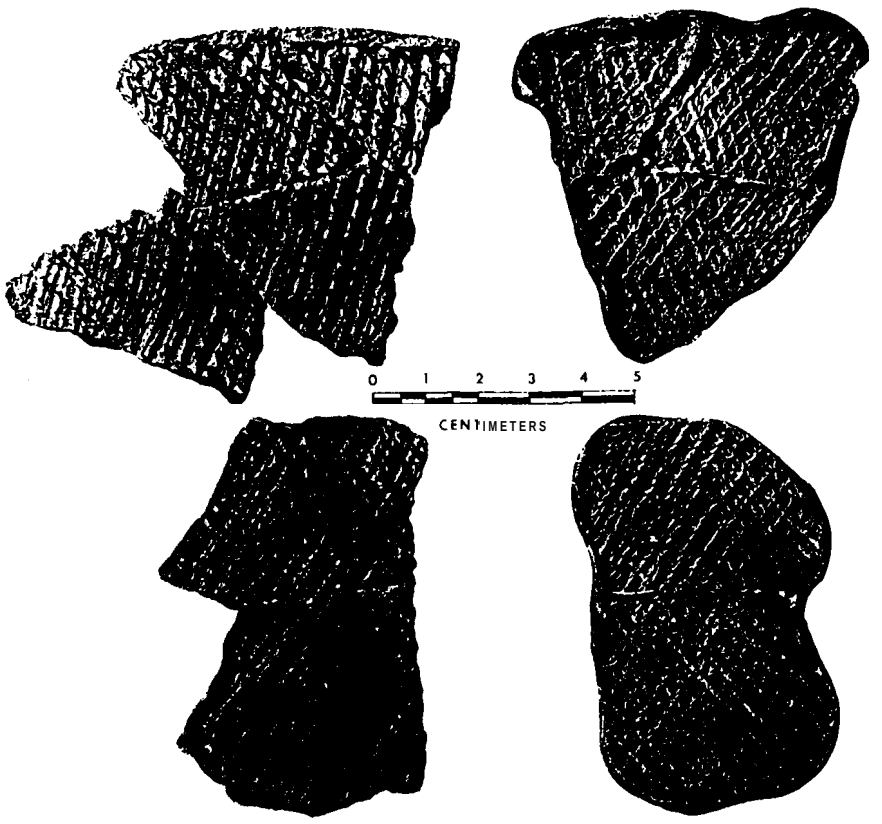


FIG. 12

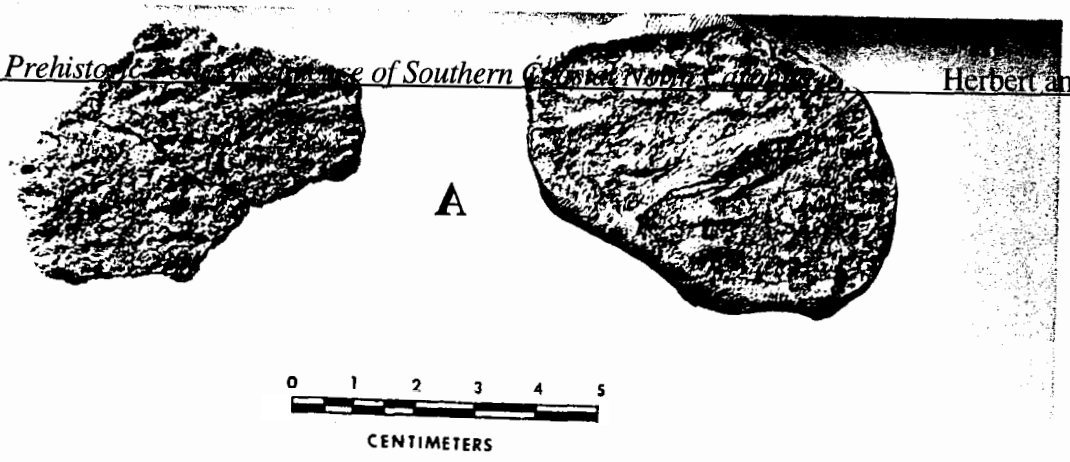
Hanover Cord, Twined Textile
Var. 1

FIG 13

Hanover Cord Twined Textile

FIG. 14

Hanover Fabric Variety 3
w/ twined textile base



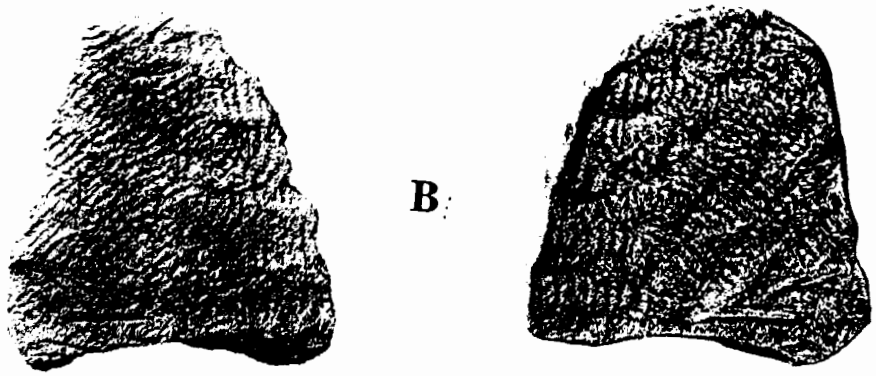


FIG. 15

A: Cape Fear Fabric Impressed Variety 1 (coarse)

B: Cape Fear Fabric Impressed Variety 3 (fine)

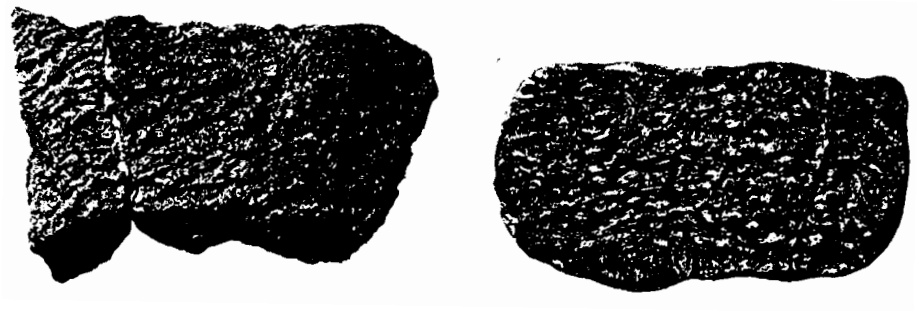
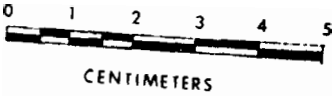


FIG. 16



Cape Fear Fabric, Var. 2

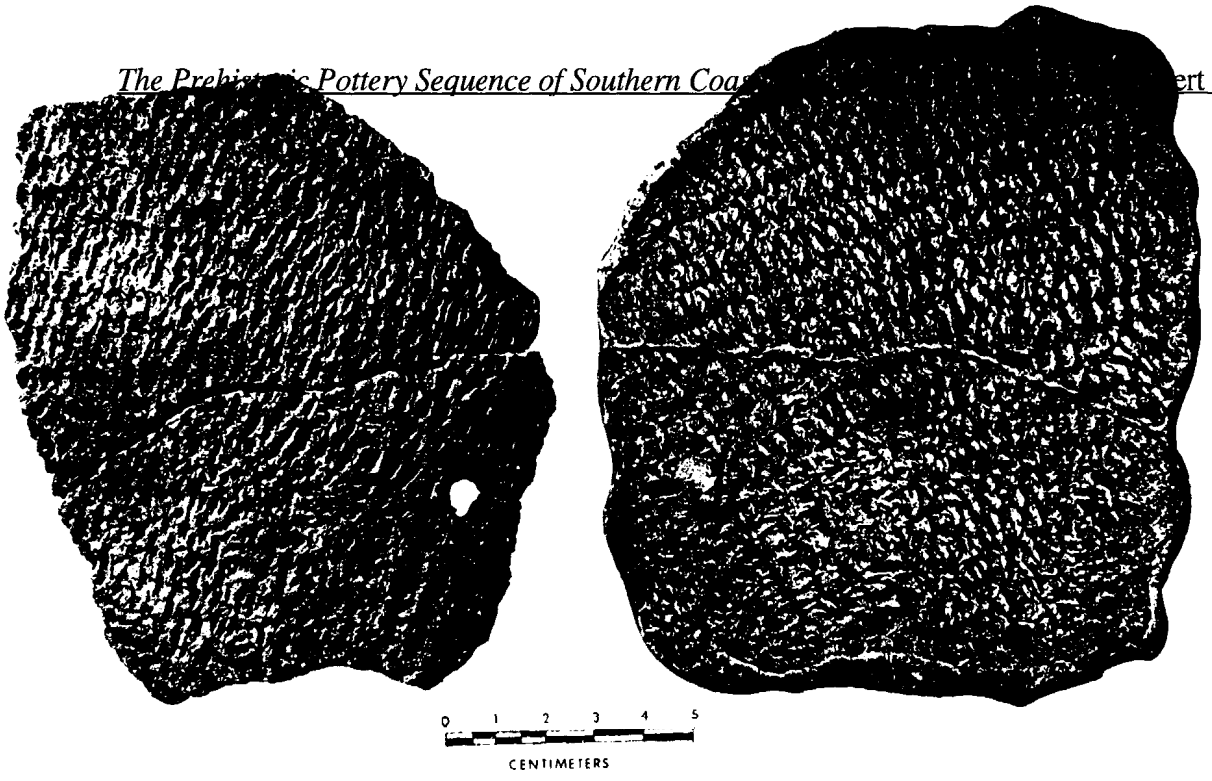


FIG. 17

~~Cape Fear~~ Hanover
Fabric, Variety 2
31 on 238

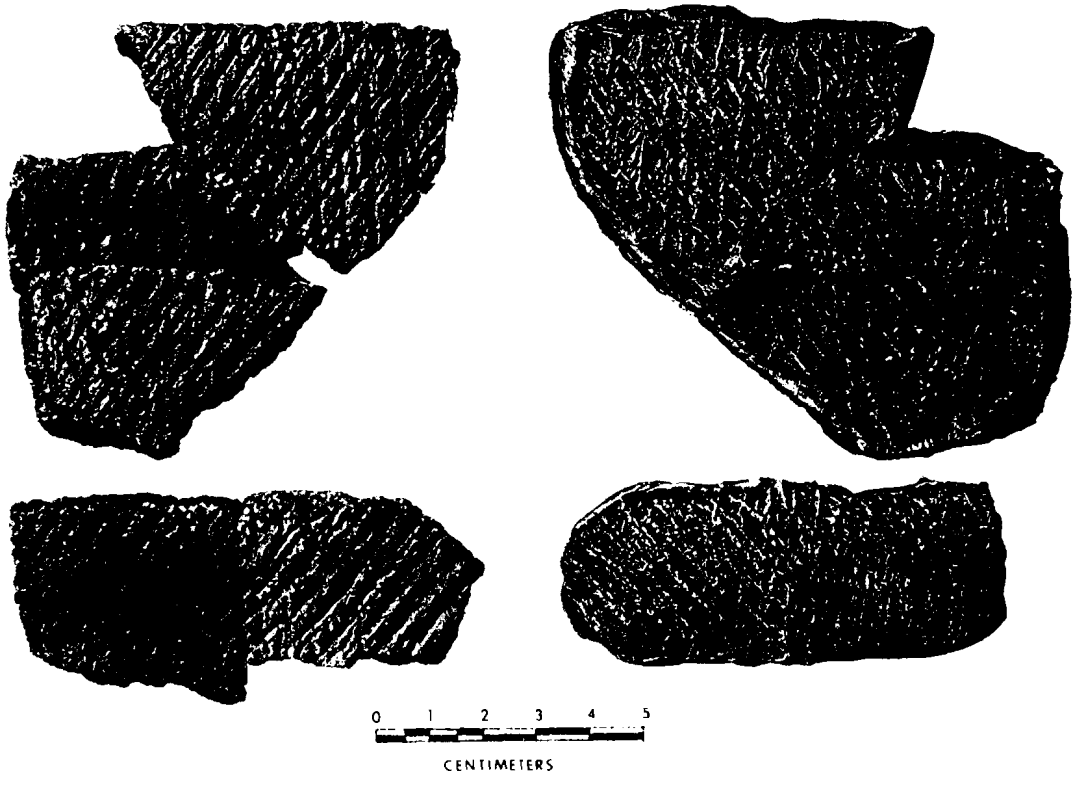


FIG. 18

Cape Fear Cord, Twined Textile
Var. 1

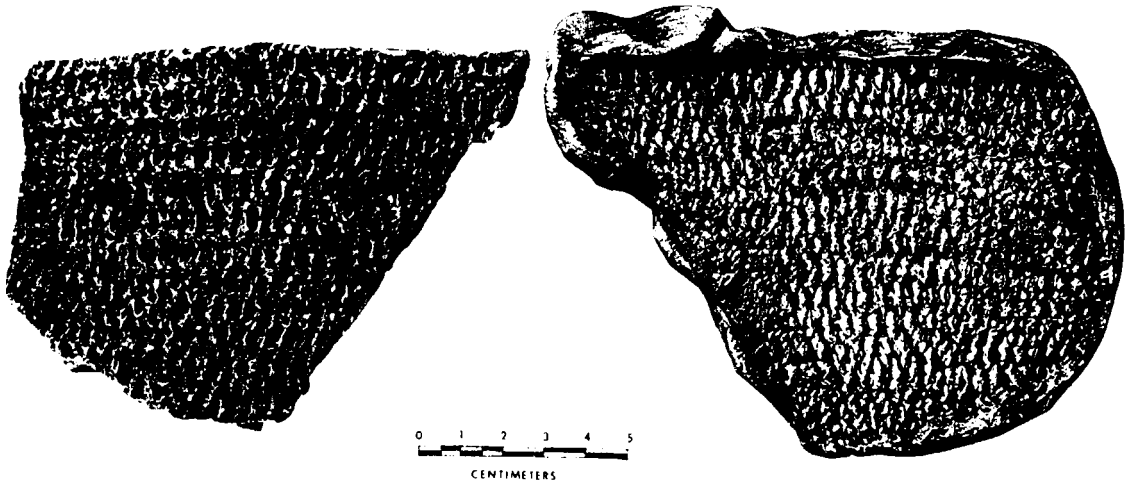


FIG. 19

white oak
Fabric, Variety 2
31 Cr 218, Burial 6

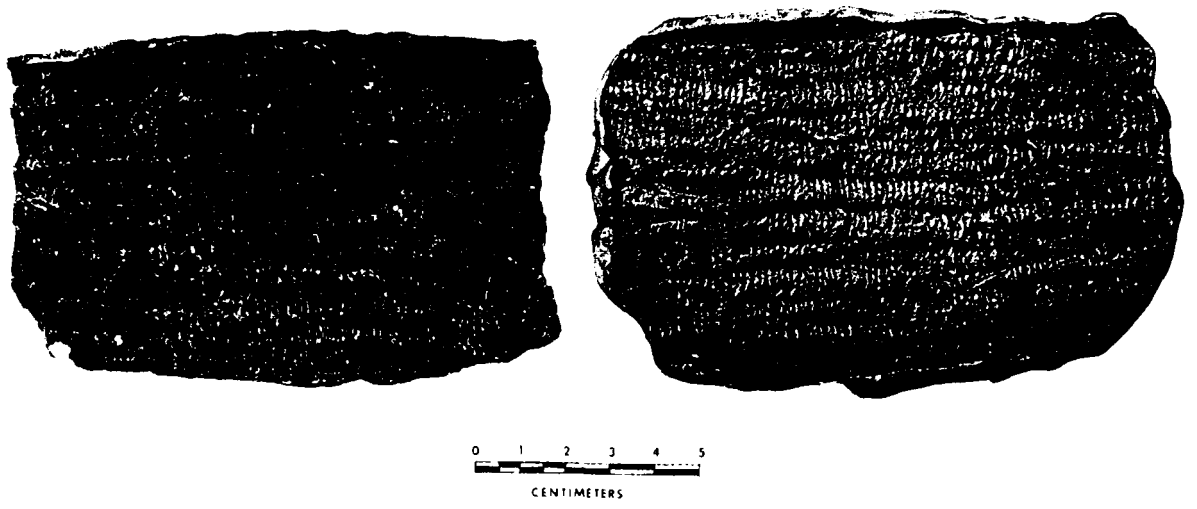


FIG. 20

white oak
Fabric, Variety 3
31 Cr 218, Burial 6

PART II.

A Sorting Guide for Indian Pottery of the Carolinas: An Initial Formulation

(Assembled and edited by David G. Anderson)

With Contributions* by Christopher T. Espenshade, Jane Eastman, Joel Gunn, Joe Herbert, Thomas G. Lilly, and Mark Mathis

* Contributions are based on information provided in the Technical Papers in Part I. In the pages that follow the authorship of individual type descriptions is listed at the end of each category. All descriptions for which no author is stated are by David G. Anderson. Subsequent formulations of this sorting guide will include contributions by a great many more local scholars, and the volume is likely to have multiple editors. Contributions and help is requested!

ALLENDALE PUNCTATE: see REFUGE ALLENDALE PUNCTATE

ASHLEY COMPLICATED STAMPED

Sorting criteria: Complicated stamping over the exterior vessel surface; overstamping common. Stamp impressions are (typically) bold, with the space between the lands fairly wide (between 3.0 and 5.0 mm). The stamp is often carelessly applied and smeared or overstamped; the design itself is often poorly carved and crude in appearance. Paste highly variable, typically with some small (0.1-1.0 mm) sand inclusions present. Rim strips are common and tend to be folded and/or finger pinched. May be confused with both Savannah Complicated Stamped and Pee Dee Complicated Stamped.

Distribution: Poorly documented. An occurrence in the Sea Island area of South Carolina and in the interior along major river drainages appears likely.

Chronological position: Protohistoric period, Ashley Phase (A.D. 1600-1715). South (1971) reported a date of A.D. 1780 (170±80 B.P.; GX2287) for the ware from Charles Towne Landing; this determination is probably a century too recent, although the standard deviation brings the date in line with the suspected range of the ware. The 1715 terminal date reflects the effective end of Indian occupation in the lower South Carolina Coastal Plain brought about by the Yamessee War.

Background: Not previously defined. South (1973b:54-55, reprinted 1976:28-29) noted the presence of an Ashley ware, or series, in his "Indian Pottery Taxonomy for the South Carolina Coast," based on material found at Charles Town Landing (South 1970, 1971). No descriptions of the Ashley types—Ashley Complicated Stamped, Ashley Simple Stamped, Ashley Burnished Plain, and Ashley Corncob Impressed— have appeared. The general attributes of the ware have been reported, however, and have been widely used to help identify late prehistoric and protohistoric wares. These attributes included:

> carved paddle stamped with enlarged motifs, carelessly applied decorative motifs, burnishing, finger punctated rims strips and folded rims, sloppy incising, corncob impressed type present (South 1976:28).

The use of rosettes, reed punctations, and punctated rim strips was attributed to earlier complicated stamped wares, such as the Pee Dee series (South 1976:28). A similar evolution, from reed punctated to finger pinched rims, has been demonstrated within Lamar ceramic ceramics from the Middle Oconee River in eastern Georgia (Rudolph 1978; Rudolph and Blanton 1980), and a comparable trend was also noted at the type site for the Pee Dee series, Town Creek (Reid 1967:82-83). Trinkley (1981d: 12-14) has recently provided general descriptions of two protohistoric series, Wachesaw and Catawba, that may be temporally coeval with South's Ashley series. The absence of coiling over the Wachesaw series (e.g., Trinkley 1980d:12) differentiates this ware from the Ashley series, which is coiled. The description of Catawba Complicated Stamped (Trinkley 1981d:14) is too general to permit valid comparison, although a general similarity with the Ashley series is evident. Careful, quantitatively based comparative analyses will prove essential to the discussion of late prehistoric ceramics; what is currently needed are thorough descriptions backed by facts and figures and based on large sample sizes.

A total of 36 sherds were classified Ashley Complicated Stamped from the 1979 excavation units at Mattassee Lake. The category exhibited considerable variability in design, paste, and color, and the type tended to serve as a catch-all for sherds with crudely carved, sloppily applied

complicated stamping that could not be subsumed under the Pee Dee and Savannah types. Ashley Complicated Stamped ceramics were stratigraphically the highest (i.e. most recent) of any of the types recovered in the 38BK226 block, and the second highest type (second to the single sherd of Savannah Check Stamped) recovered in the 38BK229 block.

Primary references: South (1971b, 1973b, 1976: Ashley type reported): Wauchope (1966, Lamar Complicated Stamped type and assemblage descriptions); Trinkley (1980a, 1981d, 1981e; discussion of late prehistoric ceramics along the South Carolina coast); Smith (1978), Rudolph (1978), Rudolph and Blanton 1980; evolution of Lamar ceramics); Ferguson (1971; overview of Mississippian adaptation/cultural evolution).

AWENDAW FINGER PINCHED: see THOM'S CREEK FINGER PINCHED

BURNISHED PLAIN
(surface finish category)

Sorting Criteria: Highly smoothed plain surface finish with a clayey or soapy texture. May reflect light from areas of the surface.

Probable Types: Burnished plainwares occur in a number of Woodland and Missisippian ceramic series, including Deptford (infrequent), Etowah, Savannah, Irene,

Chronological Position: Late Woodland and Mississippian (ca. A.D. ca. 800-1450). Burnished plain vessels also occur infrequently earlier, during Middle Woodland times, although this remains uncertain.

CAMDEN SIMPLE STAMPED: see SANTEE SIMPLE STAMPED

CAMDEN INCISED: see SANTEE SIMPLE STAMPED

CAMDEN CHECK STAMPED: see SAVANNAH CHECK STAMPED

CAPE FEAR FABRIC IMPRESSED

Sorting criteria: Fabric impressions applied over the exterior surface of the vessel while the paste was plastic; occasionally smoothed somewhat after stamping. Paste characterized by varying amounts of small (0.5-2.0 mm), rounded clear, white, or rose quartz inclusions. Interior finish slightly sandy or gritty in texture. Rims typically straight to excurvate, incurvate uncommon; lips rounded, flat, or less commonly slightly thickened. Lip treatment (simple stamping, or stamping with the fabric wrapped paddle) common.

Distribution: Cape Fear Fabric Impressed ceramics occur throughout the Coastal Plain and Fall Line areas of eastern South Carolina and southeastern North Carolina. The related New River series is found from the New River to the Pamlico in central coastal North Carolina, while the Deep Creek and Mount Pleasant series are found north of this area to the Virginia line. The type

becomes increasingly uncommon proceeding from northeast to southwest in the South Carolina Coastal Plain.

Chronoloeical position: Middle/Late Woodland periods, (A.D. 200-700). Six radiocarbon dates from four features containing the ware were obtained at Mattassee Lake, all from the 38BK226 block unit. The dates ranged from A.D. 520 to 710, with an average of A.D. 638. The dates are in rough agreement with South's (1976:1, 29) general placement of the ware.

Background: The type Cape Fear Fabric Impressed was originally defined by Stanley South in 1960, based on a sample of 273 sherds from 59 (predominantly) coastal shell midden sites in southeastern North Carolina and northeastern South Carolina (South 1960:38-41; reprinted 1976:18-20). The Cape Fear series, or ware-group, as South (1973b) later termed it, was characterized by "a high percentage of sand" in the paste, and cord-marked, fabric impressed, and net impressed surface finishes. Of these three finishes, fabric impressed accounted for about a third of the sherds in South's sample (N=273, 36.2 percent), with the remainder cord-marked (N=439; 58.1 percent) and net impressed (N=43; 5.7 per cent) South 1976:47). The Cape Fear series has since come to be used by many local investigators to refer to almost all sand tempered cord, fabric, or net impressed sherds found in the South Carolina Coastal Plain (exclusive of the Mississippian period types Savannah Fine Cord-Marked and Pee Dee Textile Wrapped; Caldwell and Waring 1939, Coe 1952, Reid 1967). Recently, however, it has been suggested that the category is too broad, and Trinkley (1981b:11) has "recommended that it be phased out of usage."

Five series of cord and fabric impressed wares have been suggested as possible replacements for the Cape Fear series. These are the New River, Deep Creek, Mount Pleasant, Adam's Creek, and (tentatively) McClellanville series (Trinkley 1981a, 1981b, 1981c), based on work in coastal North Carolina and central coastal South Carolina. The Deep Creek and Mount Pleasant types have been briefly described by Phelps (1981:vi), and indicate Early (1000-300 B.C.) and Middle (300 B.C.-A.D. 800) Woodland period components, respectively, in northern coastal North Carolina. Coarse sand tempered cord, net, fabric, and single stamped wares are reported for the Early Woodland Deep Creek series (Phelps 1981: vi), which appears to be identical to Loftfield's (1976) coarse sand tempered New River series, reported from the central North Carolina coast. The New River series differs from the Deep Creek series in the addition of a plain ware, which in any event is quite infrequent in Loftfield's (1976:175- 182; 45 sherds) sample. The northern coastal Mount Pleasant types are described as sand and pebble tempered, with cord- marked, fabric, and net impressed surface finishes (Phelps 1981: vi). No comparable ware is reported from the central North Carolina coast, and the Adam's Creek series, as defined by Loftfield (1976:164-166), appears to postdate the Mount Pleasant series. The Adam's Creek wares are characterized by a hard, compact, fine sand tempered paste, and cord and fabric impressed finishes. A late Woodland (post A.D. 800) even protohistoric age is inferred for the series (Loftfield 1976:200-201).

A detailed sequence for cord and fabric impressed ceramics has been developed for the central and northern North Carolina coastal plain, from the early New River/Deep Creek material to the later Mount Pleasant and final Adam's Creek series. This sequence has been corroborated by both survey and excavation data, and tied down with several radiocarbon dates (Loftfield 1976, Phelps 1981). While a comparable sequence remains to be thoroughly worked out for the southern North Carolina coast, a Stallings-Thom's Creek-Deptford/New River/Hanover-Cape Fear-Oak Island succession appears probable (South 1960, 1976; Phelps 1981:vii). The variability documented in coastal North Carolina ceramics, it has been suggested (Trinkley 1981b, 1981c), can be used to help partition South Carolina sand tempered cord and fabric impressed wares, which are currently subsumed under the Cape Fear series. In an attempt to refine coastal South Carolina cord and fabric marked typology, Trinkley (1981b, 1981c 1981d) advanced the McClellanville series, here subsumed under the Santee series.

The McClellanville series was originally described by Trinkley (1981b:11-15), based on a sample of 220 sherds from the Walnut Grove shell midden near Awendaw, in northern Charleston County, South Carolina. Four types were defined: McClellanville Simple Stamped, McClellanville Fabric Impressed, McClellanville Cord-Marked, and McClellanville Plain, and close similarities with Loftfield's (1976) New River series, and with the type Santee Simple Stamped (defined here) were noted. A date of about A.D. 1000 was initially suggested for the McClellanville series (Trinkley 1981b:15), although this has since been revised to about A.D. 500 to A.D. 800 (Trinkley 1981c:1 8; 1981d:10). Trinkley has questioned the relationship of the McClellanville Cord Marked and Fabric Impressed types to the plain and simple stamped wares since his original publication, however, stating that these finishes "cannot be associated positively with the McClellanville Series" (Trinkley 1981c:18) and that "the association of both fabric and cord- marked surface treatments with the McClellanville Series is currently tenuous" (Trinkley 1981d:10). The samples used to define the two types were small (McClellanville Cord-Marked, nine sherds; McClellanville Fabric Impressed, 15 sherds; Trinkley 1981b:16), and formal type designation appears to have been premature.

The McClellanville series, given these qualifications, is dominated by plain and simple stamped ceramics, with other finishes (such as cord-marked or fabric impressed) possibly present as minority types. Trinkley has discussed external relationship of the McClellanville series, noting that.

> It is closely related to the Middle Woodland Mount Pleasant Series (Phelps 1981) although the simple stamped motif is absent in Mount Pleasant. It appears that McClellanville is typologically midway between and bridges the Deep Creek and Mount Pleasant pottery types (Trinkley 1981d:10).

While Trinkley's research indicates that a post-Deptford cord and fabric impressed, sand tempered series is present on the South Carolina coast, and that the material may be coeval with his McClellanville Plain and Simple Stamped types, his reported sample sizes, chronological controls, and descriptions are such that creation of new types, distinct from those currently in use (i.e. Cape Fear Cord-Marked Cape, Fear Fabric Impressed), cannot be justified. Since his original type descriptions, Trinkley (1982) has dropped the McClellanville cord and fabric types and incorporated them under Phelps' (1981, 1982) Mt. Pleasant series. A Deep Creek/ Mt. Pleasant cord and fabric impressed succession is advocated for the central South Carolina Coast (Trinkley 1982).

While such a succession may eventually prove viable in the coastal plain of South Carolina, evidence for it was not found at Mattassee Lake. Representative fabric impressed sherds from the terrace, including material from radiocarbon dated features were, however, examined by Dr. David S. Phelps, who pronounced them within the range of variation of the Mt. Pleasant type (David S. Phelps; personnel communication August 1982, March 1995). If a Deep Creek/Mt. Pleasant succession can be securely documented in the central South Carolina area, and the range of variation between North and South Carolina collections delimited, then the regional assemblages should be reclassified. For the present, however, use of South's Cape Fear terminology has been retained.

The relationship of the Coastal Plain types and varieties with Piedmont taxa needs to be addressed; Cape Fear Fabric Impressed, for example, appears quite similar physically to Coe's (1964:28-29) Badin Fabric Impressed type.

Primary references: Trinkley (1981b, 1981c, 1981d); Anderson (1975a, 1975b); Anderson et al. 1979:142-143; 1982:293-299; South (1960, 1976); Loftfield (1976).

CARTERET CORD MARKED: see WILMINGTON CORD MARKED

CARTERET FABRIC-MARKED: see WILMINGTON FABRIC MARKED

CARTERET PLAIN: see WILMINGTON PLAIN

CHECK STAMPED
(surface finish category)

Sorting Criteria: A lattice of evenly-spaced raised lands that intersect to form square or rectangular checks. the even size of the lands form a regular grid, which distinguishes this design from linear check stamped. Check size, while typically uniform on individual vessels, can be quite variable, and can range may range from 2-10 mm.

Probable Tvpes: Deptford Check Stamped, var. Deptford (with plain smoothed interiors); Savannah Check Stamped, var. unspecified (with highly smoothed-to-burnished interiors. Interiors tend to be better smoothed to burnished on probable Mississippian specimens.

Chronological Position: Woodland and Mississippian periods (ca. 600 B.C.-A.D. 1500). Deptford Check Stamped (ca. 600 B.C.-A.D. 500); Savannah Check Stamped (ca. A.D. 1100-1300). Poorly documented over entire possible range. Later Woodland (ca. A.D. 500-1100) and later Mississippian (ca. A.D. 1300-1500) checked stamped finishes may be present in the middle Savannah Valley, although the existence of such categories remains unproven.

CONNESTEE SIMPLE STAMPED

Sorting criteria: Simple stamping with parallel or cross "v" shaped impressions.

Distribution: Western Piedmont South Carolina and the mountainous area of western North Carolina.

Chronological position: Middle and Late Woodland Periods (A.D. 200-1000).

Background: Traditionally thought to date to the Middle Woodland period, and extending no later than ca. A.D. 500 or so, recent dating indicates the ware extends through the Late Woodland period in western North Carolina, to ca. A.D. 1000. Along the upper Savannah River, Connestee and Cartersville-like plain, brushed, and simple stamped assemblages have been dated to between A.D. 400 and 1100. Late Woodland groups in the western Carolinas appear to have employed ceramics characterized by plain, simple stamped, and brushed ceramics traditionally subsumed within the Cartersville and Connestee series. Some overlap of Swift Creek materials with these series is also indicated, both in the upper Savannah River and elsewhere in north Georgia.

Primary references: Keel 1976, Anderson 1985:42-44; Anderson and Schuldenrein 1985:340-347; Purrington 1983:142.

CORD MARKED, CROSS FINE
(surface finish category)

Sorting: Criteria: Fine cord impressions (under ca. 2.0 mm wide) cross stamped over the exterior vessel surface. The impressions are typically closely spaced and carefully applied, although care in execution may vary considerably.

Probable Types: Same as Cord Marked, Parallel Fine. Carefully applied finish, with closely spaced cord impressions, most commonly found on Savannah Fine Cord Marked, var. Savannah.

Chronological Position: Same as Cord Marked, Parallel Fine.

CORD MARKED, CROSS HEAVY
(surface finish category)

Sorting: Criteria: Large cord impressions (over ca. 2.0 mm wide) cross stamped over the exterior vessel surface. Impression width may be up to ca. 10.0 mm or more in extreme cases. The impressions are typically closely spaced and carefully applied, although care in execution may vary considerably.

Probable Tvves: Same as Cord Marked, Parallel Heavy.

Chronological Position: Same as Cord Marked, Parallel Heavy,

CORD MARKED, PARALLEL FINE
(surface finish category)

Sorting: Criteria: Fine cord impressions (under ca. 2.0 mm wide) applied parallel to one another over the exterior vessel surface. The impressions are typically closely spaced and carefully applied, although care in execution may vary considerably.

Probable Types: Carefully stamped sherds with this finish and a burnished or highly smoothed interior surface are, in most cases, Savannah Fine Cord Marked, var. Savannah. Sherds with less well-smoothed interiors, and cord impressions that range from carefully to carelessly applied, and from closely to irregularly spaced, are typically Deptford Cord Marked (var. unspecified) in South Carolina. Intermediate between the Deptford and Savannah types in southwestern South Carolina is also a Wilmington ware, Wilmington Heavy Cord Marked (with sherd tempering), or its interior Coastal Plain equivalent (with fine sand/grit paste); cord impressions on this ware are typically large and carefully applied. Some sherds with this finish in South Carolina date to later in the Woodland period, and represent an untyped precursor of Savannah Fine Cord Marked.

Chronological Position: Deptford Cord Marked (ca. 600 B.C.-A.D. 500); untyped later Woodland cord marked (ca. A.D. 500-1000); Savannah Fine Cord Marked (ca. A.D. 1000-1400); Wilrnington Cord Marked and equivalents (ca. A.D. 500-1000).

CORD MARKED, PARALLEL HEAVY
(surface finish category)

Sorting: Criteria: Large cord impressions (over ca. 2.0 mm wide) applied parallel to one another over the exterior vessel surface. Impression width may be up to ca. 10.0 mm or more in extreme

cases. The impressions are typically closely spaced and carefully applied, although care in execution may vary considerably.

Probable Types: Deptford Cord Marked (with fine sand/grit paste); Wilmington Heavy Cord Marked (with sherd/grog tempering). When a fine sand/grit paste occurs, the finish may be an interior Coastal Plain equivalent of the Wilmington type.

Chronological Position: Deptford Cord Marked (ca. 600 B.C.-A.D. 500); Wilmington Heavy Cord Marked and equivalents (ca. A.D. 500-1000).

CURVILINEAR COMPLICATED STAMPED
(surface finish category)

Sorting Criteria: Complicated stamping dominated by curvilinear motifs, concentric circles occur on a number of series in the Carolinas.

Probable Types: Savannah Complicated Stamped, Swift Creek Complicated Stamped.

Chronolo~icalPosition: Swift Creek Complicated Stamped (ca. A.D. 300-750); Savannah Complicated Stamped (ca. A.D. 1200-1400).

DAN RIVER SERIES

Sorting Criteria: Dan River sherds are characterized by a compact, sandy paste that is tempered with sub-angular quartz particles (less than 4 mm diameter) and fine to medium sand. In most cases the vessel interior has been scraped and/or smoothed and temper particles do not protrude through vessel walls. Decoration was focused on the lip, lip/rim margin, and the neck of jars. Decorative elements include incised lines oriented parallel and oblique to the rim, brushed bands, fingernail impressions, various punctations and notches.

Distribution: The Dan River series occurs in the central North Carolina and Southern Virginia Piedmont incorporating the Dan and Yadkin drainages. It is comparable to the Haw River series defined for the Haw and Eno drainages in North Carolina Piedmont and the Wythe series defined for western Virginia.

Chronological Position: A.D. 1000-1700. The chronological position for the Dan River phase has been well-defined by radiocarbon dating. The calibrated intercepts for of forty-five dates associated with Dan River ceramics range between ca. A.D. 1000 and 1450, with most between ca. A.D. 1200 and 1450 (Eastman 1994a:29). A radiocarbon sample from Feature 18 at Upper Saratown (Skla) returned a calibrated intercepts that range from ca. A.D. 1328 to 1391. Though the Dan River phase is late prehistoric, Dan River Net Impressed vessels continued to be manufactured as a minority ware throughout the contact period (Ward and Davis 1993).

Background: The Dan River series was first defined by Coe and Lewis (1952) from an assemblage of sherds recovered during test excavations at Lower Saratown (Rkl). At that time, Dan River pottery was thought to have been made by the Sara between A.D. 1625 and 1675. A re-analysis of ceramic collections housed at the Research Laboratories of Anthropology and additional fieldwork and analysis have led to a re-interpretation of the Dan River series as Late Prehistoric (Dickens, et al. 1987, Ward and Davis 1993).

Primary References: Coe and Lewis (1952); Dickens, et al. (1987); Ward and Davis (1993);, Eastman 1996 (ms in Part I).

(Series Description: Jane Eastman)

DAN RIVER NET IMPRESSED

Sorting Criteria: The exterior surfaces of Dan River Net Impressed sherds bear the impression of knotted nets. The nets are constructed of cords that are usually less than 1 mm in diameter and the knots are generally spaced 2 to 5 mm apart. The net impressions are typically clear, but in some cases have been lightly smoothed. Eight net-impressed vessels were partially reconstructed and all are jars with restricted necks and everted or straight rims.

Distribution: The Dan River series occurs in the central North Carolina and Southern Virginia Piedmont incorporating the Dan and Yadkin drainages. It is comparable to the Haw River series defined for the Haw and Eno drainages in North Carolina Piedmont and the Wythe series defined for western Virginia.

Chronological Position: A.D. 1000-1700. The chronological position for the Dan River phase has been well-defined by radiocarbon dating. The calibrated intercepts for of forty-five dates associated with Dan River ceramics range between ca. A.D. 1000 and 1450, with most between ca. A.D. 1200 and 1450 (Eastman 1994a:29). A radiocarbon sample from Feature 18 at Upper Saratown (Sk1a) returned a calibrated intercepts that range from ca. A.D. 1328 to 1391. Though the Dan River phase is late prehistoric, Dan River Net Impressed vessels continued to be manufactured as a minority ware throughout the contact period (Ward and Davis 1993).

Background: (See Background discussion for Dan River Series)

Primary References: Coe and Lewis (1952); Dickens, et al. (1987); Ward and Davis (1993); Eastman 1994a, 1996 (ms in Part I).

(Type Description: Jane Eastman)

DAN RIVER PLAIN

Sorting Criteria: Two partially reconstructed vessels, a cup or small jar and a miniature pot, had plain exteriors. Both bore evidence of having been lightly brushed or scraped. A rim sherd from a third plain vessel also indicates a small orifice diameter. All of these vessels have smoothed or plain interiors. The miniature vessel and several other Dan River Plain sherds have been decorated with incised geometrical designs or cross-hatched lines. Paste characteristics are like those for Dan River Net Impressed sherds.

Distribution: The Dan River series occurs in the central North Carolina and Southern Virginia Piedmont incorporating the Dan and Yadkin drainages. It is comparable to the Haw River series defined for the Haw and Eno drainages in North Carolina Piedmont and the Wythe series defined for western Virginia.

Chronological Position: A.D. 1000-1700. The chronological position for the Dan River phase has been well-defined by radiocarbon dating. The calibrated intercepts for of forty-five dates associated with Dan River ceramics range between ca. A.D. 1000 and 1450, with most between ca. A.D.

1200 and 1450 (Eastman 1994a:29). A radiocarbon sample from Feature 18 at Upper Saratown (Skla) returned a calibrated intercepts that range from A.D. 1328 to 1391.

Background: (See Background discussion for Dan River Series)

Primary References: Coe and Lewis (1952); Dickens, et al. (1987); Ward and Davis (1993); Eastman 1994a, 1996 (ms in Part I).

(Type Description: Jane Eastman)

Primary References: Coe and Lewis (1952); Dickens, et al. (1987); Ward and Davis (1993); Eastman 1996 (ms in Part I).

(Type Description: Jane Eastman)

DENTATE STAMPED, LINEAR

(surface finish category)

Sorting Criteria: Linear, typically parallel arrays of small rectangular impressions or dentates over the entire vessel surface; geometric linear arrangements, usually forming triangles, less common. Degree of overstamping and care in application varies considerably.

Probable Tvves: Diagnostic indicator of Refuge Dentate Stamped.

Chronological Position: Early Woodland period (ca. 1000-600 B.C.).

DENTATE STAMPED, RANDOM

(surface finish category)

Sorting Criteria: Random arrangements of small rectangular impressions, or dentates over the exterior vessel surface.

Probable Tvves: Refuge Dentate Stamped, Refuge Separate Punctate.

Chronological Position: Early Woodland Period (ca. 1000-600 B.C.).

DEPTFORD BRUSHED

Sorting criteria: Haphazardly applied (typically) parallel brushed or combed impressions over the exterior vessel surface; occasional cross-brushing. Impressions (typically) shallow (0.51.0 mm) and narrow (1.02.0 mm), with striations and smearing common. Paste identical to that for Deptford Linear Check Stamped.

Distribution: Poorly documented. Probably similar to that or Deptford Linear Check Stamped or Deptford Simple Stamped (Milanich 1971), in the coastal plain and fall line areas of Georgia and South Carolina, and into extreme southeastern North Carolina.

Chronological position: Early/Middle Woodland periods (ca. 200 B.C.-A.D. 500). At Mattassee Lake the ware is coeval with the Deptford Linear Check Stamped and Wilmington Fabric Impressed types, and intermediate between the Refuge and Cape Fear types in the 38BK226 block unit.

Background: The type Deptford Brushed was initially defined at Mattassee Lake by Anderson et al (1982:285-286), based on a sample of 68 sherds. Brushed sherds have been occasionally noted in Deptford assemblages from the Georgia and Florida area (Milanich 1971:170), and Caldwell and McCann's (n.d.) unpublished Deptford site manuscript included a Wilmington Brushed type, which has since been formally defined by DePratter (1979:130). The Wilmington Brushed type from the Georgia coast is characterized by a clay/grog tempered paste, unlike the brushed material found at Mattassee Lake, which has a paste like that in the terrace Deptford Linear Check Stamped sherds. The two finishes nonetheless may be related, or overlap. Milanich (1971:170) reported finding brushed sherds with a Deptford paste in his excavation at Cumberland Island, Georgia, and Waring (1968b:200) noted that Refuge simple stamping was occasionally "so fine as to appear brushed." Occurrence of the finish as a minority ware within the Deptford series appears warranted.

The Deptford Brushed sherds from Mattassee Lake were characterized by narrow, smeared longitudinal impressions, reflecting haphazard brushing or combing while the paste was plastic. In a few cases, the brushing was over other finishes; two sherds were clearly brushed over Deptford Linear Check Stamped, and some of the finishes may be a simple stamp that was dragged and/or smeared during application. Brushing striations characterize and serve to identify the ware. In color and paste the ware is like Deptford Simple Stamped and Linear Check Stamped. Interior finish is somewhat more variable, however, with an appreciable minority characterized by an irregular or poorly smoothed finish. This may reflect less care in manufacture, something that might also be related to the haphazard exterior finishing. Rims were typically straight, with flattened lips; stamped lips were common, something also noted on the Deptford Simple Stamped assemblage. Close similarity with other Deptford types from the terrace is evident.

Primary references: Anderson et al. (1982:285-286). Caldwell and McCann (n.d.; Wilmington Brushed type); DePratter (1979; Wilmington Brushed type); Milanich (1971).

DEPTFORD CHECK STAMPED

Sorting criteria: Check stamping over the exterior vessel surface, defined as evenly sized and spaced horizontal and vertical lands. The exterior surface is occasionally smoothed somewhat after stamping. Paste characterized by varying amounts of small (0.5-2.0 mm), rounded clear, white, or rose quartz inclusions. Interior finish typically slightly sandy or gritty in texture. May be confused with Deptford Linear Check Stamped, Cartersville Check Stamped, and Savannah Check Stamped.

Distribution: Deptford Check Stamped occurs throughout the Coastal Plain and Fall Line areas of eastern Georgia and South Carolina, and is occasionally noted in the southeastern Coastal Plain of North Carolina. A similar, related ware, Cartersville Check Stamped occurs in the adjoining Piedmont of Georgia and western South Carolina, and the two types tend to intergrade.

Chronological position: Early/Middle Woodland periods, Refuge-Deptford Phases (ca. 600 B.C. - A.D. 500). A range for the type between roughly 600 B.C. and A.D. 500 has been documented by radiocarbon dates from a number of sites in the Coastal Plain of Georgia and South Carolina, and along the lower Savannah River the ware occurs stratigraphically between the Refuge and Wilmington types.

Background: The type Deptford Bold Check Stamped was formally defined by Joseph R. Caldwell and Antonio J. Waring, Jr. in 1939, based on materials recovered from the Deptford shell midden and several other sites in the vicinity of the city of Savannah, Chatham County, Georgia (Caldwell and Waring 1939a). The ware was recognized as part of a series, including linear check, bold check, and simple stamped types, that were stratigraphically intermediate between the Stallings and Wilmington series in the Chatham County sequence (Caldwell and Waring 1939b). The principal attribute or decorative motif of the type, check stamping, occurs over much of the southeastern Gulf and Atlantic slopes, from eastern Alabama and Florida, to throughout Georgia and South Carolina and into North Carolina. Several formal type descriptions for Deptford Check Stamped have appeared (e.g., Caldwell and Waring 1939a; DePratter 1979:124-126), as well as a number of detailed descriptions of the ware from specific sites, localities, or regions.

Deptford Check Stamped consists of a lattice of evenly-spaced raised lands that intersect to form square or rectangular checks. It is the even size of the lands that distinguishes this design from linear check stamped. The type is easily confused with the later Savannah Check Stamped, although the interiors are poorly to well smoothed on Deptford specimens, and highly smoothed-to-burnished on probable Mississippian specimens. See also discussion for Deptford Linear Check Stamped.

Primary references: Caldwell and Waring (1939a, 1939b); Griffin (1945); Griffin and Sears (1950); Caldwell (1952, 1958, 1971); South (1960, 1976); Waring 1955, 1968c); Williams (1968); Waring and Holder (1968); Peterson (1971); Stoltman (1974); Anderson et al. (1979; 1982:277-281); DePratter (1979:123-124); Sassaman and Anderson 1990).

DEPTFORD COMPLICATED STAMPED (DePratter 1979:126): see SWIFT CREEK COMPLICATED STAMPED

DEPTFORD CORD MARKED

Sorting; criteria: Parallel cord impressions, with cord widths averaging 1.0 to 2.0 mm. Cross cord impressions also occur and comprise a distinct minority of assemblages. Care in application of the cord impressions varies considerably, from closely to irregularly spaced, with the latter more common. Paste characterized by varying amounts of small (0.5-2.0 mm), rounded clear, white, or rose quartz inclusions. Interior finish typically slightly sandy or gritty in texture.

Distribution: Observed primarily along Savannah River below the Fall Line, and along the Edisto River.

Chronological position: Middle Woodland period, Deptford Phase (ca. 800 B.C. - A.D. 500). A date early in the Deptford range (ca. A.D. 200 - 500) is indicated at the G. S. Lewis site on the middle Savannah (Hanson 1986).

Background: The type Deptford Cord Marked was first defined by DePratter (1979:126), based on materials from the WPA excavations and subsequent work at the mouth of the Savannah River.

Cord marked pottery, which co-occurs with fabric marked pottery in the Coastal Plain of South Carolina and in much of eastern North Carolina during the Middle Woodland, is comparatively uncommon in the Piedmont of western South Carolina and northern Georgia (Goodyear et al. 1979:116-117; Taylor and Smith 1978:297; Wauchope 1966:52,71; Wood 1981:14), a finding supported by the Russell Reservoir investigations (Anderson 1988c). Cord

marked sherds are only rarely observed within Middle Woodland Cartersville assemblages, and an occurrence with the Middle/Late Woodland Connestee and Mississippian Etowah and Savannah series is inferred for most of the cord marked pottery found in the upper Savannah River area. Comparable Early to Middle Woodland cord marked wares from the surrounding region include the Mossy Oak, Swannanoa, and Deptford Cord Marked types (DePratter 1979:126; Keel 1976:260-263; Wauchope 1966:52).

Primary references: DePratter (1979:126); Waring (1968c); Williams (1968); Anderson et al.(1979); Sassaman and Anderson (1990).

DEPTFORD INCISED

Sorting criteria: Numerous fine, shallow straight incisions haphazardly applied over the exterior vessel surface. Hard, compact paste (similar to that for Deptford Linear Check Stamped), with very thin, highly smoothed vessel walls.

Distribution: Poorly documented. Probably similar to that for other Deptford types, occurring in the coastal plain and fall line areas of eastern Georgia and South Carolina, and into extreme southeastern North Carolina.

Chronological vosition: Poorly documented. Probable Middle Woodland (ca. A.D. 200 - 500). An occurrence later in the Deptford Phase has been suggested for Deptford Zoned Punctated, which may be related. At Mattassee Lake the Deptford Incised assemblage appears to stratigraphically slightly postdate the other Deptford types, and slightly predates the Cape Fear series material in the 38BK226 excavation block; this distribution suggests an appearance or greatest occurrence towards the end of the Deptford Phase.

Background: The type Deptford Incised was originally defined by Anderson et al. (1982:286-287) based on a sample of 50 sherds from the Mattassee Lake sites along the lower Santee River. Incising has been occasionally noted within the Deptford series, typically as an unusual interior finish, or as the zoning on Brewton Hill Zoned Stamped and Brewton Hill Zoned Punctate (Waring and Holder 1968: 141, 145; these types are here described under the type Deptford Zoned-Incised Punctate). The Deptford Incised material from Mattassee Lake closely resembled the Cal Smoak material (save for an absence of punctations), suggesting that the two types are related in some way.

The Mattassee Lake specimens appear to be from a single small slightly conoidal bowl about 20 cm in diameter, no basal or rim sherds were recovered, however, so precise estimates of vessel form cannot be made. The exterior incising is invariably fine, rarely exceeding 1.0 mm in width or depth. The incisions are typically quite short, rarely more than two or three centimeters long, and haphazardly applied (roughly) parallel to one another, with considerable overlap/intersection. The surface appears to have been repeatedly scratched with a fine instrument while the paste was still somewhat plastic, possibly with the edge of a flake. The paste itself contains a moderate quantity of small (0.5-2.0 mm), rounded clear or white quartz inclusions, like that typical of many Deptford Linear Check Stamped assemblages. Both the interior and exterior surfaces were highly smoothed or "floated," giving them a smooth, waxy texture. Most of the sherds are very light colored (very pale brown), with some faint fire-clouding. The re is quite thin, and the paste is hard and compact. Incising occurs infrequently in coastal South Carolina ceramic assemblage over several periods (see Background discussion for Thom's Creek Incised).

Primary references: Anderson et al. 1982:286-287.

DEPTFORD LINEAR CHECK STAMPED

Sorting criteria: Linear check stamping over the exterior vessel surface, defined as "a repeated parallel arrangement of two longitudinal lands which contain a series of finer transverse lands. . . . The longitudinal lands are invariably heavier and usually higher than the transverse lands" (Caldwell & Waring 1939a). The paste is sand or grit tempered with varying amounts of small (0.5-2.0 mm), rounded clear, white, or rose quartz inclusions. Considerable variability in the size, shape, and application of the stamping occurs, and overstamping is common; in some cases, the finish is badly smeared or even smoothed over. A few sherds exhibit single or double rows of linear checks, but these somewhat unusual finishes are a distinct minority. Occasionally sherds with both linear check and fabric impressed or cord marked finishes are noted (South 1976:40), unequivocally documenting the contemporaneity of the finishes (see Deptford Linear Check/Cord Marked and Deptford Linear Check/Fabric Impressed types). The interiors are typically fairly well smoothed, although most are slightly gritty in texture. A few sherds exhibited interior stamping or other treatment such as incising, scraping, or irregular finishing. Rims are predominantly excurvate, with flattened, unmodified lips. Rounded lips are comparatively infrequent, while lip treatment, if present, tends to be characterized by simple or check stamping. Cylindrical to slightly conoidal jars and hemispherical bowls are represented, most from 25 to 35 cm in diameter at the rim. Tetrapods or sharp, V-shaped conoidal bases are rare in Coastal Plain assemblages, although they are common in Piedmont (Cartersville) assemblages. May be confused with Savannah Check Stamped, Cartersville Check Stamped, and Deptford Check Stamped.

Distribution: Deptford Linear Check Stamped occurs throughout the Coastal Plain and Fall Line areas of eastern Georgia and South Carolina, and is occasionally noted in the southeastern Coastal Plain of North Carolina. A similar, related ware, Cartersville Check Stamped occurs in the adjoining Piedmont of Georgia and western South Carolina, and the two types tend to intergrade.

Chronoloeical position: Early/Middle Woodland periods, Refuge-Deptford Phases (ca. 600 B.C. - A.D. 500). A range for the type between roughly 600 B.C. and A.D. 500 has been documented by radiocarbon dates from a number of sites in the Coastal Plain of Georgia and South Carolina. Along the lower Savannah River the ware occurs stratigraphically between the Refuge and Wilmington types, while along the lower Santee the ware is stratigraphically coeval with Wilmington Fabric Impressed and intermediate between the Refuge and Santee series.

Background: The type Deptford Linear Check Stamped was formally defined by Joseph R. Caldwell and Antonio J. Waring, Jr. in 1939, based on materials recovered from the Deptford shell midden and several other sites in the vicinity of the city of Savannah, Chatham County, Georgia (Caldwell and Waring 1939a). The ware was recognized as part of a series including linear check, bold check, and simple stamped types that were stratigraphically intermediate between the Stallings and Wilmington series in the Chatham County sequence (Caldwell and Waring 1939b). Several formal type descriptions for Deptford Linear Check Stamped have appeared (e.g., Caldwell and Waring 1939a; Willey 1949:354-356; Griffin and Sears 1950; DePratter 1979:123-124), as well as a number of detailed descriptions of the ware from specific sites, localities, or regions (e.g., Griffin 1945:469, 472; Wauchope 1966:48 52; Waring and Holder 1968:135-144; Milanich 1971:161-169; Smith 1971; Anderson et al. 1979:145-150, 1982:277-281; Trinkley 1981a; Sassaman and Anderson 1990:192-200). In some cases the check and linear check stamped finishes have been subsumed under a single type name, such as Deptford Check Stamped (e.g., Griffin 1945; Wauchope 1966), but in most cases two or more discrete types are used to categorize assemblages. In the present taxonomy several types—Deptford Linear Check, Deptford Check, Deptford Linear Check/Cord Marked, Deptford Linear Check/Fabric Impressed, and Deptford Linear Check/Simple Stamped—are employed to accommodate the variability observed within this finish.

The difference between check and linear check stamping lies in the size of the horizontal and vertical lands making up the design; in the former they are equivalent in size and shape, while in the latter one is more pronounced than the other. The use of varieties to accommodate perceived regional variability in the Deptford ceramic series was advocated by Anderson et al. (1982) and by Charles Fairbanks (1962:10-12) and Betty Smith (1971:2, 58-59):

> Deptford, Cartersville, Booger Bottom, Wright Check Stamped, and McLeod Check Stamped . . . go together. . . . I think we have a constellation here of early check stamped types, generally involving a deep jar, rather small size, generally involving a strong tendency towards linerality, always associated with a granular temper, and almost always with sand temper, with the exception of Wright Check Stamped, which still seems to fall in the group...I would suggest, that a valid way to look at these is with Deptford as a central type perhaps based only on its priority...Cartersville, Wright, and McLeod seem clearly strongly related, and I would put them in a variety status (Fairbanks 1962:11-12).
>
> This paper recommends the use of the type-variety approach to pottery typology for Deptford tradition ceramics...the Deptford, Cartersville, and limestone-tempered complexes of the period between roughly 610 B.C. - A.D. 490 should be considered variants of a basic type. . . . the differences exhibited between these complexes are here considered to be less significant than are the similarities between them (Smith 1971:2, 58).

A third attempt to employ variety designations on Deptford pottery locally was made by Anderson et al. (1982), based on materials from Mattassee Lake, who argued that it would acknowledge what is already tacitly known: that many of the current check stamped types cannot be reliably sorted from one another on a sherd by sherd basis. While use of a type-variety system might provide a more rigorous and objective taxonomy of local and regional check and linear check stamped ceramics than the array of types currently in use, it has never been adopted by archaeologists working in the South Appalachian area.

Linear Check Stamping occurs far more frequently than check stamping within the Deptford series in the South Carolina Coastal Plain. At Mattassee Lake, for example, a four to one ratio of linear check to check stamped finishes was observed, a ratio that appears to reflect the popularity of the two finishes throughout the area of the South Carolina Coastal Plain; an examination of surface collections from 313 sites noted 1543 sherds with linear check stamping to 335 sherds with check stamping (out of a total sample of 19,861 sherds; Anderson 1975b). In the Piedmont, in contrast, linear check stamping is very rare, with most Cartersville ceramics characterized by check stamping only. In spite of considerable examination at a number of sites and localities, no stratigraphic trends have been noted in the occurrence of check as opposed to linear check stamping or in check size (e.g., Milanich 1971: 167; Anderson et al. 1979:147-148; 1982:279-280). Along the Santee River an appreciable proportion of stamp designs are applied parallel or at very low angles to the rim, a very different pattern from that observed at the mouth of the Savannah, where "the design is invariably applied in such a manner that the longitudinal lands intersect the rim obliquely" (Caldwell and Waring 1939a; DePratter 1979:124). What this difference means in cultural terms is presently unknown.

Most of the quartz (sand) inclusions that are found in Deptford pottery are white or clear in color, but a small minority exhibit predominantly reddish, or rose colored quartz inclusions. These rose quartz inclusions appear restricted almost exclusively to Deptford series ceramics in South Carolina. While the significance and occurrence of this "temper" is currently unknown, although it may eventually prove to be useful marker for Early/Middle Woodland pottery.

The Deptford series was defined in the late 1930s during WPA investigations along the Georgia coast, where it was found in stratified context at the Evelyn Plantation and Deptford sites (Waring and Holder 1968). At Deptford, a large shell midden located on the Brewton Hill bluff overlooking the Savannah River just east of the city of Savannah, a stratigraphic occurrence for Deptford materials intermediate between Stallings and Wilmington series ceramics was demonstrated. Linear check, check, and simple stamped and plain finishes were shown to occur throughout the Deptford period. Earlier and later Deptford assemblages were recognized at the type site, however, the latter distinguished from the former by the addition of Swift Creek Complicated Stamped pottery. On this basis DePratter (1979:111-112) differentiated two Deptford Phases, Deptford I (ca. 400 B.C. to A.D. 300) and Deptford II (ca. A.D. 300-500). DePratter (1979:126) additionally defined the type Deptford Cord Marked, noting that the finish occurred during both phases on the Georgia coast.

In the middle Savannah River ceramic sequence two subphases have been advanced, Deptford I and Deptford II, corresponding to the early Middle Woodland (ca. 600 BC-A.D. 0) and later Middle Woodland (ca. A.D. 0-500). In most respects these phases correspond to those proposed at the mouth of the river. Both phases are characterized by plain, linear check, check, and simple stamped finishes, with Deptford II distinguished from Deptford I by the addition of the Deptford Cord Marked, Swift Creek Complicated Stamped, and Deptford Zoned-Incised Punctate types. Stratigraphic evidence from the G. S. Lewis site on the SRS indicates the type Deptford Linear Check/Simple Stamped occurs primarily during Deptford I, and declines or drops out entirely during the Deptford 11 phase (Hanson 1985). Cord marked finishes may have been present in the Deptford I phase locally, but are not common until Deptford II. Deptford Linear Check/Cord Marked finishes are observed at this time, but are extremely rare. Fabric impressed pottery appears for the first time in low incidence during the Deptford II phase, possibly reflecting the spread of this finish from the north.

The slightly later appearance for Deptford I in the middle Savannah River sequence than that proposed at the mouth, 600 B.C. as opposed to 900 B.C., is based on recent radiocarbon determinations placing the beginnings of the Deptford series at about this time (Anderson 1979; Trinkley 1989). The earlier date for the onset of Deptford II in the Middle Savannah sequence, ca. 0 A.D. as opposed to A.D. 300, reflects a presumed earlier local appearance for the Deptford Cord Marked, Deptford Zoned-Incised Punctate, and Swift Creek Complicated Stamped types. Two radiocarbon dates from the G. S. Lewis West site indicate cord marking and zoned-incised punctate finishes may be this early. Swift Creek materials are assumed to come in somewhat later, after ca. A.D. 200, when the finish becomes widespread in Georgia.

Deptford wares were in use for approximately 1100 years, and demarcate the Middle Woodland period locally. Differentiating Deptford I and II assemblages is difficult on small assemblages, however, since linear check, check, simple stamped, and plain finishes occur during both phases. The presence of Deptford Linear Check/Simple Stamped sherds indicates that a Deptford I component is present, while the presence of Deptford Zoned-Incised Punctate or Swift Creek Complicated Stamped types, or cord marked or fabric impressed pottery, indicates the presence of a Deptford II component. Only the Deptford Zoned-Incised Punctate and Swift Creek Complicated Stamped types unambiguously document a Deptford II component. While design size has been examined a number of times for cultural/chronological trends, none have been noted.

Primary references: Caldwell and Waring (1939a, 1939b); Griffin (1945); Griffin and Sears (1950); Caldwell (1952, 1958, 1971); South (1960, 1976); Waring 1955, 1968c); Williams (1968); Waring and Holder (1968); Peterson (1971); Stoltman (1974); Anderson et al. (1979; 1982); Trinkley (1980a); DePratter (1979); Sassaman and Anderson 1990).

DEPTPORD LINEAR CHECK STAMPED/CORD MARKED

Sorting Criteria: Design consisting of discrete areas of linear check stamping and cord impressions typically occupying different areas on the same vessel. May be confused with Deptford Linear Check Stamped and Deptford Cord Marked.

Distribution: Rarely noted. The only reported examples are from 38BR495 in the central Savannah River valley (Brooks and Hanson 1988)..

Chronoloeical Position: Early and Middle Woodland periods (ca. 600 B.C.-A.D. 500). The bold, parallel cord impressions couples with the small size of the linear checks suggests a date towards the latter end of this range.

Backmound: Sixty-six sherds from a single conoidal vessel with these finishes on it was found at 38BR495 (Brooks and Hanson 1988). The vessel was cord marked over its lower surface and linear check stamped on its upper surface; at the interface of these finishes both were present, with the cord marking placed over, and hence after, the linear check stamping.

Primary References: Brooks and Hanson 1988; Sassaman and Anderson 1990.

DEPTFORD LINEAR CHECK STAMPED/FABRIC IMPRESSED

Sorting; Criteria: Design consisting of discrete areas of linear check stamping and fabric impressions on the same vessel. May be confused with Deptford Linear Check Stamped, Cape Fear Fabric Marked, or other fabric impressed types.

Distribution: Rarely noted. The only reported examples are from the Mattassee Lake sites on the lower Santee River.

Chronological Position: Early and Middle Woodland periods (ca. 600 B.C.-A.D. 500).

Background: The type is extremely rare in the Deptford series. Three sherds with a linear check stamped/fabric impressed finish were found at Mattassee Lake (Anderson et al. 1982: 280, 283). The cooccurrence of the two finishes on the same vessel unequivocally documents their contemporaneity.

Primary References: South 1976:40, Anderson et al. 1982:280

Primary references: Caldwell and Waring (1939a, 1939b); Sassaman and Anderson 1990).

DEPTPORD LINEAR CHECWSIMPLE STAMPED

Sorting Criteria: Alternating arrangement of linear check and simple stamped designs. Typically from one to four rows of linear checks occur, separated by an empty area devoid of stamp impressions, or characterized by a single U-shaped or flattened groove. The linear check stamped portion of the design is a "repeated parallel arrangement of two longitudinal lands which contain a series of finer transverse lands . . . The longitudinal lands are invariably heavier and usually higher than the transverse lands" (Caldwell and Waring 1939). The lands are formed by the carving of grooves into a wooden paddle; the stamp is applied when the vessel paste is plastic. Occasionally smoothed somewhat after stamping. The width of the simple stamped portion of the design

typically varies from 3.0-10.0 mm in width. Paste characterized by varying amounts of small (0.5-2.0 mm), rounded clear, white, or rose quartz inclusions. Interior finish typically slightly sandy or gritty in texture.

Distribution: Deptford Linear Check/Simple Stamped occurs throughout the Coastal Plain and Fall Line areas of eastern Georgia and South Carolina, and is occasionally noted in the southeastern Coastal Plain of North Carolina. Appears more common along the Savannah River than areas to the northeast.

Chronoloeical Position: Early and Middle Woodland periods (ca. 600 B.C.-A.D. 500). Stratigraphic evidence for the G. S. Lewis site suggests that this type dates to fairly early within the temporal range for Deptford (Hanson 1986).

Background: Not previously defined. The finish combination was noted in a description of ceramics found in the central Savannah River Valley (Sassaman and Anderson 1990:193, 200). It appears to be fairly common along the central Savannah River. It is decidedly uncommon on the central Santee River, a distributional pattern that warrants further documentation and explanation.

Primarv References: Sassaman and Anderson 1990:193,200.

DEPTFORD SIMPLE STAMPED

Sorting; criteria: Parallel longitudinal U-shaped grooves over the exterior vessel surface; occasionally lightly to extensively smoothed after stamping. Stamping (typically) parallel, overstamping or cross stamping less common. Impressions typically narrow (about 2.0 mm), shallow (0.5-2.0 mm), and carefully applied. Lip treatment (stamping or incising) common. Paste and interior finish identical to that for Deptford Linear Check Stamped. May be confused with Thom's Creek Simple Stamped, Refuge Simple Stamped, and Santee Simple Stamped on individual sherds.

Distribution: Throughout the Coastal Plain and Fall Line areas of South Carolina and into extreme southeastern North Carolina. Increasingly infrequent northeast of the Santee River drainage; only rarely noted in North Carolina.

Chronological position: Early/Middle Woodland periods (ca. 600 B.C. - A.D. 500).

Background: The type Deptford Simple Stamped was originally defined by Caldwell and Waring in 1939, based on materials recovered from the Deptford site, and several other locations, in the vicinity of Savannah, Georgia (Caldwell and Waring 1939a). Like Deptford Linear Check Stamped, the ware has since been widely reported and described (e.g., Wauchope 1966:47-48; Willey 1949: 357-358; Griffin 1945:468; Griffin and Sears 1950; Anderson et al. 1979:153-155, 1982:281-285). A geographic range similar to that for Deptford Linear Check Stamped appears probable; like the linear check stamped finish, several regional simple stamped types have been recognized and named (e.g., Dunlap Simple Stamped, Mossy Oak Simple Stamped, Cartersville Simple Stamped, Pigeon Simple Stamped, Swannanoa Simple Stamped, etc.), each varying somewhat from the Deptford type, but all approximately temporally coeval. The differences between at least some of these types appear to be minor, and use of the type-variety system would probably be appropriate. Smith (1971:58-59) has proposed such a taxonomy, using Deptford Simple Stamped as the primary type, with several varieties subsumed under it (e.g., var. Mossy Oak, var. Cartersville). Type-variety classification has never caught on in the Carolinas, which is why this guide makes use of the binomial classification system.

In the original mouth-of-the-Savannahceramic sequence, formulated in the late 1930s, only one simple stamped type, Deptford Simple Stamped, was recognized (Caldwell and Waring 1939b). In 1947, Waring, working at the Refuge site (38JA5) in Jasper County, South Carolina, resolved a post-Stallings, pre-Deptford series of pottery, characterized by plain, simple stamped, punctated, and dentate stamped finishes which he classified as Refuge. The Refuge types were formally incorporated into the Savannah River sequence in a paper Waring (1968c) gave at the 1955 Southeastern Archeological Conference and have seen intermittent use since. Refuge Simple Stamped was separated from Deptford Simple Stamped primarily by quality of manufacture; the earlier (Refuge) type was characterized by a coarser, thicker paste, and sloppy, haphazard stamping (Waring 1968b:200). Intergradation between the types was noted, however, (e.g., Waring 1968b:200), rendering objective sorting difficult, and prompting some dissatisfaction among later researchers (e.g., DePratter 1976, 1979; Lepionka 1981; Trinkley 1980a; see also Background discussions for Refuge Simple Stamped). To resolve this ambiguity, DePratter (1979:121-122) combined the Refuge and Deptford simple stamped wares into a single type, Refuge Simple Stamped. The type Deptford Simple Stamped was abolished, and Refuge Simple Stamped became the only simple stamped type recognized in the mouth-of-the-Savannah sequence.

Research conducted along the middle Savannah River have demonstrated that it is possible to sort Refuge from Deptford Simple Stamped pottery on an assemblage basis, and over many individual specimens, using stamped size, shape, application, and orientation attributes (Anderson 1988; Sassaman and Anderson 1990; Sassaman 1993b; see also background discussion for Refuge Simple Stamped). The differences between these varieties remain those noted by Waring (1968b:200), and as briefly described by DePratter (1979:121-122). In general, the earlier variety is characterized by coarser paste and sloppier execution and (typically) a hemispherical vessel form, while the later variety is better made with (typically) a conoidal jar slope. Deptford Simple Stamped is characterized by carefully executed and applied, parallel U-shaped simple stamp impressions, although cross stamping and less carefully executed impressions (with both U- and V-shaped grooves) are a distinct minority in assemblages. The impressions are typically closely spaced and carefully applied, although care in execution may vary considerably. Simple stamped vessels are occasionally lightly to extensively smoothed after stamping. Simple stamping also characterizes Thom's Creek and Refuge Simple Stamped, although on these wares the stamping typically exhibits a greater range of execution, from careful to careless, and greater variation in the distances between individual impressions. Tetrapods are extremely rare in Deptford assemblages in the South Carolina Coastal Plain (Anderson et al. 1979:82), although they are common in Piedmont Cartersville assemblages from the upper Savannah River and to the west (Anderson and Joseph 1988).

At Mattassee Lake along the lower Santee cross-stamped Deptford Simple Stamped sherds tended to exhibit narrower impressions and occur somewhat later than parallel stamped material, at least in the 38BK226 block, suggesting some intergradation, or development into the Santee Simple Stamped type. At Mattassee Lake the exterior finish is typically applied parallel or at low angles to the rim, however, in marked contrast to the stamping on the Santee Simple Stamped type, which is commonly perpendicular or at high angles (i.e. near perpendicular) to the rim.

Primary references: Caldwell and Waring (1939a, 1939b); Griffin (1945), Griffin and Sears (1950); Caldwell (1952, 1958, 1971); Wauchope (1966); Waring (1955; 1968b, 1968c); Williams (1968); Waring and Holder (1968); Stoltman (1974); Anderson et al. (1979:153-155, 1982:281-285).

DEPTFORD ZONED-INCISED PUNCTATE

Sorting criteria: Geometric patterns of small punctations bounded by fine incised lines, typically applied near the vessel rim. Plain areas within incised lines may be red painted. Decorations applied while the paste was plastic. Paste characterized by varying amounts of small (0.5-2.0 mm), rounded clear, white, or rose quartz inclusions. Interior finish typically slightly sandy or gritty in texture.

Distribution: Uncommon. Observed only along Savannah River below the Fall Line, and along the Edisto River.

Chronological position: Unknown, probably Middle Woodland period (ca. A.D. 200-500. An occurrence later in the Deptford Phase has been suggested for Deptford Zoned Punctate by both Caldwell and McCann (n.d.) and Milanich (1971). The Deptford Zoned Incised Punctate ware found at Cal Smoak on the Edisto River appears roughly coeval with Deptford Linear Check Stamped sherds at that site (Anderson et al. 1979:74, 140-141). At the G. S. Lewis site on the middle Savannah River there is some suggestion that the finish may date slightly earlier.

Background: The type Deptford Zoned Punctated was originally briefly described by Caldwell and McCann (n.d.) in their unpublished draft report on the Deptford site. Sherds with this finish were recovered at the Cal Smoak site (38BM4) along the central Edisto drainage in South Carolina, where a formal description of Deptford Zone-Incised was offered by Anderson et al. (1979:78, 140-141). The ware has been found in good context at the G. S. Lewis site in the northern Coastal Plain of South Carolina, along the middle Savannah River, where the unique zoned red painting was first observed (Sassaman and Anderson 1990:196, 197, 200). Some of the plain and zoned punctated areas on this ware were painted red, and are reminiscent of Gulf Coastal Weeden Island ceramics. Milanich (1971:170-171) has noted that the finish is similar to the Weeden Island type Carabelle Punctated (Willey 1949:425).

Primary references: Caldwell and McCann (n.d., Deptford Zoned Punctated type); Waring and Holder (1968, Brewton Hill Zoned Punctated type); Milanich (1971; Deptford Zoned Punctated type); Anderson et al. 1979:140-141; Sassaman and Anderson 1990:196, 197,200).

DUNLAP FABRIC MARKED

Sorting criteria: Fabric impressions applied over the exterior surface of the vessel while the paste was plastic; occasionally smoothed somewhat after stamping. Paste characterized by varying amounts of fine sand (0.5-2.0 mm).

Distribution: Western Piedmont of South Carolina to just below the Fall Line, and across northern Georgia.

Chronological position: Early Woodland (1000-300 B.C.)

Background: Dunlap Fabric Marked pottery was originally defined by defined by Jennings and Fairbanks (1940). The Woodland period in the north Georgia Piedmont began sometime between 1000 and 600 B.C., and is identified by the appearance of Dunlap Fabric Marked pottery (Bowen 1982; Caldwell 1958:23-25; Garrow 1975:18; Wauchope 1966:46-48; Wood 1981:13-14). The earliest securely dated assemblages date to ca. 700-600 B.C. and are characterized by course sand/grit-tempered fabric marked pottery. To the north of the Piedmont, in the Appalachian summit of western North Carolina, fabric marked pottery dominates assemblages. The sequence in this area proceeds from the coarser to finer sand and grit-tempered pottery of the Pigeon and Swannanoa series, which are dated to after 700 B.C. and 400 B.C., respectively (Keel 1976:17).

Dunlap Fabric Marked pottery currently appears to be the only initial Woodland ceramic indicator currently known from the upper Savannah River. An early position for the finish was documented stratigraphically at Big Generostee Creek in the Russell Reservoir, and fabric marked sherds were noted in early levels in isolated units at a number of other sites (Anderson 1988c). This may indicate that the widespread adoption of ceramics did not occur in the upper Savannah River until well into the Early Woodland period, after Refuge times. Given the infrequent occurrence of Stallings and Thom's Creek ceramics in the Piedmont, and the apparent late (ca. 700 B.C.) appearance for fabric marked pottery in northern Georgia, this seems to be a plausible inference (Bowen 1982; Garrow 1975).

While some fabric marked pottery found in the western part of South Carolina may date to the Early Woodland period, the finish cannot be unequivocally assigned to the this period whenever it is found. A long occurrence for the finish, spanning virtually the entire ceramic prehistoric era, has been documented throughout much of eastern and central North Carolina (Coe 1964; Keel 1976; Phelps 1983; Reid 1967:8-9; Ward 1983), as well as in the Coastal Plain of South Carolina (Anderson 1982:293-301, 1988a; Trinkley 1983, 1989). Within the Georgia Piedmont, however, the primary occurrence for the finish appears to be during the Early Woodland, with only occasional materials noted in later Woodland and Mississippian contexts (e.g., Connestee Fabric Marked, Keel 1976:254; Etowah Net Marked, Wauchope 1966:71). In the upper Savannah River Valley, fabric marked pottery appears to occur primarily in the Early Woodland period, as in north Georgia, with the occasional later occurrences of the finish perhaps representing influences from areas to the east.

Primary references: by Jennings and Fairbanks (1940). Caldwell (1958); Wauchope (1966).

ETOWAH COMPLICATED STAMPED

Sorting criteria: Paste characterized by fine sand and some (typically few) clear quartz inclusions from 0.5 to 2.0 mm in size.

Distribution: Found throughout northern Georgia and across South Carolina, extending as far as the Town Creek site in North Carolina. Incidence decreases markedly with increasing distance to the east of the Savannah River.

Chronoloeical j Early ipr (ca. A.D. 1000-1200)

Background: Etowah Complicated Stamped (primarily variations on the nested diamond motif) occurs commonly in the upper Savannah River where it is attributed to the Jarrett (A.D. 1100-1200) and Beaverdam (A.D. 1200-1300) phases. The incidence of Etowah Complicated Stamped declines appreciably during the Beaverdam phase, although a later occurrence is likely. Nested or cross diamond motifs, traditionally associated with Etowah components in the South Appalachian area, have recently been found to encompass a much broader temporal range. The nested diamond motif continues to occur in post-Etowah period assemblages in the middle Oconee drainage of Georgia (Smith 1981:183-184, 1983). At the Dyar Mound nested diamonds were reported as the most common motif throughout both the Early and Middle Mississippian Stillhouse and Duvall phases, which roughly correspond to the Etowah/Early Savannah Beaverdam and late Savannah/early Lamar Rembert phases in the upper Savannah River area.

Primary references: Wauchope (1948, 1950, 1966)

FABRIC IMPRESSED, LOOSE WEAVE
(surface finish category)

Sorting Criteria: Fabric impressions characterized by a loose, poorly defined weave. The impressions were applied while the paste was plastic. Both warp and weft elements are soft and evenly defined.

Probable Types: Cape Fear Fabric Impressed (with fine sand/grit paste); Wilmington Fabric Impressed (with grog/sherd tempering). When a fine sand/grit past occurs, the finish may be an interior Coastal Plain equivalent of the Wilmington type. The chronological position of fabric impressing is poorly understood in the middle Savannah river basin; the finish is not even represented in the sequence from the river mouth (DePratter 1979). Stratigraphic evidence from 38BR495 and other sites on the Savannah River Plant (Hanson 1986) suggests an occurrence later in the Woodland for fabric impressed sherds with fine sand/grit paste, comparable to the range for Cape Fear Fabric Impressed in the middle Santee River drainage.

Chronological Position: Cape Fear Fabric Impressed (ca. A.D. 200-700); Wilmington Fabric Impressed and interior equivalents (ca. A.D. 500-1000).

FABRIC IMPRESSED, RIGID WEAVE
(surface finish category)

Sorting Criteria: Fabric impressions characterized by a rigid warp element, about which a flexible cord was laced. The impressions were applied while the paste was plastic. The rigid warp element creates a longitudinal land giving the sherd a linear stamped appearance.

Probable Types: Same as Fabric Impressed, Loose Weave.

Chronological Position: Same as Fabric Impressed, Loose Weave.

FABRIC IMPRESSED, UNIDENTIFIABLE WEAVE
(surface finish category)

Sorting Criteria: Fabric impressions unidentifiable as to weave (i.e., either rigid or loose). Typically found only on small sherds.

Probable Types: Same as Fabric Impressed, Loose Weave.

Chronological Position: Same as Fabric Impressed, Loose Weave.

FIBER TEMPER
(paste category)

Sorting Criteria: Fiber vesicles throughout the paste, typically visible on both the interior and exterior vessel surface regardless of the extent of smoothing. This attribute should be carefully evaluated since some later period wares exhibit apparent fiber inclusions; these (typically) are either accidental inclusions or else impressions resulting when the wet vessel was set on fibers on other plant debris prior to firing.

Probable Types: Diagnostic indicator of Stallings series ceramics.

Chronological Position: Late Archaic Period (ca. 2500 B.C.-1000 B.C.).

FINE SAND
(paste category)

Sorting Criteria: Paste characterized by fine sand inclusion size typically 0.2 mm in size or smaller. Trace amounts of larger inclusions may also be present. All of the inclusions are unmodified; that is, no evidence for intentional crushing is observed.

Probable Types: Principal paste of the Santee series; common within the Thom's Creek and Refuge series.

FINE SAND/GRIT
(paste category)

Sorting: Criteria: Paste characterized by macroscopically visible inclusions of sand; inclusion size typically ranges from 0.2 mm to 2.0 mm. Fine sand (0.06 mm-0.2 mm) and trace amount of larger inclusions may also be present. All of the inclusions are unmodified; that is, no evidence for intentional crushing is observed.

Probable Types: Principal paste observed within the many of the Woodland and Mississippian ceramic series in the Carolinas.

Chronological Position: Late Archaic through contact periods (ca. 2000 B.C.-A.D. 1750).

GROG TEMPER
(paste category)

Sorting Criteria: Paste characterized by the presence of rounded, subrounded, and irregular lumps of clay or fired clay. These inclusions may range from ca. 2.0 mm-10.0 mm in size, and may differ appreciably in color and texture from the surrounding body of the sherd. The absence of recognizable sherd surfaces on these inclusions is the critical attribute distinguishing this paste from sherd tempering.

Probable Types: Diagnostic indicator of Wilmington and St. Catherines series ceramics along the lower Savannah; and the Hanover and Carteret series in coastal North Carolina. It often occurs in conjunction with sherd tempering.

Chronological Position: Early through Late Woodland, depending upon the series.

INCISED

Sorting Criteria: Fine lines from ca. 1.O-5.0 mm wide drawn on the surface of the vessel. These are usually produced while the paste was plastic, but may be drawn (engraved) after firing, although this practice is extremely rare in the Carolinas. May be confused with closely spaced drag &jab finishes.

Probable Types: Thom's Creek Incised, Refuge Incised; Deptford Incised, Irene Incised, Lamar Incised.

Chronological Position: Throughout the sequence.

IRENE COMPLICATED STAMPED

Sorting criteria: Complicated stamping dominated by filfot cross motifs, although line block, figure 9s, and other designs occur but are distinct minorities. Stamp impressions are usually narrow, well-executed, and carefully applied, with overstamping uncommon. Rim treatment is common, including reed punctations, rosettes, applique strips, lugs, and nodes. The grooves making up the design are typically 1.0 - 2.0 mm wide, and about 1.0 mm deep. Interior surfaces are typically well smoothed or burnished. The paste contains a large amount of coarse sand with inclusions up to 3.0-4.0 mm in size common.

Distribution: Irene Complicated Stamped ceramics are found along the lower Savannah River and in the Sea Island area to the north and south of the mouth of the Savannah. The ware becomes progressively uncommon to the northeast of the Savannah.

Chronological position: Middle Mississippian period (A.D. 1300- A.D. 1550).

Background: The type Irene Complicated Stamped was originally defined by Caldwell and Waring (1939a), and subsequently by DePratter (1991:192) based on materials recovered from the Irene Mound near Savannah. At the mouth of the Savannah the Irene I Phase (A.D. 130011325-140011425) is identified by the appearance of Irene Complicated Stamped pottery, characterized by filfot cross and line block motifs, and a variety of rim decorative treatments (DePratter 1979:111, 1991:190-192). Bold incising, a hallmark of the later, Irene II phase, appears for the first time, but in low incidence and with relatively simple one to three line designs placed just below the rim primarily on bowls. Rim treatment has proven a particularly sensitive temporal indicator. Plain folded rims occur in small numbers late in Savannah III, followed by hollow cane punctations and riveted nodes during the transition from Savannah III to Irene I, with rosettes and narrow folded rims with cane punctations and, rarely, finger pinched appliquéd rim strips characteristic of Irene I assemblages. (See also discussion under Savannah Complicated Stamped).

The Middle Mississippian period in the middle Savannah River Valley dates from 750 to 550 BP, during the Hollywood and (provisional) Silver Bluff phases. Transitional Savannah/Irene or Early/Middle Mississippian assemblages in the middle Savannah River Valley have been provisionally assigned to the Hollywood phase (A.D. 1250-1350)(Anderson et al. 1986), developed from the assemblages found at that site by DeBaillou (1965). Savannah Check stamping is common, followed by Mississippian Plain, Burnished Plain, and both Savannah and Irene Complicated Stamped, the latter dominated by variations on the filfot cross motif. As at Irene during Caldwell and McCann's (1941:41-42) contemporaneous "transitional" period, cane punctations and riveted nodes with cane punctations are present. Corncob impressing occurs in low incidence.

Assemblages reflecting a mixture of attributes from the Irene I phase at the mouth of the basin and the Rembert phase in the central Piedmont appear following the Hollywood phase (ca. A.D. 1350-1450), during what is provisionally described as the Silver Bluff phase (Anderson

1994). Diagnostic indicators include Pee Dee/Irene and Lamar Complicated Stamped pottery, characterized by modified rims with punctations, rosettes, nodes and, less commonly, folded rims or applied rim strips. Rectilinear line blocks and filfot crosses and scrolls dominate complicated stamped assemblages; less common motifs include the herring bone and arc-angle. Other finishes present include burnished plain and check stamping, the latter in low incidence. Incising of any kind is rare, occurring as simple one to several line designs below the rim of bowls and sometimes in conjunction with rim modification, on folds. If ceramic collections can be obtained from the area of the Mason's Plantation mound group they may provide the basis for establishing a local equivalent of the Irene I/Rembert phases that could be called either Silver Bluff or Mason's Plantation.

Primary references: Caldwell and Waring (1939a, 1939b); Caldwell and McCann (1941:42-48); DePratter (1979, 1991:190-192).

IRENE INCISED

Sorting criteria: Bold incising, usually simple designs below the rim of bowls, sometimes in conjunction with rim modification, on folds. "The design generally consists of horizontal bands of repeated or alternating design elements. Three to seven parallel lines [are] most common on Irene phase vessels. Designs are relatively simple and include concentric festoons, circle, guilloches, and swirls. ...Punctations in combination with incising is rare" (DePratter 1991:192). Both interior and exterior surfaces are well smoothed or burnished, and only rarely sandy or gritty in texture. The paste contains a large amount of coarse sand with inclusions up to 3.0-4.0 mm in size common.

Distribution: Irene Incised ceramics are found along the lower Savannah River and in the Sea Island area to the north and south of the mouth of the Savannah. The ware becomes progressively uncommon to the northeast of the Savannah.

Chronological position: Late Mississippian period (A.D. 1450-A.D. 1550). Temporal placement of the ware is drawn largely from its position in the mouth-of-the-Savannah sequence and along the Georgia coast (c.f. Caldwell 1971; DePratter 1979).

Background: The Irene Incised type was originally defined by Joseph R. Caldwell and Antonio J. Waring, Jr. in 1939 based on material recovered from excavations at the Irene mound. See discussion for Irene Complicated Stamped. DePratter (1991:192-193) has recently provided a revised description, based on work conducted since the W.P.A.

Primary references: Caldwell and Waring (1939a, 1939b); Caldwell and McCann (1941); Caldwell (1952, 1958, 1971); Fairbanks (1950); Williams (1968); DePratter (1979, 1991:192-193).

LAMAR COMPLICATED STAMPED

Sorting criteria: Complicated stamping dominated by rectilinear motifs, with lesser occurrences of curvilinear motifs. Stamp impressions are usually large, bold, and sloppily executed, with overstamping common. The grooves making up the design and typically 3.0-5.0 mm wide, and about 2.0 mm deep. Paste varies but typically is fine sand/grit with appreciable inclusions present.

Distribution: Western Piedmont South Carolina, progressively less common to the east.

Chronological position: Later Mississippian period (A.D. 1350-1600).

Background: During the Rembert phase (A.D. 1350-1450) in the upper Savannah River Mississippian assemblages are characterized by Lamar Complicated Stamped pottery, with both curvilinear and rectilinear motifs present (Anderson et al. 1986:41-42; Rudolph and Hally 1985:456-459). Design motifs included concentric circles, figure nines, filfot crosses, line blocks, and herring bones. Check stamping nearly disappears, while Lamar Bold Incised makes its first appearance, albeit in low incidence. Incised vessels dating to this period are characterized by simple designs formed using typically two or three broad lines. Cane punctations, rosettes, and nodes continue on vessel rims, and finger pinching appears. Rims included both folded and unfolded forms, and narrow appliquéd strips appear. Rembert components have been identified at Rembert, Rucker's Bottom, and Tugalo.

Late prehistoric/protohistoric Tugalo phase (A.D. 1450-1600) components in the upper Savannah are also characterized by Lamar Complicated Stamped and Lamar Incised pottery. The complicated stamped design motifs are similar to those from the preceding Rembert phase, although the stamping is larger and more carelessly applied; the incised ware, in contrast, has more complex designs than during the preceding period, made from a larger number of narrower lines. Folded and pinched rims dominate jar assemblages, and rim fold and appliquéd strip width increases over earlier periods (Rudolph 1983:90-93). Red filming again appears as a minority ware (Anderson et al. 1986:38-42; Duncan 1985). Tugalo phase components are restricted to the extreme upper reaches of the Savannah River, where they have been identified at Chauga, Estatoe, and Tugalo.

Primary references: Anderson et al. 1986:38-42; Rudolph and Hally 1985:456-459;

MCCLELLANVILLE SIMPLE STAMPED: see SANTEE SIMPLE STAMPED

MCCLELLANVILLE FABRIC IMPRESSED see SANTEE FABRIC IMPRESSED

MCCLELLANVILLE CORD MARKED see SANTEE CORD MARKED

MCCLELLANVILLE PLAIN see SANTEE PLAIN

NAPIER COMPLICATED STAMPED

Sorting criteria: Narrow, well executed rectilinear complicated stamping and a typically dark gray to black color.

Distribution: Extreme western Piedmont of South Carolina and the western mountains of North Carolina.

Chronological position: Late Woodland period (ca. A.D. 650-850)

Background: Napier ceramics were originally recognized during the excavations at Macon Plateau in the 1930s. Overlap with both earlier Swift Creek and later initial Mississippian Woodstock series ceramics has been documented at a number of sites (Wauchope 1966:60-63, 437-438), suggesting the series represents terminal Woodland occupations in the area. Napier ceramics are uncommon in the vicinity of the upper Savannah River basin (Ferguson 1971:67; Garrow 1975:24; Keel 1976:221, Rudolph 1986).

Primary references: Kelly 1938; (Caldwell 1958:44, 1957:313-314; Fairbanks 1952:288; Kelly 1938; Wauchope 1948:204, 1966:57-60).

OLDTOWN SERIES

Sorting Criteria: The Oldtown series is characterized by a well-kneaded paste that was usually tempered with fine to very fine sand and feels smooth to the touch. Interior surfaces were nearly always smoothed, but vessels with burnished exteriors were often burnished on the interior as well. More than 90 percent of all Oldtown sherds from Upper Saratown were between 4 and 8 mm thick. the most common vessel type was a restricted neck jar with an everted rim. Other vessel forms included small cups, jars with recurved rims, hemispherical bowls, and restricted bowls with inverted or carinated rims, and very small hand-modeled pots.

Distribution: The Oldtown ceramic series is associated with the Sara Indians who occupied the upper Dan drainage of the northern North Carolina and southern Virginia Piedmont from the protohistoric through the contact period. The largest and best known Oldtown ceramic collections are from the Upper and Lower Saratown site localities.

Chronological Position: A.D. 1450 - 1710 The Oldtown series was manufactured from the protohistoric through the beginning of the eighteenth century in the Dan River drainage. Some exterior surface treatments and decorative techniques were popular for only a limited period of time within the series duration. These will be indicated in the individual type descriptions.

Backmound: The Oldtown series was first described by Wilson (1983:616) following his analysis of small samples of the pottery from Upper Saratown. He did not define individual ceramic types at that time because he felt his analysis incorporated too small a portion of the Saratown assemblages. Following his study of pottery collections from excavations at Lower Saratown and the William Kluttz site, Davis defined several Oldtown pottery types based on differences in exterior surface treatment including plain, brushed, burnished, simple stamped, check stamped, complicated stamped, and net impressed (Ward and Davis 1993). Both researchers agree that the Oldtown series developed out of the Dan River series.

Primary References: Wilson 1983; Ward and Davis 1993

(Series description: Jane Eastman)

OLDTOWN NET IMPRESSED, VARIETY COARSE

Sorting: Criteria: (See Sorting Criteria for the Oldtown Series) Oldtown Net Impressed, var. Coarse is distinguished from Dan River Net Impressed pottery by several attributes including the tendency for Oldtown vessel rims to be everted and folded. In addition, Oldtown paste generally has a high mica content, is tempered with fine sand, and is smooth to the touch. Nets used to roughen the exterior surface of these Oldtown pots had knots spaced about 5 mm apart and the cord used in the net was between 0.5 and 1 mm in diameter. Only one of the Oldtown Net Impressed, var. Coarse sherds from the Upper Saratown assemblage was decorated. The neck of this sherd was decorated with parallel incised lines oriented oblique to the rim. Several of the rim sherds had net impressions on the vessel lip. The vessel interiors were smoothed, but typically bore evidence of having been scraped and subsequently smoothed.

Distribution: This type has only been identified at Upper Saratown.

Chronological Position: A.D. 1450 - 1620. Oldtown Net Impressed, var. Coarse pottery has been identified in only one Early Saratown pottery assemblage, that from the Early Saratown component from the test trench excavation at Upper Saratown. Its chronological position is presented as the same for the Early Saratown phase, but no radiocarbon dates are available for this variety.

Backmound: Though Wilson (1983:617) did not formally describe Oldtown ceramic types, he did describe the Oldtown series. Among the Oldtown series surface treatments he listed were net impressed and several specimens were illustrated. Davis described the Oldtown Net Impressed type based on an analysis of pottery from the William Kluttz site (Ward and Davis 1993:295). Following an analysis of this and other Oldtown assemblages, I felt it was prudent to split net impressed sherds in the Oldtown series into two groups based on the coarseness of the net used to texture the vessel exterior. The specimens illustrated by Wilson from the Early Saratown phase assemblage would fall under the coarse variety of Oldtown Net Impressed. The sherds from the Kluttz site described by Davis would be classified as Oldtown Net Impressed, variety Fine type. These latter sherds were made during the Middle and Late Saratown phases, but were most popular during the second half of the Late Saratown phase. These two types are distinguishable not only on the basis of coarseness of the net, but also on rim form and interior surface treatment.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastmun)

OLDTOWN COMPLICATED STAMPED, VARIETY FILFOT SCROLL

Sorting Criteria: (See Sorting Criteria for the Oldtown Series) Three partially jars with filfot cross complicated stamped exteriors have been partially reconstructed. The same paddle may have been used to stamp two of the vessels, while the third was paddled with a different stamp. Both designs have four sets of four parallel lands and grooves forming a cross with distal ends that form loops. Typically the surface was overstamped to the point that the overall design was obscured. Two of the vessels were stamped when the clay was fairly wet, leaving deep, somewhat sloppy impressions. The third pot was stamped when the clay was drier and stiffer, creating more shallow impressions. When present, the rim fold was stamped. None of these partially reconstructed vessels were decorated.

Distribution: This type has only been identified at Upper Saratown.

Chronological Position: A.D. 1450-1620. Though Oldtown vessels with curvilinear complicated stamped surfaces were made throughout the contact period, the use of the Filfot scroll design appears to have been limited to the protohistoric Early Saratown phase.

Background: See Background description for Oldtown Series.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastmun)

OLDTOWN PLAIN

Sorting Criteria: (See Sorting Criteria for the Oldtown Series) Oldtown Plain pottery has exterior surfaces that have been smoothed prior to drying. Most interior surfaces have also been smoothed. All Oldtown vessel forms including jars, small conoidal cups, restricted bowl forms with incurvate or carinated rims and flat or rounded bases, and open, hemispherical bowls are represented in the Oldtown Plain assemblage. A range of smoothing is present which varies from roughly smoothed to carefully smoothed.

Distribution: This type has only been identified at Upper Saratown.

Chronological Position: A.D. 1450 - 1710. Although Oldtown Plain pottery was made throughout the Protohistoric and Historic periods in the Dan drainage, it was most common during the Middle and Late Saratown phases.

Backmound: See Background description for Oldtown Series.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastman)

OLDTOWN BURNISHED

Sorting Criteria: (See Sorting Criteria for the Oldtown Series) To create a burnished surface a clay slip is applied to a pot when it is at the leather-hard stage of drying. The surface is then rubbed with a hard, smooth tool like a cobble or piece of bone, to create a very smooth, sometimes polished surface. The burnished surface will bear linear facets from the polishing tool. During the protohistoric Early Saratown phase burnished exteriors occur only on bowls with inverted or carinated rims. In most instances the interiors of Oldtown Burnished bowls were also burnished. During this phase, decoration appears to have been limited to triangular-shaped notches or short parallel incised lines on the shoulder of carinated bowls and circular punctations on the lip of bowls with inverted rims. Later, during the Middle and Late Saratown phases, additional vessel forms were burnished. Hemispherical bowls and a vessel shape which Wilson (1983) referred to as a "cuspidor" were also burnished. A cuspidor has a flat base, wide shoulder, and an everted rim. As a general rule, cuspidors were not decorated. During the Contact Period the shoulder, rim, and lip of Oldtown Burnished bowls were decorated. Rims and shoulders were decorated with incised curvilinear or rectilinear designs sometimes combined with zones of punctations. Various types of notching and incising occurred on the lips or lip/rim margin of these burnished bowls. Repeating rectilinear incised designs on the rim of burnished cazuela bowls appears to have been a late development within Oldtown Burnished pottery.

Distribution: This type has only been identified at Upper Saratown.

Chronological Position: A.D. 1450 - 1710.

Background: See Background description for Oldtown Series.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastman)

OLDTOWN SIMPLE STAMPED

Sorting Criteria: (See Sorting Criteria for the Oldtown Series) Simple Stamping occurred as a minor surface treatment throughout the temporal span of the Oldtown series. Wooden paddles with straight parallel grooves carved into them were used to texture the exterior surface of jars. The linear designs were applied to the surface of pots in two ways: the first indicating overstarnping after the paddle was turned perpendicular to its original orientation creating a rough cross-hatched appearance; and secondly, unidirectional stamping with the grooves oriented oblique to the vessel rim, creating the appearance of lands and grooves spiraling around the pot. The grooves on overstamped vessels were generally much deeper than those created by the latter method. Both methods of stamping occur in Saratown phase assemblages with no apparent changes in popularity. At least two of the spiraled Oldtown Simple Stamped jars from the Early Saratown phase assemblage have applique strips just below the lip. Stamping on Oldtown Simple Stamped jars from Late Saratown phase components often extends onto the top of the lip creating a notched appearance.

Distribution: This type has only been identified at Upper Saratown.

Chronolonical Position: A.D. 1450 - 1710.

Background: See Background description for Oldtown Series.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastman)

OLDTOWN CORD MARKED

Sorting Criteria: (See Sorting Criteria for the Oldtown Series) No reconstructable sections of an Oldtown Cord Marked vessel have been identified from Upper Saratown. The rim sherds indicate that small to medium-sized jars were represented. These sherds can be distinguished from Dan River Cord Marked sherds on the basis of paste characteristics.

Distribution: This type has only been identified at Upper Saratown.

Chronological Position: Cord-Marking remained a minority surface treatment throughout the Oldtown series, but was most popular during the Early Saratown phase, comprising 10 percent of that assemblage from the test trench excavation at Upper Saratown.

Background: See Background description for Oldtown Series.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastman)

OLDTOWN CORNCOB IMPRESSED

Sorting Criteria: (See Sorting Criteria for the Oldtown Series) Corncobs were used to decorate the neck of plain pots and as a surface treatment for small vessels during the Dan River phase, but during the Middle Saratown phase the entire exterior surface of large jars were being textured by

rolling dried cobs over the wet clay. Two partially reconstructable Oldtown Corncob Impressed jars were recovered from Upper Saratown, one had a fingernail notches on the lip/rim margin and the other had a folded and everted rim and was undecorated. Both jars had smoothed interiors.

Distribution: This type has only been identified at Upper Saratown.

Chronolonical Position: A.D. 1620 - 1710. Corncob impressing as an exterior surface treatment was most popular during the Middle Saratown phase (A.D. 1620-1670), but continued as a minority treatment until the end of the Late Saratown phase.

Background: See Background description for Oldtown Series.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastman)

OLDTOWN COMPLICATED STAMPED, VARIETY CONCENTRIC CIRCLE

Sorting Criteria: (See Sorting Criteria for the Oldtown Series) This stamped design consists of four or five concentric circles. Considerable overstamping occurred in the application of this design to the vessel surface. Vessel interiors were either burnished or smoothed. Decorations on this variety of pottery is limited to notching of the lip/rim margin.

Distribution: This type has only been identified at Upper Saratown.

Chronological Position: A.D. 1620 - 1710. This variety of complicated stamping occurs in Middle and Late Saratown phase components.

Background: See Background description for Oldtown Series.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastman)

OLDTOWN NET IMPRESSED, VARIETY FINE

Sorting Criteria: (See Sorting Criteria for the Oldtown Series) Most Oldtown Net Impressed, variety Fine vessels are thin walled jars (less than 6 mm thick) with smoothed interiors and everted rims, though one bowl form has been identified. The nets used to impress the surfaces of these pots have knots spaced about 3 mm apart that are about 2 mm in diameter.

Distribution: This type has only been identified at Upper Saratown.

Chronological Position: A.D. 1670 - 1710. Net impressing using nets with closely-spaced, small knots or finely woven nets was first recognized in Middle Saratown phase components. This surface was more popular during the following Late Saratown phase.

Background: See Background description for Oldtown Series.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastman)

OLDTOWN BRUSHED

Sorting Criteria: (See Sorting Criteria for the Oldtown Series) This surface treatment was produced by lightly scoring the smoothed clay surface with bundles of small twigs or straw. The direction of brushing tended to be either parallel to or perpendicular to the rim, though some sherds were brushed in various directions. One style of brushing was indicative of the Middle Saratown phase. This form of brushing consists of brushed bands oriented perpendicular to the rim. These brush marks begin just below the lip and continue down the vessel to the lower portion of the body. These brushed bands alternate with smoothed areas.

Distribution: This type has only been identified at Upper Saratown.

Chronological Position: A.D. 1620 - 1670. Brushing occurs in Middle Saratown phase components.

Background: See Background description for Oldtown Series.

Primary References: Wilson 1983; Ward and David 1993, Eastman 1996 (ms in part I)

(Type description: Jane Eastman)

PEE DEE COMPLICATED STAMPED

Sorting criteria: Complicated stamping over the exterior vessel surface; stamp impressions (typically) dominated by rectilinear or combination curvilinear-rectilinear design motifs. The motifs are (typically) well-executed, with the width between the land making up the design uniform and rarely more than 2.0-2.5 mm. The paste is characterized by a fair amount of fine sand, although inclusions over 1.0 mm in size are rare. Vessel interiors are well smoothed; rims include both incurvate and excurvate forms, with rounded and flat, occasionally stamped lips. May be confused with Savannah Complicated Stamped, var. Jeremy, and Ashley Complicated Stamped, var. unspecified on small sherds (see Reid 1967 for a comprehensive description of the type).

Distribution: Along major drainages in the coastal plain and lower piedmont of South Carolina and extreme southeastern North Carolina, and throughout the sea-island area of South Carolina.

Chronological position: Middle Mississippian period (A.D. 1200-1450). Many of the design motifs evident on Savannah Complicated Stamped and early Irene ceramics are present on the Pee Dee type, and separation of these wares can be difficult on a sherd by sherd basis, particularly if rims, or large portions of the design are lacking.

Background: The type Pee Dee Complicated Stamped was formally defined by J. Jefferson Reid (1967:42-52) as part of a comprehensive description of the Pee Dee series ceramics from the mound at the Town Creek site, Montgomery County, North Carolina. The Pee Dee series was first identified and briefly described by Joffre L. Coe (1952), based on the extensive excavations at the Town Creek site. The ware is sand tempered (i.e. has moderate amounts of rounded quartz sand grains in the paste), and is characterized by carved paddle stamped designs which, in order of incidence in the type collection, included concentric circles, the filfot cross, arc angles, herring

bone patterns, line blocks, quartered circles, and split diamonds (Reid 1967:5-8). Reid (1965, 1967:64 ff) noted similarities between the Pee Dee type and complicated stamped ceramics found throughout the South Appalachian area (e.g. Holmes 1903; Ferguson 1971), but concluded that they were most similar to ceramics found along the lower Savannah River and throughout much of South Carolina:

> The ceramics of the Pee Dee people are very much like those found at the Fort Watson, Hollywood, Irene, and other sites along the Broad and Wateree Rivers in South Carolina and the lower Savannah River in Georgia. So similar are these ceramics, in fact, that a cultural relationship is postulated for the ceramic complexes at these sites during the late prehistoric and protohistoric times. This relationship is seen in terms of a Town-Creek- Irene Axis, a loose geopolitical unit of independent sites inhabited by peoples with a related cultural heritage (Reid 1967:83-84).

Ferguson (1971) has provided a comprehensive review of archeological investigations on late prehistoric (i.e. Mississippian period) sites throughout the South Appalachian area. While supporting Reid's inferences about the similarity of sites in the general North and South Carolina area, Ferguson (1971: 126-127) stressed that connections with other parts of the province were also evident.

General similarities of the Pee Dee type with both Savannah and Lamer Complicated Stamped ceramics from northern Georgia are evident, not only in design/ motif (c.f. Wauchope 1966: 77-82) but also in the internal evolution of rim treatment, from plain to reed punctated rims, to pinched rim strips (c.f. Rudolph 1978, Rudolph and Blanton 1980, Smith 1978). The evolution of rim treatment noted by Reid (1967: 82-82) at Town Creek, from plain to reed punctated rims with the addition of rosettes, shaped pellets, and fillets (i.e. rim strips), is virtually identical to the changes reported from the Duvall (A.D. 1375-1475) and Dyer (A.D. 1475-1600) Phases of Early and Middle Lamer from the Middle Oconee River (Smith 1978). Similar patterns are also noted by South (1976:28) from coastal South Carolina between his Chicora (i.e. Pee Dee, Savannah series) and York (i.e. Ashley series) ware groups. Based on the work in northern Georgia, the Pee Dee assemblage described from Town Creek would appear to date from roughly A.D. 1350 to 1550, slightly earlier than A.D. 1450 to 1650 range suggested by Reid (1967:62-63), yet more in line with radiocarbon dates from the site. The preeminence of concentric circle complicated stamping - a hallmark of the Savannah Complicated Stamped type (c.f. Caldwell and Waring 1939a; Wauchope 1966:79) coupled with the virtual absence of bold incising, further supports a (largely) pre-European contact time- range for the type (c.f. Wauchope 1966:79- 86; Smith 1978, Rudolph 1978).

Pee Dee ceramics have been reported from a number of locations in South Carolina, primarily from the sea-island and fall line areas, and along major river systems. Although these wares resemble materials described under the Savannah and particularly Lamar types in Georgia, use of the Pee Dee taxon is retained, primarily because Reid's (1967) type description is far more detailed, and hence useful, than any reported for Lamar Complicated Stamped (c.f. Wauchope 1966; 79-82 for perhaps the best published description of Lamar Complicated Stamped). Eventual accommodation of the Pee Dee and Savannah Lamer types will be necessary, particularly since the primary criteria for separation appears to be increasingly one of geography (i.e. the Georgia-South Carolina state line).

Pee Dee materials from Mattassee Lake are similar to the Pee Dee ceramics described from the type site (Reid 1967), and are similar or identical to artifacts recovered from the Fort Watson (38CR1; Ferguson 1975a) and Mulberry (38KE12; Ferguson 1974), mound sites upriver along the Santee/Wateree drainage. Trinkley (1980e) has noted a virtual identity of Pee Dee ceramics from northern Charleston County with materials from Town Creek. The close similarity in manufacture

tends to support Reid's (1967: 83-84) inference about close sociopolitical ties between late prehistoric groups or settlements within this general area.

Primary references: Coe (1952); Reid (1965, 1967); Ferguson (1971, 1974, 1975a, 1975b); South (1973b, 1975); Anderson (1975a, 1975b); Anderson and Claggett (1979); Trinkley (1980a, 1981b, 1981c, 1981e).

PLAIN
(surface finish category)

Sorting Criteria: Plain surface finish. Considerable variability in both interior and exterior finish may occur, with texture ranging from somewhat irregular to well-smoothed.

Probable Types: Plainwares occur in small numbers in most local series.

Chronological Position: Plain pottery occurs throughout the period when ceramics were made, from the Late Archaic through the Late Woodland/Mississippian era.

PUNCTATE, DRAG & JAB
(surface finish category)

Sorting Criteria: Linear rows of punctations formed by jabbing the tool into the plastic clay and then dragging to the next punctation. Typically applied in rows parallel to the rim; curvilinear or geometric arrangements less common. Punctations typically produced with a cut reed.

Probable Types: Stallings Punctate, var. Chesterfield (with fiber tempered paste); Thom's Creek Punctate, var. Spanish Mount (with fine sand/grit paste).

Chronological Position: Late Archaic period (ca. 2500-1000 B.C.).

PUNCTATE, LINEAR SEPARATE
(surface finish category)

Sorting Criteria: Individual separate punctations, typically placed in rows parallel to the rim; random or geometric arrangements less common. Punctations typically produced with a hollow or cut reed.

Probable Types: Stallings Punctate, var. Stallings (with fiber tempered paste); Thom's Creek Punctate, var. Thom's Creek (with fine sand/grit paste). Isolated punctations, or rows of punctations, may also occur on Mississippian vessel rims.

Chronological Position: Late Archaic (ca. 2500-1000 B.C.) and later Mississippian (ca. A.D. 1200-1450) periods.

RECTILINEAR COMPLICATED STAMPED
(surface finish category)

Sorting Criteria: Complicated stamping dominated by rectilinear motifs.

Probable Types: Napier, Woodstock, Etowah, Pee Dee, or Irene.

Chronological Position: Later Woodland to Middle Mississippian (ca. A.D. 700-1400).

SANTEE CORD MARKED: see SANTEE SIMPLE STAMPED

SANTEE FABRIC IMPRESSED: see SANTEE SIMPLE STAMPED

SANTEE PLAIN: see SANTEE SIMPLE STAMPED

REFUGE ALLENDALE PUNCTATE

Sorting Criteria: Individual, "closely spaced, randomly oriented punctations that must have been made by a composite instrument rather than one impression at a time—a handful of straw or twigs? Individual punctations never exceed 5 mm in diameter and are most often less than 3 mm in diameter. Impressions were made by an instrument held vertically or at an angle to the surface in about equal proportion" (Stoltman 1974:276). Paste ranges from appreciable sand to temperless to tempered with small (0.5-2.0 mm) lumps of aplastic clay (grog). Both interior and exterior surfaces are well smoothed. Flat, excurvate rims are ubiquitous; lips are typically undecorated.

Chronoloeical Position: Early Woodland period (1000 B.C. - 800 B.C.). At Mattassee Lake Refuge Allendale Punctate occurs stratigraphically early, coeval with the Thom's Creek types, and below Refuge Dentate Stamped, in the 38BK226 excavation block. This suggests that the ware may date to the early part of the Refuge Phase.

Distribution: Poorly documented. The variety appears to be a minority ware among Refuge ceramics, with a distribution comparable to that for the series (see Refuge Dentate Stamped). Reported along the lower Savannah River on Groton Plantation (e.g., Peterson 1971a, 1971b; Stoltman 1974) and the Savannah River Site (Sassaman and Anderson 1990:180, 188-191), and at Mattassee Lake on the lower Santee River. Isolated examples occasionally noted or reported from elsewhere in the Georgia/South Carolina coastal plain (e.g., Gregorie 1925:Plate 6; Miller 1950:255; DePratter 1976: Figure 1). In an examination of ceramics from 313 sites across the coastal plain of South Carolina, only eight Refuge Allendale Punctate sherds were observed, out of a total sample of 19,861 (Anderson 1975b).

Background: This type is equivalent to Allendale Punctate, which it replaces. The type Allendale Punctate was originally defined by Stoltman (1974:276-277), based on a sample of 158 sherds from 16 sites on Groton Plantation, on the lower Savannah River in Allendale County, South Carolina. The ware is identical to what Peterson (1971b:77, 79) has called Refuge Irregular Punctate. While Stoltman (1974:237238) thought the type might have been "a minor element in some Wilmington assemblages" (e.g., post Deptford pre-Savannah), Peterson (1971a) was able to demonstrate that it occurred early in the Refuge Phase. A similar age is evident at Mattassee Lake, where incorporation into the Refuge series as a variety of Refuge Punctate was proposed (i.e., Refuge Punctate var. Mattassee; this variety designation is here formally sunk). See Background discussion for Refuge Dentate Stamped, Refuge Separate Punctate.

Primary References: Stoltman (1974); Peterson (1971a, 1971b); DePratter (1976); Anderson (1975b); Gregorie (1925); Miller (1950); Anderson et al. (1982); Sassaman and Anderson (1990: 180-188-191).

REFUGE DENTATE STAMPED

Sorting criteria: Linear arrays of small rectangular impressions, or dentates; geometric arrangements (usually forming triangles) or random impressions less common. Paste ranges from appreciable sand to temperless to tempered with small (0.5-2.0 mm) lumps of aplastic clay (grog). Both interior and exterior surfaces are well smoothed with stamping (typically) oriented obliquely with respect to the rim on the exterior. Isolated single and double rows of dentates predominate, although a minority of sherds exhibit stamping over their entire surface. Cross-stamping, creating overlapping diamonds or triangles, was also noted on several sherds; the design occurs around the vessel rim in a few cases. Flat, excurvate rims are ubiquitous; lips are typically undecorated.

Distribution: Found throughout the Coastal Plain of eastern Georgia, South Carolina, and into southeastern North Carolina; the greatest incidence of type appears to be along the Santee River. More common in the lower Coastal Plain, the type is rarely noted above the Fall Line. The ware is uncommon northeast of the Black River drainage and southwest of the Savannah. Refuge Dentate Stamped with grog tempered paste occurs primarily near the lower Santee River; Refuge ceramics along the Savannah River are characterized by sand tempered paste. Cylindrical, rounded bottom, slightly flaring jars or bowls from 30 to 40 cm in diameter are indicated.

Chronological position: Early Woodland period (1000-600 B.C.). Two radiocarbon dates from the lower Savannah River unambiguously date the ware to about 1000 B.C.: 970±200 B.C. (M267; Williams 1968:329) and 920 B.C.±110 (GX01752; Peterson 1971a:249). Two additional dates, from the second Refuge site (Lepionka 1981a:76), both support this early date, and suggest that the Refuge Phase lasted for several hundred years (1070 B.C.±115, QC-784; 510 B.C.±110, QC785). At Mattassee Lake Refuge Dentate Stamped stratigraphically postdates both Thom's Creek and Refuge Punctate types, and is slightly earlier than Deptford. At Minim Island Refuge and Thom's Creek wares appear to have co-occurred for at least part of their range.

Background: Refuge ceramics were recognized by Waring (1968b) as an intermediate series between Stallings and Deptford, based on the excavation of four 5 foot squares opened in 6 inch levels to a depth of seven feet into a small shell midden (38JA5) on the South Carolina side of the Savannah River. The site was located on the Savannah National Wildlife Refuge, hence the origin of the site and series name. Five Refuge types were identified and described by Waring (1968b:200) based on a sample of 683 sherds: Refuge Simple Stamped (N=200; 29.3 percent of Waring's sample); Refuge Plain (N=403; 59.0 percent); Refuge Dentate Stamped (N=45; 6.6 percent); Refuge Punctated (N=33, 4.8 percent); and Refuge Incised (N=2, 0.3 percent). Recognition of Refuge Phase sites has been highly confused, however, primarily because most of the Refuge types (as defined) are similar or identical to established types in the Thom's Creek and Deptford series. Only Refuge Dentate Stamped, of the five original Refuge types, for example, can be unambiguously sorted, primarily because the characteristic exterior finish does not occur on earlier or later wares in the immediate region.

Formal type descriptions of Waring's five Refuge types were published by DePratter (1979:120-123), based on collections from the mouth of the Savannah River (including from the Refuge site). Two phases were proposed, Refuge I (1000-800 B.C.) and Refuge II (800-600 B.C.), the former characterized by plain, incised, simple stamped, and punctated types and the latter by the addition of dentate stamping and the disappearance of punctations (DePratter 1979:113, 117). DePratter's (1979:120-121) Refuge Punctated and Refuge Incised types, as

defined, are indistinguishable from Thom's Creek punctated and incised types (e.g., Trinkley 1980a:353), and the Refuge I phase may actually reflect the adoption of Thom's Creek wares and manufacturing technology on the north Georgia coast. Refuge Dentate Stamped appears somewhat later, during what DePratter (1979:117) called late Refuge I through Refuge II.

At Clear Mount on Groton Plantation in Allendale County, South Carolina, and from other sites in the area, Peterson (1971a, 1971b) documented the presence of a Thom's Creek assemblage intermediate between Stallings and Refuge. Wares identifiable as Thom's Creek Reed Separate Punctate were replaced by distinctive Refuge types, with surface finishes characterized by dentate stamping, and by what Peterson (1971b:77) called Irregular Punctate, which is similar or identical to Stoltman's (1974:276277) Allendale Punctate. The Refuge Dentate Stamped and Allendale Punctate types are gradually replaced by simple stamped wares at Groton Plantation, a trend also noted by DePratter (1979:117-118) from the mouth of the Savannah.

Descriptions of Refuge Dentate Stamped have been offered by Waring (1968b:200), Peterson (1971a:126-127), DePratter (1979:122-123), and Lepionka (n.d.), based on materials recovered from along the lower Savannah River, and by Anderson et al. (1982:264-268), based on materials from the lower Santee. The ware is characterized by (typically) linear arrays of small rectangular impressions, or dentates, that appear to have been applied with a toothed comb, roulette, or cog rocker. The type is very similar to Wheeler Dentate Stamped (Sears and Griffin 1950), and an origin from this interior, fiber tempered series is possible. Dentate stamping has been noted at a number of sites from eastern Georgia to southeastern North Carolina, and at present the finish is the only unambiguous referent or diagnostic for identifying Refuge components. There is some evidence from the original Refuge site excavations (Waring 1968b:206) and from the Second Refuge site (Lepionka 1980, 1981, n.d.), and from Groton Plantation (Peterson 1971b:77), that dentate stamping occurs only during the early part of the Refuge phase.

At Mattassee Lake along the lower Santee a large sample (n=102) of Refuge Dentate Stamped sherds with a temperless to clay-grog tempered paste were found, a paste previously unreported within the Refuge series. The occurrence of "grit and sand in considerable quantities" (DePratter 1979:121) characteristic of Refuge wares from the lower Savannah River was not at all evident. What these marked differences in tempering between the two areas means in cultural terms is presently unknown. No abraders were noted in the Mattassee Lake Refuge sherd assemblage, unlike the situation along the lower Savannah where these tools are common (DePratter 1979); this absence may be due to the nature of clay-grog paste which, lacking much sand, was not suitable for abrading. The clay-grog paste in the dentate stamped sherds from the lower Santee is for all practical purposes identical to the paste in the Hanover/Wilmington wares from the same area, and a similar manufacturing technology is evident. The series may be related, or evolve from one to the other.

Refuge assemblages, which are characterized by punctate, random punctate, twig impressed, dentate, and simple stamped finishes, have been dated to between 1000 and 600 B.C. along the lower Savannah River. Stratigraphic evidence from the two wildlife refuge sites and from Clear Mount indicates that the punctated and dentate stamped finishes, as well as simple stamped and plain, occur early in the period, and are replaced by assemblages dominated by plain and simple stamped finishes. These distinctions are marked by the creation of two subphases, each two hundred years in length, to accommodate the initial early Woodland period locally. Key diagnostic indicators of the Refuge I phase (ca. 1000-800 B.C.) in the Middle Savannah ceramic sequence include the Refuge Punctate (vars. Refuge, Allendale) and Dentate Stamped types. The dentate stamped finish is characterized by linear, typically parallel arrays of small rectangular impressions or dentates that occur over the vessel's exterior surface. Geometric linear arrangements of dentates, usually forming triangles, or random arrangements of dentates, exhibiting no obvious pattern, occur much less commonly. Two varieties of Refuge Punctate are evident, the first (var. Refuge)

characterized by randomly spaced punctations typically applied with a reed. The absence of linear or geometric arrangement is what distinguishes this ware from earlier Thom's Creek Punctate varieties. Refuge Punctate var. Allendale is characterized by small, irregular and frequently angled punctations that appear to have been made by a bunch of straw or small twigs (Stoltman 1974:276).

The Refuge II phase (ca. 800-600 B.C.) in the Middle Savannah ceramic sequence is characterized by plain and simple stamped ceramics. There is no evidence to suggest that the earlier punctated and dentate stamped finishes carried over into this period. Because simple stamping occurs widely during the Woodland period locally, components of this period are difficult to recognize unless fairly large assemblages are available. Refuge Simple Stamped pottery is characterized by carelessly executed and applied U- and V-shaped longitudinal grooves. The stamp impressions are frequently irregularly spaced with respect to each other and haphazardly applied, although care in stamp execution and application may vary considerably. V-shaped impressions dominate assemblages, although U-shaped grooves may occur as a minority finish. Parallel stamping tends to be the principal method of application, although cross stamping commands an appreciable minority of the sherds in many assemblages. The vessels are occasionally lightly to extensively smoothed after stamping.

Refuge wares seem to have a distribution similar to that of the previous Stallings and Thom's Creek series, and appear to evolved directly from them. Refuge components have been documented along both the Georgia and South Carolina coast and well into the interior of the Coastal Plain in both states (Anderson 1975; DePratter 1976, 1979). Along the lower Santee River in South Carolina major Refuge assemblages have been examined at the Mattassee Lake and Minim Island sites in recent years (Anderson et al. 1982; Brockington and Espenshade 1989), and work in the Sea Island area of Georgia indicates many Refuge period sites lie buried in the marsh, having been covered by rising sea levels (DePratter 1976, 1977). Although regional variation in Refuge assemblages has seen little examination, Refuge assemblages along the Santee River appear to be characterized by a higher incidence of dentate stamping, and a much lower incidence of simple stamping, than Refuge assemblages found along the Savannah River. At least some of the Refuge materials along the Santee, furthermore, are characterized by grog-tempering, something not observed at all during this period along the lower Savannah (Anderson 1982).

Initial Early Woodland assemblages elsewhere in the Savannah River Valley differ from the situation in the middle part of the basin to varying degrees. In the mouth of the Savannah sequence three Refuge phases have been advanced (DePratter 1979). Plain and simple stamped finishes are observed during all three phases, which are differentiated by the occurrence of punctated and incised finishes (Refuge I, ca. 1100-1000 B.C.), dentate stamping (Refuge II, ca. 1000-900 B.C.), and linear check and check stamping (Refuge III, 900-400 B.C.). Given the absence of absolute dates in or near the basin supporting subdivisions as fine grained as those advanced for the Refuge I and II phases, or for such an early appearance of Deptford as suggested by the range offered for the Refuge III phase, a more conservative approach has been taken in the definition of the two Initial Early Woodland Refuge subphases advanced in the middle Savannah sequence.

No evidence for Refuge or other major Initial Early Woodland period ceramic assemblages have been found to date to the north of the Fall Line in the Savannah River basin (Anderson 1988c). Virtually nothing, in fact, is currently known about the Initial Early Woodland period in the upper part of the basin. A continuation of typical Coastal Plain sequences has been documented at several sites near the Fall Line (Ferguson and Widmer 1976), but beyond this point little is known.

Primary references: Edwards (1965:24); Waring in Williams (1968:200); Peterson (1971a, 1971b); Anderson 1975a, 1975b; DePratter (1976, 1977, 1979:122-123); Trinkley (1980a);

Widmer 1976a; Herold and Knick (1978, 1979a); Lepionka (1980, 1981, n.d.); Anderson et al. (1982:264-268).

REFUGE PLAIN

Sorting criteria: Plain, well smoothed exterior surface finish. Paste ranges from temperless to tempered with small (0.5-2.0 mm) lumps of aplastic clay (grog). Both interior and exterior surfaces are well smoothed. Flat, excurvate rims are ubiquitous; lips are typically undecorated. May be confused with Thom's Creek Plain, later Woodland plainwares.

Distribution: Poorly documented. The distribution of the type Refuge Plain is assumed to be the same as that for temperless or clay-grog tempered Refuge Dentate Stamped, which has currently been observed only along the lower Santee River, at sites where otherwise identical dentate stamped wares occur. Ceramics characterized by a plain surface finish and a temperless or clay-grog tempered paste are not uncommon in coastal North and South Carolina, although most occurrences appear associated with later series, such as Wilmington or what is referred to in North Carolina as Hanover.

Chronological position: Early Woodland period, Refuge Phases (1000 B.C.—600 B.C.).

Background: The type Refuge Plain was first noted by Waring (1968b:Tables 12 16), in a description of ceramics recovered from his 1947 excavations at the Refuge type site (38JA5). No formal description of the type was offered, although it was implied that the plainwares came from the lower (undecorated) portions of Refuge Simple Stamped vessels (Waring 1968b:200). A formal description of Refuge Plain was published by DePratter (1979: 122), using materials from the north Georgia coast and from the type site. Due to perceived ambiguities in the traditional approach to sorting Refuge from later plain wares, DePratter (1979) used the type Refuge Plain for all pre-Mississippian period sand tempered plain wares in the Savannah locality, much as he used the type Refuge Simple Stamped to accommodate all local simple stamped wares. Separation of early (e.g., Refuge) from later (e.g., Deptford) plain and simple stamped wares in the Savannah sequence was traditionally based on "quality" or apparent manufacturing sophistication, with the earlier materials (typically) reported as cruder (e.g., Waring 1968b:200). As Stoltman (1974:22), DePratter (1976, 1979), and others have noted, these criteria are highly subjective, and not particularly useful for sorting ceramic assemblages.

In this guide the term Woodland Plain is used for such sand-tempered plain wares, and Refuge Plain is resewed for the distinctive temperless or clay-grog tempered materials found with Refuge Dentate Stamped materials in the central South Carolina Coastal Plain. Separation of earlier and later plain and simple stamped wares remains a major challenge in Georgia and the Carolinas.

Primary references: Waring (1968b:200); Peterson (1971a, 1971b); Anderson (1975b); DePratter (1976, 1977, 1979:122), Trinkley (1980a, 1981c); Anderson et al. (1982:270-271)

REFUGE SEPARATE PUNCTATE

Sorting criteria: Small (2.0-5.0 mm), irregular, shallow (0.5-2.0 mm) circular punctations; less commonly square or oval, randomly applied over the exterior surface. Paste highly variable, typically temperless or tempered with small (0.5-2.0 mm) lumps of aplastic clay (grog); less

commonly with dense fine to coarse sand. May be confused with Thom's Creek Reed Separate Punctate and Refuge Dentate Stamped.

Distribution: Poorly documented. The type appears to be a minority among Refuge ceramics, with a distribution comparable to that for the series (see Refuge Dentate Stamped).

Chronological position: Early Woodland period. Refuge I Phase (1500 B.C.-800 B.C.). At Mattassee Lake Refuge Punctate occurs stratigraphically early, coeval with the Thom's Creek types, and below Refuge Dentate Stamped in the 38BK226 block unit. This suggests that the ware may date to the earlier part of the phase.

Background: Previously undefined, although this type corresponds to Refuge Punctate, var. Moultrie defined by Anderson et al. (1982:268-269) at Mattassee Lake based on a sample of 14 sherds. That variety name is here formally sunk and replaced with the name Refuge Separate Punctate. A Refuge Punctated type was originally proposed by Waring (1968b:200), and DePratter (1979:120-121) offered a formal description. As so defined, however, Refuge Punctated is indistinguishable from Thom's Creek Reed Separate Punctate, and the name is here formally sunk. The punctation observed at Mattassee Lake did not resemble typical Thom's Creek decorations. The finish was characterized by small, irregular circular punctations resembling rounded dentates, and occurred on sherds with the same temperless to clay-grog paste noted in the Refuge Dentate Stamped sherds at the site. The surface finish on Refuge Separate Punctate closely resembles Wheeler Punctated finish (e.g. Sears and Griffin 1950), suggesting a possible derivation from that type (or possibly vice versa).

Primary references: Anderson et al. 1982:268-269, DePratter 1979:120-121, 1992; Waring 1968b:200.

REFUGE SIMPLE STAMPED

Sorting: criteria: carelessly executed and applied U- and V-shaped longitudinal grooves. The stamp impressions are frequently irregularly spaced with respect to each other and haphazardly applied, although care in stamp execution and application may vary considerably. V-shaped impressions dominate assemblages, although U-shaped grooves may occur as a minority finish. Parallel stamping tends to be the principal method of application, although cross stamping commands an appreciable minority of the sherds in many assemblages. The vessels are occasionally lightly to extensively smoothed after stamping. Paste ranges from appreciable sand to temperless to (rarely in the case of the simple stamped finish) tempered with small (0.5-2.0 mm) lumps of aplastic clay (grog). Flat, excurvate rims are ubiquitous; lips are typically undecorated.

Distribution: Found throughout the Coastal Plain of eastern Georgia, and western South Carolina; the greatest incidence of type appears to be along the Savannah River. More common in the lower Coastal Plain, the type is rarely noted above the Fall Line. The ware is uncommon northeast of the Edisto River drainage; Refuge ceramics along the Savannah River are characterized by sand tempered paste, while those along the lower Santee have clay-grog paste, although simple stamping is not observed. Cylindrical, rounded bottom, slightly flaring jars or bowls from 30 to 40 cm in diameter are indicated.

Chronological position: Early Woodland period (1000-600 B.C.). Two radiocarbon dates from the lower Savannah River unambiguously date the ware to about 1000 B.C.: 970±200 B.C. (M267; Williams 1968:329) and 920 B.C.±110 (GX01752; Peterson 1971a:249). Two additional dates, from the second Refuge site (Lepionka 1981a:76), both support this early date, and suggest that

the Refuge Phase lasted for several hundred years (1070 B.C.±115, QC-784; 510 B.C.±110, QC785).

Background: Refuge Simple Stamped was identified by Waring (1968b:200) based on his excavation of the small shell midden (38JA5) on the Savannah National Wildlife Refuge in South Carolina. Refuge Simple Stamped was one of the most common wares recovered in the sample of 683 sherds recovered (N=200; 29.3 percent; Waring 1968b:200), second only too plain finishes. Recognition of Refuge Phase sites has been highly confused, however, primarily because most of the Refuge types (as defined) are similar or identical to established types in the Thom's Creek and Deptford series. A formal type description of Refuge Simple Stamped was published by DePratter (1979:120-122), based on collections from the mouth of the Savannah River (including from the Refuge site). While Refuge Dentate Stamped pottery with a temperless to clay-grog tempered paste occurs along the lower Santee, a comparable simple stamped ware is not observed in this area. See discussion for Refuge Dentate Stamped.

Refuge Simple Stamped is characterized by carelessly executed and applied U- and V-shaped longitudinal grooves, and in this respect it can be differentiated from Deptford Simple Stamped (see background discussion for Deptford Simple Stamped). The stamp impressions are also commonly irregularly spaced with respect to each other, and in this respect it can be differentiated from Santee Simple Stamped, where the stamping impressions are closely spaced together (see background discussion for Santee Simple Stamped). V-shaped impressions tend to dominate assemblages, although U-shaped grooves may occur as a minority finish. Parallel stamping tends to be the principal method of application, although cross stamping commands an appreciable minority of the sherds in many assemblages.

Primary references: Waring (1968b:200, 1968c); Williams (1968); Peterson (1971a, 1971b); DePratter (1979:120-122); Lepionka (1980, 1981, n.d.).

SANTEE SIMPLE STAMPED

Sorting criteria: Tapered, v-shaped longitudinal grooves over the exterior vessel surface. Impressions (typically) narrow (about 1.0-2.0 mm) and shallow (1.0-2.0 mm); v-shaped profile characteristic. Cross stamping at high angles to the rim (oblique to perpendicular) predominates, parallel stamping less common. Rims (typically) straight to excurvate, with both rounded and flattened lips; lip treatment (typically simple stamping) common. Interior simple stamping at or nearly perpendicular with the rim on a small minority of the sherds. Interiors well to poorly smoothed, fine scraping marks evident on a fair minority of the sherds. Paste characterized by fine sand and some (typically few) clear quartz inclusions from 0.5 to 2.0 mm in size. May be confused with Thom's Creek Simple Stamped and Deptford Simple Stamped.

Distribution: Santee Simple Stamped occurs in the central Coastal Plain and fall line areas of South Carolina, specifically along the coast in northern Charleston County, and in the interior along the Santee-Wateree drainage (e.g., Trinkley 1981b, 1981c, 1981d; Stuart 1975).

Chronological position: Late Woodland, Early/Middle Mississippian periods (ca. A.D. 700-A.D. 1400). At Mattassee Lake Santee Simple Stamped is stratigraphically later than the Deptford and Cape Fear types in the 38BK226 and 38BK229 excavation blocks (see Background discussion). A total of six radiocarbon determinations, four from 38BK226 and two from 38BK246, specifically date the ware at Mattassee Lake. The six dates range from A.D. 810 to A.D. 1340, with an average age of A.D. 1087. The ware clearly succeeds a fabric impressed ware identified as Cape Fear series at Mattassee Lake, which is dated by another six determinations to between A.D. 520 to A.D. 710 (x = A.D. 638). Possible contemporaneity with Mississippian period complicated

stamped wares is indicated at the Walnut Grove and Awendaw shell mounds (Trinkley 1981b, 1981c) and at Mattassee Lake.

Background: Until quite recently, sand tempered simple stamped wares in the southeastern Atlantic Coastal Plain were assumed to date fairly early, from the late Archaic to the Middle Woodland periods (excluding stamped Mississippian period wares). In the mouth-of-the-Savannah sequence, for example, Refuge Simple Stamped, the only sand tempered simple stamped type in use, has a range of from roughly 1100 B.C. to A.D. 500 (DePratter 1979). In coastal North Carolina sand tempered simple stamped wares have also been reported from an Early Woodland context, in the New River (Loftfield 1976:149-150; described as New River Thong-Marked) and Deep Creek series (Phelps 1981:vi). In coastal South Carolina simple stamped ceramics have been widely reported, usually under the Thom's Creek, Refuge, or Deptford type names (e.g., Caldwell and Waring 1939a, Caldwell 1952, Waring 1968b, 1968c; Stoltman 1974; Trinkley 1976a, 1980a, 1981a; Anderson et al. 1979; to cite a few examples), and somewhat less commonly using a general sand tempered category (e.g., Brooks and Scurry 1978; Anderson 1975b; 1979a); where a general category was used the finish was (almost invariably) assumed to be early in subsequent interpretations.

The only attempt to suggest a continuation of simple stamping into the late prehistoric in the Coastal Plain area of South Carolina prior to the work at Mattassee Lake was by George Stuart (1975), who defined what he called the Camden Ceramic Complex from the Middle Wateree Valley locality. This series, composed of sand tempered Camden Simple Stamped, Incised, and Check Stamped types, was based on a sample of "almost 80 sherds" (Stuart 1975: 85) recovered from the Guernsey or "Cut-Off Island" site, located on a small island in the Wateree River east of Lugoff, South Carolina. A small sample of sherds (N=42) from the site had been previously described by Griffin (1945; 971- 475), who suggested that the simple stamped, cord-marked, and check stamped ceramics elements were post-Early Woodland in age, but prior to the introduction of complicated stamping (i.e. pre-Mississippian). The Camden Series is presumably generally similar to the Santee assemblage described here, although precise chronological placement of the material is difficult because few specimens exist. Unfortunately, all of the sherds in both Griffin and Stuart's samples were from surface collections, and the material from the Guernsey site itself was found washed out of the river bank on a sand bar. This lack of secure context and control for the chronological placement of the Camden Series, coupled with the fact that few artifacts resembling Stuart's type materials have been found in the years since the series was defined, has precluded its widespread use.

The unambiguous stratigraphic placement of a sand tempered simple stamped ware in a late Woodland context (i. e. post-Deptford/McClellanville phases) at Mattassee Lake, supported by a battery of 12 internally consistent radiocarbon dates (six each for the Cape Fear and Santee series), has forced a major reevaluation of the temporal occurrence of simple stamping in the South Carolina area.

Concurrent with the analysis of the Mattassee Lake assemblage, Michael Trinkley (1981b, 1981c, 1981d) identified and described the McClellanville series, based initially on test excavations at the Walnut Grove shell midden (39CH260) in northern Charleston County (Trinkley 1981b). Four types were defined, McClellanville Simple Stamped, McClellanville Plain, McClellanville Fabric Impressed, and McClellanville Cord-Marked. Since that time, Trinkley (1981c) has conducted excavations at the Awendaw shell midden (38CH300), and has examined collections from elsewhere in northern Charleston County, gathering additional information on the occurrence of this series. Two formal descriptions of the McClellanville series types have been offered (Trinkley 1981b, 1981d), and an age for the series from roughly A.D. 500 to 800 has been posited (Trinkley 1981c:18). The association of the cord-marked and fabric impressed types with the plain and simple stamped wares has recently been questioned by the author (Trinkley 1981c:18, 1981d:9; see also background discussion for Cape Fear Fabric Impressed and the McClellanville

series, as currently defined, would appear to consist of the plain and simple stamped types. Close similarity with the late simple stamped ware found at Mattassee Lake was indicated (Trinkley 1981b:1 1-12; 1981c:l8; 1981d:10), although some differences were noted:

> Also closely related is Anderson's Santee Series (David Anderson, personal communication) found from the Santee-Cooper Rediversion Project in Berkeley County. The Santee Series, however, has a variety of later features, such as excurvate rims, fine paste variation, and frequent interior rim stamping, which are not duplicated in the McClellanville Series (Trinkley 1981d:9).

Similarities with Stuart's (1975) Camden series of simple stamped pottery ware also noted; like the Mattassee Lake material the Camden material was also assumed to be later than the McClellanville type (Trinkley 1981c:18).

The extensive late prehistoric simple stamped assemblage recovered at Mattassee Lake was classified Santee Simple Stamped. Close similarity with Stuart's (1975) Camden Simple Stamped and Trinkley's (1981b) McClellanville Simple Stamped types is acknowledged. Use of Santee as opposed to McClellanville or Camden terminology follows from the nature of the type samples themselves. Unlike either of the other two simple stamped type collections, the Santee Simple Stamped assemblage from Mattassee Lake is extensive (N=1591 sherds), and its relative and absolute temporal position well documented. The ware was recovered in over one hundred 0.5 and 2.0 meter excavation units along the terrace with temporal controls provided by both the assemblage stratification and a series of 12 internally consistent radiocarbon dates. A Late Woodland (post-Cape Fear, pre-Pee Dee) age for the ware is indicated.

Stratigraphically, for example, the ware is higher, or more popular later, than the Cape Fear Fabric Impressed type in the 38BK226 block unit. In the 38BK229 excavation block, where virtually no fabric impressed pottery was recovered, Santee Simple Stamped is clearly later than the Thom's Creek and Deptford types found in the block; the virtual absence of fabric impressed sherds suggests that the finish is not temporally coeval with the Santee Simple Stamped type, at least over its entire range.

Twelve radiocarbon dates from along the Mattassee Lake terrace support these stratigraphic inferences (see Chapter 11). Six dates, from four features with Cape Fear pottery present in the fill (all from the 38BK226 block), solidly place this series from A.D. 520 to 710; no Santee Simple Stamped sherds were found in any of these features. Another six samples, from six features with Santee Simple Stamped pottery present in the fill (four from 38BK226 and two from 38BK246), produced dates from A.D. 810 to A.D. 1340. Replacement of a cord and fabric impressed assemblage with an assemblage dominated by simple stamping is indicated; the available evidence suggests that this transition occurred about A.D. 700-800.

The temporal extent of the Santee Simple Stamped type would appear to be about 500 to 700 years, from roughly A.D. 750 to 1350. A similar late date, around A.D. 1000, and possibly from circa A.D. 800 to 1400, is suggested by Stuart (1975:87, 138, 151-152) for his Camden Ceramic Complex; unfortunately this series remains to be found in secure context. Association of Santee Simple Stamped-like ware with Mississippian pottery types would also appear to be documented at the Walnut Grove and Awendaw shell middens (Trinkley 1981b, 1981c). At Walnut Grove, where fair assemblage stratification is evident in the levels of the six five foot squares excavated (Trinkley 1981b: Table 2), over 90 percent (N=142; 92.8 percent) of Trinkley's McClellanville Simple Stamped type is found in Level 1, which also yielded all of the Savannah and Pee Dee ceramics identified from the site. At the Awendaw midden, where four five foot squares were excavated, over 80 percent (N=48; 81.4 percent) of the McClellanville Simple Stamped sherds recovered came from Level 1, which also produced most of the (Mississippian period) complicated stamped wares; Trinkley (1981c:21) has cautioned, however, that the deposits at this site are "thoroughly mixed," with the two associated radiocarbon dates contradictory and

hence unacceptable. The data from the Awendaw and Walnut Grove shell middens, in spite of some ambiguities, does tend to support a late occurrence for simple stamping, extending into the Mississippian period. It should be noted, however, that Trinkley does not accept such a late extent, arguing instead that:

> The McClellanville Series is known to postdate Deptford and predate Pee Dee, based on stratigraphic reconstructions from the Walnut Grove and Awendaw middens (Trinkley 1981c:18).

A range of from A.D. 500 to A.D. 800 is instead suggested; these conclusions are not, however, supported by the excavation data from these sites reported above.

What the data collected by Stuart, Trinkley, and at Mattassee Lake clearly indicate is that a previously unrecognized Late Woodland ceramic series, dominated by simple stamped pottery, is present in the central Coastal Plain of South Carolina along the Santee-Wateree drainage. At the present, simple stamping is the only finish that can be unambiguously attributed to this series, although research by Trinkley and Stuart suggests that plain, incised, cord, and fabric marked wares may also be associated; the data from Mattassee Lake supports an association of plainwares, and points to the presence of cord and fabric marking during the transition period when the use of these finishes was augmented by the addition of the distinctive form of simple stamping characteristic of the Santee Simple Stamped type.

A total of 1591 sherds of Santee Simple Stamped, var. Santee were recovered in the 1979 excavation units at Mattassee Lake. The ware is characterized by the somewhat haphazard application of parallel, v-shaped impressions, suggesting use of a thong wrapped or possibly incised or gouged paddle. The regular, careful application of parallel, U-shaped impressions characteristic of the Deptford Simple Stamped type are absent. Cross stamping dominates the Santee Simple Stamped assemblage (N=1190, 74.8 percent); parallel stamping, common on both the Thom's Creek and Deptford Simple Stamped types, is comparatively infrequent. Stamp width is typically narrow, from 1.0 to 2.0 mm; wider impressions (roughly 2.0- 4.0 mm) were evident on only a small proportion of the assemblage (N=144, 9.1).

The ware is dominated by very pale brown, brown, and reddish yellow colors, while the paste is characterized by a moderate amount of fine sand, with comparatively few larger (1.O- 2.0 mm) quartz inclusions (although these are present in most sherds). Interior surface finish is quite variable. Fine scraping marks are evident on a fair minority of the sherds, and slightly over a tenth of the assemblage exhibited interior stamping or incising, typically perpendicular or at high angles to the rim. Rims were predominantly straight or excurvate, with other forms characterized by flattened and rounded (frequently) stamped lips. Vessel lips are typically stamped; over three quarters (N;66; 77.6 percent) of the Santee Simple Stamped rims exhibited simple stamping, with one sherd additionally punctated along the lip. A few unusual, thickened lips were present in the assemblage, but most were the same thickness as the rim profile. Most of the sherds appear to come from large (c. 40 cm in diameter at the rim), slightly tapering jars with rounded or faintly conoidal bases. A few sherds with incurvate rims appear to come from small, hemispherical bowls between 20 and 30 cm in diameter.

The Santee Simple Stamped assemblage from Mattassee Lake differs somewhat from Stuart's (1975:174) Camden Simple Stamped type in having a higher incidence of excurvate rims, but otherwise the wares are quite similar. A number of the Camden Simple Stamped sherds also exhibited exterior incising (noted on only one Santee Simple Stamped sherd at Mattassee Lake); this treatment appears to be the primary difference between the two series, and may reflect greater manufacturing or decorative sophistication in the upper Wateree Valley locality, where major ceremonial centers were beginning to emerge. The Santee ware differs somewhat from Trinkley's coastal McClellanville type in having a higher incidence of flattened lips, and in having lip

treatment (i.e. stamping), which was not noted in Trinkley's (1981b, 1981c) samples. The high incidence of rounded, undecorated lips in the coastal sample suggests that the material is earlier than that at Mattassee Lake (based on the stratigraphic trends noted above). The ware is clearly much later in time than Loftfield's (1976:149-150), New River Thong-Marked type, although otherwise these wares are similar in description. Relationships with prehistoric simple stamped types farther removed in space (e.g., Connestee Simple Stamped; Keel 1976) remain to be determined, although the occurrence of simple stamping at a Late Woodland time level appears to be more common in the Southeast Atlantic slope than is currently assumed.

Primary references: Anderson et al. 1982; Griffin (1945); Stuart (1975); Trinkley (1981b, 1981c, 1981d).

SAVANNAH BURNISHED PLAIN

Sorting criteria: Burnished exterior surfaces with smoothed or burnished interiors. Paste is characterized by appreciable fine sand and grit (0.5-2.0 mm).

Distribution: Savannah Burnished Plain ceramics are found throughout the eastern Georgia Coastal Plain and Piedmont, and are also present in northwest Georgia where they are sometimes described as Wilbanks (e.g., Caldwell and Waring 1939a, Wauchope 1966, Sears 1950). The type is also fairly common in the southeastern Coastal Plain of South Carolina, along the Savannah River and in the Sea Island area, The ware (and all Mississippian types) are rare along minor drainages (Anderson 1975a, 1975b). The ware appears to be progressively uncommon to the northeast of the Savannah.

Chronological position: Middle Mississippian period (A.D. 1200-A.D. 1400).

Background: The type Savannah Burnished Plain was originally defined by Caldwell and Waring (1939a), based on materials recovered from a series of sites in and around the city of Savannah in Chatham County, Georgia. DePratter (1991:196) has recently offered a slightly revised type description, based on his work with the WPA collections.

Primary references: Caldwell and Waring (1939a, 1939b); Caldwell and McCann (1941); Waring (1968c); DePratter (1991:186).

SAVANNAH CHECK STAMPED

Sorting criteria: Check stamping over the exterior vessel surface; occasionally smoothed somewhat after stamping. The checks are typically small (from 2.0 to 5.0 mm) and faint, with overstamping common. Paste and interior surface finish are similar or identical to that noted for Savannah Complicated Stamped.

Distribution: Poorly documented in the South Carolina area. Common throughout eastern Georgia in the Sea Islands, Coastal Plain, and Piedmont. An occurrence in the Sea Island area south of Charleston Harbor, and as a minority ware on sites with Mississippian period complicated stamped pottery is indicated.

Chronological position: Initial and Middle Mississippian period (A.D. 1200-1300). Temporal placement of the ware is drawn largely from its position in the mouth-of-the-Savannah sequence and along the Georgia coast (c.f. Caldwell 1971; DePratter 1979).

Background: The Savannah Check Stamped type was originally defined by Joseph R. Caldwell and Antonio J. Waring, Jr. in 1939 based on material recovered from excavations in and around the city of Savannah, Georgia (Caldwell and Waring 1939a). The ware was recognized as stratigraphically intermediate between the Wilmington and Irene ceramic complexes, and an occurrence in the Georgia Sea Island area and along the Savannah River to the Fall Line was suggested (Caldwell and Waring 1939a, 1939b). Since its original definition the type, characterized by a lattice of evenly raised lands that intersect to form square, rectangular, or diamond-shaped checks, has been widely reported in the eastern Coastal Plain and Piedmont of Georgia. The occurrence of the ware in the South Carolina area is less well documented, although it is apparently fairly common in the sea-island area south of Charleston Harbor, and elsewhere in the coastal plain check stamping is reported as a minority finish on a number of late prehistoric sites (i.e., sites characterized by the presence of Savannah or Pee Dee complicated stamped ceramics). The temporal placement of check stamping is not well documented in the South Carolina area, and an occurrence throughout the late prehistoric may be possible (c.f. Reid 1967; South 1976; Figure 12; Trinkley 1980a:415, 420).

Primary references: Caldwell and Waring (1939a, 1939b); Caldwell and McCann (1941); Caldwell (1952, 1958, 1971); Fairbanks (1950); Wauchope (1948, 1966); Sears (1950), Williams (1968); Stoltman (1974); DePratter (1991:186-187).

SAVANNAH COMPLICATED STAMPED

Sorting criteria: Complicated stamping dominated by concentric circle motifs, with lesser occurrences of arc-angle, nested square, and filfot cross motifs. Stamp impressions are usually bold, with oveistamping common. The grooves making up the design and typically 2.0-3.0 mm wide, and about 1.0 mm deep. Interior surfaces are typically well smoothed or "soapy" and only rarely sandy or gritty in texture. The paste is predominantly fine sand (1.O-2.0 mm) and clay, with few larger sand inclusions. May be confused with Pee Dee Complicated Stamped and Ashley Complicated Stamped, with which the ware tends to intergrade.

Distribution: Savannah Complicated Stamped ceramics are found throughout the eastern Georgia Coastal Plain and Piedmont, and are also present in northwest Georgia where they are sometimes described as Wilbanks. The type is also fairly common in the southeastern Coastal Plain of South Carolina, along the Savannah River and in the Sea Island area. Classic Savannah Complicated Stamped pottery appears to be progressively uncommon to the northeast of the Savannah, particularly in the interior; a variant locally described as Jeremy occurs just to the north of Charleston in the Sea Island area.

Chronological position: Middle Mississippian period (A.D. 1200-A.D. 1350). A range from A.D. 1150 to A.D. 1300 for the series, and from A.D. 1250 to A.D. 1300 for the Savannah Complicated Stamped type, has been advanced (DePratter 1979:111). While possibly accurate for the mouth-of-the-Savannah sequence, the 50 year range suggested for the complicated stamped type appears too limited, and a considerably broader range, from roughly A.D. 1200-1350 is suggested here (see also Caldwell 1971; Anderson 1994).

Background: The type Savannah Complicated Stamped was originally defined by Caldwell and Waring (1939a), based on materials recovered from a series of sites in and around the city of Savannah in Chatham County, Georgia. From excavations at the Deptford site, the Irene Mound, and other sites in the Savannah area, the ware was recognized as intermediate between the Wilmington and Irene series (Caldwell and Waring 1939b). Additional descriptive information on the ware, and on the Early/Middle Mississippian cultural complex of the same name, can be found

in the Irene Mound report (Caldwell and McCann 1941:42-48). The related Wilbanks series is common in northern Georgia, where stratigraphic occurrence between the Etowah and Lamar series has been long documented (Wauchope 1948, 1966; Sears 1950).

The Savannah II (A.D. 1200-1250) and Savannah III (A.D. 1250-1300) phases at the mouth of the river defined by DePratter (1979:111) are distinguished by the appearance of check stamping and complicated stamping, respectively. Savannah III Complicated Stamped pottery is dominated by curvilinear, concentric circle or oval motifs. While there is stratigraphic evidence for this succession at a number of sites, including Irene, the subdivision of Savannah into three 50 year phases appears too restrictive. Savannah Complicated Stamped pottery, for example, the key diagnostic for identifying a Savannah III component, occurs in the first seven mound stages at Irene. It is highly unlikely that all of this construction activity occurred within a 50 year period. Likewise, it seems unlikely that the widespread occurrence of both Savannah Check Stamped and Savannah Complicated Stamped pottery in the lower basin reflects no more than a 100 year period. A somewhat broader span for these phases, from ca. A.D. 1100 to 1200 for Savannah II, and from A.D. 1200-1350 for Savannah III, is suggested.

Early Mississippian (ca. A.D. 1100-1350) occupations in the middle Savannah Valley are roughly equivalent to the Savannah II/III occupations at the mouth of the river and the Jarrett/Beaverdam phase in the central Piedmont, differing only in the incidence of certain finishes within assemblages. No formal phase names have been assigned, although the occupations at the Lawton Mound group suggest a provisional Lawton phase designation for components of this period in the lower interior Coastal Plain along the Savannah. Diagnostic indicators include Savannah Complicated Stamped, Plain, Burnished Plain, Fine Cord Marked, and Check Stamped. The Savannah series materials typically have plain, unmodified rims lacking punctations, rosettes, or nodes. Other finishes that may occur include plain (non-burnished), and, as a minority, cross v-shaped simple stamping (Santee Simple Stamped). The Savannah Check Stamped, Cord Marked, and Burnished Plain types may occur earlier than Savannah Complicated Stamped. Concentric circle motifs dominate the complicated stamped assemblages, with one and two bar diamond Etowah motifs less common.

Using material recovered from eight shell midden sites in northern Charleston County Trinkley (1980a, 1981d, 1981e) has identified and described a complicated stamped ware that he has called Jeremy, that appears to be a local variant of Savannah Complicated Stamped. The ware was first recognized by a local collector, Mr. Donald MackIntosh of McClellanville, who called it Jeremy after the Jeremy Island site (38CH2), where appreciable quantities of the material were noted. Trinkley (1980a:41 6-41; 1981d:10-11) has provided formal type descriptions for Jeremy Complicated Stamped, and has summarized the salient attributes of the ware as follows:

> A collection of 138 sherds from the Jeremy type site and 103 sherds from the Oyster Mount were used to define the Jeremy type. The Jeremy Series has a finer paste, containing more clay, than the succeeding Pee Dee pottery. The major surface treatment of the Jeremy Series is complicated stamped, and the collection may be classified into four motifs. The motifs observed include the filfot cross, concentric circles, nested squares, and the arc-angle. Stamp designs are characteristically large to moderate in proportion and the execution is usually bold. Grooves range up to 3mm in depth, and 2mm in width and lands average 3mm in width. The entire design is not usually visible because of overstamping.
>
> The predominant motifs are variations of the Pee Dee arc-angle. The "owl eye" motif as MackIntosh calls it, is found into the Pee Dee Phase, but is gradually replaced by the filfot cross. Small numbers of the filfot stamp are found in the Jeremy Series. The majority of the Jeremy collection must be classified as

> miscellaneous, meaning that the stamp was too vague, or the sherd was too small, worn, or overstamped to allow accurate appraisal of the motif.
>
> Decoration in the Jeremy Series is rare, although a few examples of notched lips and punctated rims have been found. No examples of nodes, pellets, rosettes, rim fillets or incising have been documented. The typical Jeremy rim...(has) a straight to nearly vertical profile typical of bowl and jar forms (Trinkley 1981e: 3-4).

Close similarity with Savannah Complicated Stamped was acknowledged (e.g. Trinkley 1980a:912; 1981e) but the ware was classified as a separate type, primarily because of perceived differences in design motifs. Jeremy Complicated Stamped was reported as having "a considerable elaboration on the five motifs observed on the Savannah stamps (Caldwell and Waring 1939a), although the two are closely related" (Trinkley 1980a:412). Sorting Jeremy from Savannah Complicated Stamped pottery is thus difficult on a sherd by sherd basis.

Primary references: (1) Savannah Complicated Stamped: Caldwell and Waring (1939a, 1939b); Caldwell and McCann (1941); Sears (1950); Caldwell (1952, 1971); Wauchope (1948, 1966); Waring (1968c); Williams (1968), Stoltman 1974), Hally (1975); DePratter (1991:188-189), Trinkley (1980c). (2) Jeremy variant: Trinkley (1980a, 1981a, 1981b, 1981c, 1981d, 1981e).

SAVANNAH FINE CORD MARKED

Sorting criteria: Cross stamped fine cord impression ca. 0.5-2.0 mrn in diameter. Paste is characterized by appreciable fine sand and grit (0.5-2.0 mm).

Distribution: Extreme southwestern South Carolina along the lower Savannah River.

Chronological position: Middle Mississippian period (A.D. 1200-A.D. 1400).

Background: The type Savannah Fine Cord Marked was originally defined by Caldwell and Waring (1939a), based on materials recovered from a series of sites in and around the city of Savannah in Chatham County, Georgia. DePratter (1991:183-185) has recently offered a slightly modified type description, based on his analysis of the WPA collections..

Primary references: Caldwell and Waring (1939a, 1939b); Caldwell and McCann (1941); Sears (1950); Caldwell (1952, 1971); Wauchope (1948, 1966); Waring (1968c); Williams (1968), Stoltman 1974), Hally (1975); DePratter (1991:183-185).

SIMPLE STAMPED, NARROW CROSS "U"

(surface finish category)

Sorting Criteria: Cross stamped longitudinal U-shaped grooves over the exterior vessel surface; occasionally lightly to extensively smoothed after stamping. Impression width (distance between the raised lands) under 2.0 mm. The impressions are typically closely spaced and carefully applied, although care in execution may vary considerably.

Probable Types: Carefully stamped sherds with this finish (and a fine sand/grit paste) are, in most cases, Deptford Simple Stamped. The finish also occurs on Thom's Creek and Refuge Simple Stamped, although on these wares the stamping typically exhibits a greater range of execution, from careful to careless, and greater variation in the distance between individual impressions.

Cross U-shaped impressions (<2.0 mm), other than those associated with Thom's Creek, Refuge, and Deptford, occur infrequently in assemblages throughout the Woodland and Mississippian periods.

Chronological Position: Same as Simple Stamped, Narrow Parallel "U".

SIMPLE STAMPED, NARROW PARALLEL "U"
(surface finish category)

Sorting Criteria: Parallel longitudinal U-shaped grooves over the exterior vessel surface; occasionally lightly to extensively smoothed after stamping. Impression width (distance between the raised lands) under 2.0 mm wide. The impressions are typically closely spaced and carefully applied, although care in execution may vary considerably.

Probable Types: Carefully stamped sherds with this finish (and a fine sand/grit paste) are, in most cases, Deptford Simple Stamped. The finish also occurs on Thom's Creek and Refuge Simple Stamped, although on these wares the stamping typically exhibits a greater range of execution, from careful to careless, and greater variation in the distances between individual impressions. Parallel U-shaped stamp impressions (<2.0 mm), other than those associated with Thom's Creek, Refuge, and Deptford, occur infrequently in assemblages throughout the Woodland and Mississippian periods.

Chronological Position: Late Archaic through Mississippian periods (ca. 1500 B.C.-A.D. 1500). Thom's Creek Simple Stamped (ca. 1500-1000 B.C.); Refuge Simple Stamped (ca. 1000-600 B.C.); Deptford Simple Stamped (ca. 600 B.C.-A.D. 500).

SIMPLE STAMPED, WIDE CROSS "U"
(surface finish category)

Sorting Criteria: Same as for Simple Stamped, Narrow Cross "U", except here impression width is over 2.0 mm.

Probable Types: Same as Simple Stamped, Narrow Cross "U". Unusually wide stamp impressions (>10.0 mm) are sometimes noted on Thom's Creek wares and, where fiber tempering is present, on Stallings wares (neither finish was observed in the present sample).

Chronological Position: Same as Simple Stamped, Narrow Parallel "U".

SIMPLE STAMPED, WIDE PARALLEL "U"
(surface finish category)

Sorting Criteria: Same as for Simple Stamped, Narrow Parallel "U", except here impression width is over 2.0 mm.

Probable Types: Same as Simple Stamped, Narrow Parallel "U". Unusually wide stamp impressions (>10.0 mm) are infrequently noted on Thom's Creek and Stallings wares.

Chronological Position: Same as Simple Stamped, Narrow Parallel "U".

SIMPLE STAMPED, NARROW CROSS "V"
(surface finish category)

Sorting Criteria: Cross stamped, tapered V-shaped longitudinal grooves over the exterior vessel surface; occasionally lightly to extensively smoothed after stamping. Impression width over 2.0 mm. The impressions are haphazardly applied, although care in execution may vary considerably.

Probable Types: Same as for Simple Stamped, Narrow Parallel "V"

Chronological Position: Same as for Simple Stamped, Narrow Parallel "V".

SIMPLE STAMPED, NARROW PARALLEL "V"
(surface finish category)

Sorting Criteria: Parallel, tapered V-shaped longitudinal grooves over the exterior vessel surface; occasionally lightly to extensively smoothed after stamping. Impression width under 2.0 mm wide. The impressions are typically somewhat irregular and haphazardly applied, although care in stamp execution and application may vary considerably.

Probable Types: Sherds (with a fine sand or fine sand/grit paste) where the finish is characterized by carefully applied, closely spaced parallel impressions are, in most cases, Santee Simple Stamped; this finish sometimes occurs as a minority finish in Deptford Simple Stamped assemblages. The finish occurs on both Refuge and Thom's Creek Simple Stamped, although on these wares the stamping typically exhibits a greater range of execution, from careful to careless, and greater variation in the distances between individual impressions.

Chronological Position: Late Archaic through Mississippian periods (ca. 1500 B.C.-A.D. 1500). Thom's Creek Simple Stamped (ca. 1500-1000 B.C.); Refuge Simple Stamped (ca. 1000-600 B.C.); Deptford Simple Stamped (ca. 600 B.C.-A.D. 700); Santee Simple Stamped (ca. A.D. 700-1400).

SIMPLE STAMPED, WIDE PARALLEL "V"
(surface finish category)

Sorting Criteria: Same as for Simple Stamped, Narrow Parallel "V", except here impression width is over 2.0 mm.

Probable Types: Same as for Simple Stamped, Narrow Parallel "V".

Chronological Position: Same as for Simple Stamped, Narrow Parallel "V".

SIMPLE STAMPED, WIDE CROSS "V"
(surface finish category)

Sorting Criteria: Same as for Simple Stamped, Narrow Cross "V", except here impression width is over 2.0 mm.

Probable Types: Same as for Simple Stamped, Narrow Cross "V".

Chronological Position: Same as for Simple Stamped, Narrow Cross "V".

ST. SIMONS PLAIN see STALLINGS PLAIN

ST. SIMONS INCISED see STALLINGS INCISED

ST. SIMONS PUNCTATE see STALLINGS REED LINEAR SEPARATE PUNCTATE, STALLINGS DRAG AND JAB PUNCTATE, STALLINGS SHELL PUNCTATE

STALLINGS INCISED

Sorting criteria: Fine incised lines typically arranged in rows parallel or at low angles to the rim; curvilinear and geometric designs, and incising perpendicular to the rim less common. Fiber vesicules throughout the paste, typically visible on both the interior and exterior vessel surface regardless of the extent of smoothing. May be confused with Stallings Reed Drag and Jab Punctate (if individual punctations are run together) and Thom's Creek Incised, which may have incidental fiber inclusions, or exterior fiber-like impressions resulting from placement of the wet vessel on plant materials prior to firing.

Distribution: Poorly documented. Found throughout the Coastal Plain, Fall Line, and lower Piedmont of eastern Georgia, and western South Carolina to the Santee River. Very little decorated Stallings pottery has been reported to the northeast of the Santee drainage, and it is uncommon even along this drainage. Greatest incidence from the Ogeechee to Edisto Rivers.

Chronological position: Late Archaic period (ca. 2500 B.C.-1000 B.C.).

Backmound: The type Stallings Incised was first defined by Sears and Griffin (1950). A related type, St. Simons Incised, was briefly described by Waring (1968a:160), based on his work at the Bilbo site in Chatham County, Georgia, where 36 sherds with the finish were reported. The type St. Simons Incised was first formally defined by DePratter (1979:115), based on collections from the mouth of the Savannah. DePratter (1979:113), echoing earlier arguments raised by Waring, urged that coastal fiber tempered pottery be differentiated from Stallings through the use of St. Simons terminology, "because of major differences between coastal and inland ceramics (Waring 1968a, p. 160)." Waring's cited argument is as follows:

> Despite Griffin's plea [1943] for the type-designate name of "Stallings" for the coastal fiber-tempered pottery, we are loath to do so. There are several important differences between the coastal ware and the ware upstream, despite a marked similarity. The Stallings Island wares differ from the Bilbo and other coastal wares in (1) thinner and more uniform vessel walls, (2) smaller, neater, and more varied forms of punctation, (3) the presence of a crude form of "simple stamping" on the bases of many of the vessels, and (4) the presence of the flanged, carinated bowl (by which we refer to a fiber tempered form, not the later Lamar Incised which was also present at that site. For these reasons we prefer to use the site name, "St.

Simons," in referring to these types until further work reveals whether or not these minor variations are of any particular importance.

These four attributes are all duplicated in interior fiber tempered materials, however, and are impossible to differentiateon a sherd by sherd basis. Waring notes, in fact, that the differences are actually "minor variations." His "marked similarity" between coastal and interior fiber tempered wares has been what has been emphasized by most subsequent researchers (e.g., Stoltman 1974:19-20; Sassaman 1993). No one besides Waring has, in fact, published reasons for keeping separate series names and, probably as a result, use of St. Simons terminology has not been widely adopted by coastal researchers, at least in South Carolina. For these reasons the taxa should be considered at best a variety of Stallings, something Stephen Williams, Waring's posthumous compiler, himself suggested (1968:103-105).

Incising appears to be a minority finish during the Late Archaic fiber tempered pottery tradition. The finish is rare in the Coastal Plain of South Carolina; an examination of ceramics from 313 sites (Anderson 1975b; sample = 18,961 sherds) recorded 14 Stallings Incised sherds. See also discussion for Stallings Plain.

Primary references: Sears and Griffin 1950; DePratter 1979:115 (St. Simons variant); Waring 1968a:160.

STALLINGS PLAIN

Sorting criteria: Plain surface finish. Fiber vesicules throughout the paste, typically visible on both the interior and exterior vessel surface regardless of the extent of smoothing. Other wares, particularly Thom's Creek Plain, may have incidental fiber inclusions, or exterior fiber-like impressions resulting from placement of the wet vessel on plant materials prior to firing.

Distribution: Found throughout the Coastal Plain, Fall Line, and lower Piedmont of eastern Georgia, South Carolina, and southeastern North Carolina. Occasionally noted beyond these areas. Greatest incidence from the Ogeechee to Edisto Rivers.

Chronological position: Late Archaic period, Stallings and Thom's Creek Phases (ca. 2500 – 1000 B.C.).

Background: The type Stallings Plain was first formally described by Griffin (1943:159–160), based on a sample of 28 sherds from the Chester Field shell ring (38BU29) on Port Royal Island, near Beaufort, South Carolina. Griffin's analysis of the Chester Field assemblage included a comparison with Stallings Island materials, which had previously been described in general terms (Claflin 1931, Fairbanks 1942) and noted their basic similarity. Stallings series ceramics are characterized by distinctive linear voids in the paste, formed when plant fibers used in tempering burned out during the firing process. Their distinctive nature has been variously noted for over a century, beginning with the work of Jeffries Wyman at shell middens along the St. John's River in Florida in the early 1870s. Sites characterized by fiber tempered ceramics have received considerable attention over the past half century, in part because of their great age, and because they commonly occur in shell middens offering excellent preservation of a wide range of other artifact categories, including paleosubsistence and human skeletal remains. A number of taxonomic analyses and descriptions of fiber tempered pottery have appeared down through the years (e.g., Fairbanks 1942; Sears and Griffin 1950; Williams 1968:103–105; Stoltman 1972; Sassaman 1993), and the series is the most extensively sampled, described, and dated of any known from the Carolinas (Sassaman 1993:25, 235–244).

In the Georgia–South Carolina area, there is some evidence, notably from the Bilbo site near Savannah, and the Sapelo shell ring on Sapelo Island, that plain fiber tempered pottery occurs prior to decorated forms (Williams 1968:180, 263–278; Sassaman 1993). In the Coastal Plain of South Carolina plain fiber tempered pottery is classified as Stallings Plain; use of other type names, such as St. Simons Plain as proposed by Waring and DePratter (1979:113-114) for Georgia Sea Island area assemblages, has not been universally accepted (e.g., see Griffin 1945; Williams 1968a:103-105; Stoltman 1974:19-20). The incidence of fiber inclusions varies appreciably and in some areas, notably along the Savannah and Ogeechee Rivers, the ware intergrades with Thom's Creek ware, in that some sherds have appreciable sand and only occasional fiber present.

Sassaman (1993), in a seriation employing vessel surface finish and lip form data from 35 Late Archaic sites from in and near the Savannah River Valley, has been able to subdivide the use of Stallings ceramics into three basic subperiods or phases. During the first phase, from ca. 4500 to 3800 BP, assemblages are characterized by thickened and flanged lips, a high incidence of plain vessel forms, and relatively simple punctated designs. In the second phase, from ca. 3800 to 3400 BP, decorated vessels dominate assemblages, and a new decorative treatment, punctations over incised lines, appears. Vessels with multiple decorative motifs, or complex design elements, are fairly common at this time. Thickened and flanged lips decline markedly, however, and are gone by the end of the period. The third phase, from ca. 3400 to 3000 BP, is characterized by a complete absence of thickened or flanged rims, and a high degree of interassemblage variability, with some Stallings assemblages dominated by plain and others by decorated vessels.

The design element variability that is observed on the Stallings ceramics from the Savannah River Valley may be linked to the intensity of Late Archaic social interaction within the region. Greater diversity in design element occurrence may reflect greater social diversity, if these designs signal concepts such as vessel ownership or group affiliation (Wobst 1977). The three Stallings subphases devised by Sassaman are equated with the emergence, peak, and dissolution of a high level form of sociopolitical integration in the valley. Comparable diachronic analyses with Thom's Creek sites and assemblages remain to be accomplished, although along the coast there is considerable evidence demonstrating that finger pinching, a finish virtually nonexistent in the Stallings series, is the latest decorative treatment to appear in this series (Trinkley 1980a, 1980b; Waddell 1965).

Primary references: Claflin (1931:Plate 14); Fairbanks (1942); Griffin (1943:159–160, 1945:467); Sears and Griffin (1950); Caldwell (1952); Williams (1968); Stoltman (1972, 1974); South (1976:Figure 15); Widmer (1976a); Trinkley (1976c, 1980a, 1981a); Anderson (1975a, 1975b); Anderson et al. 1979:132–133); Phelps (1981:77–78); Anderson et al. (1982:246-247; Sassaman (1993).

STALLINGS PUNCTATE: see STALLINGS REED LINEAR SEPARATE PUNCTATE, STALLINGS DRAG AND JAB PUNCTATE, STALLINGS SHELL PUNCTATE

STALLINGS REED DRAG AND JAB PUNCTATE

Sorting criteria: "Linear rows of reed punctations formed by jabbing the reed tool into the plastic clay and then dragging to the next punctation. This forms lines of decoration which may resemble incising if the tool was small and the spacing of the jabs close together" (Trinkley 1980b:15). Typically applied in rows parallel to the rim; curvilinear or geometric arrangements less common. Fiber vesicules throughout the paste, typically visible on both the interior and exterior vessel surface regardless of the extent of smoothing. May be confused with Thom's Creek Reed Drag and

Jab Punctate, which may have incidental fiber inclusions, or exterior fiber-like impressions resulting from placement of the wet vessel on plant materials prior to firing.

Distribution: Found throughout the Coastal Plain, Fall Line, and lower Piedmont of eastern Georgia, and western South Carolina to the Santee River. Very little decorated Stallings pottery has been reported to the northeast of the Santee drainage, and it is uncommon even along this drainage. Greatest incidence from the Ogeechee to Edisto Rivers.

Chronological position: Late Archaic period (ca. 2500 B.C.-1000 B.C.).

Background: The type Stallings Punctate was first defined by Griffin (1943). Distinguishing linear separate from drag and jab punctations derives from the work of Michael Trinkley, who demonstrated the temporal and spatial (i.e., distributional) significance of differing surface finish attributes within the Thom's Creek series in the 1970s (Trinkley 1976, 1980a, 1980b). Within the Stallings series this distinction has been demonstrated to have temporal and spatial (i.e., distributional) significance by Sassaman (1993). See also discussion for Stallings Plain.

Primary references: Claflin (1931:Plate 14); Fairbanks (1942); Griffin (1943, 1945); Sears and Griffin (1950); Caldwell (1952); Williams (1968); Stoltman (1972, 1974.

STALLINGS REED SEPARATE PUNCTATE

Sorting criteria: Individual separate reed punctations, typically placed in rows parallel to the rim; random or geometric arrangements less common. Fiber vesicules throughout the paste, typically visible on both the interior and exterior vessel surface regardless of the extent of smoothing. May be confused with Thom's Creek Reed Separate Punctate, which may have incidental fiber inclusions, or exterior fiber-like impressions resulting from placement of the wet vessel on plant materials prior to firing.

Distribution: Found throughout the Coastal Plain, Fall Line, and lower Piedmont of eastern Georgia, and western South Carolina to the Santee River. Very little decorated Stallings pottery has been reported to the northeast of the Santee drainage, and it is uncommon even along this drainage. Greatest incidence from the Ogeechee to Edisto Rivers.

Chronological position: Late Archaic period (ca. 2500 B.C.-1000 B.C.).

Background: The type Stallings Punctate was first defined by Griffin 1943. Distinguishing linear separate from drag and jab punctations derives from the work of Michael Trinkley, who demonstrated the temporal and spatial (i.e., distributional) significance of differing surface finish attributes within the Thom's Creek series in the 1970s (Trinkley 1976, 1980a, 1980b). Within the Stallings series this distinction has been demonstrated to have temporal and spatial (i.e., distributional) significance by Sassaman (1993). See also discussion for Stallings Plain.

Primary references: Claflin (1931:Plate 14); Fairbanks (1942); Griffin (1943, 1945); Sears and Griffin (1950); Williams (1968); Waring 1968:160 (St. Simons Variant); Stoltman (1972, 1974); Anderson et al. (1979); Phelps (1981:77-78); Sassaman 1993

STALLINGS SHELL PUNCTATE

Sorting: criteria: Individual (separate) shell punctations, typically formed by the tip of a small gastropod. Typically placed in rows parallel to the rim, zoned, curvilinear, or random motif less common (Trinkley 1980b:16). Fiber vesicules throughout the paste, typically visible on both the interior and exterior vessel surface regardless of the extent of smoothing. May be confused with Thom's Creek Shell Punctate, which may have incidental fiber inclusions, or exterior fiber-like impressions resulting from placement of the wet vessel on plant materials prior to firing.

Distribution: Found throughout the Sea Island area of southeastern Georgia and southwestern South Carolina, and less commonly in the interior Coastal Plain and lower Piedmont. Very little decorated Stallings pottery has been reported to the northeast of the Santee drainage, and it is uncommon even along this drainage. Greatest incidence from the Ogeechee to Edisto Rivers.

Chronological position: Late Archaic period (ca. 2500 B.C.-1000 B.C.).

Background: The type Stallings Punctate was first defined by Sears and Griffin 1950. Distinguishing linear separate reed from shell punctations derives from the work of Michael Trinkley, who demonstrated the temporal and spatial (i.e., distributional) significance of differing surface finish attributes within the Thom's Creek series in the 1970s (Trinkley 1976, 1980a, 1980b). Within the Stallings series this distinction has been demonstrated to have temporal and spatial (i.e., distributional) significance by Sassaman (1993). See also discussion for Stallings Plain. Decoration with a marine gastropod was a common feature in Stalling' pottery observed at the Chesterfield shell ring site near Beaufort (Griffin 1943).

Primary references: Griffin (1943, 1945); Sears and Griffin (1950.

STALLINGS SIMPLE STAMPED

Sorting criteria: Exterior surface stamped with both "v" and "u" shaped impressions, typically applied parallel to each other, and somewhat carelessly; cross-stamping infrequent. Fiber vesicules throughout the paste, typically visible on both the interior and exterior vessel surface regardless of the extent of smoothing. May be confused with Thom's Creek Simple Stamped, which may have incidental fiber inclusions, or exterior fiber-like impressions resulting from placement of the wet vessel on plant materials prior to firing.

Distribution: Poorly documented. Found throughout the Coastal Plain, Fall Line, and lower Piedmont of eastern Georgia, South Carolina, and southeastern North Carolina. Rare but still occasionally noted beyond these areas.

Chronological position: Late Archaic period, Stallings and Thom's Creek Phases (ca. 2500 B.C.-1000 B.C.).

Background: Not previously defined

Primary references: Sassaman 1993.

ST. CATHERINES BURNISHED PLAIN

Sorting criteria: The exteriors are burnished while the interiors are careless smoothed; the burnishing is described as "often done in parallel alignments or resulting in undulating, 'fluted' surface" (DePratter 1991:182). The paste is characterized by crushed sherds or clay/grog from 3 to

5 mm in maximum dimension. The grog/sherd temper elements are smaller, on the average, than in Wilmington Cord Marked assemblages.

Distribution: Sea Island area of northern Georgia and extreme southwestern South Carolina, in the vicinity of the mouth of the Savannah River.

Chronological position: Terminal Late Woodland/Initial Mississippian (ca. A.D. 1000-1150).

Backeround: The type St. Catherines Burnished Plain was originally formally defined by DePratter (1979:131), based on materials in collections from WPA-era excavations at the mouth of the Savannah. The description was modified from an earlier unpublished study by William Steed (n.d.). The finish is a minority type at the mouth of the Savannah River.

Primary references: DePratter (1979:131; 1991:182183), Steed (n.d.)

ST. CATHERINES FINE CORD MARKED

Sorting criteria: Cross stamped cord impressions over the exterior vessel surface. typically at a ca. 45 degree angle with respect to the rim. Interiors are commonly shell scraped. The paste is characterized by crushed sherds or clay/grog from 3 to 5 mm in maximum dimension. The grog/sherd temper elements are smaller, on the average, than in Wilmington Cord Marked assemblages.

Distribution: Sea Island area of northern Georgia and extreme southwestern South Carolina, in the vicinity of the mouth of the Savannah River.

Chronological position: Initial Mississippian period, A.D. 1000-115011200

Backeround: The type St. Catherines Fine Cord Marked was formally defined by DePratter (1979:131), based on materials from WPA-era excavations at the mouth of the Savannah. The description was modified from an earlier unpublished study by William Steed (n.d.). The type is referred to as St. Catherines Cord Marked in the most recent revision of the sequence (DePratter 1991:180).

St. Catherines phase assemblages at the mouth of the Savannah are dominated by grog-tempering, although the size of the temper inclusions decreases compared with the previous period. St. Catherines Plain, Burnished Plain, Fine Cord Marked, and Net Marked all occur, with the grog-tempered fine cross cord marked which is the key diagnostic. Cord impressions are much narrower and more carefully executed, and more often cross stamped than on the preceding Wilmington period vessels. St. Catherines vessels are much better made than their Wilmington predecessors, furthermore, with well-smoothed interiors.

Exactly how late Late Woodland assemblages, specifically those dominated by cord marking, run in the lower and middle Savannah River Valley is currently the subject of some debate. Along the southern coast, in Beaufort County, excavations at three sites on Pinckney Island tested and demonstrated the general utility of the mouth-of-the-Savannah sequence in that area (Trinkley 1983). The fieldwork did suggest that St. Catherine's pottery, dated from A.D. 1000 to 1150/1200 in the mouth-of-the-Savannah sequence, might run as late as the sixteenth century A.D. in that area (Trinkley 1981:82; see also Braley 1983; Brooks 1983). Excavations at the St. Catherines/Savannah I period Callawassie Island Burial Mound (Brooks et al. 1982) have also suggested that an essentially "Woodland" burial tradition may have continued into the early

Mississippian period in the southern coastal area. Similar phenomena may have occurred in the middle Savannah River area, where M. J. Brooks and K. E. Sassaman (personal communication: 1989) have suggested that Woodland ceramics continued in use during and even after the period Mississippian chiefdoms occupied the area, perhaps to as late as A.D. 1450.

Primary references: DePratter (1979:131; 1991:182), Steed (n.d.)

ST. CATHERINES NET MARKED

Sorting: Criteria: Net impressions over the exterior vessel surface, with overstamping common. "Both knots and webbing impressions visible on most sherds. Width of mesh varies [from] 3/8" (9.5 mm) to 3/4" (19 mm) (DePratter 1979:131). Interiors are carelessly smoothed and lumpy due the large size of the temper inclusions, and are frequently shall smoothed. The paste is characterized by crushed sherds or claylgrog from 3 to 5 mm in maximum dimension, with fragments up to 10 mm in size sometimes observed. The groglsherd temper elements are larger than is typical over other finishes on the St. Catherines series and are comparable with those observed in the Wilmington series.

Distribution: Sea Island area of northern Georgia and extreme southwestern South Carolina, in the vicinity of the mouth of the Savannah River.

Chronologeical position: Initial Mississippian period, A.D. 1000-115011200.

Background: The type St. Catherines Net-Marked was formally defined by DePratter (1979:131), based on materials from WPA-era excavations at the mouth of the Savannah. The description was modified from an earlier unpublished study by William Steed (n.d.). Given the size of the temper inclusions, which are comparable to those observed on Wilmington pottery, placement within the St. Catherines series may need to be re-assessed.

Primary references: Caldwell 1952:316: Wilmington Net Marked); Waring (1968:220, Wilmington Net-Impressed); DePratter (1979:131-132; 1991:182), Steed n.d. (St Catherines Net Marked).

ST. CATHERINES PLAIN

Sorting criteria: Both the interior1 and/exterior finishes are smoothed, often over shell scraping. The paste is characterized by crushed sherds or claylgrog from 3 to 5 mm in maximum dimension. The groglsherd temper elements are smaller, on the average, than in Wilmington Cord Marked assemblages.

Distribution: Sea Island area of northern Georgia and extreme southwestern South Carolina, in the vicinity of the mouth of the Savannah River.

Chronological position: Terminal Late Woodland/Initial Mississippian (ca. A.D. 1000-1150).

Background: The type St. Catherines Plain was originally formally defined by DePratter (1979:132), based on materials in collections from WPA-era excavations at the mouth of the Savannah. The finish is a minority type at the mouth of the Savannah River. St. Catherines Plain is distinguished from Wilmington Plain primarily by the size of the temper elements, and in care with which the exterior and interior surfaces are smoothed.

Primary references: DePratter (1979:133; 1991:182-183), Steed (n.d.)

ST. CATHERINES (SAND-TEMPERED) CORD MARKED

Sorting criteria: Cross cord marked impressions, with cord widths averaging 1.0 to 2.0 mm. Care in application of the cord impressions varies considerably, from closely to irregularly spaced, with the former more common. Paste characterized by varying amounts of small (0.5-2.0 mm), rounded clear or white quartz inclusions. Interior finish typically slightly sandy or gritty in texture.

Distribution: Observed primarily along Savannah River below the Fall Line, and along the Edisto River.

Chronological position: Late Woodland period (A.D. 800-1200). Equivalent to St. Catherines Fine Cord Marked and Savannah Fine Cord Marked on the coast.

Background: The difference between the inland and coastal early Late Woodland assemblages lies in the type of temper employed in each area. Wilmington and St. Catherines series ceramics along the lower Savannah are characterized by clay/grog-tempering, while assemblages in the interior are sand-tempered. The later Late Woodland in the middle Savannah River ceramic sequence dates from A.D. 800-1100, and is characterized by assemblages dominated by fine cross cordmarked sand-tempered pottery. The ware appears to be an inland equivalent of St. Catherines Cord Marked. Folded rims are sometimes observed, and there is a suggestion that later assemblages have a higher incidence of folds, sometimes with incised lines on or below the rim. Other cord marked finishes characterized by heavy or narrow parallel stamping, or heavy cross stamping, are present as minority wares. Other minority finishes that occur include cross V-shaped simple stamping (Santee Simple Stamped) and fabric impressed (Cape Fear Fabric Impressed). Toward the end of the period Savannah Check Stamped appears.

The later Late Woodland in the Middle Savannah thus falls within what is locally described as the Savannah I phase (ca. A.D. 800-1100), an inland equivalent of the St. Catherines and Savannah I phases from the mouth of the drainage (Anderson 1994:369-370). Fine cross cordmarked sand-tempered pottery is common, characterized by closely spaced and carefully applied narrow (ca. 0.5 - 2.0 mm) impressions; stamped and folded rims are sometimes observed, and appear to become more common later in the period. Separation of St. Catherines equivalents from Savannah Fine Cord Marked material is currently impossible in the middle Savannah, and for this reason all of the Late Woodland and Early Mississippian fine cross cord marked pottery in the area is tentatively typed St. Catherines (Sand-Tempered) Cord Marked. Cord marked vessels found with Mississippian assemblages typically have highly smoothed or burnished interiors, but this is an unreliable criteria to use with small samples.

Primary references: Caldwell and Waring (1939a, 1939b); Waring (1968c); Williams (1968); Sassaman and Anderson (1990).

SWIFT CREEK COMPLICATED STAMPED

Sorting criteria: Complicated stamped.

Distribution: Extreme western Piedmont of South Carolina and the western mountains of North Carolina. Occasional sherds are noted in the Coastal Plain of South Carolina west of the Santee River.

Chronological position: Middle and Late Woodland periods (ca. A.D. 300-750)

Background: Swift Creek ceramics, originally reported from the type site near Macon (Kelly and Smith 1976), are characterized by a wide range of complicated stamped design motifs, and are common in southwest Georgia and on the Florida Gulf coast, where they have been dated to between A.D. 100 and 450 at sites like Mandeville (Smith 1979). Early Swift Creek ceramics, delimited at sites like Mandeville in southwest Georgia, are characterized by complicated stamped designs with concentric circles, ovals, and, usually, simple curvilinear design motifs. Rims are typically notched or scalloped and tetrapods are common. The ware continues into the Late Woodland in central and northern Georgia, well after its replacement in the Gulf Coastal region by Weeden Island types (Milanich and Fairbanks 1980; Willey 1949). In eastern Georgia, Swift Creek and later, Late Woodland Napier finishes are less common, and they are extremely rare along the lower Savannah River (DePratter 1979; Hanson and DePratter 1985; Stoltman 1974).

Late Woodland occupations in the upper Savannah River are characterized by late Swift Creek and Napier ceramics. Late Swift Creek ceramic assemblages, which date from ca. A.D. 500-750, defined primarily with materials from the Swift Creek and Kolomoki sites (Kelly and Smith 1975; Sears 1956), are characterized by an increase in the incidence of plain pottery and folded rims, a decline in the incidence of notched and scalloped rims, and more complex complicated stamped designs with some zoned stamping. A fine-lined variant of Swift Creek, called B-Complex to differentiate it from classic south and central Georgia materials, was defined by Caldwell in the Buford Reservoir on the upper Chattahoochee River (Wood et al. 1986:340-341). This material, which appears transitional between Swift Creek and Napier, appears to be a regional variant, and is most commonly found in the northern and eastern Georgia Piedmont, including within the Russell Reservoir (Anderson 1988c; Rudolph 1986; Wood et al. 1986:340-341). Similar Swift Creek/Napier materials were found at the Anneewakee Creek site in northwest Georgia, where uncorrected dates of A.D. 605±85 and 755±110 were reported (Dickens 1975; Wood et al. 1986:341). Late Swift Creek materials were infrequently found in the Russell Reservoir and were dated to between A.D. 600 and 750 at Simpson's Field (38AN8). These materials were provisionally given an Anderson phase designation, although this appears premature given how little is actually known about these occupations (c.f., Wood et al. 1986, Anderson 1988c).

In northern Georgia late Swift Creek and Napier ceramics are considered secure indicators of Late Woodland components, and these wares have been found in the Savannah River basin, albeit in low incidence. Few sites with Swift Creek or Napier ceramics have been found in the lower part of the Savannah River basin, and a decrease in incidence is clearly evident proceeding from west to east from Georgia into the South Carolina Piedmont (Ferguson 1971:67; Garrow 1975:24; Keel 1976:221-222; Wauchope 1966:436-438). Some overlap of Swift Creek materials with the Cartersville and Connestee series is indicated, both in the upper Savannah River and elsewhere in north Georgia, although relationships between these series are poorly documented.

Primary references: Kelly 1938; Williams and Elliott n.d.

THOM'S CREEK FINGER PINCHED

Sorting criteria: Individual pinched impressions, typically placed in rows parallel to the rim; random pinching less common. Finger pinching may vary considerably in both size and depth of impression; shallow impressions may be indistinct, producing a ridged, or undulating appearance. Paste contains substantial quantities of very fine, subrounded sand grains; few inclusions over 1.0

mm in size (over most specimens). Rims tend to be straight to very slightly incurving, with plain unmodified lips.

Distribution: From the Savannah River to the Santee River in the Sea Island area of South Carolina. Infrequent southwest of the North Edisto River and northeast of Bulls Bay; only rarely noted in the interior Coastal Plain.

Chronological Position: Late Archaic period, Thom's Creek Phase (2000 B.C. to 1000 B.C.). Trinkley (1980a:63-64, 287) suggests that the ware may date to the later part of the phase, postdating most other Thom's Creek types.

Background: The type Awendaw Finger Pinched (reported here as Thom's Creek Finger Pinched) was formally defined by Trinkley (1976a, 1980b:13-14) based on a sample of 1095 sherds from 9 shell ring and midden sites from the Sea Island area of South Carolina. A second detailed description of Awendaw pottery, focusing in part on decorative variability, has been prepared by Michie (1979:40-44), based on materials from the Bass Pond shell midden (38CH124) on Kiawah Island, Charleston County, South Carolina. The diagnostic decorative motif, finger pinching, had been long noted by local archeologists (e.g. Williams 1968:331), but had not previously been incorporated into a formal type description.

The type Awendaw Punctate was provisionally established by Waddell (1965:82), who associated it with the Thom's Creek series; Waddell (1965:82) at that time noted that "a formal type description of Awendaw Punctate is (still) forthcoming." Waddell described the general physical characteristics of the ware, and documented its distribution in the Sea Island area from Beaufort to northern Charleston County. A brief description of "Awendaw Punctated" ware was also provided by Edwards (1965:24), based on materials recovered from the Sewee shell ring (38CH45) in northern Charleston County, South Carolina; this description subsumed both reed punctated and fingerpinched motifs, however, and was too brief and general to be of much use. Trinkley (1980a, 1980b) argues that Awendaw Finger Pinched is the latest (and last) decorative motif in the Thom's Creek series.

Like Thom's Creek Shell Punctate, Thom's Creek Finger Pinched pottery has only rarely been noted in the interior of the Coastal Plain. Fourteen sherds were found at Mattassee Lake, the first reported occurrence of the type along the Santee River, and the first occurrence noted well outside the immediate coastal area. The only other interior, non-shell midden site where Thom's Creek Finger Pinched pottery has been reported is at the Palm Tree site (38BK147) on the lower Cooper River drainage.

Primary references: Griffin (1943; notes the presence of fiber tempered, finger pinched ware at the Chester Field shell ring); Waring (in Williams, ed. 1968:330-331); Waddell (1965a); Edwards (1965); Calmes (1967); (1970); Sutherland (1974); Trinkley (1975, 1976a, 1980a, 1980b), Anderson (1975b), Widmer (1976a), Michie (1979), Anderson et al. (1982:260-261), Sassaman (1993).

THOM'S CREEK INCISED

Sorting criteria: Fine incised lines typically arranged in rows parallel or at low angles to the rim; curvilinear and geometric designs, and incising perpendicular to the rim less common. The incisions are typically narrow (0.5-2.0 mm) and shallow (0.5-1.0 mm), and from well to poorly or haphazardly applied. Parallel lines predominate; geometric incising is much less common. Paste, general surface finish, and rim and lip similar or identical to that noted for Thom's Creek Reed Separate Punctate.

Distribution: Poorly documented. Appears to occur throughout the Coastal Plain and Fall Line areas of South Carolina and adjoining portions of eastern Georgia and southwestern North Carolina. Like most of the Thom's Creek types, it is rare above the Fall Line.

Chronological Position: Late Archaic period, Thom's Creek Phase (2000 B.C. 1000 B.C.).

Background: The type Thom's Creek Incised was formally defined by Phelps (1968:21), based on a sample of six sherds from the central Savannah River drainage. A second type description, based on a sample of 39 sherds from nine shell ring and midden sites, from the Sea Island area of South Carolina, has been presented by Trinkley (1976a, 1980b:16-17). Incising, by itself, appears to be a decidedly uncommon form of decoration, accounting for only 1.4 percent of the Thom's Creek sherds in Phelps (1968:20) sample, and less than half a percent of the sherds in Trinkley's (1980b: Figure 5). The incidence of incising is only slightly higher in the coastal sample when its occurrence in combination with other decorative motif is included (0.61 percent; Trinkley 1980b:Figure 5). The ware would appear to be a distinct minority in local assemblages, and is only occasionally reported in descriptions of Thom's Creek ceramics (e.g., Trinkley 1981b:8). Edwards (1965:24) briefly noted the presence of a type he called "Awendaw Incised" at the Seewee shell ring (38CH45) in northern Charleston County. No formal type description was offered, however, and the type has become established within the Thom's Creek series.

Incising occurs infrequently on later period ceramics, in the Deptford series (e.g., Deptford Zoned-Incised Punctate, Anderson et al. 1979:140-141; Deptford Incised, Anderson et al. 1982:286-287), and in the Mississippian period (e.g., Irene Incised, Caldwell and Waring 1939). Waring (1968b: 200) briefly noted the presence of incising on a few sherds from the Refuge site (38JA5) on the lower Savannah River, and named the material Refuge Incised. A formal description for Refuge Incised was provided by DePratter (1979:121), who noted that the ware occurred only in the "earliest portion of the Refuge I phase," or from about 1100 to 1000 B.C. A reexamination of the area around the Refuge type site resulted in additional description of Refuge Incised (Lepionka 1981). The ware is here identified and associated with the Thom's Creek series.

Incising appears to be a minority ware during the Late Archaic sand and fiber tempered pottery tradition. The finish is generally rare in the coastal plain of South Carolina; an examination of ceramics from 313 sites (Anderson 1975b; sample = 18,961 sherds) recorded only 93 incised sherds, from 44 sites. Only about half of these sherds appear to be Thom's Creek Incised; the remainder are either Stallings (N=14) or later, post-Thom's Creek wares. Thom's Creek Incised sherds can usually be readily sorted from later incised wares by paste, rim and lip form, and general surface finish.

Primary references: Edwards (1965); Phelps (1968); Waring (1968b; Refuge Incised type); Trinkley (1976a, 1980a, 1980b, 1981b); DePratter (1976, 1979; Refuge Incised type); Lepionka (1980, 1981, n.d.; Refuge Incised type). Anderson et al. 1982: 263-264.

THOM'S CREEK PLAIN

Sorting criteria: Plain surface finish. Paste, general surface finish and rim and lip forms similar or identical to that noted for Thom's Creek Reed Separate Punctate. May be confused with later Woodland Plain with which it tends to intergrade (see Background discussion for Woodland Plain). Sherds may be from undecorated portions of decorated vessels.

Distribution: Found throughout the Coastal Plain and Fall Line areas of extreme eastern Georgia, South Carolina, and southwestern North Carolina. Infrequently noted above the Fall Line, typically only along major drainages.

Chronological Position: Late Archaic period, Thom's Creek Phase (2000 B.C.- 1000 B.C.). .

Background: The type Thom's Creek Plain was first formally described by Phelps (1968:21), based on a sample of 176 sherds from White's Mount (9RI4) and the Boy Scout site (9BK6) along the Savannah River drainage in Georgia. A second formal type description, based on a sample of 4369 sherds from 13 sites along the South Carolina coast, was prepared by Trinkley (1976a; 1980b:17). The two descriptions serve to document variability in the ware along the central Savannah River and in the South Carolina Sea Island area, respectively. A thorough review of taxonomic and classificatory efforts associated with Thom's Creek ceramics has been provided by Trinkley (1980b). The Thom's Creek series, similar in several respects to the Stallings series, originated with Griffins's (1945) description of a non-fiber tempered punctated ware at the Thom's Creek site on the upper Congaree River near Columbia, South Carolina. Thom's Creek Punctate was the only ware recognized in the original type description, although Griffin (1945:470) noted that there were three plain sherds "probably belonging to the type called "Thom's Creek Punctate;" this marked the first (informed) recognition of what would later be called Thom's Creek Plain.

Although apparently postdating Stallings wares along the Savannah (e.g., Stoltman 1974:91; Phelps 1968; Trinkley 1980a: 45-48), stratigraphic and radiocarbon data from the South Carolina area indicates a long period of overlap or coassociation for the two series (Trinkley 1976a, 1980a, 1980b:19; Sassaman 1993). Changes in decorative treatment over these wares may follow similar trajectories. Evidence for an early appearance of Thom's Creek Plain, predating the decorated Thom's Creek types, is currently equivocal, but is suggested at a few sites (Trinkley 1980a:63, 287). An increase in plain finish with increasing excavation depth occurs at Fig Island (Trinkley 1980a:63), and this pattern was also noted at Mattassee Lake (Anderson et al. 1982).

Using data from several coastal South Carolina Sites, Trinkley (1980a) has suggested that decorative variability between Thom's Creek phase sites may reflect a temporal dimension:

> It is possible to suggest that the pottery be serriated such that Thom's Creek Plain is the oldest pottery (acknowledging that it will be found at all sites representing undecorated portions of decorated vessels) followed by Thom's Creek Reed Punctate. At the time reed punctating was losing popularity, Thom's Creek Shell Punctate was gaining popularity. Awendaw Finger Pinched appears to follow the shell punctate style. Based on the more prominent occurrence of the minority ware Awendaw Finger Impressed pottery from Lighthouse Point and Stratton Place, I am tempted to suggest that this pottery represents the last expression of the Thom's Creek potters (Trinkley 1980a:287).

The primary geographic distributions of these decorative motifs—Thorn's Creek Reed Punctate in the interior and along the southwestern coast of South Carolina, Thom's Creek Shell Punctate in the central coastal area (to about Charleston Harbor), and Awendaw Finger Pinched in the northern coastal area (from Charleston Harbor to the Santee River)—additionally suggested to Trinkley (1980a:291, 314-315) a gradual population movement northward along the coast. Many of the Thom's Creek sites in the interior of the coastal plain may, in this view, date to an early part of the Thom's Creek phase, and may "represent part of an early seasonal cycle between the coast and the interior which is not found as frequently later" (Trinkley 1980 a: 291).

An alternative explanation for the observed distributions, based on inferences about Late Archaic sociopolitical organization, has been proposed by several investigators, notably Widmer (1976a:43), Michie (1979:49), and Anderson et al. (1979:94-95). In this view, the differential

distributions of the Thom's Creek wares may correspond to the territories of discrete sociopolitical entities:

> It is suggested that late Archaic artifact distributions delimit the boundaries of relatively endogamous, probably tribal level social groups. At least two, and possibly three, such groups are hypothesized to exist in the Sea Island area of South Carolina, characterized by Stallings wares in the southwest and Awendaw ware in the northeast, with a possible third group between them. . . . A separate group may have occupied much of the interior of the Coastal Plain, characterized by Thom's Creek ceramics. . . . group endogamy is inferred from the relatively discrete ceramic distributions. If exogamous spouse procurement and exchange occurred, greater intergradation and stylistic overlap might be expected (Anderson et al. 1979:94-95).

Strictly speaking, Thom's Creek Plain can only be identified at the assemblage level, and not sherd by sherd. The ware tends to intergrade with later plain wares. **An** appreciable proportion of many assemblages appear to be almost temperless, with inclusions larger than 1 mm uncommon. This aspect of the paste is a diagnostic attribute of the ware; conscious selection or milling of clay sources may have been practiced.

The exterior surfaces of the Thom's Creek Plain vessels are almost uniformly undifferentiated, although parallel scraping marks are common on specimens from the Sea Island area, from smoothing with a marine shell. The vast majority of the Thom's Creek Plain rims are incurvate or straight, and only rarely excurvate in form. Lips are typically rounded or flattened, and sometimes exhibit decorative treatment, usually narrow incising or cord marked or simple stamping. Some manufacturing differences are evident over its range; material from along the Savannah tends to be thicker with a coarser (sandier, less compact) paste than is noted on materials from further to the northeast, along the Edisto, Santee, and Pee Dee Rivers.

Primary references: Phelps (1968:21); Trinkley (1976a; 1980b:17).

THOM'S CREEK REED DRAG-AND-JAB PUNCTATE

Sorting criteria: "Predominately linear rows of reed punctations formed by jabbing the reed tool into the plastic clay and then dragging to the next punctation. This forms lines of decoration which may resemble incising if the tool was small and the spacing of the jabs close together" (Trinkley 1980b:15). Typically applied in rows parallel to the rim; curvilinear or geometric arrangements less common. Paste, general surface finish, and rim and lip form similar or identical to that noted for Thom's Creek Reed Separate Punctate. May be confused with Thom's Creek Incised.

Distribution: Found throughout the Coastal Plain and Fall Line from extreme eastern Georgia to southeastern North Carolina. The ware is most commonly found in the area from the Savannah to the Santee Rivers, and occurs much less frequently elsewhere. Rarely noted above the Fall Line, typically only along major drainages.

Chronological Position: Late Archaic period, Thom's Creek Phase (ca. 2000 B.C.-1000 B.C.). Research by Trinkley (1980a: 63-64, 287) suggests that Thom's Creek Reed Drag and Jab Punctate may date to the earlier part of the phase.

Background: Thom's Creek Reed Drag and Jab Punctate was formally defined as a variety of Thom's Creek Reed Punctate by Trinkley (1976a, 1980b:15), based on a sample of 687 sherds from 13 shell ring and midden sites from the Sea Island area of South Carolina. The distinctive

drag and jab decorative mode was noted in earlier descriptions of the Thom's Creek Punctate type (e.g., Griffin 1945:467; Waddell 1965:Figure 1; Phelps 1968:20), but the incidence of the attribute (and that of the separate punctated mode) has not been consistently reported (See Background discussion for Thom's Creek Reed Separate Punctate). Anderson et al. (1982:256-257) advocated calling it Thom's Creek Punctate, var. Spanish Mount, after the shell midden of Edisto Island (38CH62) where large quantities of this finish were reported (e.g. Trinkley 1976a, 1980b; Sutherland 1974). Adoption of the type-variety system has not occurred locally, however, and the variety designation is here formally sunk.

Most punctations were made with split and cut reeds; less commonly, blunt reeds or sticks were used. The decoration was typically applied in rows parallel to the rim, although curvilinear arrangements are sometimes noted. In some cases it appears that the decoration was restricted to the upper part of the vessel near the rim, or that it was isolated, occurring for one or a few rows.

Primary references: (Same as Thom's Creek Reed Separate Punctate)

THOM'S CREEK REED SEPARATE PUNCTATE

Sorting criteria: Individual (separate) reed punctations, typically placed in rows parallel to the rim; random or geometric arrangements less common. Hard, compact paste; inclusions over 1 mm in size rare. Most sherds are slightly sandy to the touch, only rarely well smoothed or "soapy" in texture. Straight or incurvate rims with rounded or flattened lips (over most specimens). May be confused with punctated Refuge or Mississippian wares on very small sherds. In eastern Georgia the ware is sometimes reported under the name Refuge Punctate (DePratter 1979:120-126).

Distribution: Found throughout the Coastal Plain and Fall Line areas of extreme eastern Georgia, South Carolina, and southwestern North Carolina. Infrequently noted above the Fall Line, typically only along major drainages.

Chronological Position: Late Archaic period, Thom's Creek Phase (ca. 2000 B.C.-1000 B.C.). Research by Trinkley (1980a: 63-64,287) suggests that the type may date to or be more common during the earlier part of the phase.

Background: The type Thom's Creek Punctate was initially defined by Griffin (1945:467), based on a sample of 19 sherds from the Thom's Creek site (38LX2) on the upper Congaree River, Lexington County, South Carolina. A formal type description, employing the traditional format (c.f. Ford and Griffin 1939), was offered by Waddell (1963); additional detailed descriptions of the ware have been presented by South (1960:47-49), Phelps (1968:20-21), DePratter et al. (1973:45- 52) and Anderson et al. (1979: 136-137). The type was subdivided by Trinkley (1976a, 1980b) into Thom's Creek Reed Separate Punctate, Thom's Creek Reed Drag and Jab Punctate, and Thom's Creek Shell Punctate, distinctions that have been widely adopted.

Thorn's Creek Reed Separate Punctate was formally defined as a variety of Thom's Creek Reed Punctate by Trinkley (1976a, 1980b; 14-15), based on a sample of 1948 sherds from 14 shell ring and midden sites in the sea island area of South Carolina. In 1982 Anderson et al. advocated using formal varieties to designate the different forms of surface finish (e.g., Thom's Creek Reed Punctate, Separate Punctate Variety = Thom's Creek Punctate var. Thom's Creek; Thom's Creek Reed Punctate, Dreg and Jab Variety = Thom's Creek Punctate, var. Spanish Mount; Thom's Creek Shell Punctate = Thorn's Creek Punctate, var. Fig Island). These varieties were never adopted, nor was any use of the type variety system, and they are formally sunk here.

Primary references: Griffin (1945:467); Caldwell (1952:315); South (1960, 1973b, 1976); Waddell (1963, 1970); Edwards (1965; described as Awendaw Punctated); Calmes (1967); Phelps (1968); Hernrnings (1970, 1972); Sutherland (1973, 1974); DePratter, Jefferies, and Pearson (1973); Stoltrnan (1974); Trinkley (1974, 1975, 1976b, 1976c, 1980a, 1980b, 1981a), Loftfield (1976:195); Anderson (1975a, 1975b); Anderson et al. (1979:136-137, 1982), Widmer (1976a), Loftfield 1976.

THOM'S CREEK SHELL PUNCTATE

Sorting criteria: Individual (separate) shell punctations, typically formed by the tip of a small gastropod. Typically placed in rows parallel to the rim, zoned, curvilinear, or random motif less common (Trinkley 1980b:16). Paste contains substantial quantities of very fine, subrounded sand grains; few inclusions over 1.0 mm in size (over most specimens). General surface finish, rim and lip form similar or identical to that noted for Thom's Creek Reed Separate Punctate.

Distribution: From the Savannah River to the Santee River in the Sea-Island area of South Carolina. Infrequent in the interior.

Chronological Position: Late Archaic period, Thom's Creek Phase (2000 B.C.- 1000 B.C.). Research by Trinkley (1980a:63-64, 287) suggests that the ware may date to the later part of the phase.

Background: The type Thom's Creek Shell Punctate was formally defined by Trinkley (1980b:15-16) based on a sample of 1095 sherds from 12 shell midden and ring sites from the sea island area of South Carolina. The diagnostic method of decoration is shell punctation, employing the tip of small gastropods (probably marsh periwinkle, Littorina sp.) and, less commonly, shell edges. This attribute was initially noted by Waddell (1963: Figure 2) in his description of Thom's Creek Punctate, but its occurrence has not been consistently reported in the literature. Similar shell punctations have been reported and illustrated within Stallings Punctate (e.g., Griffin 1945:161; Waring 1968a), highlighting the general similarity of the two series.

The shell punctate variety only rarely occurs outside of the Sea Island area, a distribution that Widmer (1976a:43) has interpreted as reflecting a year round coastal adaptation by its makers. Trinkley (1980a:290-291) has offered two alternative explanations for the distribution, the first temporal (reed punctate is earlier than shell punctate) and the second related to manufacturing procedures (only readily available, expedient, punctating tools were used). Widmer (1976a:41) has argued that "the periwinkle could easily be incorporated into a tool kit" while Trinkley (1980a:290-291) has responded that the "Thom's Creek Series does not strongly suggest or support the idea of a potter's tool kit, but rather suggests that readily available items were picked up and pressed into service." Eleven sherds of Thom's Creek Shell Punctate were recovered at Mattassee Lake, some 40 miles into the interior. These sherds could be readily subsumed into collections from Sea Island sites, and it is possible that they came from that area.

Primary references: Waddell (1963), Hemmings (1972), Sutherland (1974), Trinkley (1975, 1976a, 1980a, 1980b); Anderson et al. (1982:258-260).

THOM'S CREEK SIMPLE STAMPED

Sorting criteria: Stamping includes both "v" and "u" shaped impressions, typically applied parallel to each other, and somewhat carelessly; cross-stamping infrequent. Stamps range from both

shallow and deep v-shaped grooves to u-shaped grooves of varying width, typically about 2 mm across. The v-shaped impressions are typically cruder, indicating less care in carving. In most cases the stamps are carelessly applied, with considerable impression overlap; most stamping is parallel or at an angle to the rim, with cross-stamping rare. Rims tend to be straight to slightly excurvate, with the incurvate form less common than over the other Thom's Creek types. Lips tend to be flat or rounded, with a fairly high incidence of decorative treatment, typically simple stamping. Paste is similar or identical to that noted for Thom's Creek Reed Separate Punctate. May be confused with Deptford and later simple stamped wares.

Distribution: Poorly documented. Appears to occur in low incidence throughout the Coastal Plain and Fall Line areas of South Carolina and adjoining portions of eastern Georgia and southwestern North Carolina. Like most of the Thom's Creek types, it is rare above the Fall Line.

Chronological Position: Late Archaic period, Thom's Creek Phase (2000 B.C. to 1000 B.C.).

Background: The type Thom's Creek Simple Stamped was formally defined by Phelps (1968:21), based on a sample of 52 sherds from Whites Mound (9RI4) and the Boy Scout site (9BK6), two locations along the central Savannah River drainage in eastern Georgia. The ware has been occasionally noted in site reports from the South Carolina area (e.g. Widmer 1976a, Michie 1979), but recognition has been hampered by the close similarity of most simple stamped ceramics in the region. Typically, sherds are identified as Thom's Creek Simple Stamped when they are found on sites where only the Thom's Creek series ceramics are present or where other series are only minimally represented. Trinkley (1980a:292) has noted that simple stamping occurs only infrequently in coastal Thom's Creek sites, and has suggested that:

> what other researchers and I are calling Thom's Creek Simple Stamping is actually either Refuge or Deptford. . . . I also suspect that simple stamped sherds will occur only on late Thom's Creek sites, and are part of the transition from Thom's Creek to Refuge/ Deptford (Trinkley 1980a:292).

While what appears to be a Thom's Creek simple stamped ware was noted in moderate quantities at the Bass Pond site (38CH124) on Kiawah Island (Michie 1979:49). Simple stamping is documented within the coeval Stallings series (e.g. Claflin 1931; Fairbanks 1942; Phelps 1968; Stoltman 1974; Widmer 1976a), where it also appears to be a minority ware. Simple stamping on fiber tempered wares appears to be most common in the interior southeast (as in the Wheeler series of northern Alabama, Sears and Griffin 1950; see also Stoltman 1974:63); a similar distributional pattern may occur within the Thom's Creek series (Phelps 1968: 21). It is possible that simple stamping appears only near the end of the Late Archaic, and predominately in the interior, although this needs to be more thoroughly documented.

Simple stamping is extremely common in the ensuing Refuge series, and may evolve directly from Thom's Creek forerunners. DePratter (1979:117) has discussed the evolution of north Georgia coastal ceramics, offering the following perspective:

> At sometime around 1100 B.C., changes in the ceramic tempering materials began on the Georgia coast. Sand and grit were gradually added to the fiber-tempered St Simons ceramics, until eventually the sand and grit completely replaced the fibers. The resulting sand and grit tempered incised, punctated, and plain ceramics are now identified as Refuge I phase types. Refuge Punctated and Incised were made for only a brief period. A new type, Refuge Simple Stamped, was added to the ceramic assemblage prior to the disappearance of incising and punctation. Simple stamping occurs on fiber tempered Stallings Island ceramics inland on the Savannah River (Claflin, 1931; Phelps, 1968), and it is likely that simple stamping originated in that area (DePratter 1979:117).

DePratter is here clearly offering an evolutionary interpretation of changes in ceramic styles and technology along the north Georgia coast.

The appearance of simple stamping may be due, in part, to these changes in ceramic technology; the finish may reflect a greater need to malleate the coiled, as opposed to molded pottery. Use of paddles probably quickly led to a recognition of their potential for applying design; alternatively (or additionally), the stamping may have been functional, to make the vessel easier to hold. Some sherds exhibit broad shallow grooves similar to what Trinkley (1980a:260-261) provisionally called Awendaw Finger Impressed. The moderate incidence of straight-to-excurvate, flattened lips, and the high incidence of lip treatment, suggests that the ware is a late addition to the Thom's Creek series. The flattened, straight-to-excurvate rims are typical of later wares, and there is also some evidence for an increase in lip decoration over time in Thom's Creek assemblages, for example at Mattassee Lake. A late appearance for the ware, in the interior, would support the inferences advanced by Trinkley and DePratter (discussed previously) about the age and origin of simple stamping in the general region.

Primary references: Phelps (1968), Widmer (1976), Michie (1979), DePratter (1979; see discussion of Refuge Simple Stamped type); Trinkley (1980a), Anderson et al. (1982:261-263).

UNIDENTIFIABLE
(surface finish category)

Sorting Criteria: All sherds not unambiguously identifiable to a specific type, or to one of the surface finish or paste categories noted above. Typically found only on small sherds.

WALTHOUR CHECK STAMPED: see WILMINGTON CHECK STAMPED

WALTHOUR COMPLICATED STAMPED: see WILMINGTON COMPLICATED STAMPED

WALTHOUR SIMPLE STAMPED: see WILMINGTON SIMPLE STAMPED

UWHARRIE SERIES

Sorting Criteria: Vessel forms may be limited to somewhat globular jars with conoidal or rounded bases. Jar forms usually have low, broad shoulders and slightly restricted necks. Rims tended to be long and slightly everted or straight. Vessel necks and shoulders were often decorated with multiple parallel incised lines, brushed or scraped bands, or fingernail impressions oriented parallel or perpendicular to the vessel rim. Vessel lips were either flattened or rounded and often notched. Most vessel interiors are scraped. Vessel walls tend to be rather thick, usually between 6 and 10 mm thick. Uwharrie sherds are usually tempered with angular quartz particles or coarse sub-angular quartz sand and have a rough and gritty feel. These tempering agents were sometimes mixed with other types of crushed minerals like feldspar or mica.

Chronological Position: A.D. 500-1200. Nine radiocarbon dates associated with Uwharrie series pottery have been collected. Four of these dates fall within the A.D. 1000 to 1200 range, while three dates from the Yadkin River drainage fall between A.D. 1400 and 1600 (see Eastman 1994).

Distribution: Uwharrie ceramics are found throughout the North Carolina Piedmont and into South Carolina including the Dan River, Yadkin, Catawba, Broad, Haw, and Eno drainages. The Grayson series, defined for southwestern Virginia, is comparable to the Uwharrie series. Uwharrie Net Impressed sherds are the most common type in the series, accounting for between 50 and 90 percent of collections.

Background: This pottery type was first recognized in a surface collection from a sandbar at the mouth of the Uwharrie River where it empties into Lake Tillery in Montgomery County. This site was designated the Uwharrie site. No description of the site or ceramics has been published but a collection of sherds from at least five vessels is housed in the Research Laboratories of Anthropology of the University of North Carolina at Chapel Hill. The type was first defined by Joffre Coe (1952:307-308) and a collection from the Trading Ford site (31Yd1) was described the next year by Howell and Dearborn (1953).

Primary References: Coe (1952:307-308, 1964:32-33); Howell and Dearborn (1953); Eastrnan (1994, 1996 (ms in Part I))

(Series Description: Jane Eastmun)

UWHARRIE NET IMPRESSED

Sorting Criteria: The exterior surface of Uwharrie Net Impressed pottery has been textured by pressing coarse knotted nets into the wet clay. Often the net impressions are very clear and the space between knots varies from 4 and 6 mm, though nets are sometimes bunched and impressions unclear. After the exterior surface was textured in this manner the surface was often scraped or brushed, especially the area above the vessel shoulder. Sometimes a thin layer of moist clay was applied to the textured exterior surface before it was scraped.

Chronological Position: A.D. 500-1200. Nine radiocarbon dates associated with Uwharrie series pottery have been collected. Four of these dates fall within the A.D. 1000 to 1200 range, while three dates from the Yadkin River drainage fall between A.D. 1400 and 1600 (see Eastman 1994).

Distribution: Uwharrie ceramics are found throughout the North Carolina Piedmont and into South Carolina including the Dan River, Yadkin, Catawba, Broad, Haw, and Eno drainages. The Grayson series, defined for southwestern Virginia, is comparable to the Uwharrie series. Uwharrie Net Impressed sherds are the most common type in the series, accounting for between 50 and 90 percent of collections.

Background: (See Background discussion for Uwharrie series)

Primary References: Coe (1952:307-308, 1964:32-33); Howell and Dearborn (1953); Eastrnan (1994, 1996 (ms in Part I))

(Type Description: Jane Eastmun)

UWHARRIE CORD MARKED

Sorting Criteria: Uwharrie Cord Marked pottery shares temper, paste, vessel form, and decorative elements with Uwharrie Net Impressed type described above. The exterior surface of Uwharrie Cord Marked sherds has been impressed with a cord-wrapped paddle. A large rim section of a

Uwharrie Cord Marked restricted neck jar from the Upper Saratown locality has been reconstructed. The interior of this jar was smoothed, while other Uwharrie Cord Marked sherds exhibit the more common scraped interiors. The cord impressions on this vessel were carefully applied and uniform in direction. No overstamping is present and the cord marks are oriented oblique to the rim with continuous strands of cord up to 8 cm long. The cord is thick (2.5 mm diameter) and of a simple twisted structure. The cords are parallel to one another and spaced 1 to 3 mm apart. Other Uwharrie Cord Marked sherds exhibit more tightly-spaced and finer cords (as thin as 1 mm in diameter).

Chronological Position: A.D. 500-1200. Nine radiocarbon dates associated with Uwharrie series pottery have been collected. Four of these dates fall within the A.D. 1000 to 1200 range, while three dates from the Yadkin River drainage fall between A.D. 1400 and 1600 (see Eastman 1994).

Distribution: Uwharrie ceramics are found throughout the North Carolina Piedmont and into South Carolina including the Dan River, Yadkin, Catawba, Broad, Haw, and Eno drainages. The Grayson series, defined for southwestern Virginia, is comparable to the Uwharrie series.

Background: (See Background discussion for Uwharrie series)

Primary References: Coe (1952:307-308, 1964:32-33); Howell and Dearborn (1953); Eastman (1994, 1996 (ms in Part I))

(Type Description: Jane Eastmun)

UWHARRIE BRUSHED

Sorting Criteria: As noted in the description of the Uwharrie Net Impressed type, the exterior of many vessels were subsequently scraped. The Uwharrie Brushed type may represent sherds in which the brushing has obscured the original surface treatment.

Chronological Position: A.D. 500-1200. Nine radiocarbon dates associated with Uwharrie series pottery have been collected. Four of these dates fall within the A.D. 1000 to 1200 range, while three dates from the Yadkin River drainage fall between A.D. 1400 and 1600 (see Eastman 1994).

Distribution: Uwharrie ceramics are found throughout the North Carolina Piedmont and into South Carolina including the Dan River, Yadkin, Catawba, Broad, Haw, and Eno drainages. The Grayson series, defined for southwestern Virginia, is comparable to the Uwharrie series.

Background: (See Background discussion for Uwharrie series)

Primary References: Coe (1952:307-308, 1964:32-33); Howell and Dearborn (1953); Eastman (1994, 1996 (ms in Part I))

(Type Description: Jane Eastmun)

UWHARRIE CURVILINEAR COMPLICATED STAMPED

Sorting Criteria: Uwharrie Complicated Stamped sherds share paste, temper, and vessel form characteristics with other types of Uwharrie pottery. At least two Uwharrie Curvilinear Complicated Stamped restricted neck jars were recovered from features at the Upper Saratown

locality. One jar had a long straight rim, while the other smaller vessel had an everted rim. Shallow notches on the lip of the larger stamped vessel was the only decoration present.

Chronological Position: Unknown, probably quite late in the series

Distribution: Only found at the Upper Saratown site.

Background: The same carved paddle was used to stamp both vessels. I have not been able to identify any other examples of this pottery type in other collections.

Background: (See Background discussion for Uwharrie series)

Primary References: Coe (1952:307-308, 1964:32-33); Howell and Dearborn (1953); Eastman (1994, 1996 (ms in Part I))

(Type Description: Jane Eastrnan)

UWHARRIE SIMPLE STAMPED

Sorting Criteria: One partially reconstructed simple stamped jar was present in the assemblage from Fea. 22-Skl from the test trench excavation at Upper Saratown. This vessel was tempered with angular quartz and feldspar particles. The vessel form is similar to other Uwharrie series jars, except that the rim was folded. The exterior surface, including the rim fold, was lightly stamped with a paddle carved with parallel grooves about 2.5 mm wide, separated by 3 mm. The portion of the vessel below the shoulder was overstamped and possibly lightly brushed or scraped. This jar was undecorated.

Chronological Position: Unknown.

Distribution: Only found at the Upper Saratown site.

Background: (See Background discussion for Uwharrie series) No other examples of Uwharrie Simple Stamped sherds are known from other Uwharrie assemblages.

Background: (See Background discussion for Uwharrie series)

Primary References: Coe (1952:307-308, 1964:32-33); Howell and Dearborn (1953); Eastman (1994, 1996 (ms in Part I))

(Type Description: Jane Eastrnan)

UWHARRIE PLAIN

Sorting Criteria: Plain surface finish with smoothed exterior and interior surfaces (See Sorting Criteria for Uwharrie series).

Chronological Position: A.D. 500-1200. Nine radiocarbon dates associated with Uwharrie series pottery have been collected. Four of these dates fall within the A.D. 1000 to 1200 range, while three dates from the Yadkin River drainage fall between A.D. 1400 and 1600 (see Eastman 1994).

Distribution: Uwharrie ceramics are found throughout the North Carolina Piedmont and into South Carolina including the Dan River, Yadkin, Catawba, Broad, Haw, and Eno drainages. The Grayson series, defined for southwestern Virginia, is comparable to the Uwharrie series.

Background: (See Background discussion for Uwharrie series) Fragments of a hemispherical bowl with plain, smoothed exterior and interior surfaces was recovered from the surface of the Uwharrie site (Mg14), type site for the series. These sherds share paste characteristics with other Uwharrie Net Impressed and Cord Marked sherds from the site and are thought to be part of the same ceramic tradition, however this vessel is the only example of a bowl form within the Uwharrie assemblages examined. Sherds with plain exterior surfaces usually account for a small percentage of pottery assemblages from Uwharrie phase sites. No large Uwharrie Plain vessel sections were recovered from the Upper Saratown Locality.

Primary References: Coe (1952:307-308, 1964:32-33); Howell and Dearborn (1953); Eastman (1994, 1996 (ms in Part I))

(Type Description: Jane Eastmun)

UWHARRIE FABRIC IMPRESSED

Sorting Criteria: (See Background discussion for the Uwharrie series). The fabric used to texture the exterior surface of these vessels is very coarse warp and weft weave. Vessel form, decorative elements, and paste characteristics are identical to Uwharrie Net Impressed

Chronolonical Position: A.D. 500-1200. Nine radiocarbon dates associated with Uwharrie series pottery have been collected. Four of these dates fall within the A.D. 1000 to 1200 range, while three dates from the Yadkin River drainage fall between A.D. 1400 and 1600 (see Eastman 1994).

Distribution: Uwharrie ceramics are found throughout the North Carolina Piedmont and into South Carolina including the Dan River, Yadkin, Catawba, Broad, Haw, and Eno drainages. This type is common in collections from the Forbush Creek site and the Parker site (Newkirk 1978) in the Yadkin drainage. The Grayson series, defined for southwestern Virginia, is comparable to the Uwharrie series.

Background: (See Background discussion for Uwharrie series) No Uwharrie Fabric Impressed sherds were recovered from the excavations at the Upper Saratown Locality. Vessels of this type from the Forbush Creek site are housed in the Research Laboratories of Anthropology and share the same vessel form, decorative elements, and paste characteristics with Uwharrie Net Impressed.

Primary References: Coe (1952:307-308, 1964:32-33); Howell and Dearborn (1953); Eastman (1994, 1996 (ms in Part I))

(Type Description: Jane Eastmun)

WILMINGTON BRUSHED

Sortine criteria: Haphazardly applied parallel brushed or combed impressions over the exterior vessel surface; occasional cross-brushing. Impressions are typically shallow (0.5-1.0 mm) and narrow (1.O-2.0 mm), with striations and smearing common. The paste is characterized by crushed

sherds or grog from 3 to 5 mm in maximum dimension, although larger inclusions up to 10.0 mm are sometimes noted. The finish is sometimes observed on the bases of Wilmington Heavy Cord Marked vessels.

Distribution: Poorly documented. The finish is a minority type at the mouth of the Savannah River, and likely occurs with Wilmington assemblages on the southwestern South Carolina coast.

Chronological position: Late Woodland period (ca. A.D. 500-1000). DePratter (1979:130) suggests it may postdate A.D. 600 at the mouth of the Savannah.

Background: The type Wilmington Brushed was formally defined by DePratter (1979:130-131) based on materials in collections from WPA-era excavations at the mouth of the Savannah, and using information from Caldwell and McCann's unpublished Deptford site manuscript. The Wilmington Brushed type from the Georgia coast is characterized by a clay/grog tempered paste, and may be related to the Deptford Brushed type. The type materials are thought to be decorated with bundles of sticks or grass, with tempering consisting of chrushed sherds or crushed, low-fired clay fragments (DePratter 1979:129-130) Brushing is reported over the entire body, and is also occasionally noted on the bases of Wilmington Heavy Cord Marked vessels. In the latter cases the brushed appearance may derive from vegetation the pot may have been placed on prior to firing.

The temporal and taxonomic relationships of southeast Atlantic coastal clay/grog tempered wares are currently somewhat ambiguously perceived, and appear to depend as much on geography or absolute dates as on distinctive attributes of the wares themselves. Two major series of clay/grog tempered wares are currently established in the literature for the region (if we view, for the sake of convenience, the Wilmington and St. Catherines series as sequential parts of a local tradition). These are: (1) the Hanover series from coastal North Carolina and northern coastal South Carolina and, (2) the Wilmington/St. Catherines series from central coastal South Carolina south into the sea island area of Georgia. Sherd (clay/grog) tempered ceramics are, therefore, documented throughout most of the area from central coastal North Carolina to the sea islands of Georgia. The northern (Hanover) wares are earlier, and are dominated by fabric impressed surface finish; they are additionally found well into the interior of the coastal plain (e.g., South 1960, Anderson 1975a, Loftfield 1976). The southern wares (Wilmington, St. Catherines), in contrast, are dominated by cord marking, and appear restricted to the coast in the area south of Charleston Harbor, occurring only rarely in the interior (e.g., Caldwell 1952:317; Anderson 1975a:189). The southern wares occur later, although continuity through time and over space is apparent. A number of radiocarbon dates from the central South Carolina coast, in particular, document the length of this tradition, and the temporal overlap between the northern and southern margins (e.g. South 1971; South and Widmer 1976; Dorian and Logan 1979). A north to south movement, or adoption, of this distinctive tempering/manufacturing technology is indicated.

The clay/grog tempered ceramics from the southeastern Atlantic coast thus comprise a distinctive local tradition whose geographic and temporal extent is only now becoming known. The similarities over this area appear to greatly outweigh the differences. While the incidence of specific finishes differs over the area, and assemblages can be sorted, individual sherds typically cannot:

> Material from the Savannah River area called Wilmington is generally thicker, sandier, and somewhat more poorly made than material to the north (e.g., Hanover). The variation is slight, however, and can be detected only in assemblages from the northern and southern areas and not from the individual sherds; within these assemblages individual sherd-tempered sherds may be readily substituted in assemblages over the area (Anderson 1975a:189).

Separation of these wares into discrete ceramic series does not make good sense taxonomically. Nowhere is this more evident than in the central coastal area of South Carolina, where it could be argued that a major criteria used to classify wares as either Hanover or Wilmington appears to be the age of associated radiocarbon dates.

For this reason, most post-Refugelpre-St. Catherines claylgrog tempered ceramic types in the Carolinas are subsumed under the Wilmington series, with variants acknowledged as necessary to accommodate perceived variability in the ware. This would reduce (or at least acknowledge) the ambiguity inherent in attempting to sort the various types now in use (i.e., Hanover Cord Marked from Wilmington Heavy Cord Marked), while simultaneously providing a realistic and accurate method for accommodating the variability that does exist. Such a procedure would greatly streamline local typology (by eliminating redundant ceramic series) and help establish a much needed regional analytical perspective.

Primary references: DePratter 1979:130-131.

WILMINGTON (WALTHOUR) CHECK STAMPED

Sorting: criteria: Check and rarely linear check stamping over the exterior vessel surface; occasionally smoothed somewhat after stamping. The paste is characterized by crushed sherds or grog from 3 to 5 mm in maximum dimension, although larger inclusions up to 10.0 mm are sometimes noted.

Distribution: Poorly documented. Check and linear check stamped pottery characterized by sherd or claylgrog tempering appears restricted to the Sea Island area from the mouth of the Savannah River to Charleston Harbor, beyond which it occurs both along the coast and in the interior of the Coastal Plain from the Ashley-Cooper to the Cape Fear/New River drainages in North Carolina. The ware becomes increasingly uncommon from south to north in North Carolina.

Chronological position: Early/Middle Woodland periods (ca. 300 B.C. - A.D. 600). North of Charleston Harbor the finish appears to occur throughout the Middle Woodland period, where it is roughly contemporaneous with Deptford finishes, from ca. 500 B.C. to A.D. 500. On the southeastern coast of South Carolina the ware appears to date later, and only occur at the end of this interval; DePratter (1979:111, 130) places this material (which he typed Walthour Check Stamped) to between A.D. 500 and 600 at the mouth of the Savannah.

Background: This category subsumes earlier types developed for claylgrog tempered check and linear check stamped wares locally, notably Caldwell's (1952:316, see also Waring 1968:220) Wilmington Check Stamped, renamed Walthour Check Stamped by DePratter (1979:130, 1991:176), and Hanover Check Stamped, after the series defined by South (1960, 1973). Walthour Check Stamped, found at the mouth of the Savannah, is assumed to date to the initial part of the Late Woodland, from ca. A.D. 500-600, and is thought to be a direct development from Deptford (DePratter 1979:130). The northern Hanover type is assumed to have been contemporaneous with Deptford, differing only in the selection of paste. A north-to-south movement, or adoption, of claylgrog tempering/manufacturing technology appears indicated by the distribution and dating of assemblages recovered to date. Wilmington materials south of Charleston Harbor appear to postdate ca. A.D. 500, while those to the north (formerly called Hanover) occur much earlier, and are in fact replaced after ca. A.D. 500 by other series.

Wilmington Check Stamped appears to be relatively uncommon in the coastal plain of South Carolina; a survey of ceramics on 313 sites recorded only 49 claylgrog tempered check and linear check stamped sherds, on 17 sites (Anderson 1975b). A total of 15 sherds of Wilmington

Check Stamped were recovered at Mattassee Lake. Except for the exterior surface finish, the ware was virtually identical to the fabric impressed claylgrog tempered ware from the site, Wilmington Fabric Impressed. Both check and linear check stamped finishes were present, although most (N=11, 73.3 percent) exhibited linear check stamping.

Primary references: Caldwell (1952, 1971); Waring 1968c, Williams 1968; Anderson 1975b; DePratter (1979:130); Anderson et al. (1982:276).

WILMINGTON (WALTHOUR) COMPLICATED STAMPED

Sorting Criteria: Complicated stamping characterized by concentric circles, figure eights, and other designs over the exterior vessel surface. The paste is characterized by crushed sherds or grog from 3 to 5 mm in maximum dimension, although larger inclusions up to 10.0 mm are sometimes noted.

Distribution: Poorly documented. Complicated stamped pottery characterized by sherd or claylgrog tempering appears largely restricted to the mouth of the Savannah River.

Chronological position: Late Woodland period (ca. A.D. 500 - 600).

Background: This category subsumes earlier types developed for claylgrog tempered complicated stamped ceramics, notably Wilmington Complicated Stamped (Caldwell 1952:316, see also Waring 1968:220), renamed Walthour Complicated Stamped by DePratter (1979:130, 1991:176). Walthour Complicated Stamped, found at the mouth of the Savannah, is assumed to date to the initial part of the Late Woodland, from ca. A.D. 500-600, and appears related to Deptford Complicated Stamped, which it closely resembles save for the paste differences (c.f., DePratter 1979:7, 126, 130). Excavations conducted on Wamassee Neck on St. Catherines Island by Caldwell in 1969 and 1970 demonstrated that the type appeared at the very end of the Deptford phase (DePratter 1991:7). The stamp designs strongly suggest that the type (and the related Deptford Complicated Stamped) is a local variant of Swift Creek Complicated Stamped.

Primary References: DePratter (1979:130, 1992:176); Caldwell 1952:316; Waring 1968:220.

WILMINGTON CORD MARKED

Sorting criteria: Cord impressions stamped over the exterior vessel surface when the paste was wet. The paste is characterized by crushed sherds or grog from 3 to 5 mm in maximum dimension, although larger inclusions up to 10.0 mm are sometimes noted. Occasionally materials are tempered with smaller (0.5-2.0 mm) lumps of aplastic clay (grog).

Distribution: Wilmington Cord Marked occurs in the Sea Islands of Georgia and South Carolina north to Charleston Harbor. From Charleston Harbor to the Parnlico River, it is found both along the coast and in the interior to the Fall Line.

Chronological position: North of Charleston Harbor: Early/Middle Woodland periods (500 B.C. - A.D. 500). South of Charleston Harbor: A.D. 500-1000.

Background: The type Wilmington Heavy Cord Marked was initially defined by Caldwell and Waring (1939) based on WPA-era excavations at a number of sites at the mouth of the Savannah River. Originally defined by a single type, Wilmington Heavy Cord Marked, and encompassing both sherd and grit tempering, the series has come to include a range of types, all characterized by

claylgrog tempering. The type has been described by DePratter (1979:129, 1991:177), who in his most recent formulation dropped the word "Heavy" from the name. This seems particularly appropriate, since the word refers to the thick, typically parallel stamped cord impressions that are commonly found on Wilmington cord marked pottery along the lower Savannah, yet are uncommon away from this area.

Clay/grog or sherd tempered pottery characterized by cord marked and fabric impressed finish occurs widely in the Coastal Plain of both North and South Carolina, and two major series have been traditionally used to encompass this variation. These are Wilmington, defined from work conducted at the mouth of the Savannah during the late 1930s, and Hanover, defined by South (1960) based on survey work in southern Coastal North Carolina in 1960. In recent years the temporal and spatial distribution of these two series have run together, creating considerable taxonomic confusion. ***For this reason, use of Wilmington terminology is adopted here for all post-initial Early Woodland Refuge, pre-initial Mississippian St. Catherines clay/grog tempered pottery in the Carolinas.***

The claylgrog tempered pottery at the mouth of the Savannah has been used to define three phases, Wilmington I, Wilmington II, and St. Catherines (DePratter 1979:111; 1991:11). The first, Wilmington I/Walthour, dates from A.D. 500 to 600, and is characterized by claylgrog-tempered Wilmington Check stamped, Heavy Cord Marked, Plain, and Walthour Complicated Stamped ceramics, the latter an apparent late Swift Creek variant. Wilmington II phase components, which dates from ca. A.D. 600 to 1000, are identified by the presence of Wilmington Plain, Brushed, Fabric Marked, and Heavy Cord Marked pottery. The St. Catherines phase, which dates from ca. A.D. 1000 to 1150, is characterized by the St. Catherine Plain, St. Catherines Burnished Plain, St. Catherines Fine Cord-Marked, and St. Catherines Net-Marked types.

Wilmington and St. Catherines wares, however, are both claylgrog or sherd tempered, and are differentiated primarily by temper size and quality of manufacture:

> St. Catherines phase ceramics are characterized by finer clay tempering than that of preceding Wilmington types and by the increased care with which the ceramics were finished. The lumpy, contorted surface of Wilmington types was replaced by carefully smoothed and often burnished interiors and exteriors. St. Catherines Burnished is characterized by careful exterior burnishing, whereas surfaces of St. Catherines Plain are simply smoothed. St. Catherines Fine Cord Marked has more carefully applied and more consistently spaced crossed cord impressions than did its predecessor, Wilmington Heavy Cord Marked. A new type, St. Catherines Net Marked, is also included in the St. Catherines series, but it is rare at most sites (DePratter 1979:119).

A number of radiocarbon dates for Wilmington/St. Catherines components from the Georgia and South Carolina Sea Island area support the posited time range of roughly A.D. 500 to A.D. 1150 for these wares, and stratigraphically the materials are clearly post-Deptford on the north Georgia coast (Waring 1968c; Caldwell 1971; DePratter 1979; Trinkley 1980a, 1981a). The decision to retain separate Wilmington and St. Catherines series in the present taxonomy was based on the differences in paste and surface finish between the two series. Given the potential for overlap, however, it is possible that some or all of the St. Catherines types may ultimately need to be subsumed within the Wilmington series.

A second claylgrog or sherd tempered ware, the Hanover series, was reported by Stanley South in 1960, based on materials collected from predominantly coastal shell midden sites in southeastern North Carolina and northeastern South Carolina. The paste was described as:

> Tempered with large lumps of aplastic clay. The majority of these tempering lumps appear to be crushed sherds. The smoothed interior of the original sherd can be frequently seen on some of the crushed tempering fragments. These large lumps of temper result in a rough, lumpy surface on the interior of the sherd, around which a series of small cracks are frequently seen. Occasionally a rounded quartz pebble can be seen in the paste, but this is more the exception than the rule (South 1976:16).

A sample of 1034 sherds of this ware were collected, from 68 sites, and two finishes were identified, cordmarked (N=251 sherds; 24.3 percent) and fabric impressed (N=783; 75.7 percent). While preparing his report, South contacted Waring and described the sherd tempered ware that he had found. While recognizing the similarity with the Wilmington series, they decided that separate terminology would be appropriate because of the geographic separation, and since the ceramics of the intervening area (i.e. coastal South Carolina) were then unknown (South 1960, personal communication). Two types were identified within the series, Hanover Fabric Impressed and Hanover Cord Marked, and these taxa have been widely adopted in the South Carolina archeological literature, particularly in the Coastal Plain north of Charleston Harbor into North Carolina.

Clay/grog tempering has been reported from other localities in North Carolina, although either the wares were untyped (e.g., Haag 1958:69), or else the names advanced have not been widely adopted, as is the case with the Carteret and Grifton series. In the mid-1970s, for example, Loftfield (1976: 54-157; 175-182) formally defined the clay-grog tempered Carteret series, based on materials from 83 sites in south central coastal North Carolina, predominantly from Onslow and Craven Counties. Three types were recognized in the Carteret series, Carteret Cord Marked (N=415 sherds; 22.2 percent) Carteret Fabric-Marked (N=1384 sherds; 73.8 percent) and Carteret Plain (N=74 sherds; 4.0 percent) (Loftfield 1976: 175-182). An Early/Middle Woodland age for the Carteret series was indicated. A similarity or identity of the Carteret series with Crawford's (1966) Grifton series from Lenoir County, North Carolina, immediately west of Onslow and Craven Counties, was noted (Loftfield 1976:234). Comparison of both the descriptions and type specimens for the Carteret and Hanover types indicates that the differences between the series are minimal. In the present study, the Carteret series is dropped and the types subsumed with Hanover as local geographic variants within the Wilmington series

Primary references: DePratter (1979:129, 1991:177).

WILMINGTON FABRIC IMPRESSED

Sorting criteria: Fabric impressions applied over the exterior surface of the vessel while the paste was plastic; occasionally smoothed somewhat after stamping. The paste is characterized by crushed sherds or grog from 3 to 5 mm in maximum dimension, although larger inclusions up to 10.0 mm are sometimes noted. Rims straight to excurvate, typically rounded.

Distribution: Wilmington Fabric Impressed occurs in the Sea Islands of Georgia and South Carolina. From north of Charleston Harbor to the Pamlico River, it is found both along the coast and in the interior to the Fall Line.

Chronological position: North of Charleston Harbor: Early/Middle Woodland periods (500 B.C. - A.D. 500). South of Charleston Harbor: A.D. 500-1000.

Background: The type Wilmington Fabric Impressed was first defined by Anderson et al. (1982:271-275) based on a sample of 235 sherds from the Mattassee Lake sites on the lower Santee River. The presence of fabric marked pottery within the Wilmington series had been

previously observed by Caldwell and McCann during their analysis of materials from the Walthour site near Savannah (as reported in DePratter 1991:34-35). In DePratter's revised sequence for the north Georgia coast (1991:11, 35), the type Wilmington Fabric Marked was placed in the Late Woodland era and dated to between A.D. 600 - 1000, and interpreted as the first introduction of fabric marking into the area. Waring (1968:220) had earlier included a Wilmington Net-Impressed type in his formulation of the mouth-of-the-Savannah sequence, occumng throughout the period Wilmington pottery was made; this type is not included in DePratter's (1979:111, 1991:11) reformulation, where it appears to have been replaced by Wilmington Fabric Marked. A clay/grog tempered net impressed ware is reported from the mouth-of-the-Savannah sequence, however, St. Catherines Net Marked (DePratter 1979:131-132, 1991:11, 182).

The Mattassee Lake type sample was dominated by poorly defined, or "loose" weave fabric impressions, where both the warp and weft elements were pliable, although about one-quarter of the assemblage was characterized by a rigid warp element. Overstamping was fairly common, and about one-third of the sherds exhibiting a rigid warp element were cross stamped. The stamping is typically parallel, or at low angles to the rim, and is only rarely perpendicular (stamp orientation determined by the alignment of the warp element with the rim). The assemblage was dominated by reddish-yellow and reddish-brown interior and exterior colors. Temper density varies appreciably, and appears to constitute an appreciable portion of the paste (estimated at from 10 to 50 percent by volume). Quartz sand and other minor mineral inclusions are present in many sherds, although majority are virtually temperless (excluding, of course, the grog), with little or no sand evident. Interiors were poorly to well smoothed, and an appreciable minority of the sherds exhibit a lumpy, irregular surface with fine to coarse, wide scraping marks made with a comparatively soft implement while the paste was quite wet. As noted by South (1976:16), the "large lumps of temper result in a rough, lumpy surface" over the interior of many of the less carefully smoothed sherds; it should be stressed, however, that a majority of the interiors were well-smoothed. Rims were invariably straight to excurvate and rounded, unmodified lips were most common, although about one third of the lips were flattened and stamped with the fabric wrapped paddle. Several bases were recovered, and moderate sized conoidal jars roughly 40 cm in diameter at the rim, and having a capacity of from 10 to 15 liters. The Mattassee Lake material more closely resembles Hanover and Carteret assemblages from North Carolina than Wilmington and St. Catherines material from the mouth of the Savannah, particularly over rim form, lip shape, color, and interior finish.

Primary references: (1) Hanover: South (1960, 1976); Loftfield (1976; Carteret series); Phelps (1981); (2) Wilmington: Caldwell and Waring (1939a); Caldwell (1952, 1971); Caldwell and McCann (1941); Waring (1968c); DePratter (1979:128-131, 1991:).

WILMINGTON PLAIN

Sorting criteria: "Exterior finishes range from careless smoothing to infrequent burnishing. Interiors are usually carelessly smoothed but lumpy due to presence of large fragments of clay tempering. Shell scraping commonly occurs on vessel interiors" (DePratter 1979:129). The paste is characterized by crushed sherds or grog from 3 to 5 mm in maximum dimension, although larger inclusions up to 10.0 mm are sometimes noted. The type may be confused with St. Catherines Plain and St. Catherine's Burnished Plain, with which it intergrades.

Distribution: Poorly documented. The finish is a minority type at the mouth of the Savannah River, and is rarely noted in Wilmington assemblages on the southwestern South Carolina coast.

Chronological position: Late Woodland period (ca. A.D. 500-1000).

Background: The type Wilmington Plain was formally defined by DePratter (1979:129) based on materials in collections from WPA-era excavations at the mouth of the Savannah. The type is a distinct minority in assemblages at the mouth of the Savannah River. It is distinguished from St. Catherines plain primarily by the size of the temper elements. Given the similarity of the two wares, the appropriateness of maintaining a typological distinction between them may need to be reassessed.

Primary references: DePratter (1979:129; 1991:177-179)

WILMINGTON (SAND-TEMPERED) CORD MARKED

Sorting criteria: Closely spaced, carefully applied, wide (>2.0 mm) parallel cord impressions. The cord width may be up to ca. 10 mm wide in extreme cases on this heavy cord marked finish. The impressions are typically closely spaced and carefully applied, although care in execution may vary considerably. Paste characterized by varying amounts of small (0.5-2.0 mm), rounded clear or white quartz inclusions. Interior finish typically slightly sandy or gritty in texture.

Distribution: Observed primarily along Savannah River below the Fall Line, and along the Edisto River.

Chronoloeical position: Late Woodland period (A.D. 500-800). Equivalent to Wilmington Heavy Cord Marked on the coast.

Background: The early Late Woodland in the middle Savannah River ceramic sequence dates to ca. 1500 to 1200 BP, and is characterized by sand-tempered plain, cord marked, and fabric impressed pottery. The cord marked material appears to be an inland equivalent of Wilmington Heavy Cord Marked observed at the river mouth. No phase names have been assigned to the early Late Woodland period, which is provisionally described as an interior Wilmington equivalent. No unambiguous diagnostic indicators exist dating assemblages exclusively to this period, although sand-tempered cord marked pottery characterized by closely spaced, carefully applied wide parallel impressions is common.

Wilmington I/Walthour, dates from A.D. 500 to 600, and is characterized by claylgrog-tempered Wilmington Check stamped, Heavy Cord Marked, Plain, and Walthour Complicated Stamped ceramics, the latter an apparent late Swift Creek variant. No interior equivalent for this phase has been observed, although there was undoubtedly a period when the manufacture of Deptford and interior Wilmington wares overlapped. Wilmington II phase components, which dates from ca. A.D. 600 to 1000, are identified by the presence of Wilmington Plain, Brushed, Fabric Marked, and Heavy Cord Marked pottery. A contemporaneous phase provisionally called "interior Wilmington equivalent" has been advanced for the interior Coastal Plain along the Savannah River, where comparable types, differing only in possessing fine sand/grit instead of claylgrog tempering, are present (Anderson 1988, 1994; Sassaman and Anderson 1990).

The difference between the inland and coastal early Late Woodland assemblages lies in the type of temper employed in each area. Wilmington and St. Catherines series ceramics along the lower Savannah are characterized by claylgrog-tempering, while assemblages in the interior are sand-tempered. Clay/grog paste has rounded, subrounded, and irregular lumps of sherd, clay, or fired clay ranging in size from ca. 2 to 10 mm mixed into it. These inclusions typically differ appreciably in color and texture from the surrounding body of the sherd. Claylgrog-tempered paste is extremely rare in the middle Savannah River Valley, where only a few sherds have been found (Sassaman and Anderson 1990).

Late Woodland assemblages dominated by sand-tempered cord marked pottery are widespread in the interior Coastal Plain along the Savannah River, both along the floodplain and in the interriverine uplands. Chronological control within local cord marked assemblages is poor, however, with only a rough separation between earlier and later Late Woodland currently possible, made on the basis of cord size and the occurrence of cross-stamping. There is some suggestion that rim and lip treatment has chronological significance, but this remains to be explored locally.

Primary references: Stoltman 1974; Anderson et al. (1979); Sassaman and Anderson 1990).

WILMINGTON SIMPLE STAMPED

Sorting; criteria: Simple stamped exterior finish. The paste is characterized by crushed sherds or grog from 3 to 5 mm in maximum dimension, although larger inclusions up to 10.0 mm are sometimes noted.

Distribution: Poorly documented. The type is an extreme minority at the mouth of the Savannah River, and is rarely noted in Wilmington assemblages on the southwestern South Carolina coast.

Chronological position: Late Woodland period (ca. A.D. 500-1000).

Background: Not previously defined. A few sherds of what was called Wilmington Simple Stamped by both Caldwell and McCann and DePratter have been reported at the Deptford burial mound near Savannah (DePratter 1991:119-120). Additionally, DePratter (1991:175) illustrates a sherd of Walthour Simple Stamped. A single sherd of what appears to be a simple stamped, clay-grog tempered ware was also recovered at Mattassee Lake that appears to belong to the Wilmington or possibly Refuge series. The stamp impressions are very faint, reflecting a fair amount of smoothing after stamping; it is possible that the finish may be due to a thong or even cord wrapped paddle. Small (1.0 mm) lumps of clay/grog are present but infrequent in the paste, which is otherwise temperless. Claylgrog tempered simple stamped and cord-marked ceramics have been occasionally reported from elsewhere along the Santee (e.g., Anderson 1975b).

Primary references: Waring 1968:220; DePratter 1991:119-120, 175.

WOODLAND PLAIN

Sorting criteria: Plain surface finish. Paste characterized by varying amounts of small (0.5-2.0 mm) rounded clear, white, or rose quartz inclusions. Both the interior1 and/exterior finishes are typically well smoothed or "soapy" and only occasionally sandy or gritty in texture. Rims typically straight to excurvate, incurvate less common. May be confused with Thom's Creek Plain, with which it tends to intergrade.

Distribution: Found throughout the Coastal Plain and fall line areas from eastern Georgia to south central North Carolina. In western South Carolina and eastern Georgia, the ware is sometimes reported under the types Deptford Plain or Refuge Plain (e.g., Waring 1968c; DePratter 1979); in south central North Carolina the ware is some times described as New River Plain (Loftfield 1976).

Chronological position: Woodland (1000 B.C. - A.D. 900). A range from 1150 B.C. to A.D. 500 for Refuge Plain (which includes Thom's Creek Plain and Woodland Plain as defined here) has

been reported from the north Georgia coast (DePratter 1979:111112). Loftfield's (1976) New River series, which includes a sand tempered plain ware, is reported as "the earliest ceramics on the North Carolina coast that appear in any number"; contemporaneity with Thom's Creek and Deptford ceramics is inferred (e.g., Loftfield 1976:234; Phelps 1981). At Cal Smoak, along the Edisto River, Woodland plain wares are reported in "an Early-to-Middle Woodland context, coeval with or slightly post dating the Deptford material" (Anderson et al. 1979:74). At Mattassee Lake, Woodland Plain is stratigraphically fairly early, coeval with the Refuge, Wilmington/Hanover Fabric Impressed, and Deptford Linear Check Stamped material.

Background: The type subsumes all plain finished ceramics with fine sand/grit paste manufactured during the Woodland period (c. 1000 B.C. to A.D. 900) in the southeastern Atlantic Coastal Plain in the general vicinity of South Carolina. Previously described Woodland period types, such as Refuge Plain, Deptford Plain, or New River Plain, should be considered varieties. The sand inclusions are distinct from the larger crushed quartz fragments characterizing the Yadkin and Onslow series wares (e.g., Coe 1952, 1964; Loftfield 1976), or the pebble tempering reported from series such as Cashie in northern coastal North Carolina. Related plainware types from the Georgia and South Carolina Piedmont (e.g., Cartersville Plain) are excluded from the present discussion; separate varieties (under the type Woodland Plain) may eventually be needed to effectively classify these wares.

The development of an effective taxonomy for sorting local plainwares is still in its infancy, and delimiting useful types and varieties will prove a major challenge to area researchers. The need for refinement is evident, however; sorting local assemblages on the basis of published plainware descriptions has almost invariably (it is argued here) produced classifications that are either ambiguous or overly general. These problems have, of course, been recognized by local archeologists, who have typically chosen one of three (alternative) solutions: (1) use the established types as best as possible, often with a disclaimer about potential ambiguities (e.g., Wauchope 1966: 52; Waring 1968c; Trinkley 1980a, 1981a); (2) lump the existing types into a single, inclusive type (e.g., DePratter 1979); or (3) use no type names, but instead provide detailed descriptions of the materials (e.g., Anderson et al. 1979). None of these solutions is very satisfactory, however, and only through fine-grained, comparative analyses will a more effective terminology emerge.

Plainwares account for an appreciable proportion of the ceramics recovered from archeological sites in the vicinity of the South Carolina Coastal Plain, rendering effective classification a matter of some importance. At Mattassee Lake, for example, Thom's Creek, Woodland, and Mississippian plainwares made up over forty percent of the total diagnostic assemblage (N=4728, 40.5 percent; Table 51). An analysis of surface collections from 313 sites in coastal South Carolina noted sand tempered plain sherds on 250 sites, and the category accounted for almost a third of all ceramics observed (N=5828 sherds, 29.3 per cent of total; Anderson 1975b). Comparable figures have been reported from other excavation and survey reports in the region.

Three major fine sand/grit tempered Woodland period plainwares are currently in use in the Georgia to North Carolina Atlantic Coastal Plain, the Refuge, Deptford, and New River types. The first sand tempered plain pottery type described in the general South Carolina area was Deptford Plain, which was mentioned in Caldwell and McCann's (n.d.) unpublished report on the Deptford site, written about 1940. Use of the type has appeared in a number of manuscripts and papers since that time (e.g. Caldwell 1952:315; Wauchope 1966:52; Waring 1968a:175; Williams 1968:252; Milanich 1971:164; Trinkley 1981a:50) although it has never been fully described.

The second sand tempered plain type, Refuge Plain, was reported by Waring (1968c:200), based on his 1947 excavations at the Refuge site (38JA5) near Savannah (see Background discussion for Refuge Dentate Stamped). Descriptive information on the Refuge series did not

reach print until the late 1960s, with the posthumous release of the Waring Papers (Williams, ed. 1968), although Waring had discussed the general nature and significance of the series with his colleagues, most notably in a 1955 SEAC paper on the cultural sequence at the mouth of the Savannah River (Waring 1968c). No formal or even detailed description of Refuge Plain was provided, however, and the distinctive attributes of the type had to be inferred from his general descriptions of the Refuge series (Waring 1968b:200). Sorting Refuge from Deptford plain thus proved difficult, something that prompted DePratter (1979) to combine them under a single, Refuge category. In DePratter's (1979:22) formulation, Refuge Plain subsumes both the earlier Refuge Plain and Deptford Plain types (much as his Refuge Simple Stamped type subsumes previous Refuge and Deptford simple stamped types). Taxonomically, DePratter's approach is sound since the wares clearly intergrade and hence do not meet the primary criteria for the establishment of types, notably sortability, or discreteness (e.g., Ford and Griffin 1939; Phillips 1970).

The third major Woodland period sand tempered plainware currently in use in the region, New River Plain, was formally described by Loftfield (1976:152153), based (in part) on a sample of 46 sherds from 19 sites in Craven and Onslow Counties, North Carolina (data from Loftfield 1976:175182). Closely resembling South's (1960) sand tempered plain type from the southeastern North Carolina coast; the ware appears to be fairly early, and is probably contemporaneous with the Refuge or Deptford types to the south (e.g., Loft field 1976:195196; Phelps 1981).

The three Woodland period plainwares described here—Refuge, Deptford, and New River—are quite similar and, from their descriptions, clearly intergrade. Use of variety classification, rather than three separate type names, therefore, would be clearly appropriate, under a single type, Woodland Plain. The material is designated Woodland Plain, to avoid the temporally limiting connotations of the three type names now in use. Sand tempered plainwares occur over a long time range in the region (1100 B.C. to A.D. 500 in the mouth-of-the-Savannah sequence; DePratter 1979:111-112), and use of Refuge or even Deptford terminology to cover materials over this entire span and region appears inappropriate. While in this guide Thom's Creek Plain was retained as a separate type, this may eventually prove untenable if considerable intergradation can be documented.

Woodland Plain differs from Thom's Creek Plain in several respects. Although macroscopic quartz inclusions were almost ubiquitous in Woodland Plain sherds, the surfaces are also commonly well-smoothed and in some cases almost "soapy" in texture. Thom's Creek pottery, in contrast, typically has sandy or gritty surfaces. Thom's Creek Plain rims are typically straight or incurvate, and only rarely excuwate. In contrast, Woodland Plain rims are characterized by excuwate or straight forms, with an incuwate profile less common.

Both shallow hemispherical bowls and larger flaring jars are represented at Mattassee Lake; incurvate rims appear to occur on the smaller bowl forms. The Mattassee Lake Woodland Plain assemblage is generally similar to DePratter's (1979: 122) Refuge Plain type, although it differs in at least three respects: (1) it lacks tetrapods, (2) it has (occasional) incurving rim forms and, (3) its surfaces are somewhat better smoothed. This latter point is of interest, since little evidence was noted at Mattassee Lake for "interiors and exteriors coarse and friable due to sand content" (DePratter 1979:122). While the Thom's Creek Plain assemblage at Mattassee Lake is slightly sandy in texture, the Woodland Plain wares are (usually) quite smooth in comparison. Close similarities are apparent with South's (1960) "sand tempered plain" assemblage from southeastern coastal North Carolina, and Loftfield's (1976) New River Plain type from central coastal North Carolina; the described variability in wares can be readily subsumed within the Mattassee Lake Woodland Plain assemblage. The Mattassee Lake assemblage also resembles the plain wares recovered at the Cal Smoak site on the central Edisto River (Anderson et al. 1979:151-152). Well smoothed, otherwise nondescript "sand tempered" plain wares are extremely common in the coastal South Carolina area; the data from the Mattassee Lake sites, although limited, suggests that

delimiting variability in rim and lip treatment offers the best hope for temporarily subdividing the ware.

Primary references: Anderson et al. 1979, 1982 (Woodland Plain); Caldwell and McCann n.d. (Deptford type); Griffin 1945:473-474; Caldwell 1952, 1971; South 1960; Waring 1968a, 1968b, 1968c (Refuge, Deptford Plain types); Stoltman 1974 (sand tempered plain), Anderson (1975b, 1979a (sand tempered plain); Trinkley 1980a, 1981a, 1981b, 1981c (Refuge, Deptford Plain types); DePratter (1979:122; Refuge Plain).

WOODSTOCK COMPLICATED STAMPED

Sorting criteria: Barred oval complicated stamped motifs.

Distribution: Western Piedmont of South Carolina along the upper Savannah River, rarely observed elsewhere in western North and South Carolina.

Chronological position: Late Woodland/initial Mississippian (A.D. 850-1000).

Background: The Mississippian sequence in the upper Savannah River was developed by Hally during the investigations in the Russell Reservoir (Anderson 1988d; Anderson et al. 1986; Hally and Rudolph 1986). In the upper Savannah River initial Mississippian Woodstock components (ca. A.D. 900-1100) are identified by the presence of Woodstock Complicated Stamped ceramics, which have been shown to be ancestral to Etowah in northwest Georgia (Sears 1958). Like the preceding Napier and Swift Creek series, Woodstock assemblages are infrequent in the upper Savannah River, and no sites with major components have been excavated.

Primary references:

YADKIN CORD MARKED

Sorting criteria: Cord impressions applied over the exterior surface while the paste was plastic; occasionally smoothed somewhat after stamping. Paste characterized by large amounts of rounded and sub-rounded or crushed white and clear quartz gravel (1.0-8.0 mm; average about 3.0 mm). At the type site lips were rounded and undecorated while rims were straight. In South Carolina samples rims tend to be typically excurvate with flattened and decorated lips (i.e. with simple stamped, cord marked, or fabric impressing).

Distribution: The ware is most commonly reported in the inner Coastal Plain and lower Piedmont of North and South Carolina in the vicinity of the boundary between the two states, from roughly the Santee-Wateree to the Cape Fear rivers. The ware does not appear to be common in the lower Coastal Plain of either state.

Chronological position: Early-Middle Woodland (ca. 500 B.C. - A.D. 500). At 38SU83 a date of 380 B.C.±80). was obtained from a feature with a Yadkin Cord Marked vessel present (Blanton et al. 1986:146-147).

Background: The Yadkin series was defined by Coe (1964:30-32) based on a sample of 619 sherds recovered from the Doerschuk site on the lower Yadkin River in Montgomery County, North Carolina. Three finishes were reported within the sample, cord marked (n=285, 46.0%), fabric marked (n=270, 43.7), and linear check stamped (n=64, 10.3%). The distinctive temper

was described as "large angular fragments of quartz that appeared to have been broken especially for tempering material" (Coe 1964:30); this temper was reported to account for up to 40 percent of the paste by volume. Within the type sample, cord impressions tanged from 0.5 to 2.0 mm in diameter and were typically applied at oblique or right angles to the rim, and parallel to one another; cross stamping was not observed. Vessel forms include both bowls and conoidal jars.

The Yadkin series appears related to the Onslow (Loftfield 1976:166-168) and Mount Pleasant (Phelps 1981:vi) series in the central and northern North Carolina coastal plain, respectively; the former is tempered with crushed quartz and the latter with sand and small quartz pebbles. All three wares appear to occupy a Middle Woodland time level, succeeding earlier Badin, New River, Carteret, and Deep Creek types. The presence of clay/grog inclusions with the crushed quartz in some of the fabric marked sherds at Doerschuk (Coe 1964:30, 32; see also background discussion of Yadkin Fabric Marked), suggests the large quartz inclusions may be a substitute for the sherd or clay//grog tempering noted in the Hanover and Wilmington series.

A large sample of Yadkin Cord Marked sherds (N=460) with subangular or unmodified quartz temper were reported at 38SU83 in Sumter County, South Carolina (Blanton et al. 1986:70). Three radiocarbon dates were obtained from 38SU83 that date the Yadkin assemblage, 180 B.C.±70, 380 B.C±80, and 520 B.C.±70 (Blanton et al. 1986:146-147). The latest date was from a feature with a Yadkin Cord Marked vessel, while the middle date was from a feature with both Yadkin Linear Check Stamped and Yadkin Simple Stamped sherds. The earliest date came from a smudge pit from the Yadkin level, and also appears to date the occupation. The 38SU83 sample resembled materials from the type site in that overstamping was uncommon, and cord size ranged between 0.5 and 2.0 mm. Most sherds were well smoothed, and S-twist was reported as dominating the assemblage (73 percent), with the remainder Z-twist. Four sherds of Yadkin Cord Marked were also observed at Mattassee Lake along the lower Santee (Anderson et al. 1982:318).

Primary references: Coe (1964:30-31); Anderson et al. (1982:318); Blanton et al. 1986:70.

YADKIN FABRIC MARKED

Sorting: criteria: Fabric impressions, typically characterized by a rigid warp element, applied over the exterior surface while the paste was plastic; occasionally smoothed somewhat after stamping. Paste characterized by large amounts of rounded and sub-rounded or crushed white and clear quartz gravel (1.0-8.0 mm; average about 3.0 mm). Rims typically excurvate with flattened, decorated (i.e., simple stamped or fabric impressed) lips.

Distribution: The ware is most commonly reported in the inner Coastal Plain and lower Piedmont of North and South Carolina in the vicinity of the boundary between the two states, from roughly the Santee-Wateree to the Cape Fear rivers. The ware does not appear to be common in the lower Coastal Plain of either state.

Chronological position: Early-Middle Woodland (ca. 500 B.C. - A.D. 500).

Background: The type Yadkin Fabric Marked was formally defined by Coe (1964:31-32), based on a sample of 269 sherds from the Doerschuk site. The ware is characterized by large, angular fragments of quartz (averaging about 3.0 mm in diameter) in the paste and finely woven, wicker fabric impressions (i.e. with a rigid warp element, which were ca. 4 mm wide) over the exterior surface of most specimens. A minority of the fabric marked sherds in the type sample (N=46; 17.1 percent) also had claylgrog inclusions with the crushed quartz in the paste (Coe 1964:30, 32), suggesting some kind of ties with the makers of the Hanover/Wilmington wares to the south and

east (see also background discussion for Yadkin Cord Marked). Vessel forms at the type site were shallow bowls and large, straight to slightly constricted jars.

A large sample of Yadkin Fabric Marked sherds (N=523) with subangular or unmodified quartz temper were reported at 38SU83 in Sumter County, South Carolina (Blanton et al. 1986:70). The 38SU83 sample resembled materials from the type site in having stiff or rigid warp elements that ranged from 4 to 7 mm wide. The weft was produced with cordage 0.5 to 1.5 mm in diameter that was all characterized by an S-twist.

A total of 74 Yadkin Fabric Marked sherds were recovered in the 1979 excavation units at Mattassee Lake, almost all from site 38BK246 (Anderson et al. 1982:299-300) The entire assemblage was characterized by rigid warp elements, with cross-stamping infrequent. The stamping is typically applied at high angles to the rim (stamp orientation determined by the alignment of the warp element with the rim). The assemblage is dominated by reddish-brown exteriors, although interiors are more variable and tend to be lighter colored. The paste is characterized by large amounts of rounded and subrounded quartz gravel; these inclusions are naturally weathered and have not been crushed, a primary difference between the Mattassee Lake assemblage and the Doerschuk type site material. The interiors are smooth and somewhat roughened, primarily because the extensive gravel in the paste results in a lumpy surface. Rims are typically excurvate, with flat or thickened, lips that are commonly decorated. Lip treatment includes both simple stamping and fabric impressions. The assemblage appears to derive from large jars.

The Mattassee Lake Yadkin Fabric Marked material differs somewhat from Coe's (1969:31-32) type sample, primarily in paste (rounded versus crushed inclusions), rim form (excurvate versus straight), and lip shape and treatment (flattened and decorated opposed to rounded and plain). The paste differs in the same respect (rounded versus crushed inclusions) from Loftfield's (1976:166-168) Onslow series, although no fabric impressed finish was reported from that series. Phelps's (1981) Mount Pleasant series appears quite similar, with rounded gravel inclusions and a fabric impressed exterior finish. Specimens of Yadkin Fabric Impressed from Mattassee Lake were, in fact, inspected by Dr. David S. Phelps (personnel communication 1982, 1995), who pronounced them within the range of variation for the northern coastal North Carolina Mt. Pleasant type. The Mattassee Lake Yadkin-like material was distinctive, however, both in appearance and distribution, from the Cape Fear Fabric Impressed material Phelps also included in the Mt. Pleasant type range, and formal separation of the two wares is believed warranted. Use of Yadkin, as opposed to Mt. Pleasant terminology for the primary type reflects the relative proximity of the Doerschuk type site, and the close temporal equivalence of the two collections.

Primary references: Coe (1952, 1964; Yadkin Fabric Marked type); Ferguson (1976; Yadkin-like ceramics); Cable and Cantley (1979; Yadkin-like ceramics); Trinkley (1980a; Yadkin ceramics); Loftfield (1976; Onslow series ceramics); Phelps (1981; Mount Pleasant series ceramics). Anderson et al. (1982:299-301); Blanton et al. (1986:70)

YADKIN LINEAR CHECK STAMPED

Sorting criteria: Linear check stamped impressions applied over the exterior surface while the paste was plastic; occasionally smoothed somewhat after stamping. Paste characterized by large amounts of rounded and sub-rounded or crushed white and clear quartz gravel (1.O-6.0 mm; average about 3.0 mm). Rims typically excurvate with flattened, decorated (i.e. simple stamped or fabric impressed) lips.

Distribution: Poorly documented. The ware is most commonly reported in the inner Coastal Plain and lower Piedmont of North and South Carolina in the vicinity of the boundary between the two states, from roughly the Santee-Wateree to the Cape Fear rivers.

Chronological vosition: Early-Middle Woodland (ca. 500 B.C. - A.D. 500)

Background: The type Yadkin Linear Check Stamped was initially described by Coe (1964:32), based on a sample of 64 sherds (about four percent of the total Yadkin sample) from the Doerschuk site in along the Yadkin River in Piedmont North Carolina. A local manufacture was inferred, since only in surface finish did these sherds differ from other Yadkin wares found on the site. A large sample of Yadkin Check and Linear Check Stamped sherds (N=231) were reported at 38SU83 in Sumter County, South Carolina (Blanton et al. 1986:70, 89, 90). The temper was, with two exceptions where crushing was observed, subangular or unmodified quartz. A combined check/linear check stamped category was employed at 38SU83; check stamping was described as the predominant finish. A radiocarbon date of 380 B.C±80 was obtained from 38SU83 from a feature with Yadkin Linear Check Stamped and Yadkin Simple Stamped sherds.

Six sherds of linear check stamped pottery characterized by a moderate incidence of large (1.O-3.0 mm) rounded quartz inclusions were also recovered at Mattassee Lake (Anderson et al. 1982:317-318). While the paste may reflect the normal range of variation within the Deptford Linear Check Stamped type, an association with Coe's (1969:32) Yadkin Linear Check Stamped type is possible, especially given the presence of other probable Yadkin wares from the terrace. Yadkin-like wares have also been reported from White's Creek site in Marlboro County, South Carolina (Ward 1978).

Primary references: Coe 1964:32; Ward 1978; Anderson et al. 1982:317-318; Blanton et al. 1986.

YADKIN PLAIN

Sorting criteria: Plain surface finish. Paste characterized by large amounts of rounded and subrounded or crushed white and clear quartz gravel (1.0-6.0 mm, average about 3.0 mm).

Distribution: The ware is most commonly reported in the inner Coastal Plain and lower Piedmont of North and South Carolina in the vicinity of the boundary between the two states, from roughly the Santee-Wateree to the Cape Fear rivers.

Chronological vosition: Early-Middle Woodland (ca. 500 B.C. - A.D. 500)

Backmound: The type Yadkin Plain was initially described by Anderson et al. (1982), based on a sample of 60 sherds from the Mattassee lake sites along the lower Santee River in South Carolina. The Yadkin series as originally defined by Coe (1964:30-32) included three types, Yadkin Cord-Marked, Yadkin Fabric-Marked, and Yadkin Linear Check Stamped. Plain wares were not reported, and the only other finish noted within the series was dentate stamping, observed on a single sherd (Coe 1964:30). A number of cordmarked, fabric impressed, and linear check-stamped sherds were recovered at Mattassee Lake that strongly resembled Coe's Yadkin types. These wares, characterized by large, angular and/or rounded fragments of quartz in the paste, were found with a fourth, plain finished ware that was otherwise identical to the other three. Description as a type within the Yadkin series was, therefore, considered appropriate. Possible related wares include Onslow Plain (Loftfield 1976: 168) from central coastal North Carolina, tempered with crushed quartz, and the Mount Pleasant series (Phelps 1981:vi) from northern coastal North Carolina, tempered with sand and gravel. All of these wares occur on a Middle Woodland time level, in rough agreement with their placement at Mattassee Lake.

The Yadkin Plain sample from Mattassee Lake had well-smoothed interior and exterior surfaces, although most sherds are slightly sandy to the touch. The paste is characterized by large amounts of rounded and subrounded quartz gravel; these inclusions are naturally weathered, and not intentionally crushed. The ware was predominantly reddish-brown in color; no rimsherds were recovered. The ware differs from both the Yadkin and Onslow series type materials (Coe 1964, Loftfield 1976) in having rounded as opposed to crushed quartz inclusions, although in this respect it is similar to Phelps (1981) Mount Pleasant series. Plain wares have not been described for either the Yadkin or Mount Pleasant series.

Primary references: Anderson et al. (1982:301-302; Yadkin Plain); Coe (1952, 1964; Yadkin series), Cable and Cantley (1979; Yadkin-like ceramics); Loftfield (1976; Onslow series ceramics); Phelps (1981; Mount Pleasant series ceramics).

YADKIN SIMPLE STAMPED

Sorting Criteria: Cross-stamped longitudinal U-shaped grooves over the exterior vessel surface; occasionally lightly to extensively smoothed after stamping. Impressions typically narrow (about 2.0 mm), with a range of from ca. 1.0 to 4.0 mm..

Distribution: Poorly documented. The ware, like other types in the Yadkin series, likely occurs in the inner Coastal Plain and lower Piedmont of North and South Carolina in the vicinity of the boundary between the two states, from roughly the Santee-Wateree to the Cape Fear rivers. The only large sample reported is from 38SU83 in Sumter County, South Carolina (Blanton et al. 1986:70).

Chronological position: Early-Middle Woodland (ca. 500 B.C. - A.D. 500)

Background: Not previously defined, although Blanton et al. (1986:70, 89, 90) briefly describe the type, based on a large sample of sherds (N=174) from 38SU83 in Sumter County, South Carolina. The temper in the 38SU83 sample was, with one exception where crushing was observed, subangular or unmodified quartz. A radiocarbon date of 380 B.C±80 (Blanton et al. 1986:146-147) was obtained from a feature with both Yadkin Linear Check Stamped and Yadkin Simple Stamped sherds (see also Background discussion for Yadkin Cord Marked).

Primary References: Blanton et al. (1986:70, 89, 90).

ZONED-INCISED PUNCTATE
(surface finish category)

Sorting Criteria: Geometric patterns of punctations bounded by fine incised lines, typically applied near the vessel rim. Decorations applied while the paste was plastic.

Probable Types: Thom's Creek Punctate; Deptford Zone-Incised

Chronological Position: Observed within Deptford and Thom's Creek series.

TYPES THAT WILL NEED TO BE ADDED TO THIS GUIDE

BADIN FABRIC MARKED (Coe 1964:28-29)
BADIN NET-IMPRESSED (Coe 1964:27-28)
BADIN PLAIN (Coe 1964:29)
CARTERSVILLE SERIES
CASHIE SERIES (Phelps)
COLINGTON SERIES (Phelps)
CONNESTEE SERIES
CROAKER LANDING SERIES (Phelps)
DEEP CREEK SERIES (Phelps)
DEPTFORD COMPLICATED STAMPED (DePratter 1979:126
HAMP'S LANDING SERIES (Hargrove 1993, 1996)
MARCY CREEK SERIES (Manson 1948)
MOCKLEY SERIES (Stephenson and Ferguson 1963))
MOUNT PLEASANT SERIES (Phelps)
NEW RIVER SERIES (Loftfield 1976)
OAK ISLAND SERIES (South 1960)
OEMLER COMPLICATED STAMPED (DePratter 1979:127-128)
SWANNANOA SERIES (Keel 1976)
TOWNSEND SERIES
WANDO SERIES (Adams and Trinkley)
WHITE OAK SERIES (South 1962, Loftfield 1976)
(PLUS MANY, MANY OTHERS!!)

TYPES THAT MAY NEED TO BE ELIMINATED FROM THIS GUIDE

ST CATHERINES PLAIN (combine with WILMINGTON PLAIN?? CHECK WITH CBD)
LENOIR SERIES (Crawford 1966)
GRIFTON SERIES (Crawford 1966)
ADAMS CREEK SERIES (Loftfield 1976)
OAK ISLAND SERIES (South 1960) ??

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