CONTENTS

CONTENTS i

ACKNOWLEDGEMENTS ix

ABSTRACT xii

I. INTRODUCTION 1
Project Setting 2

II. CULTURAL BACKGROUND 9
Previous Research 10

III. RESEARCH METHODS 15
Literature and Archival Review 15
Fieldwork Methods 15
Laboratory Analysis 19
Curation Statement 20
Public Outreach 20

IV. HISTORICAL BACKGROUND OF NORTH END PLANTATION 21
European Contact and the Colonial Period 21
Plantation Era and Civil War 30
Reconstruction to Present 32

V. RESULTS 37
Defining the North End Plantation 37
Locus A 38

Locus B 39
Locus C 39
Locus D 46
Locus E 47
Locus F 47
Locus G 47
Locus H 51
Locus I 53
Locus J 54
Locus K 54
Locus L 55
Locus M 55
Locus N 58
Locus O 59

Locus P 59
Locus Q 60
Material Culture of North End Plantation 60

VI. INTERPRETATIONS 83
Birth of the Ossabaw Island Plantations 83
Physical Organization of North End Plantation 86
Housing 88
Plantation Support 92
Lifeways of the Enslaved at North End Plantation 96

VII. CONCLUSIONS 99

VIII. RECOMMENDATIONS 103
Historical Research 103
Archaeological Research 104
Public Interpretation 104
Site Preservation Issues 105

REFERENCES CITED 107

Figure 1. Project Location (Georgia Department of Natural Resources, Wildlife Resources Division 2005). 4

Figure 2. Topographic Map of the North End Plantation. 5

Figure 3. View of Tabby 1, Facing Northwest, 9Ch1062. 6

Figure 4. Interior View of a Tabby Duplex after Removal of the Flooring, 9Ch1062. 6

Figure 5. GPR Survey Coverage, 9Ch1062. 16

Figure 6. GPR Survey in Progress, Locus M, 9Ch1062. 16

Figure 7. Post-Processing the GPR Data, 9Ch1062. 16

Figure 8. Metal Detector Survey in Progress, Locus G, 9Ch1062. 17

Figure 9. North End Plantation Excavation Plan. 18

Figure 10. Excavations in Tabby 2 Vicinity, North End Plantation. 18

Figure 11. Volunteer Dave Stroud Screens Excavation Fill from Locus C and His Audience Approves. 19

Figure 12. Isaac Levy's Advertisement for Sale of Ossabaw Island Property, September 13, 1759. 21

Figure 13. Example of a GPR Map, 9Ch1062. 37

Figure 14. Site Loci, 9Ch1062. 39

Figure 15. View of Locus C After Excavation, 9Ch1062. 40

Figure 16. Plan of Test Units 205 and 206, Base of Level 6, 9Ch1062. 41

Figure 17. Test Unit 205 and 206, North Profile, 9Ch1062. 41

Figure 18. Plan View of Test Units 207 and 208, Base of Level 2, 9Ch1062. 41

Figure 19. Plan of Test Units 207 and 208, Base of Level 4, 9Ch1062. 41

Figure 20. Test Units 207 and 208, East Profile, 9Ch1062. 42

Figure 21. Test Units 207 and 208, West Profile, 9Ch1062. 42

Figure 22. View of North Profile, Test Unit 207, 9Ch1062. 42

Figure 23. Plan of Test Units 210 and 211, Base of Level 2, 9Ch1062. 43

Figure 24. Plan of Test Units 210 and 211, Base of Level 5, 9Ch1062. 43

Figure 25. Test Units 210 and 211, East Profile, 9Ch1062. 43

Figure 26. Test Unit 211, South Profile, 9Ch1062. 43

Figure 27. Plan of Test Units 215 and 216, 9Ch1062. 46

Figure 28. Test Units 215 and 216, North Profile, 9Ch1062. 46

Figure 29. Enlarged GPR Plan at 19.2 to 24.5 ns, Blocks BC, BD, BE, BH, and BJ, 9Ch1062. 47

Figure 30. Plan and East Profile of Shovel Test 181 and Feature 34, 9Ch1062. 47

Figure 31. GPR Plan, Blocks BE, BF, and BG, 9Ch1062. 48

Figure 32. West View of Test Unit 203 and Feature 10, 9Ch1062. 49

Figure 33. Plan View of Test Unit 203, 9Ch1062. 50

Figure 34. Plan View of Test Unit 203 and Feature 10, Base of Level 5. 50

Figure 35. North Profile, Test Unit 203, 9Ch1062. 50

Figure 36. North Profiles of Features 20 and 21, 9Ch1062. 50

Figure 37. Feature 23, East Profile, 9Ch1062. 51

Figure 38. Plan of Test Unit 209 and Feature 15, 9Ch1062. 51

Figure 39. South Profile, Test Unit 209, 9Ch1062. 52

Figure 40. Feature 15, South Profile, 9Ch1062. 52

Figure 41. South Profile, Test Unit 212, 9Ch1062. 52

Figure 42. Plan of Test Unit 214 and Feature 22, Base of Level 3, 9Ch1062. 53

Figure 43. Test Unit 214, North Profile, 9Ch1062. 53

Figure 44. View from Locus H, Facing North, During a 1930s Building Construction (Vanishing Georgia 2005). 53

Figure 45. Plan of GPR Block AS at About 50 cm Below Surface, Locus F, 9Ch1062. 54

Figure 46. Photograph from the 1930s, Facing East, Line of Oaks in Locus K Visible in Distance (Vanishing Georgia 2005). 55

Figure 47. Shovel Test 166 and Feature 31, West Profile, 9Ch1062. 55

Figure 48. GPR Block C, 45 cm Below Surface, 9Ch1062. 56

Figure 49. Plan View of Test Unit 204, Locus M. 56

Figure 50. Test Unit 204, North Profile, 9Ch1062. 57

Figure 51. Plan and North Profile of Shovel Test 170 and Feature 32, 9Ch1062. 57

Figure 52. View of Tabby Smokehouse, Facing Southeast, 9Ch1062. 58

Figure 53. Plan View of Test Unit 213 and Feature 19, Base of Level 2, 9Ch1062. 58

Figure 54. Test Unit 213 and Feature 19, East Profile, 9Ch1062. 59

Figure 55. Archaeologists Confer with Historical Architect George Fore During Excavation of Test Unit 217, 9Ch1062. 59

Figure 56. Plan of Test Unit 217, Base of Level 2, 9Ch1062. 59

Figure 57. Test Unit 217, East Profile, 9Ch1062. 59

Figure 58. Examples of Clothing Artifacts, 9Ch1062. 63

Figure 59. Republican Blues (Harpers Weekly 1860). 64

Figure 60. Republican Blues Button, Locus Q, 9Ch1062 (Shown Enlarged). 65

Figure 61. Combed and Dotted Yellow Slipware, 9Ch1062 (Lot 147). 67

Figure 62. Colonoware Sherds, 9Ch1062 (Lot 46). 69

Figure 63. Ossabaw Island Manager Andy Meadows Unearths a Bottle, Locus C, 9Ch1062. 70

Figure 64. Minard Liniment Bottle, 9Ch1062 (Lot 43). 71

Figure 65. Advertisement for Minard's Liniment (The History Project 2005). 71

Figure 66. Bone Lice Comb, 9Ch1062 (Lot 75). 74

Figure 67. Metal Charm from Surface, Locus E, 9Ch1062. 75

Figure 68. British Brown Bess Musket Hardware, Canepatch Road (Courtesy of Andy Maury and Andy Meadows). 76

Figure 69. French Blade Gunflint, 9Ch1062 (Lot 87). 77

Figure 70. English Spall Gunflints, 9Ch1062 (Lot 214). 77

Figure 71. Brass Ship Nail, 9Ch1062 (Lot 219). 78

Figure 72. Porcelain Doll Plate, 9Ch1062 (Lot 56). 80

Figure 73. Bill Tatnall, Frederica, St. Simons Island, Georgia, 1935 (Courtesy Library of Congress). 81

Figure 74. Portion of 1860 Nautical Chart of Ossabaw Sound Detailing the North End Plantation. 85

Figure 75. Portion of a 1910 Nautical Chart of Ossabaw Sound Detailing the North End Plantation. 85

Figure 76. Aerial Perspective of the North End Plantation, ca. 1930s (Vanishing Georgia 2005). 86

Figure 77. GPR Plan at 3.1 to 8.3 ns Below Ground Surface, 9Ch1062. 89

Figure 78. GPR Plan at 13.8 to 19 ns Below Ground Surface, 9Ch1062. 89

Figure 79. GPR Plan at 20.9 to 26.2 ns Below Ground Surface, 9Ch1062. 90

Figure 80. GPR Plan at 29.9 to 35.2 ns Below Ground Surface, 9Ch1062. 90

Figure 81. GPR Plan at 44.2 to 49.5 ns Below Ground Surface, 9Ch1062. 91

Figure 82. GPR Plan at 71.2 to 74.6 ns Below Ground Surface, 9Ch1062. 91

Figure 83. Indigo Operation in South Carolina (Mouzon and Lodge 1773). 95

Table 1. Chatham County Ceramic Sequence. 13

Table 2. Enslaved by Bryan M. Morel, District 13, Chatham County, 1850. 31

Table 3. Test Unit Locations, North End Plantation, 9Ch1062. 38

Table 4. Site Loci, North End Plantation, 9Ch1062. 38

Table 5. Mean Ceramic Dates, North End Plantation. 44

Table 6. Tobacco Pipestem Dates, Locus C and Site 9Ch1062. 44

Table 7. Window Glass Dates, 9Ch1062 45

Table 8. Nail Summary, 9Ch1062 62

Table 9. Frequency Comparison of Amber and Olive Green Glass, 9Ch1062. 70

ACKNOWLEDGEMENTS

The archaeological investigations at Ossabaw Island's North End Plantation were accomplished by many individuals, organizations, and agencies. These people and organizations contributed to the success of the project, either by fiscal contributions, physical labor, clever suggestions, or moral support. To these people and organizations I offer a global *"Thank You!"* We give a hearty thanks and to the support staff of the Ossabaw Island Foundation and the Georgia Department of Natural Resources for their support. The intrepid board members (and their families) of the Ossabaw Island Foundation, who braved the freezing spray and high winds to tour and volunteer on a shovel test grid, are greatly appreciated. The field crew consisted of numerous individuals who participated in a "tag team" work schedule with the Project Archaeologist [DTE]. The team included: David C. Crass, Ronnie Rogers, Jason Burns, Joey Charles, and Bob Entorf with the Archaeological Services Unit, Melina Vasquez, historic program assistant, and Kenneth Thomas, Historian, Historic Preservation Division, Georgia Department of Natural Resources; Danny Brown, Supervisor, Fort McAllister State Historic Site, Georgia Department of Natural Resources; Judy Wood, Savannah District, U.S. Army Corps of Engineers; and Dan Battle, Tracy Dean, Ginger Ellerman, Rita Folse Elliott, and Virginia Pierce, representing The LAMAR Institute.

Dan Battle worked as a field archaeologist with the LAMAR Institute but he also donated services and vital supplies as Vice President of Cypress Cultural Consultants, LLC, of Beaufort, South Carolina.

A partial list of those whose extensive volunteer efforts were recognized included: Jim Bitler, Dean Goodman, Mark Frissell, Andy Maury, Andy Meadows, Daryl Hartley, Jim Simmons, David Stroud, and Donald Thieme. Four volunteers merit particular recognition. Mark Frissell and David Stroud, Historic Preservation Consultants in Savannah, volunteered to work at hard labor for two weeks in the February winter. Both proved to be quick studies in field archaeology and were crucial to the success of the field project. Dean Goodman, Ph.D Geophysicist with Geophyscial Archaeometry Laboratory, Woodland Hills, California, deserves special thanks for his extensive contributions to the Ground Penetrating Radar portion of this study. Dr. Goodman, whose GPR-Slice software is an industry leader in GPR studies, volunteered his time in the field and laboratory to work with the project team in processing the radar data. Many examples of Dr. Goodman's contributions to the project are presented in Appendix 3.

Don Thieme, Ph.D Geoarchaeologist, Georgia Perimeter College, Lawrenceville, made a field visit to examine the soils at the North End Plantation where he gathered samples for laboratory analysis. His preliminary findings are provided in Appendix 4.

Allen Vegotsky, Ph.D and a hard-working member of the Greater Atlanta Archaeological Society and the Society for Georgia Archaeology, provided valuable research information on Minard's Liniment.

Intrepid Archaeologists and Volunteers, North End Plantation, January 29, 2005.

Thanks also to David C. Fischetti, President of DCF Engineering, Cary, North Carolina, and George Fore, Historical Architect, Raleigh, North Carolina, for their insight and advice in interpreting the archaeological record as it relates to the built environment. These gentlemen are directing the architecture restoration of the tabby structures at the North End Plantation.

Important background information was provided by Richard Laub, PhD. and the Fall 2004 Class in Conservation of Historic Building Materials from Georgia State University (Barrickman et al. 2004).

Thanks to Richard Thornton and M. Tyus Butler, Jr., for providing useful family history and genealogical information about the John Morel lineage. Both men are descendants of the Morels and both learned of the archaeological study as a result of the press coverage and they came forth with offerings of historical data that was quite beneficial to the project.

Several news journalists who were covering the archaeology news story at Ossabaw themselves were immersed in the story as they contributed volunteer labor to the project. These include Jane Fishman and Eric Wills. Jane proved to be handy with a shovel. Eric followed the historical trail to the University of North Carolina where he examined records of the Kollock plantation on Ossabaw Island, as well as other relevant sources. Other journalists were able to maintain their professional distance, although I am sure they were secretly dying to get their hands dirty in the historic midden. These include Matt Carlins, WSAV3 television, Savannah; Ed Gordon, News

and Notes, National Public Radio, Los Angeles; Andre Jones, photographer and news journalist CNN; Michael Jordan, Coastal Heritage Society, WSAV3 television, WTKS 1290AM radio, and *Connects* magazine; Orlando Montoya, Georgia Gazette news magazine, Georgia Public Radio, Savannah; Steven Morton, Associated Press photographer and free-lance photographer; and Russ Bynum, Associated Press. Thanks also to Andrew Curry, Editor, *Smithsonian* magazine for his interest in the project. Jason Burns and Chica Arndt provided the author [Elliott] with timely speaking engagements that afforded an opportunity to inform the public of the Ossabaw Island study.

Finally, thanks to Eleanor Torrey "Sandy' West, whose vision insured the preservation of Ossabaw Island's wonderful natural and cultural resources for future generations.

ABSTRACT

This report documents the 2005 archaeological investigations conducted at the North End Plantation site, Ossabaw Island, Chatham County, Georgia. This study was conducted by the LAMAR Institute and the Archaeological Services Unit, Historic Preservation Division, Georgia Department of Natural Resources for the Ossabaw Island Foundation. The field study was conducted from January through May, 2005 and this research formed part of the Save America's Treasures grant project, funded by the National Park Service, U.S. Department of the Interior and the Robert W. Woodruff Foundation. The study area was covered by topographic mapping and surface reconnaissance, Ground Penetrating Radar (GPR) survey, metal detector survey, selectively placed shovel tests, and 16 test units (totaling 20 m^2). One previously unrecorded archaeological site, 9Ch1062, was defined by the project. Site 9CH1062 is a large site that contains eighteenth through twentieth century historic components and minor aboriginal components. This archaeological study represents a first look at many of these areas and serves to establish baseline information for future studies at this site. Site 9Ch1062 is considered to be a contributing element of the Ossabaw Island National Historic Landmark, and a long-term study of the site is recommended.

I. INTRODUCTION

The Ossabaw Island Foundation and the Georgia Department of Natural Resources were awarded a Save America's Treasures grant by the United States Department of the Interior, National Park Service. The Ossabaw Island Foundation also received grant support from the Robert W. Woodruff Foundation, and from other public and private sources. This study, which was funded by a Save America's Treasures grant and the Robert W. Woodruff Foundation, was the first exploration of early historic settlement on Ossabaw Island.

A team of archaeologists and historic preservationists with GDNR, The Ossabaw Island Foundation, and The LAMAR Institute completed a search for underground clues about the story of the North End Plantation, Ossabaw Island, Georgia. The grant was intended for the study of three tabby dwellings and one tabby building of undetermined function (suspected to be a smokehouse) on Ossabaw Island's north end. Archaeology was an integral part of this research, stabilization and historical restoration project.

The search focused on three intact tabby slave dwellings and a possible smokehouse, but the investigation has discovered much more, including evidence of at least seven additional structures and a deeply buried occupation zone that extends back to the 1760s. These buildings formed one part of what was known historically, appropriately enough, as the North End Plantation. The North End Plantation site contains one of the best preserved slave quarters (both architecturally and archaeologically) in the Southeast.

This report details the archaeological work done on the North End Plantation site. North End Plantation was owned by John Morel by 1763 and was an important producer of indigo and timber for the British colonies. During the colonial period it housed at least 30 enslaved African-Americans. John Morel was a wealthy Georgian, whose father came from Switzerland and settled at Purysburg, South Carolina around 1732, prior to moving to Georgia. The North End plantation was inherited by John Morel's son, Bryan in the late 1700s and it continued to flourish until the American Civil War.

Recent historical research suggests that by 1860 the slave quarter contained nine dwellings, and the archaeologists surmise that that number is considerably higher. The plan and layout of the earlier nineteenth century and eighteenth century slave quarter is presently unknown, but the archaeological evidence of building posts, refuse pits, and midden deposits may allow for its accurate delineation.

The 1840s slave quarter was a relatively late addition to the plantation, however, as the archaeological study demonstrated. The age of the central extant tabby dwelling (named Tabby Number 2) was deduced by the project's Historical Architect George Fore to be ca. 1840-1845. The archaeological evidence gathered by this project tentatively supports Fore's age estimate.

Archaeological midden deposits extend down about 2 feet below ground and most of these deposits pre-date the standing buildings. The midden contains a wide variety of everyday objects used by the enslaved including weaponry, sewing apparel, plates, bottles, fishhooks, nails, as well as an abundance of food remains. These items tell a story of what life was like under slavery on Georgia's barrier islands. The well preserved food evidence reveals that

Morel's enslaved dined on a wide variety of wild and domestic foods, including: peaches, peanuts, walnuts, alligator, various fishes, turtles, snakes, and water birds, cow, pig, deer, raccoon, otter, squirrel, and other rodents.

Several of the test excavations at the North End Plantation slave quarter revealed a buried ash soil zone, which caps an older occupation zone. An historical account by Georgia's Governor John Martin from late 1782 records a raid by the British/Loyalists on Morel's plantation in which 30 slaves and a large quantity of indigo were taken as prizes and a unfinished vessel was burned in drydock. The attackers were tentatively identified as Captain Scallion [Scallon/Scallan] who commanded the British galley *Arbuthnot*. Although Governor Martin made no mention of any burning of the slave quarter, archaeologists hypothesize that the buried ash zone may relate to this catastrophic event from the final days of the American Revolution.

This report contains eight chapters and four appendices. Chapter 2 contains a review of previous archaeological research on Ossabaw Island. This chapter also includes general background information on the cultural sequence for coastal Georgia. Chapter 3 presents the research methods employed in this study. Chapter 4 contains a background discussion of the cultural history of the North End Plantation. Chapter 5 presents the results of the archaeological fieldwork for the explored portions of the North End Plantation. The description of the various site loci is followed by a summary of the material culture that was recovered by the project. Chapter 6 provides interpretations of the findings. Chapter 7 contains a summary of the primary conclusions resulting from the study. Chapter 8 offers several recommendations for future research at the North End Plantation and elsewhere on Ossabaw Island. The report is supported by a thorough list of references cited, which should also serve as a useful reference for future historical and archaeological research at Ossabaw Island.

Appendix 1 consists of an inventory of the artifacts recovered by the project. This spreadsheet includes information on the Lot number, Site Loci, Excavation Unit number, Excavation Level, Feature number, other recovery information (such as metal detected item, shovel test, surface find, etc.), artifact count, artifact description, raw material, and other notable artifact attributes.

Appendix 2 contains selected artifact images from the project. These images are digital scans and are identified by their respective lot numbers, which can be cross-referenced to the lot numbers in Appendix 1 for additional context information.

Appendix 3 contains additional GPR output images, not shown in the report. This appendix also contains a table detailing the grid layout and other important attributes for the GPR survey blocks. Appendix 3 also contains a discussion by Dean Goodman on the improvements made to his GPR-Slice software, which resulted from his involvement with the Ossabaw GPR project.

Appendix 4 contains a preliminary analysis of soils from the North End Plantation, which was conducted by Don Thieme. Thieme examined soils from several of the excavation contexts and gathered samples for laboratory processing.

PROJECT SETTING

The project area is located on the north-central end of Ossabaw Island in Chatham County in southeastern Georgia (Figures 1

and 2; USGS 1985; Bozeman 1997). Ossabaw Island is a large barrier island that was formerly a barrier island during the Pleistocene epoch. Ossabaw Island is bounded on the north by the Egg Islands, Raccoon Key, Ossabaw Sound, and the Atlantic Ocean, on the west the Ogeechee River, on the east by the Atlantic Ocean, and on the southwest by St. Catherine's Island Sound and the Medway River. Elevations on the island range from sea level to 5 m amsl (above mean sea level). The maximum elevation in the study area is 2.5 m amsl.

The North End Plantation occupied a large section on the north end of Ossabaw Island. The obvious historic resources from the plantation days include three tabby duplexes and a tabby smokehouse. These resources were the primary subject of this study at the onset. Figure 3 shows an exterior view of Tabby 1 and Figure 4 shows an interior view of one of the duplexes.

Geology and Soils

Geology. The island was formed during the Pleistocene period and many changes in sea level have been documented during the Holocene period by geological and archaeological research (Georgia Department of Natural Resources 1976; Howard and Frey 1980; Webb and DePratter 1982).

The geological structure of Ossabaw Island consists of Holocene Shoreline Complex and Pleistocene Silver Bluff Shoreline Complex strata (Georgia D.N.R. 1976). According to DePratter (1975:1), Ossabaw Island is geologically younger than 50,000 years. Prior to that, this area was submerged. Ossabaw Island became a relatively stable land surface by approximately 35,000 years ago. During the last major episode of continental glaciation and lowered sea level approximately 25,000 years ago, Ossabaw Island was part of the continental mainland, and was situated at least 70 miles inland from the ocean. The sea level began to rise by 18,000 B.P. and by 5000 B.P., Ossabaw Island was formed.

Geologists have well documented the numerous fluctuations in Georgia coastline since the end of Pleistocene glaciation. According to DePratter and Howard (1980:2), "Shoreline progradation and erosion has characterized the southeastern United States for the past 2 million years." They further state: "Well-exposed Pleistocene outcrops are scarce on the Georgia coast, and reliable, undisturbed cores through coastal sequences are lacking." At the end of the Pleistocene, while vast amounts of moisture were frozen in glaciers, the land mass on the Georgia coast extended many kilometers out onto the Continental Shelf into what is now the Atlantic Ocean. According to DePratter and Howard (1980:237), "Ossabaw, Skidaway, and Wilmington Islands are composed of Pleistocene sediment; everything to the east is Holocene. Along the south side of the Savannah River, this expanse represents nearly 10 km of pro-gradation. Southward from the Savannah River, these Holocene wedge trends merge." Howard and Frey (1980:66) provide a summary of the Holocene depositional environment:

> The middle and outer continental shelf, a palimpsest substrate inherited from the Pleistocene, is atypical of most ancient shelves or epeiric seas; yet other environments, including those of the nearshore shelf, provide important analogs for ancient facies. Physical and biogenic sedimentary structures are distinctive and diagnostic of respective environments and processes.

Figure 1. Project Location (Georgia Department of Natural Resources, Wildlife Resources Division 2005).

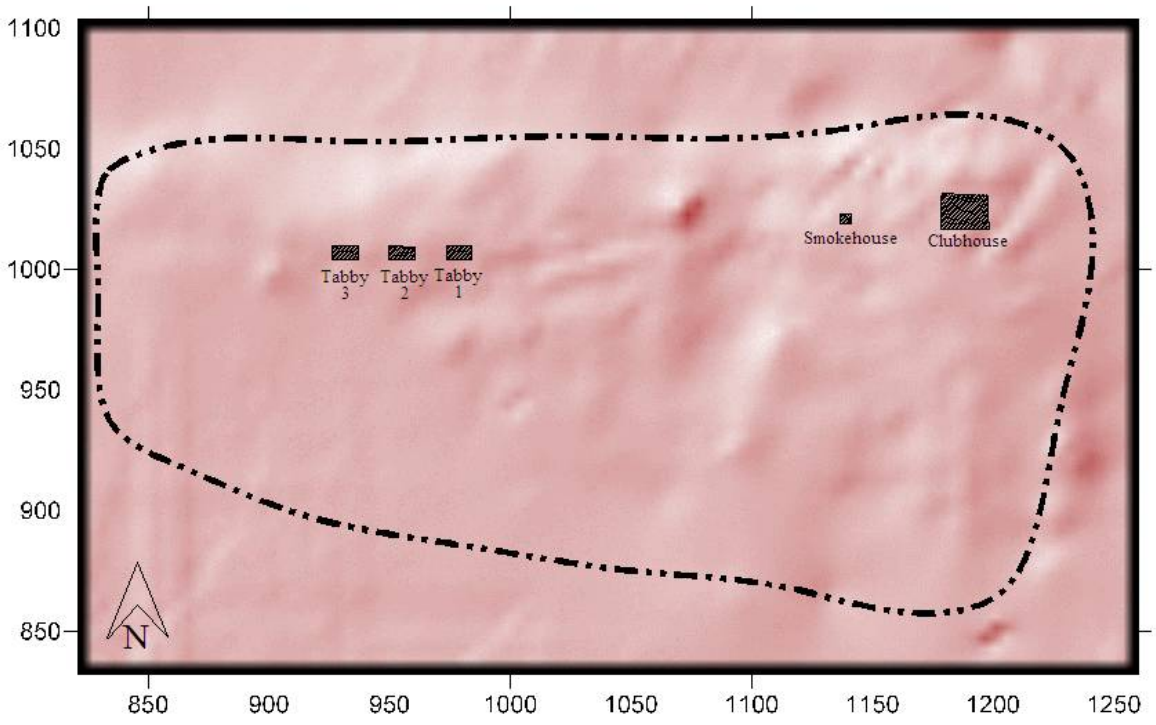


Figure 2. Topographic Map of the North End Plantation.

Marine depositional environments, in addition to the shelf, include inlet shoals (ebb tidal deltas), spits, beaches, and beach-related tidal flats. Relict salt marsh deposits crop out on erosional beaches. Marginal marine or back-barrier facies include estuarine channels--whether of riverine or tidal stream origin, point bars, tidal flats, tidal stream banks, salt marshes, and washover fans.

Present coastal morphology inherited many characteristics from preexisting Pleistocene and Late Tertiary configurations. Holocene accretion has occurred mainly in the vicinity of major river mouths, the nearshore shelf, inlet shoals, and various back-barrier environments.

Soils. Soils in the well drained areas consist of sandy loams and sands with varying amounts of culturally introduced oyster shell. The northeastern section of Ossabaw Island is dominated by soils of the Lakeland Chipley Association (Wilkes et al. 1974). Soil pH and salinity significantly affect the productivity of soils on Ossabaw Island (Swanberg 1968). The wetland portions of the study area are composed of Ellabelle soils. Ellabelle soils are characteristically poorly drained, wooded soils that are subject to flooding and not well suited for cultivation.

Olustee fine sand is a poorly drained soil found in areas above the broad flats, drainages, and ponds. It is low in natural fertility and organic matter and is strongly

Figure 3. View of Tabby 1, Facing Northwest, 9Ch1062.

Figure 4. Interior View of a Tabby Duplex after Removal of the Flooring, 9Ch1062.

acid to very strongly acid. A typical profile of Olustee Series consists of: 0-6 inches, very dark gray (N 3/0) fine sand; 6-11 inches, very dark brown (10YR 2/2) and dark yellowish brown (10YR 4/4) fine sand stained by organic matter; 11-32 inches, pale brown (10YR6/3) fine sand grading to pale olive (5Y 6/3), mottled with shades of pale brown (10YR 6/3) and gray (10YR 6/1) in the lower part; and 32-60 inches, gray (10YR 6/1) sandy clay loam mottled with yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) sandy clay loam (Wilkes et al. 1974:29).

Tidal Marsh, Salty soils are found between the barrier islands and the mainland. They are partly covered by normal high tides. The sediments are very dark gray to black and loamy (Wilkes et al. 1974:35).

Soils on Site 9CH1062 have been modified by humans, particularly with the formation of oyster shell middens that increase soil fertility and affect the natural soil pH. These variations are not indicated by published soil surveys. Site 9CH1062 soils have been mapped as a poorly drained soil with a spodic (Bh) underlying an E horizon mapped of the Leon series. The published soil map shows the Leon from about the vicinity of Tabby 2 south into the woods (Wilkes et al. 1974). Chipley fine sand occurs on broad ridges and is moderately well drained, but are low in natural fertility and organic matter. It is very strongly acid and strongly acid throughout. It is suited for agriculture, although drainage of the water table and application of fertilizers are often required for productive crop yields. A typical profile of Chipley Series consists of: 0-7 inches, very dark grayish brown (2.5Y 3/2) fine sand; 7-18 inches, olive-brown (2.5Y 4/4) fine sand; 18-33 inches, light olive-brown (2.5Y 5/4) fine sand with light gray (2.5Y 7/2) mottles; 33-43 inches, light yellowish brown (2.5Y 6/4) fine sand with brownish-yellow (10YR 6/6) and light gray (2.5Y 7/2) mottles; 43-57 inches, light yellowish-brown (2.5Y 6/4) fine sand with light gray (2.5Y 7/2) and yellowish-red (5YR 5/8) mottles; and 57-65 inches, light gray (2.5Y 7/2) fine sand with strong brown (7.5YR 5/8) mottles.

Thieme provides a more detailed discussion of Ossabaw Island geology, geomorphology, and soils in Appendix 4. Thieme's analysis is based on his examination of the archaeological excavations at the North End Plantation and brief reconnaissance examination of other parts of Ossabaw Island. Of particular interest is a buried "ashy" soil zone that was observed in several of the excavations on the North End plantation. That zone may represent a catastrophic burning event. The artifacts located beneath and above this zone roughly bracket this possible event to the eighteenth or early nineteenth century. An attractive explanation for this ashy soil may be found in the historical record, when, in 1782, British troops ransacked the Morel plantation. Although the accounts of these events are sketchy and no mention is made directly stating that the slave quarter was burned, one ship that was under construction was burned. The proof of the connection between the soil zone and the military history of the North End Plantation cannot be resolved based on the current evidence but these data beg the question. The answers to this question must await additional field study.

Climate

Precipitation in Chatham County generally ranges from 32.9 to 64.2 inches annually, averaging 124.23 cm. Most of the precipitation occurs between June and October. The area is prone to devastating hurricanes that originate in the Atlantic Ocean. Notable hurricanes struck the

Georgia coast in 1752, 1804, 1824, 1881, and 1898 (Kelly 1980). The extent of damage to Ossabaw Island as a result of these major storms went unrecorded but it was probably considerable given the accounts of destruction in Savannah, Sunbury, and other nearby locations on the Georgia coast where records have survived. Temperatures range from an average low of 39.3^{o} F during December to an average high of 90.4^{o} F during July. Temperatures above 100^{o} F and below 0^{o} F are not uncommon. The period between March 30 and November 1 are generally frost free, and the growing season averages 275 days. Winters are short and mild and summers are humid and warm (Wilkes et al. 1974:68).

Biota

Food resource zones that are available within a one kilometer radius of the study area include riverine resources, tidal creeks, marsh areas, oyster reefs, and the mixed pine/live oak forests of Ossabaw Island. Vegetation consists of a mature mixed live oak and pine forest and oak-palmetto forest. The original forest cover was probably maritime forest and has been depleted by logging and replaced by secondary growth. Plant foods include acorns, hickory nuts, and assorted tubers and berries. Trees in the study area include live oak, palmetto palm, red bay, rusty lyonia, myrtle oak, slash pine. Wax myrtle, gallberries, and yaupon holly are common shrubs in the area. Saw palmetto, muscadine grape, greenbrier, bamboo brier, bayberry, and sparkleberry are dominant understory plants. Glasswort, an edible marsh grass, also is available in the area (Hillestad 1975; Wilkes et al. 1974: 30; McKee 1984:32; Pearson 1977:29-33).

Estuarine resources include shellfish, turtles, crabs, shrimp, and a wide diversity of fish resources. Island resources that include alligator, bear, deer, diamondback terrapin, mink, opossum, otter, marsh rabbit, and raccoon. Numerous waterfowl are also available. Feral pigs were introduced to the island during the historic period. The pond located on the western side of the study area contains a variety of coastal wildlife, including large wood stork feeding areas. Dolphins frequent the tidal creeks on Ossabaw Island, as do a wide variety of fish. Many species of birds, amphibians, and reptiles were observed during the field survey, and the area was likely an important for food resources in the past (McKee 1984).

II. CULTURAL BACKGROUND

Archaeological research on the Georgia coast has resulted in a reconstructed culture history. Although this history is greatly biased towards the ceramic periods, it does provide a cultural framework for discussing archaeological sites in the region. The prehistory of Georgia has been divided into four major periods: Paleoindian, Archaic, Woodland, and Mississippian.

The Paleoindian period begins with man's first entry into the North American continent. The first appearance of man on the coast was probably after 16,000 B.P. (Before Present, or prior to A.D. 1950), although an increasing number of scholars argue for an earlier presence. Evidence of Paleoindian culture in coastal Georgia consists solely of stone tools, particularly fluted lanceolate projectile points (Waring 1968c), although there is other evidence from South Carolina and Florida (Wright 1980; Rouse 1950; Neill 1964). While evidence of Early Man has rarely been found in close association with extinct mega-fauna in the eastern United States, associated finds are common elsewhere on the continent (Irwin-Williams 1967). Most Paleoindian sites in Georgia are surface finds, although Paleoindian stone tools have been recovered from buried contexts on seven sites in Georgia. Paleoindian projectile point finds from the Sea Islands are quite rare, and no intact sites from the period have been identified (Anderson et al. 1990).

Archaic life-ways were initiated following the extinction of the Pleistocene fauna as modern flora and fauna became established in the southeastern United States. In portions of the Coastal Plain, certain Pleistocene animals may have survived into the Early Archaic period. The Archaic has been subdivided into three sub-periods--Early, Middle, and Late. The diagnostic artifacts from this period include distinctive projectile point types. The Early Archaic is characterized by projectile points with side- and corner-notched hafting elements. Early Archaic period artifacts have been reported from one site on Ossabaw Island (DePratter 1974:9). Stemmed hafting types become more common during the Middle and Late Archaic periods. By the Late Archaic, ground stone items were a common element in the material culture. The pre-ceramic Archaic of the Georgia coast has received very little archaeological attention (DePratter 1975), since the changes in sea level resulted in many of the sites being submerged. They may still exist underwater in the marshes and extending onto the continental shelf (DePratter and Howard 1981).

Pre-ceramic Archaic life-ways on the Georgia coast were followed by ceramic traditions. The development of the Late Archaic (2200-1000 B.C.), Woodland (1000 B.C.-A.D. 900), and Mississippian (A.D. 900-1540) ceramic traditions of coastal Georgia is accompanied by an increase in the use of estuarine resources. Settlements from this period include villages, smaller residential sites, and temporary extractive sites.

The St. Simons phase shell middens were first occupied by 2300 B.C. During the St. Simons phase, the sea level was approximately 1.5 to 2 m lower than present (Marrinan 1975; DePratter 1977:11). St. Simons phase subsistence focused on the use of mollusks and fishes found in the marsh and lagoons. By 700 B.C., the sea level had dropped to approximately four meters below present (DePratter 1977:11), resulting in the submergence of many Refuge phase sites beneath the present marsh. The use of shellfish declined after 1000 B.C., perhaps as a result of environmental change (Marrinan 1975;

DePratter 1977:11). By 600 B.C., the sea level once again began to rise and reached its present level by 400 B.C.

The Woodland period, divided into Early, Middle, and Late subdivisions, began around 1000 B.C. and continued until A.D. 900. Groups became increasingly sedentary during this period. Elaborate burial practices became more frequent, often requiring group effort. Large aggregated settlements are documented for this period.

For Ossabaw Island, the ceramic sequence for this period is well defined (Webb and DePratter 1982:6-7; Williams 1968), with Refuge type ceramics, including punctated and simple stamped decorations, occurring in the Early Woodland, being replaced by Deptford wares, including check stamped, linear check stamped, simple stamped, and cord marked decorations, later in the Middle Woodland, and Wilmington pottery during the Late Woodland. Villages dating to the Late Woodland have been found elsewhere in Chatham County at the Walthour site, 9CH11 and 9CH16, and the Cedar Grove Site, 9CH17 and 9CH18. Wilmington Phase ceramics are distinctive and easily recognized by the presence of grog (clay lumps) used as a tempering agent. Wilmington wares include cord marked and plain wares. St. Catherines ceramics, including plain and cord marked wares, are currently considered to date to the Late Woodland/Mississippian transitional period. Diagnostic chipped stone artifacts of the Woodland Period include small stemmed projectile points, miscellaneous notched projectile points, and triangular points. This latter form was a true arrowhead, signaling the use of the bow and arrow for the first time.

The Mississippian Period began around A.D. 900 on Ossabaw Island. This period is marked by the addition of public architectural house mounds for the elite, increasing importance of maize agriculture, and the formation of political units into chiefdoms with society becoming more formally structured. Political territories became more clearly marked. The Mississippian Period marked the pinnacle of political and social complexity of prehistoric groups in the Southeast. This development was truncated by the arrival of Europeans, bringing their mission organization and new diseases.

The Mississippian Period on the northern Georgia coast is identified by Savannah and Irene type ceramics. Savannah phase and Irene phase villages have been located in Chatham County (Caldwell and McCann 1941). Ossabaw Island may have been evacuated by the mid-fifteenth or early sixteenth century. Historically known tribal groups, such as the Guale, may have used the area. Historic period aboriginal occupation is known as the Altamaha phase during the seventeenth century.

PREVIOUS RESEARCH

The northern coastal sections of Georgia have been the scene of considerable archaeological, geological, and paleontological research. Interest in the area was sparked during the mid nineteenth century when Pleistocene fossils were discovered on the banks of the Skidaway Narrows on the western side of the island. Finds of extinct species attracted the attention of international scholars, and the locale was known as *Fossilossa* (Hodgson 1846; Lyell 1840).

Interest in the shell heaps, mounds, and aboriginal antiquities of coastal Georgia and South Carolina swelled throughout the late nineteenth- and early twentieth centuries (Brown 1873; Moore 1897).

When archaeology became a focal point of Roosevelt's New Deal administration, local scholars were successful in initiating Works Progress Administration (WPA) works projects on several sites in Chatham County, including Irene, Bilbo, and Deptford (Caldwell 1943, 1958; Caldwell and McCann 1941; Caldwell and Waring 1939a, 1939b; Holder 1938; McCann 1940; Waring 1968a, 1968b; Williams 1968). This pioneering research resulted in a ceramic sequence that proved to be extremely useful in southeastern United States. None of the WPA sites, however, were located on Ossabaw Island due to its isolation from the mainland. Nearly 800 archaeological sites have been recorded within Chatham County to date. These recorded sites are the results of large scale excavations, small test excavations, and numerous archaeological surveys.

Georgia Sea Island Archaeological Surveys

Survey and excavation research since the 1970s also has resulted in an increased site inventory on other sea islands of the Georgia and South Carolina coast (Brooks et al. 1982; Crook 1975; Crusoe and DePratter 1974; Deagan 1975; DePratter 1973, 1974, 1975, 1976a, 1976b, 1977, 1978, 1979; 1991; DePratter and Howard 1980, 1981; DePratter and Pearson 1975; Elliott 1985a; Ehrenhard 1976; Honerkamp 1980; Larson 1958; Larsen et al. 1980; Marrinan 1975, 1976; Martinez 1975; McMichael 1977; Milanich 1977; Milanich and Machover 1976; Moore 1985; Otto 1984; Pearson 1977, 1978; Sheldon 1976; Simpkins 1975; Singleton 1980, 1985; Thomas et al. 1978, 1979; Trinkley 1981). These studies provide a sophisticated historic and prehistoric context for the coastal islands, which adds to the research value of archaeological sites found in the region. The surveys that have been conducted provide a better understanding of prehistoric settlement of the islands.

Garrow's, DePratter's (1974), and Pearson's (1977, 1978) work on Ossabaw Island located a variety of sites on Pleistocene and Holocene sediments. More than 158 sites have been identified on Ossabaw Island, including a significant presence of Irene phase sites. Pearson's study of the Irene phase settlement on the island identified four classes of sites.

Using the available survey data from Sapelo and the other islands off the Georgia coast, McMichael formulated a model for prehistoric settlement on the barrier islands. McMichael (1977:190) summarized the sea island settlement by saying: "the majority of sites are located on the Pleistocene sand ridges with fewer sites reported on the poorly drained flats, few sites reported in the sloughs, and no sites reported on the strand." In this area, sites were located on Lakeland, Chipley, Olustee, Leon, Ellabelle, and Kershaw-Osier soils (McMichael 1977:190; Simpkins 1975). Survey on Cumberland Island revealed that most prehistoric sites were located within the oak-palmetto or oak-pine forest community on Lakeland, Chipley, or Leon soils (Ehrenhard 1976:43; McMichael 1977:191). All but a small portion of Black Island was surveyed by DePratter (1973). DePratter identified a correlation between Ona and Scranton soils and prehistoric sites, with all sites being located near the marsh edge. Sheldon's (1976) survey of Colonels Island noted a relationship between the Live Oak vegetative zone and occurrence of prehistoric sites. All of the sites located within this zone were situated along the marsh edge. Crook's (1975) survey of Green Island located 57 sites. All but one was located on Chipley or Lakeland soils. All of the sites were adjacent to the estuary.

Previous Research at North End Plantation

No archaeological study of the North End Plantation is documented prior to the recent studies implemented by the Ossabaw Island Foundation. Archaeologists with the Georgia Department of Natural Resources, assisted by other GDNR employees, started archaeological investigations in June 2004 (Rogers 2004; Barrickman et al. 2004:27-28). That work included the excavation of two test units and a series of systematically placed shovel tests surrounding a portion of the tabby dwellings.

The GDNR investigations were followed in October 2004 by a reconnaissance investigation by students from the Heritage Preservation Program at Georgia State University, as part of the early stages of the conservation/restoration project (Barrickman et al. 2004). Their reconnaissance identified five potential nineteenth century (surface) features, which were recorded on a field map (Barrickman et al. 2004:32). These features included oyster shell concentrations and suspicious depressions that were located north and east of the tabby dwellings.

Chatham County Ceramic Sequence

As a result of the Work Progress Administration (WPA) excavations, the basic chronological sequence of the Georgia coast was established (Caldwell and Waring 1939a, 1939b). Since that time, refinements in the chronology have been made and will continue to be made as new data are collected. Most recently, a concise bibliography of the archaeology and anthropology of coastal Georgia has been assembled by Larsen (1979).

DePratter (1977:6) has provided a summary of the archaeological sequence for Chatham County covering the ceramic periods. His sequence is most applicable to the project area. Based upon his reanalysis of WPA collections, DePratter concluded that: "At present, there do not appear to be any significant breaks in the ceramic sequence used to construct the Chatham County chronology." A summary of DePratter's Chatham County ceramic sequence is presented in Table 1.

Table 1. Chatham County Ceramic Sequence.

PHASE	POTTERY TYPES	DATE
Altamaha	Altamaha Line Block	A.D. 1550-1700
	Altamaha Incised	
	Altamaha Plain	
	Altamaha Check Stamped	
	Altamaha Red Filmed	
Irene	Irene Complicated Stamped	A.D. 1300-1550
	Irene Incised	
	Irene Plain	
	Irene Burnished Plain	
Savannah II	Savannah Check Stamped	A.D. 1200-1300
	Savannah Cord Marked	
	Savannah Complicated Stamped	
	Savannah Plain	
	Savannah Burnished Plain	
Savannah I	Savannah Check Stamped	A.D.1150-1200
	Savannah Cord Marked	
	Savannah Plain	
	Savannah Burnished Plain	
St. Catherines	St. Catherines Fine Cord Marked	A.D. 1000-1150
	St. Catherines Net Marked	
	St. Catherines Plain	
Wilmington	Wilmington Heavy Cord Marked	A.D. 600-1000
	Wilmington Plain	
Deptford III	Deptford III Check Stamped	A.D. 500-600
	Deptford III Complicated Stamped	
	Deptford III Cord Marked	
	Deptford III Plain	
Deptford II	Deptford Bold Check Stamped	A.D. 100-500
	Deptford Complicated Stamped	
	Deptford Cord Marked	
	Deptford Plain	
	Refuge Simple Stamped	
Deptford I	Deptford Check Stamped	400B.C.-A.D.100
	Deptford Linear Check Stamped	
	Deptford Plain	
	Deptford Dentate Stamped	
	Refuge Simple Stamped	
Oemler	Oemler Check Stamped	700-400 B.C.
	Oemler Complicated Stamped	
	Refuge Simple Stamped	
Oemler	Refuge Plain	
Refuge	Refuge Simple Stamped	1100-700 B.C.
	Refuge Plain	
	Refuge Punctated	
	Refuge Incised	
St. Simons II	St. Simons Punctated	1700-1100 B.C.
	St. Simons Incised	
	St. Simons Plain	
St. Simons I	St. Simons Plain	2200-1700 B.C.

III. RESEARCH METHODS

LITERATURE AND ARCHIVAL REVIEW

The archaeology field project at the North End Plantation was accompanied by a preliminary literature and archive review of existing documentation on Ossabaw Island and Chatham County, Georgia. This included a review of the archaeological site files, research reports, and unpublished manuscripts at the University of Georgia, Department of Anthropology, in Athens. Historical research also was conducted at the Georgia Historical Society in Savannah. A review of the National Register files and research reports for Chatham County on file at the Georgia Department of Natural Resources (GDNR) also was conducted (Linley 1982; Martin 1975).

FIELDWORK METHODS

The initial subjects of this study were three tabby duplexes and a tabby smokehouse, which are scheduled for repair, renovation and restoration. The Ossabaw Island Foundation and the Georgia Department of Natural Resources desired an archaeological study of these resources to better assess their age, function, and research potential. Archaeological study was also deemed important for the proper management of these historic resources and to insure that damage to the archaeological deposits was minimized in the pending construction work.

The archaeologists made a topographic map of the North End Plantation with the aid of a SOKKIA total station and TDS Recon data collector. More distant landscape features on the North End plantation were plotted using a Garmin V GPS Receiver. Archaeologists first established a metric site grid, which was oriented parallel to the plantation plan, or approximately 30 degrees East of Magnetic North. A primary datum was established at 1000 m North, 1000 m East. UTM coordinates for Datum 1 were established with the Garmin V GPS Receiver at approximately 491264 Easting, 3522307 Northing (Zone 17, NAD 27).

As the scale and breadth of the North End Plantation archaeological site became apparent the archaeological goals were modified to expand the scope of work. The field survey was completed over a seven week period from January through May 2005. Crew size varied throughout the project.

Ground Penetrating Radar Survey

Approximately 4.5 acres of the North End Plantation was systematically surveyed by Ground Penetrating Radar (GPR). This equals approximately 35 kilometers of radargrams. The GPR survey team accomplished the survey by covering portions of the site with a series of 59 sample blocks. These blocks varied in size but combine to form one large irregular block. The site plan of the GPR survey coverage is shown in Figure 5. The surveyors avoided standing buildings, large trees, fences, and other obstacles that impeded the GPR survey. This strategy accounts for the gaps and irregular shape of the surveyed areas.

The equipment used for the survey consisted of a RAMAC X3M Radar, a shielded 500 MHz antenna, MALA GeoScience survey cart, and a Toshiba Satellite laptop computer. Samples were consistently recorded with a time window of 75 nanoseconds (75 ns) and 512 samples per

radar trace. Odd-numbered radargrams (or transect lines) were taken from West to East and even-numbered radargrams were taken from East to West. Progress of these lines was from South to North. The individual sample blocks were assigned letter designations from A through Z (excluding I and O), AA through AZ (excluding AI and AO), and BA through BL (excluding BI). Highlights of the GPR survey findings are presented in the Results chapter of this report. More detailed information is provided in Appendix 3.

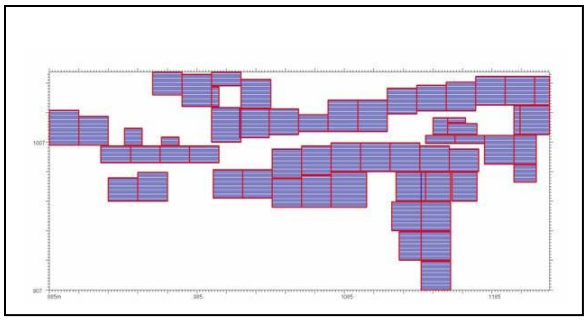


Figure 5. GPR Survey Coverage, 9Ch1062.

The GPR surveyors included Dan Battle, Tracy Dean, Ginger Ellerman, Daniel Elliott, Dean Goodman, and Virginia Pierce. Figure 6 shows the field collection of radargrams in progress in Locus M. Figure 7 shows the survey team busy in the Ossabaw Island Clubhouse post-processing the GPR data.

Shovel Testing

Archaeologists excavated a series of shovel tests across the site. These tests were strategically placed, based on cartographic evidence, GPR survey findings, topographic features, and surface artifacts. The shovel tests consisted of 30 by 30 cm, or 50 by 50 cm units. The areas immediately surrounding Tabbies 1-3 had been previously examined by systematic shovel test survey spaced at 5 m intervals (Rogers 2004; Barrickman et al. 2004:27).

Figure 6. GPR Survey in Progress, Locus M, 9Ch1062.

Figure 7. Post-Processing the GPR Data, 9Ch1062.

Metal Detector Survey and Metal Probes

Archaeologists also employed metal detectors in their reconnaissance of the North End Plantation. The equipment used for the survey included two Nautilus brand detectors. Archaeologists used metal probes to explore for buried foundations and midden deposits on the North End Plantation. Figure 8 shows archaeologist Dan Battle busy surveying Locus G.

Test Units

Archaeologists excavated 15 test units on selected areas of the site. These units were numerically designated units 203 through 217. Test Units 201 and 202 were excavated previously in 2003 by Georgia Department of Natural Resources staff (Rogers 2004; Barrickman et al. 2004:27). These test units measured 1 by 1 m. Their locations are shown in Figures 9 and 10.

Excavation within the tabby duplexes proved to be a challenge. The soils were so dry and dusty that screening the soil required the crew to wear dust masks. Figure 11 shows an eager volunteer screening soil from a test unit located inside Tabby 2.

Soils and Geomorphology

Geoarchaeologist Don Thieme spent one day with Field Director Elliott conducting a geomorphological reconnaissance of the North End plantation and adjacent areas. Thieme gathered soil samples from Loci C and H for laboratory analysis. Thieme' study is presented in Appendix 4.

Figure 8. Metal Detector Survey in Progress, Locus G, 9Ch1062.

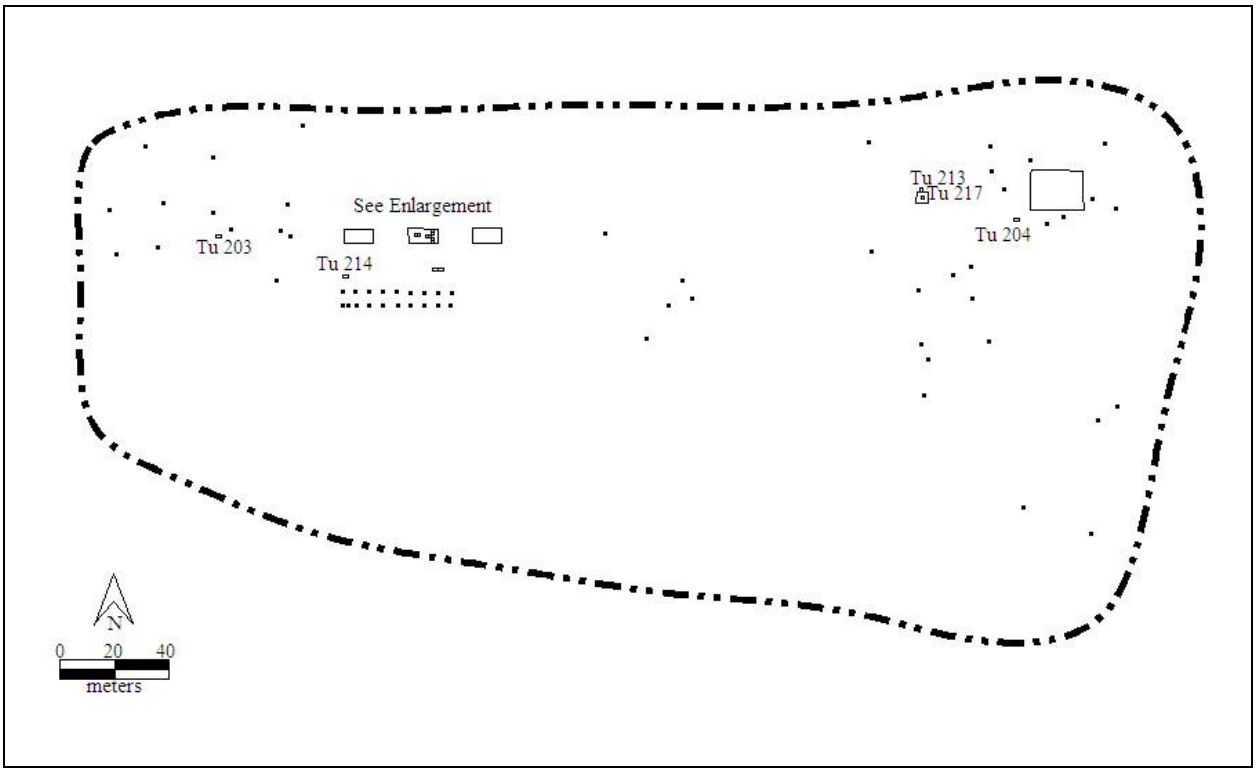


Figure 9. North End Plantation Excavation Plan.

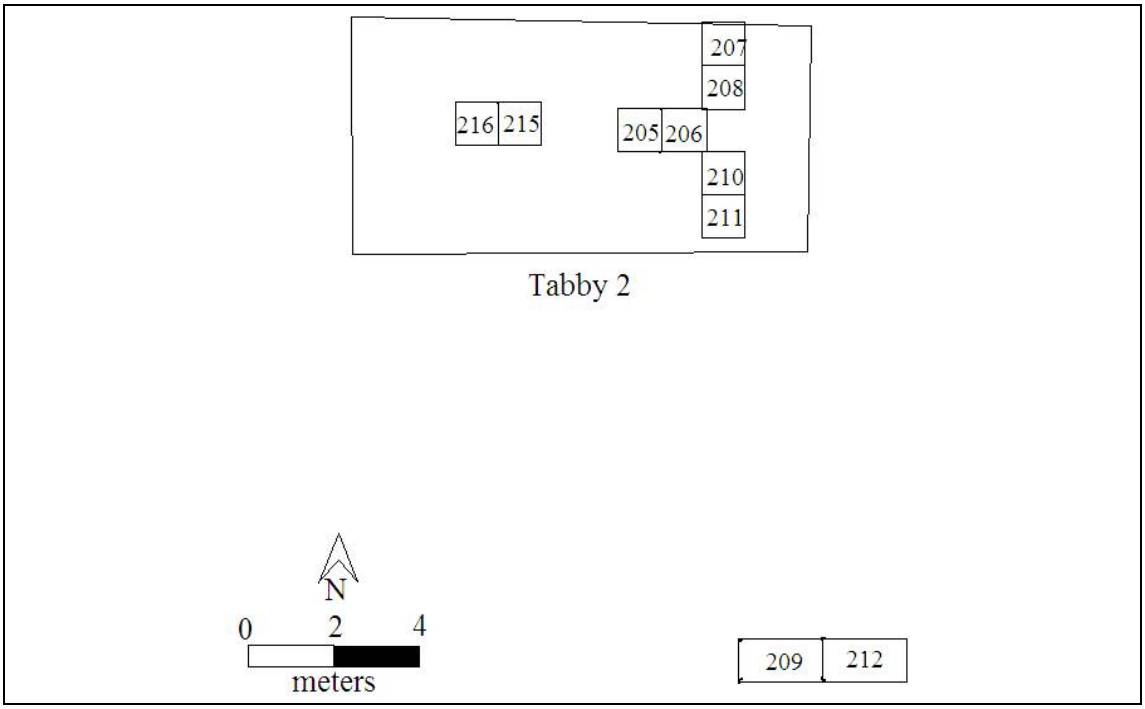


Figure 10. Excavations in Tabby 2 Vicinity, North End Plantation.

Figure 11. Volunteer Dave Stroud Screens Excavation Fill from Locus C and His Audience Approves.

LABORATORY ANALYSIS

Upon completion of the field survey all notes, artifacts, photographs, and other records were returned to Rocquemore Laboratory, Box Springs, Georgia for processing. The artifacts were accessioned, cleaned, and analyzed. The analysis methods employed were consistent with that used by the LAMAR Institute for similar studies. They were stored in acid free polypropolene bags in labeled containers and prepared for permanent curation. Artifacts were classified by functional type, material, age, design, and surface treatment. Temporally diagnostic artifact types were used to study the age of the cultural deposits through the use of applicable artifact dating methods. For aboriginal artifacts this included grouping the artifacts by raw material, functional, and chronological categories. Two primary classes of aboriginal artifacts were expected, stone and ceramic. Only one stone artifact was recovered. The ceramics were classified by surface decorative treatment, temper, and gross morphological characteristics (rim or

body sherd). Potentially diagnostic sherds were separated from the collection for additional study, which is ongoing. For historic period artifacts, the artifacts were classified by material composition (pottery, metal, glass, brick, tabby), functional class (kitchen, architecture, clothing, personal, arms, tobacco, furniture, and activities) following South (1977).

Reference sources included Bartovics (1981), Brown (1971), Dickens (1982), Elliott and Elliott (1991), Garrow (1982), Godden (1963), Jones and Sullivan (1985), Ketchum (1975), Lorrain (1968), Miller (1980), Miller and Stone (1970), Nelson (1963), Newman (1970), Noël Hume (1985), South (1977), and Stone (1974). Floral and faunal remains were noted in the inventory, but no detailed analysis of these materials was conducted at the survey phase. Potential diagnostic artifacts were separated from the collection for additional study. Following completion of the analysis phase, the artifact data was entered into a computer spreadsheet and was arranged into appendix format, which is included as Appendix 1. Selected artifact images from the project are contained in Appendix 2. GPR images and selected GPR data and other related information provided by Dr. Dean Goodman are presented in Appendix 3. Soils information gathered and processed by Dr. Don Thieme is presented in Appendix 4.

CURATION STATEMENT

Artifacts, maps, notes, photographs, and other records related to the project will be permanently curated following completion of all archaeological study, The curation facility where collections are housed meet current National Park Service standards for a permanent curation facility. The collection was analyzed in Box Springs, Georgia.

PUBLIC OUTREACH

Several news journalists who were covering the archaeology news story at Ossabaw themselves were immersed in the story as they contributed volunteer labor to the project. These include Jane Fishman and Eric Wills. Other journalists maintained their professional distance, although I am sure they were secretly dying to get their hands dirty in the historic midden. These include Matt Carlins, WSAV3 television, Ed Gordon, News and Notes, National Public Radio, Los Angeles; Andre Jones, CNN; Michael Jordan, Coastal Heritage Society, WSAV3 television, WTKS 1290AM radio, and *Connects* magazine; Orlando Montoya, Georgia Public Radio, Savannah; Steven Morton, Associated Press photographer and free-lance photographer; and Russ Bynum, Associated Press (AP).

The extent of media coverage for the project was quite surprising. This “feeding frenzy” of journalists was instigated, in large part, thanks to Russ Bynum’s article, which appeared in more than 40 newspapers worldwide. Steven Morton, whose excellent photographs appeared in the AP story, returned to the site to photo-document the project for Getty Images. Getty Images is a large photo-database of stock images that are sold for use in various publications. Michael Jordan proved to be multi-talented in presenting our story to the public. His visit to the site resulted in a TV news story (Channel WSAV3, Savannah), a radio interview (WTKS 1290AM, Savannah), and a newspaper article (*Connects*, a free weekly newspaper in Savannah). Eric Wills, a writer for the *Smithsonian* magazine, spent several days in the field gathering subject material for his upcoming (anticipated in the Fall of 2005) magazine article.

IV. HISTORICAL BACKGROUND OF NORTH END PLANTATION

EUROPEAN CONTACT AND THE COLONIAL PERIOD

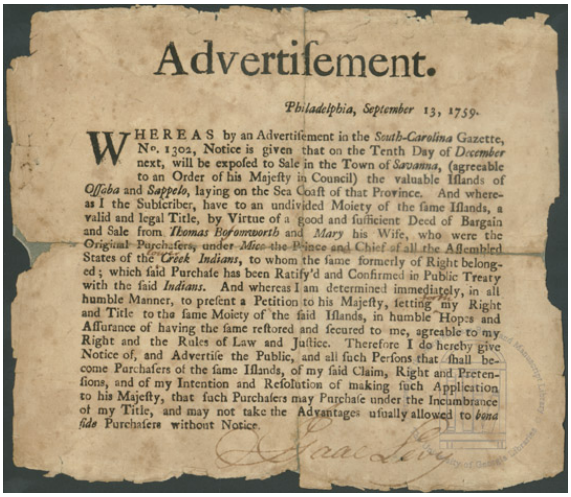
Native American population in the Savannah area at the time of European contact was sparse. The Spanish explored the coast of Florida and Georgia during the sixteenth century and established missions to convert the indigenous people. The northernmost such mission documented was at St. Catherine's Island, immediately south of Ossabaw Island. It is likely that Ossabaw Island was inhabited by only a few natives, or perhaps was completely abandoned, when James Oglethorpe arrived in 1733 to establish the Georgia colony at Savannah.

Mary and Thomas Bosomworth

Mary Musgrove Matthews Bosomworth was a prominent Creek woman in Colonial Georgia. As a reward for her efforts in securing several treaties between the Creek tribes and the British crown, Mary and her third husband obtained possession of three barrier islands, which were Ossabaw, St. Catherines, and Sapelo, from the Creek Nation in 1747. The Creek Nation was led in this transaction by Malatche Opiya Mico, who was a close kinsman of Mary.

Mary and her husband Reverend Thomas Bosomworth settled their plantation on St. Catherines Island, where Mary died about 1763. In treaty talks held on April 22, 1758, the Creek chiefs gave ownership of Ossabaw Island to King George II. That document was recorded on September 29, 1760 (Georgia Colonial Conveyence Book C-1:504). Mary and Thomas Bosomworth deeded/granted Ossabaw Island and other property to Georgia Governor Henry Ellis for the sum of 2050 pounds on April 19, 1760, which also was recorded on September 29 of that year (Georgia Colonial Conveyence Book C-1:500-503). These documents mention no improvements on Ossabaw Island.

In 1759 Isaac Levy, a loyal subject of King George II, filed a petition with the Privy Council requesting restitution for, "parts of Ossabaw Island and Sapelo Island, or a coal mine in Cape Breton, Canada". It was not until nearly a decade later (in 1767 and 1768) that a report on Levy's petition was filed by the Board of Trade. That same year Levy advertised the intended sale of Ossabaw and Sapelo Islands in the *South Carolina Gazette*, as shown in Figure 12 (Levy 1759).



Advertiſement.

Philadelphia, September 13, 1759.

WHEREAS by an Advertiſement in the *South-Carolina* Gazette, No. 1302, Notice is given that on the Tenth Day of *December* next, will be expoſed to Sale in the Town of *Savanna*, (agreeable to an Order of his Majeſty in Council) the valuable Iſlands of *Oſſaba* and *Sappelo*, laying on the Sea Coaſt of that Province. And whereas I the Subſcriber, have to an undivided Moiety of the ſame Iſlands, a valid and legal Title, by Virtue of a good and ſufficient Deed of Bargain and Sale from *Thomas Boſomworth* and *Mary* his Wife, who were the Original Purchaſers, under *Mico* the Prince and Chief of all the Aſſembled States of the *Creek Indians*, to whom the ſame formerly of Right belonged; which ſaid Purchaſe has been Ratify'd and Confirmed in Public Treaty with the ſaid *Indians*. And whereas I am determined immediately, in all humble Manner, to preſent a Petition to his Majeſty, ſetting my Right and Title to the ſame Moiety of the ſaid Iſlands, in humble Hopes and Aſſurance of having the ſame reſtored and ſecured to me, agreable to my Right and the Rules of Law and Juſtice. Therefore I do hereby give Notice of, and Advertiſe the Public, and all ſuch Perſons that ſhall become Purchaſers of the ſame Iſlands, of my ſaid Claim, Right and Pretenſions, and of my Intention and Reſolution of making ſuch Application to his Majeſty, that ſuch Purchaſers may Purchaſe under the Incumbrance of my Title, and may not take the Advantages uſually allowed to *bona fide* Purchaſers without Notice.

Figure 12. Isaac Levy's Advertisement for Sale of Ossabaw Island Property, September 13, 1759.

The existence of Levy's petition for Ossabaw Island land, and its serious consideration by the Board of Trade, leads to speculation that Levy had invested capital in developing property on Ossabaw Island sometime prior to 1759. The entire island was transferred to Mary Musgrove Bosomworth in 1747 by the Creek Nation.

Levy's claim may indicate that he had developed portions of the island prior to Bosomworth's award. Some additional evidence to support Levy's claim for Ossabaw Island land is found in a 1753 journal, which was recently published (Wood and Bullard 1996:34), and in other primary documents in the Keith Read Collection at the Hargrett Rare Book and Manuscript Library. The documents should be the subject of future study by those interested in the early history of Ossabaw Island, since they may have bearing on the former ownership and age of the earliest plantation on the island. If Isaac Levy made improvements on Ossabaw Island, these may be discovered in the island's archaeological record.

Grey Elliott was the next owner of portions of Ossabaw Island, after he submitted the high bid for the property on May 17, 1760 and received the King's grant on October 31, 1760 (Georgia Grant Book B:496). Elliott's title to the property was supported by a plat made by Surveyors Henry Yonge and William DeBrahm on September 2, 1760. Grey Elliott was a prominent resident of Sunbury and one of the original trustees for that town. His possession of the Ossabaw Island property was short-lived, however, and he conveyed the land to Henry Bourquin later that year (Howard 1968:96). Elliott's remaining Ossabaw Island property was conveyed to John Morel in 1763 (Torrey 1926).

Henry Bourquin

Dr. Henri Francois Bourquin was a Surgeon who originally settled at Purysburg, South Carolina. He died in Savannah, Georgia in 1778 (Ancestry.com 2005; Davis 1940:1; Howard 1968). One source lists a Henry Bourquin as a native of Corcelles, Neuchatel, Switzerland, who was born in 1689 and was married to Ester Perrenoud, a native of the same area, in 1718. Other sources place the birthdate of Henri Bourquin in 1703 or 1704 (Davis 1940:3). Their only child, Marie Anne or Mary Ann, was born in Switzerland. Another genealogical source identifies a Henri Francois Bourquin and Susanne Marie Sunier as the parents of Mary Ann Bourquin, who was born on February 14, 1731 in Sonceboz, Bern, Switzerland and died on August 15, 1765 (Familysearch.org 2005). Another source, however, places her date of birth in 1728. Another Marie Bourquin had a father named Henry Bourquin. That woman was born in Switzerland Corcelles, Neuchatel, Switzerland and christened on January 22, 1719 (Familysearch.org 2005). It is unclear if all of these entries represent the same individual, but all agree that she was the daughter of Henry Bourquin and was born in Switzerland, sometime between 1719 and 1731. All of these sources agree that Henri Bourquin was a native of Switzerland.

A direct descendant of Henri Francois Bourquin and John Morel provided this summary of his lineage,

> Henri Francois Bourquin,(Swiss) French Huguenot, born in Switzerland circa 1703, died in Chatham County (Savannah),Georgia, December 1778, Patriot, Representative, Little Ogeechee District, Georgia Commons House of Assembly, 1764-1772, and his wife, Susanne-Marie Sunier (Chatelain), born Switzerland, February 4. 1709(?), died in Chatham County, Georgia, March 3, 1799. Their daughter,…Mary Anne Bourquin, born Sonceboz, Switzerland, December 14, 1731, died on Ossabaw Island (Chatham County), Georgia, August 15, 1765, married…, John (Jean) Morel (the elder), also a (Swiss)French Huguenot, Patriot, Member of the Provincial Congress of Georgia, Appointed to the Council of Safety

by the Friends of Liberty (Liberty Boys) June 22, 1775, born San Domingo (Hispaniola, West Indies) February 17, 1723, died in Savannah, Georgia, January 3, 1776. John Morel (the elder) was the son of Pierre Henri Morel, (Swiss) French Huguenot, born Zurich, Switzerland, circa 1700, died Savannah, Georgia, October 15, 1752, and his wife Mary (Marie), born Switzerland, married in Switzerland. Pierre Henri Morel was a Member of the Georgia Commons House of Assembly. It is understood that the Bourquins came to Savannah by way of Charleston and Purysburg, South Carolina. (Purysburg was a (now extinct) village of French Huguenots on the South Carolina side of the Savannah River, just North of the City of Savannah. It is understood that the Morels came to Savannah about the same time as the Bourquins (1734), just after the founding of Savannah and the Colony of Georgia in 1733. It is believed that both families came to South Carolina in about 1732 (Butler 2005).

Dr. Henry Bourquin was associated with the Purysburg township of present-day Jasper County, South Carolina. The Purysburg settlement was established on the lower Savannah River in 1732 by Jean Pierre Pury. It was settled by religious refugees from Switzerland, France and Gemany (Howard 1731-1980; Alexander 1970; Davis 1926, 1940; Transactions of the Huguenot Society of South Carolina 1889-2004; Hirsch 1999; Elliott 1985b). The town lasted until the 1820s, although most of its inhabitants had moved to other locations in South Carolina and Georgia by the mid-eighteenth century. Many original Purysburg colonists developed into wealthy planters. Dr. Henry Bourquin held numerous properties in both colonies and by 1772 was recognized as one of the primary indigo producers and merchants in the region (Hirsch 1999:216-217). A bounty was imposed on indigo in 1748 by Great Britain, which provided for 6 pence per hundred pounds of indigo that was shipped directly to England. This incentive made indigo a desirable commodity in South Carolina and Georgia until the trade, and the British bounty, was interrupted by the war after 1775.

Henri Bourquin was present in Purysburg, South Carolina by 1733 (Hirsch 1999:83). Henri was active in Georgia politics in the mid to late eighteenth century. He served as a Representative from the Little Ogeechee District in the Georgia Commons House of Assembly from 1764 to 1772 (Butler 2005; Davis 1940).

John Morel, Sr.

John Morel was the son of Pierre and Martine Morel. John was born on February 17, 1722/1723 in Zurich, Switzerland. His father Pierre Rodof Morel was born in Zurich in 1700 and he died in Savannah, Georgia on October 5, 1754. Pierre (or Peter) Morel was an inhabitant of Highgate village near Savannah (Jones 1992:54, 278). Highgate is one of several villages in coastal Georgia that were created during the Trustee period. It was located near the present-day Hunter Army Airfield (Elliott 1989). Little else is known of John Morel's mother Martine. John was the youngest of three children. His older sisters were Nancy and Mary Ann Morel and their ages and vital statistics are unknown (Ancestry.com 2005). Soon after he acquired the property Henry Bourquin conveyed his Ossabaw Island land to John Morel, who was married to Henri Bourquin's daughter, Marie Anne (Ancestry.com 2005).

John's wife, Marie Anne Bourquin was born in Switzerland and later lived in Savannah, Georgia. The couple was married prior to 1755 and they had five children, who were:

- Henry, birth date undetermined;
- Peter Henry, born on February 20, 1757;
- John, born January in 1759 in Savannah;
- Mary Anne, born on February 14, 1761; and,
- Susanna, born in August, 1765 (Ancestry.com 2005).

Marie Morel died on August 15, 1765 on Ossabaw Island, which was around the time of her fifth child's birth (Ancestry.com 2005; Butler 2005). Following the death of his first wife John married Mary Bryan on January 24, 1767 in Savannah, Georgia. Mary Bryan, the daughter of Mary Williamson and Jonathan Bryan-- a wealthy planter and rancher in Georgia, was born on February 16, 1744/45 at "Walnut Hill" plantation on the Pocataligo River in Beaufort District, South Carolina (Ancestry.com 2005). Her father was born in England on September 12, 1708 and he died in Savannah, Georgia on March 9, 1788. Jonathan's wife Mary Williamson was born on March 23, 1721/22 and died on March 24, 1781 (Ancestry.com 2005). Mary Bryan and John Morel had six children, who were:

- Bryan [born in 1768 or 1769, Savannah, Georgia];
- Elizabeth, born on November 1, 1767;
- Isaac, born on August 27, 1770;
- Esther, born on August 1, 1772;
- Ann, born on January 9, 1774; and,
- Hannah Bryan, born on August 20, 1776 (Ancestry.com 2005).

Ossabaw and the American Revolution

Captain John Morel, Sr. was a well-respected leader in the community and like many of his peers, he entertained a growing dissatisfaction with life in the colonies under British rule. He received his commission as captain in the 8th Company, 1st Regiment, Georgia militia on July 5, 1762, which was during the Seven Years War (Knight 1967:423; Clark 1983:952). He served as a Delegate to the Provincial Congress of Georgia. That his sympathies rested with the American rebellion is learned from the published records, which identify John Morel as one of the representatives for the rebel cause. He was appointed to the Council of Safety by the Friends of Liberty, also known as the Liberty Boys (Butler 2005). John Morel attended insurrectionist meetings at Peter Tondee's tavern in Savannah. The meetings at Tondee's tavern are synonymous with the birth of the revolution in Georgia, as Benson Lossing later described,

> On the fourteenth of July [1774], the Sons of Liberty were requested to assemble at the 'libert pole at Tondee's tavern' in Savannah, on Wednesday, the twenty-seventh instant, in order that public matters may be taken under consideration, and such other constitutional measures pursued as may then appear most eligible'…A meeting was accordingly held at the watch-house in Savannah [on July 27, 1774], where letters from Northern committees were read, and a committee to draft resolutions was appointed. These proceedings were published, and the governor, alarmed at the progress of rebellion around him, issued a countervailing proclamation. He called upon the people to discountenance these seditious men and measures, and managed the disobedient with the penalties of stern British law (Lossing 1851-52:724).

John Morel was one of those in attendance at these meetings, who nineteenth century historian Benson Lossing described as, "the leading Sons of Liberty at Savannah in 1774", and, "On the tenth of August [1774] another meeting was held, when it was resolved to concur with their sister colonies

in acts of resistence [sic] to oppression…" (Lossing 1851-52:724).

John Morel, Sr. never lived to see America declare its independence from the British monarchy however, since he died on January 3, 1776 on Ossabaw Island, Georgia, six months before the Declaration was signed (Ancestry.com 2005; Familysearch.org 2005). John's widow and second wife, Mary Bryan Morel and her children maintained the Morel plantation on the north end of Ossabaw Island throughout the war, as well as other property on the mainland. This family of rebel sympathizers was located in a precarious place that was vulnerable to coastal attacks from British, Loyalists, and Privateers. For most of the war life on the Morel plantation passed without incident. The British attack on Savannah in November and December 1778 and the combined American and French siege of Savannah from September to November 1779 only marginally affected the plantation.

When Savannah and Sunbury were captured by the British in December 1778 and January 1779, respectively, Ossabaw Island is little mentioned in the historical accounts. One event that involved Ossabaw Island was the flight of two American galleys, the Washington and the Bulloch, which were beached, burned and abandoned on Ossabaw Island by their American crew hours after Sunbury was captured. Those two vessels were fleeing Sunbury and the Medway River at the time. The American crews of the two row galleys were transferred to a sloop, which was later captured at sea by the British (Elliott 2005). The burning of the American galleys probably occurred on the southern end of Ossabaw Island and did not directly impact the North End Plantation.

A second incident took place in late 1779 when the French fleet, commanded by Count D'Estaing, was abandoning the Georgia campaign. The French naval force consisted of 36 warships and, "several unarmed Sloops and Schooners for debarking Troops" (Hough 1975:94-95). The troops hauled by the French fleet numbered 5,800 men at the beginning of the 1779 siege. One place where the French troops were landed was at Beaulieu plantation near the mouth of the Vernon River and Ossabaw Sound. Beaulieu, or Bewlie, was owned by John Morel (Hough 1975:29). That landing took place on September 12, 1779. One French ship wrecked near Ossabaw Island, during the landing, as recounted in *Rivington's Royal Gazette* on December 11, 1779: "We are told that one of the French flat-bottomed Boats, full of Soldiers and Sailors, when they began to land their Troops off Ossabaw, in a Swell of the Sea, filled with Water, by which means she sunk, and all on board perished" (Hough 1975:50-51).

The most significant impact of the American Revolution affecting the North End Plantation on Ossabaw Island came near the end of the war in October 1782. British and/or Loyalist soldiers and sailors made a raid on the Morel plantation, which is documented in two letters from Georgia Govenor John Martin to East Florida Governor Patrick Tonyn. Governor Martin's letter, dated October 19, stated, "Information has also just come to hand that a Captain Scallions, in a galley from St. Augustine, did last evening secretly come into one of the inlets of Ossabaw in this state, & burnt a new vessel on the stocks, nearly finished, taken off thirty negroes & two thousand weight of indigo belonging to the Est. of John Morel, & three negroes belonging to the estate of Thomas Netherlclift, Esq." (Martin 1917:334-335).

In a follow-up letter, dated October 22, Governor Martin wrote, "After my dispatches for Gov. Tonyn were closed I heard that it was uncertain what boat or

vessel it was from Florida that did the mischief at the southward in burning the vessel, carrying off the negroes & indigo of Mrs. Morel belonging to an undivided estate, in which misfortune a number of helpless children are involved; aslo those negroes of Mr. Netherclift's" (Martin 1917:334-335).

According to the loyalist claims of Colonel Roger Kelsall and Captain Simon Paterson, both former officers in Sunbury's loyalist militia, the crew of the *Arbuthnot* caused other mischief that same year when they destroyed and burned the town of Sunbury, including the Sunbury fort (Loyalist Claims, cited in Sheftall 2001:56; Coldham 1980:269-270, 380-381). The *HMS Arbuthnot*, a British galley commanded by Captain Scallion, attacked Sunbury in April 1782. Few details about the *Arbuthnot* and her crew have been discovered. Answers to some of these mysteries may be contained in the ships Muster lists. Muster lists for the *Arbuthnot* for the period including April 1782 are preserved in the British National Archives but these records have not been examined (BPRO 2004).

The sacking of the North End Plantation by the *Arbuthnot* and her crew was an extremely significant event for Ossabaw Island. Although the Morel family was apparently spared any physical injury from this engagement, it no doubt had significant financial ramifications for the plantation. At the close of the American Revolution many enslaved African-Americans who were in the possession of the Loyalists were taken to British territories. For some this meant settling in the Caribbean region and for others it meant colonizing the Canadian Maritimes (Nova Scotia and New Brunswick). No records were found that tell whether the 30 people taken from the Morel's plantation were ever returned to them. Possibly they were not, although Governor Martin's plea to Governor Tonyn may have been honored. If these enslaved were not returned to Ossabaw Island, then the Morel's would have "restocked" the plantation with other enslaved persons. The sacking of the North End plantation by Captain Scallion and the crew of the Arbuthnot was a catastrophic event, which likely left its distinguishing imprint in the archaeological deposits on the plantation site.

Early Federal Era

When the State of Georgia was formed in 1775, Ossabaw Island was considered part of Chatham County. In 1793 Bryan County was formed from portions of Chatham and Effingham Counties (Davis 1981). Ossabaw Island remained part of Bryan County. Ossabaw Island was later returned to Chatham County in 1847, as it remains today.

Following the death of John Morel, Sr., his estate on Ossabaw Island was divided into four parts as dictated by the terms of his Last Will and Testament (Alexander 1970:1). His Will was dated June 23, 1774, probated April 9, 1777, and recorded on April 10, 1777. Three parts were left to his sons and one part was to be left undeveloped. Bryan, the eldest son of John and Mary Bryan Morel, inherited Lot Number 3, which included the North End Plantation on Ossabaw Island (Ossabaw Island Papers, Folder 1: 1809). The "Decree of Partition of Ossabaw Island, Georgia", dated April 14, 1809, described Lot Number 3 as, "comprehend [comprising] the remainder of No. 10, 11, 12 and including all the Hammocks on the west of these numbers is assigned to Bryan Morrell".

The 33 year delay in the settling of the Estate of John Morel, Sr. is based on a provision in Morel's Will, which required the real estate to be distributed to his

surviving sons, once all of the sons, or their rightful heirs, had attained the age of 25. Although Morel died in early 1776, this distribution was apparently not finalized until 1809. Bryan Morel, who was born in 1768 or 1769, would have been eligible to inherit land by about 1793 or 1794. Most of John Morel, Sr.'s Ossabaw Island property was divided in March 1788 (Charlton 1808:85).

John Morel, eldest son of John and Anne Morel, had a distinguished career in public service. He served as a Captain in the Georgia Continental Army (Knight 1967:362, 388, 423). John Morel, [Jr.] married Henrietta Netherclift in Savannah in 1795 (Waters 2001). John Morel, Jr. became a prominent planter in Georgia and he held numerous plantations in several coastal counties, including his plantation on Ossabaw Island, Bewlie plantation on the Vernon River, and a plantation on the lower Savannah River (Granger 1947). John Morel, Jr. would have been 23 years old when the Morel plantation on Ossabaw Island was ransacked by the British loyalists in 1782. Although John, Jr. never owned the North End Plantation, he lived there as a child. John, Jr. Although he was not the official owner of the property, we suspect that John Morel, Jr. probably played a significant role in the management of North End Plantation in the period immediately following the American Revolution and possibly for several decades hence.

Bryan Morel

Bryan Morel was the youngest son of John Morel, Sr. and Mary Bryan Morel and heir to the North End Plantation. Bryan was born in Savannah, Georgia at 6:00 P.M. on a Sunday in either 1768 or 1769 (Bullock 1895:14). Bryan Morel, son of John Morel, died in 1812 or 1813(Foskey 2001:13; Familysearch.org 2005; Barrickman et al. 2004:9). Morel was listed in the property tax records for Chatham County in 1792 and 1793 (Ancestry.com 2005). Bryan Morel advertised the North End property for sale in May 1797 and the property was described as, "lands adapted to the cultivation of cotton, indigo, or corn—for quantity and quality of live oak timbers, in its wood for excelent and extensive range, for stock of all kinds there is no island in the state, esteemed superior" (Foskey 2001:13). It does not appear that Morel actually sold the property as a result of this advertisement.

Bryan Morel was married to Harriet McQueen in Savannah, Georgia on December 4, 1800 (Ancestry.com 2005; Davis 1926:62). The couple had four children: Bryan McQueen, born 1803, Caroline, John, and Elizabeth.

One Bryan M. Morel reportedly died in 1804 in Chatham County, Georgia (Ancestry.com 2005). The relationship of this individual to Bryan and Harriet McQueen Morel remains an enigma.

Bryan M. Morel, probably Bryan McQueen Morel, and grandson of John Morel, Sr., is enumerated in the 1830 census for Bryan County, Georgia (U.S. Census, Population Schedule, Bryan County 1830:84; Ancestry.com 2005). His relationship to the elder Bryan Morel is unclear as to whether he was a son or nephew. Bryan M. Morel was born in Chatham County, Georgia in 1803. (Ancestry.com 2005). His household contained one free white male, aged 20 to under 30, and one free white male, aged 50 to under 60 and a total of 73 African-Americans. One Free colored person, 36 to under 55, also was included in Bryan M. Morel's household in 1830. At that time Bryan M. Morel was unmarried.

Bryant M. Morrell is enumerated in the 1840 census for Bryan County, Georgia (U.S. Census, Population Schedule, Bryan

County, Georgia 1860:110; Ancestry.com 2005). The Bryant M. Morell is probably the same person described previously for 1830, although the names are spelled differently. This household contained 63 people, including five free whites and 63 enslaved African-Americans. The free whites included:

> 1 Free white male, under 5 years;
> 1 Free white male, 30 to under 40 years;
> 2 Free white females, under 5 years, and;
> 1 Free white female, 30 to under 40 years.

Bryan McQueen Morel married Louisa Shaw Turner in 1840, and some of their children were born on Ossabaw (Davis 1926:62; Foskey 2001:13). The date of their marriage may be erroneous, however, since three children (each under 5 years of age) were living in his household in 1840. These three children were either newborn triplets, born out of wedlock, or children from a previous marriage. Another explanation is that these children were orphans under Bryan's custody.

Bryan Morel is not listed in the 1850 census for Chatham County, although Hariet Morel is enumerated (U.S. Census 1850, Population Schedule, Chatham County, Georgia:253; Ancestry.com 2005). Bryan M. Morel was listed as a Naval officer in 1850, which may explain his absence from the Chatham County census for that year (Davis 1926:62). Hariet, a free white female 45 years of age, is shown living in a household on August 25, 1850 that headed by a one-year old free white male, named William W. Morel. Also present in the household is an 80 year old free white female named Ann Morel.

The Morels of North End Plantation were represented in the war by a possible descendant, Bryan M. Morel. Bryan M. Morell enlisted as a Private in Company B, 8th Regiment, Georgia Infantry. Bryan M. Morell was possibly the grandson of Bryan Morel and the likely heir of North End Plantation. Private Bryan Morel was killed in the battle at Manassas Junction, also known as the 1st Battle of Bull Run, in late July 1861(NPS 2005; ehistory.com 2005a; Lawrence 1997:30-32). His untimely death and the other deleterious consequences of the Civil War led to the termination of the Morel family's association with North End Plantation. Private Morel was one of six soldiers in the Oglethorpe Light Infantry and one of 387 Confederates, who were killed in the battle (ehistory.com 2005a). Following the battle, Confederate General Beauregard wrote of their heroism, "I salute the Eighth Georgia with my hat off". A mass funeral was held in February 1862 at the Independent Presbyterian Church at Savannah for Morel and the other casualties of the Oglethorpe Light Infantry, 8th Georgia Regiment. Smith (1997:34) cites one Savannah newspaper that stated that Ryan Morel [sic, Bryan Morel] and the others slain at Manassas were, "buried together on the battlefield". Lawrence cites a Savannah newspaper obituary that stated that the dead were, "All young, all unmarried, all gentlemen, there was not one of the killed who was not an ornament to his community and freighted with brilliant promise" (Lawrence 1997:30-32). The unit history of the 8th Georgia has been summarized as follows,

> 8th Infantry Regiment as organized by Colonel F.S. Bartow during the spring of 1861. All of its companies had seen prior military service in the Georgia militia and were from Rome, Savannah, and Atlanta, and the counties of Greene, Echols, Pulaski, and Floyd. Early in June the unit was ordered to Virginia and, assigned to F.S. Bartow's Brigade, fought at First Manassas. In April, 1862, it had but 251 men fit for duty and for the balance of the war served under General G.T. Anderson. The 8th was involved in the campaigns of

> the Army of Northern Virginia from the Seven Days' Battles to Cold Harbor, except when it was with Longstreet at Suffolk, in Georgia, and at Knoxville. It did not take part in the Battle of Chickamauga. The unit participated in the Petersburg siege south and north of the James River and later the Appomattox Campaign. It reported 41 killed and 159 wounded at First Manassas, had 28 killed, 65 wounded, and 11 missing during the Seven Days' Battles, and lost 8 killed and 54 wounded at Second Manassas. It lost more than fifty percent of the 312 engaged at Gettysburg, and from April 14 to May 6, there were 92 disabled, and from August 1 to December 31, 1864, the regiment had 82 killed or wounded. At the surrender it contained 14 officers and 139 men. The field officers were Colonels F.S. Bartow, William M. Gardner, L.M. Lamar, and John R. Towers; Lieutenant Colonels Thomas L. Cooper and Edward J. Magruder; and Majors John F. Cooper and George O. Dawson (NPS 2005).

The heirs of Bryan McQueen Morel conveyed the property to James M. Waterbury of New York City in 1886 (Foskey 2001:19). The Waterburys owned the property until 1895, when they sold it to Caroline C. Maxwell of Savannah. Maxwell immediately sold the plantation to William L. Nevin, in trust for John Wanamaker of Philadelphia. In 1906 Thomas D. Wanamaker sold the North End Plantation to John H. Carr for Henry D. Weed. Weed sold the property to some of the partners of the Strachan Shipping Company, who maintained the North End Plantation as a hunting preserve. George Ferguson Armstrong maintained a kennel of hunting dogs at the north end. Two photographs of these kennels, while they were under construction in the 1920s, are preserved in the Vanishing Georgia collection (Vanishing Georgia 2005). The boarding house was occupied by the Superintendent and his family during this period (Foskey 2001:19). In 1924 the partners of the Strachan Shipping Company sold Ossabaw Island to Dr. and Mrs. Henry Norton Torrey. Their daughter, Eleanor "Sandy" Torrey West and her brother's heirs conveyed Ossabaw Island to the State of Georgia in 1978, while reserving a 24 acre life estate surrounding the Torrey mansion.

An 1812 inventory of enslaved African-Americans on the Morel plantation includes 40 persons on Lot Number 3 [North End Plantation], whose combined value was $12,250 (Torrey 1926:31). A list of 15 enslaved African-Americans on Lot 3 [North End Plantation], which was drafted in 1817 but not recorded in the Ordinary Court until 1827 included the following persons, their respective ages, and their estimated monetary value:

- Quamina, 52, $600
- Nancy, 28, $500
- Jim, 7, $350
- Kinsey, 5, $300
- Adam, 4, $150
- Harry G., 24, $600
- Aggrippa, 42, $300
- Kate, 42, $300
- Suckey, 22, $500
- Nancy, 1, $100
- Sue, 47, $400
- Rachel, 23, $500
- Nancy, 32, $500
- Old Mars, 62, $25
- Betsey, age not given, $500 (Ossabaw Island Papers 1827).

Fifty-nine people who were enslaved on Bryan Morel's plantation in Bryan County in 1830. None of them were identified by name. These included:

- 11 Male slaves, under 10;
- 5 Male slaves, 10 to under 24;
- 3 Male slaves, 24 to under 36;
- 4 Males slaves, 36 to under 55;
- 14 Female slaves, under 10;
- 12 Female slaves, 10 to under 24;

- 4 Female slaves, 24 to under 36;
- 4 Female slaves, 36 to under 55, and;
- 2 Female slaves, 55 to under 100.

Fifty-eight enslaved African-Americans in the Bryant M. Morrell household (probably the same as the earlier Bryan Morel household), as recorded in the 1840 census for Bryan County. None of the enslaved were identified by name but they included:

- 13 Male slaves under 10 years;
- 8 Male slaves, 10 to under 24 years;
- 3 Male slaves, 24 to under 35 years;
- 5 Male slaves, 36 to under 55 years;
- 2 Male slaves, 55 to under 100 years;
- 8 Female slaves, under 10 years;
- 6 Female slaves, 10 to under 24 years;
- 5 Female slaves, 24 to under 35 years;
- 3 Female slaves, 36 to under 55 years;
- 5 Female slaves, 55 to under 100 years (U.S. Census, Population Schedule, Bryan County, Georgia 1860:110; Ancestry.com 2005).

Ossabaw Island became part of Chatham County in 1847. The Slave Census for District 13, Chatham County, Georgia, which was taken on October 21, 1850, lists 63 slaves owned by Bryan M. Morel. None of these people were identified by name. These people are listed in Table 2, which includes their age and gender. Their race was also listed and consisted of one Mulatto and 62 Blacks. The Mulatto was an 18 year old male. All were listed as residents of District 13.

Historian Byrne noted that Bryan Morel's plantation included at least two manumitted servants. Byrne recorded that, "Bryan Morel freed George and his wife, Clarinda, on the condition that they continue to live at his residence and take care of the house and any other articles entrusted to them. Clarinda had to agree to raise poultry, wash clothes, cook, and "in all respects obey any orders which may be given her." (Byrne 1979). Byrne provides no documentary source for this information.

PLANTATION ERA AND CIVIL WAR

A massive expeditionary force of the U.S. Army and U.S. Navy to capture the South Atlantic coast was led by Major General Thomas W. Sherman in late 1861. The expedition resulted in the capture of Fort Pulaski and the establishment of a blockade to restrict Confederate shipping. This campaign also led to the exodus of plantation owners from Georgia's Sea Islands to the mainland. The Morel's North End Plantation was probably abandoned by its owners sometime between late 1861 and 1862. Family tradition holds that the Morel's left their home in haste and several household items were lost overboard during their transit to the mainland (Richard L. Thornton personal communication, April 16, 2005).

Table 2. Enslaved by Bryan M. Morel, District 13, Chatham County, 1850.

Age	Gender	Age	Gender
70	Female	12	Male
60	Male	12	Male
60	Female	12	Male
55	Male	11	Male
50	Female	10	Female
50	Male	10	Male
45	Male	10	Female
45	Female	8	Male
40	Male	8	Female
40	Male	8	Female
40	Female	8	Male
35	Female	8	Female
35	Male	6	Female
30	Male	6	Male
30	Male	6	Male
30	Male	6	Male
30	Male	6	Female
28	Male	6	Male
28	Female	5	Male
27	Female	4	Female
25	Male	4	Male
25	Male	4	Male
25	Female	4	Male
25	Female	3	Male
25	Female	2	Female
21	Female	2	Male
20	Female	1	Female
18	Female	1	Female
18	Male	1	Female
18	Male	1	Male
16	Male	1	Female
15	Male		

(U.S. Census, Slave Schedule, Chatham County, Georgia 1850:149-150).

One component of this military occupation of the southern coast was the establishment of Fort Seymour at Bradley Point on the northeastern tip of Ossabaw Island. Fort Seymour, also known as Battery Seymour, was garrisoned by the 4th Regiment, New York Infantry, also known as the "Washington Grays". On January 18, 1863, the History of the 47th Regiment records that they established a camp by March 4, 1863, when 594 U.S. Army troops were stationed there. Fort Seymour was completed by April 1863. The 47th Regiment was garrisoned at Fort Seymour under the command of Major D.A. Allen until July 11, 1863, when the post was abandoned and the garrison removed to Folly Island. The number of Union troops at Fort Seymour ranged from about 506 to 594 during their occupation in 1863. After the departure of the 47th Regiment, Fort Seymour served as a coaling station for the blockading fleet (NPS 2005; ehistory.com 2005b; Brown 2005).

Records of Confederate military activity on Ossabaw Island are scant. On the approach of the U.S. expeditionary force, Confederate troops on the barrier islands were ordered to abandon those posts, including fortifications on Green, St. Simons, Skidaway, and Wassaw islands, to defend Savannah's immediate perimeter. If the Confederates maintained any post on Ossabaw Island, it is not well documented in the official records. An expedition to Ossabaw Island was mounted on July 3, 1863 by the 24th Georgia Battalion, C.S. Army, led by Major Edward Anderson. Anderson's report of this expedition to Captain Mercer is reproduced below:

> CAMP LEE, July 4, 1863.
>
> CAPTAIN: I have the honor to report that I have just returned from a scout of Ossabaw Island. With a party of 9 men, I landed there just about daylight yesterday morning, July 3. We scouted it carefully up to McDonald's place, where we arrived about 12 m., without seeing any sign of the enemy, excepting a few abandoned picket posts. After our arrival at McDonald's, we lay in wait there until this morning without seeing a human being, though I know some were there, from hearing a pistol fired off. Wishing to see the battery at the north point, and ascertain the number of men, if practicable, we

left our lair before day; but on our way Captain [R. H.] Wylly, of Company C, was taken suddenly and violently sick, and we had to return without accomplishing it. On our way back, however, we paid a formal visit to McDonald's, and surprised and captured there a Yankee picket post of 2 men; also, we captured 8 negroes. The names of the former are Sergt. J. C. Wilson, Company B, Forty-seventh New York, and Private Thomas Rourke, Company D, Forty-seventh New York. The sergeant is reserved, but the other seems capable of having information obtained from him. He states the force on the island to be about 800 or 900, and they have six guns mounted. This the sergeant contradicts. I got no papers or letters. They state that within the last few days 120,000 men have been sent from Hilton Head to Folly Island. This has either just been done or is about to be done. So much for what they say. Of the negroes, I could bring off but 3; my boat would hold no more. The others were turned loose. Those brought off are a boy. Cato, belonging to Mr. Starr (he was waiting upon a Yankee officer), a girl, Maria, with infant, belonging to Mr. Hart, and a girl, Jane, belonging to Dr. Johnston, all of this county.

The alarm was given to the battery and gunboats, and the latter were stationed so as to cut us off; but thanks, under Providence, to the heroism and endurance of Privates A. W. Dixon and [J. M. S.] Cosby, of Company B, [John S.] Perrin, of Company C, [G.] Lewis, of Company A, and of my acting surgeon, Dr. Ruddell, who pulled the boat through the marsh grass, in water up to their waists, for nearly 2 miles, we eluded their watch, and arrived up here at 12 m. to-day (ehistory.com 2005b).

RECONSTRUCTION TO PRESENT

Major General William Tecumseh Sherman's United States military force marched from Atlanta to Savannah in 1864. These troops were followed by several thousand newly freed African-Americans. The plight of these freedmen became a major problem for the United States government. An incident at Ebenezer Creek in Effingham County resulted in the drowning deaths of numerous freed slaves. The Union command was divided on the proper way to handle this situation. This management dispute between the commanding generals was finally settled by the arbitration of the Secretary of War.

Soon after Sherman captured Savannah, he issued orders for reallocating property on the barrier islands to the freedmen. On January 16, 1865 Sherman issued Special Field Orders, Number 15, which provided:

> 1. The islands from Charleston south, the abandoned rice-fields along the rivers for thirty miles back from the sea, and the country bordering the St. John's River, Florida, are reserved and set apart for the settlement of the negroes now made free by the acts of war and the proclamation of the President of the United States.
>
> 2. At Beaufort, Hilton Head, Savannah, Fernandina, St. Augustine, and Jacksonville, the blacks may remain in their chosen or accustomed vocations; but on the islands, and in the settlements hereafter to be established, no white person whatever, unless military officers and soldiers detailed for duty, will be permitted to reside; and the sole and exclusive management of affairs will be left to the freed people themselves, subject only to the

United States military authority, and the acts of Congress. By the laws of war, and orders of the President of the United States, the negro is free, and must be dealt with as such. He cannot be subjected to conscription, or forced military service, save by the written orders of the highest military authority of the department, under such regulations as the President or Congress may prescribe. Domestic servants, blacksmiths, carpenters, and other mechanics, will be free to select their own work and residence, but the young and able-bodied negroes must be encouraged to enlist as soldiers in the service of the United States, to contribute their share toward maintaining their own freedom, and securing their rights as citizens of the United States. Negroes so enlisted will be organized into companies, battalions, and regiments, under the orders of the United States military authorities, and regiments under the orders of the United States military authorities, and will be paid, fed, clothed, according to the law. The bounties paid on enlistment may, with the consent of the recruit, go to assist his family and settlement in procuring agricultural implements, seed, tools, boots, clothing, and other articles necessary for their livelihood.

3. Whenever three respectable negroes, heads of families, shall desire to settle on land, and shall have selected for that purpose an island or a locality clearly defined within the limits above designated, the Inspector of Settlements and Plantations will himself, or by such subordinate officer as he may appoint, give them a license to settle such island or district, and afford them such assistance as he can to enable them to establish a peaceable agricultural settlement. The three parties named will subdivide the land, under the supervision of the inspector, among themselves, and such others as may choose to settle near them, so that each family shall have a plot of not more than forty acres of tillable ground, and, when it borders on some water channel, with not more than eight hundred feet water-front, in the possession of which land the military authorities will afford them protection until such time as they can protect themselves or until Congress shall regulate their title. The quartermaster may, on the requisition of the Inspector of Settlements and Plantations, place at the disposal of the inspector one or more of the captured steamers to ply between the settlements and one or more of the commercial points heretofore named, in order to afford the settlers the opportunity to supply their necessary wants, and to sell the products of their land and labor.

4. Whenever a negro has enlisted in the military service of the United States, he may locate his family in any one of the settlements at pleasure, and acquire a homestead, and all other rights and privileges of a settler, as though present in person. In like manner, negroes may settle their families and engage on board the gunboats, or in fishing, or in the navigation of the inland waters, without losing any claim to land or other advantages derived from this system. But no one, unless an actual settler as above defined, or unless absent on Government service, will be entitled to claim any right to land or property in any settlement by virtue of these orders.

5. In order to carry out this system of settlement, a general officer will be detailed as Inspector of Settlements and Plantations, whose duty it shall be to visit the settlements, to regulate their police and general arrangement, and who will furnish personally to each head of a family, subject to the approval of the President of the United States, a possessory title in writing, giving as near as possible the description of boundaries; and who

> shall adjust all claims or conflicts that may arise under the same, subject to the like approval, treating such titles altogether as possessory. The same general officer will also be charged with the enlistment and organization of the negro recruits, and protecting their interests while absent from their settlements; and will be governed by the rules and regulations prescribed by the War Department for such purposes.
>
> 6. Brigadier-General R. Saxton is hereby appointed Inspector of Settlements and plantations, and will at once enter on the performance of his duties. No change is intended or desired in the settlement now on Beaufort Island, nor will any rights to property heretofore acquired be affected thereby" (Sherman 1865, in Ehistory.com 2005).

The welfare of the swelling population of freed African-Americans in the Savannah area attracted nationwide attention. Among those who tried to help ease the transition from slavery to freedom was Harriet A. Jacobs. Jacobs wrote in 1866 concerning the freedmen in Savannah and the abuses that they were suffering by the locals (Jacobs and Child 1861; Jacobs 2005). The influx of people from Georgia's upcountry to Savannah taxed Savannah's already fragile economy. The U.S. Army instituted many construction projects that employed some of these people, but many were destitute.

Reverend Tunis G. Campbell was assigned the task of colonizing the Sea Islands with Freedmen (Duncan 1986). His efforts were concentrated on St. Catherines and Sapelo Islands, although Ossabaw Island was included in his jurisdiction. By May 1865 Campbell had deposited a number of Freedmen on Ossabaw Island and by December 15, 1865 an estimated 78 settlers were living on the island under Campbell's charge (Duncan 1986:20, 26). Freedmen Bureau records for August 9, 1865 noted that Paul John and two members of his family occupied 15 acres on Marel (sic, Morel) property on Ossabaw Island. This documented noted that the property had been "Restored", which probably indicates that the property was restored to the Morel family's ownership (Freedmen's Bureau Online 2005). Consequently, Paul John's occupation of the North End plantation probably lasted only a few years. He was not enumerated in the 1870 Federal Census for Chatham County, which suggests he was no longer living at the North End plantation by that date (Ancestry.com 2005).

Few details are provided concerning the establishment of their settlement on Ossabaw. On St. Catherines Island, however, the Freedmen settlers occupied abandoned slave row housing that was quite similar to the North End Plantation quarter (Duncan 1986:48, Figures 6 and 7). Since a parallel situation likely existed on Ossabaw Island, it is reasonable to expect that these new settlers took advantage of existing dwellings on the island for their residences. What is not known, however, is whether these plantations were entirely abandoned at the time of their arrival, or whether existing residents were displaced or inconvenienced by the arrival of newcomers. Although this resettlement program would come to an abrupt halt as a result of government legislation the following year, many of the Freedmen continued to live on the Sea Islands and became the established island population (Duncan 1986:48, Figure 7).

Sherman's orders were reversed by the U.S. Congress and President Andrew Johnson in February 1866. All title to land granted to the freedmen by the Freedman's Bureau were rescinded and the property was returned to its former owners. Thus, freedman ownership of Ossabaw Island property lasted less than one year and title was returned to the heirs of Bryan Morel.

Many of the Freedmen who inhabited Ossabaw Island lived there for several decades following the Civil War as squatters or tenants. The population of the island in the 1880 census numbered 180 persons and most, if not all of them, were of African-American descent. Between 1881 and 1899 most inhabitants had moved to the mainland. Those who remained were likely in the employ of the Island's owners, although for most of the period from 1868 to 1886, the owners were absentees. Their absence allowed the African-American residents to continue living relatively unmolested.

North End Plantation was sold by the heirs of Bryan Morel to James M. Waterbury in 1886. Waterbury was from New York City. Thus ended the 126 year land tenure of the Morel family on Ossabaw Island. The Waterbury's owned it for less than eight years. It was during their ownership that most of the African-Americans who were living on Ossabaw Island left. This suggests that relations between the Waterbury's and the other residents was less than amiable. The mass exodus of African-Americans from Ossabaw Island was partly spurred by their economic condition and many may have left seeking jobs.

The North End plantation was deeded by Kate Anthony Waterbury and James M. Waterbury to Carolyn C. Maxwell on June 1, 1895 (Ossabaw Island Papers, Folder 4:1895). That deed refers to two earlier plats of the property by William Hughes. One plat was dated May 23, 1853 and another dated July 2, 1886 (see Chatham County Deed Book 8N:385). The "North End" and other property on Ossabaw Island were conveyed by John H. Carr to John Wanamaker on November 10, 1909 for $75,000 (Ossabaw Island Papers, Folder 4:1909).

The North End tabby dwellings may have lain vacant for most of the period from the 1890s to about 1915. Beginning in the 1890s the North End plantation served as a hunt club for the wealthy northern owners. Quite possibly the tabby dwellings were used to house animals during that period. One early photograph shows Tabby's 1 and 2 within a fenced enclosure and their front (south-facing) doors are shown barricaded with widely spaced planks.

Around 1915 the dwellings were reconstituted and returned for use as housing. The tongue in groove flooring may have been added at that time by either the Wannamakers or the Torreys. Tenants of the North End Plantation dwellings in the twentieth century included the Martin, Parker, and Williams families. The Martin and Williams families were of African-American heritage. The Parkers were of Euro-American heritage.

Cyrus "Jimbo" Martin, who began work on Ossabaw in 1913, remained on the island working for the Torrey family until his death in 1995 at age 95. Jimbo, his son Cyrus Martin, Jr., and other members of the Martin family resided in Tabby 2 (Foskey 2001; Eleanor Torrey West personal communication, Ossabaw Island, February 1, 2005). Roger Parker began work on Ossabaw in the 1960s. His first residence was in Tabby 2 but he later moved to Tabby 1 where he lived until about 1991 (Roger Parker, personal communication, Ossabaw Island, February 1, 2005). Lucille "Queenie" and Emmanuel Williams, and their son Emanuel, also resided in one of the tabby quarters on the North End Plantation (Foskey 2001; Roger Parker, personal communication, Ossabaw Island, February 1, 2005). The Williams family resided in Tabby 3.

V. RESULTS

DEFINING THE NORTH END PLANTATION

The North End Plantation site covered an extensive area of the northern end of Ossabaw Island. The primary plantation complex, which excludes the agricultural fields and woodlands, covered an area of approximately 10 acres. The archaeologists concentrated their mapping on the main complex, although some reconnaissance of the other areas was accomplished. The archaeological survey of the North End Plantation provides a preliminary understanding of the horizontal limits of the primary plantation complex, as well as some understanding of the age, function, and research potential of selected areas within this complex.

The Ground Penetrating Radar Survey examined major portions of the North End Plantation. The results of this work are presented in the following section. These images are a series of Time Slices with increasing depth below ground surface. Figure 13 shows one example of a GPR plan map.

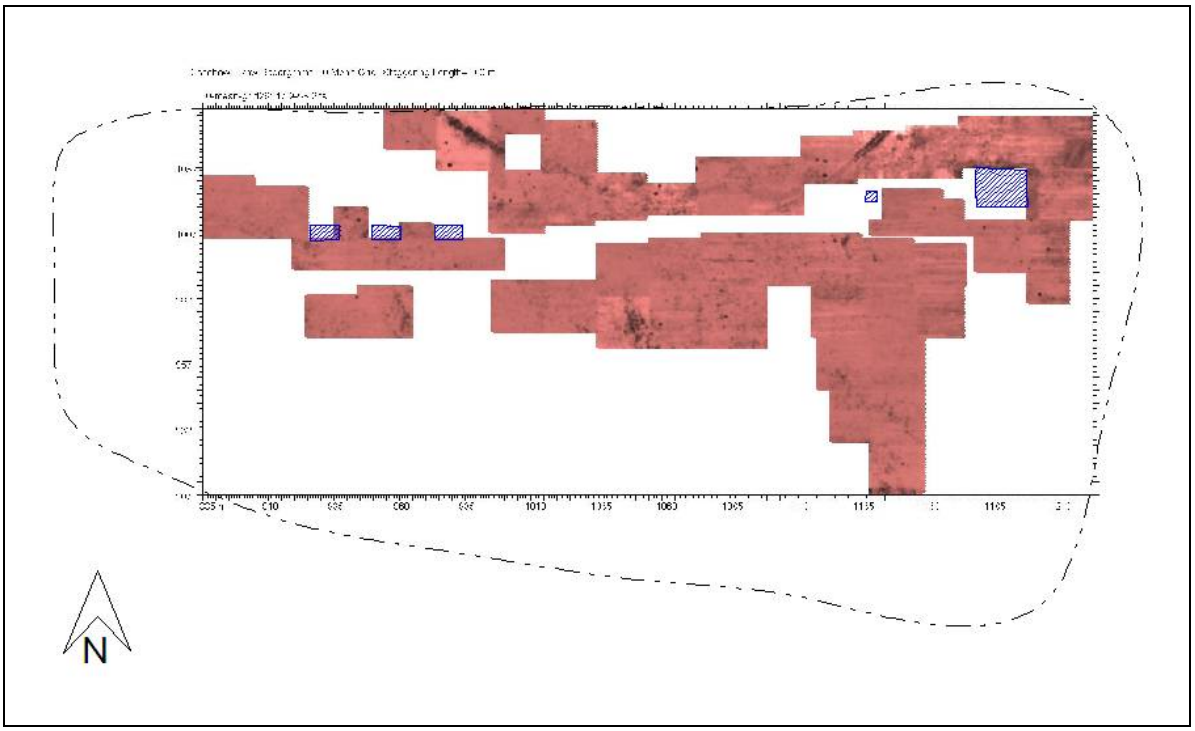


Figure 13. Example of a GPR Map, 9Ch1062.

Eighty-one shovel tests were excavated on the North End Plantation in 2005. Number designations for these shovel tests began with the number 100, in order to distinguish these tests from those previously excavated in 2003. The shovel tests included 30 by 30 cm and 50 by 50 cm sizes.

Several of these shovel tests were noteworthy for the features and midden deposits that they intercepted.

A total of 21m^2 at 9CH1062 was hand excavated in January and February 2005 to assess the sites archaeological resource

potential. Number designations for these 17 test units began with the number 203, in order to distinguish these tests from those previously excavated by the Georgia Department of Natural Resources staff in 2003. The earlier test units were designated 201 and 202. The grid location of each of these test units is presented in Table 3.

Table 3. Test Unit Locations, North End Plantation, 9Ch1062.

Unit	North	East
217	1021.00	1138.00
216	1007.27	951.70
215	1007.27	952.70
214	992.28	924.93
213	1023.51	1137.53
212	994.76	960.38
211	1005.09	957.51
210	1006.09	957.51
209	994.76	958.37
208	1008.09	957.51
207	1009.09	957.51
206	1007.09	956.52
205	1007.09	955.51
204	1013.12	1172.00
203	1007.17	878.55

For purposes of analytical discussion 17 loci were defined for the North End Plantation. Each of these loci was designated by a letter (Loci A through Q). The areas contained in each of these loci are summarized in Table 4. Their general location is shown in Figure 14. The findings from each loci are presented in the following text.

LOCUS A

Locus A was defined as the area within the Eastern room of Tabby 1. Tabby 1 was the last occupied of the three standing tabby dwellings. It was abandoned in the early 1990s and its last resident was Roger Parker. According to Mr. Parker, who had moved into this dwelling several decades prior to 1990, this dwelling had a tongue-in-groove floor that had been installed around 1922. During his occupancy Mr. Parker replaced that floor (and the floor in Locus B) with a newer floor (Roger Parker personal communication February 1, 2005). Locus A was sampled by metal detector. Nine metal detector signals were investigated and collected. The metal artifacts from Locus A include an assortment of kitchen-, clothing-, and activities-related artifacts. No excavation was conducted in this room. Locus A was examined by GPR Block AF.

Table 4. Site Loci, North End Plantation, 9Ch1062.

Loci	Description
A	Tabby 1, East room
B	Tabby 1, West room
C	Tabby 2, East room
D	Tabby 2, West room
E	Tabby 3, East room
F	Tabby 3, West room
G	Quarters West of Tabby 3
H	Area South of Tabby 1, 2, and 3
I	Quarters East of Tabby 1
J	Pasture Southeast of Tabby 1
K	Low Area, Possible Canal
L	Pasture Southwest of Clubhouse, West of Alley
M	Clubhouse/Main Morel House and Kitchens
N	Smokehouse
O	Boarding house
P	Barn
Q	Extreme West End of Site

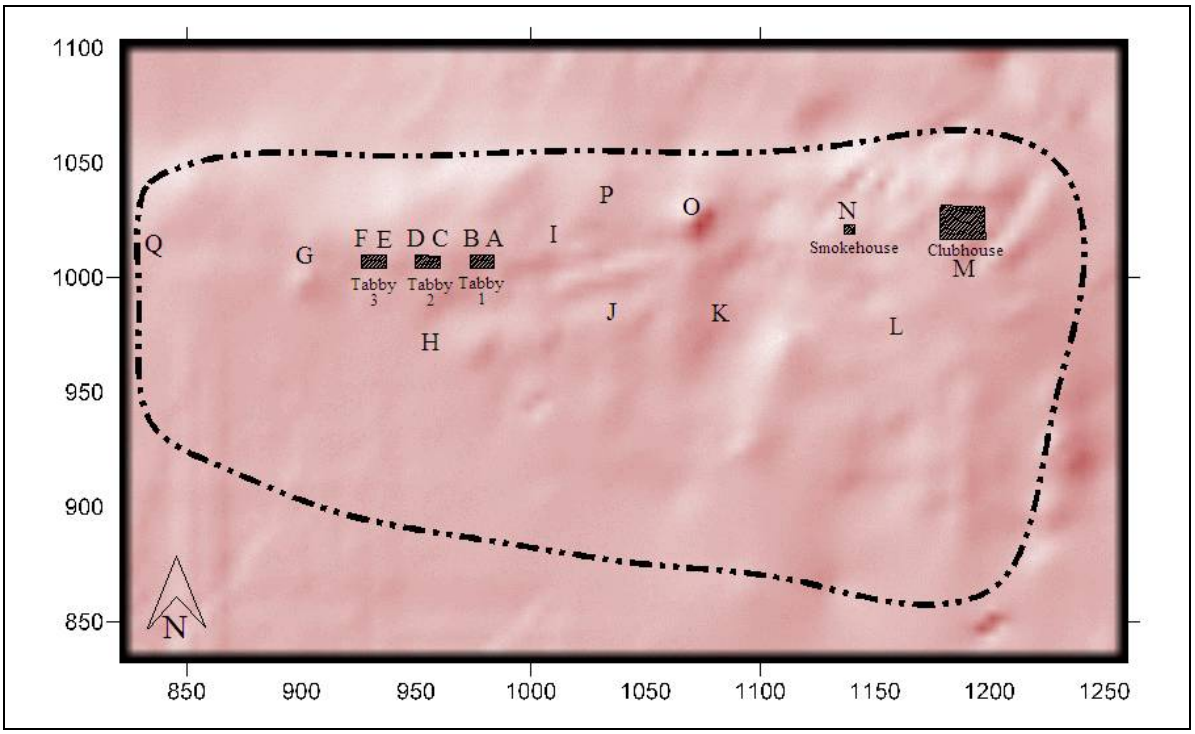


Figure 14. Site Loci, 9Ch1062.

LOCUS B

Locus B was defined as the area within the Western room of Tabby 1. This area was sampled by metal detector and one shovel test. The shovel test measured 50 by 50 cm and was placed immediately West of the chimney hearth. Artifacts from Locus B yielded a TPQ of 1813, based on the presence of ironstone ceramics. The historic ceramic assemblage from Locus B was insufficient for MCD calculations. The area of grass between Loci B and C (between Tabby 1 and Tabby 2) was investigated by GPR Block BJ. Numerous strong buried anomalies were indicated in this area. These anomalies may predate the tabby dwellings and are possibly indications of earlier slave dwellings from the colonial or early federal period.

LOCUS C

Locus C was defined as the area within the Eastern room of Tabby 2. This area was the most heavily investigated of the tabby dwellings. It was sampled by Test Units 205 to 208, and 210-211 represent a total of six 1 by 1 m units placed in the eastern room of Tabby 2. Figure 15 is a photographic view of Locus C after the completion of test excavations.

Test Unit 205 abutted the chimney hearth at its approximate center. Test Unit 206 was immediately east of Test Unit 205. Figure 16 shows a plan of Test Units 205 and 206 at the Base of Level 6. Figure 17 shows the North profile of Test Units 205 and 206.

Test Unit 207 abutted the northern interior tabby wall of the dwelling. Test Unit 208

was immediately south of Test Unit 207. Figure 18 shows a plan view of Test Units 207 and 208 at the base of Level 2. Figure 19 shows a plan view of Test Units 207 and 208 at the base of Level 4. Figure 20 shows the East profile of Test Units 207 and 208. Figure 21 shows the West profile of Test Units 207 and 208. Figure 22 is a photographic view of the North profile of Test Unit 207.

Figure 15. View of Locus C After Excavation, 9Ch1062.

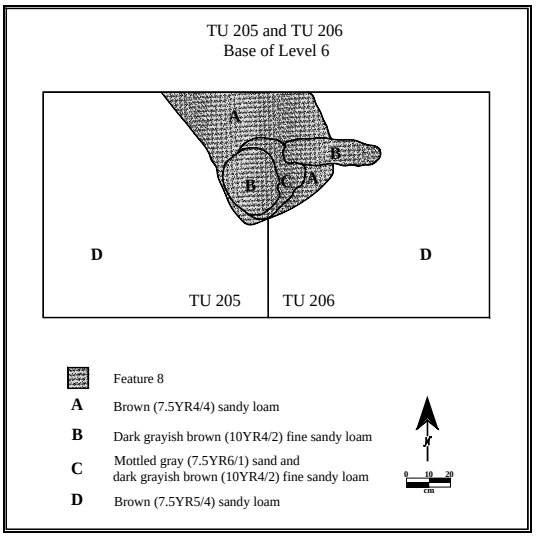


Figure 16. Plan of Test Units 205 and 206, Base of Level 6, 9Ch1062.

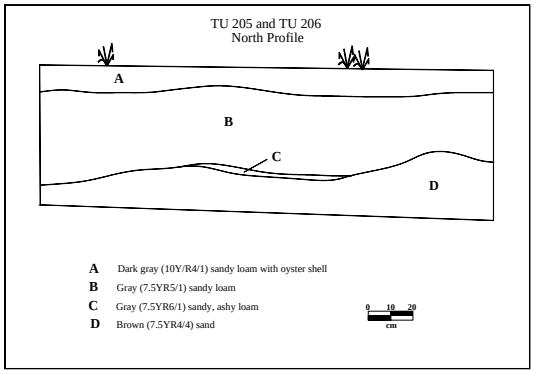


Figure 17. Test Unit 205 and 206, North Profile, 9Ch1062.

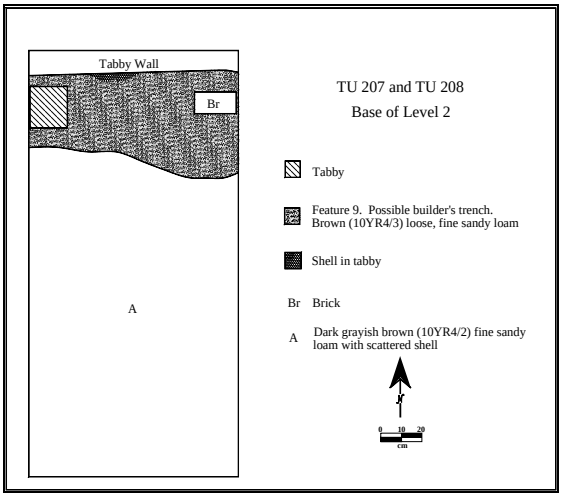


Figure 18. Plan View of Test Units 207 and 208, Base of Level 2, 9Ch1062.

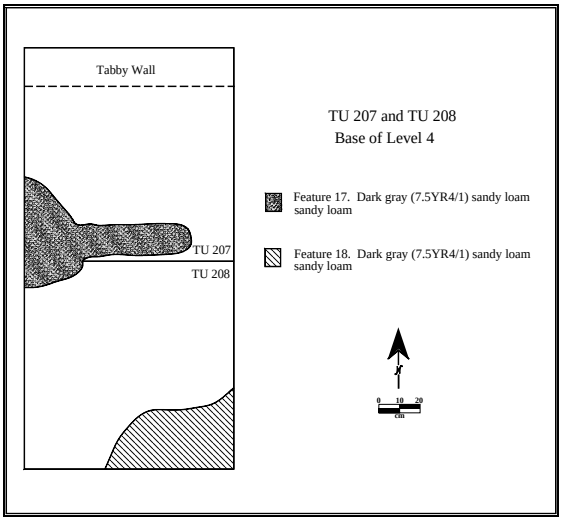


Figure 19. Plan of Test Units 207 and 208, Base of Level 4, 9Ch1062.

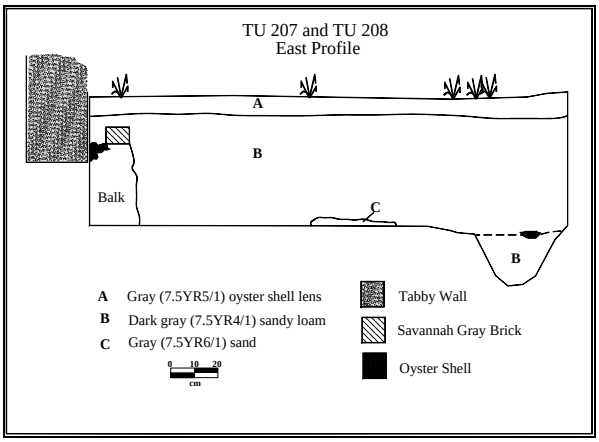


Figure 20. Test Units 207 and 208, East Profile, 9Ch1062.

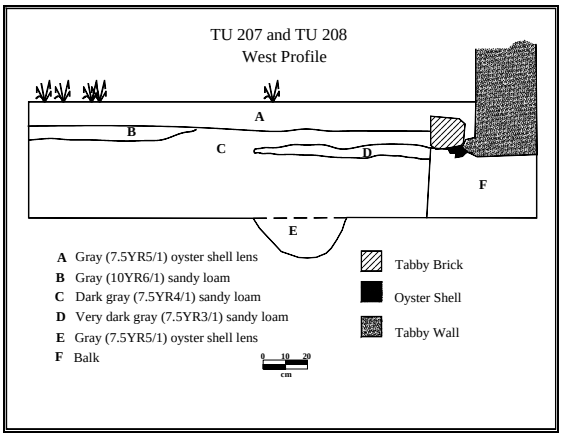


Figure 21. Test Units 207 and 208, West Profile, 9Ch1062.

Figure 22. View of North Profile, Test Unit 207, 9Ch1062.

Test Unit 211 abutted the southern interior tabby wall of the dwelling. Test Unit 210 was immediately north of Test Unit 211. Figure 23 shows a plan view of Test Unit 210 and 211 at the base of Level 2. Figure

24 shows a plan view of Test Units 210 and 211 at the base of Level 5. Figure 25 shows the Eastern profile of Test Units 210 and 211. Figure 26 shows the Southern profile of Test Unit 211.

The historic ceramic assemblage from Locus C was used to calculate a MCD for this area of occupation. The results of the MCD calculations for selected areas of the North End Plantation are shown in Table 5. A sample of 190 sherds from Locus C yielded a MCD of 1785.7. MCDs from selected contexts within Locus C ranged from 1762 to 1793.9. The ceramics that were recovered from this area spanned the period from 1760 to 1860 and included a wide variety of types.

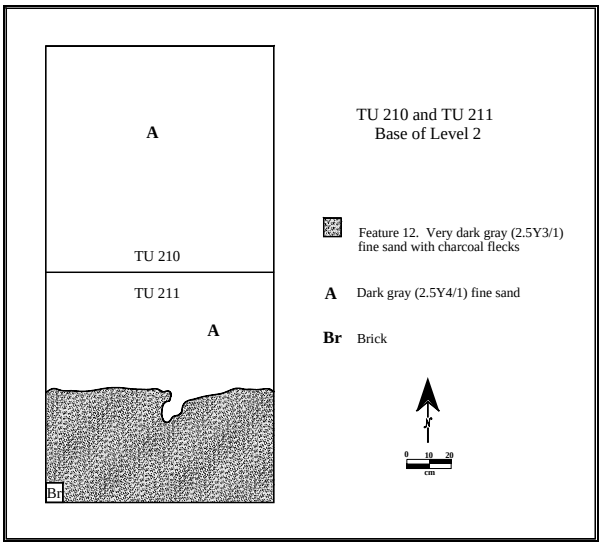


Figure 23. Plan of Test Units 210 and 211, Base of Level 2, 9Ch1062.

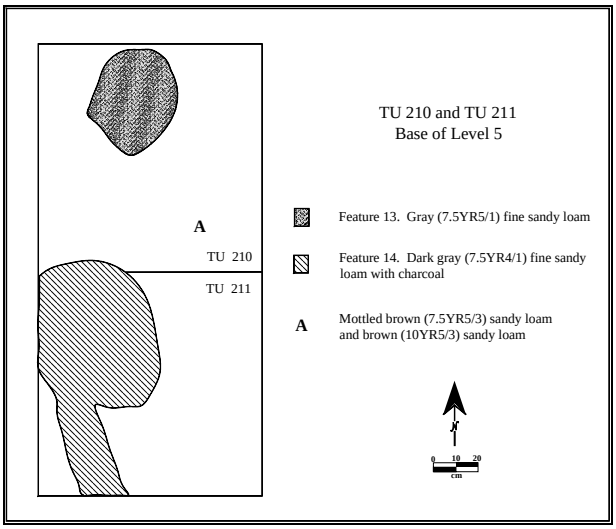


Figure 24. Plan of Test Units 210 and 211, Base of Level 5, 9Ch1062.

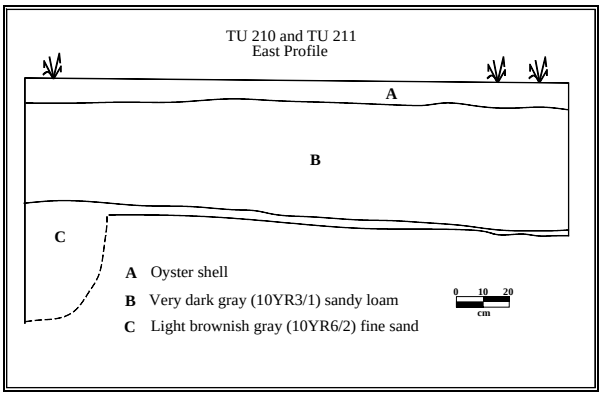


Figure 25. Test Units 210 and 211, East Profile, 9Ch1062.

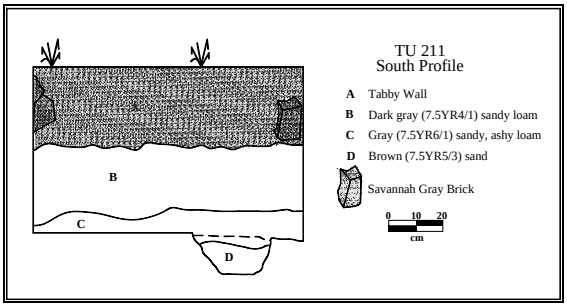


Figure 26. Test Unit 211, South Profile, 9Ch1062.

Artifacts from Locus C yielding the latest TPQ included window glass (1883), a crown bottle cap (1892), a semi-automatic wide mouth bottle (1893), glass marble (1901), a U.S. Indian head penny and bakelite comb (1907), a U.S. buffalo nickel (1911), a U.S. wheat penny (1917), and plastic buttons (1940). Interestingly, no varieties of historic ceramics with TPQs dating after 1830 were recovered from Locus C. This may indicate that flooring was established in the tabby dwelling shortly after 1830 and this construction precluded the deposition of large sherds in the soils in this area. This relationship is consistent with the project construction episode of 1840 for the tabby duplexes, as suggested by Fore (2004).

Table 5. Mean Ceramic Dates, North End Plantation.

	LOCI C		LOCI D		LOCI E		LOCI G		LOCI H		LOCI M	
Level	**MCD**	**Sherds**	**MCD**	**Sherds**	**MCD**	**Sherds**	**MCD**	**Sherds**	**MCD**	**Sherds**	**MCD**	**Sherds**
1	1793.9	19	1773.7	3	1788	32	1799.2	41	1827	131	1810.5	28
2	1790.4	49	1793.9	13	1791	9	1799.7	29	1834.1	118	1816.8	55
3	1791.7	60	1794.2	11	1776	3	1767.5	2	1811.5	22	1813.2	26
4	1773.9	27	1788.6	8	0	0	1733	1	1803.5	8	1815.5	4
5	1767.6	23	1797	1	0	0	0	0	1805	1	1808.6	5
6	1762.0	2	0	0	0	0	0	0	1821.3	3	0	0
Features	1770.0	12	1802	1	1818	1	1799	4	0	0	1803.7	3
Other	0.0	0	0	0	0	0	1805	20	1825.3	20	1808.6	54
Total	**1785.7**	**190**	**1791.5**	**37**	**1788**	**45**	**1799.2**	**97**	**1827.8**	**303**	**1812.2**	**175**

Dating information provided by examination of other time-sensitive artifact types, including bottle glass, buttons, coins, nails, tobacco pipes, and window glass.

The recovered sample of tobacco pipe stems from 9Ch1062 was relatively small (N=90) and was of only limited utility for dating purposes. The entire site sample yielded a date of 1770.308 using Binford's formula (Binford 1962; Heighton and Deagan 1972). A sample of 44 pipestems from Locus C yielded a date estimate of 1769.245, which is 16.5 years earlier than the date obtained from the MCD calculations (Table 6). These tobacco pipe dates provide archaeological support for an intensive occupation of the North End Plantation prior to the American Revolution. The lag time between the observed pipestem dates and the MCDs is partially a reflection of the gradually increasing availability of imported ceramics among the enslaved population.

Table 6. Tobacco Pipestem Dates, Locus C and Site 9Ch1062.

Bore	**Product**	**Count**	**Pipestem Date**	
5/64"	25	125		
4/64"	5	20		
3/64'	14	42		
Sum	**44**	**187**	**1769.245**	**Locus C**
5/64"	49	245		
4/64"	12	48		
3/64'	29	87		
Sum	**90**	**380**	**1770.308**	**Site 9Ch062**

Nineteenth-century window glass is a useful artifact type for dating. Window glass produced in the eighteenth century is also helpful for site dating but it is not used as part of the window glass dating formula because of its different manufacturing technique. Nineteenth-century window glass became progressively thicker throughout the century. As glass production techniques improved glass makers were able to manufacture larger and thicker panes of window glass. Roenke (1978) and others have developed dating formulas for window glass. Because the technology for glass manufacture was radically improved from the earlier blown glass window panes of the eighteenth century, this dating technique is only applicable to nineteenth-century assemblages. Moir's (1987) regression formula for dating window glass is expressed as:

Glass Manufacture Date=84.22 x (Mean glass thickness in Millimeters)+1712.7

Moir's formula was applied to the window glass sample from three contexts at 9Ch1062—Loci C, H and M (Table 7). A sample of 45 window glass sherds from Locus C produced a mean thickness of 1.8222 mm, which yielded a window glass date estimate of 1866.17.

Table 7. Window Glass Dates, 9Ch1062.

Glass Thickness	Locus C			Locus H			Locus M			Total, 9Ch1062		
(mm)	Count	Product	Mean	Count	Product	Mean	Count	Product	Mean	Count	Product	Mean
0.5	0	0		0	0		1	1		3	1.5	
1.1	3	3		1	1.1		5	6		14	15.4	
1.3	0	0		1	1.3		11	14		14	18.2	
1.5	5	8		8	12		24	36		45	67.5	
1.7	6	10		2	3.4		16	27		31	52.7	
1.9	7	13		14	26.6		21	40		61	115.9	
2.1	7	15		31	65.1		27	57		88	184.8	
2.3	9	21		7	16.1		11	25		33	75.9	
2.5	7	18		9	22.5		4	10		23	57.5	
2.7	0	0		1	2.7		1	3		2	5.4	
2.9	1	3		0	0		2	6		4	11.6	
	45	**82**	**1.8222**	**74**	**150.8**	**2.0378**	**123**	**224**	**1.8203**	**318**	**606.4**	**1.9069**
Date, Locus C= 1866.17				**Date, Locus H= 1884.32**			**Date, Locus M= 1866.01**			**Date, Locus M= 1873.30**		

The window glass date estimate from Locus C falls more than five decades later than the MCD estimate. This suggests that the windows may not have been present in the earliest buildings in this area, or perhaps it suggests a catastrophic event took place around 1866, which resulted in extensive breakage of windows and the subsequent discard of window glass sherds. This destruction may have resulted from Union occupation in the American Civil War. The 1866 window glass date may reflect the timing of the original installation of glass windows in the ca. 1840 tabby duplexes. Glass windows may have been added to these dwellings shortly after the war.

LOCUS D

Locus D was defined as the area within the Western room of Tabby 2. It was investigated by Test Units 215-216, which were two contiguous 1 x 1 m units. Nine metal detector signals in this room were investigated and collected.

Test Unit 215 was placed immediately adjacent to the hearth and the long axis of this excavation was oriented East-West. Test Unit 216 was located immediately west of Test Unit 216. A plan view Test Units 215 and 216 at the base of Level 5 is shown in Figure 27. Feature 23, which is shown in this plan, was a posthole that was located at the junction of Test Units 215 and 216. It was a rounded bottom post. This post is probably associated with a building dating prior to the construction of Tabby 2. Figure 28 shows the North profile of Test Units 215 and 216.

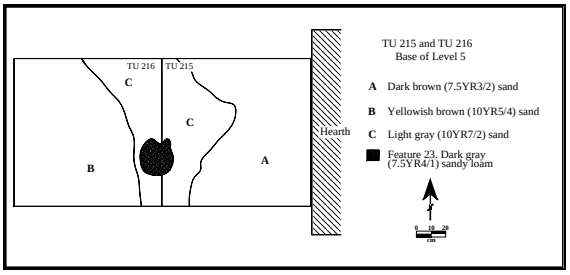


Figure 27. Plan of Test Units 215 and 216, 9Ch1062.

The historic ceramic assemblage from Locus D was used to calculate a MCD for this area of occupation. A sample of 37 sherds from Locus D yielded a MCD of 1791.5. MCDs from selected contexts within Locus D ranged from 1773.7 to 1802. The ceramics that were recovered from this area spanned the period from 1760 to 1860 and included a wide variety of types.

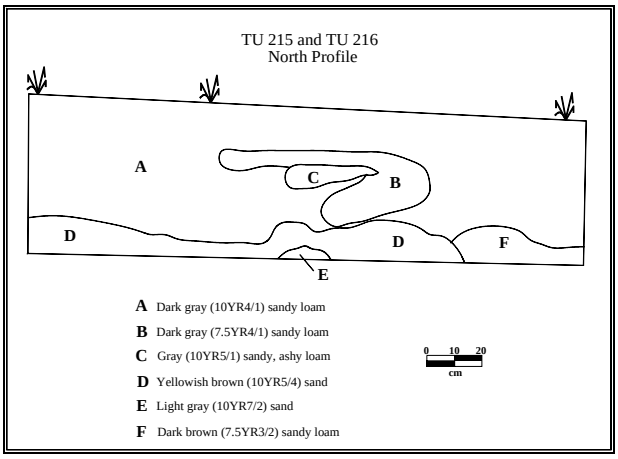


Figure 28. Test Units 215 and 216, North Profile, 9Ch1062.

Artifacts from Locus D yielding the latest TPQ included black underglaze transfer printed ware (1840), pointed wood screw (1846), paneled bottles (1867), and a crown stopper finish bottle (1892). The construction sequence situation in Locus D was probably similar to that observed for Locus C. Very few artifacts that were produced after 1840 were recovered from the midden in Locus D. This suggests that the wooden flooring prevented the accumulation of artifacts in the soils beneath the floor.

The area between Loci D and E (a grassy patch between the two tabby duplexes) was examined by GPR Block BH. The radar information from this sample was quite tantalizing. An enlarged and annotated view of the GPR map from this vicinity, which shows the radar anomalies at 19.2 to 24.5 ns, is shown in Figure 29. These data suggest the presence of a building, possibly circular in plan between Tabby 2 and Tabby 3. No excavation was attempted in this area but this vicinity shows great promise for future study.

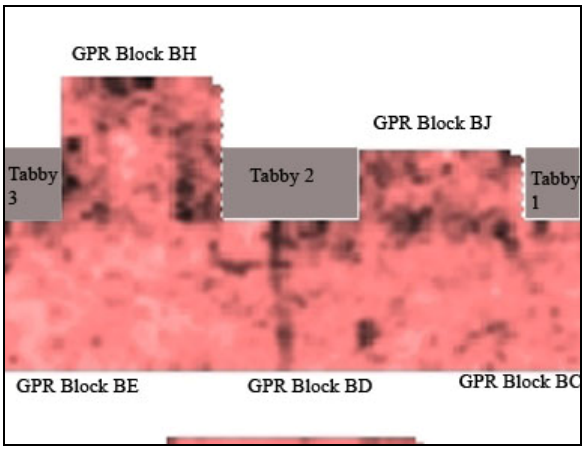


Figure 29. Enlarged GPR Plan at 19.2 to 24.5 ns, Blocks BC, BD, BE, BH, and BJ, 9Ch1062.

LOCUS E

Locus E was defined as the area within the Eastern room of Tabby 3. It was investigated by four 50 by 50 cm shovel tests and metal detecting. A 50 by 50 cm shovel test (ST 181) that was placed immediately north of Tabby 3, East Room is included with this locus. Feature 34 was identified in the base of this shovel test. The plan view and profile of this post feature is shown in Figure 30. Ten metal detector signals were investigated and collected.

The historic ceramic assemblage from Locus E was used to calculate a MCD for this area of occupation. A sample of 45 sherds from Locus E yielded a MCD of 1788.3. MCDs from selected contexts within Locus E ranged from 1775.7 to 1818. The ceramics that were recovered from this area spanned the period from 1760 to 1860 and included a wide variety of types. Artifacts from Locus E yielding the latest TPQ included window glass (1833), harmonica (1862), paneled bottles (1867), and machine made light bulb (1895). The latest TPQ for the historic ceramics is 1813, based on the presence of two ironstone sherds.

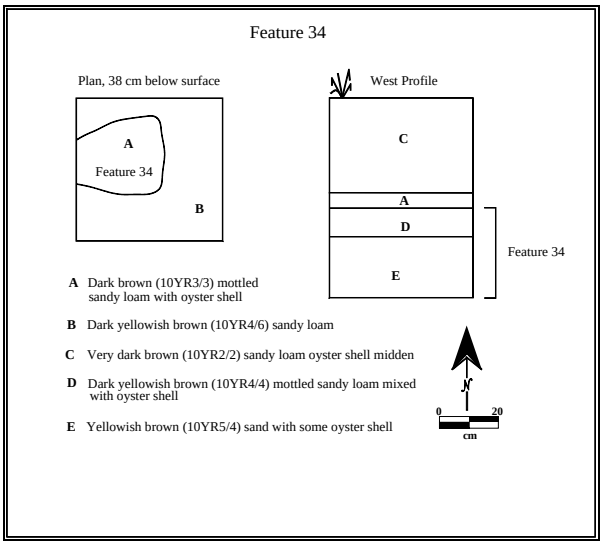


Figure 30. Plan and East Profile of Shovel Test 181 and Feature 34, 9Ch1062.

LOCUS F

Locus F was defined as the area within the Western room of Tabby 3. It was investigated by 11 metal detector finds, which were collected. No excavation was done in this room.

LOCUS G

Locus G was defined as the areas of the enslaved quarter located immediately West of Tabby 3. This vicinity was sampled by several shovel tests and by Test Unit 203. This area was extensively probed for evidence of buried structural elements. A portion of Locus G was sampled by GPR survey Blocks BF and BG. An enlarged and annotated view of the GPR anomalies in Locus G, which is shown at 19.2 to 24.5 ns, is shown in Figure 31. Many anomalies are shown in this view. Some of these may represent modern utility ditches but a

number of clusters and curved linear anomalies may pertain to early construction in this vicinity. A strong concentration of radar signals near the junction of Blocks BF and BG probably correspond to a tabby duplex, which would be Tabby 4 in the numbering sequence.

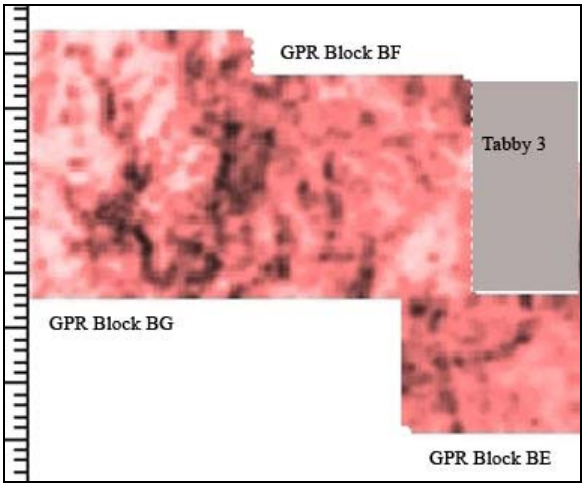


Figure 31. GPR Plan, Blocks BE, BF, and BG, 9Ch1062.

Shovel Test 100, located at 1009.91N 884.19E, encountered a dense historic midden. This midden is probably associated with presumed Tabby 5. Test Unit 203 was placed to further explore this location. Test Unit 203 was a 2 by 1 m unit located in the vicinity of presumed Tabby 5 toward the western end of the North End plantation. This test unit also contained a dense historic midden as well as portions of a tabby wall and two construction posts. The tabby wall was irregularly poured and may represent an interior wall and not a major supporting wall.

Three features were identified in Test Unit 203—Features 10, 20 and 21. Feature 10 was a large section of poured tabby wall. It was capped with a rich organic midden. This tabby was sloppily poured onto a bed of oyster shells. The tabby did not exhibit regular form, which suggests that it was poured into a trench in the ground without any wooden frame. Feature 10 extended the full length of the test unit on its east west axis and extended beyond the excavation to the north. Feature 10 measured at least 47 cm on its North-South axis.

Feature 20 was a sub-rectangular posthole that was located beneath Feature 10. It contained a low frequency of bone, shell, and architectural stone. Feature 21 was a sub-rectangular posthole that was located beneath Feature 10. It yielded no artifacts. Both of these post features probably predate Feature 10 and are likely associated with an earlier slave dwelling in this vicinity.

Figure 32 is a photographic view of Test Unit 203 during excavation, which shows the tabby construction in Feature 10. Figure 33 is a plan view of Test Unit 203 at the base of Level 4. Figure 34 is a plan view of Test Unit 203 at the base of Level 5, which includes Features 20 and 21. Figure 35 shows the North profile of Test Unit 203, which was drawn after the removal of most of the Feature 10 unconsolidated tabby chunks and oyster shell.. Figure 36 shows the North profiles of Features 20 and 21.

Several shovel tests that were excavated in Locus G yielded historic features. Figure 37 shows the profile of Feature 23.

Figure 32. West View of Test Unit 203 and Feature 10, 9Ch1062.

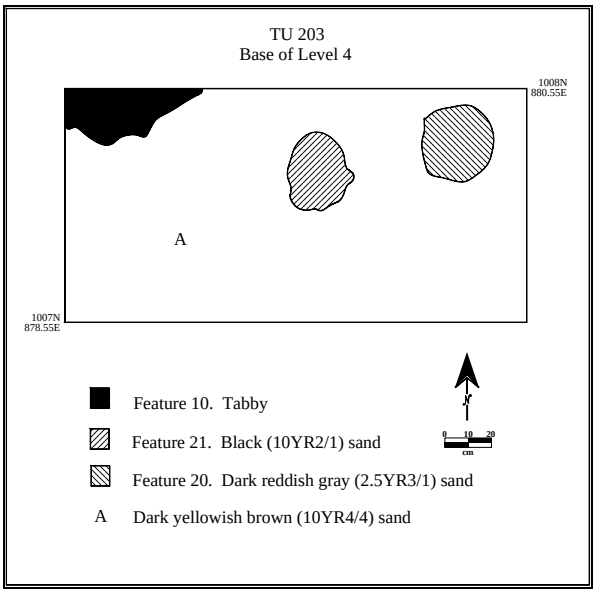


Figure 33. Plan View of Test Unit 203, 9Ch1062.

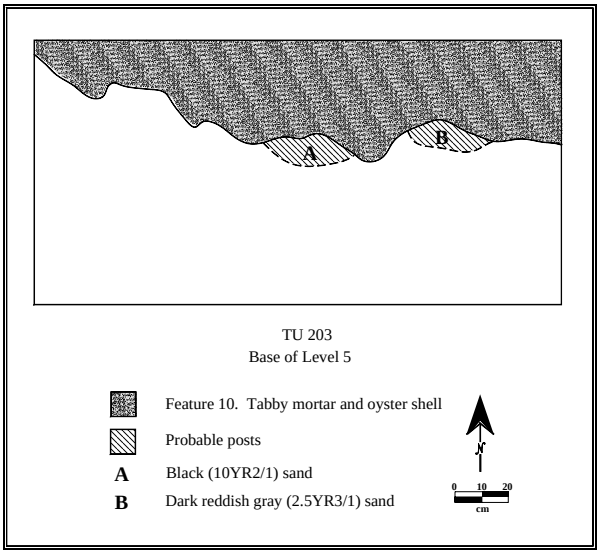


Figure 34. Plan View of Test Unit 203 and Feature 10, Base of Level 5.

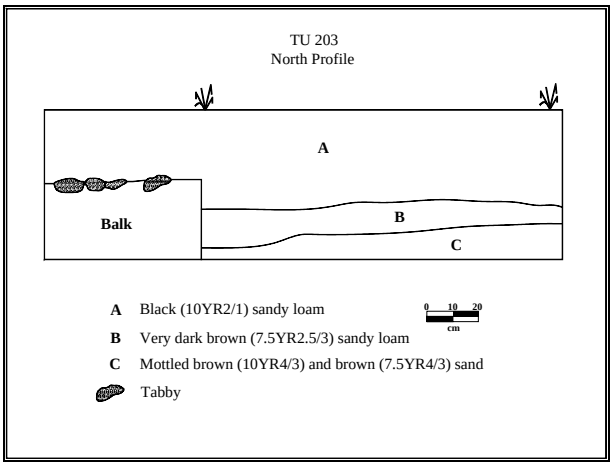


Figure 35. North Profile, Test Unit 203, 9Ch1062.

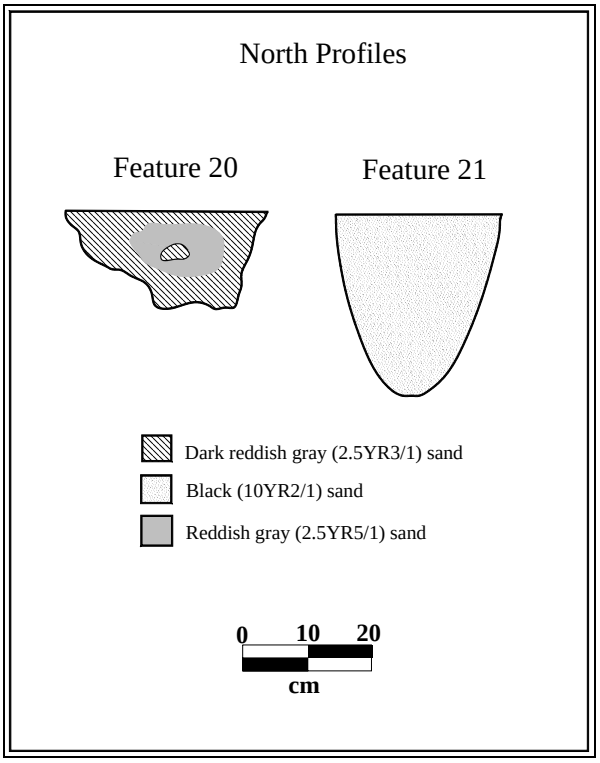


Figure 36. North Profiles of Features 20 and 21, 9Ch1062.

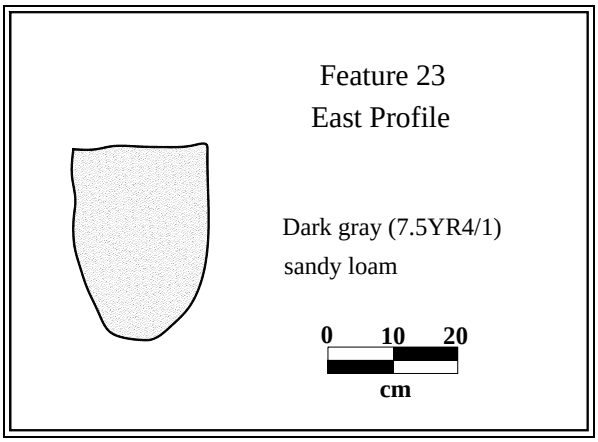


Figure 37. Feature 23, East Profile, 9Ch1062.

The historic ceramic assemblage from Locus G was used to calculate a MCD for this area of occupation. A sample of 97 sherds from Locus G yielded a MCD of 1799.2. MCDs from selected contexts within Locus G ranged from 1767.5 to 1805. The ceramics that were recovered from this area spanned the period from 1760 to 1860 and included a wide variety of types.

LOCUS H

Locus H was defined as the area immediately South of Tabbies 1, 2 and 3. This area is in pasture and was sampled by three test units (209, 212, and 214), a series of systematically placed shovel tests, and GPR survey Blocks BC, BD, BE, BK and BL. The area also was investigated by metal probe and metal detector to a limited extent.

Test Units 209 and 212 were two contiguous 2 by 1 m units located South of Tabby #2. Archaeologists discovered a large modern utility ditch near the junction of these two test units. This large trench was oriented North-South. An electric line was located at the bottom of this trench. Artifacts in Test Units 209 and 212 spanned the period from the 1760s through the twentieth century. Test Unit 209 also contained one post feature (Feature 15). Except for the area of the modern trench disturbance, these artifacts were generally stratified. The soil stratigraphy in Test Units 209 and 211 was intriguing. These soil strata were examined by Geoarchaeologist Don Thieme and his preliminary findings are contained in Appendix 4.

Figure 38 shows a plan of Test Unit 209 and Feature 15 at the base of Level 6. Figure 39 shows the South profile of Test Unit 209. Figure 40 depicts the South profile of Feature 15.

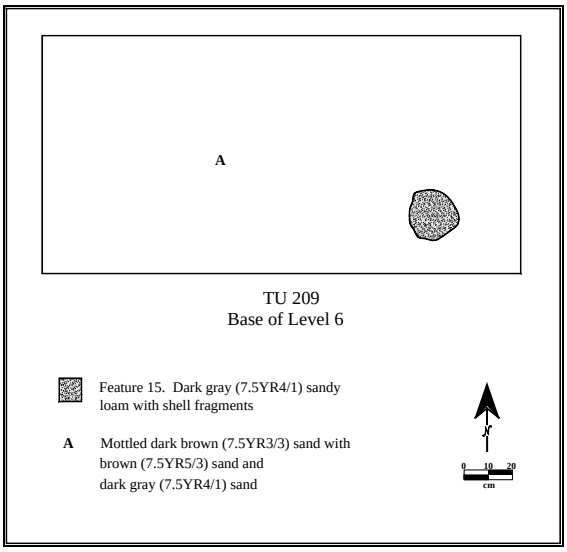


Figure 38. Plan of Test Unit 209 and Feature 15, 9Ch1062.

Test Unit 212 contained no historic features. Slightly less than one-half of this test unit was consumed by the modern utility trench that intruded into it. Figure 41 shows the South Profile of Test Unit 212, in which the utility ditch figures prominently.

The historic ceramic assemblage from Locus H was used to calculate a MCD for this area of occupation. A sample of 303 sherds from Locus H yielded a MCD of 1827.8. MCDs

from selected contexts within Locus H ranged from 1803.5 to 1834.1. The ceramics that were recovered from this area spanned the period from 1760 to the late 1800s and included a wide variety of types.

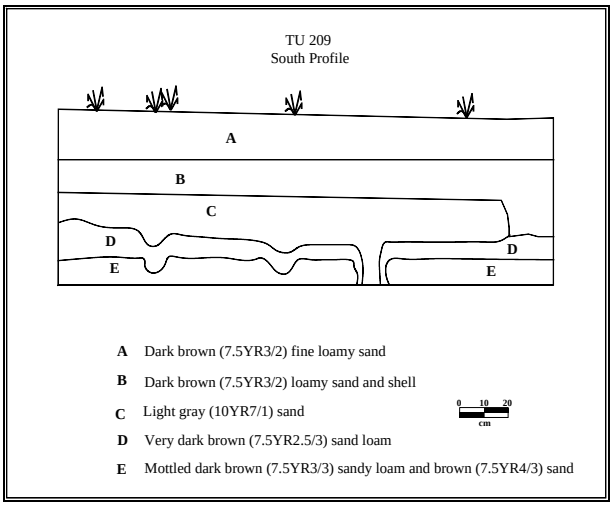


Figure 39. South Profile, Test Unit 209, 9Ch1062.

Moir's formula was applied to the window glass sample from Locus, H (see Table 7). A sample of 74 window glass sherds from Locus H produced a mean thickness of 2.0378 mm, which yielded a window glass date estimate of 1884.32.

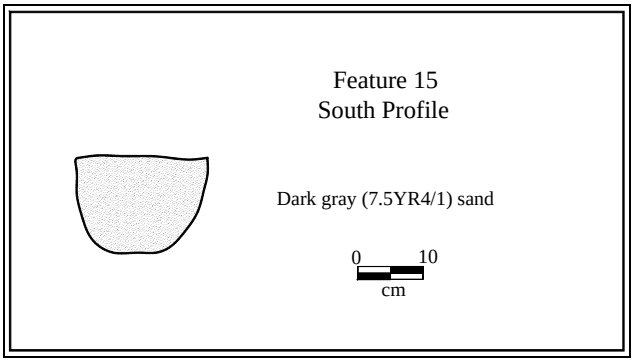


Figure 40. Feature 15, South Profile, 9Ch1062.

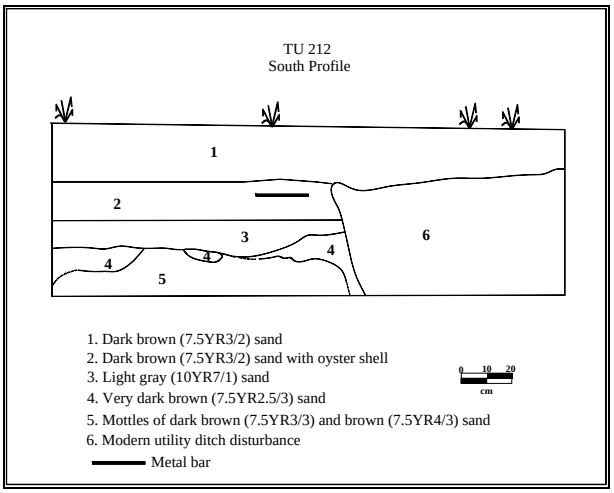


Figure 41. South Profile, Test Unit 212, 9Ch1062.

Test Unit 214 was a 2 by 1 m unit placed South of Tabby 3. It was located on the eastern slope of a large depression. The function of the depression was not determined but its size suggested it may represent a cellar or large well that had been partially filled in. Metal probe tests in this vicinity indicated a dense deposit of tabby, although the tabby was discontinuous. The archaeologists speculated that the large depression was filled with tabby chunks from a destroyed building. Figure 42 shows the plan of Test Unit 214, which includes Feature 22, at the base of Level 3. Figure 43 shows the North profile of Test Unit 214.

Figure 44 shows buildings under construction on the south side of Locus H during the 1930s (Vanishing Georgia 2005). Two of the tabby dwellings are visible in the distance in this view.

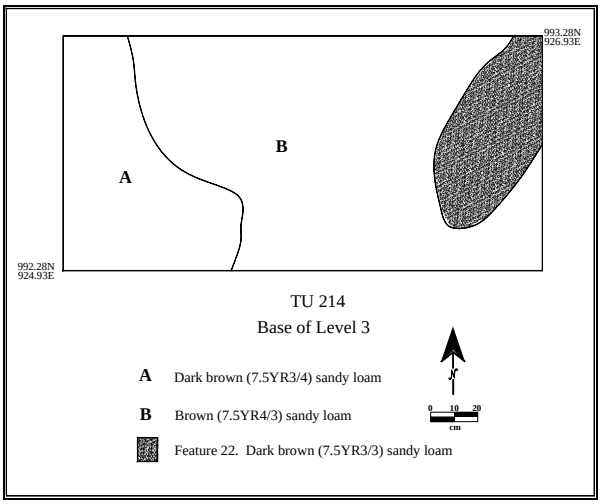


Figure 42. Plan of Test Unit 214 and Feature 22, Base of Level 3, 9Ch1062.

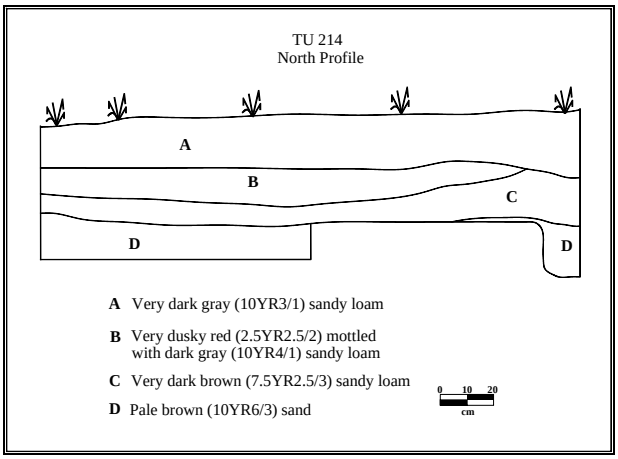


Figure 43. Test Unit 214, North Profile, 9Ch1062.

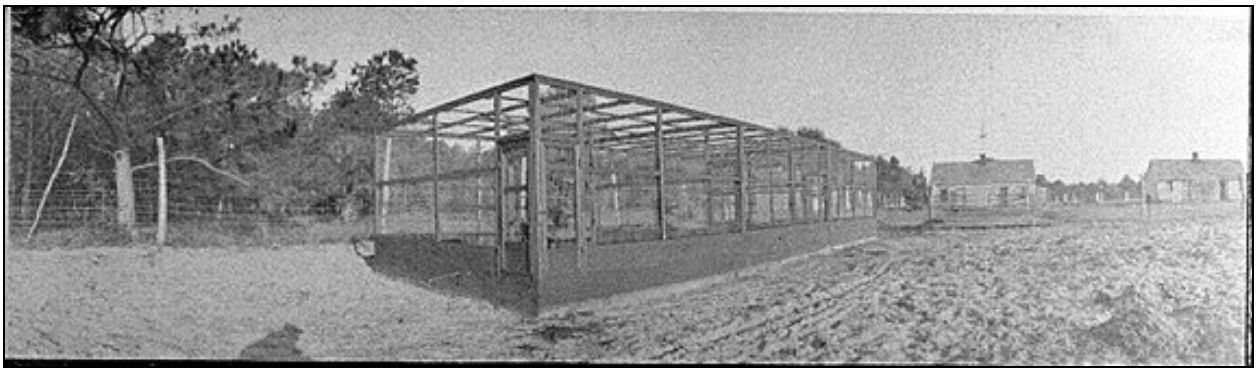


Figure 44. View from Locus H, Facing North, During a 1930s Building Construction (Vanishing Georgia 2005).

LOCUS I

Locus I was defined as the area of the slave quarter located immediately east of Tabby 1. This area contains two mounded areas and dense tabby and oyster shell debris. These two areas were suspected to represent the ruins of two tabby duplexes. Both areas have been eroded by traffic using Canepatch Road. Many artifacts have been exposed in the roadway as a result. Locus I was examined by shovel tests, metal probe, metal detector and GPR survey Blocks Z and AE. Neither dwelling was extant by the end of the second decade of the twentieth century.

LOCUS J

Locus J was defined as the area immediately Southeast of the slave quarter. This area is mostly pasture. The 1860 coastal chart shows several large buildings or compounds in this part of the site. These buildings were suspected to represent plantation support facilities, such as barns or warehouses. They were destroyed prior to the 1920s, since none appear in early photographs or in living memory. Locus J was examined by shovel tests, metal probe, metal detector and GPR survey Blocks AU, AV, AW, AX, AY, AZ, BA, and BB.

LOCUS K

Locus K was defined as the low-lying area east of Loci J and O and west of Loci L and N. This area is suspected to contain some type of water access feature. Historic maps of the area from the 1860s show no such feature, which may indicate that it was abandoned and possibly intentionally filled before 1860. Locus K was examined by shovel tests, metal probe, metal detector and GPR survey.

The topographic map of the North End Plantation clearly indicates the low-lying area of Locus K. A grove of massive live oak trees (living and dead) is located within this depressed area. That grove forms a single line that is oriented perpendicular to the Ogeechee River.

Two artificial cuts are evident on the northern side of Locus K. One is located at the highwater mark of the marsh. The other is located on a small relict dune.

Figure 45 shows a plan view of GPR survey Block AS at about 50 cm below ground surface. A large right-angled linear anomaly is clearly visible in this image. This is almost certainly an early historic construction or excavation. To the left (West) is the low ground of Locus F and to the East is higher ground of Locus L.

Figure 46 shows a view facing Locus K that was taken during the 1930s (Vanishing Georgia 2005). The line of live oak trees are visible in the distance on the right side of this photograph.

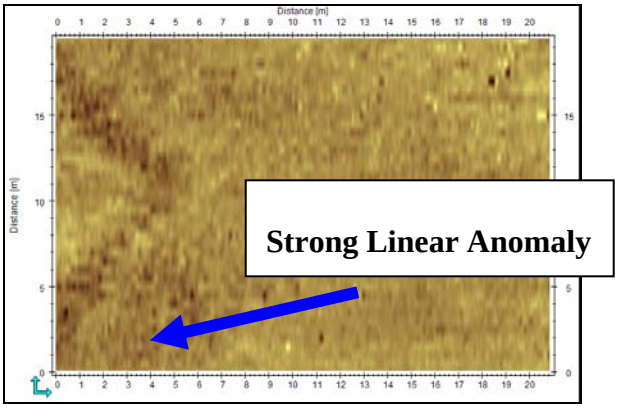


Figure 45. Plan of GPR Block AS at About 50 cm Below Surface, Locus F, 9Ch1062.

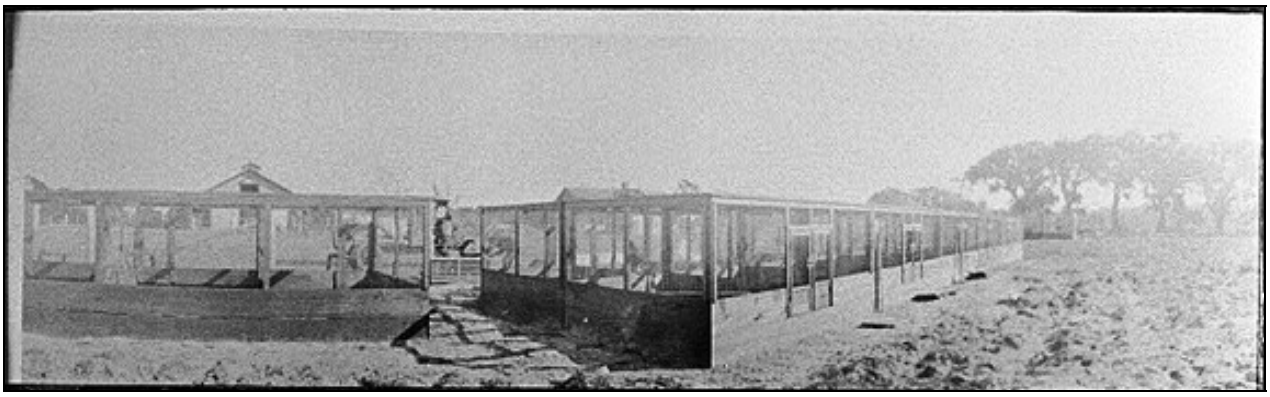


Figure 46. Photograph from the 1930s, Facing East, Line of Oaks in Locus K Visible in Distance (Vanishing Georgia 2005).

LOCUS L

Locus L was defined as the area east of Locus J, Southwest of Locus M, and immediately West of the main plantation avenue (or alley). This area is entirely in pasture. Locus J was examined by shovel tests, metal probe, metal detector and GPR survey. Two shovel tests in Locus L encountered early historic features. Two other shovel tests intersected modern utility ditches.

Shovel Test 166 contained Feature 31, which was a stratified deposit thought to be a mid-nineteenth century cellar. No buildings were known to exist in this vicinity from living memory, nor were any buildings indicated on the early photographs or cartography. This historic feature (or structure) was first identified during the GPR field survey. A series of strong anomalies were reflected in several radargrams in the northeastern corner of GPR Block AK. The GPR field data suggested a buried feature at least 4 m in diameter. Shovel Test 166 was placed in this location to investigate the GPR anomaly. Figure 47 shows the West profile of Shovel Test 166 and Feature 31.

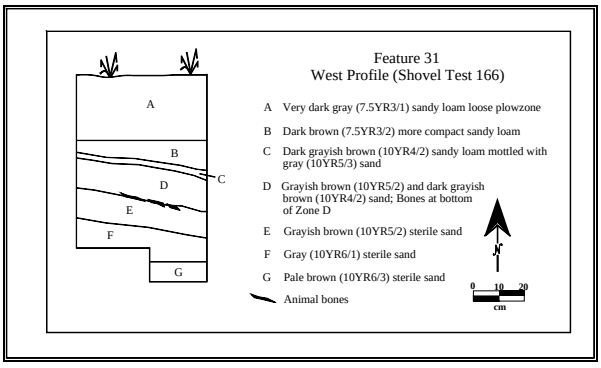


Figure 47. Shovel Test 166 and Feature 31, West Profile, 9Ch1062.

LOCUS M

Locus M was defined as the area of the main Morel plantation house(s) and immediate support facilities. This area is located beneath and surrounding the present Club House location on the northeastern end of the plantation site. This vicinity was investigated by one test unit, several shovel

tests, metal detector, metal probe, and GPR survey.

The GPR survey revealed several probable building ruins, or intense midden deposits in Locus M. A slight rectangular rise on the landscape Northwest of the Clubhouse was suspected to indicate the ruins of outbuilding. GPR Block C revealed a strong anomaly in this area. Figure 48 shows this GPR anomaly at about 45 cm below ground surface.

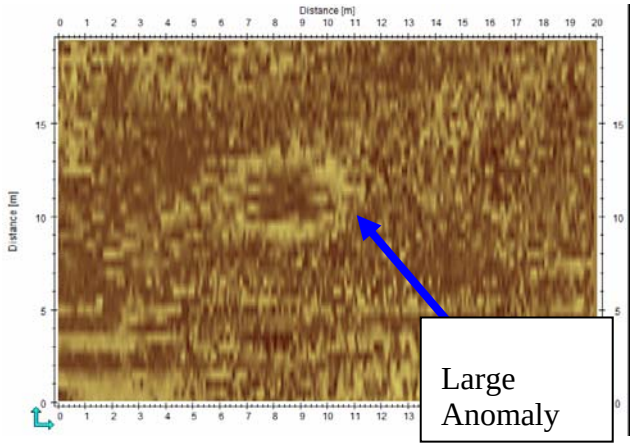


Figure 48. GPR Block C, 45 cm Below Surface, 9Ch1062.

Test Unit 204 was a 2 by 1 m unit located in the former Main House yard, southwest of the Clubhouse and near the eastern end of North End plantation. Four cultural features were defined in the base of Test Unit 204.

Feature 3 was a small refuse pit that contained a post hole in its base. The post hole was designated Feature 3A. Feature 3 was located in the Eastern end of Test Unit 204 and a small extension of Test Unit 4 was excavated to expose the entire feature for excavation. The feature measured 1 m North-South by 75 cm East-West. Feature 3 was a shallow basin. It contained a small assemblage of late 18th and early nineteenth century artifacts. These included brick, tabby mortar, window glass, wrought and cut nails, creamware and pearlware ceramics, bottle glass, tobacco pipe fragments, bone and oyster shell. Transfer printed ware from this feature places its filling date sometime after 1795.

Feature 4 was a small oval post. It measured 30 cm East-West by 28 cm North-South. Feature 5 was a small rectangular post. It measured 27 cm by 27 cm and was oriented with the site grid. One decorated tobacco pipe bowl was contained in the feature fill. Feature 6 was an irregular rectangular basin. It measured 50 cm North-South by 25 cm East-West.

Figure 49 shows a plan view of Test Unit 204 at the base of Level 3. Features 3 through 7 are shown in this plan. Figure 50 is the North profile of Test Unit 204.

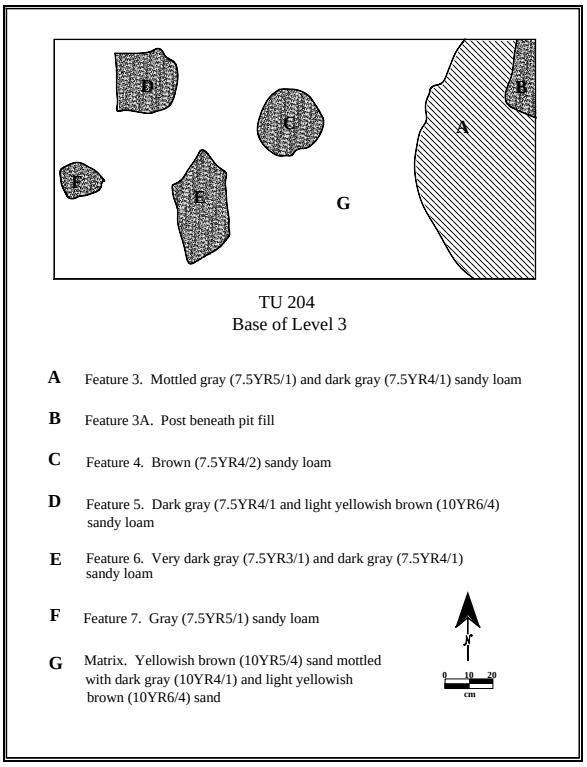


Figure 49. Plan View of Test Unit 204, Locus M.

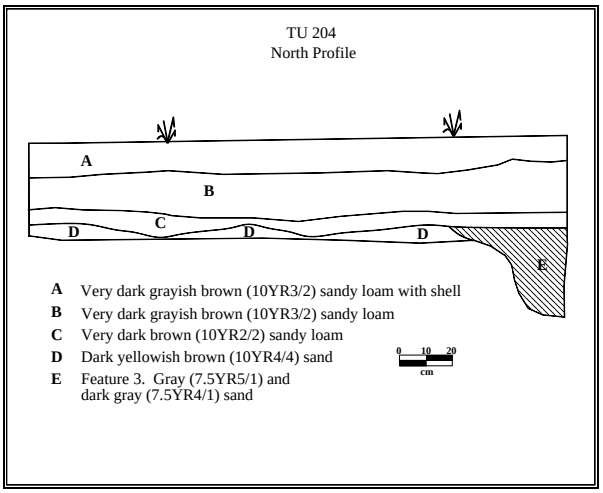


Figure 50. Test Unit 204, North Profile, 9Ch1062.

Shovel Test 170 was a 50 by 50 cm test that was located Southeast of the Clubhouse main entrance. GPR Block L revealed an anomaly on its northwestern margin. The presence of several large palm trees near the front porch of the Clubhouse precluded a complete GPR survey of this vicinity, however. A metal probe was used to locate and trace the probable extent of buried stone and Shovel Test 170 was excavated to explore this intriguing deposit. The excavation yielded Feature 32, which was a probable early historic period cellar and building rubble deposit. Figure 51 shows the plan view and North profile of Shovel Test 170 and Feature 32. This shovel test apparently clipped the southern edge of this cellar.

Feature 32 is suspected to be a large cellar associated with an early dwelling, possibly the original John Morel plantation home. The archaeological discovery of this feature happened late in the project and its investigation was limited. The metal probe was used in an attempt to follow the horizontal extent of the buried rubble deposit. This effort was mostly successful, although two cast iron utility pipelines stymied this exercise. The utility lines were oriented parallel to the Clubhouse porch. They were confirmed by the excavation of Shovel Test 171.

The historic ceramic assemblage from Locus M was used to calculate a MCD for this area of occupation. A sample of 175 sherds from Locus M yielded a MCD of 1812.2. MCDs from selected contexts within Locus M ranged from 1808.6 to 1816.8. The ceramics that were recovered from this area spanned the period from 1760 to 1860 and included a wide variety of types.

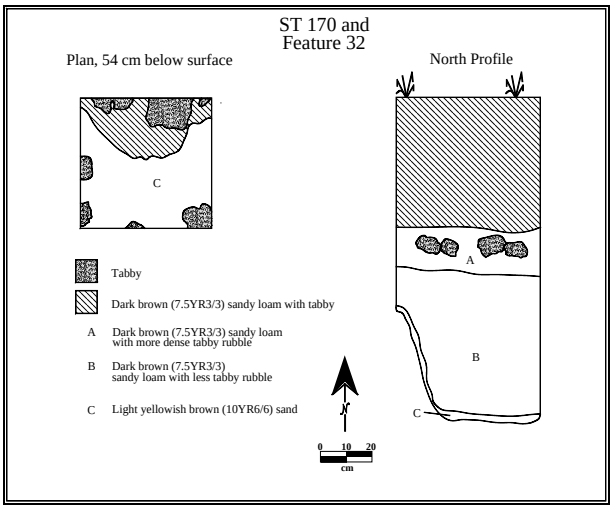


Figure 51. Plan and North Profile of Shovel Test 170 and Feature 32, 9Ch1062.

Moir's formula was applied to the window glass sample from Locus M (see Table 7). A sample of 123 window glass sherds from Locus M produced a mean thickness of 1.8203 mm, which yielded a window glass date estimate of 1866.01. The window glass date estimate from Locus M is more than five decades later than the MCD estimate. This suggests that the windows may not have been present in the earliest buildings in this area, or perhaps it suggests a catastrophic event took place around 1866, which resulted in extensive breakage of windows and the subsequent discard of

window glass sherds. This destruction may have resulted from Union occupation in the American Civil War.

LOCUS N

Locus N was defined as the vicinity of the tabby smokehouse (Figure 52). Test Units 213 and 217 investigated the suspected tabby smokehouse. Areas outside of this tabby building were sampled by GPR survey Blocks A, B, Q, R, and S.

Figure 52. View of Tabby Smokehouse, Facing Southeast, 9Ch1062.

Test Unit 213, which measured 2 by 1 m, was placed immediately abutting the exterior tabby wall, north of the northern doorway. Figure 53 shows the plan view of Test Unit 213 at the base of Level 2. Figure 54 is the East profile of Test Unit 213. Feature 19 was a large twentieth century deposit that dominated Test Unit 213. This feature is probably a large trash-filled cellar or other massive excavation. This depression is visible in the area East and Northeast of Test Unit 213.

The interior of the tabby smokehouse was an area of interest but a large refrigerator obstructed access to the ground surface inside the building. Consequently, no excavation was attempted inside the building during the main field project. This refrigerator was removed soon after the field project was completed and a small crew returned to Ossabaw Island to investigate this area. At the urging of Historical Architect George Fore, the central part of the smokehouse was sampled to see if any trace of a fire pit was preserved.

Test Unit 217, which was a 1 by 1 m unit, was placed in the center of the original tabby smokehouse. Figure 55 shows Test Unit 217 and the field crew during excavation. Figure 56 shows the plan view of Test Unit 217 and Figure 57 shows the East profile of this excavation. The findings from both test units (213 and 217) were disappointing because the soils in these areas were extensively disturbed in the twentieth century. The archaeological test exploration in these two areas showed no evidence of intact eighteenth or nineteenth century deposits.

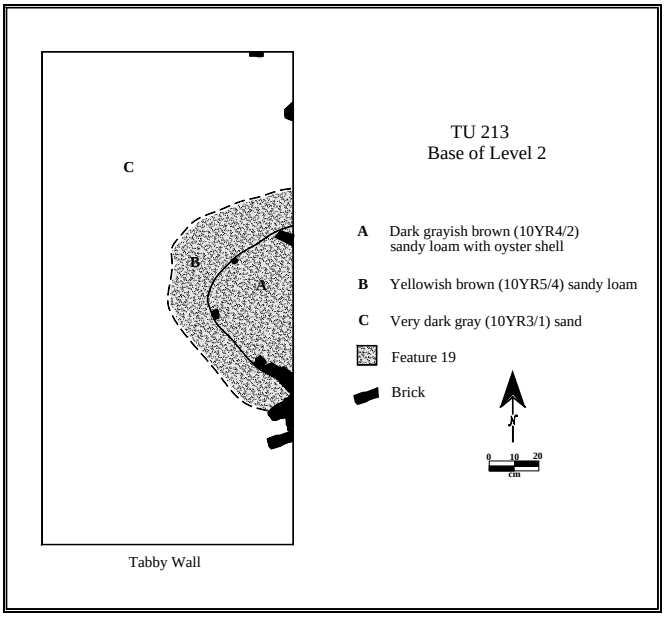


Figure 53. Plan View of Test Unit 213 and Feature 19, Base of Level 2, 9Ch1062.

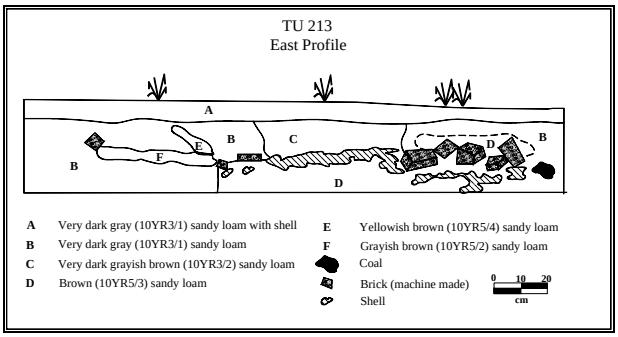


Figure 54. Test Unit 213 and Feature 19, East Profile, 9Ch1062.

Figure 55. Archaeologists Confer with Historical Architect George Fore During Excavation of Test Unit 217, 9Ch1062.

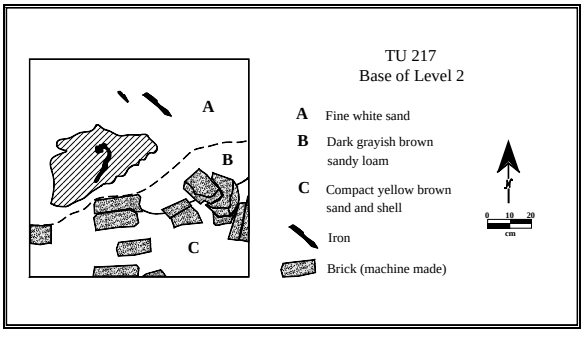


Figure 56. Plan of Test Unit 217, Base of Level 2, 9Ch1062.

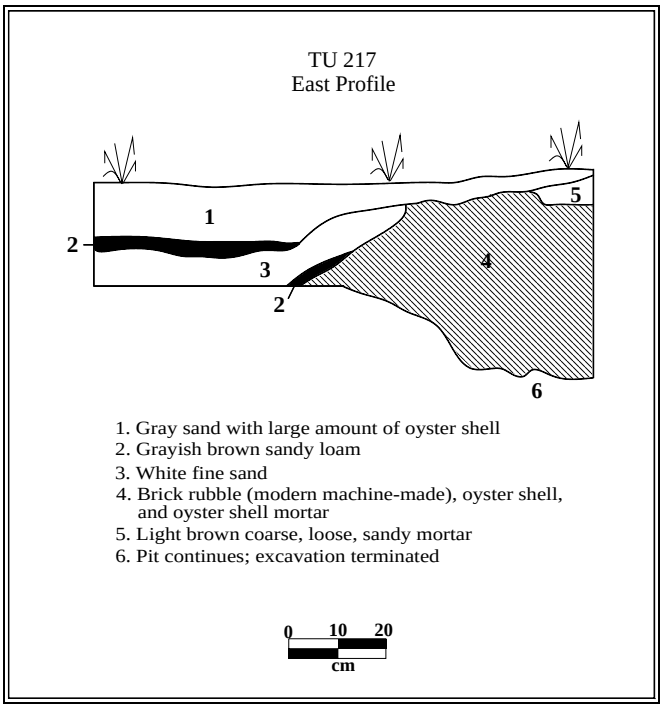


Figure 57. Test Unit 217, East Profile, 9Ch1062.

LOCUS O

Locus O was defined as the area of the Boarding house, which was on the north side of the site between the tabby quarters and the tabby smokehouse (Locus N). A large area is presently covered by the boarding house. Areas surrounding this building were investigated by several shovel tests and GPR survey.

LOCUS P

Locus P was defined as the area immediately surrounding the barn, which is located on the north side of the tabby quarters. The barn is a standing structure that dates to the early twentieth century. This area was examined by surface

reconnaissance, several shovel tests, metal probe, metal detector, and by GPR survey. The GPR survey in the vicinity of Locus P included GPR Blocks X, Y, Z, AA, AB, and AC. The ground surface visibility in the area East and North of the barn was good and numerous early historic ceramic and glass artifacts were observed. Only one of these artifacts, a combed yellow slipware rim sherd, was collected. Artifacts that were observed included pearlware, creamware, and olive green bottle glass sherds. One shovel test was placed in the area showing the highest frequency of surface artifacts. This shovel test yielded a low artifact frequency, however, and no additional testing in this area was attempted.

LOCUS Q

Locus Q was defined as the extreme western end of the North End Plantation. This area is heavily forested except for Canepatch Road, which bisects it. This vicinity is thought to be west of the slave quarter and was arbitrarily defined as east of the trash dumpsters. The horizontal extent of this area remains poorly defined and it should be the subject of future investigation.

MATERIAL CULTURE OF NORTH END PLANTATION

Architecture

Building Materials

Brick and Tabby were used extensively in the construction of buildings at the North End plantation. Four buildings made from poured tabby survive and strong evidence for several others is indicated by the archaeological remains.

Evidence for an early building which was constructed using tabby bricks was discovered immediately south of the Clubhouse. This building ruin is probably the Morel manor house, dating from the eighteenth or very early nineteenth century. Although tabby brick has been observed elsewhere on Ossabaw Island (on Middle Place plantation), no other evidence for individually-formed tabby brick was seen at the North End plantation.

Savannah's thriving brick industry began in 1819 on the Hermitage Plantation on the lower Savannah River. Prior to that brick were imported from other regions of the East Coast, or from Europe. The classic "Savannah Grey" bricks were produced by Henry McAlpin at the Hermitage from 1819 and continuing through the mid-nineteenth century (Daiss 2005). Brick were produced in the Savannah region prior to 1819, and possibly as early as the 1730s, but that industry is poorly documented.

The three tabby slave dwellings possess red brick chimneys. Bricks and tabby blocks (chunks of poured tabby) also were used as foundation supports for sleepers beneath the dwelling floors. Several of these sleeper bricks were Savannah Greys, which would date their use in Tabby 2 after 1819.

The building remains in Test Unit 203 (Locus G) contained poured tabby, although it remains undetermined whether this dwelling was built entirely of tabby or if tabby was only used sparingly in its foundation. For other suspected dwellings and ancillary buildings the evidence for tabby also is not fully established.

Many buildings at the North End plantation, particularly those built in the eighteenth century, may have been primarily of wood or other organic material (such as palmetto thatch). The apparent increased use of tabby

in architectural construction at the North End plantation probably corresponded with the completion of the causeway that leads to Cane Patch Island. A large prehistoric shell ring on the northern end of that island was probably the source for the oyster shell used to make the tabby at the North End plantation. This shell deposit is the nearest ready source of aged oyster shell to the plantation. Evidence for the mining of oyster shell and tabby production was observed on Cane Patch Island, including an iron pitchfork and a tabby building foundation (or tabby burn feature). Other evidence is represented by the construction elements of the causeway leading to Cane Patch Island. That causeway contains a sub-structure of palmetto and other woodwork, which likely dates to the plantation era. Shell was also available from the extensive shell midden deposit at Middle Place plantation, but that deposit was several more miles distant.

Spikes

A total of 27 wrought iron spikes was identified in the 9Ch1062 artifact assemblage. These artifacts were concentrated in Loci C and E. The greatest concentration of spikes was observed in Levels 4 and 5 in Locus C. These probably represent building hardware from buildings that occupied the site of Tabby 2, prior to its construction.

Nails

Cast, wrought, machine-cut, and wire nails were recovered from 9Ch1062. These nails provide important clues about building and other constructions of the North End Plantation.

The cast nails were square nails made from brass. These were uncommon on the North End Plantation. These nails were probably used in boat or ship construction since brass resisted corrosion from saltwater. The use of brass nails for shipbuilding is not common after the mid-nineteenth century. These brass nails are excluded from the immediate discussion, which is focused on nails related to domestic or industrial architecture on the plantation. A total of 2,879 iron nails was recovered from the North End Plantation in the present study. These are summarized by loci, type, count and percentage in Table 8. A total of 116 wrought nails was identified in the assemblage. Several examples of wrought nails are illustrated in Appendix 2 (See LNs73a). Another 117 nails were square nails that could not be identified as either wrought or machine cut. Many of these may represent heavily corroded wrought nails.

Machine-cut nails were produced after 1790 when nail manufacturing equipment was developed. Machine-cut nails quickly replaced wrought nails for most construction in the Southeast. The wrought nails at the North End plantation are useful markers for dating the areas that were constructed prior to 1800. A total of 871 machine-cut nails was recovered from 9Ch1062. The predominance of machine cut nails at the North End plantation largely coincides with the early to middle nineteenth century construction episodes.

Wire nails gradually replaced machine-cut nails after 1865. Square nails continued to be used for flooring and other specialty uses after the general demise of machine-cut nails. A total of 702 wire nails was recovered from 9Ch1062. Another 1,073 nails were not identified by type and some percentage of these may be wrought, cut, or wire nails.

Table 8. Nail Summary, 9Ch1062.

	Wrought		Cut		Wrought or Cut		Wire		Unidentified		TOTAL
Loci	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count
A	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
B	0	0.00	4	44.44	1	11.11	0	0.00	4	44.44	9
C	19	1.36	254	18.22	57	4.09	356	25.54	708	50.79	1394
D	12	4.48	72	26.87	7	2.61	11	4.10	166	61.94	268
E	16	9.47	49	28.99	11	6.51	46	27.22	47	27.81	169
F	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
G	39	26.71	70	47.95	12	8.22	16	10.96	9	6.16	146
H	8	2.63	148	48.68	3	0.99	120	39.47	25	8.22	304
I	2	11.76	3	17.65	12	70.59	0	0.00	0	0.00	17
J	1	5.88	11	64.71	0	0.00	0	0.00	5	29.41	17
K	0	0.00	0	0.00	0	0.00	0	0.00	2	100.00	2
L	0	0.00	2	40.00	1	20.00	2	40.00	0	0.00	5
M	13	4.05	156	48.60	3	0.93	61	19.00	88	27.41	321
N	3	1.74	69	40.12	1	0.58	84	48.84	15	8.72	172
O	0	0.00	23	85.19	0	0.00	4	14.81	0	0.00	27
P	2	7.69	10	38.46	9	34.62	1	3.85	4	15.38	26
Q	1	50.00	0	0.00	0	0.00	1	50.00	0	0.00	2
TOTAL	**116**	**4.03**	**871**	**30.25**	**117**	**4.06**	**702**	**24.38**	**1073**	**37.27**	**2879**

Window Glass

Window glass was present in low frequencies across the North End Plantation. A total of 318 window glass sherds was recovered from the site. This sample yielded a window glass date estimate of 1873.03. As noted earlier, modest samples of window glass were obtained from Loci C, H and M. These samples were used to calculate window glass dates for these three areas of 1866.17, 1884.32, and 1866.01, respectively. The other areas of the site contained very small samples of window glass that were not suitable for tightly dating these loci. The window glass was primarily nineteenth century glass. These data suggest that many buildings on the plantation had some glass windows by the second half of the nineteenth century. The inclusion of glass windows in the tabby quarters (Loci C and H) may have been a Post-Bellum event as the Freedmen had access to more material goods. This explanation may be oversimplified, however, since a similar window glass date was obtained for the Morel main house (Locus M). The abundance of ca. 1866 window glass is possibly the result of breakage of many windows on the plantation around that time, possibly as a result of Union Army occupation. The latter window glass date of 1884.32 for Locus H (south of the tabby dwellings) is intriguing. These data suggest that buildings that had glass windows were present in this area well after the Civil War. No buildings are indicated in this vicinity in early photographs, which suggests that these buildings were already in ruins by the early twentieth century. The site-wide date estimate of 1873.03 initially suggests that nearly all glass windows at the North End Plantation were installed after the American Civil War.

Upon closer examination, however, the situation appears more complex. Window glass was recovered from five feature contexts at the North End Plantation (Features 3, 12, 31, 32, and 34). These features date to the early nineteenth century. Features 3 and 32 are associated with the Morel house, and these finds indicate that

their manor house had glass windows by the first decades of the nineteenth century, if not earlier. Feature 12 was the builder's trench for Tabby 2 in Locus C, which may indicate the presence of windows prior to the completion of the tabby duplex. Feature 34 is a post that was located beneath an early nineteenth century midden immediately north of Tabby 3 in Locus E. Feature 31 was the cellar in Locus L. The other artifacts from Feature 31 support a mid-nineteenth century age for this building. Clearly, many of the buildings at the North End Plantation had glass windows and some may have been installed by the early nineteenth century.

Clothing

Clothing-related artifacts were well represented in the assemblage from the North End Plantation and examples are shown in Figure 58. The preservation of cloth and leather was very poor but the other clothing artifacts help to understand the clothes worn by the residents of the plantation. Many accoutrements related to tailoring and sewing were observed, such as thimbles and straight pins. Buttons were the most common clothing artifact type represented in the assemblage. Some of the clothing articles from the enslave quarters may have been from apparel worn by the Morels or their plantation overseers. The women in the tabby dwellings may have served as seamstresses or tailors for the plantation hierarchy. Most of the clothing items, we surmise, are probably from clothing worn by the enslaved and freedmen who occupied these dwellings. Most of the clothing artifacts span the period from 1760 to about 1920, when the tight flooring was installed. Prior to that date, clothing items were easily lost in the dirt floor or loose plank flooring within these domiciles.

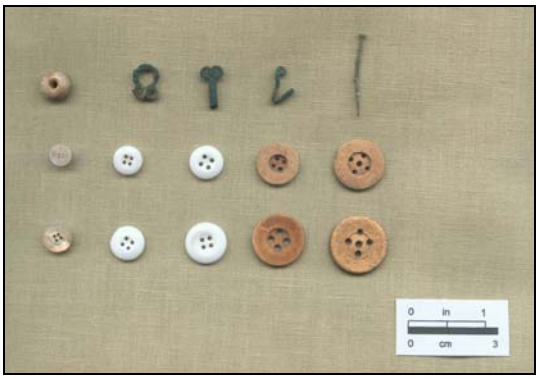


Figure 58. Examples of Clothing Artifacts, 9Ch1062.

The archaeological study of the North End Plantation produced a sample of 145 clothing buttons. These buttons were manufactured from a variety of materials including bone, brass, glass, iron, lead, pewter, plastic, rubber, and shell. A variety of metal buttons (N=44) was present at 9Ch1062 and these buttons span the entire period of site occupation (Appendix 2, LNs 218). Many eighteenth and nineteenth century button types were present, including South Types 7, 9, and 18 (South 1964; Olsen 1963).

One domed metal button that was recovered by metal detector survey from the west end of the site was particularly noteworthy. This was a military button worn by soldiers in the Republican Blues, which was a Savannah unit formed in 1808 (Figure 59; Albert 1976:56, Figure 57a; McGuinn 1988:61; Daniel Battle Personal Communication April 4, 2005; Danny Brown Personal Communication April 5, 2005).

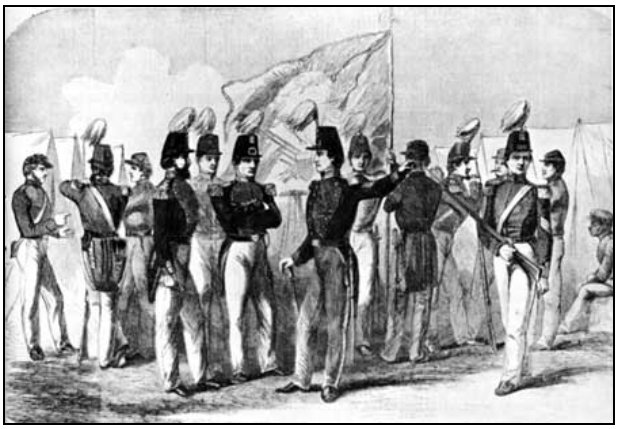


Figure 59. Republican Blues (Harpers Weekly 1860).

Another example of the Republican Blues button type that was found at 9Ch1062 is illustrated and described in the book, 1st Ga. Militia and Co. B and C of the Confederate Forces. This button type is listed as one of the early varieties of Republican Blues uniform button, which was in use well before the American Civil War. It was made by W.H. Jones and a similar backmark is found on Artillery Corps Buttons from about 1821 through the 1830s (Albert 1976:56, Figure 57a). The 9Ch1062 specimen most likely dates to the mid 1830s to 1840s at the latest. This variety is one of the earliest Republican Blues buttons that was made (Figure 60). The published example measured 23 mm and was coated with a silver wash. A maker's location was not specified on the published example. Most military buttons during that period were likely produced by northeastern manufacturers. William H. Jones was a button manufacturer in Waterbury, Connecticut from 1835-40. Jones was a former partner of the Robinson Button Company. Jones left Massachusetts in late 1834 and began making buttons in Waterbury Connecticut from 1835-37. McGuinn notes that, "W. H. Jones & Co./Extra" is noted on what is believed to be a Republican Blues button also noted and found in the Savannah, GA area" (McGuinn 1988:61).

The presence of the Republican Blues button at the North End plantation is an intriguing mystery. They were an elite military unit in the Savannah area, but a preliminary search of the rosters of the Republican Blues revealed no members of the Morel family in their ranks. Doest this button represent an undocumented encampment of Republican Blues in the early years of the American Civil War, or was it merely recycled from a garment by later residents of the North End plantation? Was it worn by an overseer, slave, or was it lost by an enslaved seamstress? The apparent abundance of metal buttons in the area where this button was retrieved (Locus Q) may indicate a special function for this area of the site. Additional archaeological study of Locus Q may help to resolve these questions.

A variety of bone buttons was represented in the 41 buttons from 9Ch1062. Numerous examples are illustrated in Appendix 2 (See LNs 38a, 214, 218). These span the eighteenth and nineteenth centuries. Bone buttons were found in several sizes and with several button-hole configurations, including one-, four-, and five- hole varieties. Many of the small bone, shell, and porcelain buttons were attached to undergarments. The large single-hole bone buttons were probably covered with cloth or other material and these outer coverings have since decomposed. Bone buttons were most prevalent in Locus C (N=25), followed by Locus D (N=11).

Figure 60. Republican Blues Button, Locus Q, 9Ch1062 (Shown Enlarged).

Buttons made from mollusk shells were common at 9Ch1062, represented by 19 examples. Several examples are illustrated in Appendix 2 (See LNs 214, 218). Several of the shell buttons bore simple linear or geometric engraved designs.

White milk glass and porcelain buttons were common at 9Ch1062, represented by 36 examples. Several examples are illustrated in Appendix 2 (See LNs 214, 218). One molded black glass button was recovered from Locus D (Appendix 2, LN 221).

Two hard rubber buttons were recovered from 9Ch1062—one from Locus H and one from Locus N. Rubber buttons, made from vulcanized rubber, date to the 1850s (International Institute of Synthetic Rubber Producers 2005).

Only a few buckles were recovered by the project. One decorative shoe buckle with a Greek Key motif was recovered from Level 2 of Test Unit 209 in Locus H (Appendix 2, LN 106). This specimen likely dates to the early nineteenth century, based on its stylistic elements. Examples of eighteenth century brass shoe buckles, which are frequently encountered on excavated eighteenth century sites in coastal Georgia were not found in the 9Ch1062 excavations. This probably indicates that brass buckles were not a luxury enjoyed by the enslaved on Morel's plantation during that period. One simple iron buckle was recovered (Appendix 2, LN 24). The function of this buckle was undetermined.

One decorative brass boot heel tap was located in the upper soils of the Tabby 3 (Locus E). This example had an attractive excised heart design in the center. This type of shoe hardware is found on eighteenth and nineteenth century sites in the Southeast. Similar items are frequently offered for sale by metal detector enthusiasts on *ebay.com* and other online commercial outlets. Grommets/eyelets were found in several areas of 9Ch1062. Illustrated examples are shown in Appendix 2 (See LNs .38a, 219a). Leather shoe fragments were recovered from Level 1 of Test Unit 8 in Locus C (Appendix 2, LN 85a).

Brass hook and eye closures were common in the North End Plantation midden. Examples were recovered from Level 3 of Test Unit 206 and Level 1 of Test Unit 208, Locus C; Level 3 of Test Unit 215 and Level 2 of Test Unit 216, Locus D; Shovel Test 133 in Locus E; and Level 2 of Test Unit 209, Locus H. Several specimens are illustrated in Appendix 2 (See LNs 38a, 85a, 214, 218).

Sewing items, including straight pins, safety pins, and thimbles, were recovered from several areas within the tabby dwellings. Brass straight pins were recovered from Level 1 of Test Unit 215 and Level 2 of Test Unit 216 in Locus D (Appendix 2, LN 214). Feature 12 in Test Unit 211 of Locus C yielded three safety pins. These modest artifacts actually provide extremely important clues as to the age of the construction trench on the interior wall of

Tabby 2. Safety pins were invented and patented by Walter Hunt in 1849. His patent was issued on April 10, 1849 (United States Patent and Trademark Office 2005). The presence of three safety pins in Feature 12 is noteworthy, as it may serve as the TPQ for the construction of Tabby 2 of sometime after 1849. Four thimbles were recovered from 9Ch1062 and all were located using the metal detector. Tabby 1 produced one example (Locus A), Tabby 2 produced one example (Locus D), and Tabby 3 yielded two thimbles (Locus F).

Glass beads were recovered from several contexts in the North End Plantation tabby dwellings. These beads were probably produced in Italy and were widely imported to southeastern North America in the eighteenth and nineteenth centuries for the Indian trade and other domestic use. Glass beads were very popular with African-Americans and are commonly found in slave quarters in the Southeast. Some scholars have noted a preference for blue glass beads among the African-American population and these archaeologists interpret this affinity for blue-colored objects as have possibly ritual significance, based on surviving early twentieth century African-American traditions equating the color blue with protection from evil spirits. Sixteen glass beads were recovered from 9Ch1062. These include black, blue, green, and white glass beads. Examples are illustrated in Appendix 2 (See LNs 60, 85a, 122, 204, 214, 218, 223, 395). The beads included spherical, tumbled cane, and faceted cane beads. Six beads were recovered from Locus C, six from Locus D, three from Locus E, and one from Locus F. Interestingly, no beads were recovered from Loci G, H, or M, where relatively large artifact assemblages were recovered. Glass beads were often enjoyed by Euro-Americans during the eighteenth and nineteenth centuries, although none was recovered from Morel house.

Kitchen

Ceramics

English delftware was a common English import during the colonial period. Undecorated, blue hand painted, and polychrome hand painted delftwares were identified in the 9Ch1062 ceramic assemblage. Delftware table service was replaced by more durable wares (particularly creamware and pearlware) by the latter part of the eighteenth century. Delftware continued in use for chamber pots and apothecary jars into the early nineteenth century. Delftware plates and bowls, however, are extremely uncommon on historic sites in Georgia after the American Revolution.

The study yielded 17 English delftware sherds. Twelve of these were from the slave quarter (Loci C, D, G and H). Examples of polychrome delftware are shown in Appendix 2 (LNs54, 84a). One Majolica sherd was identified from Shovel Test 178 in Locus G.

Yellow slipware was a common English import during the colonial period. Pottery of this style was also produced in the colonies, although no areas of production in Georgia have been identified. This ware is extremely uncommon on historic sites in Georgia that post-date the American Revolution. Combed, dotted, trailed and plain yellow slipware was identified in the collections from 9Ch1962. These designs appeared on both buff and redware bodies. Yellow slipware is associated with sites from the colonial period in Georgia. A total of 71 yellow slipware sherds were recovered from the North End Plantation. Most of these were from the slave quarter area (N=56). There they serve as important markers in the stratigraphic excavations for identifying pre-

Revolutionary War versus post-Revolutionary War occupation. The Morel house vicinity (Locus M) yielded only seven yellow slipware sherds. Several sherds from North End plantation exhibited a "pie crust" scalloped rim. Two examples are shown in Figure 61. Additional illustrated examples of yellow slipware are shown in Appendix 2 (LNs 38, 46a, 54, 89, 110a, 137, 167).

Figure 61. Combed and Dotted Yellow Slipware, 9Ch1062 (Lot 147).

Refined earthenwares, including creamware, pearlware and whiteware, were common in the ceramic assemblage at 9Ch1062. Numerous examples are illustrated in Appendix 2. (See LNs 2, 46a, 54, 84a, 89, 122b, 137, 187, 223).

Whieldon ware, which was a clouded-glaze refined earthenware that was produced in England by 1740, Whieldon ware was produced for only a brief period, which makes it an excellent marker for identifying colonial period occupation at the North End plantation. Three Whieldon ware sherds were recovered from Loci C, D and G in the slave quarters at 9Ch1062. An example is shown in Appendix 2 (LN223).

Creamware was developed by Josiah Wedgewood in 1762 and quickly became the most common export dinner ware for the next few decades. A total of 127 undecorated creamware sherds were recovered from the site. Thirteen molded creamware sherds were recovered. Two hand painted creamware sherds were recovered. A few examples of more ornate ware were recovered from the midden in the enslaved quarter at 9Ch1062. One specimen is from a molded pineapple shaped vessel of undetermined function (Appendix 2, LN 38).

Pearlware was introduced in the mid-1770s (Seidel 1990). A total of 187 undecorated pearlware sherds were recovered from the North End Plantation. Forty-eight blue hand painted pearlware sherds were recovered. This ware was available in the colonies by the mid-1770s. Thirty-one pearlware sherds had unidentified decorations. One overglaze decorated pearlware rim was recovered.

Polychrome hand painted ware from the site included eight early variety (ca. 1795-1830) and nine later variety sherds (ca. 1830-1870). Another 16 hand painted ware sherds were not identified by subtype. These sherds were widely distributed on the site. Examples are illustrated in Appendix 2 (LN 38).

Eighty-three edgeware plate sherds were identified in the 9Ch1062 assemblage. These included blue and green decorated wares. The rim treatments included plain rims, scalloped and impressed curved rims, scalloped and impressed straight rims, scalloped unimpressed rims, and unscalloped impressed rims.

Transfer printed wares were common in the 9Ch1062 ceramic assemblage. These ware were commonly produced after 1800. During their initial period of production transfer printed wares were expensive but their price declined through the course of the nineteenth century. Seventy transfer printed sherds were recovered from the North End Plantation. Most of these were early transfer printed varieties. Transfer printed motifs

that date after 1840 were located in Loci D, H, J, L and M. Examples are illustrated in Appendix 2 (See LNs 38, 122b, 187).

Two spattered whiteware sherds were recovered from Locus C and one was found in Locus M. Four sponged whiteware sherds were recovered from Locus H. These sherds are commonly called "Gaudy Dutch" and are common on mid-nineteenth century sites in Georgia.

Twenty-one Mochaware sherds were recovered from the North End Plantation. Except for one example on yellowware, these were applied to white bodied wares. The production of Mochaware began around 1795. Mocha on yellowware dates after 1830.

A total of 48 sherds from 9Ch1062 were identified as undecorated Cream Colored (C.C.) ware. This ware was produced over a broad period of the nineteenth century and has limited use in dating the ceramic assemblage.

Ironstone china was produced in England around 1813. By the late nineteenth century ironstone dominates the ceramic assemblages of most historic sites in the Southeast. A total of 216 ironstone sherds was recovered from 9Ch1062. Although the area of the slave quarter (Loci A through I) yielded most of these sherds (N=168), the excavations in the three tabby duplexes yielded only 12 ironstone sherds. The area of the Morel house (Locus M) produced 39 ironstone sherds.

Stoneware from the North End Plantation falls into two groups: unrefined utilitarian ware and refined tea service. Site 9Ch1062 yielded 84 stoneware sherds. These included:

- 8 British Brown salt glazed
- 3 Rhenish salt glazed
- 8 Gray salt glazed
- 7 refined white salt glazed
- 2 Black Basalt
- 1 Engine-turned glazed red refined
- 10 Brown glazed refined
- 7 Brown salt glazed
- 7 Alkaline glazed
- 1 Sponged
- 3 Unidentified light gray and brown salt glazed
- 3 Lead glazed
- 25 Unidentified domestic

One specimen of a rouletted design on brown salt glazed stoneware was found in Locus H. A similar example was observed embedded in the eastern interior tabby wall of the Smokehouse. Examples of British brown salt-glazed stoneware and grey salt glazed stoneware are illustrated in Appendix 2 (LN 122b, LN 54).

Porcelain was a high status ceramic and was expensive. Most porcelain in the eighteenth century was imported from China, although a European porcelain industry, centered at Meissen, Germany had developed by mid-century. Porcelain became more affordable throughout the nineteenth century. Porcelain was present in very low frequency in the 9Ch1062 ceramic assemblage. A total of 49 sherds was recovered. Several different Chinese export porcelain vessels were represented (Appendix 2, LNs 54, 110a). Twenty-three porcelain sherds, or about 47 percent of the porcelain, was found in Locus M. The remainder was spread over various areas of the site in very low frequencies. The higher frequency of porcelain in association with the main house was expected. There it comprised more than nine percent of the ceramics. The presence of any porcelain in the ceramic inventory of the enslaved is noteworthy. Loci C, E, G, H and I, which are the most likely associated with the residences of the enslaved, combined to

yield 19 porcelain sherds, or approximately two percent of the ceramic assemblage from the slave quarter. This percentage of porcelain, while low in comparison with the Morels, is relatively high compared to other Euro-American settlements in the Savannah area. At New Ebenezer, for example the average percentage of porcelain in the colonial Salzburger farmsteads and town lots never exceeded two percent and most settlements averaged about one percent. When porcelain is used to measure economic status in this way, the enslaved on the North End Plantation were more affluent than many pietest Lutheran at Ebenezer.

Unrefined earthenware and redware were minority wares at 9Ch1062. Twenty-three coarse earthenware sherds were recovered from the site. Examples of lead glazed coarse earthenware and redware are shown in Appendix 2 (LNs 2, 7a, 137, 147a).

One Jackfield ware sherd was located in Locus E. Two Astbury ware sherds were found in Loci G and M. Three white slipped redware sherds were recovered from Locus C. Thirty-eight undecorated redware sherds were recovered from the site.

One of the most important ceramic finds at 9Ch1062 was Colonoware pottery. Although colonoware is common in the Carolinas, Virginia and throughout the Caribbean, this ware is exceedingly rare in Georgia. Two dozen colonoware sherds were included in the ceramic assemblage from the North End Plantation. All but three of these came from the slave quarter (Loci C, E, and G). The Morel house area (Locus M) yielded a single example of this ware. Examples of colonoware are shown in Figure 62 and in Appendix 2 (LNs 46a,150). The presence of this ware at the North End plantation, albeit in low frequencies, indicates two possibilities. First, the colonoware may have been obtained through trade with other enslaved populations on the Atlantic Seaboard. Secondly, it may indicate the presence of resident potters who were making this ware. Given its relative frequency in the pottery assemblage, however, the first explanation seems more plausible. A more detailed study of this ware, including the recovery of larger representative assemblages, may help to answer this question.

Figure 62. Colonoware Sherds, 9Ch1062 (Lot 46).

Kitchen Glass

Bottle glass was common in the archaeological deposits at 9Ch1062 (Jones 1986; Jones and Sullivan 1985; Lorrain 1968). The present study yielded 2,306 fragments of bottle glass. Of these, 115 were modern machine made bottle glass and another 30 sherds were burned and unidentifiable. The North End Plantation yielded 895 olive green and 111 amber bottle glass sherds. The relationship between amber and olive glass was compared for each site loci. These results are shown in Table 9.

Previous archaeological studies on historic sites in Georgia have examined the potential chronological relationship between amber and olive green colored bottle glass. In rural western Georgia, Elliott demonstrated a trend for gradual replacement of olive green bottles with amber bottles through the end of

the eighteenth and early nineteenth centuries. Elliott reasoned that this replacement reflected changes in drinking preferences. Wine, rum and gin are more often associated with olive green glass bottles, whereas whiskey and beer were often bottled in amber bottles. A similar relationship to that observed in the rural areas was observed in nineteenth century urban excavations in Columbus, Georgia (R. Elliott 2005).

Table 9. Frequency Comparison of Amber and Olive Green Glass, 9Ch1062.

Loci	Amber Count	Olive Count	Combined Count	Ratio of Amber/Olive
A	0	0	0	0.00
B	0	1	1	0.00
C	8	212	220	0.04
D	0	74	74	0.00
E	2	51	53	0.04
F	0	0	0	0.00
G	12	120	132	0.10
H	62	232	294	0.27
I	2	33	35	0.06
J	0	4	4	0.00
K	0	2	2	0.00
L	0	4	4	0.00
M	10	106	116	0.09
N	14	52	66	0.27
O	0	0	0	0.00
P	0	3	3	0.00
Q	1	1	2	1.00
TOTAL	**111**	**895**	**1006**	**0.12**

A small number of medicine bottle fragments was present in the 9Ch1062 midden. A complete Minard's Liniment bottle was recovered from the midden in the East Room of Tabby 2. Figure 63 shows this bottle as it was exposed during excavation and Figure 64 shows the bottle after cleaning in the laboratory. This bottle probably dates prior to 1922, when the tongue-in-groove flooring was installed in this room. The initial production date of Minard's Liniment was not determined, although the bottle form is typical of patent medicine bottles produced in the last half of the nineteenth century.

Allen Vegotsky, a scholar in the subject of early patent medicines, provided valuable information on the history and pharmacology of Minard's Liniment, which is summarized below. Vegotsky noted that a liniment is an external medicine, with an oily component, that is rubbed on the skin. As the advertisement suggests, a liniment was used in response to pain symptoms. As an external medicine, it could contain drugs and/or chemicals that would be harmful if ingested, but acceptable as a rub.

Figure 63. Ossabaw Island Manager Andy Meadows Unearths a Bottle, Locus C, 9Ch1062.

Figure 64. Minard Liniment Bottle, 9Ch1062 (Lot 43).

Minard's Liniment was a pain remedy that was produced by Nelson and Company in Boston, Massachusetts in the nineteenth and early twentieth centuries. The Minard Liniment Company was located in Boston at the turn of the nineteenth century, but was located in Framingham, Massachusetts in 1929, and later Hyannis. Framingham and Hyannis are both within about 50 miles from Boston (Fike 1987:136). Figure 65 shows a nineteenth century advertising card for this product, which promotes the liniment as, "The Great Internal and External Remedy for Man or Beast" (The History Project 2005). Bingham (1994:63) notes that the man on the horse in this advertisement was Chancellor Bismark. In 1891, the product was advertised in "Pharmaceutical Era" as the "King of Pain. The King of All Liniments, for Man or Beast. Cures Diptheria, Rheumatism, Sore Throat, Frost Bites, Swelling, Bruises, Sprains, Burns, Headache, Neuralgia..." Bingham (1994:63) provides a listing all the things that Minard's Liniment could "cure", which includes the above-listed ailments as well as salt rheum (an old name for conditions like eczema) and "an excellent hair renewer". Bingham (1994:63) states that Minard's Liniment "backed out of the veterinary market & expanded the list of human complaints that it purported to cure."

Figure 65. Advertisement for Minard's Liniment (The History Project 2005).

With the exception of diptheria, a microbial disease, the other medical problems are typical of the ailments that nineteenth century liniments claimed to cure. Baldwin (1973:344) refers to an advertisement for Minard's Liniment in a New Hampshire

newspaper dated 1887. Baldwin scoured newspapers and magazines for patent medicine advertisements and listed the earliest advertisement date he could find. These dates usually indicate when a product first became well known or was beginning to seek a market. Based on the advertisements, the color and shape of the bottle, and the cork closure, the bottle from Tabby 2 likely dates to the late nineteenth or early twentieth century. The user of the liniment was likely a very old former slave or someone who adopted the cabin. It could also have been used for treating a horse or farm animal or domestic pet.

The product is also mentioned in Arthur Cramp's, "Nostrums and Quackery, Volume II," published by the American Medical Association in 1921 (Cramp 1921:737). Cramp and the U. S. Dept. of Agriculture's Bureau of Chemistry fought a legal battle with the patent medicine makers for many years. They fought and won a court case against Minard's Liniment in 1916 for which the company was fined all of $50.00, because of exaggerated therapy claims. The chemists who analyzed the liniment reported that it "was a thick white emulsion containing ammonia, ammonium chloride, turpentine, camphor, and ammonia soap." Such an analysis may not have been complete, because of the use of complex plant extracts (occasionally animal or mineral extracts) in patent medicines.

A liniment for humans described in the highly respected A. Emil Hiss' *Domestic and Veterinary Remedies, Vol. II* (Hiss 1909:72), which gives a formula containing ammonia water, oil of turpentine, camphorated oil, oil of origanum, and egg yolks. As late as 1977, the American Pharmaceutical Association's *Handbook of Non-Prescription Drugs* recommended Yager's Liniment among other choices for external use; this liniment contained turpentine oil, camphor, ammonia, and ammonium oleate (Skierkowski and Burdock 1977:295). So Minard's Liniment may have been proper to use for pain relief, but their advertising was exaggerated. The product remains for sale online in Canada and the United States where it is touted for its ability to provide, "Soothing penetrating Pain relief from Arthritis and Muscular Aches", and, "Quick, soothing, temporary relief from stiff, sore muscles, strains, sprains, backaches, rheumatic, arthritic and muscular pain" (Feelbest.com 2005). It cannot be assumed that the current nature of Minard's Liniment is identical to the one described above. The formulas of patent medicines were frequently changed in the twentieth century, in response to advancing medical knowledge, increasing federal legislation, and economic concerns.

Twenty pieces of tableware glass were recovered from the North End Plantation. These include six goblet fragments, five glass tumbler fragments, two molded glass bowl sherds (from Locus M), two etched glass sherds, and five other sherds. The goblet glass was found in the slave quarter (4 sherds from Locus C and one from Locus H). Examples of tableware glass are shown in Appendix 2 (LNs 110, 122a).

Kitchen hardware

Iron and brass hardware were used by the enslaved population in cooking, serving, and consuming their meals. Cast iron items became increasingly available by the late nineteenth century and most of the specimens from 9Ch1062 likely date from that period. Tin ware also was commonly used in the eighteenth through twentieth centuries and was used for cooking and other purposes. Small fragments of corroded tin were identified in the midden but most were not recognizable as to a specific form or function.

Fourteen fragments of cast iron cookware were recovered from the North End

Plantation. Ten of these pot or kettle sherds were found in the slave quarter (Loci C, E, G, and H). One sherd was found in Feature 30 in Locus L and three sherds were from Locus O. Interestingly, none were found in the vicinity of the Morel house (Locus M.). The absence of this artifact class in the main house area may reflect the spatial organization of cooking activity on the plantation. Cast iron pots came in several sizes. Smaller pots, pans, dutch ovens, and griddles were probably used to cook food within the tabby dwellings. Larger pots would likely have been used outdoors for cooking large portions of food, rendering animal products, making soap, or for the laundry. These special outdoor activities would probably have been conducted at some distance from the house in order to prevent a house fire. None of the specimens recovered by the excavations at 9Ch1062 were large enough for any definitive discussion of their individual function.

Serving and eating utensils were relatively common in the midden within Tabby 2. A tableware knife was recovered from Level 1, Test Unit 208, Locus C. It is shown in Appendix 2 (LN 85). Spoons were recovered from Level 3, Test Unit 205 and Level 1, Test Unit 208, Locus C; near the surface in Loci A, D and E; and in Level 2, Test Unit 209, Locus H. One example is shown in Appendix 2 (LN 85).

Faunal remains

Most of the animal remains that were recovered from the excavations at 9CH1062 represent food debris. Oyster shell was used in the tabby building construction. A layer of unconsolidated oyster shells, which was present on the surface in the eastern room of Tabby 2, probably represents a foundation substrate for the wooden flooring that was installed in the 1920s. The present research did not include a zooarchaeological study of this faunal assemblage. Bones were quantified by weight only. A detailed study of this collection by a zooarchaeologist is highly recommended.

Oyster shell and most other marine shells were not collected by the project team. Selected examples of shells were collected. Shell was quantified by weight in kilograms in the test excavations. It was then discarded and stockpiled for future reuse in tabby restoration work.

Not all of the recovered faunal remains represent food debris. Some may be incidental in the midden, representing animals that were either sharing this living space with humans (such as mice and rats), or animals that occupied the site later and were incorporated into the midden. Examples of the latter may include bats, rats, mice, snakes, other reptiles and amphibians and raccoons. These animals likely crawled or flew under the dwelling's wooden floor where they died and were preserved. Other animal bones may have symbolic meaning for the former residents. Raccoon baculum were frequently used in the South as love charms or sex amulets, and as lucky charms for gamblers. They were often worn as jewelry (Yronwode 2002, 2005a). Numerous examples of baculum were recovered from the Tabby 2 midden.

Personal

Coins from the excavations at the North End Plantation included one half dime, one nickel, and 13 pennies. Examples of coins from 9Ch1062 are illustrated in Appendix 2 (LNs 84). The earliest coin was the half dime, which was found in Locus F. Although the mint date was not recognizable, this variety of half dime was minted from 1837 to 1873. The next oldest coin was an 1886 cent. Four coins were recovered from excavation levels in Locus C that provide clues as to the age of the

various strata in Tabby 2. A 1907 cent and a 1917 cent were found in Level 1 of Test Units 207 and 208, respectively. An undated Lincoln cent (post-1908) was found in Level 3, Test Unit 206. A 1911 nickel was found in Level 3, Test Unit 205. None of the coins from the Locus C excavation dates after 1917, which lend supports to the oral history that the tongue-in-groove flooring was installed in the early 1920s. Coins dating after 1920 were not observed, except for modern coins that were probably dropped during (or after) the floor removal.

A few objects pertaining to personal hygiene were found at 9Ch1062. Archaeologists found a fragment of a bone "lice" comb in the midden deposits in Test Unit 203 (Locus G). This artifact is illustrated in Figure 66. This style of comb was popular in the eighteenth and early nineteenth centuries. Other artifacts that could be considered health and beauty aids include mirror glass and a dainty brush handle. Several fragments of mirror glass were recovered from the slave quarter. An example is shown in Appendix 2 (LN 95). Mirror glass is often found in very low frequencies on colonial and early federal period sites in Georgia.

Figure 66. Bone Lice Comb, 9Ch1062 (Lot 75).

Folding clasp knives, or pocket knives, were produced throughout the eighteenth, nineteenth and twentieth centuries. Several excavated examples were recovered from 9Ch1062 and are illustrated in Appendix 2 (LN 219). These items were heavily corroded and in generally poor condition.

One brass loop earring was recovered from Level 5, Test Unit 215, Locus D. This artifact is illustrated in Appendix 2 (LN 228).

A brass pencil cap was recovered from Level 2, Test Unit 211, Locus C. A pencil fragment with attached eraser was recovered from Level 1, Test Unit 205, Locus C. An aluminum pen/pencil part was found in Level 1, Test Unit 204, Locus C. Two slate pencils were recovered from Locus C and are shown in Appendix 2 (LNs 85a, 110).

Perhaps the most exciting single find from the project was a small metal charm that came from the surface of the exposed midden deposit in the rear of Tabby 3 (Locus E). This item was cast from a white metal in the form of a miniature tobacco pipe with a king's head for the tobacco bowl. It is shown in Figure 67. Although this artifact was retrieved from the surface, its context is virtually established by an examination of the eighteenth and early nineteenth century midden deposit from which it had recently eroded.

This motif for this charm was possibly based on finds from archaeological excavations in the Middle East. Similar effigy tobacco pipes, which depict a king's head, were excavated from mid-nineteenth century African-American context at Augusta, Georgia (Joseph 1993:Figures 119-122, pp 322-328, 363-371). Joseph presented an excellent discussion of this find and its symbolic importance in African-American culture. He notes that the Augusta tobacco pipe specimen was recovered from a pre-1855 pit feature. Joseph's research indicates that the king represents a citizen of Nineveh, which was the ancient capital of the Assyrian Empire (near present-day Mosul,

Iraq). Nineveh figures prominently in the Old Testament, where they were portrayed as the enemies of the Israelites and a wicked people. The story of Jonah and the whale involves Nineveh. God's destruction of Nineveh was prophesized by Nahum. Archaeological excavations at the ancient cities of Nimrod and Nineveh took place in the 1840s and 1850s. An illustrated statuary head, excavated at Nimrod in 1840, was published by archaeologist Austen Henry Layard in 1849, which was likely the inspiration for the series of biblical effigy tobacco pipes in the mid-nineteenth century.

Small metal charms were often included in small pouches, which were used by its owner for various magical purposes (Yrowonde 2005). For the enslaved African-American community at the North End plantation, this charm may have symbolized their hope for freedom from oppression from the "wicked" Southern plantation system.

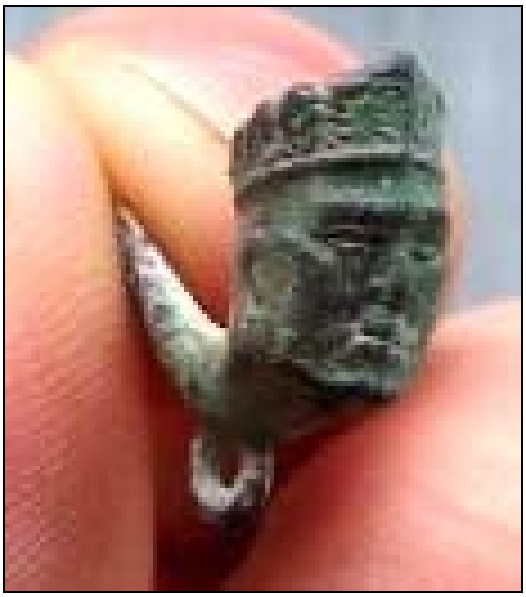


Figure 67. Metal Charm from Surface, Locus E, 9Ch1062.

Tobacco

Indirect archaeological evidence shows that tobacco products were enjoyed by many of the residents at the North End Plantation. This evidence is demonstrated by the widespread discard of smoking paraphenalia. Ball clay, or kaolin, tobacco pipes were common artifacts at 9Ch1062. Elbow pipes, both redware and stoneware varieties, are well represented in the site assemblage. Illustrated examples of tobacco pipes from North End Plantation are shown in Appendix 2 (See LNs 2, 106a, b, and 218). The LN 2 example is a molded type with a heel that was probably manufactured after 1775. The LN 218 example shows a mouthpiece from a long-stem pipe that was dipped into a brown slip.

Tobacco pipe fragments are useful for dating archaeological sites. Dating methods were developed based on the decreasing diameter of the bore on long stem tobacco pipes. This method is reliable for sites dating to the first three quarters of the eighteenth century but becomes less reliable thereafter (Binford 1962; Heighton and Deagan 1972). The pipe stems from Locus C dated to about 1769 and the entire site assemblage dated to about 1770 (see Table 6). Both of these dates fall prior to the American Revolution and they attest to a pronounced colonial occupation. The relatively low representation of nineteenth-century tobacco pipes is enigmatic.

Arms

A total of 74 artifacts from the Arms Group were recovered from 9Ch1062. These include gun parts, gunflints, lead shot, shell casings, and non-aboriginal arrowheads. The enslaved were not legally permitted to possess firearms but the archaeological data from 9Ch1062 (and elsewhere in coastal

Georgia) suggest that these laws were either ignored by the slave owners and overseers, or that the slaves maintained a clandestine arsenal. The former seems to be the more plausible explanation since it was to the owner's advantage to have the slaves use firearms to secure food for their families and for the owners' dinner table. The obvious disadvantage was that weapons had the potential to be used in slave uprisings. One possible compromise may have been that only trusted slaves were allowed to keep weapons.

Gun parts were present in low frequencies at the North End Plantation. Three pieces from a British Brown Bess musket were recovered by Georgia Department of Natural Resource employees from the surface of Canepatch Road just southeast of Tabby 1 (Locus A). These items are shown in Figure 68. The Brown Bess musket was a military issue musket and was generally not owned by civilians (Darling 1987). Its presence in the enslaved quarters at North End Plantation may be attributable to the presence of British or Loyalist troops.

Excavations within the Locus C yielded one gun part, which was a small, undecorated oval brass escutcheon plate that was attached to an iron/steel bolt. The concave curvature of the bass escutcheon plate suggests it was former affixed to a wooden gun stock. This object is illustrated in Appendix 2 (See LN 91). Locus F produced a brass ramrod guide. Other areas of the North End Plantation also yielded gun parts. A decorative brass escutcheon plate, stamped "PATENT" on the interior side, was recovered from Locus J. A bayonet tip was recovered from Feature 31 in Locus L. This specimen was a triangular shaped fragment. A gun side plate was recovered from Locus O.

Figure 68. British Brown Bess Musket Hardware, Canepatch Road (Courtesy of Andy Maury and Andy Meadows).

Gunflints were an essential component of flintlock weapon systems of the eighteenth century. Nine gunflints or gunflint fragments were recovered from 9Ch1062. The majority were made from Northern European flints. Three gunflint forms have been identified in eastern North America: spall, blade, and bifacial (Elliott 1992). Spall-type flints are the earliest form. Blade type flints appear first on French flints and these were the preferred gunflint in the American colonies. Studies have shown that these French blade flints were more reliable than the spall types (Hamilton and Emery 1988). The French kept their manufacturing techniques for the blade flints a closely guarded secret because of these superior qualities. The British were eager to master this technology, which they did by the close of the American Revolution. English blade-type gunflints are generally dated after 1780 and are the most common type in Georgia by the early nineteenth century. Bifacial type gunflints have been identified in Georgia but none were identified in the Ossabaw Island assemblage. This latter type

is attributed to Native American manufacture.

French gunflints are generally honey colored to light brown. Both spall- and blade-type flints made from French flint have been identified in coastal Georgia. Some French flints are translucent while others are opaque. Illustrated examples from the North End Plantation are shown in Figure 69 and in Appendix 2 (See LN 7). Examples of French blade-type gunflints were recovered from Loci C, G and M.

Figure 69. French Blade Gunflint, 9Ch1062 (Lot 87).

English gunflints are generally light gray to dark gray or black and are opaque. Spall-type English flints predominate in Georgia prior to the American Revolution. English blade-type flints are the primary type in Georgia in the first half of the nineteenth century. No examples of English blade-type flints were found at 9Ch1062 by the present study. Examples of English spall-type gunflints were recovered from Loci C, D, and I. Two illustrated examples from the North End Plantation are shown in Figure 70 and another is found in Appendix 2 (See LN 85b). The LN 85a example has been extensively used and knapped for reuse. The specimen (shown on the right below) has been burned and exhibits pot-lid fractures, crazing, and discoloration.

Figure 70. English Spall Gunflints, 9Ch1062 (Lot 214).

A total of 37 lead shot was recovered from 9Ch1062 and examples are illustrated in Appendix 2 (LNs 219a). Lead shot in various sizes was used with weapons by the residents of the North End Plantation, including 0.25, 0.32, 0.38, 0.57, and 0.69 calibers. The smaller calibers (0.25 and 0.32) dominated the assemblage (N=10 and 16, respectively). These smaller balls may have been used as multiple loads, or buckshot. Alternatively, these may have been fired from smaller bore pistols. Given the absence of any pistol hardware, the former interpretation is more likely. Only two lead balls measured greater than 0.50 caliber. These were probably fired from large bore weapons. No military issue musket balls (greater than 0.69 caliber) were present. A spent minie ball was recovered from Locus L. This particular bullet was a type used by the Confederacy early in the American Civil War (Daniel Battle personal communication, March 29, 2005). The otherwise complete absence of minie balls from the 9Ch1062 artifact assemblage is perplexing. One would expect minie balls to be as abundant, or even more abundant, that round balls since the North End plantation was at its heyday when minie

balls were used. Their absence may indicate that those enslaved who were entrusted with firearms were only allowed to have older weapons that fired round shot.

Locus M produced the most round lead shot, including five 0.25, three 0.32, one 0.38, and one 0.69 caliber balls. Locus C contained the next highest frequency with three 0.25, five 0.32, and one 0.38 caliber shot. Locus D produced two 0.32 caliber balls. Locus G revealed two 0.32 and one 0.57 caliber shot. Locus H yielded one 0.25 and three 0.32 caliber balls. Locus J yielded two 0.32 caliber shot. Locus N yielded one 0.25 and one 0.32 caliber balls.

Percussion caps were used as an ignition system for firearms in the nineteenth century, appearing as early as 1814 and replacing flintlock technology by about 1840. Percussion caps were small cylindrical brass casings that held an explosive charge. These caps were paced in the firing mechanism and the spent brass casings were discarded after firing. Many older flintlock weapons were refitted to accept percussion caps and percussion cap guns continued to be used by some in Georgia into the early twentieth century. A total of 17 percussion caps was recovered from 9Ch1062. These caps were found in Loci C, D, H, J, M, and N. Locus M produced the most (N=7), followed by Loci C and H (N=3 for both).

Two arrowpoints were recovered from 9Ch1069. These items are oddities or aberrations that may have been manufactured by the slave population. One is an iron arrowpoint that has a basally notched form (Appendix 2, LN 89a). The other is a stemmed chert point that was apparently produced by sawing or grinding rather than knapping. This stemmed point resembles a Late Archaic projectile point in its general outline but is quite distinctive in its manufacture.

Furniture

Brass furniture tacks were recovered from Loci C, E and L. These type of tacks were commonly used to attach upholstery to furniture and to adorn and protect trunks and small foot lockers. A small brass hinge was found on the surface in Locus I. This hinge was probable from a larger piece of furniture or a large trunk. Brass furniture escutcheon plates were recovered from Loci C and H. One of these is shown in Appendix 2 (LN 124). None of the furniture hardware was ornate.

Activities

Shipbuilding

Brass ship nails and spikes were recovered in low frequency from the North End Plantation. These nails and spikes were square, probably sand cast, and were almost certainly used in boat or ship construction. These types of nails were phased out of use by the late nineteenth century. The brass nails were recovered from the enslaved quarter. One example is shown in Figure 71. A larger brass spike, which was broken, was recovered from the pasture, southeast of the Quarter.

Figure 71. Brass Ship Nail, 9Ch1062 (Lot 219).

At least some of the enslaved population on Ossabaw Island were skilled mariners. Kollock's plantation journal for the South

End Plantation reveals that slaves frequently made the trip between Ossabaw Island and the mainland and were often unattended on these journeys. Their passage was authorized by a ticket system. A similar privilege was probably extended to the enslaved on the North End Plantation but these records have not survived. Many of the plantations on the Sea Islands possessed skilled carpenters and shipwrights among their slave populations. The Sea Island plantations were well situated for the manufacture of large wooden sailing ships and smaller vernacular craft. Shipyard Road, which is on the mainland near Bewlie Plantation in Chatham County, survives as a reminder of the shipbuilding industry in this part of the county. Georgia Governor Martin's 1782 letter to Governor Tonyn attests to the fact that ships were constructed on the Morel plantation on Ossabaw Island (Martin 1917:334-335).

Fishing

Evidence of fishing at the North End Plantation consisted of direct evidence of fish bones, metal fishhooks, and lead sinkers. One fishhook was found in Level 3 of Test Unit 211, Locus C and another was recovered from Shovel Test 143 in Locus G. An example is illustrated in Appendix 2 (See LN 124). Lead fishing weights were relatively common on the site. These were typically spherical with a central hole and were likely made from musket balls (or in musket ball molds). Most of these lead weights exhibited evidence of rodent gnawing on the surfaces. This gnawing provides important clues about the nature of the midden deposits and the prevalence of rodents in the enslaved quarter. Illustrated examples are shown in Appendix 2 (See LNs 85, 85b, and 110). Kollock's journals for the South End Plantation contain an entry in 1855 describing a few slaves hunting and crabbing for the overseer. Kollock's journals also include frequent references to slaves fishing in 1855 and in other years (Eric Wills personal communication 2005). The abundant maritime food remains in the Tabby 2 midden attests to the reliance on the ocean's resources for subsistence among the enslaved population.

Entertainment.

Toys recovered from the North End Plantation excavations included marbles, a doll part, and a small porcelain dish. The porcelain dish is an undecorated dish from a doll's tea set (Figure 72). Interestingly, the central portion of the dish is slightly discolored with an unidentified reddish brown substance. One porcelain doll part was found in Shovel Test 133 in Locus E. Six marbles were discovered in the excavations at the North End plantation and all were located in the slave quarter. Four ceramic marbles were recovered from Locus C, D (2 examples), and E. Two glass marbles were found in Locus C. One marble example is shown in Appendix 2 (LN 214b). This specimen is decorated with tri-colored concentric circles. This marble type was produced in Germany in the nineteenth century (Baumann 1999). The presence of relatively expensive toys in the slave quarter at the North End Plantation was somewhat surprising but not without precedent. Recent excavations in the slave quarter at the Ashland Belle Helene plantation in Louisiana yielded numerous marbles, porcelain doll parts (Louisiana Office of Culture, Recreation, and Tourism 2005).

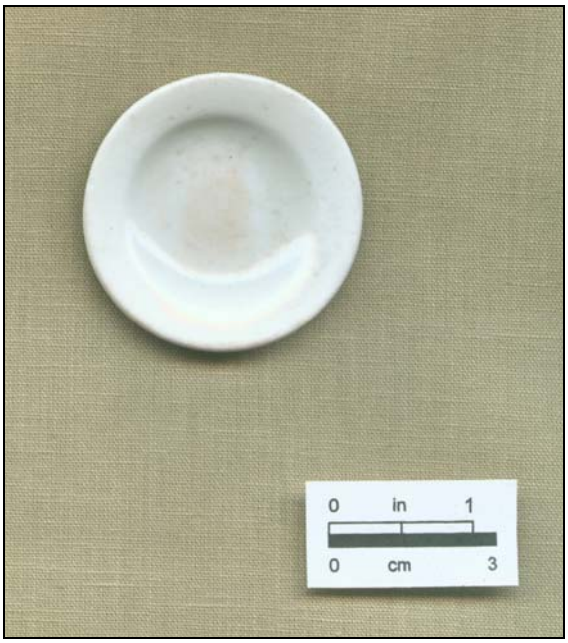


Figure 72. Porcelain Doll Plate, 9Ch1062 (Lot 56).

The enslaved and freedmen who lived at the North End Plantation undoubtedly had a wealth of musical traditions. Early ethnomusicologists, such as Thomas Wentworth Higginson, Lydia Parrish and Alan Lomax, documented vestiges of this Sea Island musical heritage in the first half of the twentieth century (Picker 2005; Parrish 1942; Lomax 1977). These researchers visited musicians on St. Simons and Sapelo Island, such as blues musician Bill Tattnall (Figure 73) but neither researcher described any specific cultural aspects of the residents of Ossabaw Island.

Archaeological evidence for music in the Tabby Quarter was shown by one harmonica reed plate that was found in the midden of Tabby 3, East Room (Locus E). Another harmonica reed plate was located by metal detector in Locus O. Harmonicas were present in limited numbers in America by the 1830s. By 1850 a hand-made harmonica could be purchased for about 10 cents. In 1862 the German Matthias Hohner Company began to mass produce and import mouth harps (or harmonicas) to America (Hohner 2005). Although many other harmonica brands were imported or produced locally, Hohner began producing harmonicas in Germany in 1857. His product proved immensely popular and it quickly spread to America. Hohner dominated the market share on harmonicas from the 1860s to the present. Because of their small size and durable construction, harmonicas were well suited to outdoor use and could be easily carried in one's pocket, where it could be quickly taken out for musical amusement. These small, inexpensive musical instruments quickly caught on among the populace despite the distraction of the American Civil War. Harmonica reed plates are often found on historic sites in the Southeastern U.S. Reed plates from other types of wind instruments, such as concertinas, accordions, and organs, are also not uncommon on archaeological sites. Harmonicas were enjoyed by a variety of ethnic groups and were versatile enough to play a variety of musical styles.

Harmonica parts have been excavated from other slave quarters in the Southeast. Several examples were recovered from Cabins 1 and 2 at the Ashland Belle Helene plantation in Louisiana. Researchers on that plantation note that harmonicas were sold in the plantation store (Louisiana Office of Culture, Recreation, and Tourism 2005).

Figure 73. Bill Tatnall, Frederica, St. Simons Island, Georgia, 1935 (Courtesy Library of Congress).

VI. INTERPRETATIONS

BIRTH OF THE OSSABAW ISLAND PLANTATIONS

For her service to King George in treaty negotiations with the Creek Nation, Mary Musgrove Mathews Bosomworth and her husband were granted several of Georgia's barrier islands, including Ossabaw, Sapelo, and St. Catherines. This transaction was signed by the Creek Mico Malatche and 16 other Creek Chiefs in 1747. Mary and her husband made St. Catherines Island their primary residence. The extent of Mary's development of the Ossabaw Island property, or of that possibly associated with Isaac Levy, has not been explored by historical researchers.

The ownership of the barrier islands, including Ossabaw, was disputed in 1758, and the island was consequently granted by King George II to Grey Elliott on October 31, 1760 for 1,325 pounds sterling. Elliott had purchased the property in a public auction held in May 1760 (Foskey 2001:10-11). A 1760 plat of Ossabaw Island shows several divisions of the property on the island's north side. This plat also shows an area of "Old Fields", which may indicate property that was in cultivation earlier in the eighteenth century. Royal surveyors Yonge and DeBrahm provide some annotation of Ossabaw Island on their 1760 plat of the island, although none is directly pertinent to the present study area (Foskey 2001:10).

An 1855 survey plat of portions of Ossabaw Island by William Hughes depicts a few details in the vicinity of Bryan Morel's North End Plantation (Foskey 1855:14). None of the dwellings or other plantation buildings is shown on this plat. The earliest cartographic reference showing significant features on the North End Plantation was a coastal chart that was published by the U.S. government in 1860 (U.S. Coast Survey 1860). A portion of this chart detailing the study area is shown in Figure 74. This figure shows a number of important cultural features or improvements. A row of nine closely-spaced buildings (probably the slave row) is located immediately north of Canepatch Road. The two westernmost of these buildings are depicted west of a road intersection. That road intersection may correspond to the present intersection of Canepatch Road and the unnamed field road that leads to a GDNR housing area.

The easternmost of the slave dwellings is within a large clearing that contains possibly nine other buildings. Most of these buildings are depicted as larger than the slave dwellings. One of the buildings is shown with a corral or other enclosed space adjacent to it. Two of these buildings are shown continuing along the axis of the slave quarter. The easternmost building on this axis probably represents the main house and this area approximately coincides with that of the present-day Clubhouse.

If, as the 1860 chart suggests, a row of nine slave dwellings existed immediately north of Canepatch Road on the North End plantation, then Tabbys 1, 2, and 3 are certainly part of this row. These surviving buildings are probably the 3rd, 4th and 5th buildings depicted, as one proceeds from southeast to northwest along Canepatch Road. The two lower dwellings are in ruins, but their locations were suggested by two notable rises on the topography and by concentrations of oyster shell, tabby dust, and historic artifacts in the vicinity of Locus I.

The four buildings shown southeast of the slave row and southwest of the main house probably represent the core of the plantation complex. These may include storage

buildings, barns, animal pens, and other workshops. No building is shown corresponding to the location of the surviving tabby smokehouse, although it may be represented by the southernmost of two buildings that are depicted northwest of the main house. One outlying building is shown on the southernmost point of the plantation complex clearing. That building is in the vicinity of the present GDNR work station.

Other improvements shown on the 1860 chart include roads, one or two water access routes, cultivated fields. The farm fields are shown by stippled lines. Several distinct fields are indicated and are shown divided by roads, fences or dikes. Several of these ancient field boundaries correspond to features on the modern landscape.

Curiously, the substantial improvements in the vicinity of Locus K are not shown on the 1860 chart. This may indicate that the suspected canal was already defunct by 1860. Neither is any building shown in the vicinity of the cellar that was identified in Locus L. The age of that building was suspected to be mid-nineteenth century, although it may have been constructed after 1860, which would explain its absence from the chart.

A later coastal chart, drafted in 1910, shows similar building information, which may have been copied from the earlier chart without ground confirmation. If this chart is accurate for the time period, then many of the slave dwellings and other support structures were extant as late as 1910. A portion of the 1910 chart is shown in Figure 75.

Early photographic views of the North End Plantation date to the early part of the twentieth century. A number of these are previously published in Foskey's book and in research reports by Fore (2004) and Laub and his students (Barrickman 2004). Three previously unpublished photographs, which are contained in the Vanishing Georgia collection, were located by the archaeological team and are presented in this report (Vanishing Georgia 2005). Two of these were presented earlier in Chapter V. Figure 76 is an aerial perspective (or bird's-eye view) of the North End Plantation that was taken from an airplane around 1930. This view was taken from the northeast facing southeast.

Several important observations can be made from this perspective photograph, which pertain to the historical resources at the North End Plantation. Most notable is a building ruin located east of Tabby 1 and along the same axis as the three tabby duplexes. This ruin may represent another tabby dwelling that was already in ruins by the time this photograph was taken. This ruin is approximately the distance of two dwellings apart from the three surviving examples. The intervening gap with no building may have contained another tabby dwelling that had already been erased from the landscape. Other buildings and fence lines are visible in the center of the photograph. Some of these may be buildings that were under construction or recently completed at the time the photograph was taken. These are probably kennels, bird pens, and other sport hunting-related facilities.

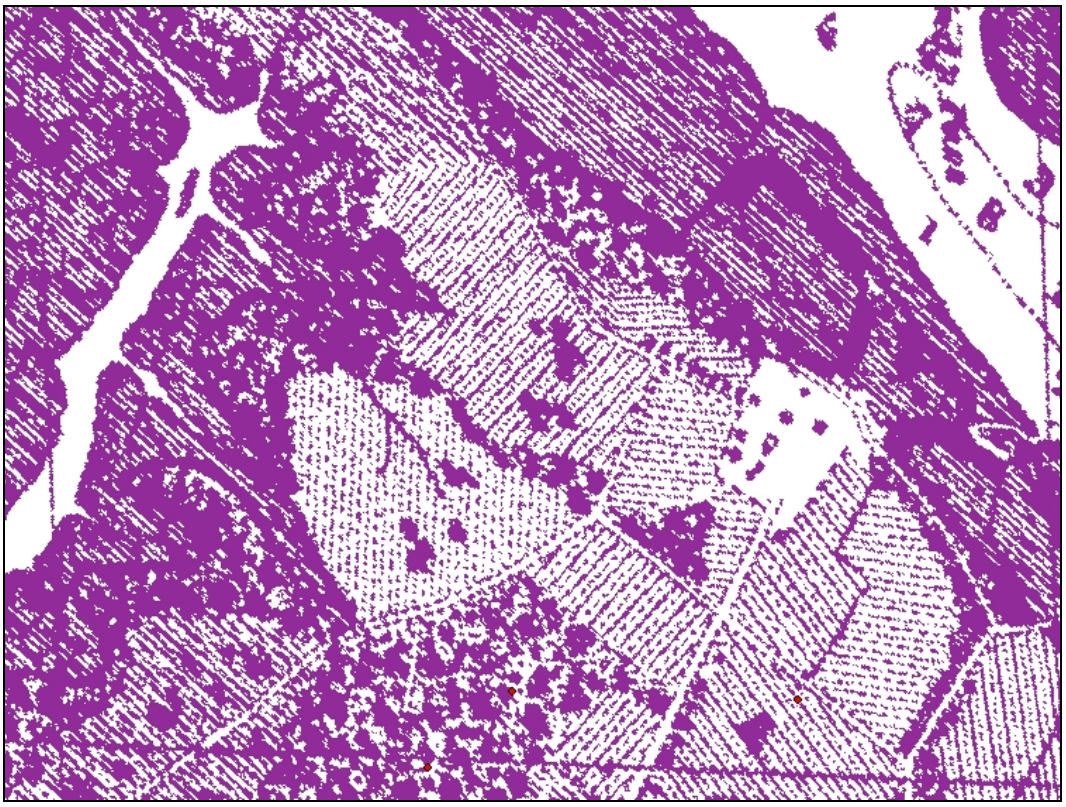


Figure 74. Portion of 1860 Nautical Chart of Ossabaw Sound Detailing the North End Plantation.

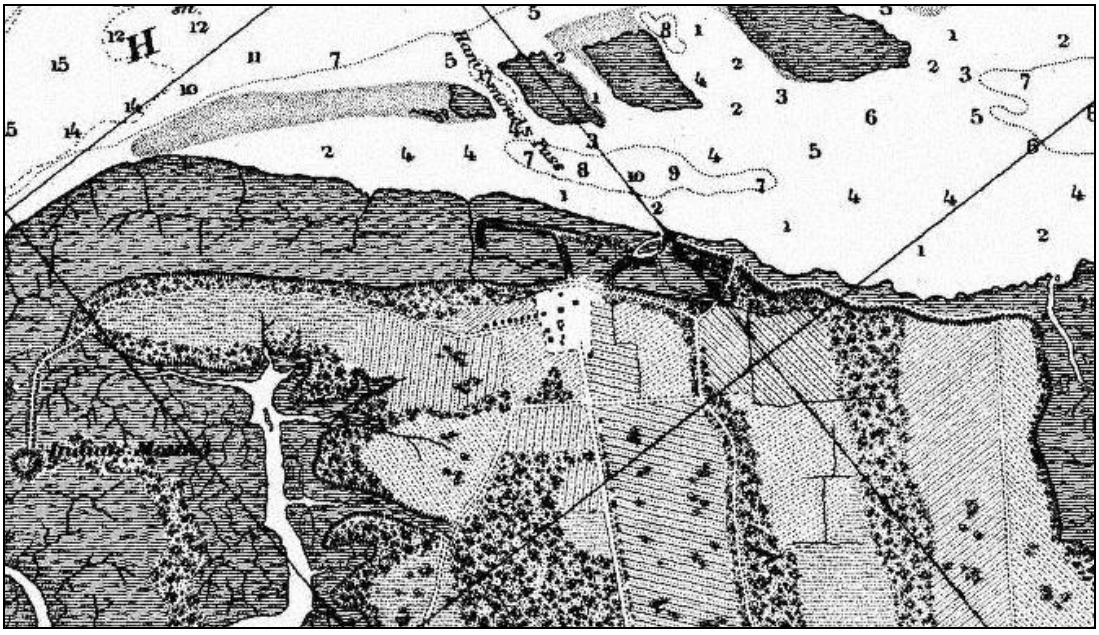


Figure 75. Portion of a 1910 Nautical Chart of Ossabaw Sound Detailing the North End Plantation.

Figure 76. Aerial Perspective of the North End Plantation, ca. 1930s (Vanishing Georgia 2005).

PHYSICAL ORGANIZATION OF NORTH END PLANTATION

Ossabaw Island's North End Plantation was an active plantation from about 1760 to 1860. Its archaeological remains are a valuable library for the study of early plantations on Georgia's barrier islands. Its ownership by the State of Georgia makes the North End Plantation even more important as an outdoor research laboratory and educational venue. An important step in the proper management of this important historical resource is the definition of the extent of the resource. In order to define its horizontal extent a variety of tools and techniques were used by the archaeological team in the present study. The most comprehensive "Big Picture" of the plantation as it exists underground is provided by the GPR survey. The research team examined many dozens of plan and profile views of the radar data in this study. A representative selection of plan views, or time slices, of the study area is presented in Figures 77 through 82. These time-slice images are presented by increasing depth below ground, measured in nanoseconds (ns). The various plan views of the radar anomalies highlight different resources at

differing depths. Many of the anomalies represent modern utility ditch disturbances, although special processing was applied to reduce the dominance of the modern disturbances in the images that are presented.

Transportation and Transportation Related Resources

In the eighteenth century water access was critically important for development of colonial Georgia. Most plantations from that period were served by water transportation routes and the development of roads in the uplands lagged behind. Roads or well-established trails on Ossabaw Island likely date to prehistoric times. The main road that bisects the island on its North-South axis is probably the earliest of these upland routes. This road connected the North End Plantation with Middle Place and the South End Plantation. At some point in the plantation era, stone mile marker posts were erected along its route. The original route of the northern end of this main road remains subject to question. Milestone 5 is located south of the North End Plantation and the main road continues leading to the former main house of the Morel's North End Plantation. Milestone 6, however, is located on a peninsula several hundred meters northeast of this location. This suggests that the original termination point of the main road may have been at an abandoned water access point northeast of the primary complex of the North End Plantation.

The shoreline and water access points along Ossabaw Island are dynamic and their evolution from the 1760s to the present has not been fully explored. The water access for the North End plantation may have changed substantially since the 1760s. These changes may be reflected in the various transportation-related features that remain in the archaeological record.

Important transportation features on Ossabaw Island may include wharves, boat slips and canals. The maritime aspect of Ossabaw Island's historic resources has hardly been explored.

The archaeological clues in Locus K provide strong evidence for an abandoned transportation feature. The evidence for a canal or extended boat slip is shown by the topography, vegetation, linear depressions and artificial cuts in the land surface, the GPR data, and from two shovel tests that were placed within it. A line of seven large live oak trees, which are oriented perpendicular to the shoreline, flank the east side of the linear depression on its southern end. Two artificial cuts were noted—one at the interface with the salt marsh and another more substantial cut through an relic dune within the salt marsh. The two shovel tests revealed thick organic zones of oxygen-reduced soils, which would be expected in a poorly drained or submerged environment. Heavy rains during the course of the archaeological project provided even more visual clues as to the former purpose of this part of the site. The rains settled in ponds that connected the line of oaks with the marsh edge. Related evidence from Locus J may indicate an area where shipbuilding was accomplished. Maps of the vicinity from the 1860s show no sign of any water-access feature in this area of Ossabaw Island. Quite possibly this canal was already obsolete and abandoned by that time. Its abandonment may have been a direct result of changes in shoreline and marsh sedimentation on this part of Ossabaw Island. The existence of a canal serving the North End plantation remains to be fully verified but these preliminary data are tantalizing. This feature may have been a very important component of the plantation in the colonial era.

Calvert notes that the Canal age in Britain lasted from 1760 to 1840 and it coincided

with the advent of the Industrial age. Although the frenzy of canal construction during this era was widely manifested in America, Calvert observed that American canals, "…were poorly built, and suffered from profiteering and corruption, which was endemic. They were filled in and almost completely forgotten by the 1870's". American canals were replaced by railway transportation by the mid-nineteenth century. Calvert (2005) describes how:

> Canal boats were sometimes towed by men, but more usually by a horse, mule, or pair of donkeys accompanied by a driver (usually a boy) on a towpath provided by the canal company on its own property. The single towpath made the passing of two boats an event in which one tow rope had to be passed over the other. Only later were some canals provided with two towpaths, which made the operation simple. At an overbridge where the towpath changed sides the tow rope had to be disconnected. This also had to be done when the towpath did not pass through the arch of a bridge.

HOUSING

Tabby was an important building material in coastal Georgia in the eighteenth and nineteenth centuries. Examples of buildings built from tabby in the 1730s and 1740s can be seen in the ruins at Wormsloe (Ft. Wymberly), Fort Frederica, and several other locations (Miller 2005). Miller notes that examples of tabby architecture exist in all of Georgia's coastal counties, although he recognized that only two of these counties have been extensively surveyed. In McIntosh and Glynn, over thirty sites have been identified that have tabby buildings, structures, or ruins.

A resurgence in the use of tabby for building occurred in the early nineteenth century, largely due to the efforts of Thomas Spalding, a plantation owner on Sapelo Island.

Colin Brooker (2005a), an authority on tabby architecture in coastal South Carolina, noted,

> Although Thomas Spalding's influence was pervasive along the Georgia coast both before and after publication of his "On the Mode of Constructing Tabby Buildings" by the Southern Agriculturalist in 1830, South Carolina's planters and merchants preferred construction techniques developed closer to home. Thus throughout the Low Country form height became standardized at about two feet some time before 1770, a preference that persisted until the late 1840s or early 1850s, when a few planters opted for twelve-inch- high forms of a kind recommended by Spalding.

Tabby brick is typical of the early to almost mid 1800s because of the still scarcity and cost of brick. Brooker suggests that the larger tabby brick (such as that observed at the North End Plantation duplexes and smokehouse) is later than a smaller kind of tabby brick which is slightly earlier. Brooker cautions, however, that this rule is not absolute and exceptions may exist. Brooker has observed a regional pattern, which he attributes to the influence of Thomas Spaulding, in the tabby building method. A method of using smaller block molds (about 1 foot tall sections) became very popular even up to the South Carolina coast. Most of these occur after 1815.

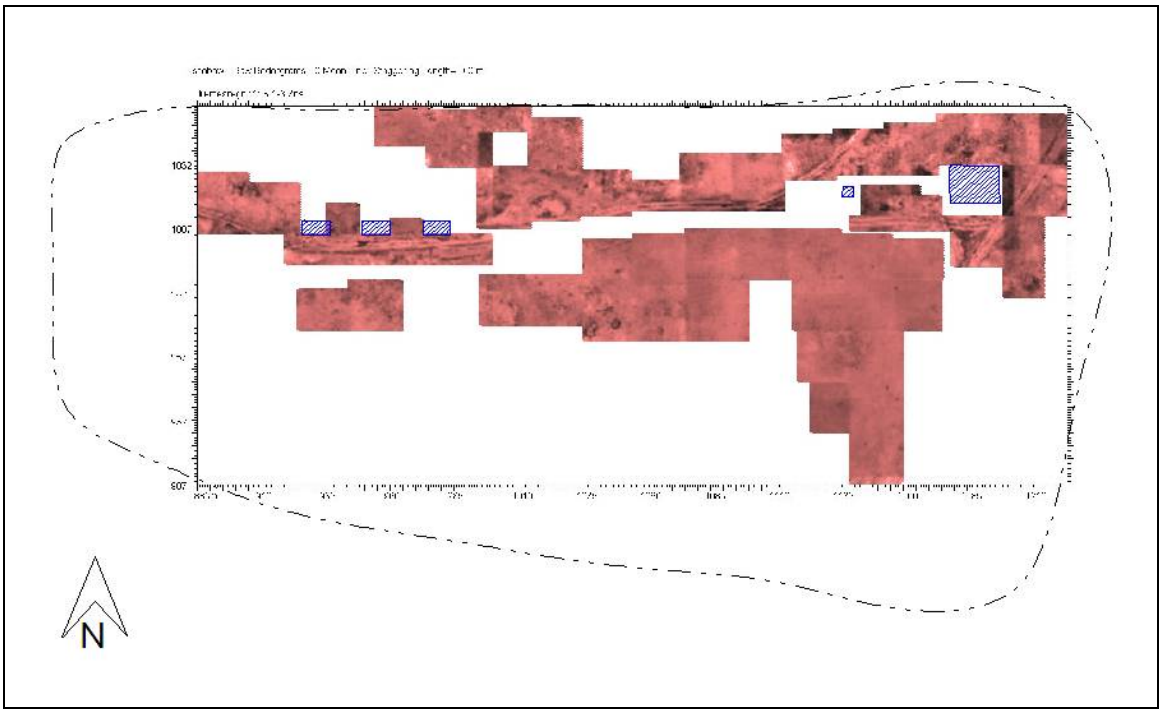


Figure 77. GPR Plan at 3.1 to 8.3 ns Below Ground Surface, 9Ch1062.

Figure 78. GPR Plan at 13.8 to 19 ns Below Ground Surface, 9Ch1062.

Figure 79. GPR Plan at 20.9 to 26.2 ns Below Ground Surface, 9Ch1062.

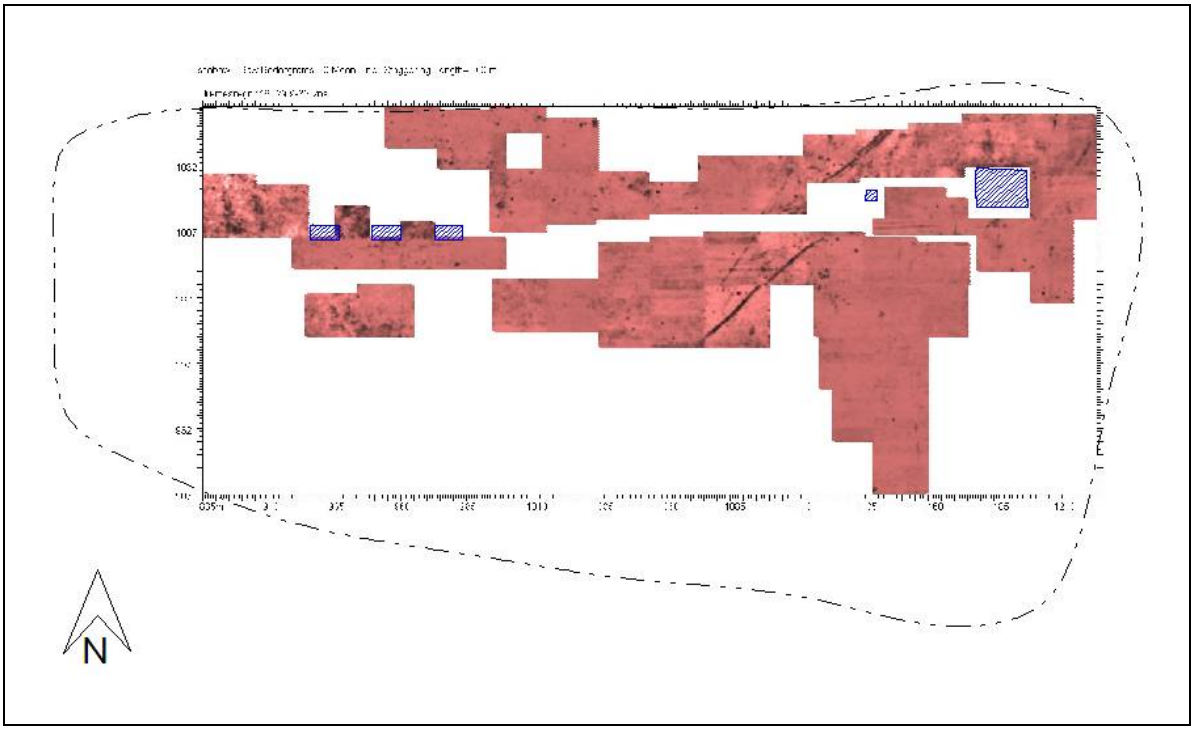


Figure 80. GPR Plan at 29.9 to 35.2 ns Below Ground Surface, 9Ch1062.

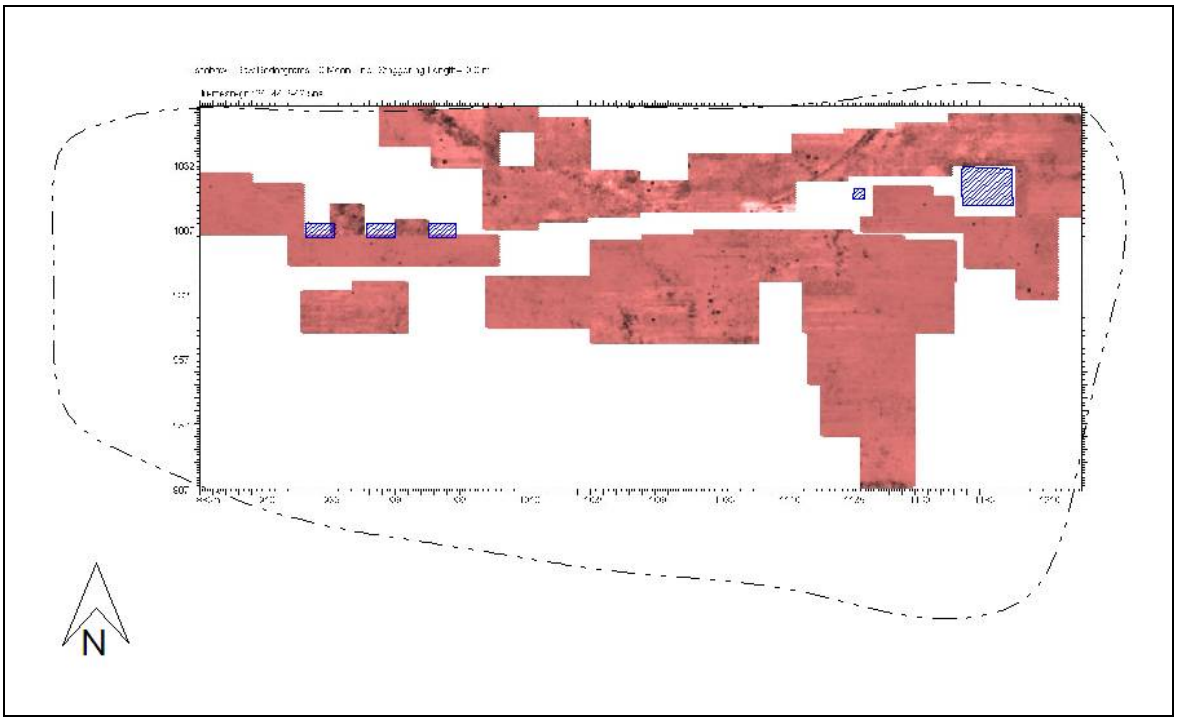


Figure 81. GPR Plan at 44.2 to 49.5 ns Below Ground Surface, 9Ch1062.

Figure 82. GPR Plan at 71.2 to 74.6 ns Below Ground Surface, 9Ch1062.

Brooker, on the other hand, felt that the 2 ft tall sectioned tabby structures were most often older and quite possibly mid-late 1700s. Brooker cautions not to guess at dates and that true archeological testing should be relied upon to date these structures. Brooker suggested comparing our block sizes to the sizes at Ft. Frederica and other known older tabby structures (Brooker 2005b).

At least two manor houses were built by the Morel family at the North End Plantation. Archaeologists obtained tentative identification of these two buildings from the present study.

Several examples of eighteenth and nineteenth century housing for the enslaved African-Americans are known for the South Atlantic Coast. These included examples in Chatham County, Georgia, such as Hermitage slave quarter on the lower Savannah River. That plantation, which has since been destroyed by industrial construction, contained a well-preserved slave row that was photo-documented. Industrialist Henry Ford dismantled and moved one of these dwellings to his museum in Deerfield, Michigan, where it remains today. The dwellings at the Hermitage were probably constructed in the early nineteenth century. Other nearby examples of tabby slave dwellings that were probably constructed in the nineteenth century include buildings on St. Simons Island, Glynn County, Georgia and the Kingsley Plantation, in Duvall County, Florida (Epworth by the Sea 2005; National Park Service 2005b; Yesterday in Florida 2005).

Eighteenth-century examples of slave architecture are more elusive and problematic. Wheaton and his colleagues presented an argument for earth-fast dwellings with packed clay floors based on their archaeological excavations at Yaughan and Curibboo plantations on the Santee River in Berkeley County, South Carolina (Wheaton et al. 1983).

The North End plantation may hold important clues about the architectural design of eighteenth-century enslaved housing. The GPR data suggests that one ore more circular or oval buildings may exist beneath the ca. 1840s tabby dwellings. If true, these earlier buildings may represent even more precious cultural resources that the overlying nineteenth-century tabby dwellings. Exploration of this "buried" eighteenth century slave quarter should receive high priority in future studies of the North End plantation.

PLANTATION SUPPORT

Plantation Support Buildings

The 1860 coastal chart depicts several large buildings in the area defined archaeologically as Loci J and L, south and west of the slave quarter. No building remains are visible in this vicinity at present. The archaeological findings indicate that several buildings were formerly located in this portion of the plantation site. The archaeological support for these buildings was further bolstered by the results of the GPR survey. Archaeological excavation in this portion of the plantation was limited to a small sample of 50 by 50 cm shovel tests. The metal detector also proved useful in identifying activity areas in the pasture that covers these portions of the site. More detailed excavation will be required to fully delineate the resources in this part of the site.

Indigo

We know from historical records that indigo was an important cash crop produced at the North End Plantation, particularly during the period prior to the American Revolution. Survival indigo plants dot the landscape in several areas of the plantation as a testament to this former cultigen. The processing of indigo required a substantial amount of labor. This work also required special vats for soaking the plants, racks for drying the extract, and forms for making the indigo into cakes (or otherwise convenient form for shipping). Indigo processing facilities constitute an important part of the former plantation landscape, but thus far, none of the locations of these facilities have been identified archaeological. Many of these constructions were probably above-ground wooden structures that did not leave a substantial footprint in the archaeological record. Perhaps one way to narrow the search for the indigo processing area would be through chemical analysis of the soils.

By 1749 the British Parliment had placed a bounty of 6p per pound-weight upon Carolina indigo. Between 1756 and 1757, indigo exports from South Carolina rose from 232,100 to 894,500 pounds per annum. Approximately 1,122,200 pounds were exported from South Carolina in 1775. Indigo continued to be produced in the Southeast during, and after, the American Revolution but the British bounties and protective tariffs no longer existed. In 1788, 833,500 pounds of indigo were exported from South Carolina, but by 1790 only 1694 casks of indigo were exported from that state. Indigo production continued in the Southeast throughout the 1790s but was largely replaced by cotton agriculture as an upland crop after the development of the cotton gin (Payne 2005).

Payne (2005) provides this summary of the indigo production process,

> Indigo processing was very precise and remained a precarious aspect of indigo culture for it determined the quality of the dye. The indigo plants were placed in three successive fermentation vats for the dye did not exist in the plant per se. A liquid called indican was formed chemically in an oxidation process which the colonial planters did not fully understand. Contemporary accounts simply said that the plants rotted. The fermented indigo/indican was then agitated by slaves with paddles which aerated the liquid. After the addition of limewater, the clear alkaline solution changed to blue. After the liquid was drained, the residue was strained, bagged, and left to dry. The resulting fine stiff paste was cut into cubes and placed into barrels for shipment to England. An average harvest for a planter usually resulted in thirty to eighty processed pounds of indigo per acre.

Henry Bourquin undoubtedly encouraged his son-in-law, John Morel, Sr. in the indigo market, and his conveyance of the Ossabaw Island property was probably intended for this purpose. Indigo cultivation was introduced to South Carolina in 1739 and was developed locally by Eliza Lucas Pinckney. By 1747, Pinckney had produced enough indigo for a shipment to England. The indigo industry in South Carolina reached its peak in 1773 (Leopold 2000; Holroyd 1783; Payne 1998).

James Roberts provided this contemporary description of indigo cultivation and the dire hazards for its workers,

> Indigo.--Four crops are raised on one piece of ground in a year. In the first cutting, a sprout is left at the bottom. By the time one field is

> gone over, we turn back and begin at the beginning, leaving a sprout, as at first, and so until the fourth crop is gathered.
>
> Each cutting is put into water, stalk and blade; kept there twenty-four hours; taken out, and leaves and shell beaten off the stalks; put in the troughs, and churned, as butter is churned, about two hours, or until it is as thick as paste. The churning is performed with paddles fixed through the sides of the troughs. It is then cut, with an iron knife made for the purpose, and spread on a tin scaffold to dry. In a short time it is ready to be put into kegs, and sent off to market. From fifty to sixty hands work in the indigo factory; and such is the effect of the indigo upon the lungs of the laborers, that they never live over seven years. Every one that runs away, and is caught, is put in the indigo fields, which are hedged all around, so that they cannot escape again (Roberts 2001).

A 1773 map of the Parish of St. Stephen, South Carolina by Mouzon and Lodge (1773) depicts an active indigo operation. This illustration is presented in Figure 83. This engraving shows enslaved workers and their overseers laboring at various tasks. One man is shown pumping water from a large scaffold that rises above a small reservoir. The water is directed by other men into above-ground vats or settling ponds. These men are busy soaking the indigo to extract its active ingredients. Two large wooden paddles rest unattended on a large log frame. These paddlers are apparently for stirring the indigo broth, or possibly for thrashing the indigo plant to soften it for soaking. Other workers are seen bringing bundles of unprocessed indigo plants to the scene. One man is shown attending to a series of above-ground drying racks. Nearby a man is busy cutting the indigo into cakes on a wooden table. Another is shown sealing up a large hogshead barrel. An unidentified feature is shown in the foreground, which may represent a subterranean dye vat.

Modern examples of indigo vats can be found in Africa and India, where older methods of indigo production are still employed (Anantharaman 2005). Anatharman notes,

> The process of extracting indigo dye is quite complicated and involves a lot of labour. The plants are soaked in a vat or a sloping tank. Two or three people actually get into the tank and paddle the water continuously for two to three days. The blue rises to the top. The water is drained out. The remaining blue substance is taken out and made into cakes. The blue that emerges cannot be matched. It is believed that the term "blue collar" worker is derived from the indigo workers, who used to wear the cheap blue cloth. The less charitable say the workers used to be blue all over!
>
> The process of extraction of dye is also difficult because of the strong odour that the vat emanates. Also, the vat should not be exposed to sunlight. It is buried in the ground, with only the neck showing. There is also a belief in India that working on an indigo extraction unit makes a woman sterile. Hence, only men used to undertake this job.

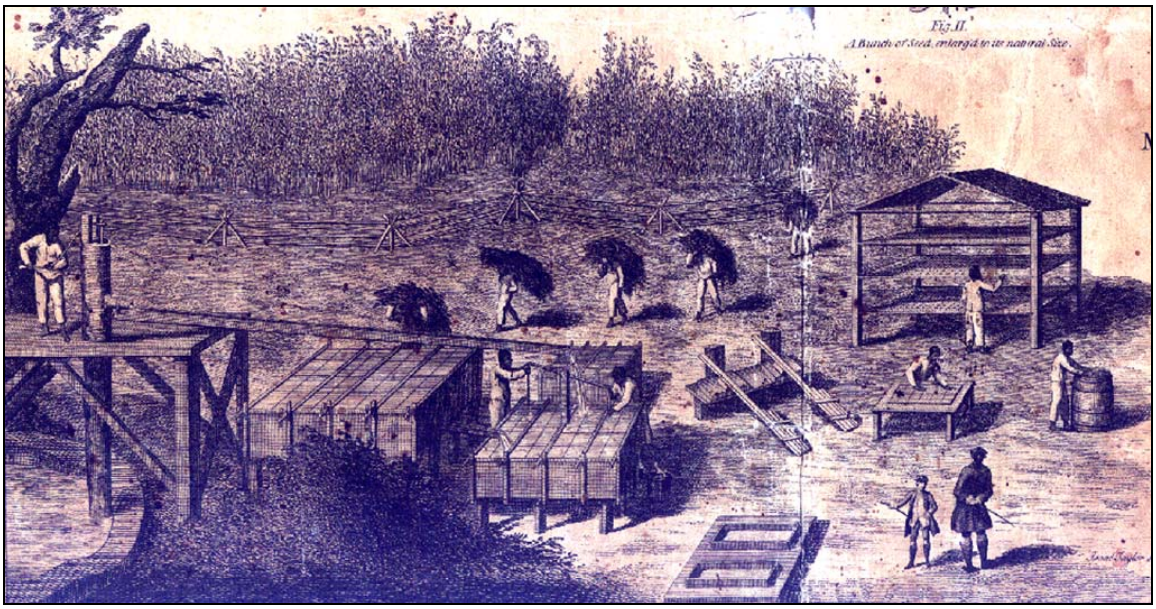


Figure 83. Indigo Operation in South Carolina (Mouzon and Lodge 1773).

Church and Cemetery

History is mute as to the location of any church or cemetery associated with the North End Plantation. The archaeologists kept a "keen eye" for any subtle clues that would lead to the location of any graves or religious sites within the study area. None was identified. No cemeteries were evident from the GPR mapping, although not all areas of the site were accessible for GPR mapping and those areas may harbour this type of archaeological evidence.

At least one church existed on Ossabaw Island by the late nineteenth century, which was known as the Hinder Me Not Church. In the 1870s the congregation of the Hinder Me Not [Missionary Baptist] Church on Ossabaw Island numbered 68 people. In 1878 the church was part of the Zion Baptist Association (Mobley 2004). The Zion Baptist Association, which was formed in 1865, was an association of African-American Missionary Baptist churches (Jack Tarver Library, Special Collections 2005a-b). The church took its name from an Old Testament passage, "And he said unto them, Hinder me not, seeing the LORD hath prospered my way; send me away that I may go to my master" (King James Bible, Genesis 24:56). Those words were attributed to a servant of Abraham named Eleazar after Eleazar had found the God-appointed bride for Abraham's son Isaac (Project Gutenberg 2005).History records that the Hinder Me Not Baptist Church was relocated to the mainland at Pin Point along with the congregation, sometime after the 1881 and 1898 hurricanes. After the move the new church was known as the Sweet Field of Eden Baptist Church. The location of this church on Ossabaw Island remains unknown. Nor was any documentary evidence found suggesting the location of any historic graves associated with it on the island.

LIFEWAYS OF THE ENSLAVED AT NORTH END PLANTATION

Subsistence

The archaeological excavations in the Tabby quarters of the North End Plantation yielded an abundance of subsistence information consisting primarily of food remains. The bulk of these remains were oyster shell, which was weighed in the field, recorded, and then discarded. Next prevalent was animal bone, represented by more than 6.6 kilograms of material. Bone was recovered from 206 different proveniences at the plantation site. Small quantities of egg shell was found in the Locus C midden. These food bones were washed, weighed and stored for future zoo-archaeological analysis. The bone assemblage includes many species of birds, fish, reptiles, rodents, and rodents. This dataset represents an important part of the North End Plantation story and future analysis of these materials is highly recommended.

Macroscopic ethno-botanical remains included small quantities of corn cobs, peach pits, pecans, and unidentified seeds. Peach pits were found in Loci C and D. Corncobs were recovered from Locus C. Soil samples were taken from selected proveniences in the excavations for flotation. The light and heavy fraction from these samples were processed and conserved for later ethno-botanical analysis. As with the food bone, this ethno-botanical dataset represents an important part of the North End Plantation story and future analysis of these materials is highly recommended.

Indirect evidence of subsistence was observed in the food storage and food preparation containers, serving and eating utensils. Weapons and lead shot, fish hooks, and fishing line sinkers also attest to activities related to food procurement.

Religion and Conjuring

Magic and conjuring were important components of African culture that survived, or were transformed, by enslaved African-Americans and Freedmen who resided on Georgia's Sea Islands. Although most plantation owners attempted to extinguish traditional African religious practices, many rituals and beliefs survived. This "underground" culture was manifested in music, dance, medicine, religion and other social expressions. The attrition of these cultural traits from the African-American community of coastal Georgia was accelerated in the twentieth century and today most manifestations of traditional culture have been lost.

Throughout the eighteenth through twentieth century Judeo-Christian religious concepts were superimposed on the traditional African belief systems of the enslaved. The loss of culture was noted and lamented by nineteenth century scholars, including Charles C. Jones, Jr., who attempted to preserve elements of this culture in his book (Jones 1888). Although Jones was a wealthy plantation owner himself, he and others in his family had endorsed religious education and instruction among Georgia's enslaved. His father, Reverend Charles C. Jones, Sr., was a renowned leader in promoting religion among Georgia's enslaved (Jones 1969). Numerous other wealthy planters in coastal Georgia shared Reverend Jones' sentiment and commitment to allowing African-Americans to worship with some degree of autonomy. Charles C. Jones, Jr. was perhaps unique for scholars in this area in his attention to traditional African beliefs. Although Jones interpretation of these traditions was clouded by his ethnic

heritage, his accounts of conjuring and ritual represent some of the earliest written accounts on the subject.

A later scholar, Roland A. Steiner, followed in Jones' footsteps in recording the rituals, superstitions, and medicinal lore of the African-Americans. Steiner's work, however, was based near the Augusta, Georgia area and is not completely applicable to the situation on Georgia's Sea Islands (Steiner 1899a, b, 1900a, b, 1901a, b).

Ethnographic work in coastal Georgia during the New Deal era resulted in the publication, *Drums and Shadows* (Georgia Writer's Project 1940). This volume dealt with a variety of subjects and contained numerous oral interviews. Several of the comments that were recorded pertained to the subject of religion, traditional medicine and beliefs.

Durable items that were often selected as components of a conjuring bag, or mojo bag, include: alligator foot or teeth, black cat bone, rabbit foot or tail, raccoon baculum, graveyard dirt, lodestone (magnetite), magnetic sand, silver dime, miniature dice, Hoyt's cologne, John the Conqueror root (Ipomoea jalapa) and buckeye (Yronwode 2002, 2005a; Jones 1888).

Jones (1888:170) wrote concerning conjuring on the Georgia coast,

> The ordinary Fetich [sic] consisted of a bunch of rusty nails, bits of red flannel, and pieces of brier-root tied together with a cotton string. A toad's foot, a snake's tooth, a rabbit's tail, or a snail's shell was sometimes added. In price it varied from twenty-five cents to a dollar. To insure the efficacy of the desired spell, it was necessary that the charm should be secretly deposited under the pillow of the party to be affected, placed upon the post of a gate through which he would pass, or buried beneath the doorsteps of his cabin.

Many of the items that Yronwode and Jones include in their lists would not be easily recognized as a fetish from archaeological exploration. While it may be possible to locate conjuring features, as Jones describes, where these fetish bags were buried beneath posts or under the cabin doorsteps or threshold, no such features were identified in the present study. The midden may hold clues about magical spells that were cast in the North End quarter. The midden at 9Ch1062 abounds in rusty nails and red flannel. Cotton string and medicinal roots are not durable artifacts in the coastal environment. The presence of alligator, cat, toad, raccoon, snake or rabbit bones or snail shells would typically be interpreted as food remains, or as incidental fill in the midden. Alligator teeth, raccoon baculum, and various amphibian, reptile, and small mammal bones were recovered from 9Ch1062 and some of these may have ritual significance. Graveyard dirt is not readily distinguishable, unless it happens to contain human skeletal remains or coffin hardware. Magnetite, silver dimes, miniature dice, and Hoyt's cologne bottles would preserve in the archaeological record but none were identified from the present study. Several coins, including a half dime were recovered from the midden in the tabby duplexes. Hoyt's Cologne was introduced in 1868 and would not be associated with the antebellum occupation at 9Ch1062, but would relate to later inhabitants. A bottle of Hoyt's Cologne sold for 10 cents around 1910 (Yronwode 2005b). Future excavators and laboratory analysts are cautioned to be on the lookout for fetish objects and conjuring features at 9Ch1062.

Information about religious life among the enslaved in Georgia's barrier islands lies encoded in their songs. Ethnomusicologists,

both professional and amateur, have long been intrigued by the traditional music of the region. That interest dates, at least, to the immediate post-bellum period. One example was transcribed by Colonel Thomas Wentworth Higginson, 1st South Carolina Volunteers (later known as the 33rd Regiment U.S. Colored Troops) who was engaged in patrolling the area of Ossabaw Sound in the American Civil War (Allen et al. 1867:19-20; Taylor 2005; Picker 2005). This song, "*Lay Dis Body Down*" was sung by African-Americans, often by the oarsmen as a work song. Lt. Colonel Trowbridge, who replaced Higginson in command after Higginson was severely wounded in 1864, noted that this song was often sung at funerals and this version was popular on St. Simons Island. Variations of this song were sung by African-Americans in coastal South Carolina as well (Allen et al. 1867:19-20). Higginson's version of the song, which he gave the title, "I Know Moon-Rise" went:

> I know moon-rise, I know star-rise,
> Lay dis body down.
> I walk in de moonlight, I walk in de starlight,
> To lay dis body down.
> I 'll walk in de graveyard, I 'll walk through de graveyard,
> To lay dis body down.
> I 'll lie in de grave and stretch out my arms ;
> Lay dis body down.
> I go to de judgment in de evenin' of de day,
> When I lay dis body down ;
> And my soul and your soul will meet in de day
> When I lay dis body down.

Higginson made an astute observation of the oppressed human condition of those enslaved on the Sea Islands, which is expressed in this song lyric, ""I 'll lie in de grave and stretch out my arms." Higginson wrote, "Never, it seems to me, since man first lived and suffered, was his infinite longing for peace uttered more plaintively than in that line." (Picker 2005).

The tension that existed between traditional African beliefs and values and those superimposed on the enslaved at North End plantation by the planter elite yielded a blend that is unique to coastal Georgia The archaeological deposits at 9Ch1062 offer an wonderful opportunity to explore this cultural evolution in religion, superstition, and music by these oppressed people.

VII. CONCLUSIONS

The North End plantation started in the mid-eighteenth century but evidence of that era is known only from the archaeological data. No surviving building examples or detailed historic maps were located that depict the plantation as it appeared during colonial times. GPR evidence provides some preliminary indication that round (or oval) house plans predated the rectangular house forms that have survived above ground. These earlier house styles are preserved below ground surface. Their layout may be determined from future archaeological excavations. Evidence obtained from the present study included the discovery of numerous post holes that formerly contained support posts for these dwellings. Other building evidence from the eighteenth century slave quarter includes large wrought spikes and nails.

The Morel house was almost certainly located in the general vicinity of the present Clubhouse. Local lore of the Torrey family maintained that the Clubhouse was built on the footprint of an earlier tabby building. Archaeological exploration reveals that at least two earlier buildings ruins existed beneath the Clubhouse. Both dwellings were possibly large manor homes of the Morels. A chimney from the former house that existed on the east end of the Clubhouse remains standing and has been incorporated into the present Clubhouse architecture. The evidence that the eastern chimney of the Clubhouse had a former life is clearly evident from the closed up firebox from a hearth that served a room east of the Clubhouse. That room and possibly other parts of the earlier house are now confined to the archaeological record. A mid-nineteenth century age is posited for this dwelling, based on the artifacts recovered in shovel tests from this vicinity, and from surface artifacts that were visible in the exposed roadbed.

The other dwelling beneath the Clubhouse was probable an earlier dwelling, possibly the original Morel home on Ossabaw. Thus far this building is known only from a concentration of tabby brick rubble and a probable cellar. This important occupation area was discovered late in the archaeological project and only limited investigations were conducted there. Only two shovel tests were placed in this area and one of these encountered two modern utility trenches. The other shovel test contained a jumble of tabby brick rubble but none of the bricks were in their original placement. This dwelling was partly defined by the GPR survey, although large palm trees prohibited a complete survey of this area. The GPR survey helps to define the southern extent of the probable cellar associated with this dwelling. Ceramic artifacts that were indicative of colonial era occupation were recovered from the ground surface and from one test unit excavation southwest of the tabby brick dwelling. The combination of the artifact data and architectural remains lead to the conclusion that the Morel house, in its various forms, was always located on the eastern end of the plantation complex and at the northern end of the alley leading from the island's interior. The architectural plans and material contents of the various main houses remain to be fully explored.

At least two other buildings were tentatively identified in the general area west and northwest of the Clubhouse. One or both of these buildings may be detached kitchens that served the main house. At present, neither building is adequately delineated. GPR survey of the northern building hints at its general extent, but an accurate understanding of it will require more excavation. The southern building is poorly understood but it abounds in early historic artifacts. Both of these buildings contain

some eighteenth century items but the bulk of the deposit appears to be nineteenth century.

A mystery building in the pasture southwest of the Clubhouse was discovered by the archaeologists. This building is not drawn on any maps, nor were either Roger Parker or Sandy West aware of a building in this vicinity. A shovel test explored a portion of a cellar that was filled with soil and artifacts. A debris field surrounds this cellar for some distance but the maximum dimensions of the building remain undetermined. GPR survey and metal detecting gave some crude indication that the building is more than four meters in diameter.

Artifacts that were found in the cellar of this building and in the surrounding midden attest to a mid-nineteenth century age for the building. While this cellar contained some domestic artifacts, these were not abundant and the site may not represent a domestic residence. A cluster of bird bones near the base of the cellar fill further added to the mystery of this building. These bones may represent the discard from a single meal. The building's size and function remain undetermined. Interestingly, the only minie ball discovered by the project came from the vicinity of this building. That minie ball was a type used by the Confederates early in the Civil War, which hints at a possible military function for this building. This question cannot be resolved on the current evidence, however, and more study is needed to determine the age and function of this building ruin.

Most of the energy expended for the project was focused on an exploration of the slave quarter. Several questions had been posed to the archaeologist by the project's historical architect (Fore). Most of these questions concerned the physical built environment. The archaeology team created their own set of questions and raised many new issues that were not previously considered by those involved in the project.

The North End plantation slave quarter from the mid-nineteenth century is easily located by the three surviving tabby duplexes. What is less readily discernable is the complete extent of the enslaved housing from this period of the plantation's history. The 1860 nautical chart shows a row of nine dwellings, of which three remain standing today. The archaeological evidence strongly suggests that two additional dwellings continuing on a line to the east of Tabby 1 and north of Canepatch Road. A "jog" in Canepatch Road cuts through the archaeological deposits of these two dwellings. That shift in the road may be a fairly recent alteration in the island's road network.

The situation to the west of Tabby 3 (continuing along the same axis) is less easily distinguished. Archaeological evidence for at least two, and possibly three, dwellings was obtained by the present study. These data combined yield a total of seven, or possibly eight, dwellings along this axis. The location of the ninth dwelling, as shown on the 1860 chart, remains to be defined on the modern landscape. The archaeologists' "best guess" is that it is located further west along the axis in a heavily wooded area. The exploration in this vicinity was hampered by the vegetative cover, as well as a heavy scatter of more recent historic artifacts from the early to early mid-twentieth century. Brick, oyster shell and bottle glass are prolific in this area and served to mask an obvious signs of the continuation of the nineteenth century slave row.

The archaeologists (Elliott and Rogers) suspected that a corresponding row of slave dwellings were located opposite Tabbys 1-3 and immediately adjacent to Canepatch Road. Their hunch was reinforced when the

metal probe was used to define the edges of the debris fields (thought to be tabby rubble) in this area. Subsequent test units and GPR survey in this vicinity provided little to reinforce their "missing slave row" theory. The GPR survey indicated heavy deposits of debris in these areas but no rectangular building outlines were discerned. Test Units 209, 212, and 214 revealed extensive debris from eighteenth and nineteenth century occupation, including quantities of tabby and brick rubble and abundant nails, but no articulated building ruins. It would appear that if this slave row existed, it was heavily impacted after abandonment. If large tabby blocks had existed, these may have been salvaged or otherwise removed from their original position. By the late 1920s no visible signs of any dwellings in these areas existed, as historical photographs indicate. Only additional archaeological study can resolve whether slave dwellings were located in this area, or not. The abundance of artifacts and building rubble in this area, however, strongly suggests that numerous buildings were once present.

The physical layout and architectural plan of the eighteenth and earlier nineteenth century slave dwellings is extremely sketchy at present. The archaeological excavations revealed many deeply buried posts that were related to these earlier dwellings. Some scattered brick and tabby also was retrieved from the pre-1840s strata, but their use was apparently not as extensive as in the 1840s. Large wrought iron spikes and nails were used in the construction of these buildings. The GPR survey evidence provides an early indication that some of these dwellings were round, or oval, in plan.

The rediscovery of colonial documents that detailed a British raid on the North End plantation in 1782 opens up a new avenue of research. That raid, which resulted in the removal of 30 slaves, a quantity of indigo, and the burning of one ship, was a serious catastrophic event for the Morels. Those 30 slaves were probably never returned to Ossabaw Island and their destiny can be the subject of future research. Many former slaves who were freed by the British were resettled in other British colonies, including Canada, the Bahamas, and other Caribbean Islands. The fate of Morel's enslaved should be traced historically, if possible.

This event undoubtedly left some trace on the archaeological record of the North End plantation. Archaeologists theorized that the raid also resulted in the destruction of the Morel's slave quarter, possibly by a catastrophic fire. Field evidence for such a conflagration was suggested by a light gray soil strata that was observed in several excavation areas. Analysis of this significant soil zone is addressed in more detail in Appendix 4.

Other disasters that may have significantly affected the occupants at the North End plantation were hurricanes and tropical storms. It may be possible to correlate these violent weather events with the archaeological record at the site. A few important dates for storms in this area were 1752, 1804, 1824, 1854, 1893, and 1898. Georgia escaped the direct impact of any major hurricanes in the twentieth century. The direct impact of these hurricanes on Ossabaw Island is not well documented. A more thorough review of available historical weather data for this region of the Georgia coast would provide a better baseline for such a study.

Another mystery that was uncovered by the archaeology team pertained to the water transportation feature, which was designated Locus K. The archaeologists suspect that this area contained a long canal, which, in the eighteenth and early nineteenth centuries, connected the North End plantation with the Atlantic Ocean. The converging lines of evidence supporting this

hypothesis were presented earlier. The existence of this feature remains to be conclusively delineated by archaeological excavation.

If it existed, it was probably abandoned prior to 1860 since it is not shown on nautical charts from that period. Its abandonment may have resulted from increased sedimentation in the marsh on the north side of Ossabaw Island and from improved water access elsewhere on the island. In later years as many as eight landings served Ossabaw Island. During its period of use, however, this water feature may have been extremely important for the economic survival of the North End plantation. This suspected waterway may have been important for loading and unloading goods and raw materials, ship construction, and general transportation for the plantation's residents.

The export of Ossabaw Island's live oak timber, which was extremely important export product used in ship construction, was probably facilitated by this water transportation feature. Other products, such as indigo and Sea Island cotton, may also have been transshipped via this facililty.

Once it was abandoned, however, this canal was an obstacle and an eyesore to be dealt with. It may have been intentionally filled by the landowners during the latter part of the nineteenth or early twentieth centuries so that this former wetland could be converted to arable land. Only the slightest vestige of it, the grove of live oaks, was allowed to remain. These were probably left to provide shade for the plantation's residents.

Another similar water feature was possibly located at the western end of the North End plantation quarter. This feature was not fully explored in the present study, but artificial cuts leading towards the water were observed extending out perpendicular to the shore in this vicinity. Indeed, the North End plantation may have had multiple access points throughout its history. The answers to this mystery remains to be determined.

VIII. RECOMMENDATIONS

The State of Georgia published its comprehensive management plan for Ossabaw Island in 2001 (Georgia Department of Natural Resources 2001). That document contains a chapter devoted to archaeological resources and their proper identification and management. Island managers and employees should be encouraged to closely follow these guidelines. Richard Laub and his students from Georgia State University offered several recommendations for future research at Ossabaw Island, several of which are echoed or elaborated below (Barrickman et al. 2004:22-23) A few additional comments on the status of the archaeological resources at the North End Plantation and best-management practices are offered here.

HISTORICAL RESEARCH

The present study and previous studies by Foske, Fore, and Laub (and his students) contained information on the early history of the North End Plantation. The present study was primarily an archaeological study, although during the research process the researchers identified a number of documentary resources, which should be studied for information pertaining to the understanding and interpretation of Ossabaw Island. A marriage of the historical and archaeological record will make for a more complete and accurate story of the North End Plantation. Historical research should provide clues helpful in future archaeological research. Important manuscript collections include the Bourquin and Kollock papers. Oral interviews with the descendants of Ossabaw Island residents should also be part of this research effort.

Religious archives hold another chapter of Ossabaw Island's secrets. A preliminary review of two published nineteenth-century histories of the African-American Baptist Church failed to yield any specific reference to the Hinder Me Not Baptist Church (Love 2005; Simms 1888, 2004). Information concerning the Hinder Me Not Baptist Church on Ossabaw Island may exist in the minutes of the Zion Baptist Association. The Jack Tarver Library, Special Collections, Mercer University in Macon, Georgia houses an extensive collection of early Baptist church records, including minutes of the Zion Baptist Association, which date from 1865 (Jack Tarver Library, Special Collections 2005b).

An initial inquiry to the Mercer archives yielded no specific listings for the Hinder Me Not Church. Some references to the church may be contained in the minutes for the Zion Missionary Baptist Association, and the archives holdings include:

> Boxed: 1868, 1871-1876, 1878-1880, 1883, 1885, 1890, 1891, 1898, 1899, 1904
>
> Reel 1258: 1868, 1873, 1878-1880, 1883, 1885, 1891, 1898, 1904
>
> Reel 1384: 1868, 1873, 1874, 1878-1880, 1883-1888, 1892-1899, 1902, 1891, 1903, 1904; Sunday School Teachers' Convention, Zion BA: 1884, 1886, 1887
>
> Reel 1407: 1871, 1872, 1874, 1890, 1899, 1917

These microfilm reels can be accessed through Interlibrary Loan (Arnette Copeland personal communication, August 12, 2005).

Many traditional African-American songs recorded by Colonel Higginson in the early 1860s were published in the *Atlantic Monthly* (Picker 2005). It is quite likely that

some of the very songs he recorded were sung by people from Ossabaw Island. These original published songs were not examined by the present researchers since it was beyond the research scope. A review of this genre of historical literature may prove productive by providing glimpses of nineteenth-century life and attitudes among Georgia's Gullah and Geechee groups.

Other stories about Ossabaw Island are hiding in Federal documents. Federal census records, including agricultural schedules, manufacturing schedules, population schedules, slave schedules may reveal a wealth of information about life on Ossabaw Island. Records of the Bureau of Refugees, Freedmen, and Abandoned Lands (NARA, Record Group 105) are another source of valuable information about Ossabaw Island's African-American inhabitants and their interaction with the white population from the period 1861 to 1879. A wealth of information also can be found in Colonial, Federal and State military records too numerous to mention.

ARCHAEOLOGICAL RESEARCH

The present study of the North End Plantation was an important first look at this important archaeological site. Despite decades of archaeological research on Ossabaw Island, the North End Plantation had escaped the eyes of the archaeologists working there. The site is now officially recorded in the GASF as Site 9Ch1062. The present study established tentative boundaries for the site and identified many of the historic resources within it. Excavations were focused on the three surviving tabby duplexes and the tabby smokehouse but researchers had the opportunity to sample other important areas as well. Several of these loci contain important buried archaeological deposits that are not apparent at the ground surface. These resources include tabby buildings that have since been demolished and more deeply buried earthfast dwelling ruins from the eighteenth and early nineteenth centuries. The present study also identified several building sites in the vicinity of the Morel manor house, possibly including the original dwelling of John Morel.

An obvious future research topic for the North End Plantation is a comparison of the lifeways of the enslaved with that of their owners and overseers. The existing resources in the slave quarter and in the main house area should allow for an in-depth treatment on this topic.

Several other aspects of the plantation have excellent research potential. These include studies of the industrial areas, transportation features, and studies of various other plantation support structures.

The entire site contains excellent subsurface feature preservation, although some areas contain more deeply buried archaeological deposits than others. Several areas containing sheet midden from the eighteenth and early nineteenth century were located. Trash features and filled cellars also were identified and the site probably contains many other large features with abundant artifacts from the plantation era. The GPR plan maps reveal dozens of large anomalies that may represent wells, large trash pits, or cellars. The largest of these is the suspected water access feature, designated Locus K. Most of these have not been explored or "ground truthed" but these can easily be targeted by future excavations.

PUBLIC INTERPRETATION

The present study contained a strong public outreach component. The community of

Georgia archaeologists collectively recognize the need for conveying information to the public about Georgia's rich archaeological heritage. Ossabaw Island is an ideal outlet for public outreach and education about archaeology. As the educational programs at Ossabaw Island continue to be developed, archaeology should play a key role as part of the curriculum. The North End Plantation is an ideal outdoor laboratory for archaeology that the public can enjoy for centuries to come. By offering the public the opportunity to experience and observe archaeology at the North End Plantation, Georgia's citizens will be better empowered to be good stewards of archaeological resources elsewhere in the state.

SITE PRESERVATION ISSUES

Several recommendations are offered to better protect the important cultural resources of the North End plantation site. One of these, moving the current trash dumpster location, has already been accomplished. That change should lessen the burden of vehicular traffic across the site, which will benefit the preservation of the archaeological deposits.

A long-term solution, which would reduce the erosion, compaction and general degradation of the archaeological deposits in the vicinity of the tabby dwellings, would be to terminate the use of a section of Canepatch Road and re-route traffic via another road.

Land managers should be made aware of the potential destruction of the archaeological resources that can result from any ground disturbance on the site. This includes the installation of utility lines or other excavations. The impact of tractor cultivation may also need to be addressed and assessed.

One byproduct of the present study was the generation of a map of underground utilities on the site. The discovery of unknown utility ditches, and the delineation of other known utility ditches, resulted from the GPR survey, and from shovel testing. Presently, no utilities map exists for this portion of Ossabaw Island. The area is riddled with utility lines (electric, gas, water, and telecommunications), drainage lines and sewer drain fields, and other unidentified linear subsurface features. Some of these linear features may be historical and may represent important cultural resources, particularly those that date prior to the twentieth century. The GDNR should prepare a comprehensive utilities map for the North End plantation, which incorporates information gleaned from the present study. When armed with this type of map, future utilities can be more intelligently placed with less damage to the cultural resources and personnel.

Formerly, the wooded area at the western end of the North End plantation was used for the disposal of animal carcasses. This practice has apparently ceased, but it should not be allowed to re-occur. Not only does this practice confuse the archaeologists, it may have seriously impacted cultural resources in this part of the site.

REFERENCES CITED

Albert, A.H.
1976 *Record of American Uniform and Historical Button, Bicentennial Edition.* SCS and O'Donnell Publications, Fairfax and Alexandria, Virginia.

Alexander, J.S., compiler
1970 Bourquin, Lachicotte, Morel, Symons, and Allied Familes. Jean S. Alexander, St. Simons Island, Georgia. Georgia Department of Archives and History, Morrow.

Allen, W.F., C.P. Ware, and L.M. Garrison
1867 *Slave Songs of the United States.* A. Simpson & Company, New York.

Anatharaman, A.
2005 The Colourful History of Indigo Blue. http://www.chennaionline.com/artscene/craftpalace/history/indigo.asp, June 29, 2005.

Anderson, D. G., R. J. Ledbetter, and L. D. O'Steen
1990 *Paleoindian Period Archaeology of Georgia.* Georgia Archaeological Research Design Paper No. 6, University of Georgia Laboratory of Archaeology Series, Report Number 28. Athens.

Baldwin, J.K.
1973 *A Collector's Guide to Patent and Proprietary Medicine Bottles of the Nineteenth Century.* T. Nelson.

Barrickman, J., L. Drummond, A. Garner, B. Garvin, T. Gillet, R. Miller, A. Reisinger, M. Reynolds, L. Sedicino, B. Serafine, and V. Toranzo
2004 Ossabaw Island, Georgia, North End Tabby Quarters. Conditions Assessment and Recommendations for Interpretation and Treatment. Conservation of Historic Building Materials Class, Masters of Heritage Preservation Program, Georgia State University, Atlanta, Georgia.

Bartovics, A. F.
1981 *The Archaeology of Daniels Village: An Experiment in Settlement Archaeology.* Ph.D. dissertation, Department of Anthropology, Brown University. University Microfilms International, Ann Arbor, Michigan.

Baumann, P.
1999 *Collecting Antique Marlbes. Identification & Price Guide*. Krause Publications, Iola, Wisconsin.

Binford, L.R.
1962 A New Method of Calculating Dates from Kaolin Pipe Stem Samples. *Southeastern Archaeological Conference Newsletter* 9(1):19-21.

Bingham, A.W.
1994 *The Snake Oil Syndrome: Patent Medicine Advertising.* Christopher Publishing House, Boston, Massachussetts.

Bond, S., and R. K. McClendon
circa. 1960 Skidaway Island. Redrawing of an Unidentified 1740 Map. Map collection, Georgia Historical Society, Savannah.

Bozeman, J.R.
1997 Ossabaw Island, State Heritage Preserve: Wildlife Management Area, Chatham County, Georgia. Wildlife Resources Division and the Coastal Resources Division, Georgia Department of Natural Resources, Social Circle, Georgia. Scale 1:20,000.

British Public Record Office
2005 Georgia: Petitions of Isaac Levy for Restitution of Parts of Ossabaw Island and Sapelo Island, or a Coal Mine in Cape Breton, Canada, and Report of Board of Trade thereon [1759; 1767-1768]. Records of the Privy Council Office, Miscellaneous Unbound Papers, Colonial Papers PC1/58/1-PC1/66/40. The National Archives, Kew, England. http://www.catalogue.nationalarchives.gov.uk, April 9, 2005.

Brooker, Colin
2005a The Conservation and Repair of Tabby in Beaufort County, South Carolina. http://www.state.ga.us/dnr/histpres/tabby/cbrooker.html, April 9, 2005.

2005b Personal Communication, Beaufort, South Carolina, April 6, 2005.

Brooks, M. J., L. Lepionka, T. A. Rathbun, and J. Goldsborough, Jr.
1982 *Preliminary Archaeological Investigations at the Callawassie Island Burial Mound (38Bu19), Beaufort County, South Carolina.* Research Manuscript Series 185, Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Brown, D.
1873 Shell Heaps in Georgia. *Smithsonian Institution Annual Report for* 1871: 423.

Brown, Danny
2005 Battery Seymour Ossabaw Island Georgia. Ms. on file, LAMAR Institute, Box Springs, Georgia.

Brown, M. K.
1971 Glass from Michilimackinac: A Classification for Eighteenth Century Glass. *The Michigan Archaeologist* 17(3-4).

Bryant, P.
1973 *English Crown Grants in Christ Church Parish in Georgia 1755-1775*. State Printing Office, Atlanta, Georgia.

Bullock, J.G.
1895 A History and Genealogy of the Families of Bellinger, De Veaux, Bull, Morel and Other Families. The Morning News Print, Savannah, Georgia.

Butler, M. Tyus, Jr.
2005 Personal Communication, Savannah, Georgia. April 5, 2005.

Byrne, W.D.
1979 The Burden and Heat of the Day: Slavery and Servitude in Savannah, 1733-1865. Ph.D. dissertation, Florida State University, Tallahassee.

Caldwell, J. R.
1943 Cultural Relations of Four Indian Sites of the Georgia Coast. Unpublished M. A. thesis, Department of Anthropology, University of Chicago, Chicago, Illinois.

1958 Trend and Tradition in the Prehistory of the Eastern United States. *American Anthropological Association, Memoir* 88.

1970 Proposal to the Branigar Organization, Inc., for Archaeological Investigations on Skidaway Island, Chatham County, Georgia. Ms. on file, Department of Anthropology, University of Georgia, Athens.

1971 Chronology of the Georgia Coast. *Southeastern Archaeological Conference, Bulletin* 13:89-91.

Caldwell, J. R. and C. McCann
1941 *Irene Mound Site, Chatham County, Georgia*. University of Georgia Press, Athens.

Caldwell, J. R. and A. J. Waring
1939a Some Chatham County Pottery Types and their Sequence. *Southeastern Archaeological Conference, Newsletter* 1:5-6.

1939b The Use of a Ceramic Sequence in the Classification of Aboriginal Sites in Chatham County, Georgia. *Southeastern Archaeological Conference, Newsletter* 2:6-7.

Calvert, J.B.
2005 Notes on Canal History and Engineering. http://www.du.edu/~jcalvert/tech/canhist.htm, March 18, 2005.

Candler, A. D., (editor)
1916 *The Colonial Records of the State of Georgia*. 26 Volumes. State Printer, Atlanta.

Champion Map Company
1985 Champion Map of Savannah, Georgia and Chatham County. Champion Map Company, Charlotte, North Carolina.

Charlton, T.U.P.
1808 *Georgia Reports*. Superior Courts of the Eastern District, Savannah, Georgia.

Clark, M.J.
1983 *Colonial Soldiers of the South, 1732-1774*. Genealogical Publishing Company, Baltimore, Maryland.

Coldham, P.W.
1980 *American Loyalist Claims, Volume I.* Abstracted from the Public Records Office, Audit Office Series 13, Bundles 1-35 & 37. National Genealogical Society, Washington, D.C.

Conyers, L., and D. Goodman

1997 *Ground Penetrating Radar: An Introduction for Archaeologists.* Altamira Press, Walnut Creek.

Cramp, A.
1921 *Nostrums and Quackery, Volume II.* The American Medical Association, Chicago, Illinois.

Crook, M. R., Jr.
1975 An Archaeological Survey of Green Island, Georgia. Ms. on file, State Historic Preservation Office, Atlanta, Georgia.

Crusoe, D. and C. B. DePratter
1974 A New Look at the Georgia Coastal Shell Mound Archaic. *The Florida Anthropologist* 29(1):1-23.

Daiss, T.
2005 Connect Savannah. Henry McAlpin. http://www.savannah-online.com/full_story.cfm?sect=TourismOurCity&id=464, August 11, 2005.

Davis, H.A.
1926 *Some Huguenot Families of South Carolina and Georgia, Peter Lafitte, Andre Verdier, Samuel Montague, Henri Francois Bourquin, Jean Baptiste Bourquin, Peter Papot, Benjamin Godin.* Harry Alexander Davis, Huguenot Society of South Carolina, Washington, D.C. Georgia Department of Archives and History, Morrow.

Davis, R.S., Jr., compiler
1981 *Research in Georgia*. Southern Historical Press, Easley, South Carolina.

Deagan, K. A.
1975 Thirty Years of Archaeology at Frederica, Georgia, 1945-1975: An Archaeological Assessment. Ms on file, National Park Service Southeast Archeological Center, Tallahassee, Florida.

DePratter, C. B.
1973 Archaeological Survey of Black Island. Ms. on file, State Historic Preservation Office, Atlanta, Georgia.

1974 An Archaeological Survey of Ossabaw Island, Chatham County, Georgia: Preliminary Report. UGA Manuscript 293, Georgia Archaeological Site Files, Athens, and Ms. on file, State Historic Preservation Office, Atlanta, Georgia.

1975 An Archaeological Survey of P. H. Lewis Property, Skidaway Island, Chatham County, Georgia. Ms. on file, State Historic Preservation Office, Atlanta, Georgia.

1976a The Refuge Phase on the Coastal Plain of Georgia. *Early Georgia* 4(1-2):1-13.

1976b Settlement Data from Skidaway Island: Possible Implications. Ms. on file, Georgia Archaeological Site Files, Department of Anthropology, University of Georgia, Athens.

1977 Environmental Changes on the Georgia Coast During the Prehistoric Period. *Early Georgia* 5(1-2):1-14.

1978 Prehistoric Settlement and Subsistence Systems, Skidaway Island, Georgia. *Early Georgia* 6(1 and 2):65-80.

1979 Ceramics. In *The Anthropology of St. Catherines Island 2: The Refuge-Deptford Mortuary Complex*, edited by David H. Thomas and Clark Larsen, pp. 109-132. Anthropological Papers of the American Museum of Natural History 56(1). New York.

1991 *W.P.A. Archaeological Excavations in Chatham County, Georgia: 1937-1942.* Laboratory of Archaeology Series Report Number 29. University of Georgia, Athens.

DePratter, C. B. and J. D. Howard
1977 History of Shoreline Changes Determined by Archaeological Dating, Georgia Coast, USA. *Transactions, Gulf Coast Association of Geological Societies* 27:252-258.

1980 Indian Occupation and Geologic History of the Georgia Coast: A 5,000 Year Summary. In *Excursions in Southeastern Geology, The Archaeology- Geology of the Georgia Coast.* James D. Howard, Chester B. DePratter, and Robert W. Frey, editors. Georgia Department of Natural Resources, Atlanta.

1981 Evidence for a Sea Level Lowstand Between 4500 and 2400 Years B.P. on the Southeast Coast of the United States. *Journal of Sedimentary Petrology* 51(4):1287-1295.

DePratter, C. and C. Pearson
1975 Archaeological Dating of Holocene Island Formation in Georgia. Ms. on file, Department of Anthropology, University of Georgia, Athens.

DesBarres, J. F. W.
1780 The Coast, Rivers and Inlets of the Province of Georgia, Surveyed by Joseph Avery and Others. Copy on file, Hargrett Rare Book and Manuscript Library, University of Georgia, Athens.

Dickens, R. S., Jr., editor
1982 *Archaeology of Urban America.* Academic Press, New York.

Drucker, L.
1979 *Cultural Resources Survey and Evaluation of the Proposed Skidaway Island Boat Ramp Facilities.* Carolina Archaeological Services, Inc., Columbia, South Carolina. Submitted to Georgia Department of Natural Resources, Atlanta.

Duncan, R.
1986 *Freedom's Shore. Tunis Campbell and the Georgia Freedmen.* University of Georgia Press, Athens.

Durham, R.S., editor
2000 *The Blues in Gray. The Civil War Journal of William Daniel Dixon and the Republican Blues Daybook.* University of Tennessee Press, Knoxville.

Ehistory.com
2005a Casualty Totals by Engagement. http://ehistory.com/uscw/features/battles/biewcasualties2.cfm, April 11, 2005.

2005b Official Records of the War of the Rebellion. http://ehistory.com/uscw/search/index_advanced.cfm?OR=1, April 11, 2005.

Ehrenhard, J. E.
1976 *Cumberland Island National Seashore: Assessment of Archaeological and Historical Resources.* Southeast Archaeological Center, National Park Service, Tallahassee, Florida.

Elliott, D. T.
1985a *Archaeological Survey for the Landings Development, Chatham County, Georgia.* Garrow & Associates, Inc., Atlanta. Report submitted to the Branigar Organization, Savannah, Georgia.

1985b Archaeological Survey of Purysburg, South Carolina. Garrow & Associates, Inc., Atlanta. Report submitted to the Law Environmental, Kennesaw, Georgia.

1989 Lost City Survey. LAMAR Institute Publication Series, Report 19, Watkinsville, Georgia. http://lamarinstitute.org/reports.htm, February 21, 2005.

1992 Towards a Global Study of Gunflints. Paper presented at 49th Southeastern Archaeological Conference, Little Rock, Arkansas.

1999 A*rchaeological Reconnaissance Survey and Management Plan of Fort McAllister State Historic Park. Bryan County, Georgia.* Southern Research, Ellerslie, Georgia. Submitted to Historic Preservation Division, Georgia Department of Natural Resources, Atlanta.

2002 Life in the Queensborough Township: Data Recovery at Hannah's Quarter, Site 9Jf195, Jefferson County, Georgia. Southern Research Historic Preservation Consultants, Inc. Submitted to Earth Tech, Raleigh, North Carolina and Georgia Department of Transportation, Office of Environment and Location, Atlanta, Georgia.

2003a Archaeological Investigations at Fort Morris State Historic Site, Liberty County, Georgia. Southern Research Historic Preservation Consultants, Inc. Submitted to Georgia Department of Natural Resources, Historic Preservation Division, Atlanta, Georgia.

2003b Archaeological Research at the Assistant Keeper's House, Tybee Lighthouse Complex, Chatham County, Georgia. *LAMAR Institute Publication Series, Report Number 75.* The LAMAR Institute, Inc. Box Springs, Georgia

2003c Ground Penetrating Radar Survey at the Fort Morris State Historic Site, Liberty County, Georgia. Submitted to Southern Research Historic Preservation Consultants, Ellerslie, Georgia. Rocquemore Radar Research, Box Springs, Georgia.

2004 Archaeological Data Recovery at the Waldburg Street Site (9Ch1039), Savannah, Georgia. Southern Research, Ellerslie, Georgia. Submitted to Housing Authority of Savannah, Savannah, Georgia.

2005a Ebenezer Revolutionary War Headquarters: A Quest to Locate and Preserve. Lamar Institute, Watkinsville, Georgia. American Battlefield Protection Program, National Park Service, Washington, D.C. [2003] http://shapiro.anthro.uga.edu/Lamar/PDFfiles/Publication 73.pdf, January 20, 2005.

2005b Archaeological Investigations at Fort Morris State Historic Site, Liberty County, Georgia. Southern Research Historic Preservation Consultants, Ellerslie, Georgia. Submitted to Historic Preservation Division, Georgia Department of Natural Resources, Atlanta. [2003]. http://hpd.dnr.state.ga.us/assets/documents/archaeology/FtMorris_Archaeological_Investigation.pdf, January 20, 2005.

2005c Sunbury Battlefield Survey. *LAMAR Institute Publication Series, Report Number 64.* The LAMAR Institute, Box Springs, Georgia. Submitted to Heritage Preservation Services, Washington, D.C.

Elliott, D.T., and R. F. Elliott
1991 *Seasons in the Sun: 1989 & 1990 Excavations at New Ebenezer.* LAMAR Institute Publication 15. LAMAR Institute, Inc., Watkinsville, Georgia.

Elliott, D.T., and J.L. Holland
1994 Draft Report. Archaeological Survey of a Proposed Olympic Yachting Venue Facility, Skidaway Island, Georgia. Garrow & Associates, Atlanta, Georgia. Submitted to Kemron Environmental Services, Inc., Atlanta, Georgia.

Elliott, D., M. Smith, M. B. Reed, and L. O'Steen
1988 *Archaeological Testing of Three Sites on the Landings Development, Chatham County, Georgia.* Garrow & Associates, Inc., Atlanta. Report submitted to the Branigar Organization, Savannah, Georgia.

Elliott, R.F.
2005 Living in Columbus, Georgia 1828-1869: The Lives of Creeks, Traders, and Enslaved African-American, Mill Operatives, and Others as Told to Archaeologists. Southern Research, Ellerslie, Georgia. Submitted to City of Columbus, Columbus, Georgia.

Epworth by the Sea
2005 Epworth by the Sea, History. http://www.epworthbythesea.org/history.html , June 24, 2005.

Feelbest.com
2005 Minard's Liniment 15ML. http://www.feelbest.com, June 24, 2005.

Fike, R.E.
1987 *The Bottle Book. A Comprehensive Guide to Historic, Embossed Medicine Bottles.* Gibbs Smith, Layton, Utah.

Fore, G.
2004 *Ossabaw Island North End Plantation, Tabby Slave Quarters & Smokehouse Conservation, Chatham County, Georgia.* George Fore, Architectural Conservator, Raleigh, North Carolina.

Foskey, A.
2001 *Ossabaw Island, Images of America.* Arcadia Press, Charleston, South Carolina.

Freedmen's Bureau Online
2005 Freedmen's Bureau Online, Records of the Assistant Commissioner for the State of Georgia, Bureau of Refugees, Freedmen and Abandoned Lands, 1865 – 1869 National Archives Publication M798 Roll 36 "Register of Land Titles Issued to Freedmen"http://www.freedmensbureau.com/georgia/landtitles/georgialand8.htm, August 11, 2005.

Garrow, P. H.
1982 *Archaeological Investigations at the Washington, D.C. Civic Center Site.* Soil Systems, Inc., Marietta, Georgia. Report on file, Garrow & Associates, Inc., Atlanta.

Georgia, Colony of
1760 Colonial Conveyence Book C-1. Georgia Department of Archives and History, Morrow, Georgia.

Georgia Department of Natural Resources
1976 Geologic Map of Georgia. Georgia Department of Natural Resources, Atlanta.

2001 *Ossabaw Island Comprehensive Management Plan.* Department of Natural Resources, Wildife Resources Division, Atlanta, Georgia.

Georgia Department of Natural Resources, Wildlife Resources Division
2005 Map of Ossabaw. http://georgiawildlife.dnr.state.ga.us, June 28, 2005.

Georgia State University [GSU], Conservation of Historic Building Materials Class [Richard

Georgia Writer's Project, Savannah Unit, Works Progress Administration
1940 *Drums and Shadows. Survival Studies Among the Georgia Coastal Negroes.* University of Georgia Press, Athens.

Goad, S. I.
1975 Excavations on Skidaway Island 9CH112. Ms. on file, Department of Anthropology, University of Georgia. Athens.

Godden, G.
1963 *British Pottery and Porcelain*, 1780-1850. A. S. Barnes and Company, London.

Granger, M., editor
1947 *Savannah River Plantations.* Savannah Writers' Project. Georgia Historical Society, Savannah.

Hamilton, T.R., and K.O. Emery
1988 Eighteenth-Century Gunflints from Fort Michilimackinac and Other Colonial Sites. *Archaeological Completion Report Series, Number 13.* Mackinac Island State Park Commission, Mackinac Island, Michigan.

Heighton, R.F., and K.A. Deagan
1972 A New Formula for Dating Kaolin Clay Pipestems. *The Conference on Historic Site Archaeology Papers, 1971 and Historical Archaeology Forum* 6(1&2):220-229.

Henry, V.J., Giles, R. T. and J.R. Woolsey
1973 Geology of the Chatham County Area, Georgia. The Neogene of the Georgia Coast Guidebook. Georgia Geological Society 8:67-80.

Henry Ford Museum
2003 Living under Enslavement: African Americans on Hermitage Plantation. http://www.hfmgv.org/education/smartfun/hermitage/house/plant.html, April 28, 2003.

Hewat, Alexander
1779 *Historical Account of the Rise and Progress of the Colonies of South Carolina and Georgia. Two volumes.* Alexander Donaldson, London, England.

Hillestad, H.O.
1975 The Ecology of the Cumberland Island National Seashore, Camden County, Georgia. *Georgia Marine Science Center. Technical Report Series, Number 75-5*. University System of Georgia, Skidaway Island.

Hirsch, A.H.
1999 *The Huguenots of Colonial South Carolina*. University of South Carolina Press, Columbia.

Hiss, E.
1909 *Domestic and Veterinary Remedies, Vol. II.* G. P. Engelhard, Chicago, Illinois.

Hodgson, William B.
1846 *Memoirs of the Megatherium, and Other Extinct Gigantic Quadrupeds of the Coast of Georgia, with Observations on its Geologic Features.* Bartlett and Welford, New York.

Hohner
2005 History of Hohner. http://www.hohnerusa.com/ahistory.htm, June 23, 2005.

Holder, Preston
1938 Excavation on St. Simons Island and Vicinity, Winter of 1936-1937. *Society for Georgia Archaeology, Proceedings* 1:8-9.

Holroyd, John Baker, Earl of Sheffield
1783 *Observations on the Commerce of the American States. With an Appendix; Containing An Account of all Rice, Indigo, Cochineal, Tobacco, Sugar, Molasses, and Rum Imported into and Exported from Great-Britain the Last Ten Years. Of the Value of all Merchandize Imported into and Exported from England. Of the Imports and Exports of Philadelphia, New-York...* J. Debrett, London. Second edition.

Honerkamp, N.
1980 *Frontier Process in Eighteenth Century Colonial Georgia: An Archeological Approach.* Ph.D. Dissertation, Department of Anthropology, University of Florida, Gainesville. University Microfilms, Ann Arbor, Michigan.

Hough, F., editor
1975 *The Siege of Savannah.* The Reprint Company, Spartanburg, South Carolina.

Howard, E.W.
1968 The Tale of a Legacy. National Genealogical Society Quarterly 56(2):83-116.

1968 The Tale of a Legacy. National Genealogical Society Quarterly 56(2):187.

Howard, J. D., and R.W. Frey
1980 Holocene Depositional Environments of the Georgia Coast and Continental Shelf. In *Excursions in Southeastern Geology, The Archaeology-Geology of the Georgia Coast*, edited by J. D. Howard, C. B. DePratter, and R. W. Frey, pp. 66-134. Department of Natural Resources, Atlanta.

Howard, E.W., compiler
1731-1980 Purysburg Colony- Bourquin Family Collection. South Carolina Historical Society, Charleston. [30 folders, ca. 160 items, some illustrations] Microfiche, The Reprint Company, Spartanburg, South Carolina.

Hoyt, J.H., R.J. Weimer, and V.J. Henry Jr..
1966 Late Pleistocene and Recent Sedimentation, Central Georgia Coast, U.S.A. In: Pleistocene and Holocene Sediments, Sapelo Island, Georgia and Vicinity. The Geological Society of America, Southeastern Section Field Trip No. 1.

Hughes, William
1855 Unidentified Survey Plat of Portions of Ossabaw Island. Portions reproduced in Ossabaw Island, Images of America, by A. Foskey [2001], p. 14. Arcadia Press, Charleston, S.C.

Huguenot Society of South Carolina
1889-2004 *Transactions of the Huguenot Society of South Carolina, Volumes* 1-108. Huguenot Society of South Carolina, Charleston.

International Institute of Synthetic Rubber Producers
2005 Brief History & Introduction of Rubber. http://www.iisrp.com/WebPolymers/00Rubber_Intro.html, June 27, 2005.

Irwin-Williams, C.
1967 Associations of Early Man with Horse, Camel, and Mastodon at Hueyatlaco, Valsequillo (Puebla, Mexico). In *Pleistocene Extinctions: The Search for a Cause*, edited by P.S. Martin and H.E. Wright, Jr., pp. 337-347. Yale University Press, New Haven.

Jack Tarver Library, Special Collections [Mercer University, Macon, Georgia]
2005a History of the Baptists in Georgia, 1733 to Present. http://tarver.mercer.edu/archives/GaBaptists.php, August 11, 2005.

2005b Baptist Conventions, General Associations, and District Associations in Georgia. http://tarver.mercer.edu/archives/Holdings/associations.php, August 11,2005.

Jacobs, H.A.
2005 Report of Harriet and Louisa Jacobs in Savannah, Ga, The Freedmen's Record, September 1866:161. Documenting the American South. http://docsouth.unc.edu/jacobs/support15.html, February 21, 2005.

Jacobs, H.A., and L. M. F. Child, editors
1861 Incidents in the Life of a Slave Girl. Written by Herself. Harriet A. Jacobs, Boston, Massachussetts. Documenting the American South. http://docsouth.unc.edu/jacobs/menu.html, February 21, 2005.

Jones, C.C., Jr.
1888 *Negro Myths from the Georgia Coast; Told in the Vernacular*. Houghton, Mifflin, Boston, Massachussetts.

Jones, C.C., Sr.
1969 *The Religious Instruction of the Negroes in the United States.* Negro Universities Press, New York.

Jones, G.F.
1992 *Georgia Dutch.* University of Georgia Press, Athens.

Jones, O.R.
1986 *Cylindrical English Wine and Beer Bottles 1735-1850.* Environment Canada-Parks, Ottawa, Ontario.

Jones, O.R., and C. Sullivan
1985 *The Parks Canada Glass Glossary.* National Historic Parks and Sites Branch, Parks Canada, Ottawa.

Joseph, J.W., III
1993 *"And They Went Down Both Into The Water" Archeological Data Recovery of the Riverfront Augusta Site (9Ri65).* New South Associates, Stone Mountain, Georgia. Submitted to City of Augusta, Georgia.

Kelly, V. E.
1980 *A Short History of Skidaway Island.* Copy on file, Georgia Historical Society, Savannah.

Ketchum, W. C., Jr.
1975 *A Treasury of American Bottles*. Bobbs-Merrill, New York.

Knight, L.L.
1967 *Georgia's Roster of the Revolution.* State Printing Office, Atlanta.

Larsen, C.S., Chester B. DePratter and D. H.Thomas
1980 *The Anthropology of St. Catherines Island 3. The St. Catherines Period Mortuary Complex.* Anthropological Papers of the American Museum of Natural History.

Larson, L. H., Jr.
1958 Cultural Relationships between the Northern St. Johns Area and the Georgia Coast. *The Florida Anthropologist* 11(1):11-22.

Lawrence, A.A.
1997 *A Present for Mr. Lincoln. The Story of Savannah from Secession to Sherman*. The Oglethorpe Press, Savannah, Georgia.

Leopold, S.
2000 A Brief History of Indigo in the United States. http://www.sewanee.edu/Chem/Chem&Art/Detail_Pags/Projects_2000/Leopold/History.html, February 21, 2005.

Levy, I.
1759 Advertisement, September 13, 1759, Philadelphia. [published in *South Carolina Gazette]*. Keith Read Collection, Hargrett Rare Book and Manuscript Library, University of Georgia Libraries, Athens.

Linley, J.
1982 *The Georgia Catalog Historic American Buildings Survey A Guide to the Architecture of the State.* University of Georgia Press, Athens.

Lomax, A.D.
1935 Bill Tatnall, Frederica, Georgia [photograph]. Alan D. Lomax Collection, Library of Congress, Washington, D.C.

1977 Georgia Sea Island Songs [sound recording]. New World Records, New York.

Lord, A.
1980 *Civil War Artifacts.* Bonanza Books, New York.

Lorrain, D.
1968 Archaeologists Guide to Nineteenth Century American Glass. *Historical Archaeology* 2:35-44.

Lossing, B. J.
1851-52 The Pictorial Field-book of the Revolution. Making of America Books. http//www.hti.umich.edu/cgi/t, February 20, 2005.

Louisiana Office of Culture, Recreation, and Tourism
2005 Daily Life in the Quarters. http://www.crt.state.la.us/crt/ocd/arch/greathou/quar2.thm, June 24, 2005.

Love, E. K.
2005 History of the First African Baptist Church, from Its Organization, January 20th, 1788, to July 1st, 1888. Including the Centennial Celebration, Addresses, Sermons, etc. The Morning News Print, Savannah, Georgia [1888]. http://docsouth.unc.edu/church/love/menu.html, January 19, 2005.

Lyell, Charles
1840 *A Second Visit to the United States.* Volume 1, John Murray, London.

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

1976 Assessment of Subsistence Strategy Evidenced by Shell Ring Sites. *Southeastern Archaeological Conference Bulletin* 19:61-63.

Martin, John [Governor]
1917 Letter to Governor Patrick Tonyn, October 19, 1782. Letter to Governor Patrick Tonyn, October 22, 1782. *Georgia Historical Quarterly* 1(4):334-335.

Martin, V. J.
1975 Architectural Survey of Chatham County. Survey forms and photographs on file, Georgia Department of Natural Resources, Atlanta.

Martinez, C.A.
1975 *Culture Sequence on the Central Georgia Coast 1000 B. C. to A.D. 1650.* Unpublished M.A. thesis, Department of Anthropology, University of Florida, Gainesville.

McCann, C.
1940 The Development of Cord Marked Pottery in Chatham County. *Proceedings of the Society for Georgia Archaeology* 3.

McGowan, J. F., and C. B. DePratter
1980 Skidaway Island: A Frontier Outpost, 1733-1740. In *Excursions in Southeastern Geology: The Archaeology-Geology of the Georgia Coast*, edited by James D. Howard, Chester B. DePratter, and Robert W. Frey. Guidebook 20. Annual Meeting of the Geological Society of America, Atlanta. Georgia Department of Natural Resources, Atlanta.

McGuinn, W.
1988 *American Military Button Makers and Dealers Their Backmarks & Dates.* Typesetting & Publishing, Inc. Manassas, Virginia.

McKee, G., editor
1984 *A Guide to the Georgia Coast.* Miller Press, Jacksonville, Florida.

McMichael, A. E.
1977 A Model for Barrier Island Settlement Pattern. *The Florida Anthropologist* 30(4):179-195.

Milanich, J. T.
1977 A Chronology for the Aboriginal Cultures of Northern St. Simons Island, Georgia. *The Florida Anthropologist* 30(3):134-142.

Milanich, J. T. and A. Machover
1976 The Radiocarbon Dated Aboriginal Sequence from St. Simons Island, Georgia-2240 B. C. to A. D. 1650. Paper Presented at the Society for American Archaeology Meeting, St. Louis, Missouri.

Miller, G. L.
1980 Classification and Economic Scaling of 19th Century Ceramics. *Historical Archaeology* 14:11-40.

Miller, J. J., II, and L. M. Stone
1970 *Eighteenth-Century Ceramics from Fort Michilimackinac. A Study in Historical Archaeology.* Smithsonian Studies in History and Technology No. 4. Smithsonian Institution, Washington, D.C.

Miller, M.W.
2005 Tabby Resources in Georgia. http://www.state.ga.us/dnr/histpres/tabby/mmiller.html, June 29, 2005.

Mobley, C.
2004 Voices of the Past. http://www.savannahnow.com/stories/022904/LOC_black5history.shtml, December 31, 2004.

Moir, R.W.
1987 Socioeconomic and Chronometric Patterning of Window Glass in *Historic Buildings, Material Culture, and People of the Prairie Margin*, edited by D. H. Jurney and R.W. Moir pp. 73-81. *Richland Creek Technical Series Vol. V.* Southern Methodist University, Dallas, Texas.

Moore, C. B.
1897 Certain Aboriginal Mounds of the Georgia Coast. *The Academy of Natural Sciences of Philadelphia, Journal 11 (Second Series, Part 1):*2-138.

Moore, S. M.
1985 Social and Economic Status on the Coastal Plantation: An Archaeological Perspective. in The *Archaeology of Slavery and Plantation Life*. edited by Theresa Singleton, pp. 141-162. Academic Press, Orlando.

Mouzon, H., Jr., and J. Lodge
1773 A Map of the Parish of St. Stephen, in Craven County: Exhibiting a View of the Several Places Practicable for Making a Navigable Canal, Between Santee and Cooper Rivers. Henry Mouzon, Jr. and John Lodge, London.

Munsell Color Company, Inc.
1988 *Munsell Book of Color*. Munsell Color Company, Inc., Baltimore, Maryland.

Neill, W. T.
1964 The Association of Suwannee Points and Extinct Animals in Florida. *The Florida Anthropologist* 17(1):17-32.

Nelson, L.H.
1963 Nail Chronology as an Aid to Dating Old Buildings. *History News* 19(2). Technical Leaflet 15. American Association for State and Local History, Washington, D.C.

Newman, T. S.
1970 A Dating Key for Post-Eighteenth Century Bottles. *Historical Archaeology* 4:70-75.

Noël Hume, I.
1985 *A Guide to Artifacts of Colonial America*. Alfred A. Knopf, New York.

Olsen, S.J.
1963 Dating Early Plain Buttons by Their Form. *American Antiquity* 28(4):551-554.

Otto, J. S.
1984 *Cannon's Point Plantation, 1794-1860: Living Conditions and Status Patterns in the Old South.* Academic Press, Orlando.

Parrish, L.
1942 *Slave Songs of the Georgia Sea Islands.* Creative Age Press, Inc., New York.

Payne, J.
2005 Rice, Indigo and Fever in Colonial South Carolina. http://www.geocities.com/Athens/Aegean/7023/indigo.html, June 29, 2005.

Pearson, C. E.
1975 Locational Analysis of Late Prehistoric Sites on Ossabaw Island, Georgia. UGA Manuscript 368, Georgia Archaeological Site File, Athens.

1977 *Analysis of Late Prehistoric Settlement on Ossabaw Island, Georgia*. Laboratory of Archaeology Series, Report 12, University of Georgia, Athens.

1978 Analysis of Late Mississippian Settlements on Ossabaw Island, Georgia. In *Mississippian Settlement Patterns*, edited by Bruce D. Smith. Academic Press, New York.

2001 Prehistoric Settlement and Sites on Ossabaw Island: An Atlas. UGA Manuscript 614, Georgia Archaeological Site File, Athens.

Picker, J.M.
2005 Thomas Wentworth Higginson's "Negro Spirituals", A Hypertext Edition, http://xroads.virginia.edu/~HYPER/TWH/TWH_front.html, August 11, 2005.

Platen, Charles G.
1875 Chatham County, State of Georgia. Map Collection, Georgia Historical Society, Savannah.

Poe, O. M.
1983 Map of Savannah, Georgia and Vicinity Illustrating the Operations of the Army under Command of Maj. Gen. W. T. Sherman Resulting in the Fall of That City December 21, 1864. In *Atlas to Accompany the Official Records of the Union and Confederate Armies*, compiled by Capt. Calvin D. Cowles. Reprinted. Fairfax Press, New York. Originally published 1895, Government Printing Office, Washington.

Project Gutenberg
2005 The King James Bible. http://www.ripco.net/download/text/e-texts/bible.txt, August 11, 2005.

Roberts, J.
2001 *The Narrative of James Roberts, a Soldier Under Gen. Washington in the Revolutionary War, and Under Gen. Jackson at the Battle of New Orleans, in the War of 1812: "a Battle Which Cost Me a Limb, Some Blood, and Almost My Life": Electronic Edition.* http://docsouth.unc.edu/neh/roberts/roberts.html, February 21, 2005.

Roenke, K.G.
1978 Flat Glass: Its use as a Dating Tool for Nineteenth Century Archaeological Sites in the Pacific Northwest and Elsewhere. *Northwest Anthropological Research Notes* 12(2), Memoir No. 4. Moscow, Idaho.

Rogers, R.
2004 Excavation Data, North End Plantation, 2003 Season. Ms. On file, The LAMAR Institute, Box Springs, Georgia.

Rosengarten, T.
1986 *Tombee: Portrait of a Cotton Planter, with the Journal of Thomas B. Chaplin (1822-1890).* William Morrow, New York.

Rouse, I.
1950 Vero and Melbourne Man: A Cultural and Chronological Interpretation. *New York Academy of Science, Transactions* 12:220-224.

Seidel, J.L.
1989 "China Glaze" Wares on Sites from the American Revolution: Pearlware before Wedgewood? *Historical Archaeology* 24(1):82-95.

Sheftall, J.M.
1995 *Sunbury on the Medway.* National Society, Daughters of the American Colonists, Georgia State Society, Norcross, Georgia. Reprint of 1977 edition.

Sheldon, C. T., Jr.
1976 *An Archaeological Survey of Colonel's Island, Glynn County, Georgia.* Ms. on file, State Historic Preservation Office, Atlanta, Georgia.

Simms, J. M.
1888 *The First Colored Baptist Church in North America, Constituted at Savannah, Georgia, January 20, A.D. 1788.* J. B. Lippincott Company, Philadelphia, Pennsylvania.

2004 The First Colored Black Church in North America. Constituted at Savannah, Georgia. January 20, A.D. 1788. With Biographical Sketches of the Pastors. J. B. Lippincott Company, Philadelphia, Pennsylvania. [online version of digitized 1888 edition] http://www.reformedreader.org/history/simms/toc.htm, April 26, 2004.

Simpkins, D. L.
1975 A Preliminary Report on Test Excavation at the Sapelo Island Shell Ring, 1975. *Early Georgia* 3(2):15-37.

Singleton, T. A.
1980 *The Archaeology of Afro-American Slavery in Coastal Georgia: A Regional Perception of Slave Households and Community Patterns.* Ph.D. dissertation, University of Florida. University Microfilms, Ann Arbor.

Singleton, T.A., editor
1985 *The Archaeology of Slavery and Plantation Life*. Academic Press, New York.

Skierkowski, P., and N. Burdock
1977 External Analgesic Products, Chapter 26 in *Handbook of Non-Prescription Drugs, 5th Ed.*, American Pharmaceutical Association.

Smith, D.
1997 *Civil War Savannah.* Frederic C. Beil, Savannah, Georgia.

Smith, M. T., J. A. Bloom, M. B. Reed, L. D. O'Steen, and D.T. Elliott
1988 *Archaeological Investigation of Two Sites on the Landings Development, Phase III, Skidaway Island, Georgia.* Garrow & Associates, Inc., Atlanta. Submitted to the Branigar Organization, Savannah, Georgia.

South, S.
1977 *Research Methods in Historical Archaeology.* Academic Press, New York.

1981 *Exploring Santa Elena 1981*. South Carolina Institute of Archeology and Anthropology Research Manuscript Series 184, Columbia.

Steiner, Roland
1899a Allan Stevenson's Trance [title only, text not given]. *Proceedings of the American Association for the Advancement of Science,* 48th Meeting, v. 48:364-365, Columbus, Ohio, August, 1899.

1899b Superstitions and Beliefs from Central Georgia. *Journal of American Folk-Lore* 12(47)(Oct.-Dec.1899):261-271.

1900a Sol Lockheart's Call. in Notes and Queries. *Journal of American Folk-Lore* 13(48)(Jan.-Mar. 1900):67-70.

1900b Braziel Robinson Possessed of Two Spirits. *Journal of American Folk-Lore* 13(50) (Jul.-Sep., 1900):226-228.

1901a "Seeking Jesus." A Religious Rite of Negroes in Georgia. *Journal of American Folk-Lore* 14 (54)(Jul.-Sep., 1901):172.

1901b Observations on the Practice of Conjuring in Georgia. *Journal of American Folk-Lore* 14(54) (Jul.-Sep., 1901):173-180.

Stone, L. M.
1974 *Fort Michilimackinac 1715-1781, An Archaeological Perspective on the Revolutionary Frontier.* Publications of the Museum, Anthropological Series Number 2. Michigan State University, East Lansing, Michigan.

Sullivan, B.
1998 Tabby: A Historical Perspective of an Antebellum Building Material in McIntosh County, Georgia. Buddy Sullivan, Darien, Georgia. Georgia Room, University of Georgia Libraries, Athens.

2000 *From Beautiful Zion to Red Bird Creek: A History of Bryan County, Georgia, Including Chronicles of the Old Canoochee-Ogeechee River Country*. Bryan County Board of Commissioners, Pembroke, Georgia.

Swanberg, J. W.
1968 *An Ecological Consideration of the pH and Salinity of the Soils on Skidaway Island.* Ph.D. disertation, University of Georgia, Athens.

Taylor, S.K.
2005 Reminiscences of My Life in Camp with the 33D United States Colored Troops Late 1st S.C. Volunteers. Susie King Taylor, Boston, Massachussetts [1902]. Digital Schomburg African American Women Writers of the 19th Century, http://digilib.nypl.org/dynaweb/digs/wwm97267, August 11, 2005.

The History Project
2005 [Ad, Minard's Liniment] U.S. History Images. The History Project, University of California, Davis. http://historyproject.ucdavis.edu, June 24, 2005.

Thomas, D. H., G. Jones, R. Durham, and C. S. Larsen
1978 The Anthropology of St. Catherines Island 1. The Natural and Cultural History. *Anthropological Papers of the American Museum of Natural History* 55(2):155-248.

1979 The Anthropology of St. Catherines Island 2. The Refuge-Deptford Mortuary Complex. *Anthropological Papers of the American Museum of Natural History. 56(1).* New York.

Torrey, H.N.
1926 *The Story of Ossabaw*. H.N. Torrey, Savannah, Georgia.

Trinkley, M.
1981 *Studies of Three Woodland Period Sites in Beaufort County, South Carolina*. South Carolina Department of Transportation, Columbia.

U.S. Department of the Interior, National Park Service [NPS]
2005a Soldiers and Sailros System. Http://www.itd.nps.gov/cwss/soldiers.htm, April 7, 2005.

2005b Florida, Kingsley Plantation. http://www.cr.nps.gov/nr/travel/geo-flor/21.htm, June 24, 2005.

U. S. Geological Survey (USGS)
1985 Raccoon Key, Georgia. 7.5 minute series quadrangle. Reston, Virginia.

Waring, A. J.
1968a The Refuge Site, Jasper County, South Carolina. In *The Waring Papers. Peabody Museum of Archaeology and Ethnology, Papers, Harvard University Vol.* 58. Revised edition, 1977,edited by Stephen Williams, pp. 198-208.

1968b The Bilbo Site, Chatham County, Georgia. In *The Waring Papers. Peabody Museum of Archaeology and Ethnology, Papers, Harvard University Vol.* 58. Revised edition, 1977, edited by Stephen Williams, pp.157-197.

1968c Fluted Points on the South Carolina Coast. In *The Waring Papers. Peabody Museum of Archaeology and Ethnology, Papers, Harvard University Vol.* 58. Revised edition, 1977,edited by Stephen Williams, pp. 241-242

1968d The Cultural Sequence at the Mouth of the Savannah River. In *The Waring Papers. Peabody Museum of Archaeology and Ethnology, Papers, Harvard University Vol.* 58. Revised edition, 1977, edited by Stephen Williams, pp. 216-221.

Waters, K.
2001 Re: Morel (1775-1834) Fra>Ga. Morel Family Genealogy Forum.http://genforum.genealogy.com/morel/messages/93.html, May 28, 2001.

Webb, P., and C. DePratter
1982 Archaeological Excavations at 9 Ch 113 Chatham County, Georgia. Department of Anthropology, University of Georgia.

Weinland, M.K.
1981 Assessment of Cultural Resources in Skidaway Island State Park. Ms. on file, Department of Anthropology, University of Georgia, Athens.

Wheaton, T.R., Jr., A. Friedlander, and P.H. Garrow
1983 *Yaughan and Curibboo Plantations: Studies in Afro-American Archaeology.* Soil Systems, Inc., Marietta, Georgia. U.S. Department of the Interior, National Park Service, Interagency Archaeological Services, Atlanta, Georgia.

Williams, S., editor
1968 The Waring Papers. *Peabody Museum of Archaeology and Ethnology, Papers, Harvard University Vol.* 58. Revised edition, 1977.

Wilkes, R.L., J. H. Johnson, H. T. Stoner, and D. D. Bacon
1974 *Soil Survey of Bryan and Chatham Counties, Georgia.* U. S. Government Printing Office, Washington, D. C.

Wood, V.S., and M.R. Bullard, editors
1996 *Journal of a Visit to the Georgia Islands of St. Catherine, Green, Ossabaw, Sapelo, St. Simons, Jekyll, and Cumberland, with Comments on the Florida Islands of Amelia, Talbot, and St. George, in 1753.* Mercer University Press, Macon, Georgia.

Wright, N.
1980 The Surfside Springs Site: A Possible Association Between Early Man and Extinct Fauna. *South Carolina Antiquities, The First Ten Years* 8:318-320.

Yesterday in Florida
2005 Kingsley Plantation [Photograph of Slave Quarter]. http://www.yesterdayinflorida.com/yesterday_in_flor..., June 24, 2005.

Yronwode, C.
2002 *Hoodoo Herb and Root Magic. A Materia Magica of African-American Conjure.* Lucky Mojo Curio Company, Forestville, California.

2005a Racoon Penis Bones. The Lucky Mojo Curio Company. http://www.luckymojo.com/raccoonpenis.html, April 9, 2005.

2005b Hoyt's Cologne. http://www.luckymojo.com/hoyts.html, June 29, 2005.

APPENDICES

APPENDIX 1. ARTIFACT INVENTORY

APPENDIX 2. SELECTED IMAGES

(SEE ACCOMPANYING CD ROM DISC)

APPENDIX 3. GPR IMAGES AND DATA

GPR Block Layout for 9Ch1062.

Time window =75; Number of Samples=512; Antenna=500 mhz;

Transect spacing=50 cm; Odd numbered lines are from west to east;
Even are east to west; Progress is south to north; Datum 1 is 1000m N 1000 m E. Grid North is 30E of Magnetic North.

	Dimensions (meters)			Southwest Corner					
Block	**E-W**	**N-S**	**Lines**	**East**	**North**	**x start**	**x end**	**y start**	**y end**
A	20	17.5	36	1114	1026	1114	1134	1026	1043.5
B	20	17.5	36	1134	1028	1134	1154	1028	1045.5
C	20	19.5	40	1154	1028	1154	1174	1028	1047.5
D	20	19.5	40	1174	1032	1174	1194	1032	1051.5
E	20	19.5	40	1194	1032	1194	1214	1032	1051.5
F	10	19.5	40	1214	1032	1214	1224	1032	1051.5
G	20	19.5	40	1204	1012	1204	1224	1012	1031.5
H	4	19.5	40	1200	1012	1200	1204	1012	1031.5
J	15	19.5	40	1200	992	1200	1215	992	1011.5
K	15	11.5	24	1200	980	1200	1215	980	991.5
L	20	19.5	40	1180	992	1180	1200	992	1011.5
M	20	5.5	12	1160	1006	1160	1180	1006	1011.5
N	20	7.5	16	1155	1012	1155	1175	1012	1019.5
P	12	3.5	8	1155	1020	1155	1167	1020	1023.5
Q	20	5.5	12	1140	1006	1140	1160	1006	1011.5
R	10	11.5	24	1145	1012	1145	1155	1012	1023.5
S	14	13.5	28	1114	1012	1114	1128	1012	1025.5
T	20	21.5	44	1094	1014	1094	1114	1014	1035.5
U	20	21.5	44	1074	1014	1074	1094	1014	1035.5
V	20	11.5	24	1054	1014	1054	1074	1014	1025.5
W	20	17.5	36	1034	1012	1034	1054	1012	1029.5
X	20	19.5	40	1014	1010	1014	1034	1010	1029.5
Y	20	19.5	40	1015	1030	1015	1035	1030	1049.5
Z	20	23.5	48	995	1007	995	1015	1007	1030.5
AA	5	13.5	28	995	1031	995	1000	1031	1044.5
AB	20	9.5	20	995	1045	995	1015	1045	1054.5
AC	20	23.5	48	975	1031	975	995	1031	1054.5
AD	20	15.5	32	955	1039	955	975	1039	1054.5
AE	20	11.5	24	980	993	980	1000	993	1004.5

AF	4	4	9	977	1006	977	981	1006	1010
AG	20	19.5	40	1140	907	1140	1160	907	926.5
AH	20	19.5	40	1140	927	1140	1160	927	946.5
AJ	20	19.5	40	1140	947	1140	1160	947	966.5
AK	20	20	41	1138	967	1138	1158	967	987
AL	20	17.5	36	1136	987	1136	1156	987	1004.5
AM	17	19.5	40	1158	967	1158	1175	967	986.5
AN	20	15.5	32	1156	987	1156	1176	987	1002.5
AP	15	19.5	40	1125	927	1125	1140	927	946.5
AQ	20	19.5	40	1120	947	1120	1140	947	966.5
AR	20	19.5	40	1118	967	1118	1138	967	986.5
AS	20	19.5	41	1116	987	1116	1136	987	1006.5
AT	20	19.5	40	1096	987	1096	1116	987	1006.5
AU	20	19.5	40	1076	987	1076	1096	987	1006.5
AV	20	19.5	40	1056	985	1056	1076	985	1004.5
AW	20	21.5	44	1056	963	1056	1076	963	984.5
AX	20	19.5	40	1036	963	1036	1056	963	982.5
AY	20	19.5	40	1036	983	1036	1056	983	1002.5
AZ	24	23.5	48	1076	963	1076	1100	963	986.5
BA	20	19.5	40	1016	969	1016	1036	969	988.5
BB	20	19.5	40	996	969	996	1016	969	988.5
BC	20	11.5	24	960	993	960	980	993	1004.5
BD	20	11.5	24	940	993	940	960	993	1004.5
BE	20	11.5	24	920	993	920	940	993	1004.5
BF	20	19.5	40	905	1005	905	925	1005	1024.5
BG	20	23.5	48	885	1005	885	905	1005	1028.5
BH	12	11.5	24	936	1005	936	948	1005	1016.5
BJ	12	5.5	12	961	1005	961	973	1005	1010.5
BK	20	16	33	905	971	905	925	967	983
BL	20	19.5	40	925	967	925	945	967	986.5

IMPROVEMENTS TO GPR-SLICE SOFTWARE

[Author's Note: The following comments were provided by Dr. Dean Goodman to users of his GPR-Slice Software. GPR-Slice program was one of the software packages that was used to process the GPR survey data from the North End Plantation. During the course of the GPR project, the LAMAR Institute survey team worked closely with Dr. Goodman in processing the data. Dr. Goodman went one step further when he selected the project as a "beta-test subject" for improvements to the software program. The project benefited greatly from these innovations, which thrust the Ossabaw Island GPR data to the forefront of international GPR research. Dr. Goodman's comments are presented verbatim]

Often, many individual blocks of GPR data are taken over a large site. These surveyed areas often have mosaic noises caused by varying gains, soils conditions, weather conditions or a variety of factors that can cause changes in the overall reflections between these areas. Currently, GPR-SLICE Software can handle mosaic corrections several ways. One, separate grids can be created for each of the mosaic regions and then adjusted transforms and append them in the Pixel Menu. Also, a separate Mosaic Correction menu is available to screen capture areas with the mouse and then apply gaining to these chosen areas. These methods require significant user intervention and are not practical ways of doing mosaic corrections when several tens of grid blocks are part of a large survey area.

A new method which will help to automatically correct designated grid blocks is now available in the June 21, 2005 Update to GPR-SLICE V5.0. The automatic mosaic correction involves several steps which the user must implement in order to use these new options. As an example, we shall show some data courtesy of Dan Elliot of the Lamar Institute. Dan collected about 35 kilometers of data at a site on Ossabaw Island, Georgi a as part of his studies into remote sensing of features associated slave dwellings on theisland (http://shapiro.anthro.uga.edu/Lamar/index.htm). Dan and his group were very meticulous and recorded a total of 58 GPR survey grids across the site, as is shown in the next diagram (Figure 1):

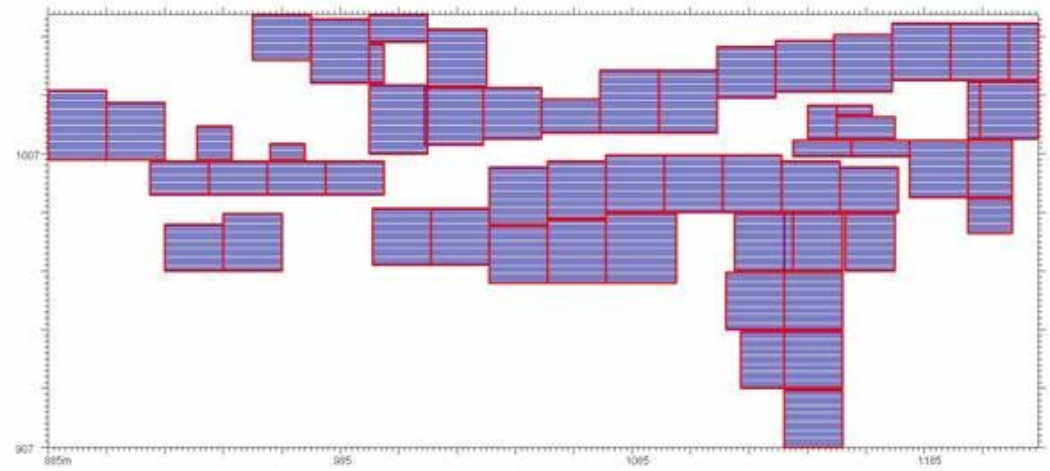


Figure 1. Ossabaw Island Georgia, profile map showing grid divisions.

1) To set the grid divisions, the user can click on those radargrams in the Edit Info File menu that are at the start of each new block as shown below in the following menu screen shot (Figure 2):

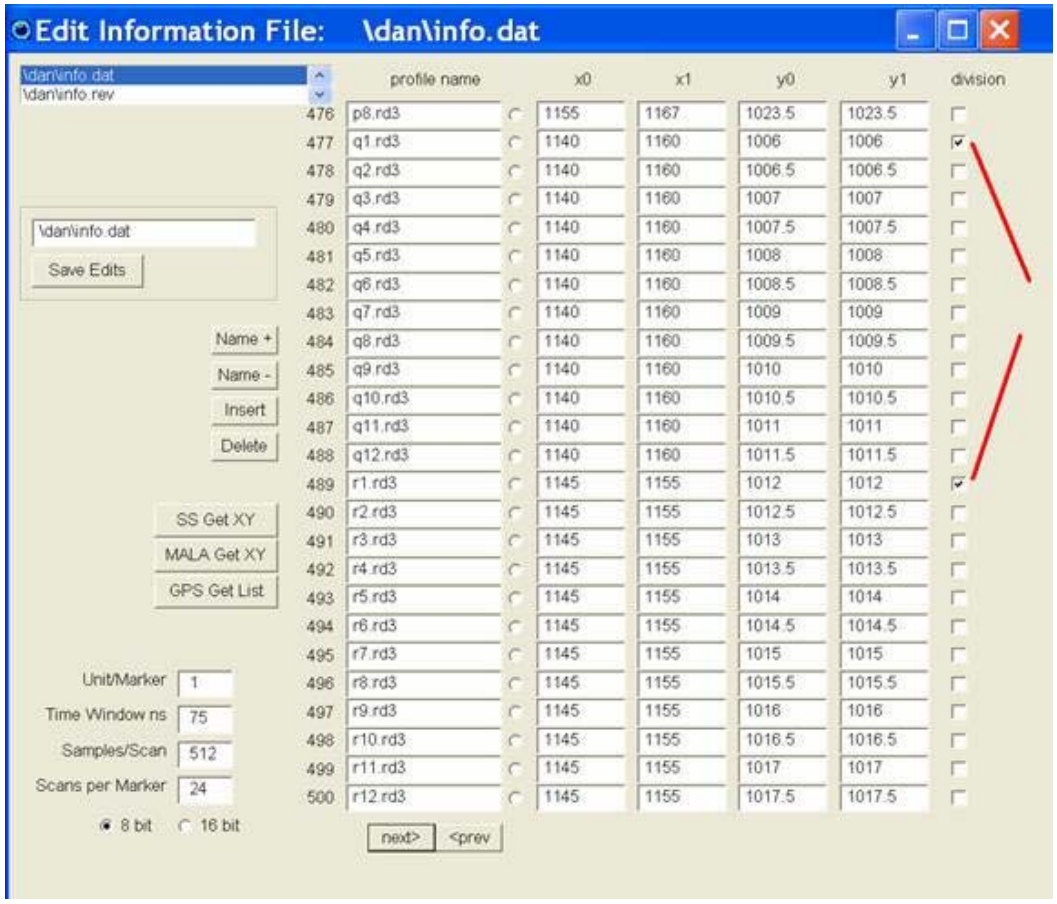


Figure 2. A screen shot of the Edit Info File menu showing where the grid divisions are set.

When the divisions are chosen, the individual grid blocks will be drawn in red as was shown in Figure 1. Note, the user must click on only the first radargram in each block as they first appear in the information file. In the above example we can see that the 477th file and the 489th file are start of different grid blocks and are thus clicked on.

2) Next, the user proceeds as usual in time slice analysis, e.g. reversing profiles, applying navigation, and slicing. The user can then create several optional time slice datasets that can effectively remove mosaic noises (Figure 3):

· 0-mean-grid XYZ time slice – XYZ datasets where the mean from every individual grid block is subtracted from data in that block to create a “0 mean” for every grid block.

· 0-mean-line XYZ time slices – XYZ datasets where the mean along every individual profile is subtracted from the time slice data on that profile to create a “0 mean” for every profile.

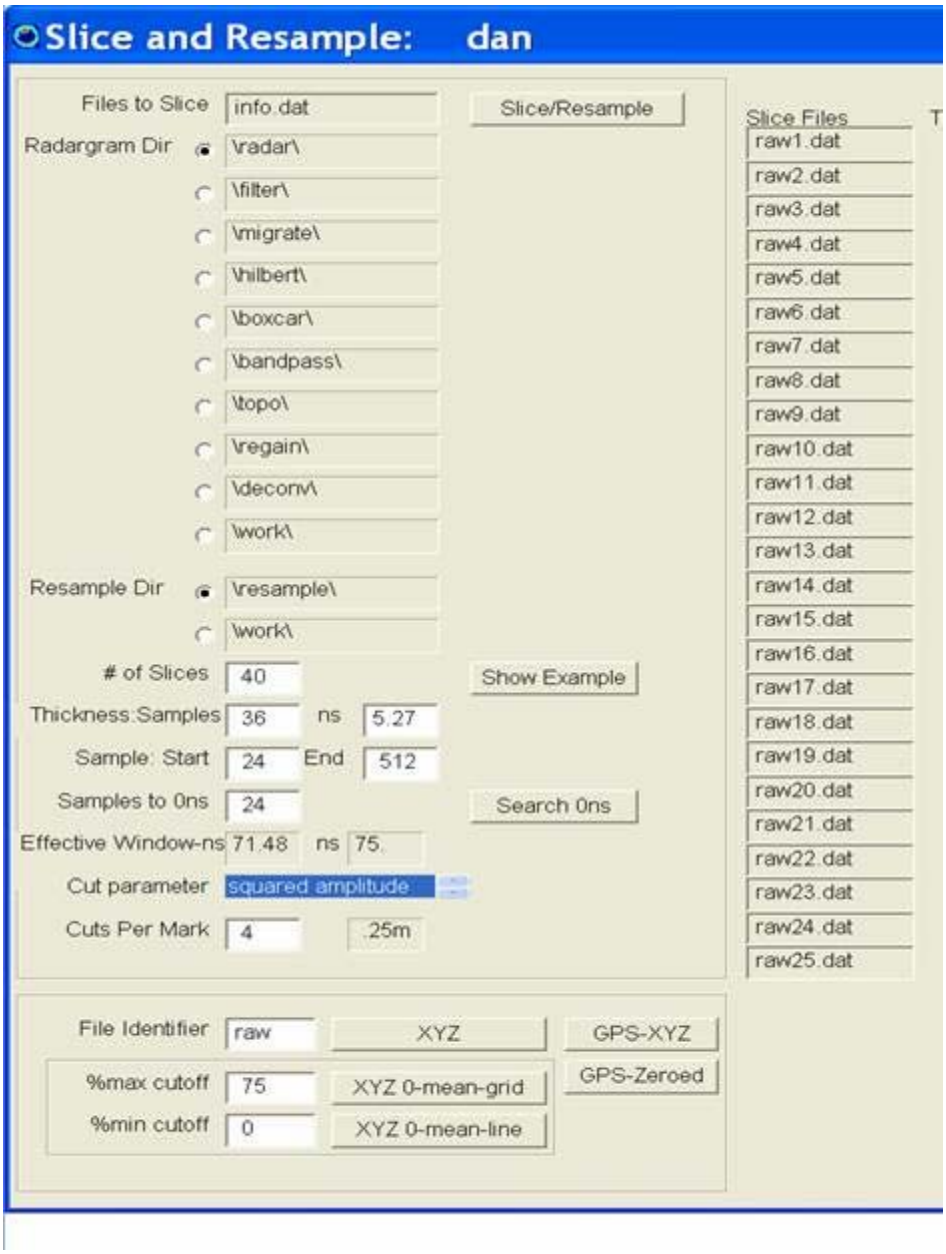


Figure 3. Location of the XYZ 0-mean-grid, and XYZ 0-mean line time slice creation

Both of these options for creating mosaic corrected time slice maps may be appropriate in various situations. The options are found just below the normal XYZ time slice creation. For the 0-mean line time slice dataset, in the case where linear features parallel to the profile and large reflective features are not present, the 0-mean-line data can provide a useful method for matching overall reflections across a large dataset. If horizontal features are present that were parallel to the profiles, they could be effectively removed from the time slice images. In this case, the 0-mean-line XYZ dataset creation should not be applied. The 0-mean grid time slice dataset will remove the average within each block. Thus, if a single line or two is parallel to a profile in the image, these reflections will be preserved since only a single mean value is being

subtracted across the whole separate grid. Seeing several plot examples will better help the user to see the effects of these 2 essential and important time slice calculations.

Shown Figure 4 is a 0-mean-grid calculation for the Ossabaw Island Georgia dataset. The top time slice is the raw time slice, the middle is the 0-mean-grid time slice, and the bottom is a time slice using the grid math option in the Grid Menu to subtract the raw and the 0-mean-grid images. The 0-mean-grid image shows very good matching in overall reflections between the 58 different grids. Mosaic noises are much more prevalent in the raw time slice. The subtracted image shows the overall gains subtracted from each of the different grid blocks. If there were no mosaic noises existing between the separate blocks, then the difference image would be solid – in this case we can see that mosaic contributions are prevalent and could be effectively removed by using the 0-mean-grid time slice creation.

Examining the 0-mean-line time slice (Figure 5), we can see that the difference image on the bottom shows mosaic noises are removed – in addition – streaks parallel to the profiles can be seen embedded within the mosaic components. The streaks are reflections from line noises that were running parallel to the profiles. These are also effectively removed from using the 0-mean-line XYZ time slice creation. One horizontal utility running from about the range 990-1060m in the time slice image, can be clearly seen in the raw and the 0-mean-grid, however, the 0-mean-line time slice shows this horizontal reflection significantly decreased and nearly invisible.

The 0-mean-line and the 0-mean-grid calculations can be assisted using the %max Cutoff and the %min Cutoff settings residing next to these processes in the Slice/Resample menu. The cutoff settings are to help in making better estimates of the mosaic noise background levels. The plots in the examples for Ossabaw Island, Georgia were made with the %max Cutoff set to 75% and the %min Cutoff set to 0%. The 75% setting will include all the data in the grid which is the bottom 75% in strength – e.g. the top 25% reflectors are not used in determining the average of the block. Similarly, the settings are also active for the 0-mean-line XYZ creation, and will throw away the top 25% strongest time slice values found on the profile and will only use the bottom 75% values to determine the average reflection strength. The reason that this works is that the mosaic backgrounds are usually not the strongest reflected energy recorded. Mosaic noises are usually at the lowest reflected strengths in the time slice images. If the entire data were used in determining the filter, then areas that had a strong reflection would overweight the filter and when the mean were subtracted from either the line or the grid calculation, the overall average reflection or the median reflection would be much weaker than the 0 mean. A median calculation in addition to the mean might also work, and this may be examined in the future.

In all data processing steps, it is always useful to compute the raw time slices without any processing. Raw time slice XYZ datasets are compiled at the XYZ button in the Slice/Resample Menu.

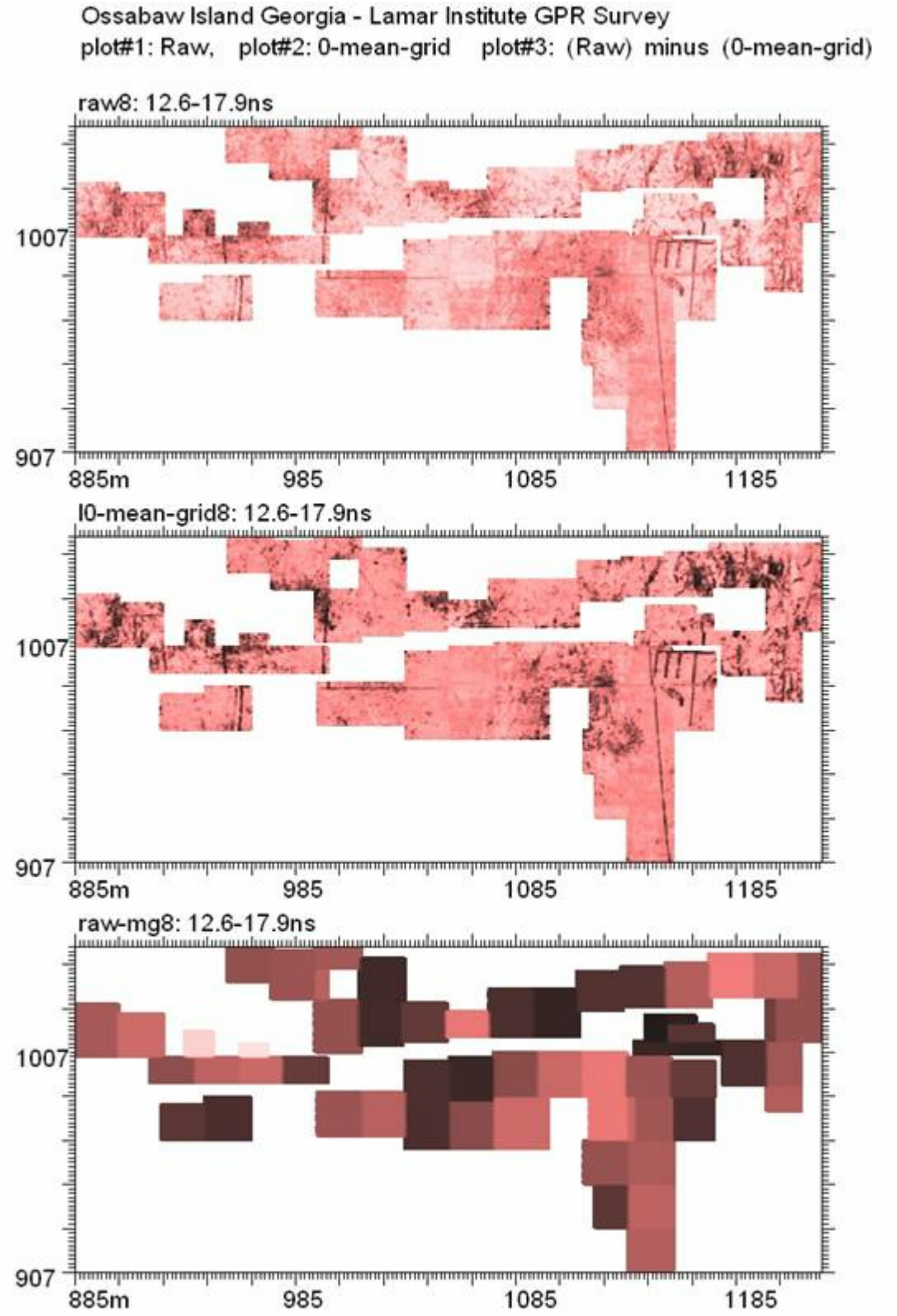


Figure 4. Raw, 0-mean-grid, and the difference time slices for Ossabaw Island Georgia.

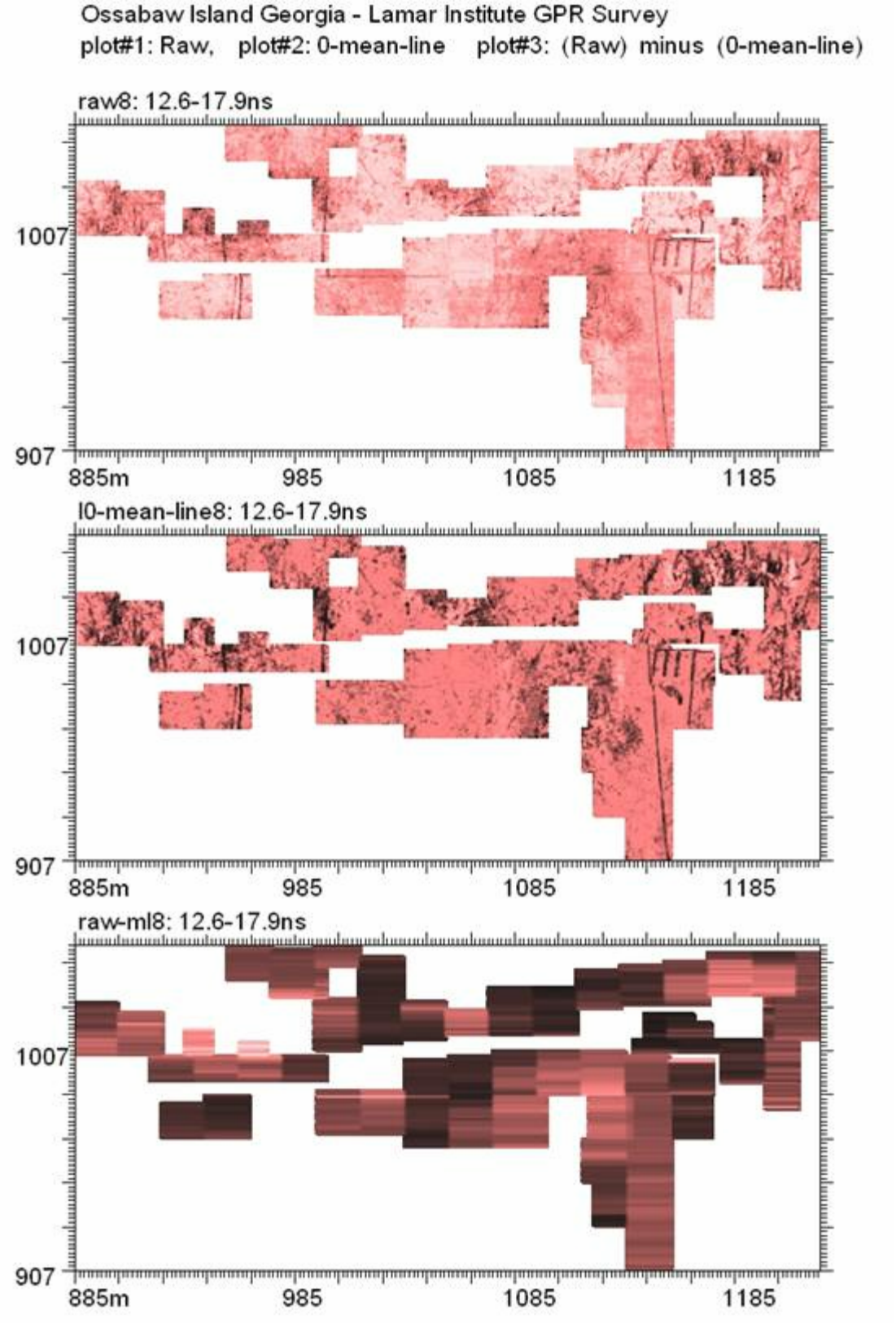


Figure 5. Raw, 0-mean-line, and the difference time slice for Ossabaw Island Georgia.

APPENDIX 4. SOILS ANALYSIS

Preliminary Report on Soils and Geomorphology of the Tabby Site (9Ch1062), Ossabaw Island

Donald M. Thieme, Ph.D
Science Department
Georgia Perimeter College
Lawrenceville, GA 30032

On March 15-16, 2005 I [Thieme] visited Ossabaw Island to examine excavations in progress by Dan Elliott of the LAMAR Institute. The primary objective of the LAMAR Institute excavations was to document the archaeological context of standing tabby structures that are thought to represent slave cabins of a plantation on the north end of the island. Soils and geomorphology were not initially thought to have much relevance to the project, but the LAMAR Institute excavations do provide a unique window on the archaeological stratigraphy of this portion of the Georgia Coast. Beyond an initial survey by Pearson (1977, 1978, 1979, 1980), there here has been very little archaeological or geological fieldwork on the island. I have therefore taken this opportunity to review the previous literature and provide some background on the most recent Quaternary history of this part of the Georgia Coast. Results of my field examinations and limited laboratory analyses are then reported and interpreted against the background of the regional knowledge base in soil science and Quaternary stratigraphy.

Geology of the Georgia Coast and Coastal Plain

The shoreline of the Atlantic Ocean in the state of Georgia extends for a mere 175 km between the mouth of the St. Mary's River to the south and the mouth of the Savannah River to the north. Nonetheless, the barrier islands and backbarrier estuaries

of the Georgia Coast have long been the subject of intensive research in coastal geomorphology (Deery and Howard, 1977; Farrell and others, 1993; Hoyt, 1967; Hoyt and Hails, 1967 Hoyt and others, 1966; Oertel, 1977; Oertel and Chamberlain, 1975) as well as ecology (Johnson and others, 1974; Odum, 1961, 1971; Smalley, 1960; Teal, 1958, 1962). Research on the active coast has also been pursued by geologists with a view to understanding the variety of depositional environments represented by the Georgia Coastal Plain, which extends over 300 km landward to the Fall Line.

At the Fall Line, the Cretaceous sea level highstand is represented by a regional unconformity where sedimentary strata overlie igneous and metamorphic bedrock of the Georgia Piedmont. Global climate and sea level changes during the Cenozoic Era also control many other regional unconformities that bound the sedimentary strata of the Georgia Coastal Plain. The Coastal Plain strata dip toward the sea, reaching a maximum thickness of over 1800 m at Savannah and tapering to a thin edge at the Fall Line. Kaolin formed by Tertiary weathering of Cretaceous sediments is a particularly important economic resource obtained from the Upper Coastal Plain. Carbonate strata deposited primarily in the Eocene and Oligocene epochs are mined for cement and function as the primary aquifer both in south Georgia and in Florida. Progressively more recent strata occur at the surface toward the coast, and relict coastal features, such as barrier islands and lagoons, are still evident in many places (see **Figure 1**).

Past shorelines were first recognized in the Georgia Coastal Plain during pioneering geological investigations by Lyell (1845). The sediments exposed at several paleoshoreline scarps were then assigned formation names and correlated to riverbank exposures by Veatch and Stephenson (1911). The same topographic features were subsequently renamed by C. W. Cooke (1931, 1936, 1943), who traced seven terraces across nearly the entire Atlantic seaboard. Cooke (1932) further hypothesized that the terraces resulted from a regular cycle of expanding and contracting glacial ice sheets, a cycle now known to have indeed occurred with a period of approximately 100,000 years

as a result of changes in Earth-Sun geometry during the Quaternary period (Bradley, 1999, p. 35-46; Hays and others, 1976; Imbrie and Imbrie, 1980).

Four of the terraces traced by Cooke (Wicomico, Penholoway, Talbot, and Pamlico) are shown in plan view on **Figure 1**. The remaining three of Cooke's seven terraces (Sunderland, Coharie, and Brandywine) lie landward of the Wicomico shoreline at elevations ranging from 50-100 m AMSL (see **Table 1**). Huddlestun (1988) renamed all of these higher terraces, using local place names from Georgia and subdividing Cooke's "Sunderland" terrace into three separate discontinuous remnants (Argyle, Waycross, and Okefenokee). The terms Hazlehurst and Okefenokee in fact predate Cooke (1932) and were abandoned by Cooke in order to facilitate correlation throughout the Atlantic Coastal Plain. Huddlestun contends that the marine terrace scarps are erosional features underlain by deposits that must be examined independently and described as lithostratigraphic units. As reported in **Table 1**, however, there is a consistent pattern of increasing age from one shoreline to the next according to absolute age estimates obtained using multiple techniques (Cronin, 1980; Cronin and others, 1981; Hoyt and Hails, 1974; McCartan and others, 1982).

Table 1: Relict Shorelines of the Georgia Coastal Plain

Shoreline or Terrace Name	**Elev MSL**	**Estimated Age**
Hazlehurst (Brandywine)	82 m	early Pleistocene?
Pearson (Coharie)	66 m	early Pleistocene?
Argyle, Waycross, Okefenokee (Sunderland)	52 m	early Pleistocene?

Wicomico	30 m	1.5 Ma ("Aftonian")
Penholoway	21 m	1 Ma ("Yarmouthian")
Talbot	13 m	OIS 11, 15?
Pamlico	7 m	100-500 ka ("Sangamon" = OIS 5e,7,9)
Princess Anne	4 m	40-80 ka (OIS 3,5)
Silver Bluff	1.5 m	<10 ka (Holocene)

The Princess Anne terrace was named and mapped by Hoyt and Hails (1967, 1974). A correlation to marine oxygen isotope stage 3 (OIS 3) is indicated by a few finite radiocarbon dates (Noakes and Brandau, 1974) as well as late Pleistocene faunal assemblages up to 10 km landward of the active coast (Cooke, 1943, p. 113-116; Lyell, 1845). Several previous studies in the Atlantic Coastal Plain (Finkelstein and Kearney, 1988; Sussman and Heron, 1979; Moslow, 1980) also infer a sea level highstand during the mid-Wisconsinan (OIS 3). The consensus opinion, however, is adamantly opposed to any sea level higher than present after the OIS 5e ("Sangamon") interglacial. (Bloom, 1983; Colman et al., 1988). Obviously the deposits in the vicinity of the Princess Anne shoreline need to be examined in greater detail, particularly in comparison to the records recently obtained from Gray's Reef, a submerged barrier on the continental shelf (Garrison and others, 2003; Harding and Henry, 1994). If the Princess Anne terrace

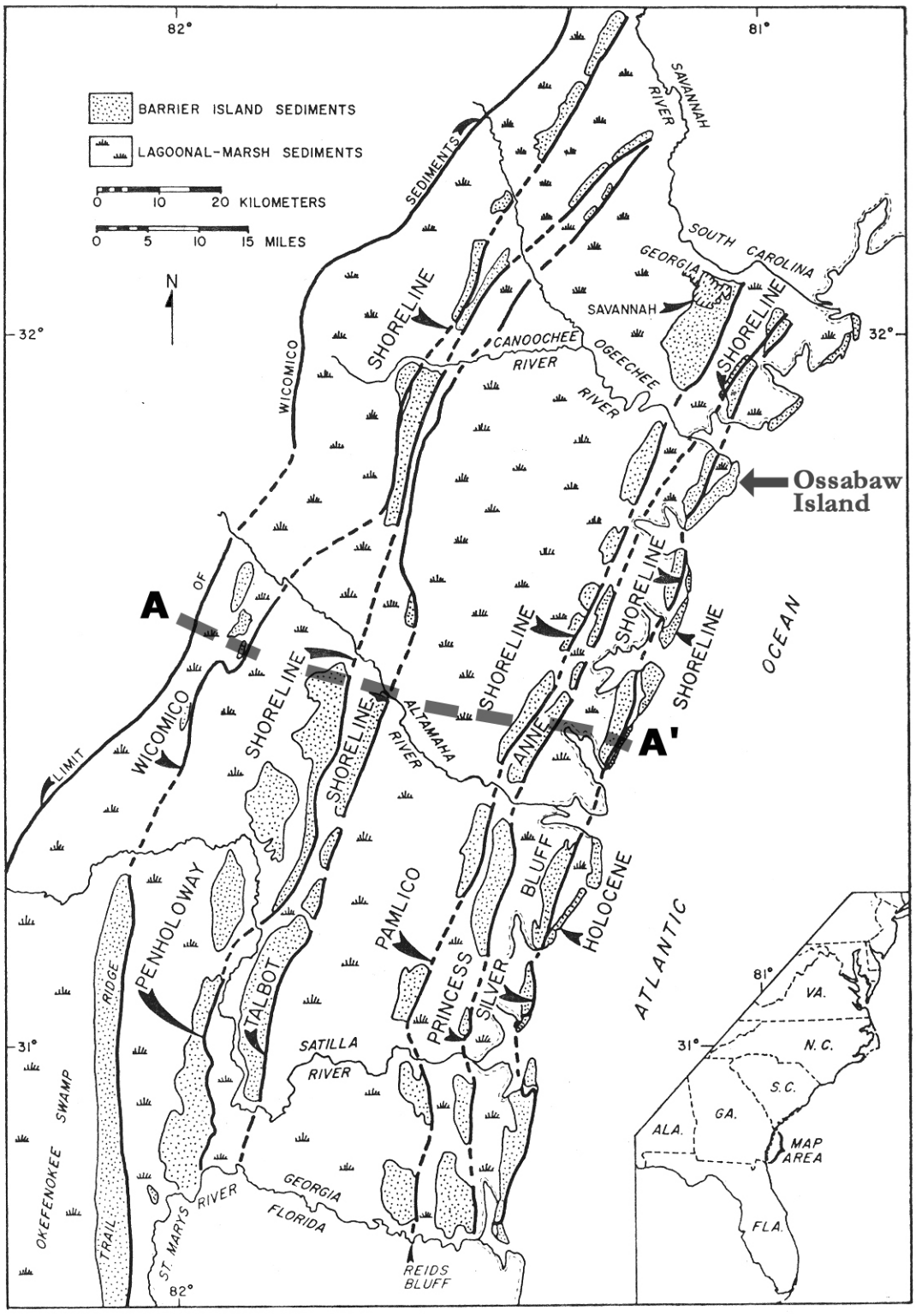

BARRIER ISLAND SEDIMENTS
LAGOONAL-MARSH SEDIMENTS
0 10 20 KILOMETERS
0 5 10 15 MILES
N
82°
81°
32°
31°
SAVANNAH RIVER
SOUTH CAROLINA
GEORGIA
SAVANNAH
SHORELINE
CANOOCHEE RIVER
OGEECHEE RIVER
WICOMICO
Ossabaw Island
A
A'
OCEAN
ATLANTIC
ALTAMAHA RIVER
ANNE
BLUFF
HOLOCENE
PAMLICO
PRINCESS
SILVER
PENHOLOWAY
TALBOT
SATILLA RIVER
RIDGE
OKEFENOKEE SWAMP
TRAIL
ST. MARYS RIVER
GEORGIA
FLORIDA
REIDS BLUFF
LIMIT
VA.
N.C.
S.C.
GA.
ALA.
FLA.
MAP AREA

Figure 1: Location of Ossabaw Island showing the Silver Bluff shoreline, five earlier Quaternary shorelines, and line A-A' used for **Figure 2** (after Hails and Hoyt, 1969)

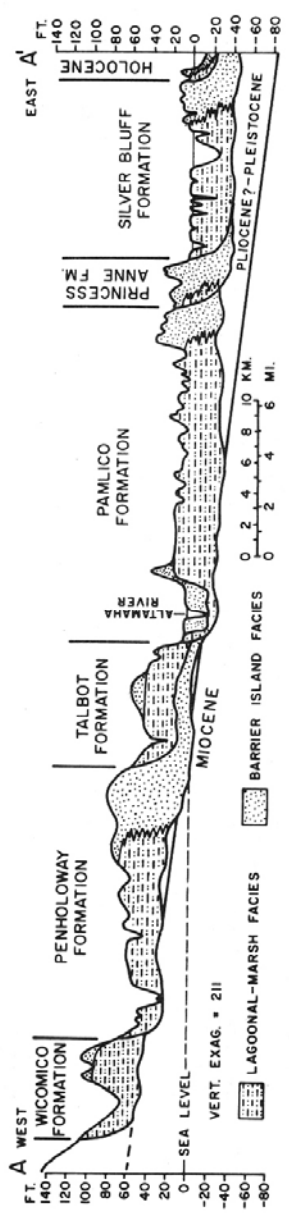


Figure 2: Cross-Section of the lower portion of the Georgia Coastal Plain running east from near Jessup to Sapelo Island (after Hails and Hoyt, 1969)

defines the OIS 5e shoreline, then this would make it the second "Sangamon" position given that the Pamlico terrace also dates to that interglacial (Cronin and others, 1981; McCartan and others, 1982).

The Silver Bluff terrace is named for a riverbank exposure approximately four kilometers downstream of Augusta on the South Carolina side of the Savannah River. Deposits of the late Pleistocene Satilla formation were first described at this location by Veatch and Stephenson (1911, p. 442). The "Satilla" designation was subsequently abandoned by Cooke (1943) and MacNeil (1950), who instead referred to all of the higher remnants on the present barrier islands as a Silver Bluff terrace. Cooke and MacNeil thus correlated coastal deposits underlying a 3-4 m high terrace on the present barrier islands with late Pleistocene fluvial deposits on the Savannah River at Silver Bluff as well as in other river valleys of the Georgia Coastal Plain. Huddlestun (1988) re-introduced the Satilla formation for both the fluvial and coastal deposits. Clearly, both the age and depositional environment of these deposits merit detailed fieldwork. Some archaeological contexts from the early Holocene or late Pleistocene may occur in such strata.

Some problems with correlating subsurface deposits on the basis of surface elevation in the Atlantic Coastal Plain may be due to tectonic tilting or warping of the Earth's crust (Markewich, 1985; Winker and Howard, 1977; Zullo and Harris, 1979). The effects of tectonic activity have long been recognized on the Cretaceous and Tertiary rocks landward of the Hazlehurst (Brandywine) shoreline in the "middle" or "upper" Coastal Plain. Most studies of the shorelines in the lower Coastal Plain, on the other hand, have mirrored Cooke's emphasis on sea level changes driven by glaciation. While there are few direct indications of compressional stress or catastrophic failure in the sediments themselves, the terrace remnants are offset in some locations or stand at slightly higher elevations in adjacent states compared to those in Georgia.

One of the best indications for late Pleistocene tectonism in Georgia is the discontinuity which offsets the positions of the Talbot and Penholoway shorelines along the present course of the Altamaha River (Georgia Geological Survey, 1976; Winker and Howard, 1977). Approximately ten meters of the relief here are probably tectonic rather than eustatic, and the magnitude of the uplift appears to increase both toward the northeast in South Carolina and toward the south in Florida. Geologists who remain skeptical of the evidence for tectonic activity in Quaternary deposits note that the Coastal Plain is a passive margin setting with little recorded seismic activity. However, a major earthquake did occur in 1886, having its epicenter at Charleston, S.C. (Weems and Obermeier, 1989). The Charleston earthquake had an estimated magnitude of 10 on the Richter scale, caused 150 human deaths, and damaged buildings in the Savannah area.

At each of the past shorelines in the Georgia Coastal Plain, there are at least two distinct facies represented in the Quaternary deposits. Backbarrier lagoon muds and peats are typically found landward of the shoreface sands, but in many cases the relict barriers have migrated in a landward direction, "rolling over" the lagoonal-marsh facies. As can be seen from **Figure 2**, wider and flatter terraces such as the Penholoway tend to preserve the facies relationships the best. The abundance of lagoonal-marsh facies is related to the tidal range, and the present Georgia Coast is considered to be "mesotidal" (Hayes, 1979, 1994; Davis and Hayes, 1984). Spring tidal ranges are two to three meters, the second highest on the Atlantic seaboard, and are a dominant force driving circulation within the lagoons, salt marshes, and estuary channels.

The dominant influence of tides on the present Georgia Coast explains the relatively short length of its barrier islands, which are separated by large estuaries and backed by expansive salt marshes. Georgia's barrier islands average about eight kilometers in length, which contrasts markedly with those further to the north and south which attain lengths of as much as 38 km (Brown, 1977; Hayes, 1994). Large tidal prisms favor relatively stable inlets between barriers, with ebb-dominated flow fields

and well-developed ebb tidal deltas (Foyle and others, 2003; Oertel, 1977; Oertel and others, 1991). Additionally, extensive marsh development behind the islands and well-developed back-barrier drainage networks tend to enhance inlet stability.

Some processes that shape the Georgia Coast operate at time and space scales that are larger than can be observed by monitoring the present conditions on the barrier islands. One such process is the transport of sediment along shore, which occurs predominantly in a southward direction. This longshore current is driven by the highest wave-energy events, occurring on decadal to millennial time frames. Based upon present conditions, the mean wave height ranges from only 0.6 to 1.0 m (Hayes and Sexton, 1989). The dominant winds are typically produced by extratropical cyclones, while hurricane events are less significant compared to Florida and North Carolina.

Less abundant lagoonal-marsh facies deposits and extensive delta deposits at the former mouths of the Savannah and Altamaha Rivers suggest that in the early Pleistocene the Georgia Coast was a wave-dominated system similar to that of North Carolina today (Rhea, 1986). The late Pleistocene coastline is more difficult to reconstruct, given that is is represented by barriers that have fused together and are being overriden by Holocene salt marsh and fan deposits. The fused late Pleistocene ("Silver Bluff" or "Satilla") and Holocene ("Satilla") shoreline deposits on Ossabaw Island, combined with its relatively pristine and undeveloped condition, make it an important "natural laboratory" for the investigation of the Georgia Coast and its responses to Quaternary environmental change.

Ossabaw Island Deposits and Soils

Ossabaw Island is a "compound" barrier south of the mouth of the Ogeechee River (see **Figure 1**). The island has prograded nearly six kilometers seaward since sea level rose to within a few meters of its present elevation. The shoreface sands of the active or "Holocene" barrier shown on **Figure 3** were probably deposited within the past

1000 years based upon the results of recent investigations on Wassaw Island by Alexander (2005). Alexander's results using optical dating of quartz sand tend to corroborate the findings of an earlier geoarchaeological study by DePratter and Howard (1977) in which a key datum point was the Late Archaic Cane Patch shell ring just to the west or "behind" the oldest portion of Ossabaw Island.

The tabby structures of the West plantation were actually built using shell material procured from the Cane Patch shell ring. The structures. are part of the West family plantation at the north end of the oldest portion of Ossabaw Island, a "Silver Bluff" barrier that sits at approximately 1.2-1.5 m MSL (see **Figure 3**). This Silver Bluff barrier on Ossabaw Island is at approximately the same elevation as the barrier that makes up most of Skidaway Island on the opposite side of Ossabaw Sound. The soils that have formed on these older barriers have bisequal profiles with at least one spodic (Bh)

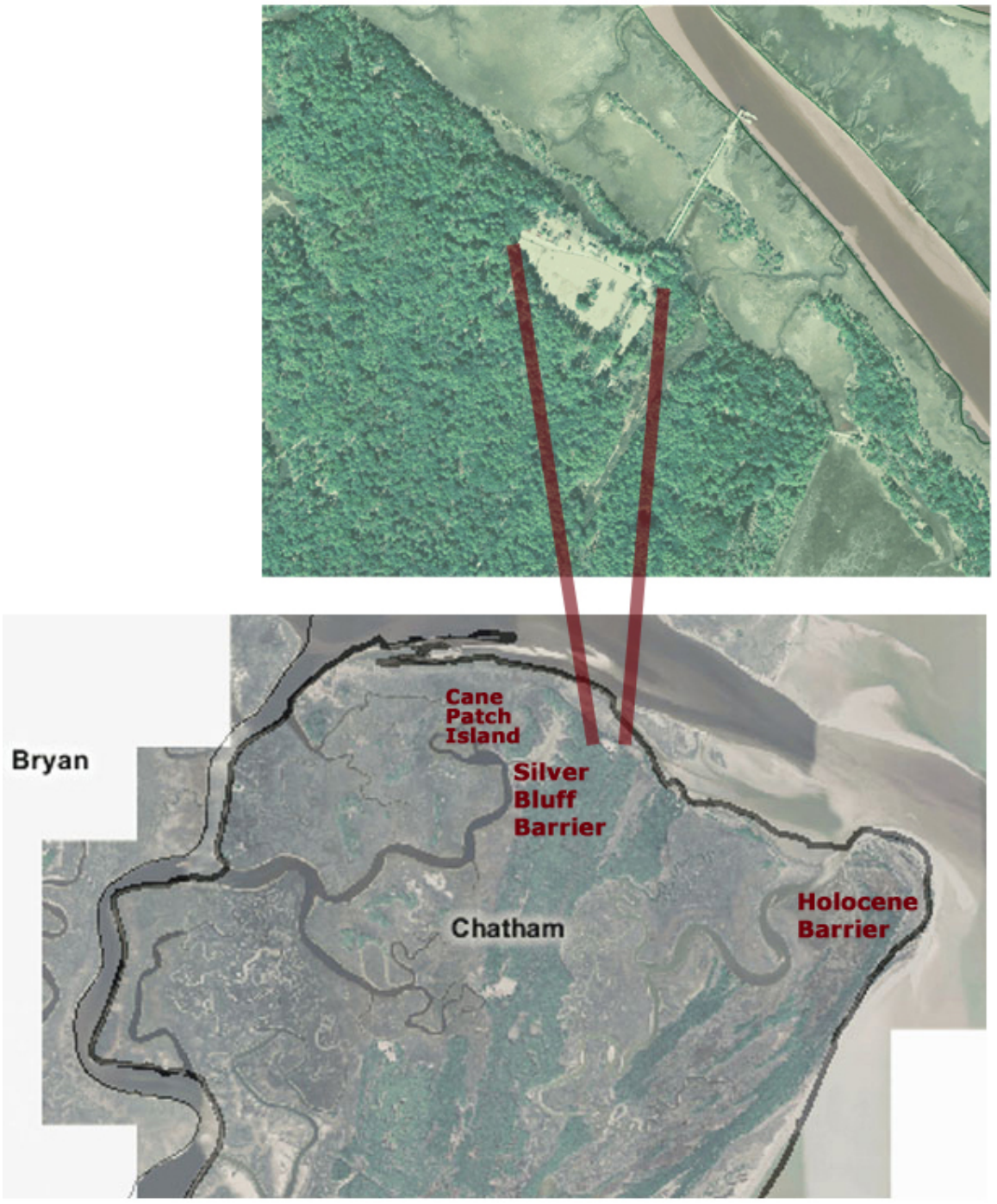


Figure 3: Location of the Tabby Structure Project Area on Ossabaw Island (rectified aerial photographs obtained from http://www.sagis.org)

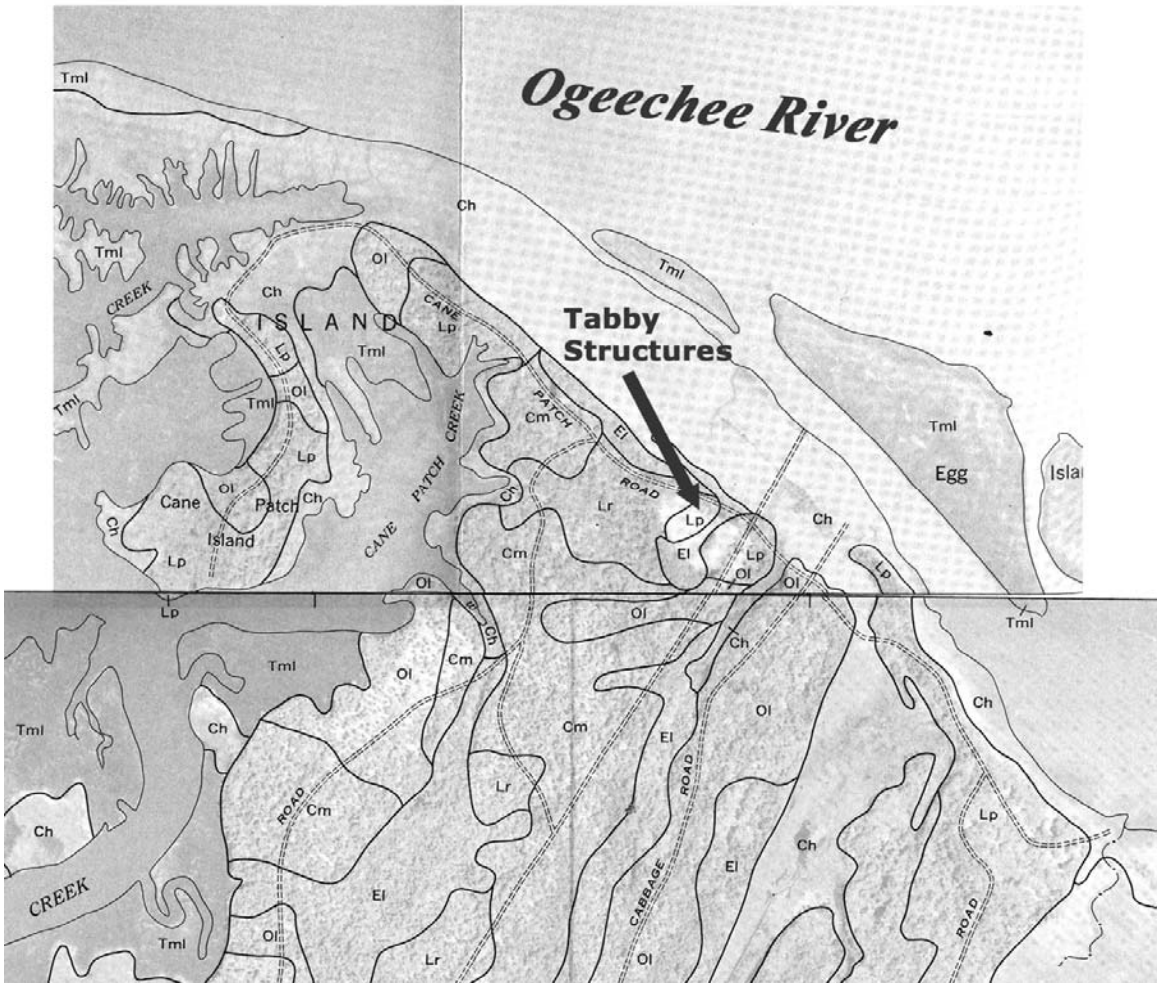


Figure 4: Soils on Ossabaw Island in the vicinity of the Tabby Structure Project Area (after Wilkes and others, 1974)

horizon. On Ossabaw Island, these soils were mapped as either Leon fine sand (Lr) or Olustee fine sand (Ol) by Wilkes and others (1974). The Leon series has a spodic (Bh) horizon in the upper 50 cm of the profile, overlying light gray (2.5Y7/2) fine sand. A buried A (2Ab) horizon occurs at a depth that may exceed the 1.5 m depth typically sampled when this soil survey was published. In the Olustee series, the buried A (2Ab) horizon occurs closer to the surface, capping a gleyed (2Bg) subsoil. Although both series are "poorly drained," they occur in this case in an upper landscape position. Profile discontinuities that represent stratigraphic contacts in an old barrier island deposit appear to be retarding water movement down profile.

In contrast to the bisequal profiles on the Silver Bluff barrier, the beach of the active barrier has a profile in which distinct soil horizons have yet to develop. Beginning approximately five kilometers east of the West plantation house, these deposits are mapped as "coastal beach" (Cub) by Wilkes and others (1974).

In the vicinity of the plantation itself, the soils are a complex mosaic that can only be explained in part by the rapid Holocene accretion seaward from the Silver Bluff barrier. Very recent deposition either by storm waves or tidal currents has added patches of unweathered sand which are mapped as either Capers (Ch), Chipley (Cm), or Lakeland (Lp) series soils. The Lakeland soils are typically found in large sheets of loose sand. Some of these are aeolian dunes, and they are always deep, well-drained deposits. The Capers and Chipley soils have some mottles at depth and therefore occur in washover fans or along channels which transported the sand to the site of deposition. Small infilled channels and marshes contain deposits of gleyed sand and silt which are mapped as Ellabelle loamy sand (El) by Wilkes and others (1974). Areas actively vegetated by *Spartina alterniflora* and other salt-tolerant grasses are mapped as tidal marsh (Tmh or Tml).

Field Observations in the Tabby Structure Project Area

Several 1 x 1 m test units were open in the immediate vicinity of the standing tabby structures during my visit on March 15, 2005. Dan Elliott and I also reopened and examined at least five 50x50 cm shovel test pits which he had laid out on a metric grid. The combined profiles provide a stratigraphic "window" into deposits spanning an area that extends from approximately 150 m west of the tabby structures eastward to the plantation house lot and northward into marshy ground that is seasonally inundated by the Ogeechee River sound. In addition, the stratigraphy beneath and within the tabby structures themselves provides some suprisingly detailed evidence about the local environment of the plantation itself.

The three standing tabby structures have been shown by the present fieldwork to be remnants of a more extensive complex of slave quarters. I examined the profile of a test unit (TU-209) within a demolished tabby structure immediately across the gravel road south of the standing structure referred to as Tabby 2. I also examined the profile of a test unit (TU-206) that Dan Elliott excavated inside Tabby 2.

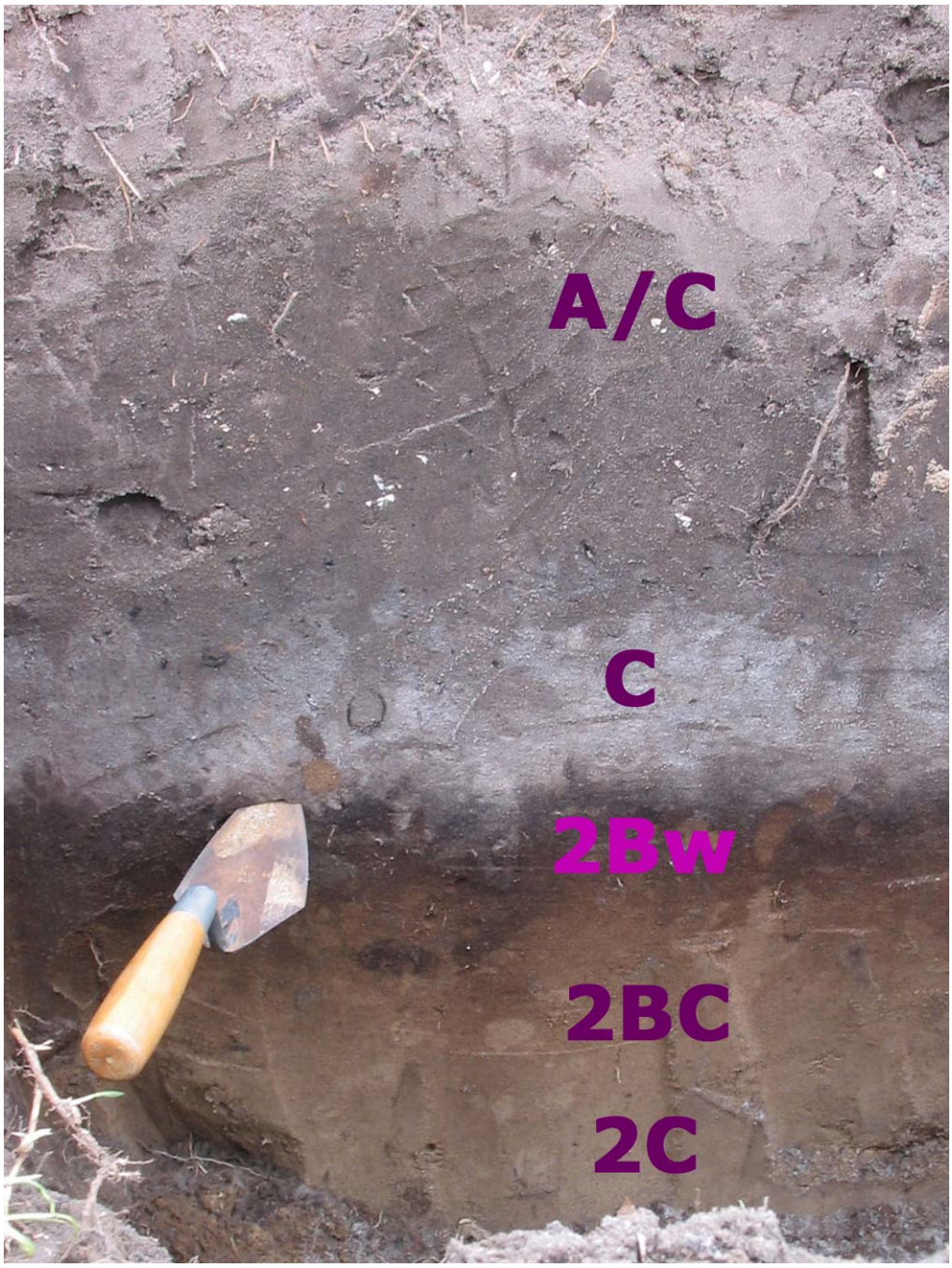
The TU-209 profile contains one of the most abrupt stratigraphic discontinuities that I have ever observed in a soil formed in sandy coastal sediments (**Figure 5**). Approximately 40 cm of brown (7.5YR4/2) sandy loam at the top of the profile (A/C horizon) appear to have accumulated in a grassy lot with frequent disturbance, possibly by vehicles, and some cultivation. I hesitate to call this a "plow zone" since it is somewhat too deep for that and there are no furrow marks to show intrusion into the underlying gray (7.5YR6/1-7/1) sand (C horizon). This A/C horizon may be a cultural midden, and it certainly does contain some fine shell, bone, and organic matter that represent food refuse. The underlying C horizon is a generally undisturbed, thin (~5 cm) sand bed which may contain some ash and is better sorted than the overlying and underlying soil.

Whatever event resulted in the deposition of the gray sand at the TU-209 location also truncated the underlying soil profile. The dark brown (7.5YR3/4-4/4) color of the 2Bw horizon may be the result of a fire, as initially hypothesized by Dan Elliott and myself in the field. Alternatively, this could simply be an incipient development of spodic characteristics which are found in both of the soils (Leon, Olustee) that formed on the Silver Bluff barrier. The grain size and sorting characteristics of both the upper and lower portion of the TU-209 profile will be discussed further below with reference to my laboratory results.

The TU-206 profile also exhibited a profile discontinuity **(Figure 6**) but differed from the TU-209 profile in having a thick (~30 cm) accumulation of tabby wall fall at the top. The gray sandy C horizon is less distinct from the underlying 2Bw, both in texture and color, than in the TU-209 profile. This is probably due to some mixing with the overlying shell residue and perhaps also to chemical changes resulting from the dissolution of the shell.

The profile that I observed at shovel test ST-145 is perhaps the most similar to the Leon series soil mapped at this location by Wilkes and others (1974). ST-145 is approximately 150 m west of Tabby 2 at 841.6 E on the project grid. Approximately 40 cm of gray (10YR4/1-5/1) loose fine sand and silt occur at the top, becoming somewhat lighter in color toward the bottom due to leaching of iron and organic matter by acid soil solutions. Neither the field observations nor the sedimentological results in this case indicate a discrete depositional event at the ST-145 location like the possible ash deposition in the vicinity of the tabby structures.

Figure 5: South Wall of Test Unit TU-209 showing abrupt discontinuity between dark



brown and gray sand

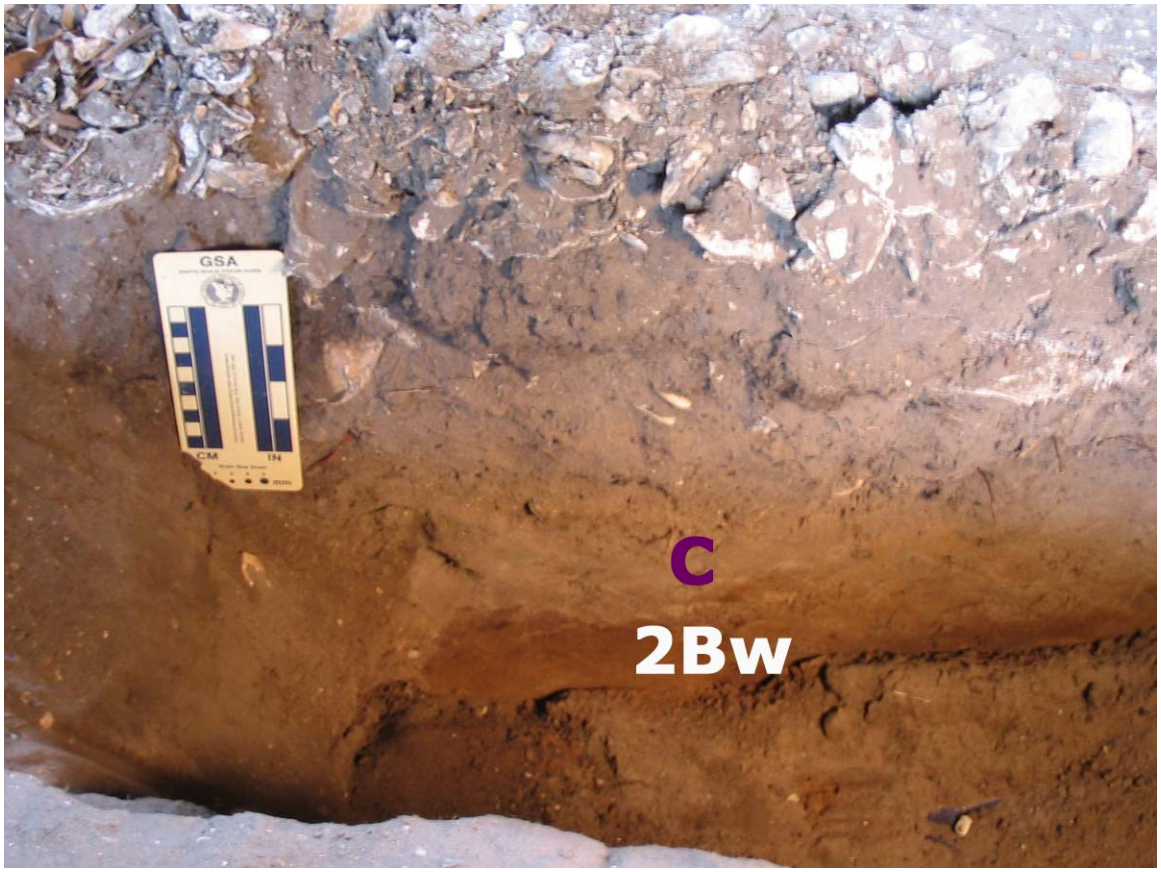


Figure 6: South Wall of Test Unit TU-206 showing tabby wall fall and gray sandy C horizon overlying dark brown 2Bw horizon

The dark brown (10YR4/3-5/3) 2AB horizon at ST-145 resembles both the description of the Leon series subsoil (Wilkes and others, 1974, p. 24-25) and the truncated 2Bw horizon found beneath the gray sand in the TU-209 profile. Moderate medium subangular blocky peds suggest a better developed subsoil at the ST-145 location, consistent with its landscape position toward the center of the Silver Bluff barrier remnant. At a depth of 70 cm below surface, the underlying C horizon exhibited little or no soil structure and consisted of light yellowish brown (2.5Y6/4) to olive yellow (2.5Y6/6) moderately well-sorted fine to medium sand.

East of the tabby structures, at 1039 E and 1162 E on the project grid, shovel test profiles were observed in which weak to moderate subangular blocky peds occur in a Bw horizon approximately 30 cm below surface.. This is not consistent with the Lakeland series mapped at these locations by Wilkes et al. (1974). I suspect that the Lakeland identification may be based upon a veneer of aeolian sand in the area disturbed by the plantation itself. Between the two shovel tests that I described in this area, there is a north-south trending swale or ditch feature which Dan identified both in his shovel tests and in ground-penetrating radar. This shows up in the soil survey as an area of Ellabelle (El) soil (see **Figure 4**).

North of the tabby structures, along the treeline and beyond it in the pastures and marshes that flank the Ogeechee River, there are a series of ridges of high ground aligned parallel to shore (see **Figure 3**). Dan thought that these might be aeolian dunes, and I described and sampled several deep shovel tests excavated into these features. The grain size seemed somewhat too large for an aeolian deposit to me, and the deposits appear to coarsen upward. After talking with Clark Alexander about these features, we have concluded that they are probably deposited by storm waves and flood tide currents which transport sand stored at the river mouth onto the north side of active barriers. This would imply that they are contemporaneous with or only slightly

younger than the Silver Bluff barrier. Some of these ridges have clearly been modified to build roads and improve drainage in the marshes.

Sedimentology of Samples from the Tabby Structure Project

I collected a total of thirteen (13) bulk sediment samples during my brief visit to the Lamar Institute tabby structure project (**Table 2**). Seven of these samples are from the south wall profile of test unit TU-209, and three are samples from ST-145. One phi (Φ) sieve analyses of the samples from these two profiles are reported and discussed below. The remaining three samples are from locations north of the tabby structures. These samples have also been sieved, and some of my general inferences about depositional environments on Ossabaw Island are tentatively supported by these results as well.

In addition to the bulk sediment samples, I collected two *in situ* soil blocks for micromorphological analysis, one each from the profiles at TU-209 and TU-206. The objective of the micromorphological analysis is to define the nature of the stratigraphic discontinuity at the top of the 2Bw horizon in both test unit profiles. That analysis is still in progress, but preliminary examination of thin section slides prepared from the soil blocks does show a difference in the grain coatings and intergranular materials between the bottom and top of each slide. Nearly all of the grains in both thin-sections appear to be quartz, however, so there is no direct evidence of ash deposition in the thin sections.

The procedures followed in the sedimentological analyses are those in the online laboratory written by John Anderson of Georgia Perimeter College (Anderson, 2004). The results for the samples from TU-209 and ST-145 both do clearly show two distinct deposits separated by a significant event. The similarity noted in the field between the 2AB horizon at ST-145 and the 2Bw horizon at TU-209 is also evident in the laboratory results. Both horizons have a median grain size of fine sand (0.19 mm = 2.5Φ), are well sorted (0.4-0.5 Φ), nearly symmetrical (0-0.1), and leptokurtic (1.1-1.5). The deposits above the stratigraphic discontinuity differ in that the TU-209 upper deposit is thicker

Table 2: Sediment Samples from the Lamar Institute

Tabby Project on Ossabaw Island

UNIT	HORIZ	DEPTH	COLOR	TEXTURE	STRUCTURE, PORES,...
TU-209	A/C1	15 cm	7.5YR4/2	fine salo	granular, many fine pores
TU-209	A/C2	30 cm	7.5YR4/2	fine salo	fine sabl parting to granular
TU-209	Ash?	45 cm	7.5YR6/1-7/1	loamy fine sa	weak fine granular
TU-209	2Bw	55 cm	7.5YR3/4-4/4	fine salo	weak fine granular
TU-209	2BC	70 cm	7.5YR6/1-6/2	losa	weak med sabl
TU-209	2C1	80 cm	7.5YR6/2	fine sa	weak med sabl
TU-209	2C2	90 cm	7.5YR6/2-6/3	fine sa	massive
ST-145	AB	35 cm	10YR4/1-5/1	fine to med sa	weak fine granular
ST-145	2AB	40 cm	10YR4/3-5/3	lo med sa	moderate med sabl
ST-145	2C	70 cm	2.5Y6/4-6/6	lo fi to med sa	weak fine sabl
ST-136	C	60 cm	10YR6/6	lo med sa	mod med sabl
N1020/ E1039.92	C	60 cm	2.5Y6/1-7/1	fine to med sa	weak med sabl
N 1100/ E 1105	C	>1 m bs	2.5Y7/1-8/1	fine sa	weak fine sabl

and more varied. This is probably the result of refuse disposal and structure demolition in the immediate vicinity of these tabby structures during the 19th and 20th centuries.

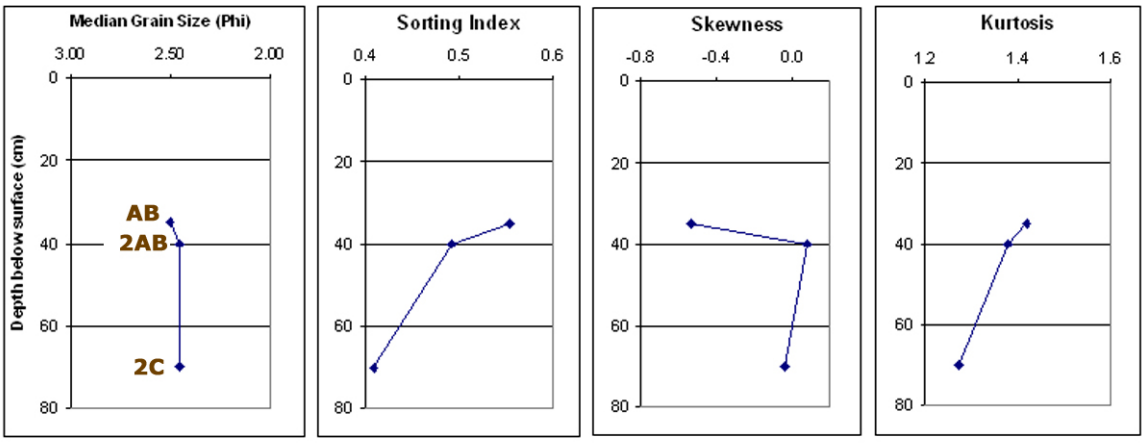
The parent material of the lower deposit appears to differ between the two profiles. At ST-145, the 2C horizon is well-sorted fine sand with a nearly symmetrical and leptokurtic distribution. It thus differs only in color and ped structure from the overlying 2AB subsoil horizon. The 2AB is slightly less well sorted and slightly more leptokurtic, as seen in **Figure 7**. The TU-209 profile, on the other hand, coarsens smoothly upward from the 2C2 to the 2Bw horizon (**Figure 8**). This is typical of an overwash fan deposit behind a barrier (Deery and Howard, 1977). Two other possible depositional environments would be a delta or an alluvial fan (Reineck and Singh, 1973), neither of which makes much sense in this portion of Ossabaw Island. An aeolian dune would be a possibility, based upon both grain size and sorting.

Aeolian deposition cannot be ruled out for the samples collected from ST-136, N 1020/E 1105, and N 1100/E 1105. The median grain size is in the fine sand range between 0.18-0.20 mm (2.3-2.5 Φ), and all three samples are moderately well sorted. Deposition by storm waves or flood tidal currents is considered to be more likely, however, based upon studies of similar topographic features on the north end of Wassaw Island and other Holocene barriers in the southeast (Hayes, 1979, 1994; Oertel, 1977; Oertel and Chamberlain, 1975).

Additional analyses of the samples collected from the Tabby Structure Project would be likely to yield additional information relevant to both the interpretation of the tabby structures themselves and the effects of historical activities on the local environment. The silt and clay fractions could be separated by hydrometer, for example, although these are very minor constituents of all of the samples analyzed. Soil chemistry would be even more informative, particularly the abundance of elements such as calcium,

potassium, and phosphorus which are know to be added to soil by specific cultural activities.

Figure 7: Sedimentology of ST-145 soil profile, Tabby Structure Project, Ossabaw Island



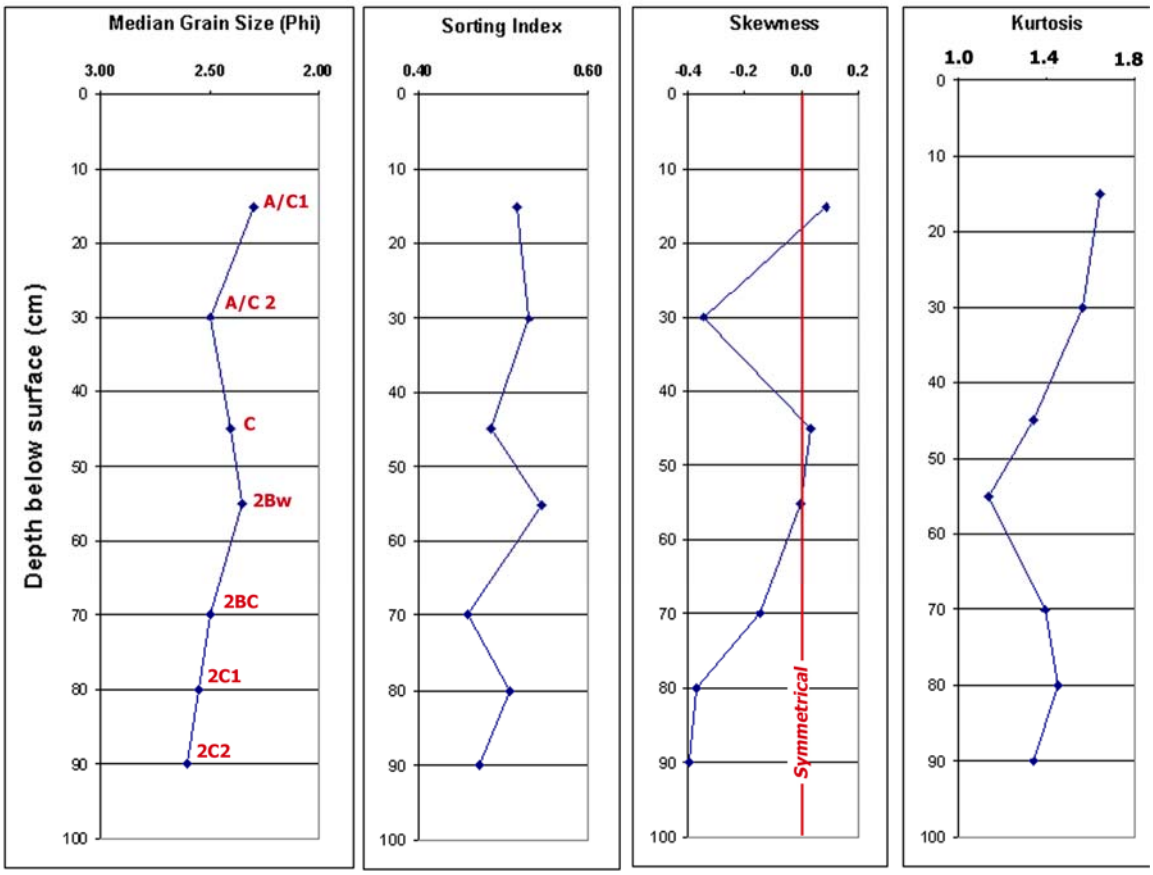


Figure 8: Sedimentology of TU-109 soil profile, Tabby Structure Project, Ossabaw Island

In addition to housing some significant historic and prehistoric cultural materials, the Ossabaw Island barrier, back-barrier, and shoreface deposits have the potential to yield quite significant information about the changing Georgia Coast. Such potential is considerably enhanced in light of the successful application of luminescence methods by Clark Alexander to similar deposits at the north end of Wassaw Island. Based upon the present results and the estimated age of the Cane Patch shell ring, the Silver Bluff barrier is probably mid- to late-Holocene in age,. This would imply that it was deposited as sea level stabilized following the rapid transgression that began 18,000 years ago when the Wisconsin glacier melted. This hypothesis could be subjected to a more rigorous test, however, through a combined geological and archaeological

investigation of the Silver Bluff barrier and the deposits which have accreted in a seaward direction to create the present shoreline.

References Cited

Alexander, C. R., 2005, Personal communication regarding investigations on Wassaw Island. Skidaway Institute of Oceanography, Savannah.

Alexander, C. R., and Robinson, M., 2004, A semi-annotated bibliography on barrier island studies applicable to Georgia back-barrier islands. Manuscript on file, Skidaway Institute of Oceanography, Savannah.

Anderson, J. R., 2004, Sand Sieve Analysis. Laboratory 7 in online Historical Geology Laboratory Manual at Georgia Perimeter College: http://www.gpc.edu/~pgore/geology/historical_lab/contents.php

Bloom, A. L., 1983, Sea Level and Coastal Morphology of the United States through the Late Wisconsin Glacial Maximum. In Late Quaternary Environments of the United States, Volume 1 - the Pleistocene, edited by S. C. Porter, p. 215-229. University of Minnesota Press, Minneapolis.

Brown, P.J., 1977. Variations in South Carolina coastal morphology. Southeastern Geology, v. 18, p. 259-264.

Bradley, R. S., 1999, Paleoclimatology - Reconstructing Climates of the Quaternary. Academic Press, New York.

Colman, S. M., Mixon, R. B., Rubin, M., Bloom, A. L., Johnson, G. H., Toscano, M. A., Finkelstein, K., and Kearney, M. S., 1989, Comments and Reply on "Late Pleistocene barrier-island sequence along the southern Delmarva Peninsula - Implications for middle Wisconsin sea levels." Geology, v. 17, no. 1, p. 84-88.

Cooke, C. W., 1931, Seven coastal terraces in the southeastern states. Journal of the Washington Academy of Science, v. 21, p. 503-513.

Cooke, C. W., 1932, Tentative correlation of American glacial chronology with the marine time scale. Journal of the Washington Academy of Science, v. 22, p. 310-313.

Cooke, C. W., 1936, Geology of the Coastal Plain of South Carolina. Bulletin 867, U. S. Geological Survey, Washington, D.C.

Cooke, C. W., 1943, Geology of the Coastal Plain of Georgia. Bulletin 941, U. S. Geological Survey, Washington, D.C.

Cronin, T. M., 1980, Biostratigraphic Correlation of the Pleistocene Marine Deposits and Sea Levels - Atlantic Coastal Plain of the Southeastern United States. Quaternary Research, v. 13, p. 213-229.

Cronin, T. M., Szabo, B. J., Ager, T. A., Hazel, J. E., and Owen, J. P., 1981, Quaternary Climates and Sea Levels of the Atlantic Coastal Plain. Science, v. 211, p. 233-240.

Davis, R.A. and Hayes, M.O., 1984. What is a wave-dominated coast? Marine Geology, v. 60, p. 313-329.

Deery, J. R., and Howard, J. D., 1977, Origin and Character of Washover Fans on the Georgia Coast, U.S.A.Transactions, Gulf Coast Association of Geological Societies, v. 27, p. 259-271.

DePratter, C. B., and Howard, J. D., 1977, History of Shoreline Changes determined by archaeological dating, Georgia Coast, USA. Transactions, Gulf Coast Association of Geological Societies, v. 27, p 252-258.

Farrell, K. M., Henry, V. J., and Cofer-Shabica, S. V., 1993, Geeomorphology, facies sequences, and processes in back-barrier salt marshes, Cumberland Island, Georgia. In Geomorphology and facies relationships of Quaternary barrier island complexes near St. Mary's, Georgia, edited by K. M. Farrell, C. W. Hoffman, and V. J. Henry, p. 42-63. Georgia Geological Society, Atlanta.

Finkelstein, K., and Kearney, M. S., 1988, Late Pleistocene barrier-island sequence along the southern Delmarva Peninsula - Implications for middle Wisconsin sea levels. Geology, v. 16, no. 1, p. 41-45.

Foyle, A. M. Alexander, C. R., and Henry, V. J., 2003, Georgia-South Carolina Erosion Study - Southern Study Region. Prepared for South Carolina Sea Grant, Charleston.

Garrison, E. G., Weaver, W., and Mitchell, M., 2003, Geoarchaeology and Paleontology of Gray's Reef National Marine Sanctuary. GSA Abstracts, v. 35, no. 6, p. 100.

Georgia Geological Survey, 1976, Geologic Map of Georgia. Geology and Water Resources Division, Department of Natural Resources, Atlanta.

Hails, J. R., and Hoyt, J. H., 1969, An appraisal of the evolution of the lower Atlantic Coastal Plain of Georgia, U.S.A. Transactions, Institute of British Geographers, v. 46, p. 53-68.

Harding, J.L. and V.J. Henry Jr. 1994. Geological history of Gray's Reef National Marine Sanctuary. Final Report to U.S. Department of Commerce, NOAA.

Hayes, M. O., 1979, Barrier island morphology as a function of tidal and wave regime. In Barrier Islands from the Gulf of St. Lawrence to the Gulf of Mexico, edited by S.
Leatherman, p. 1-27. Academic Press, New York.

Hayes, M.O., 1994. The Georgia Bight barrier system. In Geology of Holocene Barrier Island Systems, edited by R.A. Davis, Jr., p. 233-304. Springer-Verlag, Berlin.

Hayes, M.O. and Sexton, W.J., 1983. Prognosis of future shoreline changes on Botany Bay Island, South Carolina. Report to Cubit Engineering, Ltd, Columbia, South Carolina.

Hays, J. D., Imbrie, J., and Shackleton, N. J., 1976, Variations in the earth's orbit - pacemaker of the ice ages. Science, v. 194, p. 1121-1132.

Henry, V.J., Giles, R. T. and J.R. Woolsey. 1973. Geology of the Chatham County
area, Georgia. In The Neogene of the Georgia Coast, edited by R. W. Frey, p. 67-80. Georgia Geological Society, Athens.

Hoyt, J. H., 1967, Barrier-island formation. Geological Society of America Bulletin, v. 78, p. 1125-1136.

Hoyt, J. H., and Hails, J. R., 1967, Pleistocene shoreline sediments in Coastal Georgia - deposition and modification. Science, v. 155, no. 3769, p. 1541-1543.

Hoyt, J. H., and Hails, J. R., 1974, Pleistocene Stratigraphy of southeastern Georgia. In Post-Miocene Stratigraphy - Central and Southern Atlantic Coastal Plain, edited by R. Q. Oaks and J. R. DuBar, p. 191-205. Utah State University Press, Logan.

Hoyt, J.H., R.J. Weimer and V.J. Henry Jr. 1966. Late Pleistocene and Recent
Sedimentation, Central Georgia Coast, U.S.A. In Pleistocene and Holocene

Sediments, Sapelo Island, Georgia and Vicinity, edited by J. H. Hoyt, V. J. Henry, Jr., and J. D. Howard, p. 6-27. Field Trip No. 1, Southeastern Section, Geological Society of America.

Huddlestun, P. F., 1988, A Revision of the Lithostratigrahic Units of the Coastal Plain of Georgia - The Miocene through Holocene. Geology and Water Resources Division, Department of Natural Resources, Atlanta.

Imbrie, J., and Imbrie, J. Z., 1980, Modeling the climatic response to orbital variations. Science, v. 207, p. 943-953.

Johnson, A. S., Hillestad, H. O., Shanholtzer, S. F., and Shanholtzer, G. F., 1974, Cumberland Island - An Ecological Survey of the Coastal Region of Georgia. Scientific Monograph No. 3, National Park Service, Washington, D.C.

Lyell, C., 1845, Travels in North America, Volume 1. Wiley and Putnam, New York.

McCartan, L., Owens, J. P., Blackwelder, B. W., Szabo, B. J., Belknap, F. G., Kriausakul, N., Mitterer, R. M., and Wehmiller, J. F., 1982, Comparison of Amino Acid Racemization, Geochronometry with Lithostratigraphy, Biostratigraphy, Uranium-Series Coral Dating, and Magnetostratigraphy in the Atlantic Coastal Plain of the Southeastern United States. Quaternary Research, v. 18, p. 337-359.

MacNeil, F. S., 1950, Pleistocene shore lines in Florida and Georgia. Professional Paper 221-F, U. S. Geological Survey, Washington, D.C.

Markewich, H. W., 1985, Geomorphic evidence for Pliocene-Pleistocene uplift in the area of the Cape Fear Arch, North Carolina. In Tectonic Geomorphology, edited by M.Morisawa and J. T. Hack, p. 279-297. Allen and Unwin, Boston

Moslow, T. F., 1980, Stratigraphy of a mesotidal barrier island. Ph.D dissertation, University of South Carolina, Columbia.

Noakes, J. E., and Brandau, B. L., 1974, University of Georgia radiocarbon dates III. Radiocarbon, v. 16, p. 131-141.

Odum, E. P., 1961, The role of tidal marshes in estuarine production. The Conservationist, v. 15, no. 6, p. 12-15.

Odum, E. P., 1971, Fundamentals of Ecology. W. B. Saunders, Philadelphia.

Oertel, G. F., 1977, Geomorphic cycles in the ebb deltas and related patterns of shore erosion and accretion. Journal of Sedimentary Petrology, v. 47, no. 3, p. 1121-1131.

Oertel, G. F., and Chamberlain, C. F., 1975, Differential rates of shoreline advance and retreat at coastal barriers of Chatham and Liberty counties, Georgia. Transactions, Gulf Coast Association of Geological Societies, v. 25, p. 383-390.

Oertel, G.F., Henry, V.J., and Foyle, A.M., 1991. Implications of tide-dominated lagoonal processes on the preservation of buried channels on a sediment-starved continental shelf. In Shelf Sand and Sandstone Bodies: Geometry, Facies, and Sequence Stratigraphy. International Association of Sedimentologists Special Publication 14, pp. 379-393

Pearson, C. E., 1977, Analysis of late prehistoric settlement on Ossabaw Island, Georgia. Laboratory of Archaeology Series no. 12, University of Georgia, Athens.

Pearson, C. E., 1978, Analysis of late Mississippian settlements on Ossabaw Island, Georgia. In Mississippian Settlement Patterns, edited by B. D. Smith, p. 53-80. Academic Press, New York.

Pearson, C. E., 1979, Patterns of Mississippian Period adaptation in coastal Georgia. Ph.D dissertation, University of Georgia, Athens.

Pearson, C. E., 1980, Late Prehistoric settlement systems on Ossabaw Island, Georgia. In Excursions in Southeastern Archaeology-Geology of the Georgia Coast, edited by J. D. Howard, D. B. DePratter, and R. W. Frey, p. 179-201.

Rhea, M.W., 1986, Comparison of Quaternary shoreline systems in Georgia - Morphology, drainage, and inferred processes of formation. M.S. Thesis, University of Georgia, Athens.

Smalley, A. E., 1960, Energy flow of a salt marsh grasshopper population. Ecology , v. 41, no. 4, p. 672-677.

Sussman, K. R., and Heron, S. D., 1979, Evolution of a barrier island - Shackleford Banks, Carteret County, North Carolina. Geological Society of America Bulletin, v. 90, p. 305-315.

Teal, J. M., 1958, Distribution of fiddler crabs in Georgia salt marshes. Ecology v. 39, no. 2, p. 185-193.

Teal, J. M., 1962. Energy flow in the salt marsh ecosystem of Georgia. Ecology, v. 43, no. 4, p. 614-624.

Veatch, O., and Stephenson, L W, 1911, Preliminary Report on the Geology of the Coastal Plain of Georgia. Bulletin, 26, Georgia Geological Survey, Atlanta.

Weems, R.E., and Obermeier, S.F., 1989, The 1886 Charleston earthquake—An overview of geological studies, in Proceedings of the U.S. Nuclear Regulatory Commission— Seventeenth Water Reactor Safety Meeting.U.S. Nuclear Regulatory Commission NUREG/CP-0105, v. 2, p. 289-313.

Wilkes, R. L., Johnson, J. H., Stoner, H. T., and Bacon, D. D., 1974, Soil Survey of Bryan and Chatham Counties, Georgia. U. S. Department of Agriculture, Washington, D.C.

Winker, C. D., and Howard, J. D., 1977, Correlation of tectonically deformed shorelines on the southern Atlantic coastal plain. Geology, v. 5, p. 123-127.

Zullo, V. A., and W. B. Harris, 1979, Plio-Pleistocene crustal warping in the outer coastal plain of North Carolina. In Structural and Stratigraphic Framework for the Coastal Plain of North Carolina, edited by G. R. Baum, W. B. Harris, and V. A. Zullo, p. 31-40. Carolina Geological Society, Columbia.

NORTH END PLANTATION, OSSABAW ISLAND, GEORGIA:

PRELIMINARY ARCHAEOLOGICAL INVESTIGATIONS

LAMAR INSTITUTE PUBLICATION SERIES, REPORT NUMBER 76

THE LAMAR INSTITUTE, INC.
2005

NORTH END PLANTATION, OSSABAW ISLAND, GEORGIA:

PRELIMINARY ARCHAEOLOGICAL EXCAVATIONS

LAMAR INSTITUTE PUBLICATION SERIES, REPORT NUMBER 76

Submitted to:

Ossabaw Island Foundation
145 Bull Street
Savannah, Georgia 31401

Submitted by:

The LAMAR Institute, Inc.
P.O. Box 317
Box Springs, Georgia 31801-0317

Daniel T. Elliott, Principal Investigator

Authored by:
Daniel T. Elliott

With Contributions by Tracy M. Dean, Rita F. Elliott, Dean Goodman, and Donald Thieme

2005