NOAA Technical Memorandum

NOS SRD 26

APALACHICOLA BAY NATIONAL ESTUARINE RESEARCH RESERVE

ARCHAEOLOGICAL INVESTIGATIONS AT SIX SITES IN THE APALACHICOLA RIVER VALLEY, NORTHWEST FLORIDA

Washington, D.C.
June 1994

U.S. Department of Commerce / National Oceanic and Atmospheric Administration / Sanctuaries and Reserves Division

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National Estuarine Research Reserve System

Sanctuaries and Reserves Division

Office of Ocean and Coastal Resource Management

National Ocean Service

National Oceanic and Atmospheric Administration

U.S. Department of Commerce

NOTICE

REPORT TO
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

NOAA TECHNICAL MEMORANDUM SERIES NOS/SRD

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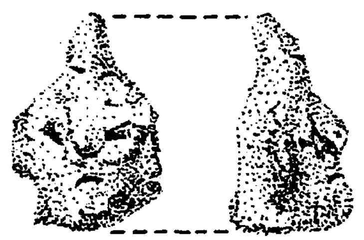

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U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
SANCTUARIES AND RESERVES DIVISION
WASHINGTON, D.C.

REPORT TO
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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NOAA TECHNICAL MEMORANDUM SERIES NOS/SRD

Archaeological Investigations at Six Sites in the Apalachicola River Valley Northwest Florida

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This work is the result of research sponsored by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Office of Ocean and Coastal Resource Management, Sanctuaries and Reserves Division Under Contract NA87AA-D-CZ006

Cover Illustration: Ceramic human head from the Clark Creek shell mound, 8Gu60. Drawing by Maggie Council

ABSTRACT

Test excavations conducted in 1987-1988 at six prehistoric archaeological sites in the Apalachicola River Valley, northwest Florida, by the University of South Florida aimed to recover controlled data from this archaeologically rich, little known region of the Southeast.

Four sites are *Rangia* shell mounds deep in the river swamp. Depot Creek shell mound (8Gu56) contains extensive Early Woodland occupation radiocarbon dated to 60 B.C., underlain by Late Archaic deposits with simple-stamped fiber-tempered pottery, dated to 1020 B.C. Yellow Houseboat shell mound (8Gu55), has mixed Early Archaic (possibly), Late Archaic, Woodland, and Fort Walton deposits and a flexed human burial of unknown age. Clark Creek shell mound (8Gu60) has Early Woodland deposits and a Late Archaic component dated to 2020 B.C. Van Horn Creek shell mound (8Fr744) contains Fort Walton cultural materials overlying possible Woodland and Late Archaic components. A stone microtool industry and other artifacts link the last to the Elliott's Point Complex and other Poverty Point-related Late Archaic manifestations. Further, the deep Late Archaic stratum was associated with oyster shells, in contrast with the upper clamshell layers, suggesting a different environmental setting in the last millennium or two B.C. on the east side of the Apalachicola delta.

Also tested were the Overgrown Road site (8Gu38), a Middle Woodland camp dated to A.D. 300, and the Corbin-Tucker site (8Ca142), a Fort Walton village and cemetery dated to the ninth century A.D.(?), with high status multiple human burials.

The scientific data recovered show a rich and diverse record of past human utilization of different valley environments. They are useful for addressing questions of culture chronology, subsistence change in response to ecological change, large scale economic interactions and even social organization. The archaeological information is also used to enhance the educational programs of the Apalachicola National Estuarine Research Reserve. Recommendations are made to incorporate cultural resources into the Reserve management plan, as all are endangered by natural and human action.

Key words: prehistoric archaeology, shell mounds, Native Americans

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LIST OF ABBREVIATIONS USED IN THIS REPORT

General

TU	test unit, as TUA, TU2
L	(arbitrary) level, as Level 1
ANERR	Apalachicola National Estuarine Research Reserve
USF	University of South Florida
NOAA	National Oceanic and Atmospheric Administration
frag(s)	fragment(s)
poss	possible
FMNH	Florida Museum of Natural History
MNI	minimum numbers of individuals (individual animals in each species as reconstructed by zooarchaeologist for a particular provenience)
diam	diameter
N	north
S	south
E	east
W	west
unident	unidentified

Ceramic Types

check-stamp	check-stamped
comp-stamp	complicated-stamped
cord-mark	cord-marked
fiber-temp	fiber-tempered plain
grit-temp	grit-tempered
grog-temp	grog-tempered
pl	plain (smooth surface)
sand-temp	sand-tempered
simple-stamp	simple-stamped (grit, sand or grog temper)
s-st fiber-temp	simple-stamped fiber-tempered

Lithic Artifact Terms

decort	decortication flake (removal of cortex from chert nodule)
prim	primary flake, first steps in artifact productions
2nd	secondary flake, next steps in artifact productions
prim decort	primary decortication flake (has > 50% cortex)
2nd decort	secondary decortication flake (has < 50% cortex)

Skeletal Terms

M1	first molar
M2	second molar
M3	third molar ("wisdom tooth")
PM1	first premolar
PM2	second premolar
I	incisor
L	left
R	right

PREFACE AND ACKNOWLEDGMENTS

This work is a report on the archaeological test excavations conducted in the Apalachicola River valley of northwest Florida in 1987 and 1988 by the University of South Florida (USF) Anthropology Department. For several years USF has conducted survey to locate prehistoric sites along the Apalachicola. Some test excavations have been done along the upper river, but few sites were even known from the lower valley until recently, because of the remoteness of the area. A 1985 survey recorded the presence of shell mounds and other sites, many deep in the riverine wetlands and estuary. But survey involved only locating sites and collecting surface cultural remains.

The major goal of this project was to gather controlled, excavated data and materials from several different prehistoric time periods from a variety of sites in this little known but archaeologically rich area. The kinds of research questions addressed had by necessity to be basic, to establish a data base for the region and to begin a program with a manageable project. So initial aims were to identify cultural components in some of the shell mounds, establish cultural chronologies, and obtain subsistence remains from as many different time periods as possible. Longer-term objectives were to investigate connections of cultural manifestations from different time periods with others along the greater region of the northern Gulf Coast, and to compare Apalachicola delta estuarine/coastal adaptations through time with the better known archaeological record of interior riverine cultures in this valley. As usual, methods and goals are dynamic throughout a project. Much of the investigation was structured also by the logistics of just getting to some of the sites. In addition we encountered some unexpected materials in the form of human burials. Ultimately, social and economic issues can be examined with these data to some extent, and there is great future research potential.

This monograph is submitted as the final report to the granting agency. It was originally submitted in July 1989 and unfortunately held up in bureaucracy for over two years before it was peer-reviewed and returned for revision. Meanwhile some of the information was published in archaeological journals (White, 1991a, 1992, 1993) and related work continues (White and Estabrook 1994). Also during this time study of the data and materials continued and the volume of published literature on shell mound archaeology, especially, increased considerably. The archaeology students and I became a great deal more knowledgeable than when we first laid out a 1 x 1 meter unit on top a shell midden in the late 1980s and expected one could dig it just like any other prehistoric site in Florida. We also had time to finish all the flotation and sorting in the lab; thus the artifact tables in this report also include materials recovered in flotation and are more complete than some published earlier (in White 1992, 1993).

This monograph is primarily descriptive in nature and covers only the test excavations done in 1987-88. It explains field operations at each site, materials recovered, analyses performed so far, and interpretations of components at each site. Where possible, social and economic systems are discussed and related to wider systems across space and time. Also included are a description of the public archaeology conducted in conjunction with the scientific investigations, and summary recommendations for the Apalachicola National Estuarine Research Reserve's management of these valuable prehistoric cultural resources.

Since 1988, I have directed further work at prehistoric sites in this region to continue exploring existing research issues and unearthing new ones (e.g., White and Estabrook 1994). During another project in 1990 a brief return visit was made to the Corbin-Tucker site in an effort to get a better charcoal sample for dating the Fort Walton cemetery. In 1993 we returned to Van Horn Creek shell mound to attempt excavation below the water table for more Late Archaic evidence, supported by a historic preservation grant from the Florida Division of Historical Resources. Analyses of data from these two return trips is still in progress, though preliminary findings have been incorporated into this report in the summary chapter.

Clearly, the project reported here has been a first big step. Many, many thanks are due several individuals and institutions who made it possible. The fieldwork and analyses were funded by the National Oceanic and Atmospheric Administration (NOAA) Estuarine Sanctuary programs division, who provided a total of $22,774 for two seasons of fieldwork and analyses. Additional assistance was provided by the University of South Florida College of Social and Behavioral Sciences (now College of Arts and Sciences), the President's Council, and the Anthropology Department. I thank NOAA archaeologist Ervan Garrison and other reviewers for extremely useful critiques of this report.

Excavations were carried out by two crews of USF field school students, whose bravery and good humor in the face of rough, sometimes dangerous, and often ridiculous field conditions were noteworthy. The 1987 crew were Phil Gerrell, Jennifer Giesler, Jerry Hren, Heather Mahan, Doug Potter, Cindy Jo Rossiter, and Annette Snapp. The 1988 crew were Steve Beckwith, John Darsey, Charles Furmeister, Maggie Goetze, John Kato, Jimmy Stark, and supervisor Fred Steube, who also visited in 1987 to lead us back to the nearly invisible Overgrown Road site. I

especially thank the 1988 crew for taking good care of their pregnant director in the field. Field volunteers were Susan Henefield-Herring, Bill Herring, Maggie Council, Art Lee, Lynn Lee, Yoko Rothe, Terry Simpson, Jeannie Potter, Dorothy Ward, and state archaeologist Louis Tesar, on a "busman's holiday."

Laboratory work, report editing, and fact checking were done by many loyal students and volunteers: Sharon Boese, Tara Boyce, Heather Clagett, John Darsey, Crete Fisher, Charles Fuhrmeister, Art Lee, Lynn Lee, Brian Parker, Doug Potter, Anne Reed, Carlene Shapiro, Terry Simpson, Paula Stewart, and Fred Steube, under the direction of tireless lab supervisor Maggie Goetze.

Field quarters for the crew were generously provided by many individuals. For our work at the Overgrown Road Site, Panama City businessman Max Fleming donated his hunting camp house at Howard Creek, where caretakers Eletha and Arthur Nixon were like adoptive godparents to the crew.

While we dug at the Corbin-Tucker site Suella McMillan, director of the W. T. Neal Civic Center in Blountstown, provided not only camping space and lab facilities, but also other help, including cases of research supplies. Finlay and Donna Corbin and their children graciously aided the fieldwork in many ways, and Finlay added his expertise as a dentist to identification of the teeth from the site.

The late John Meyer, City Manager of Apalachicola, provided assistance in securing crew quarters while we worked on the shell mounds; he got us an abandoned convent one year and renovated public housing the next. Residents of Howard Creek, Blountstown, and Apalachicola welcomed us warmly and often shared their site information and brought us their collections to see.

Special studies were conducted by many skilled individuals, who are all contributors to this report (as indicated in appropriate sections). Under the supervision of Elizabeth Wing of the Florida Museum of Natural History in Gainesville, faunal analyses were done by Karen Jo Walker and Judith E. Fandrich, who also reviewed the original manuscript. I have combined their reports into Appendix 1, which I edited for consistency but otherwise left intact. Ethnobotanical analyses were done by Elisabeth Sheldon of SITE, Inc., in Montgomery, Alabama, and Michelle Alexander of Rollins College and the Orange County Historical Museum in Orlando. Their data are incorporated into tables within the text, and Alexander's short report on Corbin-Tucker site flora is included as Appendix 5, with my edited version of her tabulated data.

Soil scientists Joe Schuster and Leland Sasser and Florida State University geologist Joe Donoghue provided great assistance in interpreting soils and geomorphology. Archaeologist Rich Estabrook of Tampa did the lithic analysis of the microtool industries. Judy Bense at the University of West Florida loaned us her waterscreening equipment in 1988. Tampa dentist Julio Maya examined the deciduous tooth from Depot Creek shell mound. Frankie Snow, of South Georgia College in Douglas, helped evaluate designs of the complicated-stamped pottery from the Overgrown Road site and pointed out a reference for the herringbone complicated-stamped pattern at the shell mounds.

John Maseman donated his skills at the South Florida Conservation Center in Pompano Beach toward the analysis and reconstruction of the copper disc from the Corbin-Tucker site burial. Sally Williams of USF's Medical Center donated an X-ray of the disk, and David Scott of the Getty Conservation Institute in Marina del Ray, California, examined its lead coating. USF chemist Jay Palmer, a specialist in archaeological metals, provided additional analyses from a fragment of the disc. I have combined all these experts' reports into Appendix 3.

Graduate students Laura Clifford and Sylvia Layman analyzed the human skeletal remains from Yellow Houseboat shell mound and the Corbin-Tucker site, respectively (Appendices 2 and 4). Charles Fuhrmeister studied the high status burial at the latter site for his senior honors thesis at USF, and drafted the site maps for Corbin-Tucker site and Clark Creek shell mound. Grad student Terry Simpson produced many drafts of tables and graphs of ceramic frequencies for each site. I also thank Marianne Bell, who typed this entire final manuscript and provided the first instance in my ten years at USF that I ever had my professional writing typed for me.

Director Woody Miley, former Education Coordinator Bonnie Holub, and their staff at the Apalachicola National Estuarine Research Reserve aided the project every step of the way, including loaning us boats and other equipment and collaborating on archaeology day programs for the community. Reserve staff members Joseph Thompson, Jimmy Moses, and Pat Millender should especially be mentioned for their help in pushing through the swamps with us, setting up fieldwork, and keeping the crew alive (and laughing).

RESEARCH FRAMEWORK

ARCHAEOLOGICAL BACKGROUND

Since the turn of the century the rich prehistoric archaeological record of the Apalachicola Valley in northwest Florida has been documented. Clarence Bloomfield Moore was the first to excavate mounds along this and other Southeastern rivers and publish descriptions of his work and findings and illustrations of interesting artifacts (Moore 1903, 1918). Though Moore's methods were crude compared with the way we do archaeology today (as our methods will be considered at some future time), he established the presence of sophisticated arts and crafts and elaborate mortuary ceremonialism among prehistoric peoples in the Apalachicola valley. Complex, beautiful and finely made pottery and other artifacts of exotic materials were interred with apparently important people in the mounds he explored.

One of the first regional overviews of modern archaeology in the eastern U.S. was done for the northwest Florida coast by Willey and Woodbury (1942) and later expanded by Gordon Willey into a major synthetic work (1949). Primarily by the use of distinctive ceramic types, Willey organized the data into a chronological framework. Though radiocarbon dating had not yet been invented, his relative chronology has withstood the test of time, even when adjusted to include absolute dates. Much of Willey's information for northwest Florida was drawn from the Apalachicola Valley.

Since the 1940s there has been exploration of this valley by archaeologists and students from Florida State University, Case Western Reserve University, and the Cleveland Museum of Natural History. Several sites have been located through survey and some have been subjected to various amounts of test excavation. The emphasis was upon locating sites in the upper and middle portions of the valley and testing later prehistoric (last millennium) sites such as Middle and Late Woodland (early to late Weedon Island) middens and Mississippian (Fort Walton) mound/village sites (e.g., Percy 1972, Brose et al. 1976, White 1982). Synthetic studies analyzing Weeden Island and Fort Walton settlement and social systems resulted from this work (Brose and Percy 1974, 1978; Percy and Brose 1974).

Between the middle of the valley at the town of Blountstown and the river mouth area and bay shore on the coast, however, few sites were recorded until the middle 1980s, when the University of South Florida began a field program there (e.g., Henefield and White 1986). We found the old meander banks in the river swamps and estuary to be rich with prehistoric occupational debris. Any area even a few cm higher than the surrounding wetlands was likely to be a prehistoric site. Shell mounds, in particular, were known from the bay shore, where they have often been exposed by development; we found more of them deep in the estuarine wetlands and river swamp.

Because of the remoteness of the lower delta region, little archaeology has been done here. The logistics of even finding sites in such dense, low forests, not to mention spending time excavating, are somewhat daunting. Yet the potential for recovering undisturbed data and materials is enormous. Thus we embarked on a limited test excavation program in 1987 and 1988 as a first step. The amount of information gained from a total of 12 weeks of digging has been staggering. This report is by no means a complete analysis of it, but we have indeed made a start.

CULTURE HISTORY

The prehistoric culture chronology of this region has been described elsewhere (e.g., Willey 1949, White 1981, 1986), and need only be summarized here. Much of it is reasonable speculation based on general cultural sequences for the eastern U.S. (e.g., Fagan 1991).

Paleo-Indian diagnostic artifacts (or any earlier cultural remains) have not been found so far in the Apalachicola Valley proper. The earliest cultural evidence consists of Clovis and other Paleo-Indian points from the Chipola River valley, the largest tributary of the Apalachicola, on its west side. Such clustering of the evidence as well as geological information indicate that the main river channel may have flowed through the present-day channel of the Chipola during the Pleistocene, providing an attractive environment for the earliest human settlement (White and Trauner 1987). Later fluvial shifts continually brought the river channel eastward, but the timing of this movement is not clear.

It is also quite likely that most of the earliest archaeological sites are invisible today for several reasons. Even if the Apalachicola was flowing farther to the west, its present valley area was probably not uninhabited. Evidence of such human presence is probably buried beneath several meters of sand, however, as the process of delta formation involved deposition of tons of alluvium. Furthermore, settlement of the Pleistocene coastline, which was probably extensive given the rich resource base there, would today be not only covered with many meters of alluvium but also submerged in Apalachicola Bay, which is rapidly filling in, and in the Gulf of Mexico, due to sea level rise after about 10,000 years ago (Donoghue 1993).

The first inhabitants doubtless came to this region as early as they did in the rest of North America, by at least 12,000 years ago. So far we can only describe their cultural adaptations with reference to what is known elsewhere in the Southeast. Fossil mammoth and mastodon teeth and other signs of Ice Age megafauna have been collected from the upper portions of the Apalachicola Valley, but it remains to be demonstrated whether the first people here were hunting these animals. They could just as easily (more easily, actually) have fished, collected wild plants and shellfish, and hunted small game as well.

There are similar difficulties with locating **Early and Middle Archaic** sites in the Apalachicola Valley. The period from about 9000 to 4500 years ago is well represented by thousands of diagnostic stemmed and notched projectile points in many collections. But there are few sites that have produced these materials in undisturbed context, and none that have been investigated beyond the survey level (Henefield and White 1986). Again it can be assumed, for now, that the Early and Middle Archaic and preceramic Late Archaic adaptations were similar to those in better documented regions of the Southeast. Post-Pleistocene fauna, fish and shellfish, and a diverse array of plant species doubtless formed a good subsistence base for small groups of seasonally mobile people.

It is only later in the **Late Archaic** stage, when the first pottery was made, that we have better information, and this report contributes new findings on the ceramic Late Archaic and subsequent time periods. When people started to make fiber-tempered pottery sometime before 2000 B.C., it probably did not change their way of life much but it certainly made their sites more visible archaeologically. Fiber-tempered pottery is found with lithic material and occasionally other artifacts throughout the valley, at riverbank sites and at locations along smaller streams. In the lower valley it is diagnostic of the Late Archaic adaptation to bayshore, estuarine, and river swamp environments and a material culture system clearly related to the Elliott's Point/Poverty Point cultural complexes that range from extreme northwest Florida to coastal Louisiana and up the Mississippi Valley. Such sites also produce characteristic microlithic tools and cores, and clay balls or "objects" that may have been for dry roasting of food. Similar remains are reported herein for some Apalachicola shell mounds. This research includes definitive identification of the plant fibers mixed with the clay as Spanish moss, and characterization of the microlithic industry in comparison with that of Poverty Point and related adaptations. Connecting these artifacts and settlement data with living socioeconomic systems is more problematic, though this report makes some attempt. The presence of the Late Archaic components at and mostly below the present-day water table and with biotic remains indicating differing environments also provides exciting new information about the timing and nature of sea level change and fluvial shifts during the late Holecene (Donoghue and White 1993).

By the last centuries before the Christian era the material evidence changes in character, marking the beginning of the **Woodland** cultural stage. Early Woodland ceramics were now made with sand, grog, and grit temper. While plain surfaces were still common, designs stamped with a paddle into the wet clay were as well, especially simple (parallel lines) and check stamping. In the upper valley there was some stamping with woven fabric, but none of this has yet been found in the lower valley. Vessel shapes include another diagnostic indicator: podal supports on vessel bottoms. These ceramics (and unfortunately no other kinds of artifacts as yet) are indicative of the **Early Woodland Deptford** period. Elsewhere in the eastern U.S. Early Woodland populations are building burial mounds and beginning to cultivate wild plants. So far no evidence for these activities this early is known within the Apalachicola Valley. A research question recognized herein, though perhaps not able to be addressed well with the data from this project, is whether or not lower valley inhabitants ever cultivated plants, given their already rich wetland environments. The thick Early Woodland deposits at several shell mounds did allow for good control of ceramic stratigraphy; this report contributes a couple good dates and a controlled look at Deptford ceramic sequences, including data to address the question of the degree to which check-stamped ceramics are diagnostic of anything.

By the **Middle Woodland** (traditionally dated from A.D. 1 to perhaps 600), people along the Apalachicola are heavily involved in burial mound construction and ceremonialism, like the rest of the eastern U.S., though there is still little evidence for plant cultivation or seasonality systems. In the lower valley many burial mounds were explored by Moore and Willey, who described their aesthetically fine artifacts and exotic raw materials. The puzzle of the overlapping temporal and geographic distributions of two ceramic complexes during this time period remains. From major mound complexes to small campsites there is Swift Creek pottery, stamped in interesting complex designs, and early Weeden Island pottery, incised and punctated in an equally fascinating variety of motifs and/or shaped into human or animal effigies or other unusual forms. The two ceramic series sometimes occur together and other times not, though complicated-stamped sherds do often show up earlier, in the company of later Deptford pottery. Results reported here from multicomponent shell mounds and a small Swift Creek camp help document the chronological positioning of these ceramics and the place of short-term occupation sites within the settlement system.

After the height of Middle Woodland ceremonialism, the **Late Woodland (late Weeden Island)** period in northwest Florida is characterized by a near disappearance of burial mound construction and presumably important though as yet unclear shifts in sociopolitical organization. At least one site of this period has produced good evidence for maize agriculture within a seasonal settlement system (Milanich 1974) in the upper Apalachicola Valley. The lower delta has many sites appearing to be of this time period, especially some documented on the bayshores of the mainland and barrier islands. But all appear to be shellfish collecting stations, and none has been investigated beyond surface collection. In the river swamp/estuarine area none of the shell mounds has produced clear evidence for any occupation during this time period, though it is difficult to do so without good radiocarbon dates as the most common evidence is check-stamped and plain pottery, which everyone earlier and later was manufacturing also.

By A.D. 1000 some kind of internal sociopolitical reorganization, apparently influenced to some degree by similar processes all over the Southeast, resulted in the development of native chiefdoms based on intensive maize agriculture in the riverine interior of this valley (White 1982). There is clear evidence of flat-topped temple mounds and large villages during this time, called the **Fort Walton** period, the variant of the **Mississippian** cultural stage in northwest Florida. It is curious that Fort Walton groups made pottery tempered with heavy grit or sand or grog; only rarely does the shell-tempered pottery characteristic of all other Mississippian societies throughout the Southeast appear at Fort Walton sites. In the lower Apalachicola Valley Fort Walton components have been known from several shell mounds and midden sites, and one was investigated as part of this work. We still do not have enough data to determine whether coastal wetlands populations practiced any agriculture, or traded with interior folks to get maize, or did not need or use cultigens at all given their abundance of other resources. A middle valley Fort Walton settlement and cemetery site tested during this project produced interesting if confusing social data, however, for looking again at questions of chronology, stratification, and resources.

Aboriginal societies with Mississippian cultural adaptations were the first encountered and the first destroyed in the early sixteenth century with the European entries into Florida and elsewhere in the Southeast. No early contacts are recorded in the Apalachicola valley, though evidence of European artifacts is known from a few Fort Walton sites (Moore 1903). Seventeenth century mission activity took place in the upper valley, but the names and identities of the peoples living along most of the river are still unknown, and they disappeared quickly, to be replaced later in the early historic period by incoming lower Creek/Seminole groups from the north who claimed then uninhabited lands. Many sites producing the diagnostic Seminole brushed pottery are known from the upper and middle valley, but the lower Apalachicola delta has little material from this time period. The Indians were removed by the middle nineteenth century, and European and later American groups filtered in to exploit the forest, swampland, and coastal resources. Backswamp areas such as at the Corbin-Tucker and Overgrown Road sites were mostly utilized for tree farming, and remote wetlands in the lowest delta river swamp were and are still mostly inhabited seasonally by hunters, fishers, and beekeepers. Coastal development continues at an accelerating pace in places such as the town of Apalachicola. Until the late twentieth century tourism boom, however, most of it has been dependent upon harvesting of aquatic resources, the activity that supported the prehistoric peoples so well.

ENVIRONMENTAL SETTING

The watery wilderness of the Apalachicola delta (B. Watts 1975) is characterized by resource abundance and diversity (Edmiston and Tuck 1987). Located about 50 miles west of Tallahassee, Florida, the Apalachicola River is actually the lowest portion of the great Chattahoochee River system, which originates in the Blue Ridge Mountains. It flows from the confluence of the Chattahoochee and the Flint Rivers, right at the modern Florida-Georgia border, 107 miles southward into the Gulf of Mexico (Figure 1).

The Apalachicola is the largest river in terms of flow in Florida, with the most fish and shellfish species, the highest densities of amphibians and reptiles north of Mexico, and a large number of unique endemic flora and fauna (Livingston 1984: 26-27).

The upper and middle portions of the valley consist mostly of broad alluvial bottomlands with hardwood and mixed forests, good land for agriculture. The unusual Torreya Ravines in the middle east side of the valley are steep hills with seeping springs where rare plant and animal species are found. In the upper valley there are outcrops of chert suitable for stone tool manufacture. The richness of the ecosystem and mild climate undoubtedly permitted support of large prehistoric human populations. The vast drainage network would have been a major settlement area and also transportation and communication system.

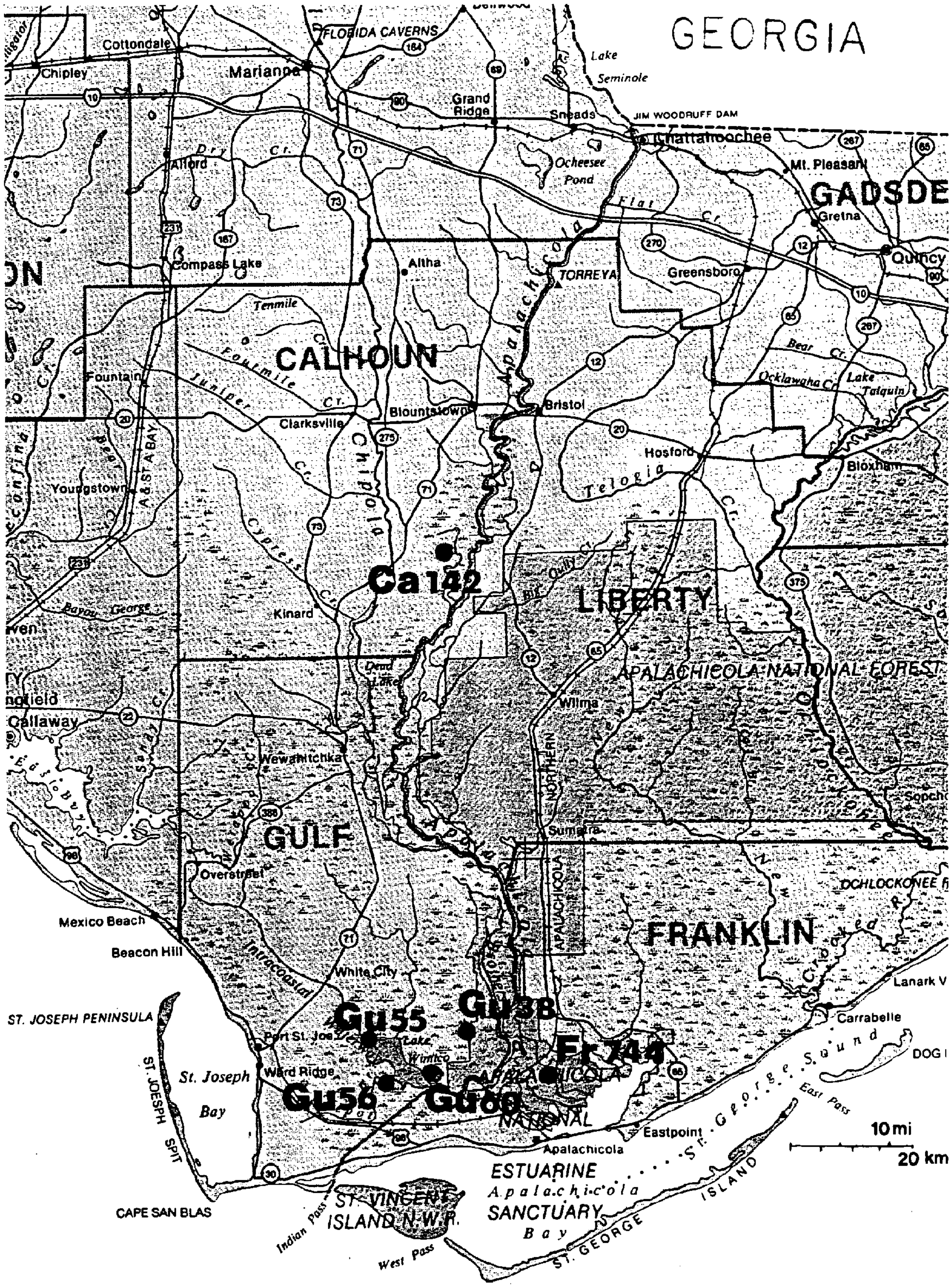


FIGURE 1. The Apalachicola Valley in northwest Florida, showing the six sites test excavated (adapted from Northwest Florida Water Management District map).

The lowest segment of the valley is a great delta comprising a vast estuary and bay system. On the outer edge, barrier islands front upon the Gulf of Mexico. In the interior the river and its manytributaries and distributaries flow through huge tracts of forested wetlands (Figure 2) and empty into the bays. One great lake, Lake Wimico, on the west side of the delta, is part of the former river channel system.

The Apalachicola River and Bay National Estuarine Research Reserve, (formerly National Estuarine Sanctuary) has been labeled "some of the wildest land left in Florida--a pristine [area] of immense and relatively inaccessible wet hammocks and stream-veined marshlands that sustain one of the nation's most productive fisheries and shelter a plethora of species" (Byers and Willson 1988:22).

Since the end of the Pleistocene, the postglacial rise in sea level has inundated the lower portion of this drainage and contributed toward the dynamism of the estuarine environment. In this constantly changing, biotically rich ecosystem prehistoric aboriginals could easily exploit a great range of terrestrial and aquatic species and make a good living over many millennia, possibly without any food production.

However, the relationships of sea level rise, climatic regimes, and cultural adaptations at various times in the prehistoric past are difficult to characterize with any specificity given the present state of our knowledge. During the late Quaternary, presumably the time when the first people arrived, the river was much bigger, and sea level up to 90 meters lower than at present. Paleo-channels are present up to 100 km south of the present river mouth and up to 30 m underwater out in the Gulf of Mexico (Donoghue 1993). New pollen data from Camel Lake, some 90 km inland on the east side of the river, indicate late Wisconsinan-age forests (14,000-12,000 B.P.) had abundant hickory, other deciduous trees, and spruce, indicating a cold climate similar to that of Quebec today. This is unusual at this time of transition into the Holocene, when there was rapid warming and melting of the ice sheet, and it contrasts with pollen data from northeast and south (peninsular) Florida and elsewhere at this time (Watts et al. 1992, Watts 1980, 1975). One explanation is that the influx of cold glacial meltwater down the Mississippi and into the Gulf cooled adjacent coastal areas at a time of otherwise continental warming (Watts et al. 1992:1065).

As the Wisconsinan glaciers began to retreat up north, sea level rise in the Gulf is seen to have been episodic, rather than regular. The river's course lay farther to the west of its present location, and did not shift to the east side of the present city of Apalachicola until some time close to 10,000 years ago. As earlier coastal and estuarine

FIGURE 2. Natural environment of the lower Apalachicola Valley shell mounds: Top, Van Horn Creek, on way upstream (south) toward shell mound (8Fr744). Bottom, beginning excavation of Test Unit A at Depot Creek shell mound (8Gu56), fieldworkers J. Geisler and D. Potter, 1987. View facing west. This unit was at west edge of mound summit that had been cleared for beekeeping.

areas became submerged, the river continued to build up its delta. The process continues today; the river is underfit for its valley and carries so much sediment that the estuary is presently in the final stages of infilling (Schnable 1966, Donoghue 1993). The cold wet climate gradually ameliorated (except for a dry hiatus from about 10,000 - 7700 B.P.) until about 6000 years B.P., when it reached approximately modern conditions; the forests shifted to oak-deciduous hardwoods with much less pine after 12,000 B.P. (Watts et al. 1992).

Sea level continued to rise, of course, though not at a regular rate. Clearly many coastal/estuarine sites are now inundated; sites on the surface of extant coastal landforms can be no more than 4000-6000 years old (Waters 1992:262). It is possible that the lower portions of the shell mounds we investigated were submerged not only due to higher sea levels but also due to land subsidence and sinking under the weight of the midden (e.g., Upchurch et al. 1992). Lazarus (1965) described a mound that is probably up to 2000 years old submerged in the Gulf two meters deep, a half mile offshore from New Port Richey (220 km around the big bend to the southeast from the Apalachicola). The work of Jim Dunbar and others (1987) in Apalachee Bay, the next drainage to the east of the Apalachicola, has documented the presence of drowned springs 19 km offshore out in the Gulf, with evidence of human activity in the form of chert flakes. But the enormous deposition in the Apalachicola delta probably makes it unlikely that any similar early coastal sites would ever be located here. Work off the Louisiana coast prior to oil drilling has located deeply submerged *Rangia* shell middens through coring and other bottom sampling techniques (Gagliano et al. 1982, Waters 1992).

However, sites of later time periods have produced some evidence for sea level fluctuations in the Apalachicola region. On the barrier island of St. Vincent, earlier and later archaeological occupations during the Woodland, separated by sediment indicating inundation, are taken as evidence of different sea level reversals and still stands (Stapor and Tanner 1977, Braley 1982, Donoghue and White 1993).

Relating the locations of the sites described in this report to sea levels is problematic. It is extremely difficult to reconstruct the marine environment adjacent to a specific archaeological site and at a specific time in the past, given the many and varied problems with details of the data (Kellogg 1988:93). Nonetheless it would be useful to know the past configurations of such microenvironments to relate evidence at each site with resources most easily available nearby, including biotic species, rocks and clays, and even navigable streams. It is known that the present barrier islands developed between 3000-4000 years ago and increasingly restricted the flow of more saline Gulf water into Apalachicola Bay during the late Holocene; however there is some evidence of earlier barrier islands seaward of the present islands (Otvos 1985). Whether the closest stream channel to a particular site was actually inhabited by a flowing stream or whether the closest environments were more or less saline is not determinable without more extensive geological work. This project has produced archaeological evidence, however, in the form of faunal species from different site components, that can be used to infer ecosystem types during the human occupation. This evidence has been used already to support geomorphological conclusions concerning continual eastward fluvial shifts that are associated with the effects of sea level fluctuations upon delta lobes (Donoghue and White 1993). Further discussion of these issues is found with each site description in this report.

While it is too early to be able to describe specific details of the sites' environments, the volume and diversity of their biotic remains attest to the great range of wetland and terrestrial species utilized. All the shell mounds seem to have been occupied repeatedly by many different cultural groups through time. People in the lower delta would probably have had to go upriver perhaps 150 km to obtain suitable chert for chipped stone tools, if they did not use the agatized coral sometimes available as beach rock on the barrier islands. They probably would have had to go upriver to grow corn if they did practice agriculture later in time, as fertile riverine bottomlands are more suitable for such crops than estuarine marshes. Otherwise the general environments utilized seem so far to be similar to river swamps and bayshores of today, just perhaps located in slightly different places in the past.

One of the ultimate goals of my continuing investigations in the Apalachicola region is to compare interior riverine, coastal, and estuarine adaptations through time. Standard settlement models in the Southeast (e.g., Milanich and Fairbanks 1980:19, Fagan 1991) begin with the earliest populations wandering around interior upland areas hunting big game, then changing after the Pleistocene to less nomadic collectors more intensively exploiting smaller resources during the Archaic, with an emphasis in coastal areas upon shellfish collection by the Late Archaic. The problems with this scenario are many: remains of Paleo-Indian fishers/shellfish collectors may well exist, but under water or tens of meters of sediment. Archaic shell mounds are the most archaeologically visible in the eastern forests, so it is no surprise that so many are recorded, perhaps at the expense of other kinds of sites. The research reported here cannot address these issues, though there may be cultural deposits of suitable antiquity to do so at greater depths in the Apalachicola shell mounds below the water table.

With the first pottery in the Late Archaic, increasing sedentism is inferred, and soon after, the beginning of plant cultivation. Early Woodland Deptford and Swift Creek sites are seen as more numerous in the rich coastal environments (Milanich and Fairbanks 1980). Again, this may be because their shell middens are more visible, and also because more archaeology has been done in coastal areas, and more development and disturbance of the land has taken place there, exposing more sites. By the time of burial mound construction in the Middle Woodland it is generally agreed that major ceremonial centers can be coastal or interior; these are highly visible. With incipient agriculture in the Late Woodland interior bottomlands are assumed to be most desirable for major settlement, though late Weeden Island sites are actually distributed over the widest range of environments for any time period (White 1981). There is a clear emphasis upon riverbank location for major population centers during late prehistory, with most Fort Walton temple mounds and villages so situated, though small camps or "hamlets" are seen on smaller streams and coastal areas (Brose and Percy 1978, White 1982).

Data from this project can shed light upon some of these hypothesized settlement systems from the Late Archaic onward. As with much research, more questions are raised than answered. The Apalachicola shell mounds investigated during this project indicated the same kinds of short term settlement and resource use from Late Archaic through Fort Walton times in the lower delta region, for example. Thus whether or not later peoples were agricultural, they were still apparently collecting an enormous amount of wild resources. There is a suggestion (though far less suppportable by hard data) that social groupings as well as subsistence methods are similar through time in this area, though clearly by the Fort Walton period at least ranked societies are burying important individuals with important artifacts upriver, where they are building large villages, while they may still be aggregating in small fishing camps in the lower valley wetlands and coast.

Models of settlement, subsistence, and society in the northwest Florida have been evaluated fairly recently (White 1985, Brose 1985, Willey 1985) and found to be lacking in enough hard data and too dependent upon the taxonomic trivia of ceramics (Milanich 1985). The first hope with this modest work in the lower Apalachicola is that it can contribute information for comparison with the much better known cultural record in the interior, to get beyond details of culture history so we can examine change and process. The ways in which societies and cultures change or remain stable throughout prehistory and their relationships with each other and with various different environments have a lot to tell us for understanding human behavior and our modern use of environments.

RESEARCH PLAN AND GENERAL METHODS

To begin the research plan in the lower part of the Apalachicola Valley some fundamentals first had to be addressed, to amass a data base for comparison with established chronologies. The first questions were basic: What cultural components were represented at sites here and what time spans did they encompass? It was hypothesized that artifact assemblages should be similar to those in the interior but biotic remains different. What were different subsistence systems in different microenvironments? Were all sites seasonal in the estuarine area as compared with the interior valley? If so, this might show up in the biotic remains as well.

Another set of questions was developed for longer range research: How did the overall adaptation of estuarine dwellers compare with those of interior riverine peoples through time, especially later in prehistory when the most complex societies developed? There are large Middle Woodland burial mounds along the upper Apalachicola, and evidence of incipient maize horticulture from the Late Woodland. Was there ever horticulture in the estuarine environment, today so difficult to farm (Clewell 1986:30), or did the abundance of wild foods that were easy to obtain make it unnecessary?

One issue currently of interest in studying shell mounds of southern peninsular Florida concerns the development of cultural complexity based only on a wild resource economy (Marquardt 1986, 1992; Widmer 1988). This is pertinent in northwest Florida as well. Did any shell mounds, for instance, have late prehistoric occupation contemporaneous with the Fort Walton farmers of the last millennium in the riverine interior? In other words, were there Fort Walton people living exclusively off wild resources at the lower end of the valley, interacting, perhaps, with agricultural chiefdoms upriver who had a similar material culture? If this were the case, Fort Walton shell middens should contain no domesticated plants, unless they were traded in.

The list of questions continues, but it was clear that we needed to begin with chronological and subsistence data, at least. Since so little was known of any sites, however, often choosing which to test had less to do with detailed research issues and more to do with field logistics. The program was thus also structured by variables such as time, money, equipment available, and accessibility of sites. Two weeks were allotted for testing at each of the six sites.

Establishing the **test excavation strategies** was a continuous process of trial and improvement, but a general plan was followed for all the sites. The number of excavation units opened was of course smaller at the shell mounds, where digging was much more difficult than in the soft sand of the rest of the valley. Locations and sizes of units depended on the layout of the site, and were determined purely judgementally, as opposed to by random or systematic designs. At each of the four shell mounds two units were opened on the summit (Figure 2) and two into the side slopes. At the other two sites the area of greatest or most interesting surface artifact concentration was where excavation began; subsequent units were placed so as to locate site boundaries and possible activity areas.

Site maps were made with a transit and stadia rod. All units were oriented to the cardinal directions and dug in arbitrary levels because of the lack of cultural or natural stratigraphy. All soils were screened (wet or dry) except those taken for flotation. Field logistics always played a part. The sand sites needed only a dry screen for efficient recovery of cultural materials. For the shell mounds only dry screening was possible (Figure 2) until we figured out a way to borrow water screening equipment and, more important, to get it to these inaccessible sites and operate it.

Excavation proceeded according to standard professional procedure (specifically, according to guidelines of the Florida Department of State, Division of Historical Resources). All units were backfilled. Details of the fieldwork at each site, such as flotation sample size or arbitrary level thickness appear in the individual site descriptions, as do explanations of the choices made based on the expected cultural record and the field situation management.

Analyses of recovered data and materials took place in the USF archaeology lab and by outside experts as noted in the acknowledgment section. Flotation of soil samples, begun in the field, was continued on campus. A standard barrel flotation tank with an internal shower head and graduated screen sizes was used. Several times we included 100 charred poppyseeds in flotation samples as a standard blind test of reliability. The recovered count of poppyseeds after flotation, drying, and sorting averaged in the high 80s. This is not the greatest reliability, but considering especially the destructiveness of shells smashing around fragile botanical remains, it is not bad.

Materials were recovered from flotation in three size fractions: A=1/4" (6.35 mm) screen, B=#20 geological screen or .034" (.86 mm), C=#50 geological screen or .0116" (.29 mm). They were sorted under the microscope, and selected samples were sent for analysis.

Students and volunteers sorted and classified artifacts in the lab; I checked all identifications and provenience summary counts. Special analysts used standard methods; as noted in Alexander's report (Appendix 5), for example, the small size of the floral remains called for each fragment of charcoal large enough to be handled to be tested for identification by snapping it in two to expose a fresh cross section.

I have included as much of the raw information as possible in this report so that it can be available for future work. Some is in the appendices but a large amount of data is included in tables in the body of the report to support the interpretation given in each site analysis. Occasionally column or row numbers on tables may not add up perfectly because of rounding off to whole gram weights. I wish I could have included more photos in this monograph. The appropriate photos were not always taken in the field; future articles will include more artifact photos.

All materials, notes, field forms, maps, and other data recovered, including botanical and faunal remains already analyzed, are curated at the USF Department of Anthropology archaeology lab, where research on the record from these sites continues.

THE DEPOT CREEK SHELL MOUND, 8Gu56

SITE DESCRIPTION

This large shell mound sits on the south side of Depot Creek, a long winding tributary emptying into Lake Wimico from the southwest. Lake Wimico is a large elongated lake considered to be a former main channel of the Apalachicola. It now flows into the river from the west via the Jackson River (see Figure 1). The site was recorded in 1985 when a local informant called the survey crew with information on its location (Henefield and White 1986:66-68). It appears clearly on aerial photos as a cleared white elongated shape in the midst of the thick forest. Part of the mound summit had been cleared for beekeeping earlier this century. Even the USGS quadrangle map, though not showing any elevated ground, notes the site by labeling it "apiary."

The site sits some 200 m south of the immediate creek bank but is aligned roughly parallel with it. At the entrance point from the bank are the ruins of a small wooden dock built to facilitate access for the beekeepers, who would come only a small part of the year when the tupelos were in bloom. The Apalachicola region has reportedly the largest stand of tupelo trees in the world, and tupelo honey is highly prized for its unusually light color and its quality to remain liquid and never crystallize. This is not the only shell mound chosen for an apiary because of its elevation in the swamp; Clark Creek shell mound, reported later herein, was also an apiary. Both seem to have been utilized at least up to the 1930s or 1940s.

At the boat docking spot on Depot Creek are the ruins of a wooden walkway to the mound, not usable today except to fill in extremely low spots in the long walk through the ankle deep muck. The mound summit has planted fig trees among the native hardwoods and palms, scatters of bricks, metal and glass artifacts, and other signs of early twentieth century utilization. There is even a ruin of a small brick structure, perhaps some kind of platform.

When visited in 1985, the mound was seen to be composed of *Rangia* freshwater clam shells and occasional oysters. It produced plain, check-stamped and complicated-stamped pottery, including a tetrapodal vessel base, some lithic debitage, a *Busycon* shell tool fragment, and a large amount of animal bone.

This site was chosen for testing because of its potential for exploring questions concerning Woodland subsistence and questions of ceramic type frequencies from Early to Middle Woodland or within Early Woodland. Numerous potholes were evident on the mound, and many local collectors reported knowing of it. It was also thought that we could obtain some intact information before the site came to further harm.

This midden mound may have been occupied when Depot Creek was a major tributary just a few hundred meters off the main river, in a time of lower sea levels. There is no way of proving this as yet. Probably the mound was on the bank of the creek, which has now shifted northward (thereby making the trip into the site every day rather laborious). Since the water level, both in the creek and the general water table, is tidally influenced, and there is often more than one tidal shift per day in this region, the depth of excavation possible and the difficulty of slogging through the mud to the site varied not only daily but hourly on an unpredictable basis.

The Depot Creek shell mound is 130 m long and 40 m wide at its widest point with a long axis at 115° or just south of due east-west. The main body of the mound runs 100 m east-west, with a smaller projection to the southeast for another 30+ m averaging 16 m wide. The mound rises at the highest point 1.8 m above the surrounding wetland (Figures 2, 3). It is likely that the midden deposits extend wider and deeper than the extent of the visible shell, as our excavations were halted at the water table, but the culturally deposited shell matrix extended well below this.

FIELDWORK

<u>Excavations</u>

Fieldwork at Depot Creek was carried out during a two-week period from 11-25 June 1987, with a crew of eight plus occasional volunteers. As with all the four shell mounds tested, the strategy was to open at least one or two test squares on the summit and the same number on the slope (Figures 2, 3). The site was mapped with a transit and stadia rod and four units were excavated, two on the high western summit, one on the steep southern slope, and one on the lower eastern projection. Unit placement was judgmental, based on absence of obvious disturbances and trees that might have thick roots.

All units were 1 x 1 meter squares oriented to the cardinal directions. They were dug in 15 cm arbitrary levels because there was no discernible cultural stratigraphy in the matrix. Furthermore, as with all the shell mounds, since we wanted good control but found it hard to excavate cleanly in thin levels, and since we knew we would probably excavate quite deeply, the figure of 15 cm was settled on as a good compromise. Thinner levels would have taken more time; thicker levels would give less control. The total of four square meters opened, when

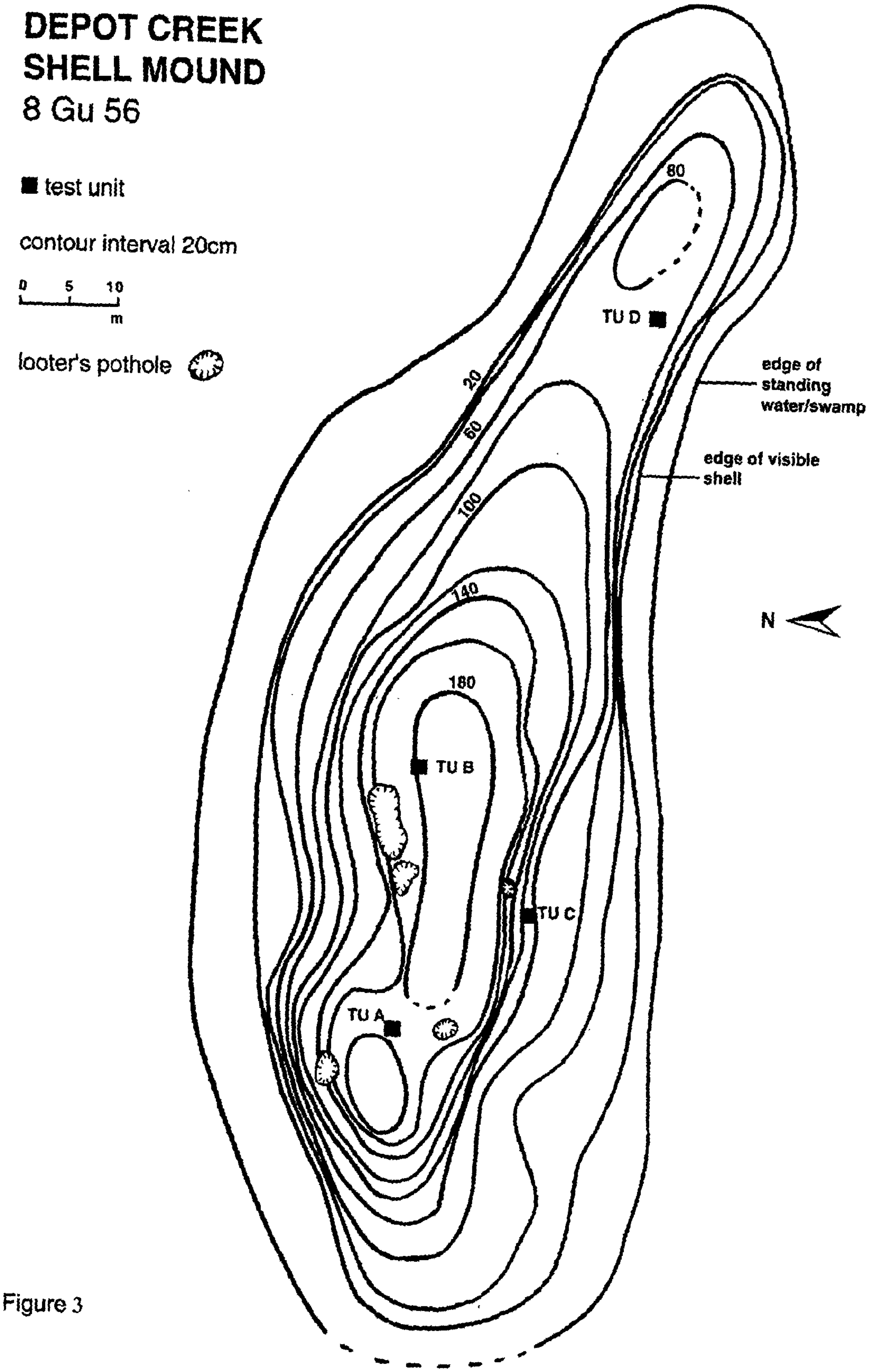

DEPOT CREEK
SHELL MOUND
8 Gu 56
test unit
contour interval 20cm
0 5 10
m
looter's pothole
80
TU D
edge of standing water/swamp
edge of visible shell
20
60
100
140
180
TU B
TU C
TU A
N

Figure 3

calculated with the different unit depths, gives a figure of nearly 4.6 cubic meters of excavation, estimated to be less than .1% of the site.

All soils except those saved for flotation or future research were dry screened through 1/4" (6.35 mm) mesh, but the inability of the sticky, clayey soil to pass through the screen meant that we used it essentially as a sorting board and picked out even the tiniest remains, probably missing only some covered with too much soil. This made screening a tedious process, but we learned quickly and made better time in the later days of the work here. In a primitive effort at waterscreening, a few buckets of water were hauled from the creek and poured over the screen to see if there was a major difference in recovery. Besides being enormously laborious this was time-consuming, and the process seemed to have no better results. What was needed was a powerful spray to waterscreen, which we did not have in 1987.

From each level of each unit a four-liter soil sample was taken for flotation, and a one-liter sample for permanent storage and future research. This resulted in complete recovery of at least a small sample of the site's tiny fauna and artifacts.

<u>Stratigraphy</u>

There was no way to define individual cultural strata of any kind in this shell mound, except generally by ceramic content. Under a continuous and thick Early Woodland stratum was situated a Late Archaic stratum of unknown thickness.

Soils in the unit walls displayed no discernible layering, however. Here and there were concentrations of more crushed or more whole shell, or more or less animal bone, or even browner soil within the black matrix. Since this was the first shell mound to be dug in the project, we initially tried treating such phenomena as archaeological features or strata, for example trying to isolate shapes and disrupting the 15 cm arbitrary level goal to level off at a slight change in the soil color or texture. There were never discrete shapes, however, or definable lenses or strata, and we later abandoned any hope of categorizing them as units representing some individual cultural behavior.

The soil matrix was a blackish sand packed with clamshells and a small proportion of oysters (perhaps one or two shells per level), animal bone and artifacts. The low amount of sand and high proportion of cultural items, especially shell, were factors making isolation of features impossible. This matrix continued all the way down to the water table as such. Clamshells were packed with tiny bone bits.

After a maximum of 30 cm excavation, shallower in most cases, modern intrusions and materials such as glass and iron disappeared and prehistoric potsherds became larger, suggesting little disturbance after the original deposition.

The matrix was often loosely consolidated. Wall cave-ins took place regularly, and materials from them were given a separate provenience ("mixed levels"), as shown on the artifact tables. Units could not be perfectly squared in the vertical dimension because of this loose matrix (Figure 4). Walls sloped inward from the top; thus the deeper levels were not a complete meter by meter but slightly smaller horizontally. In addition, it was very difficult to maintain flat floors and perfect 15 cm level thicknesses with the loose shell popping out as we dug. (Dimensions of each level are given in ceramic tables so any future quantitative studies can correct for differences).

Excavation Units

Test Unit A was a 1 x 1 m unit (Figure 4) located on the west side of the summit near the edge of the cleared zone. High up in the tall hardwoods nearby was a continually buzzing nest of wild bees (?) providing an eerie atmosphere for the excavators here.

Originally several feature-like areas were noticed during excavation of this unit; they may have been pits or lenses of more or less blackened soil from charcoal or lighter soil from ash, but they were extremely vague. It is hard to recognize discrete piles of trash in a giant trash pile. Though we labeled and numbered some and tried pedestaling and cross-sectioning, these areas never had discrete boundaries and were later not considered true features.

For example, one area that looked like a concentration of ash may indeed have been such, discarded here from a fire elsewhere. An oval roughly 18 cm by 15 cm, it disappeared within a less than 5 cm depth and had no different contents or texture than the rest of the unit, only a lighter color. In addition, we could not even draw or photograph it because the edges were so indistinct.

Other areas initially labeled features were a concentration of turtle bone and pottery, including a tetrapodal base, and a concentration of large check-stamped sherds apparently from a single pot. These items extended into the walls and when the few protruding were recovered, the walls collapsed and other items and soil poured out. This is one explanation for the high artifact counts from Test Unit A on the tables presented later in this section. There were fewer artifacts beyond Level 10 (below the collapse), and none in Level 14.

FIGURE 4. Depot Creek shell mound, 8Gu56, Test Unit A: Top, nearing bottom of Level 1 (15 cm). Bottom, at end of excavation after wall cave-ins, reaching water table at 170 cm below surface. Both views facing north.

At 168 cm below the surface, in Level 15, an area of more whole shell within a patch of crushed shell was found to contain a long deer bone point. This possible feature could have been a pit dug into the shell but there were no recognizable boundaries.

At 170 cm the water table was reached and excavation halted, at the bottom of Level 15. Levels 5, 6, 7, 11, and 12 had been under 15 cm in thickness to try to isolate different strata of crushed shell or different soils. By the time the unit reached water it had become difficult to get into and out of anyway (the typical "telephone booth"), and we learned to aim for 1 x 2 m units at the next shell mound so that this problem would be alleviated (which it was, at Van Horn Creek, only to be replaced by a different problem: inability to finish the larger units in the two weeks allotted for testing each site).

Test Unit B was a 1 x 1 m unit on the east central side of the cleared portion of the summit. It was placed near enough to two large palms to try to be in undisturbed ground and far enough away to avoid having to dig through roots.

Level 3 was halted at 7 cm thickness as the matrix changed to include many more tiny animal bones, mostly fish. A deposit inside many shells resembling wet brown tobacco leaves began appearing but could not be identified except as decaying organic material. Level 5 was also stopped before 15 cm were reached to record an apparent soil change that soon proved impossible to see.

At 155 cm depth, Level 11, the east wall caved in. An attempt was made to excavate just a portion of the square a little deeper, but the matrix was too collapsible. The water table was not really reached in this unit though the soils at bottom were very wet.

Test Unit C was a 1 x 1 m square into the "back" slope of the mound, the south side opposite the creek. It was placed here in an attempt to get to the basal cultural deposits more quickly than going down from the high summit, and it succeeded, producing fiber-tempered pottery by Level 7, at 106 cm depth. A human tooth, a deciduous molar was recovered just above this in Level 6, which produced no artifacts. The water table was reached at about 110 cm depth, and excavation halted. Stratigraphy had been similar to that of the other units: various amorphous areas, vertical and horizontal, of more whole or more crushed shell in black soil.

Test Unit D was a 1 x 1 m unit placed on the lower east side of the mound on the summit of the southeasterly projection edge (see Figure 3). This area was not cleared and mapping here was much more difficult, especially because the palm thickets were encased in greenbriar vine and poison ivy canopies, and the whole area was guarded by nests of ornery wasps.

This unit contained relatively fewer artifacts than the other three. By Level 4, 61 cm maximum depth, the soil matrix became slightly browner than the upper blackish levels. By Level 5, truncated at 69 cm, the matrix was solid clamshell with no oyster and with an orange color possibly imparted by some mineral element. Level 5 produced no artifacts in its .06 m^3. Level 6, also 6 cm thick, produced only two Deptford sherds. By this depth, 74 cm below the surface, the water table was reached and excavation halted.

CERAMICS

Pottery

Nearly 10 kilograms of ceramic sherds, numbering 1643, were recovered from the Depot Creek shell mound. They demonstrate the presence of a long Early Woodland occupation and a Late Archaic component of unknown size and duration.

Ceramic types recovered are tabulated by gross provenience in Table 1 (for abbreviations on tables see list of abbreviations on p. xi), and Tables 2 through 5 show totals for each unit by level (missing levels produced no sherds, often no artifacts at all, as noted in the previous section). It was not possible to tabulate sherds by any cultural stratum, or useful to do so by arbitrary level across the site, since the relative elevations of levels in summit and slope units differed so much as to make such an exercise meaningless.

Figure 5 graphs the gross relative frequencies by count and weight for all ceramics by type. Such a graph is also not very meaningful culturally, since it combines materials from the two components. But if the Late Archaic is able to be isolated by fiber-tempered ceramics alone, then the graph shows well the frequencies of different types in the general Woodland component. It also shows how important it is to tabulate both by sherd count and by weight. Plain sherds are much smaller than check-stamped and other Woodland types. Perhaps plain vessels were less important and handled less carefully or discarded where people walked more and crushed them. Another factor is that tiny crumbs may have been from other kinds of vessels but their small size obscured any other surface treatment so they were lumped into the plain categories by temper. Finally, any sherds with eroded or missing surfaces were also classed in the plain categories.

Similarly, the type labeled indeterminate stamped was by definition too worn or eroded to classify as to surface treatment, though something had been impressed there. Most of the indeterminate

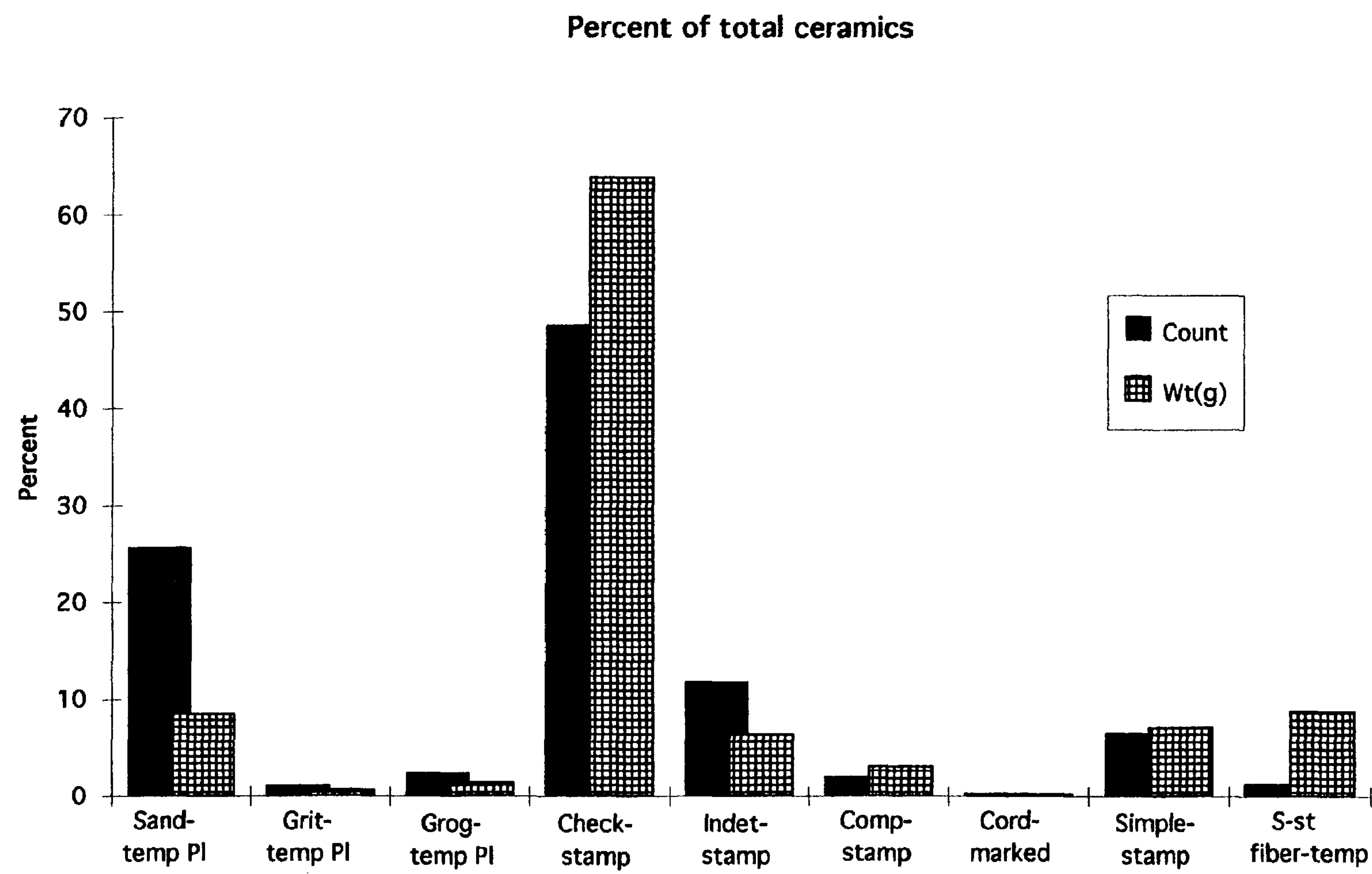


FIGURE 5. Graph of relative type frequencies of all ceramics from Depot Creek shell mound, 8Gu56

stamped probably are check-stamped; this type is more abundant, and also is less well executed and possibly its surfaces are obscured more easily.

At Depot Creek all the fiber-tempered ceramics were simple-stamped (as opposed to plain surfaced as at other sites). Thus the last set of bars on the right of this graph (Figure 5) may actually show the older component, with all the rest comprising the younger.

Early Woodland (Deptford and early Swift Creek?) When first located, the Depot Creek site had produced check-stamped sherds with some linearity in the stamping; that is, lands (or raised parts of the design) of one direction were more pronounced than those of the other direction. This is characteristic of the Deptford period, the earliest cultural division of the Early Woodland Stage (Willey 1949). Deptford in Florida dates to about 1000 B.C. until perhaps a couple centuries A.D. The site also produced complicated-stamped pottery of the Swift Creek period, thought to date from about A.D. 1 to 600 or so. There was even a sherd of the type New River Complicated-Stamped, which combines checks and complicated curvilinear designs in the stamp that was applied to the wet clay before firing. Some think this type to be transitional between the two cultural periods.

Selected stamped sherds from this site are shown in Figure 6. (Check-stamped sherds were very similar in range of variation to those from the other shell mounds; see Figures 12, 17.)

Eight basal sherds (both plain and check-stamped) with tetrapods (four little conical feet) were recovered from the surface and upper levels of units. These could be characteristic of both Deptford and Swift Creek.

Swift Creek ceramics occur supposedly in the later part of Early Woodland and in the Middle Woodland. Many archaeologists think that there is no pure Deptford without some complicated-stamped ceramics (e.g., Brose 1985). The results from Depot Creek shell mound offer interesting insights into this question.

Since all the units at Depot Creek appeared undisturbed below about Level 2, where the last modern items such as glass and metal nails were found, it is instructive to look at the tabulated ceramic frequencies from all units to see horizontal and stratigraphic trends in the ceramic distribution.

Table 1, summarizing all ceramics recovered, shows that complicated-stamped sherds came from only the two units (A and B) on the summit of the main mound, not from the back slope or the southeasterly projection (except for a single sherd very shallow in Test Unit C on the

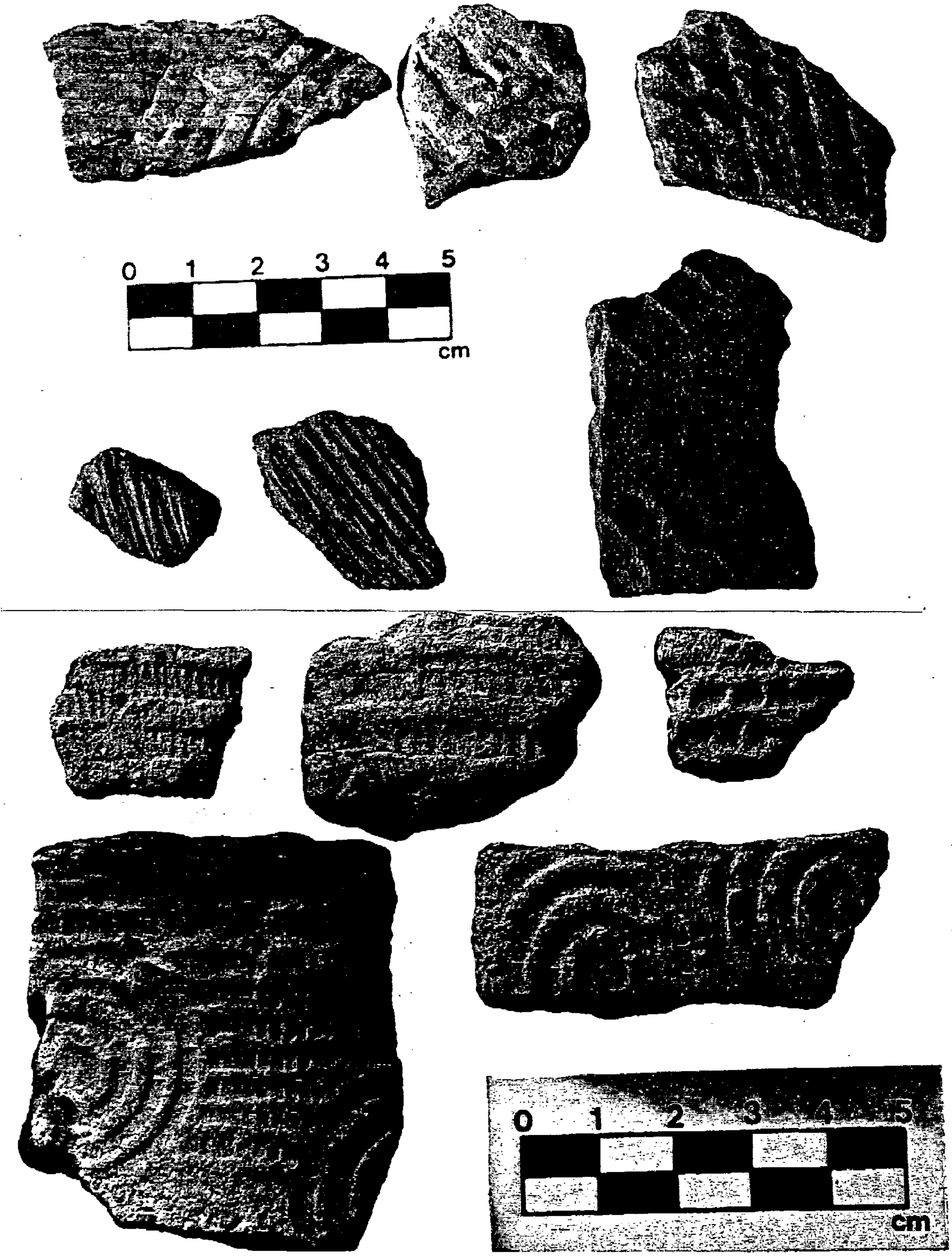


FIGURE 6. Stamped pottery from Depot Creek shell mound. Top: two rows of three varieties of simple-stamped, showing the range of variation; third row, linear check stamping; left two sherds are clearly Deptford; sherd on right has barely linear checks, is not temporally diagnostic by itself; bottom row left, New River Complicated-Stamped; right, Swift Creek Complicated-Stamped. All from surface.

TABLE 1. **CERAMICS FROM DEPOT CREEK SHELL MOUND, 8Gu56, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS.**

TYPE	SURFACE CT	SURFACE WT	MIXED LEVELS CT	MIXED LEVELS WT	TU A CT	TU A WT	TU B CT	TU B WT	TU C CT	TU C WT	TU D CT	TU D WT	TOTAL CT	TOTAL WT
SAND-TEMP PL	108	323	67	55	45	68	40	131	121	164	41	106	422	846
GRIT-TEMP PL	14	56									5	13	19	69
GROG-TEMP PL	15	106			9	17	15	13	1	3			40	138
CHECK-STAMP	204	1109	267	3313	184	1122	88	510	41	228	15	71	799	6353
INDET-STAMP	54	206	45	122	28	49	46	140	5	40	16	75	194	631
COMP-STAMP	13	89	4	136	8	53	8	29	1	3			34	310
CORD-MARK	1	5			1	2	4	15					6	22
SIMPLE-STAMP	3	23	30	329	43	202	15	57	11	77	6	18	108	706
S-ST FIBER-TEMP									21	871			21	871
TOTAL	412	1915	413	3956	318	1511	216	895	201	1387	83	282	1643	9946
% BY PROVIENCE														
SAND-TEMP PL	26	17	16	1	14	4	19	15	60	12	49	38	26	9
GRIT-TEMP PL	3	3									6	5	1	1
GROG-TEMP PL	4	6			3	1	7	1					2	1
CHECK-STAMP	50	58	65	84	58	74	41	57	20	16	18	25	49	64
INDET-STAMP	13	11	11	3	9	3	21	16	2	3	19	26	12	6
COMP-STAMP	3	5	1	3	3	3	4	3					2	3
CORD-MARK							2	2						
SIMPLE-STAMP	1	1	7	8	14	13	7	6	5	6	7	6	7	7
S-ST FIBER-TEMP									10	63			1	9
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE														
SAND-TEMP PL	26	38	16	7	11	8	9	15	29	19	10	13	100	100
GRIT-TEMP PL	74	81									26	19	100	100
GROG-TEMP PL	38	77			23	12	38	9	3	2			100	100
CHECK-STAMP	26	17	33	52	23	18	11	8	5	4	2	1	100	100
INDET-STAMP	28	33	23	19	14	8	24	22	3	6	8	12	100	100
COMP-STAMP	38	29	12	44	24	17	24	9	3	1			100	100
CORD-MARK	17	22			17	8	67	68					100	100
SIMPLE-STAMP	3	3	28	47	40	29	14	8	10	11	6	2	100	100
S-ST FIBER-TEMP									100	100			100	100
% OF TOTAL														
SAND-TEMP PL	7	3	4	1	3	1	2	1	7	2	2	1	26	9
GRIT-TEMP PL	1	1											1	1
GROG-TEMP PL	1	1			1		1						2	1
CHECK-STAMP	12	11	16	33	11	11	5	5	2	2	1	1	9	64
INDET-STAMP	3	2	3	1	2		3	1			1	1	12	6
COMP-STAMP	1	1		1		1							2	3
CORD-MARK														
SIMPLE-STAMP			2	3	3	2	1	1	1	1			7	7
S-ST FIBER-TEMP									1	9			1	9
% OF TOTAL	25	19	25	40	19	15	13	9	12	14	5	3	100	100

backslope). We might hypothesize a much briefer (and last) occupation on only the highest ground during the later portion of the Early Woodland. The few cord-marked sherds, also probably later than Deptford, also came from summit units.

Test Unit A, the deepest excavated, shows (Table 2) complicated-stamped occurring from Level 3 upward. The one cord-marked sherd is also in Level 3 and none deeper. However, a single complicated-stamped sherd was recovered from Level 13 (142 to 154 cm below surface). It could be easily associated with all the Deptford pottery there; I could just as easily explain it away as the result of a wall cave-in and maintain that Swift Creek is later.

Check-stamped predominates in nearly all levels of Test Unit A, comprising roughly 50% to 100% by weight of the ceramics. Sand-tempered plain averages 4% for each level. Simple-stamped sherds (with sand temper, usually), while present in upper levels, do not occur again until Levels 9, 10, 12, and 13, where they make up between 9% and 66% of the level by weight.

A few points need to be stressed about these ceramic types. After the first appearance of pottery some 4000 years ago (see later discussion in this report and radiocarbon date for Clark Creek shell mound), in the form of fiber-tempered vessels of the Late Archaic, the sand- and grit- and grog-tempered Early Woodland ceramics appeared, in the form of plain and simple- and check-stamped wares. While simple stamping, impressing straight parallel lines in the wet clay with a paddle or dowel, is unquestionably diagnostic of Deptford in northwest Florida, check stamping is not very diagnostic because it was done apparently continuously until after European contact.

Typically a site producing check-stamped sherds is considered Deptford only when accompanied by other diagnostics such as tetrapodal vessel shapes, simple-stamped and fine fabric-marked pottery. A few characteristics seem to be emerging as more typical of Deptford check stamping lately: sherds broken on the coil marks, a high percentage of linearity of the checks, and a sloppy execution of the stamping (White 1985). All these are present at Depot Creek.

Some check-stamped pottery from Depot Creek also has another, more unusual characteristic: very fine parallel lines impressed on the interior surfaces. This attribute has not been recorded elsewhere in the region, but on this project has been observed for check-stamped sherds at other Apalachicola shell mounds. The impressions are clear enough but of unknown origin. Perhaps the smoothing tool used to obliterate the coil marks and bumps on the inner surface was something with a raised fine grain such as wood or a fine stiff brush.

TABLE 2. **CERAMICS BY LEVEL FROM TEST UNIT A, DEPOT CREEK SHELL MOUND, 8Gu56, BY COUNTS AND WEIGHTS IN GRAMS.**

TYPE	LEVEL 1 (.16m³)		LEVEL 2 (.14m³)		LEVEL 3 (.14m³)		LEVEL 4 (.16m³)		LEVEL 5 (.07m³)		LEVEL 6 (.04m³)		LEVEL 7 (.05m³)		LEVEL 8 (.14m³)		LEVEL 9 (.15m³)		LEVEL 10 (.15m³)		LEVEL 11 (.10m³)		LEVEL 12 (.12m³)		LEVEL 13 (.12m³)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
SAND-TEMP PL	3	3	6	8	2	4	20	24	3	9	1	2			1	<1	3	7	4	7	1	2			1	2	45	68
GROG-TEMP PL					3	4	6	13																			9	17
CHECK-STAMP	4	27	7	30	36	206	54	363	22	161	26	180	4	24	1	10	20	68	6	34			2	5	2	14	184	1122
INDET-STAMP	3	4	4	11	10	10	5	7	1	2	1	3					1	1	1	5					2	7	28	50
COMP-STAMP	1	6			6	39																			1	8	8	53
CORD-MARK					1	2																					1	2
SIMPLE-STAMP			1	25	5	42											9	37	25	92			2	3	1	3	43	202
TOTAL	11	40	18	74	63	306	85	408	26	172	28	185	4	24	2	10	33	112	36	138	1	2	4	9	7	33	318	1514
% BY PROVIENCE																												
SAND-TEMP PL	27	8	33	10	3	1	24	6	12	5	4	1			50	4	9	6	11	5	100	100			14	6	14	4
GROG-TEMP PL					5	1	7	3																			3	1
CHECK-STAMP	36	68	39	41	57	67	64	89	85	94	93	97	100	100	50	96	61	60	17	25			50	63	29	42	58	74
INDET-STAMP	27	10	22	15	16	3	6	2	4	1	4	2					3	1	3	3					29	20	9	3
COMP-STAMP	9	15			10	13																			14	23	3	3
CORD-MARK					2	1																						
SIMPLE-STAMP			6	33	8	14											27	33	69	66			50	37	14	9	14	13
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE																												
SAND-TEMP PL	7	4	13	11	4	6	44	36	7	13	2	3			2	1	7	10	9	11	2	3			2	3	100	100
GROG-TEMP PL					33	21	67	79																			100	100
CHECK-STAMP	2	2	4	3	20	18	29	32	12	14	14	16	2	2	1	1	11	6	3	3			1		1	1	100	100
INDET-STAMP	11	8	14	23	36	20	18	15	4	4	4	6					4	2	4	10					7	14	100	100
COMP-STAMP	13	11			75	74																			13	14	100	100
CORD-MARK					100	100																					100	100
SIMPLE-STAMP			2	12	12	21											21	18	58	46			5	2	2	2	100	100
% OF TOTAL TU																												
SAND-TEMP PL	1		2	1	1		6	2	1	1							1		1								14	4
GROG-TEMP PL					1		2	1																			3	1
CHECK-STAMP	1	2	2	2	11	14	17	24	7	11	8	12	1	2		1	6	4	2	2			1		1	1	58	74
INDET-STAMP	1		1	1	3	1	2																		1		9	3
COMP-STAMP					2	3																					3	3
CORD-MARK																											0	
SIMPLE-STAMP				2	2	3											3	2	8	6			1				14	13
% OF TOTAL	3	3	6	5	20	20	27	27	8	11	9	12	1	2	1	1	10	7	11	9			1	1	2	2	100	100

There is a type called Gulf Check-Stamped (Willey 1949) that is supposed to accompany Swift Creek pottery of the Middle Woodland. Its only distinguishing characteristic is a scalloped rim, which does not occur at Depot Creek.

Unusual attributes of the simple-stamped sherds from Depot Creek must also be noted. The typical surface of this pottery has lands and grooves of roughly equal width stamped in parallel and sometimes criss-cross fashion (Figure 6, top row). While there is plenty of this typical sort, there are two other varieties as well. One is stamped with well executed thin and very widely spaced lands (Figure 6, second row, right). The other presents an almost brushed appearance, with very fine line stamping and not exactly parallel (Figure 6, second row, left and center). All three varieties are lumped in the ceramic frequency tables, but are in need of future study.

The rough pattern extractable from the Test Unit A ceramic distributions is that the earlier part of the Early Woodland is pure Deptford, with simple- and check-stamped pottery, and the later portion introduces complicated-stamped wares and more Middle Woodland types such as cord-marked. The flaw in this stratigraphic analysis is the one sherd of complicated-stamped from Level 13, noted above.

This general trend is well supported by the frequencies from the other units (Tables 3, 4, 5), where complicated-stamped and cord-marked, always in small numbers, are later, and simple-stamped always earlier. In fact, the other three units, and to some extent Test Unit A too, show the check-stamped rather tapering off to none by the lowest levels, where simple-stamped occurs.

A radiocarbon date of 2010 ±100 years B.P. (before the present; actually before 1950) or 60 B.C. (uncorrected; Beta-26898) was obtained for the Depot Creek shell mound from .9 g of carbon extracted from 7 g of charcoal from Test Unit C, Level 3. The sample's small size made regular radiocarbon dating possible only with an extended counting time.

By Level 3 the complicated-stamped in this unit had disappeared; of the six sherds four were check-stamped, one indeterminate, and one large one simple-stamped. Because of the compressed nature of the stratigraphy in this unit on the back slope of the mound, and according to the interpretation of the ceramics just presented, this ought to be an earlier Deptford level. The date is thus a little too late, but not bad. Perhaps it is attributable to disturbance by later Depford people.

<u>Late Archaic</u>: In Level 7 of Test Unit C, after a hiatus in occurrence of any ceramics in Level 6 and only two sand-tempered plain and one check-stamped sherd in Level 5, fiber-tempered sherds appeared.

TABLE 3. CERAMICS BY LEVEL FROM TEST UNIT B, DEPOT CREEK SHELL MOUND, 8Gu56, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.15m^3)		LEVEL 2 (.15m^3)		LEVEL 3 (.07m^3)		LEVEL 4 (.15m^3)		LEVEL 5 (.09m^3)		LEVEL 6 (.20m^3)		LEVEL 7 (.14m^3)		LEVEL 8 (.15m^3)		LEVEL 9 (.16m^3)		LEVEL 10 (.13m^3)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
SAND-TEMP PL	17	90	7	3	2	3	5	8	4	3	1	7	1	2			1	1	2	14	40	131
GROG-TEMP PL	15	13																			15	13
CHECK-STAMP	44	228	21	128	3	23	15	90	2	21	1	16	1	3	1	2					88	510
INDET-STAMP	27	73	10	42	1	1	4	19					2	3	1	2	1	1			46	140
COMP-STAMP	5	14	2	13			1	2													8	29
CORD-MARK	4	15																			4	15
SIMPLE-STAMP	4	7											1	7	5	37	4	4	1	3	15	57
TOTAL	116	440	40	186	6	26	25	118	6	24	2	23	5	14	7	41	6	6	3	16	216	895
% BY PROVIENCE																						
SAND-TEMP PL	15	20	18	2	33	11	20	7	67	14	50	31	20	11			17	15	67	85	19	15
GROG-TEMP PL	13	3																			7	1
CHECK-STAMP	38	52	53	69	50	86	60	76	33	86	50	69	20	21	14	5					41	57
INDET-STAMP	23	17	25	23	17	3	16	16					40	21	14	4	17	12			21	16
COMP-STAMP	4	3	5	7			4	1													4	3
CORD-MARK	3	3																			2	2
SIMPLE-STAMP	3	2											20	47	71	91	67	73	33	15	7	6
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE																						
SAND-TEMP PL	43	69	18	2	5	2	13	6	10	3	3	5	3	1			3	1	5	10	100	100
GROG-TEMP PL	100	100																			100	100
CHECK-STAMP	50	45	24	25	3	4	17	18	2	4	1	3	1	1	1						100	100
INDET-STAMP	59	52	22	30	2	1	9	13					4	2	2	1	2				100	100
COMP-STAMP	63	49	25	45			13	6													100	100
CORD-MARK	100	100																			100	100
SIMPLE-STAMP	27	12											7	12	33	65	27	8	7	4	100	100
% OF TOTAL TU																						
SAND-TEMP PL	8	10	3		1		2	1	2			1							1	2	19	15
GROG-TEMP PL	7	1																			7	1
CHECK-STAMP	20	26	10	14	1	3	7	10	1	2		2									41	57
INDET-STAMP	13	8	5	5			2	2					1								21	16
COMP-STAMP	2	2	1	1																	4	3
CORD-MARK	2	2																			2	2
SIMPLE-STAMP	2	1												1	2	4	2				7	6
% OF TOTAL	54	49	19	21	3	3	12	13	3	3	1	3	2	2	3	5	3	1	1	2	100	100

TABLE 4. CERAMICS BY LEVEL FROM TEST UNIT C, DEPOT CREEK SHELL MOUND, 8Gu56, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.16m^3)		LEVEL 2 (.17m^3)		LEVEL 3 (.14m^3)		LEVEL 4 (.13m^3)		LEVEL 5 (.15m^3)		LEVEL 7 (.18)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
SAND-TEMP PL	114	148	7	14			1	1	2	1			124	164
GROG-TEMP PL			1	3									1	3
CHECK-STAMP	17	81	18	60	4	62	1	21	1	4			41	228
INDET-STAMP			4	9	1	31							5	40
COMP-STAMP	1	3											1	3
SIMPLE-STAMP	7	30			3	42	1	5					11	77
S-ST FIBER-TEMP											21	871	21	871
TOTAL	139	263	30	85	8	136	3	27	3	5	21	871	204	1387
% BY PROVIENCE														
SAND-TEMP PL	82	56	23	16			33	5	67	16			61	12
GROG-TEMP PL			3	3										
CHECK-STAMP	12	31	60	70	50	46	33	77	33	84			20	16
INDET-STAMP			13	10	13	23							2	3
COMP-STAMP	1	1												
SIMPLE-STAMP	5	12			38	31	33	18					5	6
S-ST FIBER-TEMP											100	100	10	63
	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE														
SAND-TEMP PL	92	90	6	8			1	1	2				100	100
GROG-TEMP PL			100	100									100	100
CHECK-STAMP	41	36	44	26	10	27	2	9	2	2			100	100
INDET-STAMP			80	22	20	78							100	100
COMP-STAMP	100	100											100	100
SIMPLE-STAMP	64	39			27	55	9	6					100	100
S-ST FIBER-TEMP											100	100	100	100
% OF TOTAL TU														
SAND-TEMP PL	56	11	3	1					1				61	12
GROG-TEMP PL														
CHECK-STAMP	8	6	9	4	2	4		2					20	16
INDET-STAMP			2	1		2							2	3
COMP-STAMP														
SIMPLE-STAMP	3	2			1	3							5	6
S-ST FIBER-TEMP											10	63	10	63
% OF TOTAL	68	19	15	6	4	10	1	2	1		10	63	100	100

TABLE 5. CERAMICS FROM TEST UNIT D, DEPOT CREEK SHELL MOUND, 8Gu56, BY COUNTS AND WEIGHTS IN GRAMS

	LEVEL 1 (.16 m^3)		LEVEL 2 (.19 m^3)		LEVEL 3 (.12 m^3)		LEVEL 4 (.15 m^3)		LEVEL 5 (.06 m^3)		TOTAL	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
SAND-TEMP PL	26	59	11	37	1	1	3	9			41	105
GRIT-TEMP PL	2	11									2	11
GROG-TEMP PL			2	1			1	1			3	2
CHECK-STAMP	9	49	5	21	1	1					15	71
INDET-STAMP	14	54					1	6	1	15	16	75
SIMPLE-STAMP	2	6	3	6					1	6	6	18
TOTAL	53	179	21	65	2	2	5	16	2	21	83	281
% BY PROVIENCE												
SAND-TEMP PL	49	33	52	57	50	35	60	57			49	37
GRIT-TEMP PL	4	6									2	4
GROG-TEMP PL			10	1			20	7			4	1
CHECK-STAMP	17	27	24	32	50	65					18	25
INDET-STAMP	26	30					20	36	50	73	19	26
SIMPLE-STAMP	4	3	14	10					50	27	7	6
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE												
SAND-TEMP PL	63	56	27	35	2	1	7	9			100	100
GRIT-TEMP PL	100	100									100	100
GROG-TEMP PL			67	42			33	58			100	100
CHECK-STAMP	60	69	33	30	7	2					100	100
INDET-STAMP	88	72					6	8	6	20	100	100
SIMPLE-STAMP	33	33	50	35					17	31	100	100
% OF TOTAL												
SAND-TEMP PL	31	21	13	13	1		4	3			49	37
GRIT-TEMP PL	2	4									2	4
GROG-TEMP PL			2				1				4	1
CHECK-STAMP	11	17	6	7	1						18	25
INDET-STAMP	17	19					1	2	1	5	19	26
SIMPLE-STAMP	2	2	4	2					1	2	7	6
% OF TOTAL	64	63	25	23	2	1	6	6	2	7	100	100

Large and thick, surprisingly they were not smooth surfaced but simple-stamped. Large sherds we inadvertently broke open displayed unburned, undecayed fibers; these were definitively identified as Spanish moss by ethnobotanist Sheldon.

Most of the fiber-tempered sherds in the Apalachicola Valley have plain surfaces. A good case can be made for the transitional nature of this simple-stamped fiber-tempered pottery leading to the Deptford simple-stamped, placing this component at the site within the later part of the Late Archaic. Fiber-tempered sherds found at the other Apalachicola shell mounds were all plain except for a few similarly simple-stamped at Clark Creek shell mound.

Less than a gram of charcoal was present among the recovered materials from this level containing the fiber-tempered sherds, but it was submitted for radiocarbon dating through the AMS (accelerator mass spectrometry) process, which is capable of dating very tiny samples. The date returned was 2970 ± 80 years B.P. or 1020 B.C. (uncorrected; Beta 26899), a good date for the later part of the Late Archaic.

Other Ceramic Materials

Non-vessel ceramic remains, clay lumps or chunks, from Depot Creek shell mound are listed in Table 6. Only six items were recovered. A possible burned clay piece of unknown function from the surface may be modern. The other fragments were possibly daub from house or other construction, and occurred in upper levels, so are plausibly part of the Early Woodland component. Some may be associated with pottery making or other activity. It might be unlikely that more permanent housing of wattle and daub construction would have been erected here if occupation was seasonal and short-term. Furthermore there is no clay source known nearby. Shelters used prehistorically may have been lean-tos of poles and palm thatch or some other quickly constructed type.

TABLE 6. POSSIBLE DAUB FRAGMENTS FROM DEPOT CREEK SHELL MOUND, 8Gu56.

Provenience	Number/Wt in grams	Comments
Surface	3/8.8	one is possibly just burned clay lump
TU A L 2	1/0.2	
TU B Mixed	1/2.1	from wall cave-in
TU C L 3	1/5.5	

LITHIC MATERIALS

Chipped Stone

Only 17 chipped stone artifacts were recovered from the test excavations and surface of the Depot Creek shell mound. All were pieces of lithic debitage, about equally divided between primary and secondary flaking products (as defined in standard typologies such as White, Binford and Papworth 1963). All are of whitish, low quality chert that can be procured upriver in various outcrops. All were recovered from surface or upper levels of units (Table 7).

There may be such a paltry lithic industry here because there is no nearby source of chert raw materials; there is no need for stone artifacts if wooden or other non-preservable materials can be used; there are no subsistence tasks in this environment requiring stone tools; the few stone tools used were well curated and seldom lost or broken; or any combination of these reasons. Our sample from four small units may be biased also, if lithic production was carried out somewhere else on the mound than where we excavated.

TABLE 7. LITHIC MATERIALS FROM DEPOT CREEK SHELL MOUND, 8Gu56.

Chipped Stone (counts/weights in grams)

Provenience	Prim Decort	2nd Decort	Shatter	2nd Flakes	Comments
Surface	5/39.6	2/17.8	2/46.3	1/<0.05	some flakes very poor quality fossiliferous chert
TU A L 2				1/ 0.8	
TU B L 1		1/ 9	1/ 2.7	2/16.9	
TU C L 4				1/ 3.4	
TU D L 2				1/ 2.1	

Other Stone

Provenience	Material	Comments
Surface	1 sandstone piece (27.3 g) 2 limestone frags (6.9 g) 7 quartz pebbles and frags (155.2)	one is possibly worked
TU A L 10	tiny mica flake (8 mm long)	unknown if naturally occurring or not (probably not)
TU B L 2	possible limestone frag (.2 g)	
TU C L 4	small red quartz pebble (1.5 g)	

At other shell mounds there is sometimes a similar lack of many lithic remains, but at Van Horn Creek there was an extensive microtool industry that left many small cores and debitage, as described in the next chapter.

The debitage at Depot Creek suggests there were a few tools and they were mostly sharpened or maintained or altered at the site, then taken along to the next habitation spot. Perhaps the most frequent tools used here were nets and other things that would leave no traces, but some cutting would certainly have to be necessary anywhere. No use wear was seen on any of the 17 flakes.

Other Stone

As listed on Table 7, other stone materials recovered at Depot Creek were even more scant than the chipped stone, consisting of a few pebbles and fragments, only one with a possibility of use wear (a quartz pebble with some grinding on one surface). They were saved because stone is so rare here that they may be cultural in origin.

Deep in Test Unit A a tiny (8 mm long), fragile flake of mica was recovered. This mineral occurs, even in flakes a few cm long, in the alluvial sands along the banks of the Apalachicola upriver; it is unknown if it could be naturally occurring here in the sand. Since the mound is almost all composed of cultural sediments with very little natural sand and humus, however, it is possible that the mica was brought in.

OTHER MATERIALS: SHELL, BONE, TOOTH

Shell Artifacts

The abundant clam and oyster shells at this site were apparently not used for toolmaking. A few of them have holes, though none clearly looks drilled, and all may be natural. Perhaps these shells are too thin to be suitable raw materials or, as food refuse, did not fit the cultural category of raw material for artifact manufacture.

As listed in Table 8, the Depot Creek shell mound produced a fair number of artifacts of other shell types, all apparently associated with the Early Woodland component. They include gouges and columellae from whelks, cut shells and cut fragments in irregular and square shapes (Figure 7). Often the cut edges show signs of having been cut part way then broken the rest of the way. The functions of the larger pieces are probably multipurpose cutting, hammering, and so on, as well as scooping or dipping. Several show wear on the tips, perhaps from using as picks. The smaller pieces may be debitage or tools of unknown function.

TABLE 8: **SHELL ARTIFACTS FROM DEPOT CREEK SHELL MOUND 8Gu56 (Common names for species given in Table A1.1).**

Provenience	Description	Wt (g)
Surface	*Busycon contrarium*:	
	4 cut fragments	261.3
	1 small scoop	23.2
	Melongena corona:	
	1 perforated shell	50.1
	1 fragment	59.8
TU A L 3	*Mercenaria*:	
	1 cut fragment	88.0
	Busycon:	
	1 small columella 6 cm long	4.1
	1 cut and broken frag	30.8
TU A L 4	*Busycon contrarium*:	
	1 columella with sharpened point with use wear	15.0
	2 gouges (or celts)	178.2
	Busycon spiratum:	
	1 columella point, sharp	1.8
	1 shell with cut side out, worn tip	8.7
	1 shell with cut aperture, worn tip	19.2
	Fasciolaria tulipa:	
	1 shell with cut side, cut tip	18.2
	1 cut frag	2.1
TU A L 5	Unidentified large gastropod:	
	2 small burned frags	7.1
	Busycon:	
	1 small shell, partly cut side	12.5
TU A L 6	*Busycon contrarium*:	
	2 cut fragments	47.1
TU A L 10	*Fasciolaria tulipa*:	
	1 nearly whole shell	30.6
TU B L 6	*Busycon*:	
	1 large fragment	46.7
TU D L 1	*Busycon*:	
	1 cut fragment	7.8
TU D L 2	*Busycon*:	
	1 columella frag	4.7
TU D L 4	*Busycon contrarium*:	
	1 cut fragment	7.0

Project zooarcheologists advise that the *Busycon spiratum* (pear whelk) and *Fasciolaria tulipa* (tulip) shells are generally too thin walled to have been useful, and these shells, though cut, may not have been artifacts. There are so few examples of these, however, that it

FIGURE 7. Varieties of worked shell from Depot Creek shell mound, 8Gu56. All from Test Unit A, Level 4. Top, two *Busycon contrarium* gouges; center, two *Busycon spiratum*; center-lower right, *Fasciolaria tulipa*; bottom left, *Busycon contrarium* columella; bottom center, *Busycon spiratum* columella tip; bottom right, *Fasciolaria* cut fragment.

seems more likely they were brought to the site for some use beyond just a special and very light snack.

Most shell identifications of worked specimens were made by less trained individuals in the USF lab instead of project zooarchaeologists. Thus not all specimens can be classified down to the species level. However, some general statements about diversity of shells other than *Rangia* and oyster can be made. Most shells that are not *Rangia* or oyster appear to be worked. Most are of *Busycon*, whelks, with a few of *Melongena corona*, the Florida crown conch, and *Fasciolaria*, tulip. There is also a *Mercenaria* or quahog (venus) clamshell fragment, the only one identified in any of our shell mound excavations. *Mercenaria*, the largest, heaviest bivalve in Florida (Luer 1986) is ideal for a strong tool, weight, or other artifact. All these shellfish live today in the bays and saltier waters around the barrier islands. If the inhabitants of Depot Creek lived closer to fresh water, as suggested by the nearly 100% *Rangia* composition of this midden, they had to travel possibly 10 to 30 km by water to get to the sources of *Mercenaria*.

Though there is more worked shell recovered from Depot Creek than from any of the other shell mounds tested, the 26 specimens from this site are really not many compared to the abundance of such items at other sites in estuarine settings, such as in south peninsular Florida. While these shells may have originally been gathered for food, too, there seem to be too few of them not to have been chosen for artifact manufacture. Furthermore, the worked shell is concentrated in the upper part of Test Unit A, suggesting a specific activity area. The *Busycon contrarium*, lightning whelk, was clearly worked there or worked and left there, making it more likely that the other gastropods were also.

As work on the evidence from these sites continues, one goal is to look further into the nature of shell tool manufacture and compare the assemblages from the Apalachicola Valley with the large amounts of data on the subject from elsewhere in Florida (notably Marquardt 1992) and along the Gulf and other coasts. I know of no work on shell tools in the Apalachicola region. Perhaps the rarity of shell tools here is connected with the (relatively) easier access to stone tool raw material compared with South Florida. However, stone artifacts are just as scarce at Depot Creek as shell artifacts.

<u>Bone Artifacts</u>

Three bone implements were recovered from the Depot Creek shell mound, two fragments of bone points and a fishhook (Figures 8, 9). The U-shaped fishhook is probably of deer bone, and was recovered from Test Unit A, Level 9. It is broken at both ends and measures 3.5 cm long.

The longer point, of deer metapodial, came from Test Unit A, Level 15, just at the water table. It is 12 cm long, tapered at the unbroken end, and 1 cm thick, with a groove running down the middle. The other point fragment is similar in appearance, 6.4 cm long, .9 cm thick. It was recovered from Test Unit B, Level 11. Both have several small cut marks, apparently from working the material. The photos in Figure 8 are enlarged to show these marks better. As both points came from very deep levels, they could be from the earlier part of the Early Woodland. Their function is unknown.

The bone fishhook is a rare find, even in Florida archaeology, according to project zooarchaeologist Karen Walker. Most fishhooks are not round (U-shaped) and cut from a single bone, but V-shaped and made as composite tools. It may also be an unfounded assumption that this hook is a fishing implement. It could have hooked or hung anything.

Bone points are fairly common in Florida shell mounds. Walker (1992: 232) and Waller and Dunbar (1993:5) illustrate some very similar to those from Depot Creek, and the rounded type Dunbar states is probably Deptford in age. Usually in Florida rapid decomposition and acidic soils mean that items of organic raw materials such as wood and bone perish fast (compare the human skeletal remains from 8Ca142 reported in a later chapter, which were almost decayed away, and the near lack of any animal bone from both that site and 8Gu38, both in sand deposits). The preservative powers of shell mounds, with the basic shells neutralizing the effects of naturally acid soils, are clearly seen at Depot Creek and the other shell mounds investigated, where large amounts of bone, teeth, scale, and so on, are preserved.

Thus the real question becomes, why are there not more bone artifacts? They certainly would have been preserved if they were there. There is no answer to this at present except to say either it is sampling error or it is the adaptation of the people who lived here that did not require such implements.

<u>Human Remains: Deciduous Tooth</u>

A single small deciduous human molar was recovered from Test Unit C Level 6 at Depot Creek shell mound. In this level there were no ceramics; the last check-stamped sherd was about 20 cm above it and the fiber-tempered simple-stamped pottery about 10 cm below.

The tooth was examined and x-rayed by Tampa dentist Julio Maya, who provided the following comments: It has a complete root attached, and therefore cannot have fallen out to make way for a permanent tooth during the person's childhood. Rather, it was more likely to have been

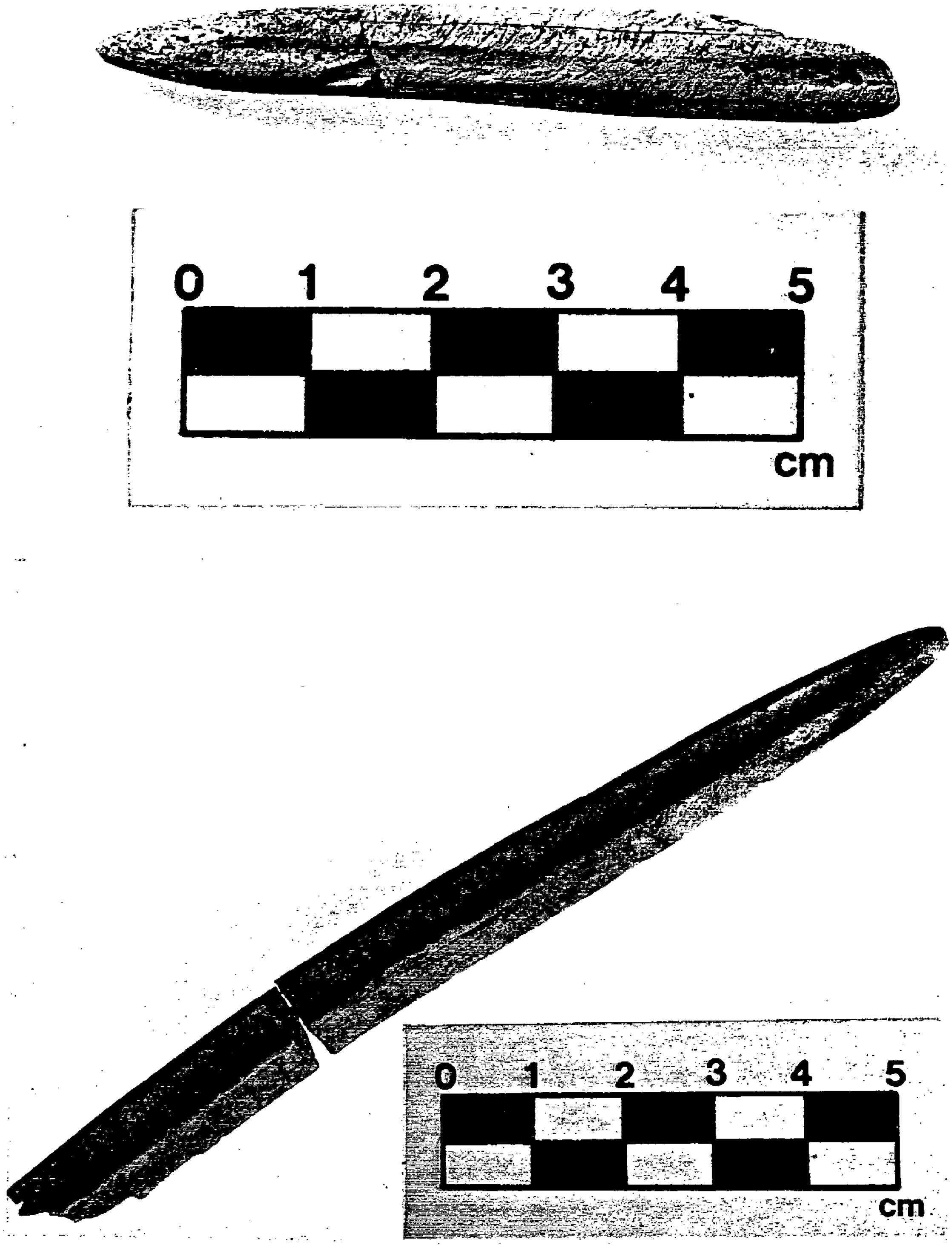


FIGURE 8. Bone points from Depot Creek shell mound; top, from Test Unit B, Level 11; bottom, from Test Unit A, Level 15.

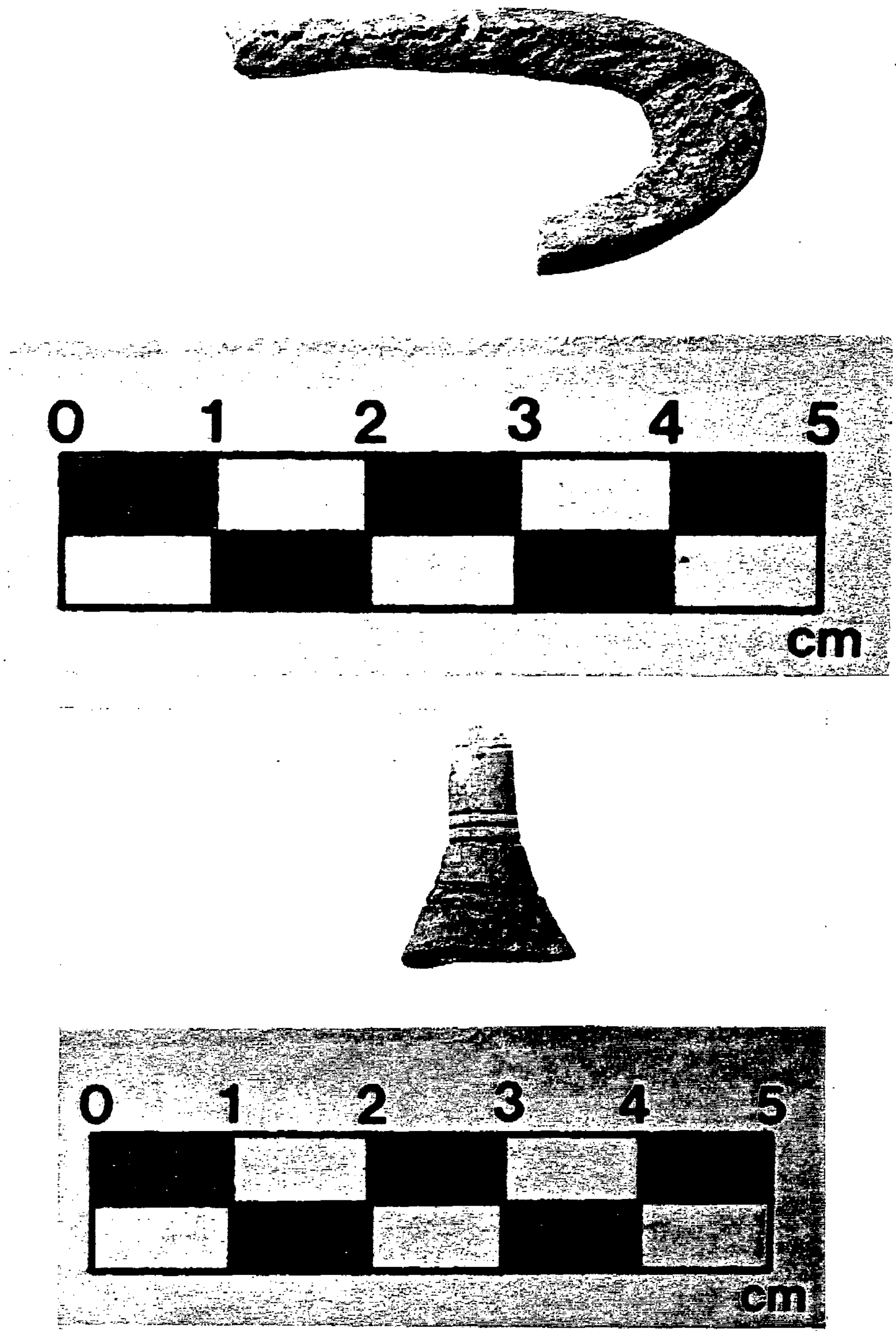


FIGURE 9. Bone tools from shell mounds. Top, fishhook from Depot Creek shell mound, Test Unit A, Level 9; bottom, engraved pin proximal fragment from Van Horn Creek shell mound, Test Unit 3, below water table (equivalent of Level 11).

pulled or knocked out or else to have come out of the skeleton after the child was dead. There are no marks on the tooth of any implements that might have pulled on it. There is moderate wear.

The tooth is from a person probably 4 to 9 years of age. The wear tends to suggest an older child by modern but not necessarily prehistoric standards. Retraction of the pulp chamber also supports the characterization as an older child. However, retraction of the pulp could also have occurred earlier in prehistoric children from mastication of more raw and hard foods. If the tooth was removed deliberately or by accident from a live person, the child was probably 8-9 years old. By age 10-11 the roots of these teeth are resorbed by the permanent tooth. On the other hand, this tooth could be from a young adult (age 23-26) who had a missing, impacted, or misplaced permanent tooth.

It is unknown what this tooth was doing here or with which component it is associated. A comparison can be made with the Clark Creek shell mound, where several adult teeth were found similarly loose in the shell matrix. They might be from corpses/skeletons buried or left elsewhere. On the other hand, writing as the parent of a 4-year-old who bashed out his own incisor, root and all, in an indoor, supervised play situation, I can only imagine how prehistoric accidents or deliberate use of teeth as tools might have effected the same result.

FAUNAL REMAINS

Faunal remains were well preserved at the Depot Creek shell mound; indeed this was one reason for choosing it for test excavation, because much could be learned about prehistoric subsistence. The entire mound was composed of predominantly *Rangia* clams, with very little soil, and a few oysters. As we dug, we often saved shells packed with tiny fish vertebrae, otoliths, or scales, small animal teeth or turtle carapace fragments or alligator dermal scales. A few of these shells were packed in tinfoil and saved just as they came from the ground. Otherwise the recovery strategy involved saving a few sample *Rangia* shells, all other shell and bone from the dry screen, and sorting all faunal remains out of the 4-liter samples subjected to flotation.

Systematic zooarchaeological analysis is a specialized study requiring much time and money. This project was fortunate to be able to get samples analyzed at the Florida Museum of Natural History (FMNH), where curator Elizabeth Wing has the largest comparative skeletal collection in the state, and has established a reputation for such special study in the eastern U.S. and elsewhere in the world. There Karen Jo Walker conducted analysis of selected samples recovered from

Depot Creek (and also from the Van Horn Creek shell mound). Her tabulated identifications and analytical summary are presented in Appendix 1A and summarized here.

Since only a small sample of the recovered remains could be identified and analyzed, these results impose an additional set of sampling biases upon the already existing biases of our unit placement on the mound and small amount of the total excavated.

Project constraints allowed for detailed identification and analysis of the flotation recovery and dry screened materials from every other level of one excavation unit, plus identification of a few interesting, unusual, or highly diagnostic looking specimens from the dry screen from various other proveniences. Thus, for Depot Creek, all fauna from Test Unit C, Levels 1, 3, 5, and 7, totaling 11.7 kg, and recovered from a total of 13.9 liters (14.3 kg) of soil samples floated, were submitted for this advanced study. These are tabulated by Walker in Tables A 1.3 through A 1.9 in Appendix 1. Test Unit C was chosen for this analysis (and also ethnobotanical analysis) because it produced not only the Deptford ceramics but also the fiber-tempered sherds. Furthermore, charcoal from Levels 3 and 7 was radiocarbon dated (see ceramics discussion).

To permit further evaluation of the results, the volumes of flotation samples and total level volumes are given in the tables in Appendix 1. These numbers show first the difficulty of taking a perfect 4-liter sample, as described in the research plan section (first chapter), and second, the truly small sample of materials analyzed compared to the enormous volume of the whole site. Walker's study provides a good first analysis, however, and she recognizes introduced biases. For example, as she notes, despite our picking even tiny remains out of the sticky matrix that did not go through the 1/4" dry screen, MNI counts or minimum numbers of individual animals were much greater in the flotation recovery, where much finer screens were used. On the other hand, she notes that some species, such as deer, mouse, alligator, seatrout, and lightning whelk were only represented in the larger screen recovery for these levels. Much more work, such as identification of the remaining majority of specimens, needs to be done to get a better picture of subsistence at this site.

However even these preliminary results give some interesting insights. Twenty-four taxa of animals were identified in the apparent food refuse at Depot Creek (Table A1.8). They include freshwater fish such as gar and more saltwater estuarine fishes such as seatrouts, seacatfish, croaker, and sheepshead; reptiles such as alligator, turtles, and snakes; and mammals such as deer, mice, and rabbits. Though no birds were found in the materials sent for analysis, other proveniences produced many fragments grossly identifiable in our lab as bird bone, distinctive because of its thin-walled, hollow form.

The majority of the midden is composed of *Rangia* clamshells, with one or two oyster shells in the upper levels, and occasional nerites and scallops. There are also land snails, which still appear in modern form today on the mound (modern shells being easily distinguished from archaeological ones by the weathering and gray patina on the latter).

As Walker states, some of these species may be commensals. That is, barnacles and land snails are probably present not because people deliberately obtained them but because they just showed up around other things people were doing (though they could also have been food). Barnacles were attached to other shells; snails were attracted to the organic deposits. Similarly, other animals might simply have wandered in and died, to be incorporated into the midden of the shell mound. During our work we collected from the mound summit the skeleton of a modern and recently deceased (and slightly malodorous) turtle to bring back to our lab for comparative purposes. But it is probable that the overwhelming majority of specimens were those targeted by the prehistoric aboriginals.

Thus, the interpretation here is that the residents at Depot Creek procured a wide range of freshwater, saltwater, and terrestrial species. This is not surprising in such a rich environment. In her comparison with the data from Van Horn Creek, Walker shows the higher number of taxa represented at that site, mostly due to the greater amount of saltwater forms in earlier Late Archaic levels. In later levels at Van Horn there is a switch to an assemblage more similar to that of Depot Creek during the Woodland and later times.

At Depot Creek the emphasis was upon freshwater estuarine animals. Furthermore, little change from the Late Archaic level to the Early Woodland deposits is seen. A way of life that was probably none too difficult and a diet that was quite rich persisted for at least a millennium.

BOTANICAL REMAINS

As with the faunal analysis, identification and study of paleoethnobotanical remains is a time-consuming and expensive process. Only flora from Test Unit C, all levels, flotation samples and dry screened material, were sent off for this specialized study, for interpretation in light of the results of the zooarchaeological and radiocarbon studies.

There were not many plant remains preserved (only charred items would have escaped decay; modern specimens identified by Sheldon are not pertinent to the archaeological record). The few materials present amidst the packed shell and animal bone were bits of pine charcoal, with tiny amounts of hardwood, and very small fragments of acorn and hickory shell (Table 9).

This paltry assemblage does not provide much to interpret. The scarcity of charcoal may mean that few fires were made, and those that were used pine wood. Pine burns fast and not as well as hardwoods, but it may have been more abundant. Today the area is freshwater swamp, vast hardwood forests dominated by oaks, gums including tupelo, and cypresses, with only a few pines. The relative predominance of pine in the archaeological samples may indicate a cultural preference, but it may also mean that the area was dryer and pine was more abundant in both Late Archaic and Deptford times.

Acorn and hickory are certainly foods known to have been utilized by aboriginal Americans, but the shells were also saved and used for

TABLE 9. BOTANICAL REMAINS FROM DEPOT CREEK SHELL MOUND, 8GU56.

Provenience	Materials	
TU C L1	WOOD:	ca. 0.5 g pine, ca. 0.5 g pine bark
	SEEDS:	1 oblong (.002" long)
TU C L2	WOOD:	13.3 g pine, 1.7 g pine & ring-porous hardwood
	SEEDS:	2 spherical (.006" diam)
	NUTS:	1 frag acorn husk
TU C L3	WOOD:	2.8 g pine, 4.7 g pine wood and bark
	NUTS:	0.1 g hickory shell (all remains from this level sent for radiocarbon dating)
TU C L4	WOOD:	1.7 g pine, 0.2 g pine and resin, 6.0 g pine and ring-porous hardwood
TU C L5	WOOD:	1.1 g pine
TU C L6	WOOD:	ca. 2.4 g pine
TU C L7	WOOD:	1.9 g pine (all sent for radiocarbon dating)
	FIBER IN SHERD:	Spanish moss, *Tillandsia usneoides*

fuel. Thus we cannot establish seasonality of the site based on the time these are ready to harvest. The nutshell fragments occur in upper levels and do suggest a Deptford affiliation. Otherwise the list of specimens on Table 9 indicates little change through time from the Late Archaic, deeper levels to the later Early Woodland adaptation, much like with the faunal record shown in Appendix 1.

A final botanical revelation was the identification of the fiber in the fiber-tempered Late Archaic pottery from Level 7 as definitely Spanish moss, *Tillandsia usneoides*. To my knowledge this is the first identification of unaltered Late Archaic ceramic fibers themselves while they were present intact in a Florida specimen. A previous identification of fiber in Orange ware from the Florida Atlantic coast noted Spanish moss but the results were not conclusive enough for "a full assessment of the tempering agent or agents" (Simpkins and Allard 1986: 115).

SUMMARY AND INTERPRETATION OF COMPONENTS

Early Woodland: Deptford and Early Swift Creek (?)

Early Woodland cultural deposits at Depot Creek shell mound are at least 2 m thick on the mound summit, though more compressed on the slopes. There seems to be an earlier pure Deptford characterized by simple-stamped, plain and some check-stamped ceramics, especially extremely linear check-stamped (Figure 6, third row left and center). Later there are Swift Creek Complicated-Stamped and cord-marked sherds suggesting a more evolved Early Woodland. A radiocarbon date on the earlier Deptford of 60 B.C. seems late but may be correct, necessitating some adjustment of this interpretation.

Whatever the ceramic change through time, there is little difference in the subsistence remains or sparse lithic assemblage throughout the Woodland deposits. Stone tool production at the site was apparently limited to maintenance of the very few items brought along. Shell tools and worked shell are relatively abundant compared with other Apalachicola shell mounds, but not when compared with shell mounds in other estuarine and coastal locales in Florida. Shell tool use and/or manufacture is most emphasized in the later Deptford levels of Test Unit A, almost the direct center of the mound summit.

Animal species exploited were a wide range of fish, some reptiles, some mammals, and shellfish, especially freshwater *Rangia* clams. No features or indications of structures, cooking pits or other daily activities were encountered. The total of three bone tools found in a mound with so much good bone preservation suggests little need for these sorts of implements as well. Walker (1992) suggests the bone points may have been gouges for catching fish. The bone hook is also implicated in fishing, though it could have hung other things. Perhaps these artifacts were far better curated; certainly they are less breakable than pottery, another factor accounting for their relative scarcity compared with sherd counts.

Reconstruction of the Early Woodland lifestyle here is not easy, even with the large amount of information derived from the testing. Perhaps simple methods of harvesting aquatic resources, such as netting fish or spearing them with wooden lances, and hand-collecting of shellfish, were the dominant subsistence activities.

Late Archaic

Only a few Late Archaic remains were recovered from the Depot Creek site, in Level 7 of Test Unit A. The large fiber-tempered ceramic sherds there were simple-stamped, perhaps representing a transition to the type of surface treatment done on the later Deptford ceramics. This level was radiocarbon dated to 1020 B.C., late in the Late Archaic but quite suitable for a date for this material. The fiber in the sherds is definitely Spanish moss, an epiphyte available hanging from most trees in the river swamp today.

Biotic evidence suggests the same sort of estuarine subsistence, emphasizing freshwater species, as was practiced during the next millennium or so by Early Woodland peoples. No lithic or other artifacts accompanied the ceramics and faunal and floral materials, though the sample of this component was so small as to make statements about their absence inappropriate.

THE VAN HORN CREEK SHELL MOUND, 8Fr744

SITE DESCRIPTION

This moderate size shell mound sits on the present bank of Van Horn Creek, a tributary of the East River, which is a major distributary of the Apalachicola on the east side of the lower valley (Figures 1 and 2). The site was recorded in 1983 during a small survey sponsored by the University of West Florida. Local (animal and artifact) hunters Ken and Mark Elliott brought me and survey archaeologist Mike Burt to this remote area. At that time only plain and check-stamped pottery was collected, but one of the former was a limestone-tempered sherd. Animal bone was noted, and a utilized piece of chert block shatter, unusual for the lower Apalachicola shell mounds, which usually have few lithic remains.

The site was chosen for test excavations because of the possibility that the limestone-tempered ware was late prehistoric Fort Walton in cultural affiliation. Components of this time period are, so far, rare at lower valley shell mounds. Especially for comparison with inland Fort Walton adaptations, it was thought that data from this site would be extremely interesting.

The shell mound is over a mile up Van Horn Creek (as it was named by our local informants, though not on the USGS quadrangle map). The route to the site was rather difficult in 1983, as this little creek is in places no wider than a dining room table and only a few centimeters deep, as well as heavily overgrown (Figure 2). Considerable effort was required in 1987 to relocate it, as the two 1985 hurricanes and apparent lack of collectors' interest caused the creek to be impassable. With the help of Joseph Thompson of the Apalachicola Estuarine Reserve, the fallen trees and other barriers were cleared enough to permit passage of our small boats, though the trip just from the creek mouth took 45 minutes.

Because this creek is heavily tidally influenced (though it is fresh water), the water level varied hourly throughout the day. Presumably aboriginal inhabitants could take advantage of the tides to aid navigation one way or the other. We noted a considerable hastening of our journey if we were going the same way the tide was, in or out. The trip was much more arduous if we traveled opposite the flow, requiring pushing the boats off logs and sandy bottoms.

The shell mound is narrow and roughly oval, with the long axis oriented about 135 degrees or due southeast. It is 30 m wide and 90 m long; this is the extent of the visible shell, at any rate, as shown on Figure 10. The entire shell midden deposit extends much wider and

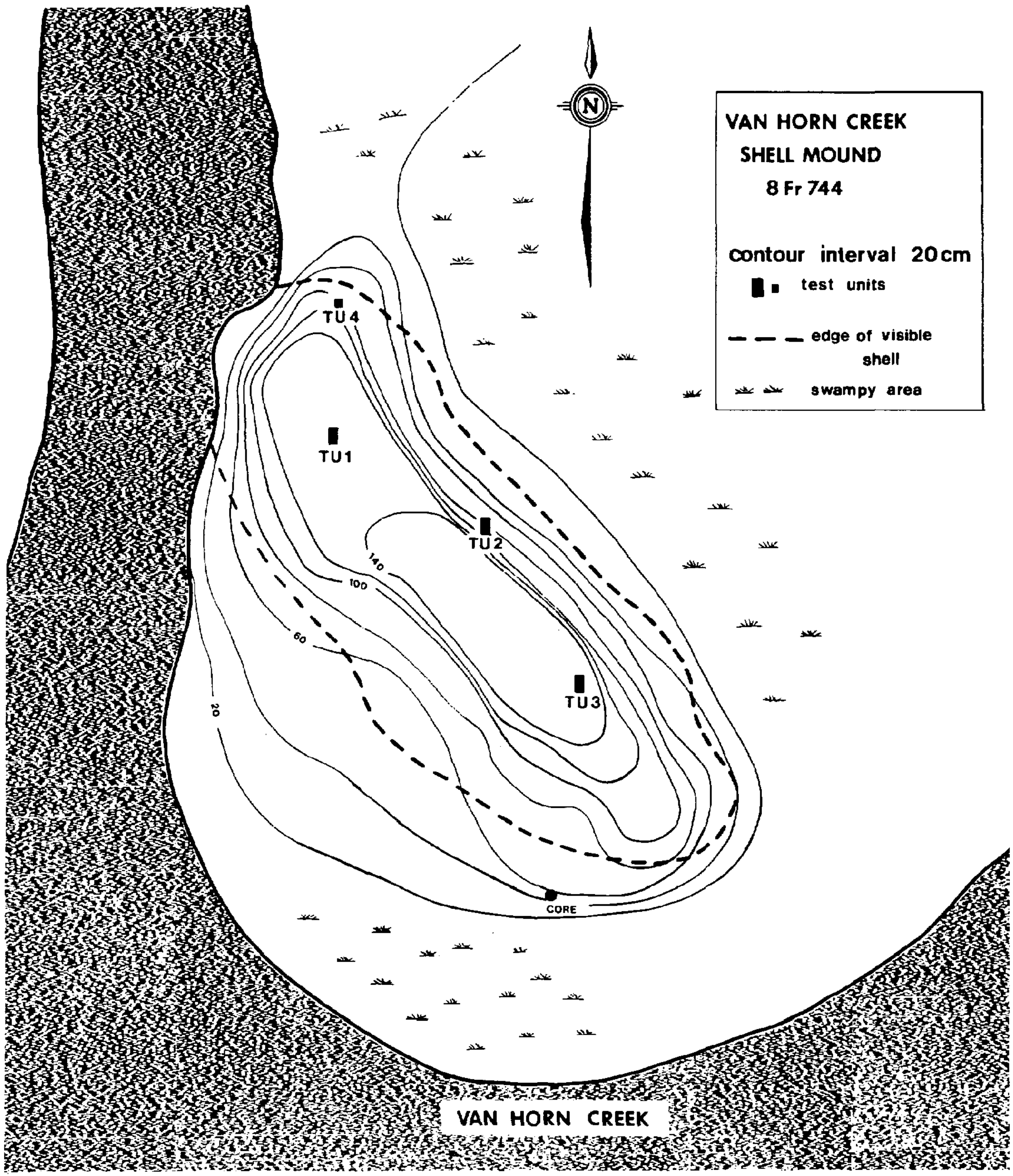

VAN HORN CREEK
SHELL MOUND
8 Fr 744
contour interval 20cm
test units
edge of visible shell
swampy area
TU 4
TU 1
TU 2
TU 3
140
100
60
20
CORE
VAN HORN CREEK

FIGURE 10.

deeper, horizontally beyond the 20 cm contour line on the map. A core hole taken by visiting soil scientist Joe Schuster off the southeast edge of the mound close to the edge of the standing water showed crushed shell up to 2 m below the surface, which was itself only at a relative elevation of 20 cm above the creek. Clearly the midden deposits extend far below the water table. Thus, though the mound today rises about 1.5 m above the surrounding swamp, it is really much higher. Rising water levels and swamp deposits have covered perhaps 50% of it. Most of the visible shell is of *Rangia*, the freshwater clam.

The site sits inside a meander loop of the creek, but does not conform to its orientation, suggesting that at one time the creek flowed along side it, but now the stream channel has shifted. In the surrounding swamp there is standing water for much of the year. The mound is quite visible from the creek, as the only elevation for miles, and also because the white shells stand out even in the summer when the vegetation is thick. In addition, it has some palms and hardwoods like the rest of the swamp forest, but also some unusual vegetation, a tall weed called bear's foot or yellow leafcup (*Polymnia uvedalia* L.) that does not occur on lower ground.

Remoteness and inaccessibility have not prevented people from getting to this mound to dig potholes. Furthermore, as conscious of our own environmental impact as we tried to be, the clearing of the creek unfortunately made it possible for looters to reach the mound after we left for the summer.

FIELDWORK

Excavations

As with the other shell mounds, the strategy for test investigations was to excavate at least one or two units into the summit and one or two into the slope. Because the site was so difficult to reach, it was the third and last to be tested in the 1987 season, when the crew were more experienced and able to deal with the rigors of a difficult site. Because it took so long to reach, we often had only a 6 hour work day there for the two-week testing period.

Fieldwork was carried out at the Van Horn Creek shell mound from 26 June to 7 July 1988, with a crew of eight, and additional work on Test Unit 4 on 14 December, with a crew of five. The site was mapped with a transit and four excavation units were dug, two on the summit and two on the slopes. Some units were bigger than at Depot Creek because we expected to go deep and wanted to be able to get in and out of them more easily. With nearly double the amount of excavation area, however, we were unable to go as deep, and some units did not even reach the water table.

Two 1 x 2 meter units, a 1 x 1.5 m unit, and a 1 x 1 m unit were excavated at the Van Horn Creek shell mound, for a total of 7 square meters. When the depths of excavation for each unit are calculated in, the total test excavations become about 6.4 cubic meters. As well as can be estimated, this represents perhaps a .1% sample of the site. All units were located judgementally.

Excavations were in arbitrary levels of 15 cm because of the absence of any clear stratigraphy permitting removal of matrix by cultural of natural strata. The unit of 15 cm was chosen, as with the other shell mounds, because of the difficulty of maintaining a flat floor and the knowledge that we would probably excavate quite deeply. Thinner levels would have taken longer.

All soils were dry screened through 6.35 mm (1/4") mesh. Often this means that many tiny materials, especially biotic remains, are lost through the large mesh opening. However this was less the case at Van Horn Creek, as also noted at Depot Creek, because the sticky, clayey soil would not even go through the mesh very well. Screeners picked materials out of the matrix, including tiny fish vertebrae and such. This made screening a long process, but did result in better recovery.

As a footnote on field method, it should be explained that, not only did we not have access to waterscreening equipment in 1987, but also we figured it would be impossible to haul it into so remote a location. Heavy pumps would make our boats impossible to push off the sandy bottom at low water. We did pour a few buckets of creek water over some screens but this process was more trouble than it was worth. The looters who visited between July and December, however, somehow made it work. While not bothering our still open Test Unit 4, which they could not have missed, they dug into the slope of the mound just west of that unit. Since their backdirt pile was essentially clean white shells, they must have waterscreened somehow, or washed the soil matrix. This is the best explanation for such a pile, as there was little rain during those dry months.

__Stratigraphy__

Stratigraphy in this shell mound was extremely difficult to interpret. There were no visible strata at all except the two produced by the gross difference between the predominantly clam shell matrix changing to predominantly oysters with increasing depth.

The upper 30 to 40 cm of matrix was about 30% blackish sand (Munsell Colors 10YR2/1 and 2/2) full of clamshells with perhaps 10% to

30% oysters. There were many ceramic and lithic artifacts and animal bones. In every unit small areas or lenses of crushed shell appeared here and there but were impossible to isolate perfectly because of the collapsible nature of the matrix. We could not even treat them as features since they seldom showed up in the floor very well and only later became visible in the walls. Thus the few phenomena recorded at the time as features ended up too unclear to be considered as such in the final analysis.

The next 40 or so cm of matrix was similar but more brownish gray and dark yellowish brown (10YR3/4), with a few artifacts and bones, and predominantly oyster, fairly solidly packed. This was clearly a transition zone between the top stratum and what was below.

By an average of 80 cm depth the matrix was loosely packed large whole oysters with no artifacts and only an occasional animal bone. The sandy soil had disappeared and the only thing resembling soil was an orange (10YR5/4 to 5YR5/8) slimy clay coating on the oyster shells. This orange slime was seen around the mound in areas of standing water and open muck. Soil scientist Joe Schuster is of the opinion that it is a mineral concentration (iron?).

The water table appeared soon after the orange slimy oyster matrix was reached. The depth of the water varied daily and hourly from tidal influence. When it was encountered, however, excavation was halted; culturally sterile soils were not reached, and probably exist a good meter or three deeper.

In terms of cultural strata, in the field it was clear that there was a Fort Walton component possibly underlain by a generalized Woodland component, and under that the fiber-tempered ceramics showed a Late Archaic occupation. Much surface disturbance by recent potholes, not to mention by later prehistoric occupants, had mixed earlier and later materials at least nearer the surface of the mound.

The horizontal and vertical distribution of clam versus oyster shell suggests the earlier occupations harvested marine species and made a longer, wider pile of their midden. Later peoples utilized more freshwater clams and distributed them mostly on the summit of the existing oyster midden. (Analysis of other fauna supports this interpretation, as discussed below).

<u>Excavation Units</u>

<u>Test Unit 1</u> measured 1 x 1.5 m and was located on the northwestern end of the mound summit in an area between two potholes that was undisturbed below the pothole backdirt. The whole and crushed clamshell and black soil matrix with a few oysters contained a few patches of

crushed shell. Animal bone, ceramics and chert were common. The shells gradually changed to solid oyster by 80 cm depth. The water table was encountered at 148 cm depth below surface, and excavation halted.

Test Unit 2 was 1 x 2 m, excavated into the "back" slope (side away from the creekside where we debarked onto the shell mound) on the center northeast side of the mound. It had more oyster in the upper levels, and more mixture of cultural components (as indicated by ceramics), unavoidable perhaps as materials fall or are thrown over the side. Horizontal levels were maintained for control, so the steepness of the slope resulted in upper levels being less than uniform thickness throughout. Areas of more or less crushed shell and grayer soil or shell were present but poorly defined. One such area, a vague oval of possibly burned or more weathered shell, was initially labeled as a feature but in cross-section proved to be very shallow. It may have been a thin lens representing an incident of refuse disposal.

By 50 cm depth the brownish transitional level was reached, and at 92 cm below the highest surface the water table was encountered and excavation halted.

Test Unit 3 was a 1 x 2 meter unit on the southeastern summit. It was away from obvious potholes but did show some disturbances in at least Level 1. By Level 3, 45 cm depth, the high number of clamshells in the matrix had diminished to about 5% and oysters had increased accordingly. At 75 cm depth fiber-tempered ceramics appeared and below that the matrix changed to the solidly packed whole oysters in orange slime, occasionally with some crushed shell.

Below 90 cm (beginning with Level 7) only the south half of the unit was continued deeper due to time considerations. The oysters continued, more loosely packed than in Test Unit 1, with a few barnacles and mussels probably brought in with the oysters. The water table was encountered at 137 cm and excavation halted.

Test Unit 4 was a 1 x 1 meter square dug at the north end of the mound on the lower slope close to where the shell met the creek, just a couple meters from where we tied up our boats and stepped onto the site. It was situated between obvious potholes, and probably had disturbed pothole backdirt in Level 1.

As with Test Unit 3 the excavation in horizontal levels on this sloping ground meant the level thickness was not uniform (level volumes are shown on ceramic and faunal tables). The low elevation on the slope also led to our encountering a rapid shift from mostly clam to predominantly oyster shells by Level 2 or 15 cm depth.

The water table appeared at 77 cm depth (Level 5) during our July excavations. It was decided to leave the unit open and return in the fall when the dry season meant that water levels all over the valley would be lower. A crew of five returned in mid-December for one day and was able to continue to 105 cm before encountering water again.

In the two additional levels excavated there was a concentration of burned clay fragments. It was not discrete enough to be labeled a feature, but may have represented either a loose hearth area or redeposited hearth materials or else clay lumps or chunks associated with Late Archaic Poverty-Point related complexes (see later discussion). Shells around the chunks of clay were not burned. There was a higher concentration of clams around them, however, and in these levels in general, instead of the high frequency of oysters seen above and in other units at this depth (both relative and absolute).

CERAMICS

Pottery

Ceramic sherds recovered from the Van Horn Creek shell mound totaled 621, weighing over 3.6 kg. They are tabulated by gross provenience in Table 10, and for each level of each unit in Tables 11 through 14. It was not possible to tabulate the ceramics by cultural stratum or even arbitrary level across the site; such an exercise would be meaningless given the differences in elevation from mound summit to slopes and the fact that three of the four units had mixed components probably due to prehistoric or recent disturbance. Figure 11 graphs the gross relative frequencies of the different types for the entire site by count and weight. It is not meaningful either in terms of isolating the components, except for the Late Archaic diagnostic fiber-tempered sherds. It does show how small the plain sherds are relative to others, suggesting possibly their greater use as more utilitarian vessels or different characteristics that make them more breakable. Many plain sherds of course may be the plain-surfaced portions of vessels with surface decoration or alteration elsewhere.

The presence of a Fort Walton component at this site was solidly confirmed by the ceramics appearing in the upper levels of the units and on the surface. This component appears to be underlain by a general Woodland component dominated by check-stamped pottery, unless the check-stamped sherds go with the Fort Walton occupation. All this, in turn, was underlain by a Late Archaic component characterized by fiber-tempered (plain) sherds.

The distributions by level for the four test units show some degree of mixing of the components in all but Test Unit 1. This is explainable for Units 2 and 4, which were on the mound slope, but not as

TABLE 10. CERAMICS FROM VAN HORN CREEK SHELL MOUND, 8Fr744, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	SURFACE CT	SURFACE WT	MIXED LEVELS CT	MIXED LEVELS WT	TU 1 CT	TU 1 WT	TU 2 CT	TU 2 WT	TU 3 CT	TU 3 WT	TU 4 CT	TU 4 WT	TOTAL CT	TOTAL WT
SHELL-TEMP PL			1	2	1	9					1	2	3	13
GROG/SHELL/BONE-T					1	1							1	1
PENS INC					1	4							1	4
FT WALTON INC	6	151			2	21	1	7	4	15	2	43	15	237
PT WASH INC					4	22							4	22
MARSH INC									1	30			1	30
L JACKSON PL	1	14					1	3	1	3	3	20	6	39
INDET INC					3	19			1	3	1	6	5	27
INDET PUNC					1	3					3	22	4	25
LIMEST-TEMP PL	2	15	3	21	3	6					1	4	9	46
LIME/GROG-TEMP PL	1	13											1	13
CHECK-STAMP	10	93	10	51	58	386	37	301	2	10	3	60	120	901
INDET STAMP					7	48							7	48
CORD OR FABRIC-MK					6	33	1	33					7	65
GRIT-TEMP PL			2	15	5	34	3	9	7	56	13	100	30	214
GROG-TEMP PL	1	13	13	54	76	455	13	65	1	5			104	593
SAND-TEMP PL	26	263	16	65	222	770	10	60	10	37	11	34	295	1229
FIBER-TEMP					1	28	2	12	2	61	3	5	8	105
TOTAL	47	562	45	208	391	1839	68	490	29	218	41	295	621	3612
% BY PROVIENCE														
SHELL-TEMP PL			2	1		1					2	1		
GROG/SHELL/BONE-T														
PENS INC														
FT WALTON INC	13	27			1	1	1	1	14	7	5	15	2	7
PT WASH INC					1	1							1	1
MARSH INC									3	14				1
L JACKSON PL	2	2					1	1	3	1	7	7	1	1
INDET INC					1	1			3	1	2	2	1	1
INDET PUNC											7	8	1	1
LIMEST-TEMP PL	4	3	7	10	1						2	1	1	1
LIME/GROG-TEMP PL	2	2												
CHECK-STAMP	21	17	22	25	15	21	54	62	7	5	7	20	19	25
INDET STAMP					2	3							1	1
CORD OR FABRIC-MK					2	2	1	7					1	2
GRIT-TEMP PL			4	7	1	2	4	2	24	26	32	34	5	6
GROG-TEMP PL	2	2	29	26	19	25	19	13	3	2			17	16
SAND-TEMP PL	55	47	36	31	57	42	15	12	34	17	27	12	48	34
FIBER-TEMP						2	3	2	7	28	7	2	1	3
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 10. CERAMICS FROM VAN HORN CREEK SHELL MOUND, 8Fr744, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS (CONTINUED).

TYPE	SURFACE		MIXED LEVELS		TU 1		TU 2		TU 3		TU 4		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
% WITHIN TYPE														
SHELL-TEMP PL			33	12	33	72					33	16	100	100
GROG/SHELL/BONE-T					100	100							100	100
PENS INC					100	100							100	100
FT WALTON INC	40	64			13	9	7	3	27	6	13	18	100	100
PT WASH INC					100	100							100	100
MARSH INC									100	100			100	100
L JACKSON PL	17	35					17	8	17	6	50	50	100	100
INDET INC					60	70			20	10	20	20	100	100
INDET PUNC					25	12					75	88	100	100
LIMEST-TEMP PL	22	33	33	45	33	14					11	8	100	100
LIME/GROG-TEMP PL	100	100											100	100
CHECK-STAMP	8	10	8	6	48	43	31	33	2	1	3	7	100	100
INDET STAMP					100	100							100	100
CORD OR FABRIC-MK					86	50	14	50					100	100
GRIT-TEMP PL			7	7	17	16	10	4	23	26	43	47	100	100
GROG-TEMP PL	1	2	13	9	73	77	13	11	1	1			100	100
SAND-TEMP PL	9	21	5	5	75	63	3	5	3	3	4	3	100	100
FIBER-TEMP					13	27	25	11	25	57	38	5	100	100
% OF TOTAL														
SHELL-TEMP PL														
GROG/SHELL/BONE-T														
PENS INC														
FT WALTON INC	1	4				1			1			1	2	7
PT WASH INC					1	1							1	1
MARSH INC										1				1
L JACKSON PL												1	1	1
INDET INC						1							1	1
INDET PUNC												1	1	1
LIMEST-TEMP PL				1									1	1
LIME/GROG-TEMP PL														
CHECK-STAMP	2	3	2	1	9	11	6	8				2	19	25
INDET STAMP					1	1							1	1
CORD OR FABRIC-MK					1	1		1					1	2
GRIT-TEMP PL					1	1			1	2	2	3	5	6
GROG-TEMP PL			2	2	12	13	2	2					17	16
SAND-TEMP PL	4	7	3	2	36	21	2	2	2	1	2	1	48	34
FIBER-TEMP						1				2			1	3
% OF TOTAL	8	16	7	6	63	51	11	14	5	6	7	8	100	100

TABLE 11. CERAMICS FROM TEST UNIT 1, VAN HORN CREEK SHELL MOUND, 8Fr744, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 1 (.21 m³)		LEVEL 2 (.21 m³)		LEVEL 3 (.10 m³)		LEVEL 4 (.22 m³)		LEVEL 5 (.22 m³)		LEVEL 6 (.24 m³)		TOTAL	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
SHELL-TEMP PL			1	9									1	9
GROG/SHELL/BONE-T					1	1							1	1
PENS INC			1	4									1	4
FT WALTON INC	1	11	1	9									2	21
PT WASH INC	2	8	2	14									4	22
INDET INC			3	19									3	19
INDET PUNC			1	3									1	3
LIMEST-TEMP PL	2	5	1	2									3	6
INDET STAMP			1	24			4	13	2	12			7	48
CORD OR FABRIC-MK	2	5					4	28					6	33
CHECK-STAMP	5	58	33	250	10	47	8	25	1	2	1	4	58	386
GRIT-TEMP PL	4	19	1	15									5	34
GROG-TEMP PL	7	61	25	151	34	219	10	23					76	455
SAND-TEMP PL	56	198	136	489	18	56	9	18	3	8			222	770
FIBER-TEMP											1	28	1	28
TOTAL	79	365	206	989	63	324	35	107	6	22	2	32	391	1839
% BY PROVIENCE														
SHELL-TEMP PL				1									1	1
GROG/SHELL/BONE-T					2								1	1
PENS INC														
FT WALTON INC	1	3		1									1	1
PT WASH INC	3	2	1	1										
INDET INC			1	2									2	2
INDET PUNC													15	21
LIMEST-TEMP PL	3	1											2	3
INDET STAMP				2			11	12	33	52			57	42
CORD OR FABRIC-MK	3	1					11	26					1	2
CHECK-STAMP	6	16	16	25	16	14	23	23	17	11	50	12	19	25
GRIT-TEMP PL	5	5		1									1	
GROG-TEMP PL	9	17	12	15	54	68	29	22						1
SAND-TEMP PL	71	54	66	49	29	17	26	17	50	38				
FIBER-TEMP											50	88		2
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 11. CERAMICS FROM TEST UNIT 1, VAN HORN CREEK SHELL MOUND, 8Fr744, BY COUNTS AND WEIGHTS IN GRAMS (CONTINUED).

TYPE	LEVEL 1 (.21 m³) CT	LEVEL 1 (.21 m³) WT	LEVEL 2 (.21 m³) CT	LEVEL 2 (.21 m³) WT	LEVEL 3 (.10 m³) CT	LEVEL 3 (.10 m³) WT	LEVEL 4 (.22 m³) CT	LEVEL 4 (.22 m³) WT	LEVEL 5 (.22 m³) CT	LEVEL 5 (.22 m³) WT	LEVEL 6 (.24 m³) CT	LEVEL 6 (.24 m³) WT	TOTAL CT	TOTAL WT
% WITHIN TYPE														
SHELL-TEMP PL			100	100									100	100
GROG/SHELL/BONE-T					100	100							100	100
PENS INC			100	100									100	100
FT WALTON INC	50	55	50	45									100	100
PT WASH INC	50	36	50	64									100	100
INDET INC			100	100									100	100
INDET PUNC			100	100									100	100
LIMEST-TEMP PL	67	77	33	23									100	100
INDET STAMP			14	49			57	26	29	24			100	100
CORD OR FABRIC-MK	33	14					67	86					100	100
CHECK-STAMP	9	15	57	65	17	12	14	7	2	1	2	1	100	100
GRIT-TEMP PL	80	57	20	43									100	100
GROG-TEMP PL	9	13	33	33	45	48	13	5					100	100
SAND-TEMP PL	25	26	61	64	8	7	4	2	1	1			100	100
FIBER-TEMP											100	100	100	100
% OF TOTAL TU														
SHELL-TEMP PL				1										1
GROG/SHELL/BONE-T														
PENS INC														
FT WALTON INC		1		1									1	1
PT WASH INC	1		1	1									1	1
INDET INC			1	1									1	1
INDET PUNC														
LIMEST-TEMP PL	1												1	
INDET STAMP				1			1	1	1	1			2	3
CORD OR FABRIC-MK	1						1	2					2	2
CHECK-STAMP	1	3	8	14	3	3	2	1					15	21
GRIT-TEMP PL	1	1		1									1	2
GROG-TEMP PL	2	3	6	8	9	12	3	1					19	25
SAND-TEMP PL	14	11	35	27	5	3	2	1	1				57	42
FIBER-TEMP												2		2
% OF TOTAL	20	20	53	54	16	18	9	6	2	1	1	2	100	100

TABLE 12. CERAMICS FROM TEST UNIT 2, VAN HORN CREEK SHELL MOUND, 8Fr744, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.30 m³)		LEVEL 2 (.38 m³)		LEVEL 3 (.26 m³)		LEVEL 4 (.22 m³)		LEVEL 5 (.46 m³)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
FT WALTON INC					1	7					1	7
L JACKSON PL							1	3			1	3
CORD OR FABRIC-MK					1	33					1	33
CHECK-STAMP	2	9	1	10	29	258	3	19	2	6	37	301
GRIT-TEMP PL					3	9					3	9
GROG-TEMP PL	2	24			10	39	1	2			13	65
SAND-TEMP PL	2	2			4	16	4	42			10	60
FIBER-TEMP							2	12			2	12
TOTAL	6	34	1	10	48	362	11	78	2	6	68	490
% BY PROVIENCE												
FT WALTON INC					2	2					1	1
L JACKSON PL							9	4			1	1
CORD OR FABRIC-MK					2	9					1	7
CHECK-STAMP	33	26	100	100	60	71	27	24	100	100	54	62
GRIT-TEMP PL					6	2					4	2
GROG-TEMP PL	33	70			21	11	9	3			19	13
SAND-TEMP PL	33	4			8	5	36	54			15	12
FIBER-TEMP							18	15			3	2
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPES												
FT WALTON INC					100	100					100	100
L JACKSON PL							100	100			100	100
CORD OR FABRIC-MK					100	100					100	100
CHECK-STAMP	5	3	3	3	78	86	8	6	5	2	100	100
GRIT-TEMP PL					100	100					100	100
GROG-TEMP PL	15	37			77	60	8	4			100	100
SAND-TEMP PL	20	3			40	27	40	70			100	100
FIBER-TEMP					100	100					100	100
% OF TOTAL TU												
FT WALTON INC					1	1					1	1
L JACKSON PL							1	1			1	1
CORD OR FABRIC-MK					1	7					1	7
CHECK-STAMP	3	2	1	2	43	53	4	4	3	1	54	62
GRIT-TEMP PL					4	2					4	2
GROG-TEMP PL	3	5			15	8	1				19	13
SAND-TEMP PL	3				6	3	6	9			15	12
FIBER-TEMP							3	2			3	2
% OF TOTAL	9	7	1	2	71	74	16	16	3	1	100	100

TABLE 13. CERAMICS FROM TEST UNIT 3, VAN HORN CREEK SHELL MOUND, 8Fr744, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.32 m³)		LEVEL 2 (.28 m³)		LEVEL 3 (.32 m³)		LEVEL 5 (.29 m³)		LEVEL 10 (.17 m³)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
FT WALTON INC	4	15									4	15
MARSH ISL INC	1	30									1	30
L JACKSON PL	1	3									1	3
INDET INC	1	3									1	3
CHECK-STAMP	1	9					1	1			2	10
GRIT-TEMP PL	7	56									7	56
GROG-TEMP PL			1	5							1	5
SAND-TEMP PL	8	26	1	10	1	1					10	37
FIBER-TEMP							1	53	1	7	2	61
TOTAL	23	140	2	15	1	1	2	54	1	7	29	218
% BY PROVIENCE												
FT WALTON INC	17	11									14	7
MARSH ISL INC	4	21									3	14
L JACKSON PL	4	2									3	1
INDET INC	4	2									3	1
CHECK-STAMP	4	6					50	2			7	5
GRIT-TEMP PL	30	40									24	26
GROG-TEMP PL			50	33							3	2
SAND-TEMP PL	35	19	50	67	100	100					34	17
FIBER-TEMP							50	98	100	100	7	28
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPES												
FT WALTON INC	100	100									100	100
MARSH ISL INC	100	100									100	100
L JACKSON PL	100	100									100	100
INDET INC	100	100									100	100
CHECK-STAMP	50	91					50	9			100	100
GRIT-TEMP PL	100	100									100	100
GROG-TEMP PL			100	100							100	100
SAND-TEMP PL	80	70	10	27	10	3					100	100
FIBER-TEMP							50	88	50	12	100	100
% OF TOTAL TU												
FT WALTON INC	14	7									14	7
MARSH ISL INC	3	14									3	14
L JACKSON PL	3	1									3	1
INDET INC	3	1									3	1
CHECK-STAMP	3	4					3				7	5
GRIT-TEMP PL	24	26									24	26
GROG-TEMP PL			3	2							3	2
SAND-TEMP PL	28	12	3	5	3	1					34	17
FIBER-TEMP							3	24	3	3	7	28
% OF TOTAL	79	65	7	7	3	1	7	25	3	3	100	100

TABLE 14. CERAMICS FROM TEST UNIT 4, VAN HORN CREEK SHELL MOUND, 8Fr744, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.15 m³) CT	LEVEL 1 (.15 m³) WT	LEVEL 2 (.15 m³) CT	LEVEL 2 (.15 m³) WT	LEVEL 3 (.15 m³) CT	LEVEL 3 (.15 m³) WT	LEVEL 6 (.17 m³) CT	LEVEL 6 (.17 m³) WT	TOTAL CT	TOTAL WT
SHELL-TEMP PL	1	2							1	2
MARSH ISL INC	1	41	1	3					2	43
L JACKSON PL	2	11	1	8					3	20
INDET INC	1	6							1	6
INDET PUNC	2	16	1	6					3	22
LIMEST-TEMP PL	1	4							1	4
CHECK-STAMP	1	54	1	5			1	1	3	60
GRIT-TEMP PL	11	87			2	13			13	100
SAND-TEMP PL	6	29			4	4	1	1	11	34
FIBER-TEMP	1	3	1	1	1	1			3	5
TOTAL	27	253	5	23	7	18	2	2	41	295
% BY PROVIENCE										
SHELL TEMP PL	4	1							2	1
MARSH ISL INC	4	16	20	11					5	15
LK JACKSON PL	7	4	20	37					7	7
INDET INC	4	2							2	2
INDET PUNC	7	6	20	25					7	8
LIMEST TEMP PL	4	1							2	1
CHECK-STAMP	4	21	20	22			50	60	7	20
GRIT-TEMP PL	41	35			29	72			32	34
SAND-TEMP PL	22	11			57	25	50	40	27	12
FIBER-TEMP	4	1	20	4	14	3			7	2
TOTAL	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE										
SHELL-TEMP PL	100	100							100	100
MARSH ISL INC	50	94	50	6					100	100
L JACKSON PL	67	57	33	43					100	100
INDET INC	100	100							100	100
INDET PUNC	67	74	33	26					100	100
LIMEST-TEMP PL	100	100							100	100
CHECK-STAMP	33	90	33	8			33	2	100	100
GRIT-TEMP PL	85	87			15	13			100	100
SAND-TEMP PL	55	85			36	13	9	2	100	100
FIBER-TEMP	33	67	33	21	33	13			100	100
% OF TOTAL TU										
SHELL-TEMP PL	2	1							2	1
MARSH ISL INC	2	14	2	1					5	15
L JACKSON PL	5	4	2	3					7	7
INDET INC	2	2							2	2
INDET PUNC	5	6	2	2					7	8
LIMEST-TEMP PL	2	1							2	1
CHECK-STAMP	2	18	2	2			2		7	20
GRIT-TEMP PL	27	30			5	4			32	34
SAND-TEMP PL	15	10			10	1	2		27	12
FIBER-TEMP	2	1	2		2				7	2
% OF TOTAL	66	86	12	8	17	6	5	1	100	100

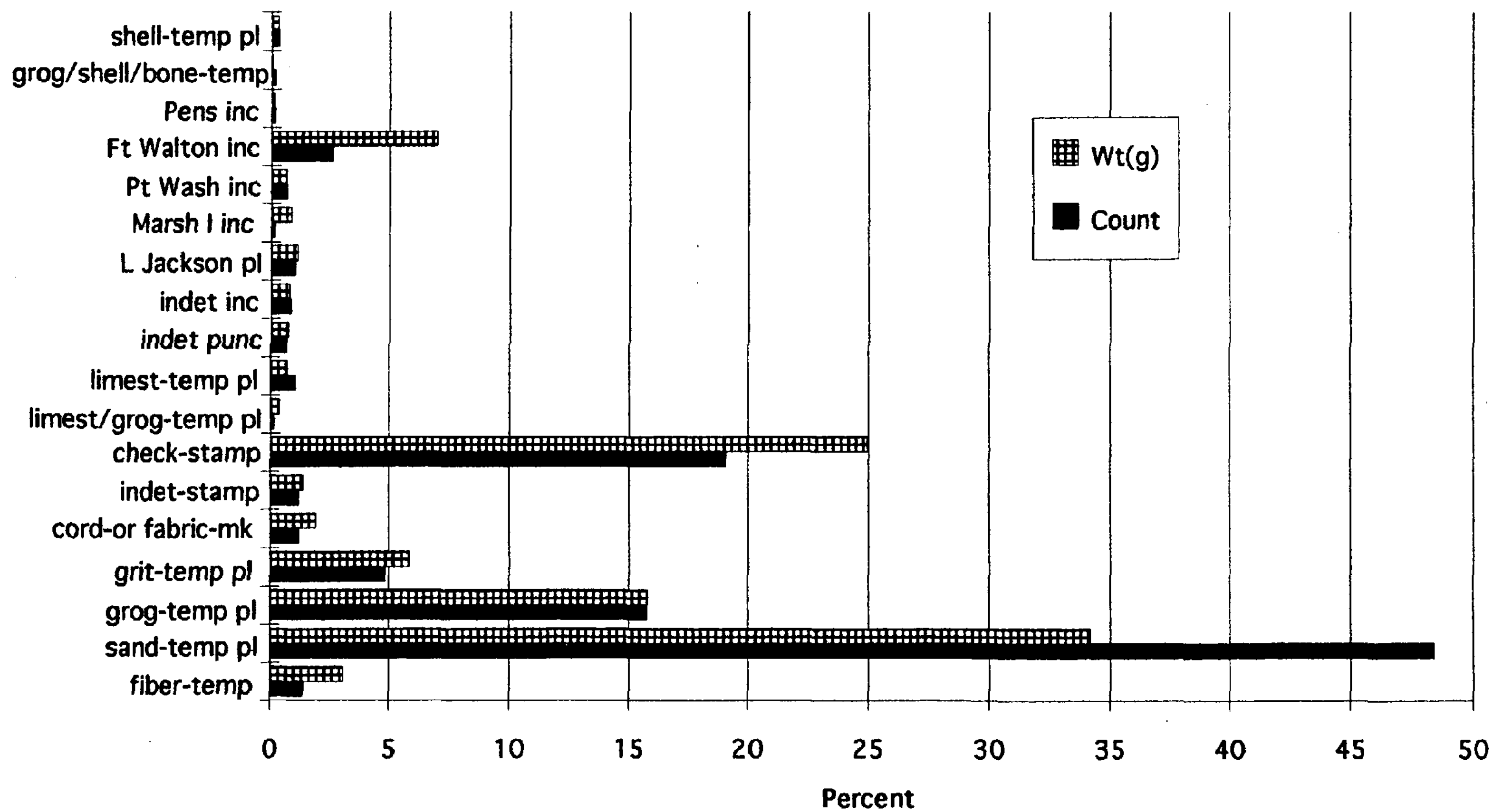


FIGURE 11. Graph of ceramic type relative frequencies from Van Horn Creek shell mound, 8Fr744.

much for Test Unit 3, on the southern end of the summit. Perhaps later peoples churned up earlier deposits more in their activities there. Test Unit 1, however, is the best to examine for a good stratigraphic picture. In addition, it produced by far the most ceramics, and went deeper into the cultural deposits than any other unit. Thus it is emphasized in the following discussion of ceramic components.

Fort Walton: As shown in Table 11, the Fort Walton ceramics (Willey 1949, White 1982), including Fort Walton Incised, Point Washington Incised (Figure 12), Marsh Island Incised and shell-tempered types (plain and Pensacola Incised), occur only in the top two levels (30 cm). When combined with the indeterminate incised and punctate sherds, other undoubtedly Fort Walton types, they make up about 6% by weight of the ceramics from these top levels. Sand-tempered plain comprises about 50% and grit-tempered plain 1% to 5%. Though there is usually more grit tempering in Fort Walton ceramics in this valley, sand tempering is more frequent in the Fort Walton assemblage at the Van Horn Creek shell mound. But all of the grit-tempered plain occurs in the latest two levels as well, and most of the sand-tempered, as shown on the third section of Table 11. Grog tempering may also characterize Fort Walton pottery, but it is common during the Woodland periods as well.

It is uncertain whether the check-stamped sherds are associated with the Fort Walton component. They are common in earlier and later levels, and do extend much deeper than any diagnostic Fort Walton types. Perhaps there is some mixing by the first Fort Walton folks to scuff up the surface of this shell mound after the Woodland materials were deposited. Fort Walton culture, the latest prehistoric manifestation in this valley, dating from about A.D.1000 to the time of European contact, is known to have a large percentage of check-stamped pottery in the ceramic assemblage, especially earlier in the period (White 1982). So far no one has found a way to distinguish check-stamped from different time periods. It is also quite possible that both Woodland and Fort Walton peoples left check-stamped pottery here.

Also uncertain is the cultural affiliation of the few cord- or fabric-marked sherds recovered, from Levels 1 and 4 in Test Unit 1 (Table 11), and a single one from Level 3 of Test Unit 2 (Table 12). Their surfaces are too indistinct to be certain of the material used to impress them. They are not of the characteristic finely woven, fabric-marked, diagnostic Deptford type. Ceramics impressed with larger weave matting or fabric can occur in very small numbers with almost any cultural component. Cord marking is most characteristic of Middle or Late Woodland Weeden Island components, but could occur in Early Woodland.

FIGURE 12. Artifacts from Van Horn Creek shell mound. Top, two Fort Walton Incised rims, one body sherd; middle left, limestone-tempered plain sherd; right, check-stamped sherd; bottom, two chert cores and fiber-tempered sherd. All from surface except fiber-tempered sherd from Test Unit 1, Level 6.

An unusual sherd tempered with grog, crushed shell, and even a bone fragment occurred in Test Unit 1, Level 3. It is unknown whether the bone was deliberately added as an aplastic to the clay or just got in accidently, escaping the prehistoric quality control system.

Three limestone-tempered sherds in Test Unit 1 are associated with the Fort Walton component. A surface find of this type (Figure 12) suggested the presence of Fort Walton materials in the first place, and was one of the reasons for choosing to test this site. However it is a small minority type; it also occurred on the surface and in Level 1 of Test Unit 4 (Table 14) making a total of nine sherds for the entire site. This temper is associated with Fort Walton in the uppermost portions of this valley as a small minority type, as well (White 1982). As noted elsewhere in this report, however, some limestone temper occurs at other sites which have no diagnostic Fort Walton materials. At Clark Creek shell mound, for example, it is associated with the Early Woodland component (see Tables 9 and 30).

Shell-tempered wares are also a small minority, though usually present, in Fort Walton assemblages in the Apalachicola Valley (White 1982). At Van Horn Creek only 5 sherds were recovered (Table 10), including plain and Pensacola incised, suggesting this temper to be even less important for Fort Walton in the lower Apalachicola. This statement is supported by their equally low frequencies from the other two sites tested with Fort Walton components (see Tables 19, 45). It is interesting that the presence of enormous amounts of shell at this shell mound was no incentive for the Fort Walton people here to use it as a tempering agent in their pottery clays.

The classic Fort Walton types appearing at this site also include Lake Jackson Plain, only recognizable from the distinctive ticked or notched rims (White 1982). Only 6 sherds of this type were recovered (from surface and Test Units 2, 3, and 4). The main diagnostics are the incised and punctuated wares. Marsh Island Incised, poorly defined in the literature (Willey 1949: 466), is also recognizable only from rim sherds, with their distinctive vertical or diagonal incisions. Many of the sand- and grit-tempered plain sherds are doubtless undecorated portions of these Fort Walton type vessels.

Woodland (Deptford?): It is probable that there is a Woodland component at the Van Horn Creek shell mound, perhaps characterized as being from the Deptford period (Early Woodland, about 1000 B.C. - ca. A.D. 200), based mostly on the negative evidence of certain later ceramic types that are not present. There are no Swift Creek complicated-stamped sherds or Weeden Island types. Conspicuously absent, however, are the unquestionable Deptford types such as simple-stamped and fabric-marked. There is only one possible sherd with a tetrapod (from Test Unit 2 Level 3), another diagnostic item of earlier Woodland. The entire (tentatively established) Woodland component is composed of check-stamped (Figure 12) and plain ceramics.

Check-stamped pottery first appears during Deptford times, perhaps a few centuries B.C., and apparently people never quit making it until after the Spanish arrived, at the end of the Mission period (very early eighteenth century). Archaeologists have had a hard time distinguishing the varieties associated with different cultural components in the Apalachicola Valley and elsewhere, and usually consider this type not to be culturally diagnostic (White 1982, 1985). A few attributes are suggestive: sherds broken on the coils, which were imperfectly smoothed during manufacture, seem to occur often among all Deptford types, for example. Very sloppy application of the paddle impressing the checkered pattern on the wet clay surface also seems characteristic. Both these phenomena are seen often on the check-stamped pottery at Van Horn Creek.

A more positive aspect of these ceramics to suggest a Deptford affiliation is the high proportion of sherds on which the check stamping is very linear. This characteristic does not occur much on later Wakulla Check-Stamped pottery and other types. During Deptford times the extreme linearity of the check stamping often means that lands (raised portions) of one direction are heavy parallel lines across the pot, while those of the other direction are like small teeth filling in the empty space. Further work with these ceramics will involve quantifying the varieties of check stamping, if possible.

Temper of the check-stamped pottery is usually not diagnostic, including sand, grit, and grog for all time periods throughout this valley. At Van Horn Creek, however, grog temper predominates. Since the grog is made by presumably crushing used or broken pots, perhaps there is more recycling during this period.

Another characteristic of the check-stamped sherds at Van Horn is their often highly eroded surfaces. A type category used throughout this report for indistinguishable stamped ceramics is "indeterminate stamped." Usually a piece so classified can be one of any number of types from different periods. In the absence of any other stamped types from Van Horn, it is probably safe to say that all the indeterminate stamped sherds were originally checked. This statement is supported by the facts that most classified as indeterminate stamped are grog-tempered, and that much of the classifiable check-stamped has part of the surface eroded to near obscurity.

Returning to the stratigraphy of Test Unit 1 to characterize the Woodland component (Table 11), it can be seen that check- and indeterminate stamped sherds occur in all levels, but comprise by weight 27% of Level 2, 14% of Level 3, 35% of Level 4, 62% of Level 5, and 12% (half the sherds by count) of Level 6. Plain pottery comprises nearly all the rest, and much of this is grog-tempered, though more is sand-tempered. The only two types in Level 6 are check-stamped and fiber-tempered (one sherd of each). This is about 50 cm below the deepest Fort Walton sherds. The suggestion is that there is a separate Woodland component laid down over and slightly mixed with the Late Archaic. This could be either an Early Woodland Deptford component or, less likely, a late Woodland, late Weeden Island component, also characterized by check-stamped and plain ceramics.

Late Archaic: Eight fiber-tempered pottery sherds (Figure 12) represent the earliest cultural component able to be isolated at Van Horn Creek shell mound. Though these occurred at shallow levels in Test Units 2 and 4 (Tables 12, 14), Test Unit 1 produced one sherd in what is probably the correct stratigraphic context, Level 6 or 81 to 91 cm depth below the surface, where the shell matrix was becoming all oyster with increasing depth. Test Unit 3 (Table 13) had two fiber-tempered sherds, one each in Level 5 and Level 10; at least the deeper was probably in undisturbed context. All the sherds were plain surfaced, eroded, and small. There was probably some mixing with the overlying Woodland cultural deposits.

For comparison with the other shell mounds having Late Archaic components, and to investigate further the shift from a predominantly oyster shell matrix in what was considered the Late Archaic component to freshwater clams later in time, charcoal from Test Unit 1 Level 6 was sent for AMS radiocarbon dating. Unfortunately the date returned was 1120 +/-75 years B.P. (Beta 26897) or A.D.830. This date simply cannot be correct; fiber-tempered ceramics date between 4000-2500 years old in the southeast (2970 years at the Depot Creek shell mound, as noted above).

Consultation with personnel at Beta Analytic was helpful in trying to explain this date. The near absence of charcoal from good contexts for dating this site meant that we isolated tiny fragments totaling less than one gram from the flotation recovery and submitted them for the more expensive accelerator mass spectrometry dating. While this method is just as reliable as regular radiocarbon dating, it can be done on extremely tiny fragments of carbon. The small size of the charcoal is probably the key to explaining the anomalous date. At any site very small items, tiny chert flakes and other cultural materials, can travel downward. Especially in a shell mound, where there are spaces between the shells for tiny particles to move, it might be possible that such contamination of earlier levels occurred. Waselkov (1987:47) has described this problem with poorly consolidated shell middens, in which tiny items can fall through spaces between shells and end up far out of original context. Furthermore, the level that produced this date, Level 6 of Test Unit 1, also produced a small check-stamped sherd in addition to the fiber-tempered sherd. Perhaps this is also evidence of component mixing by later prehistoric people or natural processes. Or perhaps the middle component is indeed of Late Woodland affiliation, which would make the date fit well.

Summary of Pottery: Van Horn Creek had the most complex and deepest ceramic stratigraphy of any of the six sites tested. The mixing of deposits by prehistoric people and modern pothunters, not to mention natural agents such as burrowing animals, roots, and gravity, made establishing exact vertical boundaries between components impossible. This is unfortunate since there was no interpretable cultural stratigraphy in the shell deposits. Furthermore, the one radiocarbon date obtained only confused matters more.

It is thus not possible at present to isolate ceramic assemblages completely from each of the components, nor to correlate them with other material remains such as the microlithic industry or shell tool occurrences. It is even impossible to determine with total certainty if a Woodland component is present between the Fort Walton and the Late Archaic.

Nonetheless, I suggest the existence of three prehistoric ceramic components here. Below Levels 5 to 6 in all units no ceramics were recovered, except for one fiber-tempered sherd in Level 10 of Test Unit 3 (Table 13). This is an interesting stratigraphic situation. In Test Unit 3 perhaps lower levels are less mixed, and Late Archaic peoples may have returned many times and only deposited few artifacts, but lots of bone and shell. If future funding becomes available we will consider submitting charcoal from this Level 10 for what might be a better date on the Late Archaic. Extensive deposits of bone and shell with no ceramics below the ceramic levels may have been left by preceramic Archaic or even earlier peoples.

Other Ceramic Materials

Other clay items recovered at Van Horn Creek are of three categories: daub and possible daub fragments, burned clay pieces, and fragments of what must have been clay balls. These are summarized by provenience on Table 15.

Twenty-one irregular clay fragments with no tempering and occasional stick marks are interpreted as daub or possible daub, the clay coating on the outside of wattle and daub houses used in the aboriginal Southeast. Averaging less than 10 grams each, these fragments do not suggest that there were many permanent structures atop the shell mound, if any at all. As already noted, there were no features or post molds indicating such structures. Some tiny fragments may not be daub but clay bits left over from pottery making or some other activity. There is no pattern to the distribution of these fragments.

TABLE 15: NON-VESSEL CLAY REMAINS FROM THE VAN HORN CREEK SHELL MOUND, 8Fr744

Counts of Pieces/Weights in Grams

Provenience	Daub & (Poss. Daub)	Burned Clay	Clay Ball Frags	Comments
Surface near N end			1/ 31.7	
TU 2 L 1			1/ 22.0	
TU 2 L 3	5/ 45.8		2/ 24.7	
TU 2 L 4	6/ 71.7		1/ 21.2	1 daub frag has stick impressions
TU 2 L 5	2/ 3.7			
TU 3 L 1	2/ 20.1			
TU 3 L 2	1/ .4			
TU 3 L 3	1/ 2.5			
TU 3 L 4	2/ 12.1			
TU 4 L 3	1/ 16.7			
TU 4 L 6	1/ 14.0	36/286.9		the poss daub was inside a clamshell
TU 4 L 7		28/219.0		

Burned clay pieces totaling over half a kilogram were concentrated in the lower levels of Test Unit 4, possibly associated with the Late Archaic component. They were loosely grouped but may at one time have been a disturbed hearth area or clay objects for roasting.

Wedge-shaped fragments of clay balls were obtained from the surface and from the upper levels of Test Unit 2. They were somewhat irregular, but unmistakably sections of spheres, with smooth surfaces. Clay balls and clay "objects" of many shapes in Florida have been associated with the Elliott's Point Complex, a variety of the Late Archaic Poverty Point Complex of Louisiana and elsewhere along the Gulf of Mexico (Lazarus 1958, Webb 1977). It has been speculated that the balls and objects were used for cooking, either for stone boiling in a non-fireproof container or for dry roasting in a pit (Hunter 1975).

It is usually assumed that these objects are Late Archaic in age and utilitarian in function, appearing just before or with the invention of pottery (Sassaman 1993). Some think that many of the objects, especially the ones that depart from a ball shape and become interesting geometric forms with incising or punctating, are too elaborate for such a utilitarian purpose as cooking (those holding this opinion have obviously never seen a modern gourmet cookware store). Investigations at the Clark Creek site, reported later herein, did produce a more elaborate, finger-grooved clay ball (see Figure 23).

Whatever the obscure purpose of these objects, they are likely associated with the Late Archaic cultural component at Van Horn Creek. They do occur in fairly close association with the microtools in Test Unit 2 discussed in the next section. This is further evidence that they are Late Archaic, as microlithic materials in northwest Florida seem related to the Jaketown and other microliths of the Poverty Point Complex (Morse and Tesar 1974:104; see discussion in summary chapter of this report).

LITHIC MATERIALS

<u>Chipped Stone</u>

Lithic remains from the Van Horn Creek shell mound, numbering 155 specimens, were the most numerous and most interesting of any from the shell mounds. The assemblage was examined by archaeologist Richard Estabrook, who identified a true microtool industry that took place at this site, and provided analytical comments given below.

All lithic remains are listed by provenience in Table 16. They are of the whitish local chert, in this case silicified coral; the people had to have gone some distance upriver for it or obtained it from the barrier islands where it occurs as beach rock. There are few primary and even secondary decortication flakes, suggesting they brought more finished pieces to work on at the site, perhaps even prepared cores. Thirty-eight small cores were recovered by our excavations, and 60 secondary flakes. Finished tools were few: 3 microtools, 1 possible microtool, a borer, a uniface, 2 utilized cores and one utilized piece of shatter.

The small cores (Figures 12, 13) are unusual in this valley and are clearly for production of the microtools. They average 4 to 6 cm long and 50 to 100 grams; all appear to be exhausted. The uniface is a

TABLE 16. LITHIC MATERIALS FROM VAN HORN CREEK SHELL MOUND, 8Fr744

Chipped Stone (counts/weights in grams)

Provenience	Cores	Prim Decort	2nd Decort	Shatter	2nd Flakes	Tools	Comments
Surface	5/320.1		1/23.3	1/59.7			two cores are thermally damaged; 1 shows use as hammerstone; shatter has some use wear
TU 1 L 5	1/52.0						has possible use wear
TU 2 L 1	5/270.3	2/12.1	1/38.2	5/11.1			
TU 2 L 2			1/ 5.4		1/ 1.1	1/3	poss microtool
TU 2 L 3	3/99.0	2/12.0	6/143.1	7/22.0	15/20.9	4/12.3	1 decort flake is large (85 g); 3 tools are microliths (2 side-scrapers and 1 needle); 1 tool is borer
TU 2 L 4	4/152.1			3/6.1	10/20.5		1 sec. flake is heat treated
TU 2 L 5	1/20.7				2/11.4		
TU 2 L 6		1/.1			2/.2		one 2nd flake is heat treated
TU 3 L 1	5/240.4	3/24.6	4/12.2	1/3.7	5/6.0	1/47.3	tool is a small uniface
TU 3 L 2	3/210.2		5/14.9	2/18.4	4/5.0		
TU 3 L 3	5/259.1	1/3.6	6/30.7	1/.7	9/18.4	1/.5	tool is small broken blade
TU 3 L 4	2/67.3				2/6.1		
TU 3 L 5	1/170.8						

Chipped Stone (counts/weights in grams)

Provenience	Cores	Prim Decort	2nd Decort	Shatter	2nd Flakes	Tools	Comments
TU 3 L 7					1/.1		
TU 4 L 1					2/10.1		
TU 4 L 2				1/11.5	1/.6		flake is thermally altered
TU 4 L 3	1/13.1	1/13.7					
TU 4 L 4	1/198.8						
TOTALS	38/2074	8/54	25/218	17/124	60/160	7/63	

Other Stone

Provenience	Material	Comments
TU 2 L 4	1 piece quartzite (15.9 g)	unknown use
TU 3 L 1	1 sandstone with worn groove (20.9 g)	probably abrading or sharpening tool
TU 4 L 1	1 frag steatite or soapstone (7.9 g)	possible sherd of stone vessel, could even be rim

scraper, and also fairly small (Figure 13, center left). One tool is a borer on a large chunky flake (Figure 13, bottom right).

Of the microtools, one is a needle and the others are sidescrapers (Figure 13). All are made on small blades. Their edges clearly show crushing damage. None are thermally altered. Such alteration would make the chert easier to work but the resulting tool less durable. These tools are similar to those of the microlithic industries described in the Poverty Point Complex of Louisiana (Webb 1977, Byrd 1991) and along a wider area of the Gulf coast, including Florida (Morse and Tesar 1974, Thomas and Campbell 1991, Jones 1993), where the manifestation is called the Elliott's Point Complex (Lazarus 1958).

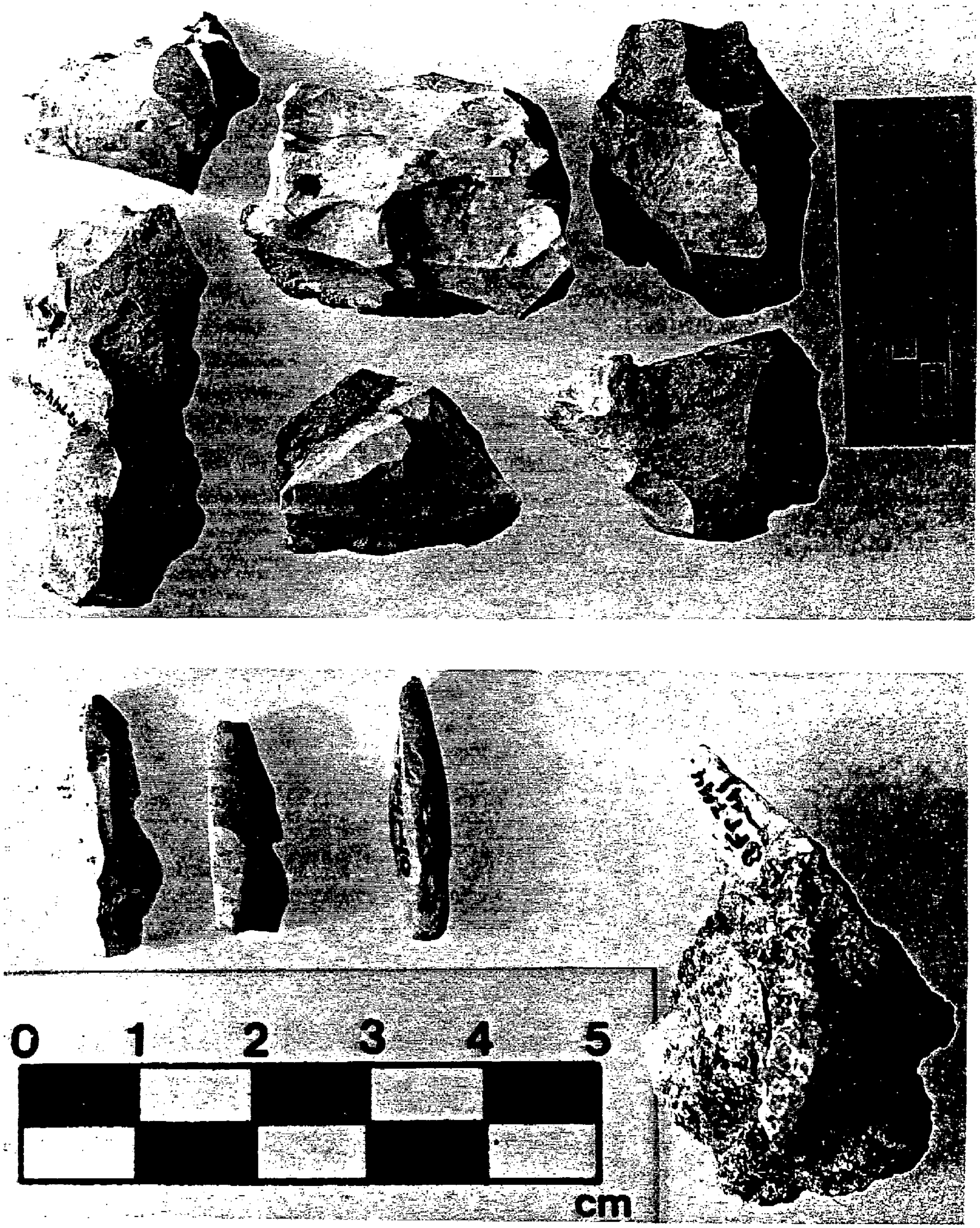


FIGURE 13. Chert materials from Van Horn Creek shell mound. Top, microcores and unifacial tool (lower left) from Test Unit 3, Level 1. Bottom, two side scrapers, one needle, and a small borer, from Test Unit 2, Level 3.

The tools from Van Horn are too few to make any metric analysis or detailed comparisons very meaningful at this point. They are discussed further in the summary chapter as Late Archaic diagnostic artifacts. Since we recovered similar specimens from Clark Creek and Yellow Houseboat shell mounds, also probably associated with fiber-tempered pottery and/or clay balls or "objects," it is probably safe to begin discussing a manifestation of Elliott's Point in the Apalachicola delta (White and Estabrook 1994). It may be an artifact assemblage specific to coastal or estuarine adaptation. So far no such phenomena have been reported from the interior of the Apalachicola Valley or elsewhere in interior northwest Florida.

It is unclear what the function of this microtool industry was, but perhaps it had to do with a particular resource. Its identification with the Late Archaic component at the site is fairly certain. Fort Walton sites in this valley are known to have few, if any, lithic remains (for unknown reasons). Furthermore, the stratigraphic locations of these lithic materials are deeper than the Fort Walton pottery.

It is also unclear why cores are so frequent and debitage and tools so rare. This may be a result of our sample size and scheme, of course, as four small units could hardly give a clear picture of tool distribution. But the suggestion is that these little tools were well curated by their owners. All the tools recovered are either broken, as if they were manufacture failures or made on snapped blades, or exhausted. But there are not many tiny retouch flakes that would be expected from the final stage of manufacturing the microtools, though we searched the fine screen recovery from soil flotation for them. There is no pattern to the secondary flakes recovered, either, perhaps indicating that they are simply from sharpening other, also well curated tools or from core manufacture. The abundance of cores at Van Horn Creek may indicate that it is a manufacturing station for microtools that were used at many sites during the Late Archaic.

The microtools could be for obtaining or processing some marine animal. In Test Unit 1, the least disturbed, the only stone artifact was one core, that appeared in Level 5, where the oysters began to predominate. In the other units stone tools and cores were shallower, but there was more disturbance. The microtools all appeared in Level 3 of Test Unit 2. This unit was on the back slope of the mound and somewhat mixed in terms of visible stratigraphy in our horizontal arbitrary levels. However, just below Level 3 was recovered a fiber-tempered sherd and a possible bone tool, and a vague area of grayer shell, either from being burned or weathered unusually. Clay ball fragments came from above, in, and below this level. How this all relates to a microtool industry is unknown, but it does show closer association of the presumed Late Archaic items.

<u>**Other Stone**</u>

Very little other stone was recovered, as shown on Table 16. There are no grinding stones suggesting plant processing. The quartzite piece may have been for chipping, like chert. The probable abrader may have been for sharpening bone tools.

The steatite (soapstone) may be a vessel sherd. Though it was stratigraphically very shallow, it may also relate to the Late Archaic complex including the microtools, clay balls and fiber-tempered pottery at this site. Steatite is known for later cultural periods in this region also. This raw material had to have come from the mountains of Georgia. It is a soft stone, easy to carve with any hard implement. Though it is rather rare it was found as well at the Thank You Ma'am Creek shell mound (8Fr755), which has a Late Archaic component and was also recorded in the Apalachicola delta during our 1985 survey. Steatite is known from later prehistoric contexts at many places in this region (such as the Weeden Island occupation at St. Vincent's Island beyond the mouth of the Apalachicola).

OTHER ARTIFACTS: SHELL AND BONE

<u>**Shell Artifacts**</u>

There were 13 pieces of worked shell recovered from the Van Horn Creek shell mound. Clam and oyster shells show no signs of working, or even clear indications of the action of opening them to eat them. Probably they were steamed or boiled or roasted to open easily by themselves. Some in each unit had holes in them, but it is unknown if they were made by people.

Most of the worked shell is whelk or conch; the species identified are *Busycon* (probably) *contrarium* and one example of *Pleuroploca gigantea* (lightning whelk and Florida horse conch, respectively). There was also a probable guahog (*Veneridae*) fragment. The artifacts are tabulated by provenience in Table 17. The horse conch is the specimen from Test Unit 2 below Level 6, below the water table, probably associated with the Late Archaic component.

There are two apparent tool types, the columella, perhaps used as a pick, and two possible scooping implements. The other pieces are either manufacturing debris or items of some unknown function. All show signs of having been cut, often not cut clear through but enough to score the area, then broken the rest of the way.

TABLE 17: **SHELL ARTIFACTS FROM VAN HORN CREEK SHELL MOUND, 8Fr744**

Provenience	Description	Weight
Tu 1 L 2	*Busycon* columella with V-shaped cut	46.1
Tu 1 L 6	*Veneridae* frag	2.6
Tu 1 L 10	*Busycon* small frag	5.0
Tu 1 mixed levels	*Busycon* pick (?)	79.1
Tu 2 L 2	*Busycon* columella	300.0
Tu 2 L 3	*Busycon* 2 cut frags, scoops?	46.7
Tu 2 L 4	*Busycon* small squarish cut piece	31.5
Tu 2 below L 6	*Pleuroploca gigantea* columella, from below water table	163.3
Tu 3 L 2	*Busycon* 2 irregular frags, probably tools	145.9
Tu 4 L 2	*Busycon* small cut silver	2.1
Tu 4 L 7	*Busycon* columella	24.6

There is no discernible pattern to the distribution of these pieces of worked shell, either horizontally or vertically. The biggest columella and the scoops and a worked fragment came from the same general provenience as the clay balls and microtools. This may be significant for some reason. But if the microtools were used to drill shell one would expect shell with lots of drilled holes, which we did not find so far. Other *Busycon* pieces came from both shallow and deep levels, perhaps associated with all cultural components. Conchs and whelks are available in Apalachicola Bay today and the shell probably was a raw material throughout prehistory. A more uncertain question is whether the meat was used as food here.

Bone Artifacts

Only two examples of worked bone were found during the test excavations at Van Horn Creek shell mound. Since the bone preservation was excellent, this suggests either that there actually were few artifacts of bone or that they were concentrated in areas where we did not dig.

One of these artifacts was an irregular piece of probable mammal bone that shows signs of being cut into a tapered shape, from Test Unit 2 Level 4, fairly close to the microtools and clay ball fragments.

The other artifact was a pin fragment, an unusual tiny bone modified into a subconical shape with six engraved lines all the way around (Figure 9). This was obtained from Test Unit 3 in a flotation sample taken from below the water table (equivalent of Level 11). This is a pure Late Archaic context (or earlier), as no ceramics were produced for nearly a meter above this except for a single fiber-tempered sherd in Level 10. The function of this unusual artifact is unknown. It is not certain whether it is broken off a larger piece or complete on its own. Perhaps some sort of peg or holding or marking device, it may be similar to engraved pins described by Walker (1992) for South Florida shell mounds. It is very small, however, and gives no clues so far if it related to subsistence or to totally different activities.

FAUNAL REMAINS

As with the Depot Creek shell mound, though dry screening with 1/4" (6.35 mm) mesh, the field crew were able to recover even small remains because the sticky shell matrix did not go through the screen very well. Picking through the matrix we were able to recognize many species in the enormous amounts of animal bones recovered: turtle, fish, bird, deer and small mammals, alligator, and others.

Limited zooarchaeological analysis was possible with the amount of funding for the project. Since Test Unit 1 went deepest and had the least amount of disturbance according to the ceramic stratigraphy, all the faunal remains from every other level, as well as a few unusual pieces from other proveniences, were sent to the Florida Museum of Natural History for special study. Identifications are presented in Appendix 1, with a comparison of the findings from Depot Creek and Van Horn Creek shell mounds. A summary is given here.

Remains submitted for analysis were from the flotation samples of Levels 2, 4, 6, 8, 10, totaling 20.5 liters (18.6 kg). It should be remembered that, for the deepest two levels, biotic remains are the only cultural items present, as there were no artifacts except a cut whelk fragment in Level 10 (Table 17). All remains recovered from the three flotation fractions were submitted, including every shell and shell fragment, as well as all from the 1/4" (6.35 mm) screen except the shells. Shells were not saved from the 1/4" screen since they were the primary component of the matrix, unless there were some unusual ones, such as very large, or small or with holes, or species other than *Rangia* or oyster.

Of the 32 taxa of animals identified for Van Horn Creek, six were not present in the flotation samples but were additional bones from the quarter inch screen; the six included rabbit, alligator and mullet. This suggests that the (ideally) 4-liter samples, taken usually from the southwest corner, were so small as to be less than representative of even the unit level (not to mention the whole mound).

Identifications of faunal remains by taxon and by level in Test Unit 1 are given in Tables A1.10 to A1.14 of Appendix 1, for both screen samples and flotation recovery, and summarized in Table A1.15. Unusual looking or large/unbroken bones and fragments from various proveniences are identified in Table A1.16.

The most dramatic aspect of the Van Horn faunal assemblage is the radical shift through time. From deeper to shallower levels there is a shift in the dominant shellfish species from oyster to freshwater clam. This is further supported by the shift from other more marine species to freshwater animals. These trends are illustrated in Walker's graphs in Appendix 1 (Figures A1.1, A1.2).

By comparison with the patterns of faunal remains at Depot Creek shell mound, Van Horn Creek's inhabitants were essentially exploiting the same wide range of freshwater species in later times, including alligator, pond slider, softshell turtle, and sunfish, in addition to a small but significant number of oysters. It is not possible to say if this represents the Fort Walton diet only or a portion or all of the Early Woodland diet as well.

However, back in the Late Archaic or earlier there is clearly a different environment, with Florida horse conch and scotch bonnet, two species requiring more saline conditions, accompanying the nearly exclusive collecting of oyster, although other animals such as deer are represented too.

Faunal analysis is tricky because of basic assumptions made. For example, the role of cultural practices in diet and food processing and disposal of remains is difficult to study. We take it for granted that a bit of everything eaten was left in this midden mound. However, cultural practices may have involved different disposal methods for some species, or procurement of some species not for food but for other purposes. What if one type of animal was treated differently and the bones thrown back into the water after consumption of the meat, for instance? Perhaps the smelliest fish remains were so discarded, though subjective judgement of what is malodorous must have been different for peoples living on top fish and shellfish debris than what it is in modern western culture.

Likewise, in terms of effort needed to obtain various resources (e.g., Crook 1992), we assume that culture is consistent and it is the environment that changes. In reality, people may have gone nearer or farther in search of their food in an unchanging environment if preferences changed. However, we usually think it more likely that they would have obtained what was nearby and moved to be closer to more distant species if they wanted them. As the zooarchaeologists remind us, after all, shellfish are heavy!

The lower Apalachicola delta region is a dynamic fluvial system, and a great deal of change in flow patterns of major and minor streams has doubtless occurred with the rise of sea level since the end of the Pleistocene and for other reasons. Geological evidence (Donoghue 1993) suggests that earlier in its history the Apalachicola's main channel was much farther to the west, going through Lake Wimico (see Figure 1). This would have made the environment near Van Horn Creek, on the east side of the delta, much more saline until later in time (perhaps the last 3000-4000 years?). Then, when the river mouth moved farther east, closer to Van Horn Creek, it brought an influx of fresh water and changed the habitats for shellfish. *Rangia* clams would have become more abundant, but apparently oysters were never very far away either, as they are still present in small numbers even in the latest deposits (20-30%).

BOTANICAL REMAINS

Because of the complex stratigraphy, with diverse cultural remains from possibly three different components, a greater number of floral remains from the Van Horn Creek shell mound was submitted for analysis. Materials recovered by 1/4" screen and flotation from all levels of Test Unit 1, were identified by ethnobotanist Sheldon. In addition, ethnobotanist Michelle Alexander offered to examine the materials from all levels of Test Unit 3. Her particular interest is late prehistoric Fort Walton culture, and this site offered the opportunity to look at remains from this time period and compare them with earlier floral utilization. Identifications provided by these scientists are given in Table 18, and their reports are summarized here.

For both units' flora, the identifications are consistent. There is a majority of pine charcoal, with a small amount of hardwoods, both ring-porous and diffuse-porous. Identifiable occasional seeds and nuts include fern spores, acorn and hickory nutshell, and possible seeds of weedy species such as knotweed (*Polygonum*) or bedstraw (*Galium*).

To paraphrase and elaborate upon Alexander's summary report, little can be said concerning the remains at this site. There is no evidence of cultigens or of utilized wild plant foods. Acorn and hickory nutshells could be naturally occurring, from animal activity. Much of the wood could not be identified. Other than possible palm and cherry, all other wood is pine, though the total present is very small. As an indication of how little botanical material was present, for the

TABLE 18. BOTANICAL REMAINS FROM THE VAN HORN CREEK SHELL MOUND, 8Fr744

Provenience		Materials
TU 1 L 1	WOOD:	7.9 g pine, 1.1 g pine & ring-porous hardwood; SEEDS: 10 spherical (.006" diam), 46 spherical (.002-3" diam)
TU 1 L 2	WOOD:	6.3 g pine, <.1 g pine bark; SEEDS: 2.5 (one is .018" long) maybe *Rosaceae* or *Polygonaceae*, 2 fern spores
TU 1 L 3	WOOD:	.8 g pine; SEEDS: 1 (.01" long)
TU 1 L 4	WOOD:	1.9 g pine
TU 1 L 5	WOOD:	1.25 g pine
TU 1 L 6	WOOD:	<1 g pine; SEEDS: maybe *Galium* or fern spores
TU 1 L 7	WOOD:	.35 g pine; SEEDS: 1 fern spore
TU 1 L 8	WOOD:	.4 g pine, .45 g pine; SEEDS: 2 *Galium* or fern spores
TU 1 L 9	WOOD:	<.05 g, .1 g pine
TU 1 L 10	WOOD:	.2 g pine
TU 1 0-L 3	WOOD:	3.8 g pine
TU 1 0-L 9	WOOD:	.75 g pine
TU 3 L 1	WOOD:	1.24 g (includes frag of monocot, possibly palm); .15 g pine; .05 g oak; .1 g diffuse-porous hardwood; .06 g ring-porous hardwood; SEEDS & NUTS: .01 g unident, .03 g acorn shell (3 frags, partly carbonized), *Phytolacca americana* (pokeweed: modern)
TU 3 L 2	WOOD:	.045 g, .69 g pine, .02 g ring-porous hardwood; SEEDS: possible fern spores
TU 3 L 3	WOOD:	.06 g, .02 g pine, pitch present; SEEDS: frag, no coat
TU 3 L 4	WOOD:	.31 g, .01 g pine
TU 3 L 5	WOOD:	.14 g, .18 g pine, pitch present
TU 3 L 6	WOOD:	.22 g, .07 g pine
TU 3 L 7	WOOD:	.07 g, .09 g diffuse-porous hardwood
TU 3 L 8	WOOD:	.43 g, .24 g pine, .04 g cherry or plum; NUTS: .01 g possible hickory nutshell
TU 3 L 9	WOOD:	.55 g, .24 g pine, pitch present
TU 3 L 10	WOOD:	.15 g, .01 g pine, pitch present
TU 3 L 11 (below water table)	WOOD:	.16 g, .08 g pine

(probably erroneous) radiocarbon date we were forced to submit the small amount from Test Unit 1 Level 6 for AMS radiocarbon dating, since there was not enough charcoal for a conventional date. Because it was so small, instead of giving a reasonable date for the Late Archaic component, it returned a date one or two millennia too young, suggesting, as noted, that this tiny fragment fell through the shells to a deeper level.

There is very little pine at Van Horn Creek today. The site is covered in hardwoods, mainly oak and tupelo, cabbage palm, and various weeds as described above. Perhaps the pine is significant in indicating there was a drier climate and higher elevations above water at this midden mound throughout at least the latter 3000 years of its existence. The lack of cultigens may indicate that even in a time period when we know maize agriculture was taking place upriver, no domesticated plants were utilized by estuarine peoples.

The sparse amount of botanical remains may also indicate that few fires were built, perhaps because the site was inhabited in warmer seasons (3/4 of the year). This is consistent with the lack of featuressuch as fire pits. Even the concentration of fired clay fragments in Test Unit 4 appears to have been redeposited hearth liner from a very small fire.

Again, our sample of four small tests at the site could be producing very biased information. The consistency from Test Unit 1 to Test Unit 3, however, analyzed by different experts, supports the interpretations given here.

SUMMARY AND INTERPRETATION OF COMPONENTS

Fort Walton

The relatively thin Fort Walton occupation at Van Horn Creek seems characterized by standard ceramic types from early to late. There are no Lamar ceramics or other artifacts that would suggest a very late or protohistoric occupation (White 1982). There are no cultigens, no diagnostic lithic artifacts such as triangular points. Though there is chipped stone, it is not clearly associated with the Fort Walton component.

While some Mississippian cultural adaptations in the Southeast include a microlithic industry (e.g., Yerkes 1983), none has ever been associated with the Fort Walton regional variation of Mississippian, which, in this valley, seldom has much chipped stone at all. The microtools from Van Horn Creek might be interpreted as a first example of this in Apalachicola Valley Mississippian. However, it is much more likely that they are late Archaic (as discussed below and in the summary chapter).

Some of the shell artifacts and perhaps some daub fragments may be associated with the Fort Walton component, but this is also uncertain. Other than pottery, we do not know what these folks made implements out of, but can only suggest that most were of more perishable materials such as wood, or else were so carefully utilized as not to lose or break them.

The general impression is that the Fort Walton materials are thicker at the top/center of the shell mound and thinner on the sides. The best that can be said is that these people inhabited this site for a short time, probably seasonally, camping here to take advantage of terrestrial and especially aquatic resources that earlier peoples had also utilized. They collected freshwater clams and some oysters, and probably more important, the fish inhabiting the same waters. Their relationship with contemporaneous agricultural peoples upriver in the interior remains unknown.

Early (?) Woodland (?)

The Early Woodland occupation is considered tentatively identified until more evidence is recovered. If it exists, it was either more intense or of longer duration than the Fort Walton use of the site, as the deposits are far deeper and wider spread. Why the ceramics are only check-stamped and plain is a mystery. At Depot Creek and Clark Creek shell mounds, for example, there were more Deptford types and other indicators such as tetrapodal vessel bases. Perhaps this means the Deptford at Van Horn Creek is earlier, though if so, it should have some other types considered earlier such as simple-stamped (see ceramic discussion for Depot Creek in previous chapter). The component is considered tentatively identified because check-stamped and plain pottery can just as easily be associated with the Fort Walton occupation or with Late Woodland (Late Weeden Island; White 1982).

There are only minor indications of a separate Early Woodland presence: First, the cord- or fabric-marked sherds, while not a standard type and thus able to be associated with any component, are possibly more likely to be Early Woodland, during which time both standard fabric-marked and possibly cord-marked pottery appear in this valley. Second, a glance at the ceramic tables (11-14) shows that the diagnostic Fort Walton types cluster in the top two or three levels of every unit while the plain and check-stamped pottery continued much deeper. While this suggests an earlier and separately identified cultural component, it does not guarantee that the component is Early Woodland. Late Woodland ceramic assemblages in this valley are also characterized by predominately check-stamped and plain sherds, though with occasional other types such as Keith Incised or Carrabelle Incised/Punctuate (White 1981). So far no late Woodland components have been identified at any Apalachicola shell mounds, however, and the most numerous and thickest cultural deposits at most of them have been Early Woodland (Deptford). The radiocarbon date of A.D. 830 reported for Test Unit 1 Level 6, which had one check-stamped and one fiber-tempered sherd in the oyster midden, would be a reasonable date for late Weeden Island and has to be dating something (though the charcoal could have been produced by a natural fire). The possible tetrapodal sherd from Test Unit 2 Level 3 is too indistinct to be a clear diagnostic. If this lumpy ceramic fragment is indeed a podal support, then it is certainly Early Woodland.

Whatever their precise cultural affiliation, these people exploited a range of resources similar to that at the other shell mounds: many fish, shellfish, mammals, amphibians, and birds of the estuary. Freshwater clams apparently either predominate during this period in the deposits or come to predominate over oysters through time, suggesting the changing of the environment from more to less saline, possibly as the river shifts its flow more eastward.

Shell tools and daub fragments from the site may be associated with this component, as might some of the lithic remains, though all of this is speculation. Few botanical remains are preserved to suggest anything other than occasional fires with pine wood.

Perhaps Deptford groups lived here seasonally, returning year after year to do about the same things, including piling up the same sorts of midden garbage, and perhaps salvaging some earlier materials such as lithic items from the Late Archaic deposits.

Late Archaic

This component is very interesting due to the diversity of remains and the change in animal species represented. The intensity/duration of occupation and thickness of the Late Archaic cultural deposits are unknown since the bottom was not reached in our brief tests due to time constraints and encountering the water table. There are signs of the kind of Late Archaic complex associated with Poverty Point and Elliott's Point cultural remains widespread along the Gulf of Mexico: a microlithic industry, clay balls or "objects," a little fiber-tempered pottery, and perhaps some of the shell tools and the unusual engraved bone artifact. When these people lived at Van Horn Creek they deposited almost exclusively oyster shells in their midden and remains of many marine animals. If they utilized the estuarine environment in the same general way that later folks did and within the same distance from the site, this suggests environmental differences. Saltwater would have been closer than it is today, permitting procurement of more saltwater species than freshwater. This is the same kind of general estuarine adaptation as that of later groups but in a slightly different environment.

THE YELLOW HOUSEBOAT SHELL MOUND, 8GU55

SITE DESCRIPTION

The Yellow Houseboat shell mound, named after the craft docked there in 1985 when it was recorded by the USF survey (Henefield and White 1986:65-66), is a partially submerged mounded midden of *Rangia* shells on the northwest shore of Lake Wimico (Figures 1 and 14). The site sits on the east bank at the place where a branch of Searcy Creek empties into the lake. When the Apalachicola River's main channel was the center of Lake Wimico, at some time in the past few thousand years (Donoghue 1993), this site would have been either on or close to the riverbank.

When first visited in 1985, the site yielded only check-stamped and plain ceramics, suggestive of a Deptford occupation, since the stamping was often linear. Though not originally chosen for test excavation, this site became the first shell mound to be tested in the 1988 season for several reasons. Since 1985 other collections from it had produced complicated-stamped and incised ceramics indicating other components. Also a local collector had obtained a portion of a human cranium from the submerged edge of the site, as well as some unusual complicated-stamped sherds and a small bird head effigy. Another collector who went diving on the submerged southern slope recovered a broken bone pin or point, black either from burning or water patina (from tannic acid).

This mound also was much more accessible than most other Apalachicola shell mounds, and provided an immediate water source for screening. It was not possible to waterscreen in 1987, but by 1988 we had borrowed the appropriate equipment.

The Yellow Houseboat shell midden rises only .45 m above the surrounding (average) water level. In reality it is much higher but the submersion of the lower slopes (Figures 14 and 15) made calculations of its total size impossible. Even wading out to the edge of the visible shell did not work, since either it got too deep for non-marine archaeologists such as our crew, or else disturbance of the black bottom showed that the shell continued but was covered with organic debris.

The section of mound above water is 60 m long and 30 m wide, at its widest point on the eastern end, tapering to 10 m wide at the west end, oriented with the longer axis to the northwest-southeast (Figure 14). The south side is a cleared beach (Figure 15) now less accessible because of huge treefalls after the 1985 hurricanes. Boats dock on this small beach area at a slight inlet. There is also a cylindrical concrete

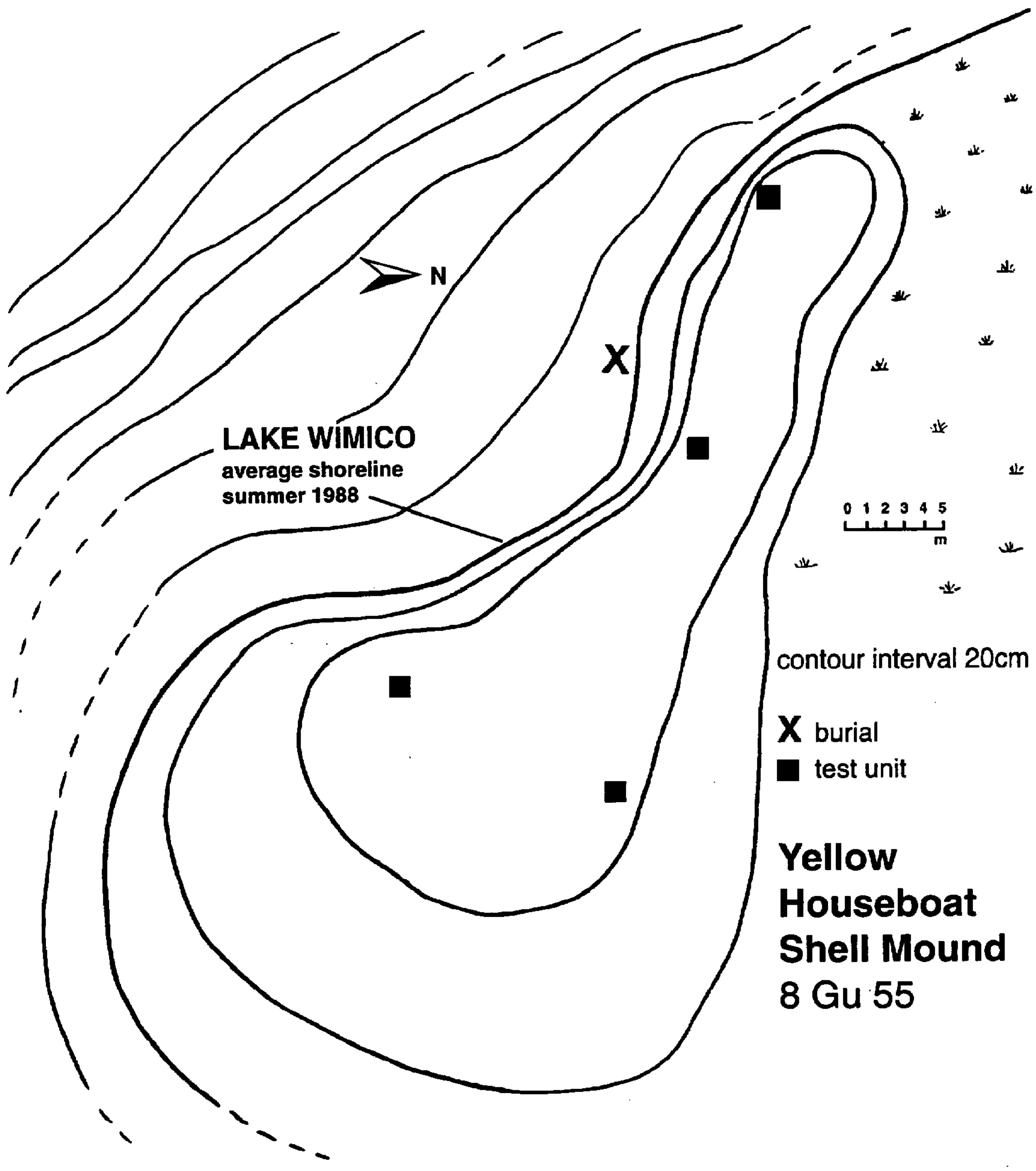

N
X
LAKE WIMICO
average shoreline
summer 1988
0 1 2 3 4 5
m
contour interval 20cm
X burial
test unit
Yellow
Houseboat
Shell Mound
8 Gu 55

Figure 14

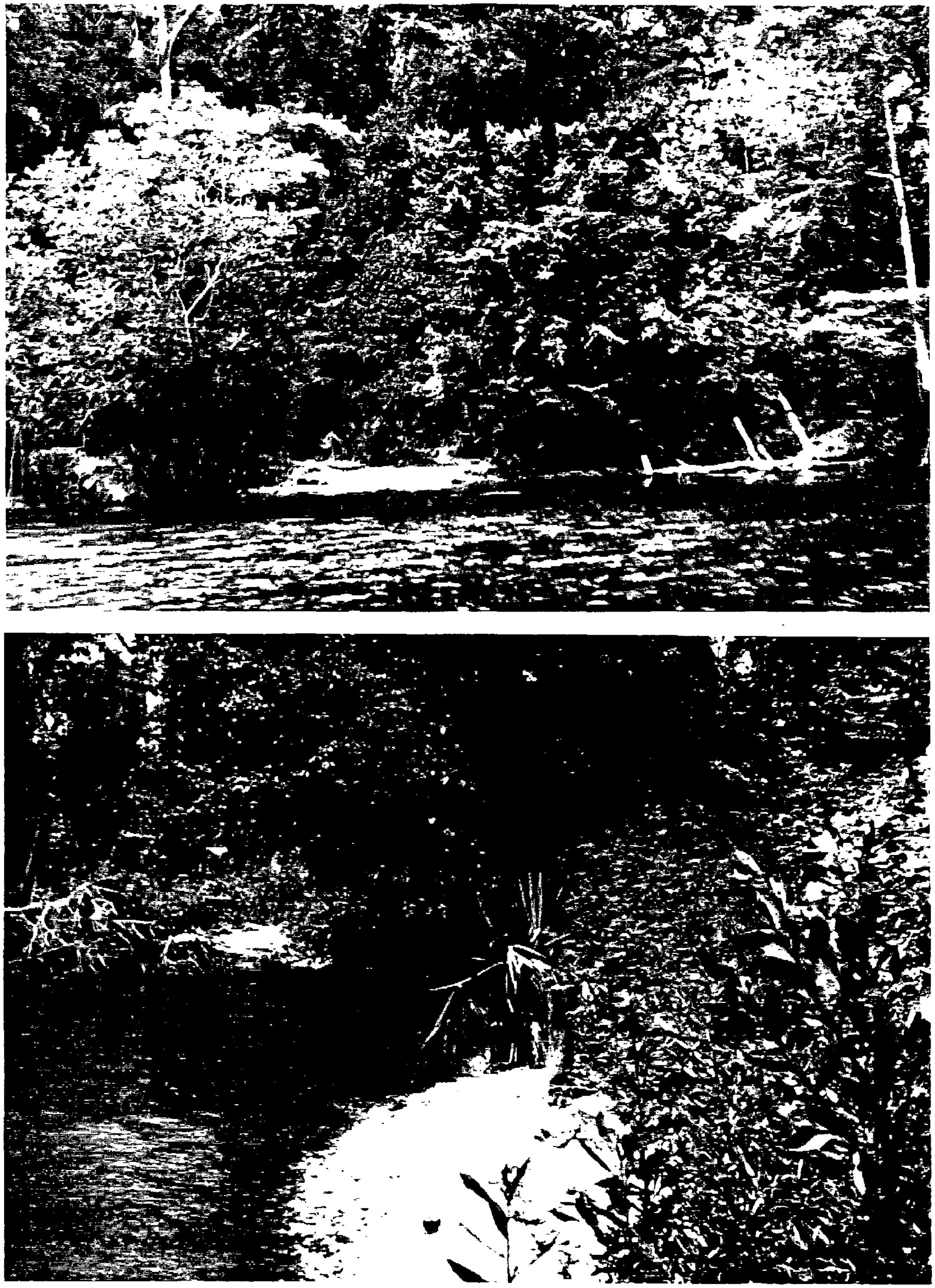


FIGURE 15. Two views of Yellow Houseboat shell mound. Top, from Lake Wimico, facing north northeast toward cleared area where boats land and skeleton was exposed. Bottom, view facing northwest from south center edge of mound.

and metal U.S. Coast and Geodetic Survey marker post there, dated 1935, protruding 50 cm above the shell at what was sometimes the water's edge.

The water level at the site changes constantly with the numerous tides of the Apalachicola system. Thus more or less shell midden is exposed depending of the time of day and season. The churning up of this dynamic shoreline is constant, by wave action and even more by boat traffic. The Intracoastal Waterway runs through the center of Lake Wimico and giant barges pass by daily. Pleasure boats of all sizes often dock here for fishing and, judging from the modern artifacts, camping. There is some evidence that beekeeping such as at Depot Creek might also have been practiced at this mound. Despite all the modern disturbance, we hoped to find intact cultural deposits.

FIELDWORK

Excavations

The shell mound testing strategy for this project had to be modified somewhat at Yellow Houseboat shell mound. Since it was so small and narrow, units could not easily be dug on its slope. Heavily covered with dense vegetation of weeds, cypress, and blooming wildflowers, the mound offered few areas even big enough for a 1 x 1 meter unit without running into massive cypress roots. Four units were placed along what passed for a central spine of this site, totaling 4 square meters opened; with depths calculated in, the total becomes 1.9 cubic meters excavated at the site.

Fieldwork was carried out between 20-29 June 1988 by a crew of eight with occasional volunteers. In addition, a crew of six returned on 2 September to salvage the human burial. The site was mapped with a transit, the stadia rod holder even wading as deep as possible to the south-southwest to get more of an idea of the mound shape. Units were dug in 10 cm arbitrary levels, because we knew we would probably hit the water table soon and not be able to go as deep, so the time could be taken for better control. All soils were waterscreened through 1/4" (6.35mm) or 1/8" (3.2mm) mesh. This procedure was time consuming, but once the heavy pump and hoses were transported to the site in our small boats, the work was well facilitated by the presence of plenty of water (White 1991a: Figure 4).

Another change from the 1987 field methods was a larger sample size for flotation samples from each level. At the suggestion of zooarchaeologist Walker, instead of 4-liter samples we took 30 cm x 30 cm x 10 cm (9-liter) samples from each level of each unit. These were over two times larger than our 1987 samples. Needless to say they weighed a great deal, and made our boat rides home at the end of the day somewhat more precarious. The larger sample sizes must be kept in mind for comparisons with the two 1987 sites. For example, faunal assemblage samples are recovered from over twice as large a volume of soil that was floated (as indicated on Tables A1.17 and A1.18).

Excavation Units and Stratigraphy

Test Unit 1 was a 1 x 1 m square on the higher, more level ground adjacent to the south beach area. It was taken only to 60 cm or Level 6 when the water began seeping in. Though we tried pumping it out with a small battery-operated bilge pump, this was not enough to permit further excavation. By this depth more oyster was present in the matrix and the color of the surrounding greasy sand was more orange, probably due to the same kind of mineral deposit as that seen deep in the other shell mounds.

Only Level 6 did not contain modern glass, iron or other materials in this unit. Nonetheless there were many artifacts and animal bones, including a concentration of turtle carapace fragments, from the aboriginal component. It is uncertain how the modern materials got to those depths. If recent campers or others dug holes for trash disposal or latrines, for example, these may or may not have been evident. How does one recognize a hole dug into a pile of shell if it is filled in with the same shell?

Test Unit 2 was a 1 x 1 located on what passed for the northeast summit of the midden. The area had no visible shell as it was covered with black humus, but the shell became apparent 10 cm into the excavation. By Level 5, at 50 cm depth, a dark greasy stain of apparently circular shape, 50 cm in radius, appeared in the northeast corner. This was the only real feature found at the site, and it could only be excavated in part as 75% of it was in the wall, on a horizontal plane, and vertically, an unknown amount below 63 cm depth was under the water table.

General unit stratigraphy under the 10 cm of forest humus consisted of about 25 cm of dark grayish brown (Munsell color 10YR4/2) clayey soil with many unbroken clamshells, overlying a lens 5 to 7 cm thick, tapering to the east, of dark brown soil (10YR4/3) with crushed shell, overlying dark brown (10YR3/4 to 3/2) wet muck with little shell. The feature may have been cultural, perhaps a pit, though there were more sherds in the matrix around it than in it. It may also have been a natural disturbance.

Test Unit 3 was a 1 x 1 placed at the edge of the site to the southeast, adjacent to the water. This was a grassy area not easily accessible by boat, where the west side of the mound dropped off rather steeply into the water. Thick tree roots made excavation difficult.

By floor 3, at 25 cm depth below surface, different colored areas of matrix surrounded the shell, from pale brown to brown to black. In the final stratigraphic profile mapped in the walls a few lenses of possible ash were recognized. Though the different colored floor areas were mapped and artifacts in them bagged separately, no significance could be attached to them in terms of natural or cultural causes. Also at this depth a hole appeared leading down to water (a former burrow?), and water covered the entire floor by a depth of 31 cm.

Test Unit 4 was placed at the far west end of the beach on the south side, in a spot where sufficient elevation was thought to be present to produce some dry digging for a while. Roots were a problem here too. At a depth of only 23 cm the water table was reached. No deposits without modern materials were encountered in this short excavation. However the matrix did change to include fewer shells with increasing depth. Among the interesting items from this unit were some human teeth.

Stratigraphy: The above descriptions show there was no clear or uniform cultural stratigraphy in this shell mound, though our units did not really get deep enough to say that this was the case throughout its entirety. The shell midden matrix consisted of packed shells, ceramic and lithic artifacts and animal bone with only a small amount of sandy soil. Lenses of blacker or lighter color, due to more or less charcoal, apparently, showed up here and there. Root stains and what were apparently large (and weird looking) fungus growths appeared in some units.

The only real break in this matrix was at about 40 cm below the surface in Test Unit 2, situated on the highest spot, where there was a change to a brownish black clayey swamp muck that still retained some shell and artifacts. Perhaps the other units would have reached such a stratum if excavation in them had not been halted by intrusion of the shallow water table. A slight trend toward more orange soil and fewer shells and perhaps a few oysters seemed to be present.

It is impossible to tell how the modern materials reached the depths that they did in Test Units 1 and 4, but many may have filtered down through the open spaces in the loosely packed shell. Others may have been part of pit fill, as noted, though no pit outlines were ever apparent. Wave action caused by barge traffic or storms might also have effected redeposition of original cultural sediments mixed with modern materials.

Burial Excavation

During the June fieldwork a human burial was observed eroding out of the south side of the mound at the water's edge. It was known that the human cranial fragment had been recovered here by a collector, and surface collection along the shore by our field party turned up a human mandible. During one low tide period, as another bone appeared, we were able to clean and expose an entire skeleton, which had been barely covered with shell midden matrix. It was undoubtedly a prehistoric interment because the adult skeleton lay flexed on the right side, with the end where the head would have been pointing south (Figure 16). A modern burial would have a coffin and probably more "Christian" type of positioning extended on the back with hands across the chest. An accidental or abandoned corpse would not be so tightly and carefully flexed. Except for the missing cranium, which was probably the one recovered by the collector, most of the skeleton was present, down to the toes.

The tides did not cooperate during June; this burial was underwater during our working hours for most of our stay at the site. (Indeed, without the previous years' drought it probably would not have been exposed in the first place.) We left it covered carefully with black plastic over which screened shell matrix was piled, to prevent looting. Consultation with several experts, including those at the NOAA field office, on the predicted tides for later in the year indicated that the lowest daytime tides occurring next in the Apalachicola Bay area would be between 1-3 September, Labor Day weekend, a perfect time to return and salvage the skeleton.

In consultation with the state archaeologist in the Division of Historical Resources in Tallahassee, it was decided the burial should be removed. Human remains not endangered should be preserved in the ground, according to current archaeological ethics and Florida law, unless there is good reason to remove them. However, at the Yellow Houseboat shell mound boats docked often, scraping bottom right over this skeleton. Collectors, even people sitting on the bank fishing, were likely to disturb it even more. Since it was on state land, the state was obliged to remove it if we did not.

On the Wednesday of the week we were to arrive for the salvage operation, Apalachicola Reserve education coordinator Bonnie Holub checked the site and found the burial indeed high and dry and well protected. Unfortunately when we arrived on Friday unseasonal rains had made the water table higher than ever and the tide schedule had changed, necessitating a revised strategy.

FIGURE 16. Burial at Yellow Houseboat shell mound when first exposed. North is at top. Flexed skeleton has right leg well articulated at upper right of photo (femur fits into hip in upper center, tibia and fibula just above and parallel to it), left tibia broken in center of photo, arms in lower left oriented diagonally with some ribs visible above them oriented near horizontally (left center of photo). Head would have been just to west or northwest of compass.

With burlap bags filled with clay and sand (dug out from the opposite bank of the stream so as to avoid further disturbance to the site) and two bilge pumps we engineered a homemade cofferdam and pumped out the water from the area of the skeleton. This laborious exercise took many hours. It rained all day. By late afternoon the excavation could begin; it ended after dark by the light of large lanterns. The heroic crew and volunteers from the ANERR office navigated our way back to town, a two hour trip through pouring rain and darkness, with many yellow alligator eyes peering up at us from Lake Wimico.

CERAMICS

Pottery

A total of 2145 ceramic sherds, weighing nearly six kilograms, was recovered from the Yellow Houseboat shell mound. These ceramics are tabulated by gross provenience in Table 19, and the excavated specimens by unit and level in Tables 20 - 23. Examples are shown in Figure 17. Types represented do indeed show at least three cultural components present. Unfortunately, there is no clear pattern to their distribution, horizontally or vertically. Diagnostic Fort Walton types occur in deeper levels of some units, along with earlier types. Components can only be isolated abstractly by discussing the diagnostics.

Fort Walton: The presence of this late prehistoric cultural manifestation is well established by the types Fort Walton Incised and Lake Jackson Plain, as well as seven shell-tempered sherds. Perhaps more of the grit-tempered specimens belong here too, but there is no way to confirm this. Little else can be said of this component except that it is here. A ceramic bird head effigy from the collection of local resident Bill Herring may also belong to this component.

Early Woodland: There are Deptford sherds of the simple-stamped and linear check-stamped types, indicating the earlier portion of the Early Woodland cultural stage. Much of this check-stamped is tempered with grog, as are the Deptford sherds reported herein for other shell mounds. There are Swift Creek Complicated-Stamped and three cord-marked sherds, suggesting the later portion of the Early Woodland. There are no other diagnostics such as tetrapodal vessel sherds.

An unusual complicated-stamped variety was recovered by collector Bill Herring, who graciously shared his information. Its pattern is a large almost herringbone (!) shape, consisting of a vertical land (raised portion) and diagonals leading out from each side of it. This pattern was also seen on sherds recovered by our project at Clark Creek shell mound, beyond the opposite end of Lake Wimico (see next chapter). Not previously recorded in the Apalachicola Valley, the pattern on this

TABLE 19. CERAMICS FROM YELLOW HOUSEBOAT SHELL MOUND, 8Gu55, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	SURFACE		AROUND BURIAL		TU 1		TU 2		TU 3		TU 4		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
SHELL-TEMP PL	1	10			4	4					2	2	7	16
FT WALTON INC	1	4					1	6	1	3	1	1	4	14
L JACKSON PL	8	121			3	14			6	32			17	167
INDET INC	6	23			7	23	11	50	8	26	2	5	34	126
INDET PUNC	7	40			6	29	7	19	2	15	2	8	24	111
LIMEST-TEMP PL									7	35	1	2	8	37
COMP-STAMP	5	45			4	20							9	65
INDET STAMP	36	165	5	19	26	81	20	238	4	20	28	75	119	597
CORD-MARK	3	12											3	12
CHECK-STAMP	86	519	6	28	15	70	60	515	15	95	34	88	216	1317
SIMPLE-STAMP	1	6											1	6
GRIT-TEMP PL	56	353	4	6	20	77	14	33	16	40	24	77	134	586
GRIT/GROG-TEMP PL	2	16			2	3							4	19
GROG-TEMP PL	49	185			59	174	35	124	27	95	19	73	189	651
SAND-TEMP PL	172	589	22	46	393	490	278	463	219	324	292	320	1376	2231
TOTAL	433	2089	37	99	539	984	426	1448	305	684	405	650	2145	5954
% BY PROVIENCE														
SHELL-TEMP PL					1									
FT WALTON INC														
L JACKSON PL	2	6			1	1			2	5			1	3
INDET INC	1	1			1	2	3	3	3	4		1	2	2
INDET PUNC	2	2			1	3	2	1	1	2		1	1	2
LIMEST-TEMP PL									2	5				1
COMP-STAMP	1	2			1	2								1
INDET STAMP	8	8	14	19	5	8	5	16	1	3	7	11	6	10
CORD-MARK	1	1												
CHECK-STAMP	20	25	16	29	3	7	14	36	5	14	8	14	10	22
SIMPLE STAMP														
GRIT-TEMP PL	13	17	11	6	4	8	3	2	5	6	6	12	6	10
GRIT/GROG-TEMP PL		1												
GROG-TEMP PL	11	9			11	18	8	9	9	14	5	11	9	11
SAND-TEMP PL	40	28	59	46	73	50	65	32	72	47	72	49	64	37
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 19. CERAMICS FROM YELLOW HOUSEBOAT SHELL MOUND, 8Gu55, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS (CONTINUED).

	SURFACE		AROUND BURIAL		TU 1		TU 2		TU 3		TU 4		TOTAL	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
% WITHIN TYPE														
SHELL-TEMP PL	14	63			57	25					29	12	100	100
FT WALTON INC	25	28					25	46	25	18	25	9	100	100
L JACKSON PL	47	73			18	8			35	19			100	100
INDET INC	18	18			21	18	32	40	24	20	6	4	100	100
INDET PUNC	29	37			25	26	29	17	8	13	8	7	100	100
LIMEST-TEMP PL									88	95	13	5	100	100
COMP-STAMP	56	70			44	30							100	100
INDET STAMP	30	28	4	3	22	14	17	40	3	3	24	13	100	100
CORD-MARK	100	100											100	100
CHECK-STAMP	40	39	3	2	7	5	28	39	7	7	16	7	100	100
SIMPLE-STAMP	100	100											100	100
GRIT-TEMP PL	42	60	3	1	15	13	10	6	12	7	18	13	100	100
GRIT/GROG-TEMP PL	50	84			50	16							100	100
GROG-TEMP PL	26	28			31	27	19	19	14	15	10	11	100	100
SAND-TEMP PL	13	26	2	2	29	22	20	21	16	15	21	14	100	100
% OF TOTAL														
SHELL-TEMP PL														
FT WALTON INC														
L JACKSON PL		2								1			1	3
INDET INC							1	1					2	2
INDET PUNC		1											1	2
LIMEST-TEMP PL										1				1
COMP-STAMP		1												1
INDET STAMP	2	3			1	1	1	4			1	1	6	10
CORD-MARK														
CHECK-STAMP	4	9			1	1	3	9	1	2	2	1	10	22
SIMPLE-STAMP														
GRIT-TEMP PL	3	6			1	1	1	1	1	1	1	1	6	10
GROG-TEMP PL														
GROG-TEMP PL	2	3			3	3	2	2	1	2	1	1	9	11
SAND-TEMP PL	8	10	1	1	18	8	13	8	10	5	14	5	64	37
% OF TOTAL	20	35	2	2	25	17	20	24	14	11	19	11	100	100

TABLE 20. CERAMICS FROM TEST UNIT 1, YELLOW HOUSEBOAT SHELL MOUND, 8GU55, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.12 m³)		LEVEL 2 (.09 m³)		LEVEL 3 (.09 m³)		LEVEL 4 (.10 m³)		LEVEL 5 (.10 m³)		LEVEL 6 (.10 m³)		LEVEL 7 (.06 m³)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
SHELL-TEMP PL					1	2	3	1							4	4
L JACKSON PL							1	6	2	8					3	14
INDET INC	1	2	1	1					3	14	2	5			7	23
INDET PUNC	2	5	1	10	1	5					2	8			6	29
COMP-STAMP	1	3	2	7			1	11							4	20
INDET STAMP	3	8	5	13	7	25	7	15	3	15	1	5			26	81
CHECK-STAMP	1	3	4	14	2	10	1	2	4	23	3	19			15	70
GRIT-TEMP PL	1	5	9	42	4	12	2	5	3	12	1	2			20	77
GRIT/GROG-TEMP PL	2	3													2	3
GROG-TEMP PL	16	17	6	6	6	13			15	46	15	92	1	1	59	174
SAND-TEMP PL	63	65	64	101	88	93	92	88	57	67	8	36	21	41	393	490
TOTAL	90	109	92	193	109	161	107	127	87	185	32	167	22	42	539	984
% BY PROVIENCE																
SHELL-TEMP PL					1	1	3	1							1	
L JACKSON PL							1	4	2	4					1	1
INDET INC	1	1	1	1					3	8	6	3			1	2
INDET PUNC	2	5	1	5	1	3					6	4			1	3
COMP-STAMP	1	2	2	3			1	8							1	2
INDET STAMP	3	7	5	7	6	15	7	12	3	8	3	3			5	8
CHECK-STAMP	1	3	4	7	2	6	1	1	5	12	9	12			3	7
GRIT-TEMP PL	1	4	10	22	4	8	2	4	3	6	3	1			4	8
GRIT/GROG TEMP-PL	2	3														
GROG-TEMP PL	18	15	7	3	6	8			17	25	47	55	5	2	11	18
SAND-TEMP PL	70	59	70	52	81	58	86	69	66	36	25	21	95	98	73	50
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 20. CERAMICS FROM TEST UNIT 1, YELLOW HOUSEBOAT SHELL MOUND, 8GU55, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS (CONTINUED).

TYPE	LEVEL 1 (.12 M³)		LEVEL 2 (.09 M³)		LEVEL 3 (.09 M³)		LEVEL 4 (.10 M³)		LEVEL 5 (.10 M³)		LEVEL 6 (.10 M³)		LEVEL 7 (.06 M³)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
% WITHIN TYPE																
SHELL-TEMP PL					25	62	75	38							100	100
L JACKSON PL							33	41	67	59					100	100
INDET INC	14	7	14	6					43	63	29	24			100	100
INDET PUNC	33	19	17	36	17	19					33	26			100	100
COMP-STAMP	25	13	50	34			25	54							100	100
INDET STAMP	12	10	19	16	27	31	27	19	12	19	4	6			100	100
CHECK-STAMP	7	4	27	20	13	14	7	2	27	32	20	27			100	100
GRIT-TEMP PL	5	6	45	54	20	16	10	6	15	15	5	3			100	100
GRIT/GROG-TEMP PL	100	100													100	100
GROG-TEMP PL	27	10	10	3	10	8			25	26	25	53	2		100	100
SAND-TEMP PL	16	13	16	21	22	19	23	18	15	14	2	7	5	8	100	100
% OF TOTAL																
SHELL-TEMP PL							1								1	
L JACKSON PL								1		1					1	1
INDET INC									1	1		1			1	2
INDET PUNC		1		1		1						1			1	3
COMP-STAMP				1				1							1	2
INDET STAMP	1	1	1	1	1	3	1	2	1	2		1			5	8
CHECK-STAMP			1	1		1			1	2	1	2			3	7
GRIT-TEMP PL			2	4	1	1			1	1					4	8
GRIT/GROG-TEMP PL																
GROG-TEMP PL	3	2	1	1	1	1			3	5	3	9			11	18
SAND-TEMP PL	12	7	12	10	16	9	17	9	11	7	1	4	4	4	73	50
TOTAL	17	11	17	20	20	16	20	13	16	19	6	17	4	4	100	100

TABLE 21. CERAMICS FROM TEST UNIT 2, YELLOW HOUSEBOAT SHELL MOUND, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.13 m³)		LEVEL 2 (.08 m³)		LEVEL 3 (.10 m³)		LEVEL 4 (.08 m³)		LEVEL 5 (.15 m³)		LEVEL 6 (.08 m³)		LEVEL 7 (.08 m³)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
FT WALTON INC			1	6											1	6
INDET INC					2	20	4	5	4	20	1	6			11	50
INDET PUNC	1	4			1	2	2	3			3	10			7	19
INDET STAMP	4	51	3	28	3	15	5	21	2	20	3	101			20	238
CHECK-STAMP			4	9	4	26	10	71	33	221	8	171	1	18	60	515
GRIT-TEMP PL	2	4	1	10	4	5	7	14							14	33
GROG-TEMP PL			1	4	13	44	11	31	6	17	4	27			35	124
SAND-TEMP PL	1	1	14	45	57	92	69	84	96	161	41	80			278	463
TOTAL	8	61	24	103	84	204	108	228	141	440	60	395	1	18	426	1448
% BY PROVIENCE																
FT WALTON INC			4	6												
INDET INC					2	10	4	2	3	5	2	1			3	3
INDET PUNC	13	7			1	1	2	1			5	3			2	1
INDET STAMP	50	85	13	28	4	8	5	9	1	5	5	26			5	16
CHECK-STAMP			17	9	5	13	9	31	23	50	13	43	100	100	14	36
GRIT-TEMP PL	25	7	4	9	5	2	6	6							3	2
GROG-TEMP PL			4	4	15	22	10	13	4	4	7	7			8	9
SAND-TEMP PL	13	1	58	44	68	45	64	37	68	37	68	20			65	32
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE																
FT WALTON INC			100	100											100	100
INDET INC					18	39	36	10	36	40	9	11			100	100
INDET PUNC	14	22			14	11	29	15			43	52			100	100
INDET STAMP	20	22	15	12	15	6	25	9	10	9	15	43			100	100
CHECK-STAMP			7	2	7	5	17	14	55	43	13	33	2	4	100	100
GRIT-TEMP PL	14	14	7	29	29	15	50	42							100	100
GROG-TEMP PL			3	3	37	36	31	25	17	14	11	22			100	100
SAND-TEMP PL			5	10	21	20	25	18	35	35	15	17			100	100
% OF TOTAL TU																
FT. WALTON INC																
INDET INC						1	1		1	1					3	3
INDET PUNC											1	1			2	1
INDET STAMP	1	4	1	2	1	1	1	1		1	1	7			5	16
CHECK-STAMP			1	1	1	2	2	5	8	15	2	12		1	14	36
GRIT-TEMP PL				1	1		2	1							3	2
GROG-TEMP PL					3	3	3	2	1	1	1	2			8	9
SAND-TEMP PL			3	3	13	6	16	6	23	11	10	6			65	32
% OF TOTAL	2	4	6	7	20	14	25	16	33	30	14	27		1	100	100

TABLE 22. CERAMICS FROM TEST UNIT 3, YELLOW HOUSEBOAT SHELL MOUND, 8GU55, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.13 m³) CT	LEVEL 1 (.13 m³) WT	LEVEL 2 (.06 m³) CT	LEVEL 2 (.06 m³) WT	LEVEL 3 (.06 m³) CT	LEVEL 3 (.06 m³) WT	LEVEL 4 (.06 m³) CT	LEVEL 4 (.06 m³) WT	TOTAL CT	TOTAL WT
FT WALTON INC							1	3	1	3
L JACKSON PL	2	17	3	10	1	5			6	32
INDET INC	1	9	5	13	2	4			8	26
INDET PUNC			1	1	1	14			2	15
INDET STAMP			4	20					4	20
LIMEST-TEMP PL			5	33			2	2	7	35
CHECK-STAMP	3	17	7	63	5	15			15	95
GRIT-TEMP PL	6	17	7	18	3	5			16	40
GROG-TEMP PL	7	27	7	34	10	23	3	12	27	95
SAND-TEMP PL	60	67	50	104	79	101	30	53	219	324
TOTAL	79	154	89	295	101	166	36	69	305	684
% BY PROVIENCE										
FT WALTON INC							3	4		
L JACKSON PL	3	11	3	3	1	3			2	5
INDET INC	1	6	6	4	2	2			3	4
INDET PUNC			1		1	8			1	2
INDET STAMP			4	7					1	3
LIMEST-TEMP PL			6	11			6	3	2	5
CHECK-STAMP	4	11	8	21	5	9			5	14
GRIT-TEMP PL	8	11	8	6	3	3			5	6
GROG-TEMP PL	9	17	8	12	10	14	8	17	9	14
SAND-TEMP PL	76	44	56	35	78	61	83	76	72	47
TOTAL	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE										
FT WALTON INC							100	100	100	100
L JACKSON PL	33	53	50	31	17	16			100	100
INDET INC	13	36	63	49	25	15			100	100
INDET PUNC			50	8	50	92			100	100
INDET STAMP			100	100					100	100
LIMEST-TEMP PL			71	93			29	7	100	100
CHECK-STAMP	20	18	47	66	33	16			100	100
GRIT-TEMP PL	38	42	44	45	19	13			100	100
GROG-TEMP PL	26	28	26	36	37	24	11	12	100	100
SAND-TEMP PL	27	21	23	32	36	31	14	16	100	100
% OF TOTAL TU										
FT WALTON INC										
LK JACKSON PL	1	2	1	1		1			2	5
INDET INC		1	2	2	1	1			3	4
INDET PUNC						2			1	2
INDET STAMP			1	3					1	3
LIMEST-TEMP PL			2	5			1		2	5
CHECK-STAMP	1	3	2	9	2	2			5	14
GRIT-TEMP PL	2	2	2	3	1	1			5	6
GROG-TEMP PL	2	4	2	5	3	3	1	2	9	14
SAND-TEMP PL	20	10	16	15	26	15	10	8	72	47
% OF TOTAL	26	23	29	43	33	24	12	10	100	100

TABLE 23. CERAMICS FROM TEST UNIT 4, YELLOW HOUSEBOAT SHELL MOUND, 8GU55, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.10 m³) CT	LEVEL 1 (.10 m³) WT	LEVEL 2 (.09 m³) CT	LEVEL 2 (.09 m³) WT	LEVEL 3 (.08 m³) CT	LEVEL 3 (.08 m³) WT	TOTAL CT	TOTAL WT
SHELL-TEMP PL	2	2					2	2
FT WALTON INC	1	1					1	1
INDET INC	1	3	1	2			2	5
INDET PUNC			2	8			2	8
LIMEST-TEMP PL	1	2					1	2
INDET STAMP	17	35	9	21	2	20	28	75
CHECK-STAMP	14	35	19	47	1	7	34	88
GRIT-TEMP PL	6	16	7	11	11	51	24	77
GROG-TEMP PL	8	10	8	14	3	48	19	73
SAND-TEMP PL	164	168	102	121	26	31	292	320
TOTAL	214	271	148	222	43	157	405	650
% BY PROVIENCE								
SHELL-TEMP PL	1	1						
FT WALTON INC PL								
INDET INC		1	1	1				1
INDET PUNC			1	3				1
LIMEST-TEMP PL		1						
INDET STAMP	8	13	6	9	5	12	7	11
CHECK-STAMP	7	13	13	21	2	4	8	14
GRIT-TEMP PL	3	6	5	5	26	33	6	12
GROG-TEMP PL	4	4	5	6	7	31	5	11
SAND-TEMP PL	77	62	69	54	60	20	72	49
TOTAL	100	100	100	100	100	100	100	100
% WITHIN TYPE								
SHELL-TEMP PL	100	100					100	100
FT WALTON INC	100	100					100	100
INDET INC	50	61	50	39			100	100
INDET PUNC			100	100			100	100
LIMEST-TEMP PL	100	100					100	100
INDET STAMP	61	46	32	27	7	26	100	100
CHECK-STAMP	41	39	56	53	3	8	100	100
GRIT-TEMP PL	25	20	29	14	46	66	100	100
GROG-TEMP PL	42	14	42	20	16	66	100	100
SAND-TEMP PL	56	53	35	38	9	10	100	100
% OF TOTAL TU								
SHELL-TEMP PL								
FT WALTON INC								
INDET INC								1
INDET PUNC				1				1
LIMEST-TEMP PL								
INDET STAMP	4	5	2	3		3	7	11
CHECK-STAMP	3	5	5	7		1	8	14
GRIT-TEMP PL	1	2	2	2	3	8	6	12
GROG-TEMP PL	2	2	2	2	1	7	5	11
SAND-TEMP PL	40	26	25	19	6	5	72	49
% OF TOTAL	53	42	37	34	11	24	100	100

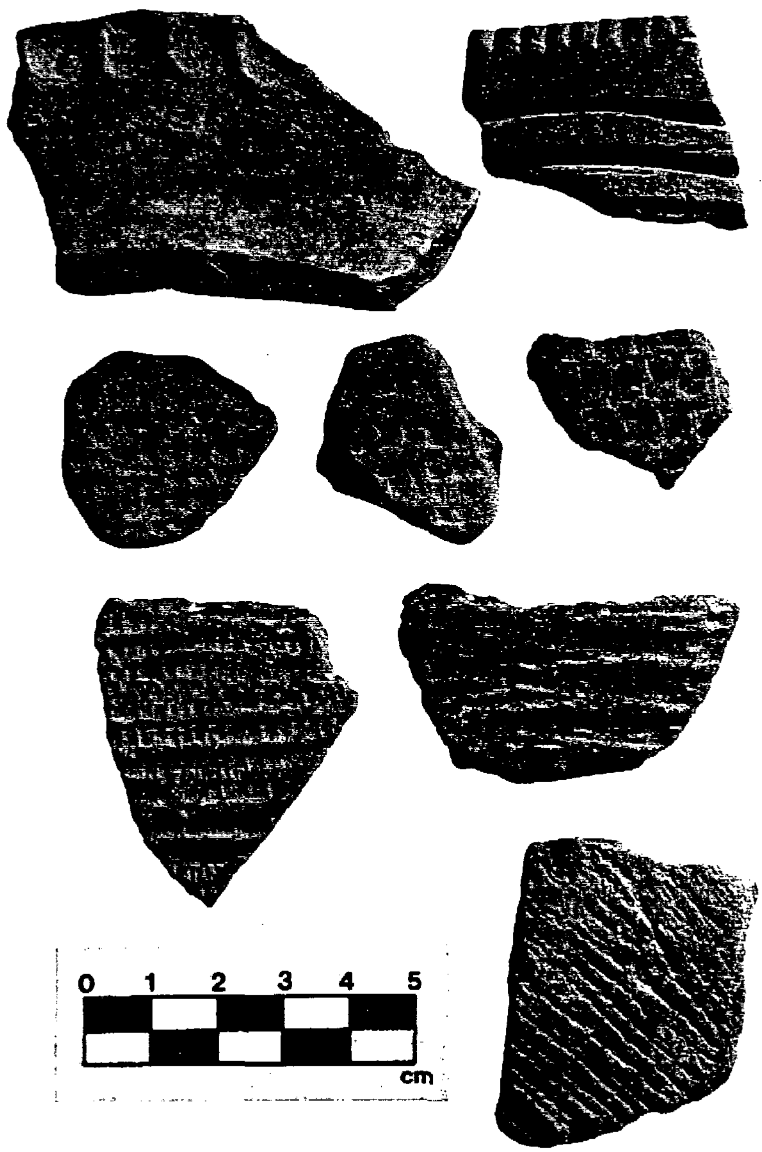


FIGURE 17. Ceramics from Yellow Houseboat shell mound (surface). Top two Fort Walton rims; middle, various check-stamped sherds, including two linear; bottom right, cord-marked.

sherd does appear identical to that on a sherd from Morgan County, north Georgia, illustrated in Wauchope's (1966: Figure 208Z) classic report.

Much of the lithic assemblage may be associated with the Early Woodland component since Fort Walton is known to produce few chert remains in this valley, but this is at present another untestable statement.

Summary of Pottery: Evidently the mixing of cultural deposits, due to prehistoric or modern cultural activity or both, and perhaps natural processes as well, has obscured ceramic stratigraphy at this site. After isolating components by their diagnostic ceramics, it is unclear where to place the non-diagnostic types, especially all the plain wares, which comprise 59% by weight of all sherds. Sand tempering is the most common, at 37% of the total by weight, 64% by count. One sand-tempered sherd from Test Unit 2's deeper levels is a rough disc with a drilled hole in the center, of unknown function.

Limestone tempering is represented by only eight sherds. Some of them have crushed limestone mixed with grog and/or grit. Though this type is probably Fort Walton in cultural affiliation, it really could be associated with any component, as could other types.

Much of the pottery here, especially from the surface, is smoothed by long years of exposure to water. This makes classifying it as to temper and decoration, not to mention recognizing rim sherds, more difficult. As with much Fort Walton pottery, for example, the outer surfaces are smoothed so as to obscure the grit temper, which is more visible in the broken edges. With the water worn sherds, however, that surface is gone and the grit is obvious. This may result in lower counts for grit elsewhere and higher ones here.

In the absence of any unquestionable Weeden Island type, the indeterminate incised and punctated sherds can probably be labeled Fort Walton. Most of the indeterminate stamped is probably check-stamped. However, as already noted, this type could be associated with any component after the Late Archaic in this valley. Only the heavily linear specimens are likely to be Deptford in cultural affiliation.

Other Ceramic Materials

Other clay artifacts from the Yellow Houseboat shell mound are listed in Table 24. They consist of nine possible tiny daub fragments (or perhaps leftover bits from pottery making) and two beads (Figure 18).

The bead from Test Unit 4 Level 1 is thin, cylindrical, light gray, 2.8 cm long and rather nondescript. It is apparently broken on one end where the margin is irregular. The bead found in September 1988

FIGURE 18. Artifacts from Yellow Houseboat shell mound. Left, Bolen or Yarborough point, from surface; center, tubular clay bead from Test Unit 4, Level 1; right, spherical clay bead with tick marks, from surface.

while waiting for the burial to dry out came from the surface northwestward along the south bank. It is dark brown, nearly spherical, 2.9 cm long, fairly solid and heavy. The hole is not perfectly in the center and measures .9 mm in diameter. A pattern of tiny, shallow tick marks runs around the bead in two different lines. The clearest way to describe this pattern is that it is reminiscent of the stitches on a baseball, though not as regular and symmetrical.

Association of any of these objects with a specific cultural component is presently impossible.

TABLE 24: NON-VESSEL CLAY REMAINS FROM THE YELLOW HOUSEBOAT SHELL MOUND, 8Gu55

Provenience	Materials
Surface	1 possible daub frag (2.9 g); 1 sub-spherical bead (2.9 cm long, .9 cm diam, with tick marks)
TU 1 L 6	1 possible daub frag (.3 g)
TU 2 L 3	4 possible daub frags (10.8 g)
TU 4 L 1	tublar clay bead, broken (.3 g)
TU 4 L 2	3 tiny possible daub frags (1.2 g)

LITHIC MATERIALS

Chipped Stone

Lithic remains from Yellow Houseboat shell mound were few but fairly interesting (Table 25). Paramount among them is a well made projectile point that could fit into the Bolen Plain or Kirk-type corner-notched type diagnostic of the Early Archaic cultural stage, at least 7000-9000 years old (Bullen 1975, Cambron and Hulse 1986). This point (Figure 18) looks even more like the Yarbrough type illustrated by Ford and Webb (1956:61) and associated in Louisiana with the Late Archaic Poverty Point complex. It has an expanded base stem and a straight, nearly horizontal shoulder on one side and something closer to a barb on the other side. It came from the surface of the southeast side of the mound, at the water's edge, thus it has no clear association with any other diagnostic materials. Whether or not this single artifact can establish the presence of an Early Archaic or Late Archaic component is problematic; it may have been picked up and brought here to be utilized by later peoples. However, the case is slightly better for a Late Archaic affiliation because of the presence at the site of microlithic tools also likely to be Late Archaic.

TABLE 25: LITHIC MATERIALS FROM YELLOW HOUSEBOAT SHELL MOUND, 8Gu744

Chipped Stone (counts/weights in grams)

Provenience	Prim Decort	2nd Decort	Shatter	2nd Flakes	Cores	Tools	Comments
Surface	2/143.5	3/ 3.9	5/458.9	12/84.1	1/51.7	5/3.4	1 pce shatter utilized; 3 2nd flakes utilized, 1 retouched, 2 thermally altered; 3 Jaketown perforators; 1 small biface frag, 1 Yarborough (?) point
TU 1 L 3				1/ .6		1/1.2	tool is point tip, thermally altered
TU 2 L 3				1/ .4			
TU 3 L 3				1/ .3			thermally altered (red)
TU 4 L 1	3/ 6.0	4/ 2.9	29/ 8.1	42/ 5.7		1/ .5	2nd flakes very tiny; tool is Jaketown perforator
TU 4 L 2			3/ 1.8	5/ 3.6		3/1.2	1 flake utilized; tools are Jaketown perforators
near burial		2/ 1.5		1/ .3		2/1.0	Tools are Jaketown perforators

Other Stone

Provenience	Material
Surface	3 quartz cobble frags, 1 with use wear (52.6 g); 2 quartz chips (94.7 g); 2 pebbles, 1 quartzite, 1 limestone (14.1 g)
TU 1 L 2	quartz pebble frag (1 g), 2 quartzite chips (1.9 g), limestone concretion (.5 g), pc. sandstone (3.8 g)
TU 3 L 3	limestone frag (2.1 g)
TU 4 L 1	2 pebbles, 1 quartz, 1 chert (?); 1 quartz chip (.3 g)

These diagnostic microtools are nine Jaketown or blunt perforators similar to those seen at Van Horn Creek and Clark Creek. Some have clear signs of crushing along the edges. They may have been used for drilling, piercing, grating or engraving. They are most likely associated here with the Late Archaic microlithic Poverty Point-type tradition. Yet we recovered no other material confirming this component, no fiber-tempered pottery or clay balls.

Other tools recovered at Yellow Houseboat are a projectile point tip and a small biface fragment, neither diagnostic of any age, though they probably are not associated with the late prehistoric Fort Walton materials. One core was picked up from the beach surface.

A fair amount of lithic debitage was recovered (114 pieces). Eight flakes with cortex suggest some primary chipping. Most flakes were secondary, some block shatter and many very tiny bifacial thinning flakes, several red or pink from thermal alteration. At least six of these show use wear, and one flake is deliberately retouched, possibly to form a scraper edge. Thus there are a few expedient tools deposited here. None can be associated with any time period.

Most of the debitage came from Test Unit 4 at the northwest end of the site where the four excavated microtools occurred. Other microtools were from the surface nearby, and from the soil around the burial (subjected to flotation), also near Test Unit 4. This debitage could therefore easily be from microtool manufacture.

Other Stone

Other stone items recovered, as listed in Table 25, are pebbles, cobbles, and fragments and chips. All were saved based on the idea that they were probably brought in and do not naturally occur in this region. The only specimen of interest is one quartz cobble fragment with use wear indicating grinding or hammering. None of these remains can be associated with a cultural component.

OTHER ARTIFACTS: SHELL AND BONE

Only one shell tool and one possible bone artifact were recovered from Yellow Houseboat shell mound. A small mammal long bone fragment with a possibly drilled hole may or may not be cultural. A whelk shell columella from Test Unit 1 Level 5 is very small, 5 cm long, and weighs 5.4 g.

HUMAN SKELETAL REMAINS

Burial

The burial (Figure 16) already described (labeled Feature 1) raised more questions after analysis than we could answer. There was no sign of any burial pit or grave goods. Items collected from the surface in its vicinity included everything from microtools, chert flakes and check-stamped sherds (see Tables 19, 25) to turtle bone, lead shot, a 1967 penny and a dime, and modern olive nerite shells. The cultural component this person is associated with is unknown. It is speculated that he was interred during the Late Archaic based on similarities with a known Late Archaic burial at Sam's Cutoff shell mound (8Fr754) excavated in 1993, on the east side of the Apalachicola delta (White and Estabrook 1994 report on the cultural affiliation and 1991 excavations at this single component site; the 1993 data and materials are still being analyzed in the USF lab). At Sam's Creek the burial was also extremely shallow, flexed on the right side, with head to the southeast, and no grave goods.

As noted, the skeleton at Yellow Houseboat shell mound was flexed, lying on the right side. Had the head been present it would have been to the south, facing east. Since the mound sloped downward the top of the body was lower than the legs and feet, which lay uphill on the slope. It is unknown if the topography was like this when the person was put here or if erosion at the water's edge and other later forces resulted in this orientation.

The analysis of this skeleton is summarized here, and Clifford's catalogue of elements present and other data appears as Appendix 2.

Age and Sex: The entire mandible is present, with some teeth still attached and others recovered loose in the field, including one possible maxillary second left molar. Attrition rates on all molars consistently suggest an age of between 35 and 45 years at death.

The squareness of the chin is more characteristic of a male. This conclusion is further supported by the characteristic smooth slope of the sacroiliac joint, which is present most often in males.

Osteometric Data: Measurements on the right femur were used to estimate the stature of this individual, in standard anthropological fashion. Though recently broken, the femur, when reconnected, measured 39.6 cm long. Using a standard deviation of 3.8, the person was calculated to be approximately 157.7 cm in height, or 5' 2" tall.

Trauma: Indications of trauma were limited to a possible healed fracture of the left ulna. This bone is tumid midway up the shaft, which could be characteristic of a healed break. Disease cannot be completely ruled out (it may be a syphilis lesion), but the pitting characteristic of disease on the bone was not present.

Summary: This individual was deliberately buried here at an unknown time period and for unknown reasons. If the entire shell midden is a garbage pile that was also lived upon because of its elevation in the wetlands, it could be postulated that he was not of great importance, having been placed at the edge (if it was the edge then) of the refuse heap. Or perhaps he was buried at the edge of the inhabited area.

We do not know if he was interred with any grave goods because they could have washed or been picked away. If he was not, it could be that he was not of a social status necessitating any such burial treatment. He could also be from a time period (such as the Late Archaic) and/or society where no one was buried with any distinctive items, or grave goods may have been of perishable materials.

Not enough grant funds were available to obtain a radiocarbon date on this skeleton, especially because an AMS date would be more suitable, destroying only a small rib fragment instead of a whole arm and a leg, but AMS dating is nearly three tines the cost of regular radiocarbon dating. Since no artifacts were associated with the burial, such a date would also be less valuable in terms of dating a component present at the site. If future funds become available, however, it might be interesting to ascertain its age. Further research will be done, at any rate, to see if the flexed orientation of the skeleton might be diagnostic of a particular culture. In addition, a small rib fragment was sent to archaeologist Glen Doran of Florida State University in case it can be further studied in his work on diet indicators and other factors in prehistoric Florida skeletal populations.

Other Human Remains

Additional human remains in the form of teeth were unearthed in Test Unit 4 at the Yellow Houseboat shell mound: from Level 1 of this unit came two adult teeth. One is a lower premolar with little wear and most of the root. The other is a lower right canine, also with little wear. They do not seem related at all to the skeleton of the Feature 1 burial. They apparently came out after the death of the individual or were knocked or pulled out during life.

This unit also produced the clay bead and much lithic debitage and several microtools. Associations among these items are not known. Apparently this is another case of some human remains put out with the garbage, but this is sheer speculation. Other human remains from this site that I observed were from Bill Herring's collection, and consisted of a left internal and external auditory meatus and fragment of a left zygomatic arch. The latter was somewhere at the border between gracile and robust, and could thus have been either male or female. The individual was adult, however, and these pieces probably are from the person in the burial, based on the collector's description of their location.

FAUNAL REMAINS

Because of clear stratigraphic mixing in most levels of most units, a relatively small sample of faunal materials from Yellow Houseboat shell mound was sent for specialized analysis: all bone and shell from flotation samples (12.5 liters) and waterscreen recovery from Test Unit 2, Levels 5 and 6, the deepest (54-62 cm and 62-70 cm below surface, respectively) and least disturbed proveniences. This sample amounted to little more that 2 kg of faunal remains; so it is between 15% and 30% of the size of the samples from the other shell mounds investigated. As the only ceramics present in these levels are non-diagnostic incised, punctated, plain and check-stamped, it is suggested that the faunal assemblage studied is from mixed Fort Walton and Woodland deposits.

Appendix 1B presents the faunal analyses, and lists of specimens are given in Tables A1.17 and A1.18. Twenty-nine taxa were identified, including rabbit, raccoon, Florida panther, rodent, bird, turtles, lizard, garfish, catfish, seatrout, bowfin, freshwater *Rangia* clams (but no oyster at all in these samples) and terrestrial snails. Though these are more taxa than those identified at Depot Creek shell mound, many are larger scale taxa such as class or family level (e.g., mammalia); there are far fewer individual species identified. A few species are the only examples from Apalachicola shell mounds known so far, including *Felis concolor*, the (now severely endangered) Florida panther, represented by a tooth, and ducks, gafftopsail catfish, and bowfin.

Given the number of components represented at Yellow Houseboat shell mound, representing occupation at various times during at least the last 3 millennia, it would be expected that far more types of animals would be present. Analysis of a larger sample of faunal remains in future work will likely yield such results. Indeed, during perfunctory examination of faunal fragments from other proveniences in the USF lab, I recognized additional species with distinctive features, such as softshell turtle carapace, pneumatized bones of the jack fish, and some characteristically fragile, shiny/pearly shells of *Elliptio*, a river mollusc usually characteristic of interior riverine shell middens on the Apalachicola. In addition, Herring's collection from the site includes more softshell turtle and a probable deer tooth.

The general subsistence here is therefore characterized as exploitation of freshwater/estuarine aquatic and terrestrial environments for all time periods at this site, perhaps with greater emphasis upon more inland riverine resources.

BOTANICAL REMAINS

All macrofloral specimens from the same two proveniences as were chosen for faunal study were sent for analysis to the ethnobotanist. Her identifications appear in Table 26. They demonstrate a limited botanical record, including only pine, an acorn and a grape seed. Seeds tentatively identified in the USF lab by students using photos in the *Seed Identification Manual* (Martin and Barkley 1961) are *Portulaca* (purslane), *Galium* (bedstraw) and *Carex* (sedge) or *Polygonum* (smartweed). The general impression is that pine, oak, and weedy species sometimes characteristic of disturbed land were either present at the site or collected and brought there.

The jumbled stratigraphy at the site, as well as the sample size, makes any good interpretation of these remains impossible. For these reasons also no charcoal specimens were sent for radiocarbon dating.

Table 26. Botanical Remains from Yellow Houseboat Shell Mound, 8GU55

Provenience	Materials
TU 2 L5	Wood: 14g pine Seed: 1 *Vitis* (grape)
TU 2 L6	Wood: 12.4g pine, .2g resin Nuts: 1 acorn cap

SUMMARY AND INTERPRETATION

The Yellow Houseboat shell mound was in some respects the least productive of the shell mounds investigated. It had the thinnest deposits above the water table and it did not have cultural components that could be isolated. Even the human burial could not be assigned with confidence to a time period. Such mixed deposits make archaeological analysis less productive.

Interesting artifact remains, such as the only complete projectile point recovered during the whole two-year project, the microtools (all Jaketown or blunt perforators), the clay beads, and so forth, are not enough to be able to say much about culture in general or specific cultural adaptations.

In sum, there are definitely Fort Walton, Early Woodland, and Late Archaic occupations represented here. Though the Late Archaic seems more tenuous than the others, based only on the presence of a few microtools and a possible Yarbrough point, supporting evidence was obtained from another collector in Apalachicola in 1993. This individual had picked up over 150 microtools from the site over the years, from the southwest beach area. He said whenever a boat passes or a heavy wind blows in off the water, more microtools appear on the surface. He also has two points with small rounded stems, made of Tallahatta quartzite (from southeast Alabama), a tubular clay bead, a shell bead, a bone fishhook and a bone point from the same area. His microtools are among the smallest known from the delta region and strongly suggest a Late Archaic presence (White and Estabrook 1994).

Some but not much lithic production took place at this site, tentatively associated with the manufacture of Late Archaic microtools. There was hardly any shell tool utilization, based on our findings.

Subsistence for the indeterminate amount of time represented in the sample deposits examined seems to be consistent through time and with that at other shell mounds throughout the Apalachicola delta: probably short-term, perhaps seasonal, repeated occupation of the site throughout a millennium (or three or more), by people who obtained diverse species from the rich fluvial and estuarine environment.

THE CLARK CREEK SHELL MOUND, 8GU60

SITE DESCRIPTION

Clark Creek shell mound (Figure 19) is a large *Rangia* shell midden pile on the west central side of the lower Apalachicola Valley delta. It sits amid low wetlands some 800 m north of a tiny tributary stream leading into Clark Creek (Figure 1). Clark Creek empties from the north into the Jackson River, a major tributary of the Apalachicola and former main river channel, which today flows eastward out of Lake Wimico. Thus prehistoric inhabitants of the site may have had a trip of several miles by water to reach the main river.

This mound is also a former apiary, and is labeled as such on the 1945 USGS quadrangle map. Its summit was cleared, so, like Depot Creek shell mound, it shows up as a white streak amid the thick forest in aerial photos.

The site is very difficult to reach as the tidally influenced tiny creek is often barely big enough to navigate, even in small boats. It was recorded during our 1985 survey (Henefield and White 1986:70-71). An informant told us of the site and we visited in October of that year, though we had to go in by another route and wade the small creek to find it.

In 1988 we were able to relocate this shell mound and draw the boats right up to the ruins of a wooden walkway made by the beekeepers. It was unclear how this walkway helped access to the site, as traces of it disappeared after about 20 meters. The rest of the long walk was through thick swamp, some sections forested and some in 3 m high grasses studded with treacherous cypress knees just waiting to trip a fieldworker (Figure 20) carrying a heavy load of equipment or soil samples.

This shell mound is 110 m long and 35 m wide, and rises about 1.75 m above the surrounding wetland (Figure 19). It probably extends wider and deeper than the visible shell also, like the other shell mounds investigated. Where not cleared the site is covered with palms, some planted fig trees, and weeds. Its long axis is oriented at about 110 degrees, or east-southeast to west-northwest. It is slightly curved. Probably when inhabited it was directly on a stream bank, but it is now quite a distance away. If the latest occupation was in Early Woodland times, this suggests the fluvial dynamics of the estuary moved the stream some 800 m south over a millennium and a half, and changed its orientation at this spot by a few degrees.

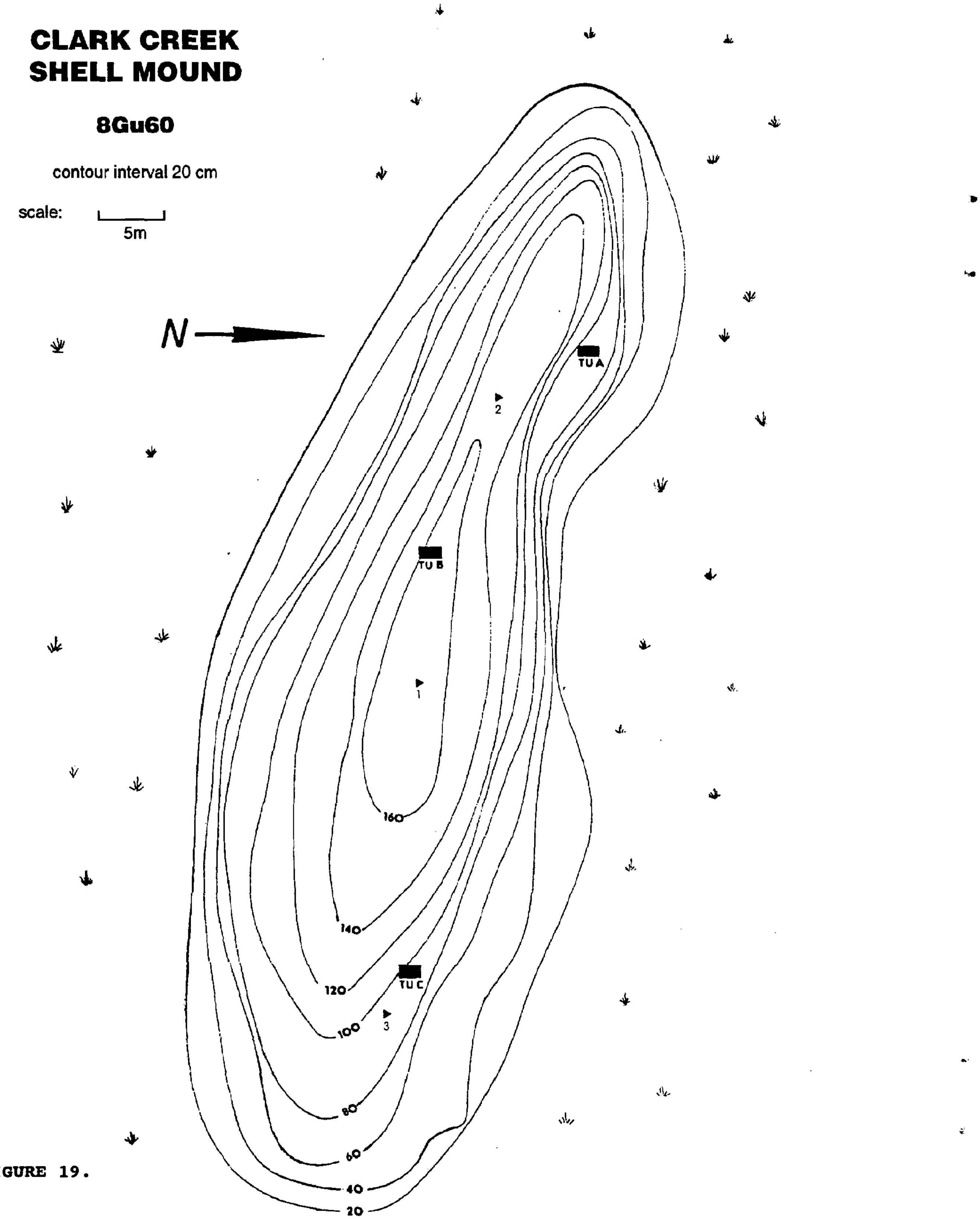

CLARK CREEK
SHELL MOUND
8Gu60
contour interval 20 cm
scale:
5m
N
TU A
TU B
TU C
1
2
3
160
140
120
100
80
60
40
20

FIGURE 19.

FIGURE 20. Path through thick grass and swamp to Clark Creek shell mound; fieldworkers C. Fuhrmeister and S. Beckwith, 1988; view facing south.

When first recorded, the Clark Creek shell mound yielded Deptford simple-stamped and check-stamped pottery, worked *Busycon* shell fragments and a large amount of animal bone, both from the surface and from a small trowel test excavated to 50 cm depth. A few oysters were seen to accompany the clamshells in the matrix. There were signs of disturbance from the historic beekeeping activity. Metal and other modern artifacts were present, but there were only a few potholes in the surface.

The site was chosen for test excavation based on its potential to produce well stratified and undisturbed Early Woodland evidence, including artifacts and subsistence remains, and because it was presumably remote enough not to have suffered much disturbance.

FIELDWORK

Excavations

Because the Clark Creek shell mound was so difficult to reach it was the last site to be tested during the 1988 season. By this time the crew were seasoned and well able to handle the tricky logistics. Fieldwork took place from 3-14 July, with a crew of eight plus occasional volunteers, including a Florida State University video crew.

The established shell mound test strategy was followed, to sample the cultural deposits from both summit and slope. After a stratified surface collection and site mapping, three 1 x 2 m units were excavated, one each into the northwest slope, southeast slope, and central summit, for a total of 6 square meters. In order to go as deep as possible in the allotted time, below certain depths excavation was limited to a 1 x 1 m portion of two units. The volume excavated is estimated to be 5.6 cubic m, perhaps a .1% sample of the site.

As usual, units were located judgementally and dug in 15 cm arbitrary levels. Soils could be waterscreened because of crew heroics. Even with the borrowed pump and fire hoses, we were afraid it would not be feasible because the site was so far from the small stream, the nearest known water source, and we had only 5 or 6 m of hose. Trying to make a wheelbarrow path through the swamp and sawgrass, to set up a screening station right at the creek, proved to be a ridiculous exercise.

Crew members searching the surrounding swamp for a closer water source located a treefall that had exposed a deep hole now filled with water just off the northeast end of the mound. The screen station was set up here. Near the bottom of this pool the swampwater became rather sulfurous, a good warning sign to stop screening for a while when it started smelling bad, so the pool could fill up again as water seeped in. Though this method was laborious, including carrying the pump and other heavy equipment (loading down our small boats, and then by hand on the long difficult walk to the site), the results were worthwhile since a great deal more small material was recovered.

Stratigraphy

As with the other shell mounds investigated, stratigraphy at Clark Creek was not apparent beyond general increase or decrease in consolidation of clamshells and occasional poorly defined lenses of more or less crushed shell. The soil matrix was the typical thin coating of black sand around the *Rangia* clamshells, with an occasional oyster, and much animal bone.

The two slope units, A and C, had some mixing, but Test Unit B on the summit presents a fairly good stratigraphic picture, as follows: Under about 40 cm of packed shell with little black sand was a general region of about 30 cm with slightly more sand, which faded out with increasing depth. By the time the water table was approached, the soil was still black, what little there was of it, but a few more oysters occurred. A few features also occurred in this unit, as noted below. In addition, lenses of crushed shell appeared at many depths.

Excavation Units

Test Unit A was a 1 x 2 m unit placed on the northwest slope of the mound, with the long axis north-south across the slope. Its upper levels were therefore wedge-shaped and of greater volume (see Table 28) to maintain a level floor. This unfortunate situation was called for only because no visible stratigraphy was present to guide digging in cultural strata. A fiber-tempered sherd in a shallow level indicated mixing of Early Woodland and Late Archaic components.

Some of this unit was dry screened to save time, as it was so far from the screening station and the screening could not keep up with the digging. Oyster shells increased with depth here. Tiny disk shell beads were recovered (in the dry screen, even though they were <8 mm wide), and a lot of lithic debitage, in addition to the usual artifacts and bone bits.

Beginning with Level 6, only the southern 1 x 1 m half of the unit was dug to get deeper in the short field time allotted. With increasing depth the soil matrix surrounding the shells tapered off. At 118 cm the water table was reached and excavation halted.

Test Unit B was a 1 x 2 unit on the mound summit, with the long axis running north-south (Figure 21). It went the deepest and afforded the best stratigraphy, as already described. It contained four features, described below. This was the only unit in which the Late Archaic

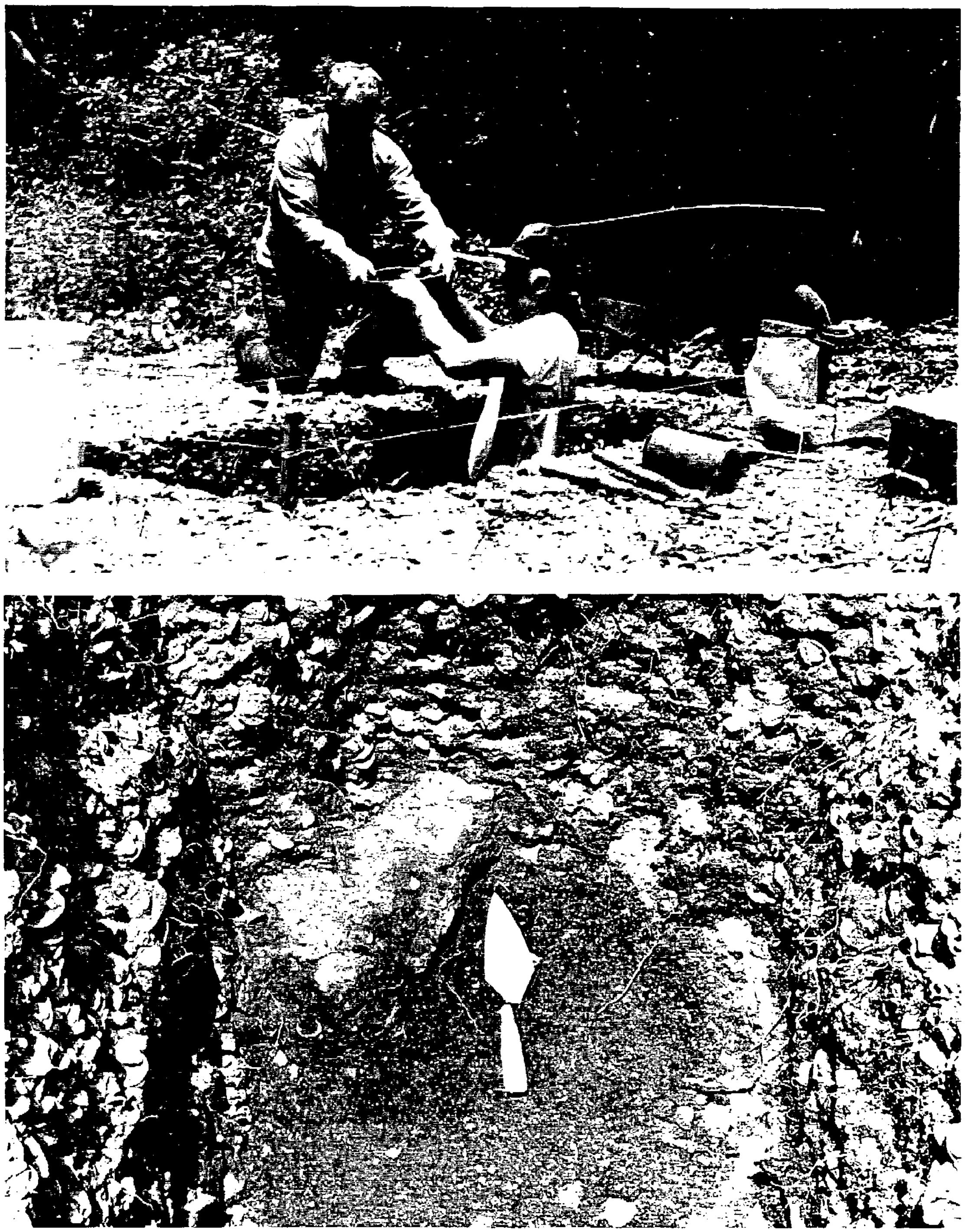


FIGURE 21. Excavations at Clark Creek shell mound, 8Gu60, 1988. Top, T. Simpson and J. Darsey in Test Unit B, on cleared summit; view facing northwest. Bottom, Feature 1 pedestaled in northwest corner of Test Unit B, 75 cm below the surface; it was an area of packed yellow silt, possibly the corner of a prepared floor (rest of unit floor is obscured from trampling).

component appeared to be more or less in proper stratigraphic sequence. On the last day of excavation, staying out until dark attempting at least to reach the water table in this unit, the crew recovered fiber-tempered sherds in Levels 9 and 10 at minimum 135 cm deep. The water table was encountered at 174 cm. Some disturbance was indicated, however, because a simple fiber-tempered sherd also came from Level 3, and a simple sand-tempered plain sherd from Level 10.

Test Unit C was a 1 x 2 m unit on the east slope of the mound, long axis running north-south. It was close to a concentration of modern artifacts left from the time of the apiary. Therefore it was no surprise that the first three levels contained modern items such as glass and nails mixed in with sherds from both prehistoric components. An increase in the still small proportion of oyster shell occurred with greater depth in one area of the unit, possibly a single deposit. Small lenses of burnt or crushed shell were apparent in vague outline. Only the southern half was excavated past Floor 5. The water table was encountered at 115 cm depth and excavation halted at Level 8, although a flotation sample and permanent storage soil sample were taken from below the water table and labeled Level 9. This unit produced a few unusual items: a greenstone pendant and four human teeth in Level 2.

Features

Feature 1 was a small (38 cm NE-SW, 16 cm NW-SE) area of light yellow clayey silt in the northwest corner of Test Unit B, encountered at a depth of 75 cm (Figure 21). It was free of any cultural materials. Ranging from 2 to 5 cm thick in cross section, it appeared to be a segment of a prepared floor. This feature was cross sectioned along two angles to permit better examination, which was already difficult because it went into the corner balk. In the wall profile after the portion of it in the unit was removed the feature appeared as a thin slanted yellow lense.

This bright yellowish brown (10YR5/4) soft silty area was quite distinctive within the black sand and shell matrix. Perhaps it was the edge of a structure floor caught in the corner of our unit. It was clearly some kind of special purpose construction. It was not flat but convoluted, possibly because of the weight of the shell crushing down on it.

Feature 2 was a small near-circular black stain, 15 cm in diameter, roughly tapered in cross section and extending at least 15 cm deep, originating at the bottom of Feature 1. It may have been a post mold beneath that feature.

Feature 3 was a 10 cm near-circular black stain that appeared in Test Unit B at a depth of about 139 cm in the southeast corner of Floor 9. It was 6 cm deep and basin-shaped in cross section, and connected with a concretion of shell matrix consisting of light gray soil stuck to many shells, all impossible to separate. This may have been the bottom of a small post mold, or a natural feature.

Feature 4 was a dark oval stain, tapered in cross section, also appearing in Test Unit B in Floor 9 at 139 cm depth, along the west wall (most of the oval went into the wall). It may have been the edge of a pit estimated to be 40 cm diameter, but did not display any depth in cross section.

Summary of Features: These four small areas were the closest thing to real features encountered in shell mound excavations on this project. They were all in Test Unit B, and had no definable cultural materials and no interpretable function, but at least Feature 1 was clearly cultural in origin, made of unusual soil brought in from elsewhere.

CERAMICS

Pottery

The 3328 ceramic sherds (13.7 kg) recovered from Clark Creek indicate a major Early Woodland component mixed with and underlain by a Late Archaic component, just as at the other shell mounds. Check-stamped ceramics dominate the assemblage. There are smaller numbers of other early Swift Creek and Deptford types.

Table 27 summarizes all sherds by type from gross proveniences including surface, test units, and mixed levels from unit wall cave-ins. Figure 22 graphs relative frequencies of each type in the total site assemblage. Neither of these data presentations isolate stratigraphic change, but they do show the two major components at the site. They also show the larger size of the check-stamped sherds relative to that of the other types. This may mean check-stamped vessels were larger or more cared for than other vessels, or used less often, so broken less and therefore less likely to leave sherds to kick around and break up further.

Tables 28, 29, and 30 give ceramic distributions by level at the three units. The vertical record at Test Unit B is least mixed and most instructive. Located on the mound summit, this unit went the deepest into the deposits, finally hitting what is considered undisturbed Late Archaic near the water table.

Early Woodland: Table 29 shows the occurrence of check-stamped and indeterminate stamped (most of which are probably checked) sherds averaging roughly over half the pottery for most levels until

TABLE 27. CERAMICS FROM CLARK CREEK SHELL MOUND, 8Gu60, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS.

	SURFACE		MIXED LEVELS		TEST UNIT A		TEST UNIT B		TEST UNIT C		TOTALS	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
INDET INC	2	54			4	30	1	3			7	86
INDET PUNC							2	7			2	7
LIMEST-TEMP PL	3	6					5	25	4	17	12	48
COMP-STAMP	22	200			3	32	9	65			34	298
ROCKER-STAMP					1	2	2	2	1	2	4	6
INDET STAMP	103	729	9	21	247	639	196	604	86	360	641	2352
CORD-MARK	6	40									6	40
CHECK-STAMP	189	1682	37	285	266	2105	630	2628	131	606	1253	7307
FABRIC-MARK					6	39	1	10			7	48
SIMPLE-STAMP	12	114			3	12	8	41	9	48	32	215
GRIT-TEMP PL	21	124			9	21	31	101	8	20	69	266
GRIT/GROG-TEMP PL	4	24			1	10					5	34
GROG-TEMP PL	72	437			40	60	60	138	131	222	303	856
SAND-TEMP PL	106	583	18	37	243	314	367	597	147	253	881	1785
FIBER-TEMP S-ST							4	45			4	45
FIBER-TEMP PL	3	24	3	23	1	2	7	8	54	228	68	284
TOTAL	543	4017	67	366	824	3266	1323	4274	571	1755	3328	13677
% BY PROVIENCE												
INDET INC		1				1						1
INDET PUNC												
LIMEST-TEMP PL	1							1	1	1		
COMP-STAMP	4	5				1	1	2			1	2
ROCKER-STAMP												
INDET STAMP	19	18	13	6	30	20	15	14	15	21	19	17
CORD-MARK	1	1										
CHECK-STAMP	35	42	55	78	32	64	48	61	23	35	38	53
FABRIC-MARK					1	1						
SIMPLE-STAMP	2	3					1	1	2	3	1	2
GRIT-TEMP PL	4	3			1	1	2	2	1	1	2	2
GRIT/GROG-TEMP PL	1	1										
GROG-TEMP PL	13	11			5	2	5	3	23	13	9	6
SAND-TEMP PL	20	15	27	10	29	10	28	14	26	14	26	13
FIBER-TEMP S-ST								1				
FIBER-TEMP PL	1	1	4	6			1		9	13	2	2
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 27. CERAMICS FROM CLARK CREEK SHELL MOUND, 8Gu60, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS (CONTINUED).

TYPE	SURFACE CT	SURFACE WT	MIXED LEVELS CT	MIXED LEVELS WT	TEST UNIT A CT	TEST UNIT A WT	TEST UNIT B CT	TEST UNIT B WT	TEST UNIT C CT	TEST UNIT C WT	TOTALS CT	TOTALS WT
% WITHIN TYPE												
INDET INC	29	62			57	34	14	3			100	100
INDET PUNC							100	100			100	100
LIMEST-TEMP PL	25	13					42	52	33	36	100	100
COMP-STAMP	65	67			9	11	26	22			100	100
ROCKER-STAMP					25	33	50	39	25	28	100	100
INDET STAMP	16	31	1	1	39	27	31	26	13	15	100	100
CORD-MARK	100	100									100	100
CHECK-STAMP	15	23	3	4	21	29	50	36	10	8	100	100
FABRIC-MARK					86	80	14	20			100	100
SIMPLE-STAMP	38	53			9	6	25	19	28	22	100	100
GRIT-TEMP PL	30	47			13	8	45	38	12	8	100	100
GRIT/GROG-TEMP PL	80	71			20	29					100	100
GROG-TEMP PL	24	51			13	7	20	16	43	26	100	100
SAND-TEMP PL	12	33	2	2	28	18	42	33	17	14	100	100
FIBER-TEMP S-ST							100	100			100	100
FIBER-TEMP PL	4	9	4	8	1		10	3	79	80	100	100
% OF TOTAL												
INDET INC												1
INDET PUNC												
LIMEST-TEMP PL												
COMP-STAMP	1	1										
ROCKER-STAMP												
INDET STAMP	3	5			7	5	6	4	3	3	19	17
CORD-MARK												
CHECK-STAMP	6	12	1	2	8	15	19	19	4	4	38	53
FABRIC-MARK												
SIMPLE-STAMP		1									1	2
GRIT-TEMP PL	1	1					1	1			2	2
GRIT/GROG-TEMP PL												
GROG-TEMP PL	2	3			1		2	1	4	2	9	6
SAND-TEMP PL	3	4	1		7	2	11	4	4	2	26	13
FIBER-TEMP S-ST												
FIBER-TEMP PL									2	2	2	2
% OF TOTAL	16	29	2	3	25	24	40	31	17	13	100	100

TABLE 28. **CERAMICS FROM TEST UNIT A, CLARK CREEK SHELL MOUND, 8Gu60, BY COUNTS AND WEIGHTS IN GRAMS.**

TYPE	LEVEL 1 (.34 m^3)		LEVEL 2 (.12 m^3)		LEVEL 3 (.24 m^3)		LEVEL 4 (.30 m^3)		LEVEL 5 (.16 m^3)		LEVEL 6 (.14 m^3)		LEVEL 7 (.15 m^3)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
INDET INC					2	12	1	16	1	1					4	30
COMP-STAMP			1	23	1	4	1	5							3	32
ROCKER-STAMP							1	2							1	2
INDET STAMP	3	6	25	63	70	157	127	335	17	48	4	19	1	11	247	639
CHECK-STAMP	4	17	29	132	71	337	71	945	55	456	24	153	12	64	266	2105
FABRIC-MARK	1	14					4	23	1	2					6	39
SIMPLE-STAMP			2	11	1	2									3	12
GRIT-TEMP PL			5	12	3	7	1	1							9	21
GRIT/GROG-TEMP PL					1	10									1	10
GROG-TEMP PL	1	1	4	7	13	21	14	22	4	5	3	4	1		40	60
SAND-TEMP PL	9	17	17	25	74	79	117	162	18	21	2	4	6	6	243	314
FIBER-TEMP PL							1	2							1	2
TOTAL	18	56	83	273	236	360	338	1514	96	532	33	180	20	81	824	3266
% BY PROVIENCE																
INDET INC					1	2		1	1							1
COMP-STAMP			1	8		1										1
ROCKER-STAMP																
INDET STAMP	17	11	30	23	30	25	38	22	18	9	12	10	5	13	30	20
CHECK-STAMP	22	31	35	49	30	54	21	62	57	86	73	85	60	79	32	64
FABRIC-MARK	6	25					1	2	1						1	1
SIMPLE-STAMP			2	4												
GRIT-TEMP PL			6	4	1	1									1	1
GRIT/GROG-TEMP PL						2										
GROG-TEMP PL	6	1	5	2	6	3	4	1	4	1	9	2	5		5	2
SAND-TEMP PL	50	31	20	9	31	13	35	11	19	4	6	2	30	8	29	10
FIBER-TEMP																
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 28. CERAMICS FROM TEST UNIT A, CLARK CREEK SHELL MOUND, 8Gu60, BY COUNTS AND WEIGHTS IN GRAMS (CONTINUED)

TYPE	LEVEL 1 (.54 m³)		LEVEL 2 (.12 m³)		LEVEL 3 (.24 m³)		LEVEL 4 (.30 m³)		LEVEL 5 (.16 m³)		LEVEL 6 (.14 m³)		LEVEL 7 (.15 m³)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
% WITHIN TYPE																
INDET INC					50	41	25	55	25	3					100	100
COMP-STAMP			33	71	33	13	33	16							100	100
ROCKER-STAMP							100	100							100	100
INDET STAMP	1	1	10	10	28	25	51	52	7	7	2	3		2	100	100
CHECK-STAMP	2	1	11	6	27	16	27	45	21	22	9	7	5	3	100	100
FABRIC-MARK	17	36					67	59	17	5					100	100
SIMPLE-STAMP			67	85	33	15									100	100
GRIT-TEMP PL			56	58	33	36	11	6							100	100
GRIT/GROG-TEMP PL					100	100									100	100
GROG-TEMP PL	3	1	10	11	33	35	35	37	10	8	8	7	3		100	100
SAND-TEMP PL	4	6	7	8	30	25	48	51	7	7	1	1	2	2	100	100
FIBER-TEMP PL							100	100							100	100
% OF TOTAL																
INDET INC																1
COMP-STAMP				1												1
ROCKER-STAMP																
INDET STAMP			3	2	8	5	15	10	2	1		1			30	20
CHECK-STAMP		1	4	4	9	10	9	29	7	14	3	5	1	2	32	64
FABRIC-MARK								1							1	1
SIMPLE-STAMP																
GRIT-TEMP PL			1												1	1
GRIT/GROG-TEMP PL																
GROG-TEMP PL					2	1	2	1							5	2
SAND-TEMP PL	1	1	2	1	9	2	14	5	2	1			1		29	10
FIBER-TEMP PL																
TOTAL	2	2	10	8	29	19	41	46	12	16	4	6	2	2	100	100

TABLE 29. CERAMICS FROM TEST UNIT B, CLARK CREEK SHELL MOUND, 8Gu60, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.30 m³)		LEVEL 2 (.30 m³)		LEVEL 3 (.30 m³)		LEVEL 4 (.15 m³)		LEVEL 5 (.15 m³)		LEVEL 6 (.16 m³)		LEVEL 7 (.14 m³)		LEVEL 8 (.21 m³)		LEVEL 9 (.19 m³)		LEVEL 10 (.20 m³)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
INDET INC			1	3																	1	3
INDET PUNC	2	7																			2	7
LIMEST-TEMP PL	2	18	2	5	1	2															5	25
COMP-STAMP	3	39	4	13	2	13															9	65
ROCKER-STAMP	1	2	1	1																	2	2
INDET STAMP	30	166	34	99	36	98	41	89	29	100	14	42	11	16	1	4					196	614
CHECK-STAMP	66	292	167	433	161	600	55	240	97	429	51	422	24	180	8	30	1	3			630	2628
FABRIC-MARK							1	10													1	10
SIMPLE-STAMP							1	3	7	39											8	41
GRIT-TEMP PL	6	18	7	20	4	8			3	33	3	5	1	2	7	14					31	101
GROG-TEMP PL	5	9	30	51	11	14			4	37	5	14	5	13							60	138
SAND-TEMP PL	25	120	118	141	85	100	47	60	58	125	21	34	4	3	6	14	2		1	1	367	597
FIBER-TEMP S-ST																			4	45	4	45
FIBER-TEMP PL					1	3											2	2	4	4	7	8
TOTAL	140	670	364	765	301	837	145	402	198	763	94	517	45	213	22	62	5	5	9	50	1323	4284
% BY PROVIENCE																						
INDET INC																						
INDET PUNC	1	1																				
LIMEST-TEMP PL	1	3	1	1																		1
COMP-STAMP	2	6	1	2	1	2															1	2
ROCKER-STAMP	1																					
INDET STAMP	21	25	9	13	12	12	28	22	15	13	15	8	24	8	5	6					15	14
CHECK-STAMP	47	44	46	57	53	72	38	60	49	56	54	82	53	84	36	49	20	64			48	61
FABRIC-MARK							1	2														
SIMPLE-STAMP							1	1	4	5											1	1
GRIT-TEMP PL	4	3	2	3	1	1			2	4	3	1	2	1	32	22					2	2
GROG-TEMP PL	4	1	8	7	4	2			2	5	5	3	11	6							5	3
SAND-TEMP PL	18	18	32	18	28	12	32	15	29	16	22	6	9	1	27	23	40	6	11	2	28	14
FIBER-TEMP S-ST																			44	91		1
FIBER-TEMP PL																	40	30	44	8	1	
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 29. CERAMICS FROM TEST UNIT B, CLARK CREEK SHELL MOUND, 8Gu60, BY COUNTS AND WEIGHTS IN GRAMS (CONTINUED).

TYPE	LEVEL 1 (.30 m^3)		LEVEL 2 (.30 m^3)		LEVEL 3 (.30 m^3)		LEVEL 4 (.15 m^3)		LEVEL 5 (.15 m^3)		LEVEL 6 (.16 m^3)		LEVEL 7 (.14 m^3)		LEVEL 8 (.21 m^3)		LEVEL 9 (.19 m^3)		LEVEL 10 (.20 m^3)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
% WITHIN TYPE																						
INDET INC			100	100																	100	100
INDET PUNC	100	100																			100	100
LIMEST-TEMP PL	40	73	40	20	20	7															100	100
COMP-STAMP	33	60	44	19	22	20															100	100
ROCKER-STAMP	50	71	50	29																	100	100
INDET STAMP	15	27	17	16	18	16	21	15	15	16	7	7	6	3	1	1					100	100
CHECK-STAMP	10	11	27	16	26	23	9	9	15	16	8	16	4	7	1	1					100	100
FABRIC-MARK							100	100													100	100
SIMPLE-STAMP							13	7	88	93											100	100
GRIT-TEMP PL	19	18	23	20	13	8			10	33	10	5	3	2	23	14					100	100
GROG-TEMP PL	8	6	50	37	18	10			7	27	8	10	8	10							100	100
SAND-TEMP PL	7	20	32	24	23	17	13	10	16	21	6	6	1		2	2	1				100	100
FIBER-TEMP S-ST																			100	100	100	100
FIBER-TEMP PL					14	33											29	20	57	48	100	100
% OF TOTAL																						
INDET INC																						
INDET PUNC																						
LIMEST-TEMP PL																						1
COMP-STAMP		1																			1	2
ROCKER-STAMP																						
INDET STAMP	2	4	3	2	3	2	3	2	2	2	1	1	1								15	14
CHECK-STAMP	5	7	13	10	12	14	4	6	7	10	4	10	2	4	1	1					48	61
FABRIC-MARK																						
SIMPLE-STAMP									1	1											1	1
GRIT-TEMP PL			1							1					1						2	2
GROG-TEMP PL			2	1	1					1											5	3
SAND-TEMP PL	2	3	9	3	6	2	4	1	4	3	2	1									28	14
FIBER-TEMP S-ST																				1		1
FIBER-TEMP PL																					1	
% OF TOTAL	11	16	28	18	23	20	11	9	15	18	7	12	3	5	2	1			1	1	100	100

TABLE 30. CERAMICS FROM TEST UNIT C, CLARK CREEK SHELL MOUND, 8Gu60, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.30 m³)		LEVEL 2 (.28 m³)		LEVEL 3 (.34 m³)		LEVEL 4 (.28 m³)		LEVEL 5 (.30 m³)		LEVEL 6 (.14 m³)		LEVEL 7 (.16 m³)		LEVEL 9 (.0085 m³)		TOTAL	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
LIMEST-TEMP PL	2	12	1	4			1	1									4	17
ROCKER-STAMP					1	2											1	2
INDET STAMP	18	46	45	207	18	77	5	30									86	360
CHECK-STAMP	23	95	68	278	34	219	6	14									131	606
SIMPLE-STAMP	1	13	6	27	2	8											9	48
GRIT-TEMP PL	4	4	4	16													8	20
GROG-TEMP PL	17	37	80	77	28	95	3	11					3	1			131	222
SAND-TEMP PL	25	40	80	157	33	48	7	6	2	3							147	253
FIBER-TEMP PL	1	5	20	59	23	117	3	18	5	24	1	4			1	1	54	228
TOTAL	91	252	304	824	139	566	25	80	7	27	1	4	3	1	1	1	571	1755
% BY PROVIENCE																		
LIMEST-TEMP PL	2	5					4	1									1	1
ROCKER-STAMP					1													
INDET STAMP	20	18	15	25	13	14	20	38									15	21
CHECK-STAMP	25	38	22	34	24	39	24	17									23	35
SIMPLE-STAMP	1	5	2	3	1	1											2	3
GRIT-TEMP PL	4	2	1	2													1	1
GROG-TEMP PL	19	15	26	9	20	17	12	14					100	100			23	13
SAND-TEMP PL	27	16	26	19	24	9	28	7	29	11							26	14
FIBER-TEMP PL	1	2	7	7	17	21	12	22	71	89	100	100			100	100	9	13
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE																		
LIMEST-TEMP PL	50	72	25	22			25	6									100	100
ROCKER-STAMP					100	100											100	100
INDET STAMP	21	13	52	57	21	21	6	8									100	100
CHECK-STAMP	18	16	52	46	26	36	5	2									100	100
SIMPLE-STAMP	11	27	67	56	22	17											100	100
GRIT-TEMP PL	50	20	50	80													100	100
GROG-TEMP PL	13	17	61	35	21	43	2	5					2	1			100	100
SAND-TEMP PL	17	16	54	62	22	19	5	2	1	1							100	100
FIBER-TEMP PL	2	2	37	26	43	52	6	8	9	10	2	2			2		100	100
% OF TOTAL																		
LIMEST-TEMP PL		1															1	1
ROCKER-STAMP																		
INDET STAMP	3	3	8	12	3	4	1	2									15	21
CHECK-STAMP	4	5	12	16	6	12	1	1									23	35
SIMPLE-STAMP		1	1	2													2	3
GRIT-TEMP PL	1		1	1													1	1
GROG-TEMP PL	3	2	14	4	5	5	1	1					1				23	13
SAND-TEMP PL	4	2	14	9	6	3	1										26	14
FIBER-TEMP PL			4	3	4	7	1	1	1	1							9	13
% OF TOTAL	16	14	53	47	24	32	4	5	1	2			1				100	100

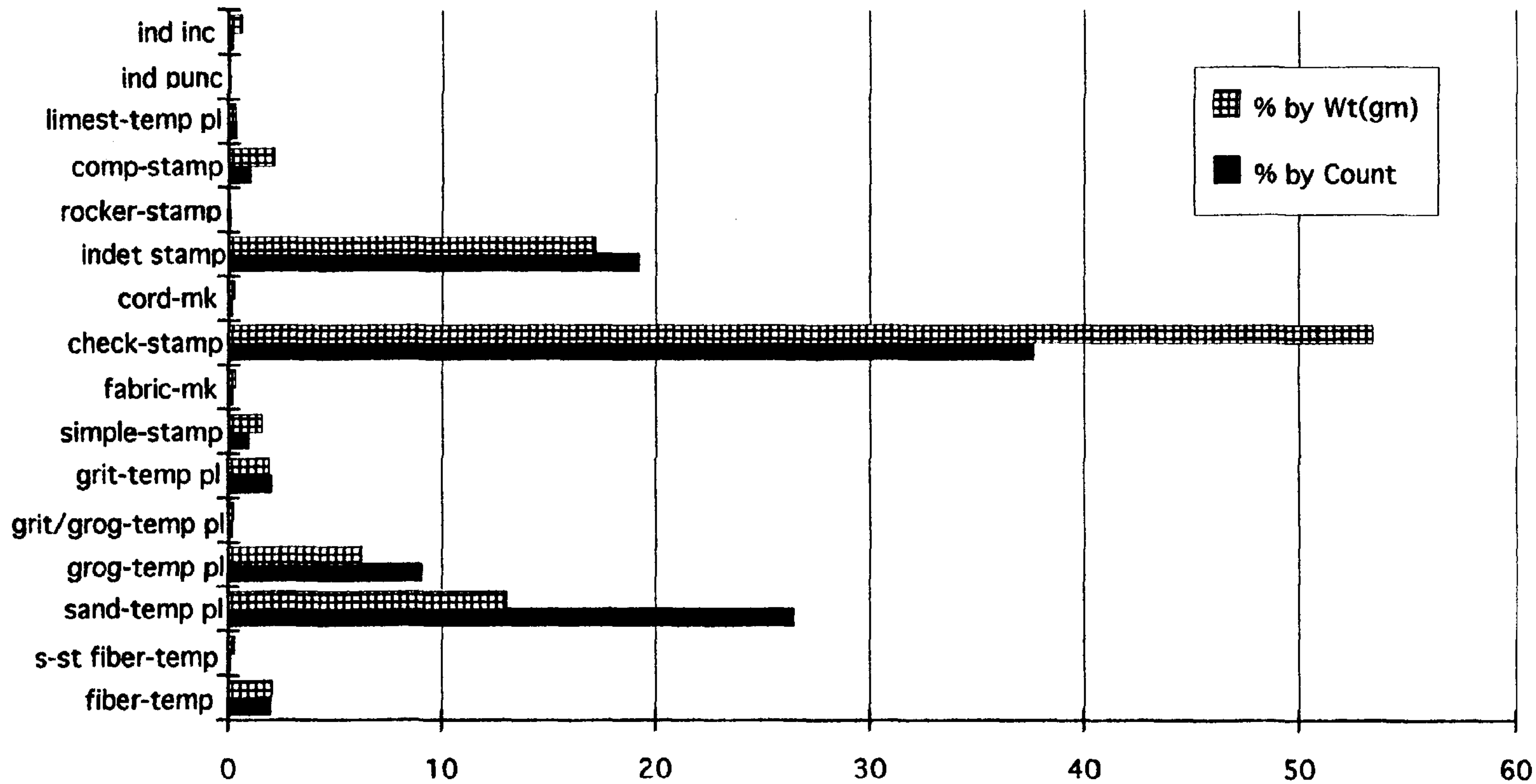


FIGURE 22. Graph of ceramic type relative frequencies at Clark Creek shell mound, 8Gu60.

disappearing after Level 9, which had only a single sherd of it. As at the other sites, much of this is extremely linear check-stamped, and much grog-tempered and sloppily executed. A few check-stamped sherds, interestingly, have pieces of crushed limestone in the paste.

As seen at the other shell mounds also, some of the check-stamped sherds have fine parallel lines stamped on the interior surfaces (perhaps the wood grain of a paddle?). Checked rims range from plain and flattened, even stamped on the horizontal surface of the lip, to folded, with a wide, flat fold that is also stamped over. Future research should involve comparison of frequencies of different attributes of this pottery, from level to level and site to site.

Sand-tempered plain pottery maintains a frequency of 10-20% in Test Unit B until tapering off in Levels 6 and 7. It reappears as 27% by weight in Level 8, then diminishing to two and one sherds, respectively, in Levels 9 and 10. Grit- and grog-tempered plain sherds occur in lesser frequencies.

Swift Creek Complicated-Stamped appears only in the first three levels, suggesting the later part of the Early Woodland. One piece is stamped with the unusual herringbone design seen in the sherds noted in the private collection from Yellow Houseboat shell mound. This distinctive pattern has not been seen before in this valley. Its presence here indicates some communication between these two shell mounds. As noted, this pattern is also known from north Georgia (Wauchope 1966:Figure 208Z).

Six cord-marked sherds recovered from the surface are probably associated with the later Early Woodland here, although this type is known in this valley mostly in Middle and Late Woodland contexts. A rare type for this region is seen in two small sherds, from Levels 1 and 2, Test Unit B, that appear to be rocker-stamped. This surface treatment is effected by rocking the edge of a tool such as a shell on the wet clay surface to produce a curvy zig-zag pattern. It is more common to the west along the Gulf in Santa-Rosa/Swift Creek context (Willey 1949). Its occurrence here in Test Unit B, and also a sherd each in Test Unit A Level 4 and Test Unit C Level 3, suggests Santa Rosa influence during the later Early Woodland from that direction.

Seven sherds of indeterminate incised and indeterminate punctated in upper levels of Test Unit B and also Test Unit A are not easily explainable. There are rarer Early Woodland types with incisions and punctations. If these are later (Weeden Island), there is not enough of the vessel present to establish this.

Simple-stamped and fabric-marked pottery appear in Test Unit B Levels 4 and 5, an earlier context than the complicated-stamped, and thus suggesting pure Deptford. These types are in higher levels in the other two units, where deposits are compressed and mixed on the slopes. The simple-stamped includes both standard and a fine-lined, almost brushed variety.

<u>Late Archaic</u>: In Test Unit B Levels 9 and 10 appear the fiber-tempered plain and simple-stamped fiber-tempered sherds indicative of the Late Archaic. The simple-stamped variety, seldom seen in this valley, was also found in deep levels at Depot Creek shell mound. A single small fiber-tempered plain sherd also came from Level 3 of this unit. This is less explainable. Perhaps it got there by disturbance from later prehistoric peoples. A similar explanation is probable for the fiber-tempered sherds in upper levels of the other units.

Charcoal from Test Unit B in what would be Level 11, just at the water table and just below the occurrence of the fiber-tempered pottery, was sent for radiocarbon dating and returned a result of 3970± 160 B.P. or 2020 B.C. (uncorrected; Beta 31785). This presumably dates the Late Archaic component.

Other Ceramic Materials

Non-pottery clay items recovered from Clark Creek shell mound are listed in Table 31. There were many clay lumps or possible daub

TABLE 31. NON-VESSEL CLAY REMAINS FROM CLARK CREEK SHELL MOUND, 8Gu60

Provenience	Possible Daub Frags/Clay Lumps (Count/wt in g)	Other Materials
Surface	4/52.7	human effigy (7.7 g)
TU A L 3	4/ 2.9	clay ball frag: melon-shaped grooved Poverty Point object (58.7 g)
TU A L 4	4/ 1.2	
TU A L 5	1/ 1.2	
TU B L 1	4/ 1.3	
TU B L 2	1/ .9	
TU B L 3	2/ 1.6	
TU B L 7	1/ 2.3	
TU B L 8	1/ 2.6	
TU C L 2	20/21.4	
TU C L 3	9/68.2	
TU C L 4	17/21.6	
TU C L 5	9/15.9	
TU C L 7	4/ 2.0	
TU C L 9	6/ 3.4	

fragments, large pieces especially encountered in Test Unit C. Other fragments were so small that they may not be daub but waste from ceramic manufacture, toys, or other items. If this is all daub this amount is unusual for the shell mound excavations, and suggests the erection of more lasting structures for perhaps the Woodland inhabitants of the site. The clay lumps may also be associated with the Late Archaic if they are for roasting Poverty Point-style (see discussion in summary chapter).

A fascinating clay item recovered from the surface of the mound is an effigy of a human head, apparently an adorno broken off the rim of a pot or figurine (cover illustration and Figure 23). It has slits for eyes and mouth, a tiny bump of clay for a nose, and a head that comes to a point. While it may be suggested that this effigy demonstrates contact with conehead extraterrestrials, this of course is not a testable hypothesis. State archaeologist Calvin Jones thinks it is similar to Poverty Point figurines from Louisiana. This is a reasonable suggestion, though I can find none illustrated in the Louisiana references that have pointed heads (indeed, many of those have cleft heads, Mexican-style [e.g., Webb 1977]).

An equally interesting object, from Test Unit A Level 3, is a broken clay ball (Figure 23) of the type associated with the Poverty Point complex in Louisiana and across the Gulf, extending into northwest Florida as the Elliott's Point complex (Webb 1977, Lazarus 1958). Though only a section of the complete artifact, this ball is melon-shaped and has wide finger (?) grooves down the sides, similar to a common form of baked clay objects of this complex. Lazarus (1971:49, Figure 16a) illustrates a whole group of such objects of the same shape from the Choctawhatchee Bay area farther west from the Apalachicola Valley along the Gulf. Combined with the fiber-tempered ceramics encountered here and the microtools, the clay ball indicates yet another example of this entire Late Archaic manifestation, as at Van Horn Creek and Yellow Houseboat shell mounds.

LITHIC MATERIALS

Chipped Stone

Lithic remains from Clark Creek shell mound were numerous (317 specimens, over 1.5 kg), as listed on Table 32. There were a few cores, bifaces and tool fragments, and 6 definite microtools. These last include 2 Jaketown perforators, 2 blunt perforators and 2 side scrapers, probably associated with the Late Archaic, as noted for the fiber-tempered ceramics and clay ball. No projectile points or other diagnostic items were recovered, however. Many of the flakes and other waste pieces were utilized, suggesting use of expedient tools.

There is a lot of chert debitage, including primary decortication products and secondary flakes. Many flakes are thermally altered,

TABLE 32. LITHIC MATERIALS FROM CLARK CREEK SHELL MOUND, 8Gu60

Chipped Stone (counts/weights in grams)

Provenience	Prim Decort	2nd Decort	Shatter	2nd Flakes	Cores	Tools	Comments
Surface	4/ 53.3	8/101.6	5/20.1	4/ 30.5	3/129.1	3/ 91.7	1 core used as hammer, 1 small biface, 1 biface frag with battering, 1 small poss scraper /perforator
TU A L 1				2/ 1.2		1/ 1.7	biface frag, poss projectile point
TU A L 2	1/ 4.6	6/ 23.8	6/ 5.0	10/ 15.9		2/ .9	microtools are Jaketown perforators
TU A L 3	5/ 9.6	9/ 6.5	9/12.1	13/ 9.4		1/ 2.4	microtool is side scraper
TU A L 4	2/ 12.9	5/ 16.5	3/ 5.4	5/ 2.8		2/ 1.1	2 microtools are blunt perforators
TU A L 5		1/ 2.2		1/ 13.1			decort flake thermally altered, other flake utilized
TU B L 1		1/ 1.7	1/ 2.3	5/ 5.1			shatter frag thermally altered, 1 flake utilized
TU B L 2	1/ 2.0		1/47.8	1/ .3			
TU B L 3						1/ .4	microtool frag?
TU B L 4				3/ 8.9			
TU B L 5		1/ 61.4		2/ 25.7			
TU B L 6				1/ .1			thermally altered
TU B L 7				1/ 6.7			
TU B L 8				1/ 2.4			thermally altered
TU B L 9				6/ 15.1			all thermally altered, 2 have retouch
TU B L 10			1/ .3	4/ 25.7			thermally altered, utilized, scraper frag?
TU B mixed levels				1/ .4			thermally altered
TU C L 1			2/ 4.5	7/ 9.7			2 flakes thermally altered, 2 retouched
TU C L 2	6/ 27.8	6/ 7.2	3/ 4.5	39/127.7	1/ 43.7	5/ 9.9	shatter thermally altered, 2nd flake retouched (spokeshave?), core utilized, tools are 2 blades & point tip, broken uniface on a flake, and poss microtool with crushed edges
TU C L 3	2/ 78.4	4/ 33.7	3/12.4	33/53.8	2/ 96.9	1/ 20.8	use wear on shatter, cores thermally altered, tool is unfinished biface frag(?)
TU C L 4	2/ 4.0	7/ 20.3	6/16.4	31/56.8			4 flakes have use wear
TU C L 5			3/34.2	6/31.7	2/ 55.5	3/ 5.5	2 flakes thermally altered, 1 microtool is side scraper
TU C L 7				1/ 2.3			strange shape, poss perforator
Total Chipped Stone	23/192.6	48/274.9	43/165	176/445.3	8/325.2	19/134.4	

Other Stone

Provenience	Materials
Surface	4 quartzite pebbles, 1 with use wear (56.6 g)
	3 quartz cobble frags, 1 with poss use wear (169.2 g)
	2 sandstone frags (52.7 g)
	1 pink quartzite cobble worn on 1 end (48 g)
	1 slate frag, probably modern (3.8 g)
TU A L 2	1 pink quartzite pebble (.7 g)
TU A L 3	8 quartzite pebble chips, 5 clear (18.2 g)
	3 pebbles (natural? .8 g)
TU B L 1	5 quartz pebble chips (1.6 g)
TU B L 3	1 quartz pebble frag (1.9 g)
TU C L 2	1 greenstone pendant (10.1 g)
TU C L 3	1 quartz pebble chip (1.1 g)
TU C L 6	1 frag glittery rock, possible micaceous schist (16.5 g)

FIGURE 23. Artifacts from Clark Creek shell mound. Top, clay Poverty Point "object" from Test Unit A Level 3; human head effigy from surface. Bottom, greenstone pendant or plummet from Test Unit C Level 2, shell beads from Test Unit A, Levels 3 and 4.

diagnostic items were recovered, however. Many of the flakes and other waste pieces were utilized, suggesting use of expedient tools.

There is a lot of chert debitage, including primary decortication products and secondary flakes. Many flakes are thermally altered, indicated by a lustrous appearance and red or pink color. The indication is of a fair amount of secondary reduction work at this site, the final manufacturing steps for tool production.

It is not possible to associate this activity definitely with any particular cultural component. However, there is more debitage from upper levels of Units A and C on the mound slopes, where there are also the most microtools. The deposits may be more compressed there, or perhaps more materials were thrown over the edge and discarded there; it is also possible that the Late Archaic component is only very thinly covered by the Early Woodland as one moves away from the mound center/summit. There are many decortication flakes as well in these areas, suggesting that manufacture involved bringing to the site from the quarry or outcrop pieces with cortex still attached, to work down into finished tools.

Other Stone

Other artifacts of stone from Clark Creek included many quartz and quartzite pebbles and cobbles or fragments; a few of these had use wear suggesting abrading or hammering (Table 32). Some smaller pebbles may have been naturally occurring, or brought to the site inadvertently with some other resource.

An unusual stone artifact was a ground stone pendant (Figure 23) made of greenstone, a grayish-green hard rock which probably came from the mountains of Georgia. Such pendants, made of various materials, are known throughout the eastern U.S. in many prehistoric contexts. (The raw material is the same stone used for the ceremonial celt accompanying the high status burial from the Corbin-Tucker site reported herein.) This artifact may be a utilitarian tool or a decorative item. It is a blunted teardrop shape, with a groove around the top for suspension. It may have been worn as jewelry, used as a fishing net sinker or otherwise utilized. The pendant came from Test Unit C Level 2, possibly a Late Archaic context, as reasoned above.

Another interesting stone is a broken piece of glittery rock that is tentatively identified as a micaceous schist. Such attractive stone pieces are found along the Apalachicola often in Middle Woodland contexts, where they may have been used in non-utilitarian activities. But this particular occurrence is not explainable, especially in Test Unit C Level 6, which is most likely Late Archaic in age.

SHELL ARTIFACTS

No bone artifacts were recovered from Clark Creek shell mound, but many shell tools and worked fragments were unearthed (Table 33). Finished, recognizable tools include dippers or scoopers and columellae for picking or hammering. Most I tentatively identify as *Busycon* or whelk, but one specimen is a Florida crown conch (*Melongena*) with the bottom cut off, probably also a pick. Some of these tools may have been hafted.

TABLE 33. SHELL ARTIFACTS FROM CLARK CREEK SHELL MOUND, 8Gu60

Provenience	Description*	Wt (g)
Surface	2 probable scoops or dippers, with shoulder (1 large)	259.8 and 92.8
	5 columellae	406.6
	5 square to rectangular frags	175.8
	2 square frags with shoulder	119.7
	1 small cut frag	3.3
	1 frag of outer lip	89.9
	1 triangular frag, scoop?	41.0
	1 Florida crown conch (*Melogena corona)* with bottom cut off	28.8
1985 test,	1 shoulder frag	25.4
0 to -50 cm	1 apical end	127.8
	2 aperture lip frags	199.3
TU A L 1	1 sliver	5.7
TU A L 2	1 frag with shoulder	21.5
TU A L 3	4 frags, 1 rectangular, 2 triangular	52.5
	1 shell disc bead, 8 mm diam	.3
TU A L 4	1 sliver, 1 small square, 1 tiny columella	8.2
	1 disc shell bead, 7 mm diam, well made	.3
TU A L 6	2 frags	20.3
TU B L 1	2 small frags, 3 square, 1 of columella	70.1
TU B L 2	1 small square frag	9.6

* All fragments probably of *Busycon* (whelk) unless otherwise indicated.

From Test Unit A Levels 3 and 4 came two tiny shell beads, perforated flat discs (Figure 23). The one from Level 3 is rough cut, asymmetrical, and not perfectly flat, 3 mm thick, 7.8 mm in diameter, with an off-center hole 2.3 mm in diameter. The one from Level 4 is regular, rounded and smoothed, 4.7 mm thick, 7.4 mm in diameter, with a centered hole 3 mm in diameter. From the same area came the clay Poverty Point "object" and several microtools and debitage.

Other fragments of cut or worked shell ranged from small slivers, squares and triangles to irregular shapes, large and small. Many showed signs of having been first cut along the desired lines then broken the rest of the way, like scoring glass before breaking it.

The distribution of shell artifacts is interesting. Almost all occurred in Test Unit A or on the surface, with only a few fragments from Test Unit B. There were none in Test Unit C, which did, however, have the greatest amount of clay lumps or daub and lithic debitage. Whether these distributions are directly related is unknown. Perhaps the area around Test Unit A was a shellworking activity locus. This would be the only relatively close association of microtools and shell working that we encountered in the Apalachicola delta.

HUMAN REMAINS

In Test Unit C level 2 were recovered four adult teeth, a lower first molar, a lower left incisor, a possible right second incisor, and a canine. All were worn, with the possible right incisor having heavy wear resulting in an occlusal surface slanting upward mesially. This could happen if the front teeth were used as tools for cutting. These teeth could have been deposited after being knocked or pulled out or by falling out of the mouth of a living person with bad dental disease, or falling out of a skull. Perhaps they are from someone who was interred, exhumed and reburied elsewhere.

FAUNAL REMAINS

From the least stratigraphically disturbed Test Unit B, faunal specimens from Levels 6 and 11, thought to be good Early Woodland and Late Archaic contexts, respectively, were sent for specialized analysis. This sample totaled just over 6 kg of bone and shell. Detailed discussion of these assemblages is given in Appendix 1B and lists of identified species appear in Tables A1.19 - A1.21. A summary of the faunal analysis is presented here.

Forty-five taxa were identified from Clark Creek shell mound, the highest number for any of the shell middens investigated, despite the relatively small size of the sample analyzed (although many taxa were broader than the generic level). Animals present included opossum, rabbit, rat, muskrat, raccoon, deer, birds, snakes, alligator, turtles, frog, garfish, catfish, porgies, sheepshead, drum, mullet, clam, oyster and gastropod. In the Early Woodland level, which had far more taxa, *Rangia* clams were 95% of the shells (by weight) and oyster about 5%, while in the Late Archaic the proportions were 54% and 14%, respectively. These figures suggest a trend from slightly less emphasis upon freshwater resources in the Late Archaic to overwhelming emphasis upon them during the Early Woodland. Such a trend is not supported by the evidence of other fish, which includes both freshwater and saltwater species in the later sample and only three identifiable types in the earlier (Late Archaic) sample: seatrout, seacatfish and gar (freshwater). Nonetheless, if there is a suggestion of even a slightly more saline local environment in the earlier time period, it could be support for the hypothesis generated by the faunal data at Van Horn Creek shell mound (see earlier chapter). Van Horn Creek shows good evidence of a more marine environment on the east side of the Apalachicola delta (see Figure 1) during the Late Archaic, changing to a freshwater environment during the Early Woodland. Depot Creek shell mound (see earlier chapter), on the far west side of the delta, produced only freshwater shellfish for both time periods. Clark Creek shell mound is located in the middle/west side of the delta. If the river's migration eastward effected the more extreme environmental change at Van Horn Creek, it could be associated with the more subtle shift at Clark Creek.

More mammals are present at Clark Creek (Early Woodland component) than at the other shell mounds tested. The significance of this fact is unclear; it may be an artifact of our sampling and recovery methods, since in 1988 all soils not floated were waterscreened.

Despite differences in numbers and particular taxa, the general subsistence picture here is consistent with that of the other shell middens. Dependence upon aquatic and terrestrial fauna of the freshwater/estuarine ecosystem seems to have provided a good living.

BOTANICAL REMAINS

Consistent with the results from the other shell middens tested, floral remains identified from Clark Creek were rather sparse and uninformative. Those sent for analysis were from the same two levels (6 and 11) from Test Unit B as the fauna analyzed, with the addition of specimens from two presumed Late Archaic levels of Test Unit C (Table 34).

Pine charcoal again predominates, and a seed of *Galium* (bedstraw) and hickory nutshell fragments were also identified. An unidentified seed and some probably modern (unburned) weed seeds were the only other floral items present in the total 38.1 liters of soil samples floated from these proveniences. Again, the pine may indicate a dryer environment from lower sea levels than today. The modern forest at the site is all cypress, oak and tupelo; pines are rare. Another explanation, of course, is cultural selection of this wood for fires. The nutshell may have been a food source or a fuel, or both.

TABLE 34. BOTANICAL REMAINS FROM CLARK CREEK SHELL MOUND, 8Gu60

Provenience	Materials	
TU B L 6	WOOD:	36.5 g pine, 5 g pine and oak, .1 g resin
	SEEDS:	4 *Galium*
TU B L 11	WOOD*:	.95 g pine
	SEEDS:	(modern?) 2 probably Polygnaceae and Chenopodium-Amaranthus complex
	NUTS*:	2 pieces hickory shell (.65 g)
TU C L 6	WOOD:	2.3 g pine, 37.9 g wood and cemented charcoal dust and shell
TU C L 7	WOOD:	1.4 g pine; 40.3 g wood and cemented charcoal dust and shell
	SEEDS:	1 hemispherical .006 mm diameter unidentified

* Destroyed for radiocarbon dating (3970 ± 160 years BP)

SUMMARY AND INTERPRETATION OF COMPONENTS

Early Woodland

Some stratigraphic evidence seems to show the division of the Early Woodland into a later Swift Creek and an earlier Deptford, though there is some mixing in the units on the slopes.

Test Unit A, at the west end, had more primary lithic debitage, decortication flakes, and most of the shell tools. Test Unit C, on the east slope, had the most debitage of all kinds, suggesting a lithic production area, and by far the largest amount of daub, perhaps from domestic structures. Closer examination of distributional data for all these kinds of artifacts may allow us to distinguish definite activity areas. Perhaps one end of the Late Archaic shell mound was used by Early Woodland peoples for houses and another for other things.

While there are differences here from the other shell mounds in other artifacts, ceramics are very similar except for the unusual herringbone complicated-stamped and the rocker-stamped. The former is seen at least as far away as the other end of Lake Wimico, and the latter is more common on the western edge of Florida along the Gulf.

Late Archaic

Both plain and simple-stamped fiber-tempered sherds indicate yet another Late Archaic occupation at an Apalachicola delta shell mound, deep below the Woodland deposits, just about at the water table in the central area of the site but perhaps much more shallow on the two end slopes. In the two units on the end slopes this pottery is mixed in with later deposits in shallow levels, and with the microtools.

Occurrences of microtools and a grooved Poverty Point ball is good evidence for a connection with similar complexes at the other shell mounds and westward across the Gulf. The actual depth of the late Archaic or even earlier components remains unknown until excavation can be conducted below the water table at Clark Creek, as with the other Apalachicola shell mounds.

THE OVERGROWN ROAD SITE, 8GU38

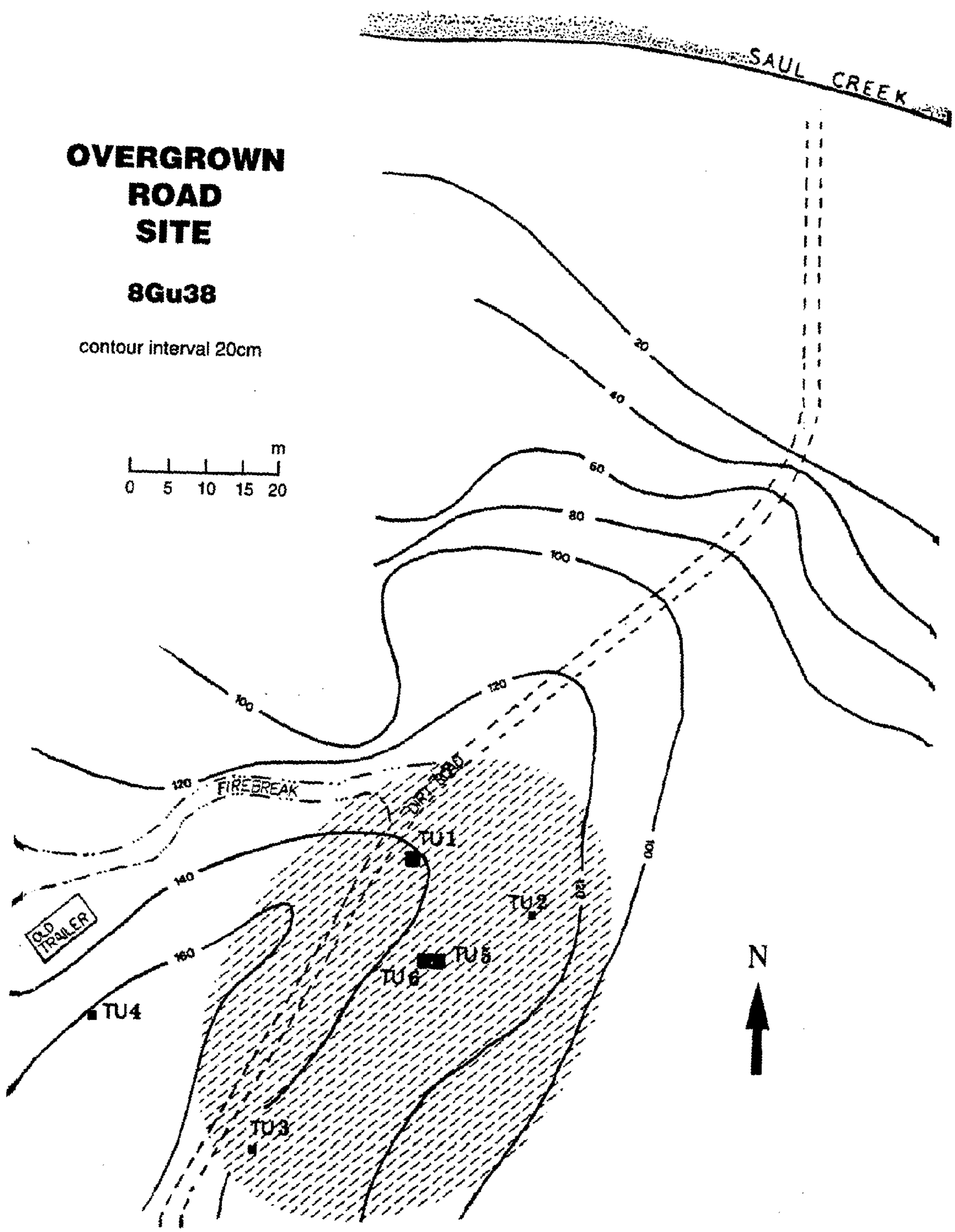
SITE DESCRIPTION

The Overgrown Road site is a small Middle Woodland camp along Saul Creek in Gulf County, south of the present-day fish camp of Howard Creek and in the middle of the area known locally as Indian Swamp (for obvious reasons). It was located during the 1985 survey as the crew hiked through an abandoned farm/apiary area that is now part of the Apalachicola Estuarine Reserve. The property is currently leased for a temporary hunting camp, for which an old house trailer is used.

During survey, the surface of an overgrown dirt road and firebreak yielded Swift Creek Complicated-Stamped ceramics. As the area of occupation seemed very limited, and there was no mound in sight, it was considered a small, short-term occupation. Several other sites are nearby; they may represent related occupations, perhaps people camping in the same general area for different seasons (Henefield and White 1986: 32-33). This site was chosen for testing because so few data are available on small domestic sites of this time period, as archaeologists and others have preferred to investigate the more spectacular mound sites.

The site is in the upper part of the lower Apalachicola valley area (Figure 1), occupying an estimated 2500 square meters, 100 m south of Saul Creek (Figure 24). The site is only 2.7 km due west of the main channel of the Apalachicola, at river (navigational) mile 11. However, by water, which today is easier than overland, given modern boat engines and the swampy terrain, the site is actually, 5.8 km (3.6 total stream miles) from the main river, where Saul Creek empties into the Apalachicola at navigational mile 6. Stream channels constantly change in the dynamic delta/estuarine environment. Presently it is unknown whether this fluvial configuration was present some 1650 years ago when the site was occupied. Even in aboriginal times, however, it is estimated that water travel was up to 40 times more efficient than walking in terms of human effort per mile traversed (Blanchard 1989).

According to a local resident, Bob Funderburk, who kept bees at the old apiary and former homestead in 1985, it was easier to get places by water earlier in this century if one knew the tidal patterns. He told the crew a story of an earlier homesteader at that same place who would plan to go downriver when the tide was moving out, and back home up the river as the tide was rising, counting on the tidal effects to make paddling or rowing easier. Doubtless, aboriginal inhabitants did the same thing.



OVERGROWN
ROAD
SITE
8Gu38
contour interval 20cm
m
0 5 10 15 20
SAUL CREEK
20
40
60
80
100
120
140
160
FIREBREAK
DIRT ROAD
OLD TRAILER
TU1
TU2
TU3
TU4
TU5
TU6
N

FIGURE 24.

Today the site is in secondary forest of mixed pine and hardwoods, which changes to low muddy cypress swamp as the creek is approached. It was probably inhabited because it is slightly higher ground (up to 1 m) than the surrounding area, though not by much (if indeed environmental conditions were the same 1650 years ago). On the USGS quadrangle it does not appear as an elevated area, but then most of the sites in the Apalachicola estuary do not. As noted, the creek is tidally influenced even this far upriver, which is what made the water table appear at different depths in our units, depending on the day and the time.

The area would have been rich in subsistence resources, as with most of the Apalachicola delta. During our fieldwork there we saw deer and other wildlife, including two snakes mating in a tree close to one excavation unit! Communication and transportation connections with the major river system would have been easy from this locale. At the time of its discovery we hypothesized that the site was a short-term, single component habitation probably for specialized purposes of resource extraction, such as hunting (in other words, a camp!). This interpretation is supported by the data and materials excavated in 1987. Though today deer hunters are usually engaged in recreational instead of subsistence activity, the site can be said to have continued its specialized use.

FIELDWORK

Excavations

Test excavations at 8Gu38, the Overgrown Road site, were conducted over a two week period from 29 May to 9 June, 1987, by a crew of (average) eight workers. Fieldwork began with a widespread general surface collection of materials exposed by disturbances (from creation and maintenance of the dirt road and firebreak and light traffic of hunters). There seems to have been no looting of this site, as it is not very obvious nor spectacular. In fact, 1985 survey member Fred Steube joined the crew for a day to help relocate the site, as it was still quite overgrown and hard to find.

Seven units of different dimensions, totaling 18 square meters, were excavated to culturally sterile soils, which were reached at depths of between 40 and 50 cm (except for features); thus about 9 cubic meters were excavated, estimated to be 6% of the site. This is much more than was possible at the shell mounds, of course. The soft grey and yellow sands were very easy to dig and held up well in profile. Unit placement was entirely judgmental, as noted in individual descriptions below.

All units were dug in arbitrary levels of 10 cm because no clear cultural stratigraphy was visible. For units in more disturbed areas the first level was greater, to remove disturbed soils and get to undisturbed midden. Soils were dry screened through 6.4 mm (1/4") mesh hardware cloth, except for one-liter soil samples taken for permanent storage and 4-liter samples for flotation. Features were pedestaled and cross-sectioned.

Stratigraphy

The site was essentially flat, there being only a very few cm difference from one datum point to the next. Thus depths are given in cm below the surface. Though this land must have been logged earlier in the century, it has apparently remained otherwise undisturbed except for the recent dirt roads and firebreaks. There was no evidence of a plow zone.

The undisturbed stratigraphic profile of the site was quite simple. Underlying an average of 15-20 cm of light grayish brown topsoil (10 YR 6/6, 6/1, 5/2) was the cultural stratum, consisting of an average of 15-24 cm of pale brown sand (10 YR 6/3), containing artifacts. At various depths within or just below this the features appeared (described below). Most of the cultural features were the remains of probable pits. The midden gradually gave way to culturally sterile light yellowish brown, or grayish brown subsoil (10 YR 5/2, 5/4, 5/8), in which were orange iron stains and concretions as well as white streaks. The subsoil became lighter in color with increasing depth.

In disturbed areas the top of the midden had been cut into and the contents brought to the surface. Disturbance extended no more than an average 20 cm depth.

Excavation Units

Test Unit 1 measured 2 x 2 m, and was placed just off the road adjacent to the surface find of the largest and most interesting complicated-stamped sherds. About midway through the cultural stratum two features appeared (Features 2 and 3) in this unit, and at the base of the stratum, five more (Features 4 through 8; White 1992: Figure 3). Depth of excavation was 60 cm, with features taken deeper.

Test Unit 1A was a 1.5 x 2 m rectangle placed along the east margin of test unit 1, since that unit had produced so many features and artifacts, justifying an extension. Test Unit 1A contained one feature (Feature 10), and was taken to a depth averaging 53 cm.

Test Unit 2 was 1 x 1 m, placed in the woods east of Test Unit 1, where it was thought the stratigraphy would be undisturbed, and not far from an overturned tree in whose roots pottery was found. As expected, the first two levels, totaling 20 cm depth, yielded no cultural materials. A small concentration of ceramic sherds (Feature 1) appeared at a depth of 22 cm, though there was no soil discoloration. By 40 cm depth culturally sterile soils were reached, though there were black flecks (probably decayed vegetation, not charcoal) and hard orange iron concretions. Excavation was halted at 70 cm except for a 50 x 50 cm window continued into the southwest corner just to be sure there were no deeper deposits. The water table was encountered at 1 m depth.

Test Unit 3 was a 1 x 1 m square on the east side of the road south of Test Unit 1. It was placed adjacent to an area in the road of discolored soil and artifacts that originally appeared to be a hearth but upon troweling proved to be redeposited materials. The unit strata sloped from north to south, and the excavation was taken to 40 cm depth except for the cross-sectioning of Feature 9 in the southeast corner, where excavation continued to 1 m depth. As with Test Unit 2, and despite the proximity to the road, this unit's stratigraphy showed it to be undisturbed; no artifacts were recovered from the first two 10 cm levels. The small number of artifacts recovered, however, suggest this was near the southern edge of the site.

Test Unit 4 was placed just south of the old trailer in an undisturbed triangle of land created by the intersecting lengths of road, a sort of turnaround for the hunters. This unit established the general western boundary of the site. It was culturally sterile, producing only a few iron concretions and charcoal bits, the latter probably from forest fires or decaying vegetation. The cultural stratum appeared to be there at the right depth but much paler and containing no artifacts. Perhaps this was off the edge of the actual habitation or intensive activity area but retained a residue of cultural soil from walking, ash blown from fires, and other human activities.

The unit was dug to 96 cm depth. A core in the center of the bottom was taken by USDA soil scientist Joe Schuster; it showed the subsoil turning paler until the water table was reached at 145 cm depth.

Test Unit 5 and **Test Unit 6**, adjacent units, each measured 2 x 2 m, and were located close to Test Unit 1, to the southeast, as by this time it was clear that most of the site extended eastward from the road. Features 11 and 12 were in Test Unit 5 and Features 13 and 14 in Test Unit 6. Final depth of excavation was about 45 cm for both, just below the cultural stratum, as the last hours of our stay at the site were approaching. Windows were dug along individual walls to aid in recording the stratigraphy. Since artifacts were recovered in the first two levels, as with Test Units 1 and 1A, it is probable that the surface at these units was also disturbed, though it did not appear so. The closer proximity to the road may have meant associated disturbance, especially pushing up of soil by heavy equipment to make the road.

FEATURES

Fourteen features were recorded and excavated at the Overgrown Road site, four clearly cultural in origin and seven possibly cultural. Features were usually pedestaled when first exposed, with the regular matrix excavated around them in the usual arbitrary levels. They were then cross-sectioned, drawn and photographed. Both halves were usually bagged (separately) for flotation of the entire feature contents, with a 1-liter soil sample saved for permanent storage. Before flotation the bags were weighed and measured to get the total volume and (mostly dry) weight of the feature fill.

All the features except Feature 1, a sherd concentration, were composed of darker brown soil, easily seen in the lighter yellowish brown midden soil (which itself was fairly well contrasted with the yellowish brown subsoil). A few, most notably Features 3 and 4, were even darker, due to a high charcoal content.

Data on features are summarized in Table 35, including measurements, soil colors according to the Munsell chart, and a list of the cultural or possibly cultural contents recovered. None contained any faunal remains. Several yielded charred floral materials sorted from the remains recovered by flotation; of these we were able to submit most for ethnobotanical identification, quantification, and analysis, and also one sample for radiocarbon dating.

FEATURE 1 in Test Unit 2 was a concentration of three checkstamped sherds and one plain sherd treated as a feature because they were piled together within the midden. The complicated-stamped sherds were later found to fit together with others from the general Level 3. This may simply be a small area where discarded remains were less kicked around than elsewhere.

FEATURE 2 was one of several pit features exposed in the 2 x 2 m Test Unit 1. It proved to have no artifacts but a large amount of charcoal and fernspores. This feature was shallower by about 10 cm than others in that unit, possibly meaning it was deposited later in time but still within the prehistoric cultural stratum.

FEATURE 3 was a very dark, well defined fire pit full of pine charcoal and even some charred resin. It was exposed almost in its entirety but extended a bit into the west wall of Test Unit 1. As it contained no artifacts it can only be considered either the locus of a fire or a pit into which refuse from a fire was put. Charred fernspores and an unidentified seed were also present in the fill.

FEATURE 4, the most informative at the site, was a well defined refuse pit containing ceramics, charcoal, and charred botanical remains. The list of materials in Table 35 gives exact amounts within the feature

TABLE 35. *SUMMARY OF EXCAVATED FEATURES AT THE OVERGROWN ROAD SITE, 8GU38.*

#	TU#	Level/Unit Depth When Encountered	Horizontal Shape/ Dimensions	Vertical Shape/ Dimensions	Soil Color(s)	Fill Volume/ Weight	Contents*	FUNCTION
1	2	3/ -24 cm	rough oval, 13 cm E-W, 9 cm N-S	3 cm ave depth	10 YR 5/6 (surrounding matrix)	N/A	3 comp-st sherds (27g) 1 plain sand-t sherd (3 g), 14 g charcoal	sherd concentration in midden
2	1	2/ -22 cm	oval, 39 cm N-S, cm N-S, 30 cm E-W	basin-shaped, 26 cm deep	mottled dark 10 YR 6/5 to 3/3	38 l 51.1 kg	pine charcoal, fernspores	fire pit or hearth?
3	1	3/ -39 cm	oval, 36 cm NW-SE, 33 cm E-W	basin-shaped, 20cm deep	mottled dark 10 YR 5/6 to 2/2	24 l 36.3 kg	pine charcoal and resin, fernspores, charred seed	fire pit?
4	1	3/ -38 cm	oval, 46 cm N-S, 55 cm E-W	basin-shaped, stratified, 23 cm deep	dark brown 10 YR 3/2 mottled with charcoal	28.8 l 44 kg	1 comp-st rim (15 g), 1 frag plain sand-t flat-bottomed bowl (6 sherds, 176 g), clear quartzite (worked? hemisphere frag? 5 g), charcoal (*pine, oak, elm, & other wood*), fernspores, *Polygonum* seed, 5 chert flakes	refuse pit
5	1	4/ -58 cm	oval, 40 cm E-W, 60 cm N-S	long, tapered, >70 cm	brown (wet) 10 YR 4/3 to 6/2	19 l 24.7 kg	fernspores, decomposing pine wood in bottom below water table	either still-decaying root or post mold/post
6	1	4/ -60 cm	oval, 26 cm N-S, 24? cm E-W	irreg, >70 cm?	brown 10 YR 4/3	4.7 l 7 kg	pine charcoal, fernspores, *Galium* seed	probably natural root mold?
7	1	4/ -64 cm	3-lobed amorphous, ave 47 cm wide	tapered 50 cm deep	lt brown 10 YR 8/2	29 l 39.2 kg	pine charcoal, fernspores	probably root mold
8	1	4/ -58 cm	round, 46 cm diam	tapered >110 cm deep	lt brown 10 YR 7/2	19.5 l 25.9 kg	pine charcoal, fern spores, mica flecks, poss 2 plain sand-t (21 g), 1 comp-stamp sherd (6 g), 1 pebble	probably root mold
9	3	2/ -29 cm	ovoid, 52 cm NE-SW, 44cm NW-SE	amorphous 50 cm? deep	brown 10 YR 5/3 to 4/3	71.5 l 92.7 kg	pine and other charcoal, fernspores, *Galium* seeds, hickory nutshell	possible pit
10	1A	4/ -50 cm	amorphous 40 cm N-S, 75 cm E-W	amorphous up to 10 cm deep?	lt brown 10 YR 7/2	11.5 l 15.5 kg	fernspores	probable natural feature or disturbed pit
11	5	2/ -15 cm	round? 62 cm N-S, 75 cm E-W	rough basin shape 50 cm deep?	greyish lt brown 10 YR 7/2	38.6 l 47 kg	Tallahatta quartzite chunk, chert flake, 1 plain sand-t rim (4.2 g), pine & other fernspores, *Galium* seeds	probable disturbed pit
12	5	2/ -15 cm	round? 60 cm radius	amorphous 1-2 cm deep	dark grayish brown mottled 10 YR 4/2	16.3 l 20.6 kg	1 sand-t sherd crumb, 1 chert flake, wood wood charcoal, fernspores, *Galium* seed	probably disturbed pit fill redeposited
13	6	2/ -32 cm	round? 45 cm diam?	amorphous 1-2 cm deep	dark brown	21.3 l 30.2 kg	1 chert flake, charcoal, seeds	probably disturbed pit fill redeposited
14	6	2/ -32 cm	round? 60 cm diam?	straight-bottomed, 13 cm deep	dark brown	>5 l	pine charcoal	probably disturbed pit fill redeposited

* For specific plant remains see Table 44.

as defined and pedestaled, but it is probable that other items originally deposited in the very top of this feature were scattered around within the midden just by everyday activity of the inhabitants.

Feature 4 contained several plain sherds with folded rims exposed in situ in the top, as well as a complicated-stamped sherd. After cross-sectioning and removing the west half, it was clear that this feature was stratified into at least two depositional layers (Figure 25), each 6 to 10 cm thick. In the eastern half the pottery was only in the upper stratum. It is uncertain if this was the case for the west half as it was removed first, all in one piece for less breakage of fragile floral remains. The lower stratum was darker and contained more charcoal than the upper.

When cleaned and pieced together the plain sherds formed a portion of a small bowl with a distinctive flat circular bottom (White 1992: Figure 5). The complicated-stamped sherd was a typical rim. Other contents were five chert flakes and a clear quartz piece that appeared to be worked, a fragment of what seems to have been a hemisphere.

Charred botanical remains in this feature included oak, elm, and other hardwoods (both diffuse-porous and ring-porous), a small amount of pine, a *Polygonum* seed and many fernspores (the 70 listed on Table 44 are a sample that could be counted and sorted from the large numbers present). Most of the charcoal is oak, which makes sense as fuel since it burns better and longer. Today oak is abundant at the site. The fern spores and pine also suggest a mixed forest. The *Polygonum* is a weedy plant perhaps growing in a small area cleared for habitation.

A sample of the oak charcoal from the western half (combining both strata) of the feature was sent for radiocarbon dating and returned a result of 1650 + 50 years before the present, or approximately A.D. 300 (uncorrected; Beta-25771). Corrected according to the latest calibration tables (Stuiver and Pearson 1986) this date becomes A.D. 363. Either is a quite reasonable date for the later variety Swift Creek Complicated-Stamped pottery.

Feature 4 thus appears to have been a stratified refuse pit. It may have held animal remains that have long since decayed. Why the quartz object was discarded here is unknown. Though it was a broken fragment, it was of a presumably exotic material and could have been remade into something else perhaps. That it appears here suggests it was used in a domestic context.

FEATURE 5 was a dark oval stain that tapered in cross-section and continued 70 cm deep until, at the water table, it became unrotted wood. It was either a post or a tree root. A sample of the wood was taken and

FIGURE 25. Top, cross-section of Feature 4 with sherds *in situ*, Overgrown Road site. Bottom, typical complicated-stamped rim sherds: left, Test Unit 2 Level 3; middle, from Test Unit 5 Level 4; right, from Test Unit 3 Level 3.

identified as pine (not cypress as originally reported [White 1992:33-34]). The dark area of the feature also contained charred fernspores.

FEATURES 6, 7, 8, and 10 appeared to be natural in origin due to their irregular shapes. The best explanation is that they were decaying tree roots or animal burrows into which some cultural remains may have fallen.

FEATURES 9 and 11 may have been pits that were later disturbed or whose fill got jumbled around enough to obscure a basin-shaped cross-section. Feature 11 contained a plain sherd and a chunk of Tallahatta quartzite, a lithic raw material that had to have been obtained in south Alabama where it outcrops, perhaps a hundred navigational miles away upriver. Both features had charcoal and Feature 9 produced *Galium* seeds and hickory nutshell.

FEATURES 12, 13, and 14 were shallow stained areas with the appearance of midden fill. They may have been areas where the modern disturbance simply extended deeper or else zones of darker midden or pit fill moved around and redeposited.

In sum, the features at the site that are cultural in appearance appear to be pits. Since they have materials in them that can be classified as refuse, we could determine the pit function to be for disposal of refuse.

Archaeologists have realized for a long time that such features may have had different uses earlier, leaving only the evidence of their last function. DeBoer (1988) reminds us that, ethnographically, pits were common for storage in aboriginal America. Rather than indications of a more sedentary existence, he demonstrates their association with more seasonal, temporary settlements. They are easy to construct and quite functional; more settled groups would have been more likely to construct above-ground food storage facilities of a more permanent nature.

Another fact that archaeologists seldom note is that humans often dig pits for use as latrines. It is impossible to prove this when interred wastes are not present, but perhaps those pit features with only seeds, for example, were for such a use.

In sum, the features at the Overgrown Road site show no evidence of structures, and no good evidence for any posts in the ground at all. They appear all to be pits or redeposited midden materials consistent with a short-term occupation.

CERAMICS

Pottery

At the Overgrown Road site 429 ceramic sherds were recovered, totaling over 1.8 kg. Of these totals, 20% (by count and 21% by weight) were from the surface. A summary of all ceramic data is given in Table 36, and Tables 37 through 42 list ceramics recovered from the different units by level (10 cm levels except Level 1s from Test Units 1, 1A, 5 and 6, which encompassed the entire disturbed zone, averaging 20 cm). All the ceramics were sand- or grit-tempered. From excavated proveniences only complicated-stamped and plain wares were recovered. The surface collection included other types: two check-stamped and two net-marked sherds. Photos of typical complicated-stamped sherds appear in Figure 25 (other ceramics are pictured in White 1992: Figures 5, 6, 8).

Just under 50% of the total ceramics from the site by weight are complicated-stamped, and just over 50% plain. By sherd count, however, 25% are complicated-stamped and 75% plain; the plain sherds were much smaller. Perhaps the plain pots were less cared for and more often broken. If complicated-stamped vessels were more for special purposes, this might generally make sense. It is unknown what proportion of the plain sherds are from un-stamped portions of stamped vessels, however. The category "plain" also includes eroded surfaces.

The complicated-stamped patterns all fit within the general designs for the type Swift Creek Complicated-Stamped type. Frankie Snow, an archaeologist at South Georgia College in Douglas, Georgia, has for many years studied distributions of different designs stamped into this pottery. He looked at photos of the sherds from the Overgrown Road site (letter from F. Snow to N. White, 3 June 1993) and found one pattern showing a connection with another Swift Creek site. A surface sherd from Overgrown Road (White 1992: Figure 6 bottom right) exhibits a design made up of multiple U shapes with parallel lines above them. This design is similar to that on a sherd from the Fairchild's Landing site (8Se14), on the east bank of the lower Chattahoochee River in extreme southwest Georgia (Caldwell and Smith 1978: Plate 7, bottom right). Caldwell also illustrated this design as "Motif 69" (Ibid:87) and considered it transitional between earlier and later Swift Creek. The Fairchild's Landing sherd shows a concentric diamonds pattern extending below the Us. Fairchild's Landing is over 120 navigational miles upriver from the Overgrown Road site (dug by Caldwell in the 1950s, it is now inundated by Lake Seminole [White 1981]). Thus, long distance communication of some sort is documented between these two sites. Future work might

TABLE 36. CERAMICS FROM THE OVERGROWN ROAD SITE, 8Gu38, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS.

	SURFACE		TEST UNITS		FEATURES		TOTALS	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT
COMP-STAMP	28	196	76	600	5	48	109	844
INDET-STAMP			1	5			1	5
NET MARKED	2	21					2	21
CHECK STAMP	2	18					2	18
GRIT-TEMP PL	1	6	1	1			2	7
SAND/GRIT-TEMP PL	14	41	21	30			35	71
SAND/GROG-TEMP PL			1	10			1	10
SAND TEMP PL	40	101	226	523	11	205	277	829
TOTAL	87	383	326	1168	16	253	429	1804
% BY PROVIENCE								
COMP-STAMP	32	51	23	51	31	19	25	47
INDET-STAMP								
NET MARKED	2	5						1
CHECK STAMP	2	5						1
GRIT-TEMP PL	1	2						
SAND/GRIT-TEMP PL	16	11	6	3			8	4
SAND/GROG-TEMP PL				1				1
SAND TEMP PL	46	26	69	45	69	81	65	46
TOTALS	100	100	100	100	100	100	100	100
% WITHIN TYPE								
COMP-STAMP	26	23	70	71	5	6	100	100
INDET-STAMP			100	100			100	100
NET MARKED	100	100					100	100
CHECK STAMP	100	100					100	100
GRIT-TEMP PL	50	86	50	14			100	100
SAND/GRIT-TEMP PL	40	58	60	42			100	100
SAND/GROG-TEMP PL			100	100			100	100
SAND TEMP PL	14	12	82	63	4	25	100	100
% OF TOTAL								
COMP-STAMP	7	11	18	33	1	3	25	47
INDET-STAMP								
NET MARKED		1						1
CHECK STAMP		1						1
GRIT-TEMP PL								
SAND/GRIT-TEMP PL	3	2	5	2			8	4
SAND/GROG-TEMP PL				1				1
SAND TEMP PL	9	6	53	29	3	11	65	46
% OF TOTAL	20	21	76	65	4	14	100	100

TABLE 37. CERAMICS FROM TEST UNIT 1, OVERGROWN ROAD SITE, 8Gu38, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 1 (.96 m²)		LEVEL 2 (.42 m²)		LEVEL 3 (.44 m²)		LEVEL 4 (.46 m²)		TOTALS	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
COMP-STAMP	5	24	4	24	1	2			10	50
SAND-TEMP PL	13	18	13	15	7	32	1	2	34	67
GRIT-TEMP PL					1	1			1	1
SAND/GRIT-TEMP PL	1	3							1	3
TOTAL	19	45	17	39	9	35	1	2	46	120
% BY PROVIENCE										
COMP-STAMP	26	54	24	62	11	6			22	42
SAND-TEMP PL	68	40	76	38	78	92	100	100	74	56
GRIT-TEMP PL					11	3			2	1
SAND/GRIT-TEMP PL	5	6							2	2
TOTAL	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE										
COMP-STAMP	50	48	40	48	10	4			100	100
SAND-TEMP PL	38	27	38	22	21	48	3	2	100	100
GRIT-TEMP PL					100	100			100	100
SAND/GRIT-TEMP PL	100	100							100	100
% OF TOTAL TU-1										
COMP-STAMP	11	20	9	20	2	2			22	42
SAND-TEMP PL	28	15	28	12	15	27	2	1	74	56
GRIT-TEMP PL					2	1			2	1
SAND/GRIT-TEMP PL	2	2							2	2
% OF TOTAL	41	37	37	32	20	29	2	1	100	100

TABLE 38. CERAMICS FROM TEST UNIT 1A, OVERGROWN ROAD SITE, 8Gu38, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 1 (.69 m^2)		LEVEL 2 (.39 m^2)		LEVEL 3 (.12 m^2)		LEVEL 4 (.33 m^2)		TOTALS	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
COMP-STAMP	4	23	10	57	7	42			21	122
SAND-TEMP PL	1	6	7	37	6	22	2	1	16	65
SAND/GRIT-TEMP PL	3	19	17	8					20	27
TOTAL	8	47	34	102	13	64	2	1	57	214
% BY PROVIENCE										
COMP-STAMP	50	48	29	56	54	66			37	57
SAND-TEMP PL	13	12	21	36	46	34	100	100	28	30
SAND/GRIT-TEMP PL	38	40	50	8					35	13
TOTAL	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE										
COMP-STAMP	19	19	48	47	33	34			100	100
SAND-TEMP PL	6	9	44	57	38	33	13	1	100	100
SAND/GRIT-TEMP PL	15	70	85	30					100	100
% OF TOTAL TU-1										
COMP-STAMP	7	11	18	27	12	20			37	57
SAND-TEMP PL	2	3	12	17	11	10	4		28	30
SAND/GRIT-TEMP PL	5	9	30	4					35	13
% OF TOTAL	14	22	60	48	23	30	4		100	100

TABLE 39. CERAMICS FROM TEST UNIT 2, OVERGROWN ROAD SITE, 8Gu38, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 3 (.10 m^2)	
TYPE	CT	WT
COMP-STAMP	8	76
SAND-TEMP PL	21	68
TOTAL	29	143
% BY PROVIENCE		
COMP-STAMP	28	53
SAND-TEMP PL	72	47
TOTAL	100	100
% WITHIN TYPE		
COMP-STAMP	100	100
SAND-TEMP PL	100	100
% OF TOTAL TU-1		
COMP-STAMP	28	53
SAND-TEMP PL	72	47
% OF TOTAL	100	100

TABLE 40. CERAMICS FROM TEST UNIT 3, OVERGROWN ROAD SITE, 8Gu38, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 4 (.10 m^2)		LEVEL 4 (.10 m^2)		TOTALS	
TYPE	CT	WT	CT	WT	CT	WT
COMP-STAMP	1	5			1	5
SAND-TEMP PL			2	1	2	1
TOTAL	1	5	2	1	3	6
% BY PROVIENCE						
COMP-STAMP	100	100			23	89
SAND-TEMP PL			100	100	67	11
TOTAL	100	100	100	100	100	100
% WITHIN TYPE						
COMP-STAMP	100	100			100	100
SAND-TEMP PL			100	100	100	100
% OF TOTAL TU-3						
COMP-STAMP	33	89			33	89
SAND-TEMP PL			67	11	67	11
% OF TOTAL	33	89	67	11	100	100

TABLE 41. CERAMICS FROM TEST UNIT 5, OVERGROWN ROAD SITE, 8Gu38, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 1 (.48 m³)		LEVEL 2 (.33 m³)		LEVEL 3 (.30 m³)		LEVEL 4 (.58 m³)		TOTAL	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
COMP-STAMP	1	6	3	7			4	47	8	59
SAND-TEMP PL	2	4	20	47	13	44	5	14	40	109
TOTAL	3	10	23	54	13	44	9	61	48	168
% BY PROVIENCE										
COMP-STAMP	33	57	13	12			44	77	17	35
SAND-TEMP PL	67	43	87	88	100	100	56	23	83	65
TOTAL	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE										
COMP-STAMP	13	9	38	11			50	80	100	100
SAND-TEMP PL	5	4	50	43	33	40	13	13	100	100
% OF TOTAL TU										
COMP-STAMP	2	3	6	4			8	28	17	35
SAND-TEMP PL	4	3	42	28	27	26	10	8	83	65
% OF TOTAL	6	6	48	32	27	26	19	36	100	100

TABLE 42. CERAMICS FROM TEST UNIT 6, OVERGROWN ROAD SITE, 8Gu38, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 1 (.84 m³)		LEVEL 2 (.45 m³)		LEVEL 3 (.67 m³)		TOTAL	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT
COMP-STAMP	15	95	11	183	2	10	28	288
INDET STAMP			1	5			1	5
SAND/GROG-TEMP PL			1	10			1	10
SAND-TEMP PL	65	108	44	94	4	13	113	215
TOTAL	80	202	57	293	6	23	143	518
% BY PROVIENCE								
COMP-STAMP	19	47	19	63	33	44	20	56
INDET STAMP			2	2			1	1
SAND/GROG-TEMP PL			2	4			1	2
SAND-TEMP PL	81	53	77	32	67	56	79	41
TOTAL	100	100	100	100	100	100	100	100
% WITHIN TYPE								
COMP-STAMP	54	33	39	64	7	4	100	100
INDET STAMP			100	100			100	100
SAND/GROG-TEMP PL			100	100			100	100
SAND-TEMP PL	58	50	39	44	4	6	100	100
% OF TOTAL TU								
COMP-STAMP	10	18	8	35	1	2	20	56
INDET STAMP			1	1			1	1
SAND/GROG-TEMP PL			1	2			1	2
SAND-TEMP PL	45	21	31	18	3	3	79	41
% OF TOTAL	56	39	40	56	4	5	100	100

investigate the possibility that the same paddle was used on both sherds.

Other designs at Overgrown Road include diamond, S, U, and other complicated shapes. Rims of both the plain and the stamped vessels were typically folded, smoothed styles of the later Middle Woodland period (Willey 1949:378-79, 431-35).

As shown in Tables 39 and 40, Test Units 2 and 3 had no ceramics from Levels 1 and 2 (the top 20 cm), demonstrating the undisturbed nature of the deposits. Whether the disturbed levels are taken into account or not, however, there is no obvious patterning of the ceramic frequencies according to vertical or horizontal space. The implication is of a single component site, even representing a single season's visit to camp while hunting, fishing, and/or collecting some other resource.

Ceramics from the features (Tables 35, 36) were few, totaling five complicated-stamped (48 g) and eleven plain (205 g) sherds, occurring in Features 1, 4, 8, 11, and 12 only. Feature 1 actually was a small concentration of complicated-stamped and plain sherds. Features 4 and 11 were pits, and 12, redeposited pit fill. Feature 8 appeared to be a natural stain such as a decaying tree root into which artifacts could have fallen. The plain sherds in Feature 4 made up the lower portion of the side of a small bowl.

Other Clay Remains

Besides vessel sherds, the only other ceramic remains were strange, very small lumps of clay that did not resemble daub but possibly were little squeezings left over from pottery making, or some other activity, even a natural process. These all occurred in Test Unit 1: 5 fragments (5 g) in Level 3 and 25+ fragments (8 g) in Level 4. They were hard to count because of their crumby nature and texture; some may have been actual sherd crumbs, but none appeared to have any temper. If daub houses had been made, they certainly would have left more than this. Unless our tests were not placed in the area of shelters, this is one more bit of evidence, albeit negative evidence, for a temporary, seasonal habitation not requiring more permanent housing.

LITHIC MATERIALS

Chipped Stone

Lithic materials from the Overgrown Road site are summarized in Table 43. Chipped stone artifacts included no finished tools but only lithic debitage, totaling 70 pieces (584.8 g). Most of this debitage was secondary chert flakes. There were only a handful of blocky shatter pieces, two secondary decortication pieces, and two large chunks, one of

TABLE 43. LITHIC REMAINS FROM THE OVERGROWN ROAD SITE, 8Gu38.

Chipped Stone (all debitage)

Provenience	Ct	Wt(g)	Type	Comments
Surface	3	2	secondary decortication	translucent tan with white cortex
TU 1 L 1	3	4	secondary	1 pink, utilized
TU 1 Floor 1	1	1	secondary	unusual dark brown
TU 1 L 2	6	2	secondary	dark gray
	1	2	shatter	
TU 1 L 2 SE corner	1	.5	secondary	
TU 1 L 3	2	.5	secondary	
TU 1 Floor 3	1	.5	secondary	
TU 1A L 1	2	2	secondary	light brown
TU 1A L 3	16	5	secondary	
	1	2	block shatter	
TU 1A Floor 3	1	.5	secondary	beige
TU 5 L 2	2	2.1	secondary	translucent tan
TU 5 L 3	3	.6	secondary	2 high quality bright red, 1 translucent tan
	1	28.2	shatter	appears to be Tallahatta quartzite
TU 5 L 4	2	1.6	secondary	smaller 1 translucent tan
	3	2.4	block shatter	mostly cortex
TU 6 L 1	1	.3	secondary	translucent tan
	1	5	secondary decortication	translucent tan, some use wear, retouched
TU 6 Floor 1	3	9	thick secondary	1 is pink, lustrous
	1	50	blocky secondary	battered at 1 end, heavy retouch; biface frag?
TU 6 L 2	3	7.5	secondary	
	2	5	block shatter	
TU 6 L 3	1	410	chunk, shatter?	poor quality, cortex?
F 4 E 1/2	3	1.2	secondary	
F 4 W 1/2	2	.4	secondary	
F 11	1	38	chunk	Tallahatta quartzite
F 11 E 1/2	1	1	secondary	translucent white
F 12	1	.1	secondary	red, poss thermally altered
F 13	1	.4	secondary	translucent tan
TOTALS	70	584.8		

Other Stone

Provenience	Ct	Wt(g)	Type	Comments
TU 1 L 2	1	.8	clear quartz chip	
	1	66	quartzite cobble frag	use wear on butt end
TU 1A L 2	2	2	clear quartz fragments	
	26	38.5	sandstone pieces	
	1	1	limestone frag	
TU 1A L 3	5	2	clear quartz frags (small)	
	7	8	stone piece	sand stone or poss Tallahatta quartzite
	2	3	quartz pebbles	like pea gravel
TU 5 L 1	1	4	quartzite cobble chip	use wear
TU 5 L 3	1	1.1	white quartzite chip	
	3	.5	mica pieces	appear broken, not cut, <4 cm long
TU 5 L 4	1	305.2	quartzite cobble	several worn surfaces for grinding or hammering
TU 6 L 1	1	9	black rock	could be coal lump
TU 6 L 2	1	213.4	quartzite or sandstone	possibly utilized
TU 6 L 3	2	5.8	quartzite chips	1 fine-grained, 1 coarse
F4	1	5	clear quartz frag	worked, part of hemisphere?
F 6	1	25	quartz pebble frag	
TOTALS	57	690.3		

poor quality cortex and one of Tallahatta quartzite, suggesting primary reduction of material for tools.

Most of the secondary flakes were very small, as well, clearly bifacial thinning flakes. This assemblage suggests that chipped stone tools were not manufactured at the site, but merely sharpened from time to time. One secondary flake and one decortication flake were utilized, probably as simple expedient tools. The only possible tool fragment is a battered, retouched blocky flake from Level 1 in Test Unit 6 that may be a piece of a biface.

The small size of the lithic assemblage also suggests a short term habitation. People may have taken along only the few things they needed, and the short stay was not long enough to break or lose many tools.

The interesting aspect of the chipped stone remains at the Overgrown Road site is the wide variety of chert types. The typical chert used in this part of Florida is a creamy whitish local material known as Gulf Coast chert or Ocala chert. Less common but still frequently encountered is agatized coral, usually about the same color. Much less common is a translucent tan or honey-colored chert; some think this chert weathers to become the whitish variety, and I have seen some evidence of this in recently broken whitish pieces with the latter material inside. All these materials are considered to be of local origin, although they would have to have been obtained at least 50 river miles (85 km) to the north or 25 km by water to the south (Upchurch et al. 1982 note the Marianna Quarry Cluster; agatized coral occurs as beach rock on the barrier islands).

There are also many other kinds of chert, a remarkable variety for this rather small number of specimens. All that can be done at present is to record the colors: pink, red, dark brown, dark gray, light brown, beige, translucent white. Perhaps these can be traced to specific sources when further work is done on chert types in this region. The pink and red chert may be same local materials thermally altered, but the others are definitely non-local.

Another material of non-local origin is Tallahatta quartzite, used for chipped stone tools more frequently farther up the valley. It is unmistakable because of its glittery appearance and greenish-gray grains outlined in white. When it weathers to dull light brown it is less distinctive, but still glittery. This material outcrops in south Alabama (Lloyd et al. 1983). The prehistoric people at the Overgrown Road site had to go up over 100 river miles (170 km) to get it (or obtain it through an exchange system that extensive), and it is rare in the lower valley.

A common characteristic at Middle Woodland period sites is the presence of many exotic artifacts, including non-local cherts. During this period more than any others, this is the case in the Apalachicola Valley. This characteristic is often linked to the use of all sorts of unusual materials for burial ceremonialism. But here at this small camp site they appear in what seems to be an everyday domestic context. Perhaps these people preferred to use more imports in general, and chose to be buried with their possessions.

<u>Other Stone</u>

Fifty-seven pieces of other stone besides chert were recovered at the site, totaling 690.3 g (Table 43). These included many sandstone and quartzite pebbles, like pea gravel, that may have been natural in occurrence. Iron concretions were seen commonly in the deeper levels, and they often resembled sandstone. A possible lump of coal was undoubtedly modern, as it was from a disturbed Level 1.

The clearly cultural items were a quartzite cobble and two cobble fragments with use wear from hammering or grinding, small irregular pieces of mica, and clear quartz artifacts (eight chips and a worked fragment. The first items suggest either plant processing or possibly chipped stone tool sharpening. The latter two are more of the exotic materials associated with Middle Woodland sites in this valley and elsewhere in the eastern U.S. Again, here they are not in any ceremonial mortuary context but part of an apparently small domestic assemblage. Noteworthy is the clear quartz, possibly used for utilitarian tools, but more probably for other objects. The worked fragment, from Feature 4, appears to be a piece of a deliberately shaped hemisphere. The mica fragments are irregular, possibly torn, with no signs of cutting or deliberate shaping. While I have seen mica pieces occur naturally in this river system among the alluvial sands, they are usually not as big as these (almost 4 cm long). Therefore it appears the mica was brought to the site by people.

BIOTIC REMAINS: ETHNOBOTANICAL MATERIALS

Probably due to the acidity of the soils, no bone was preserved at the site, with the exception of a fragment of deer or cow long bone from Test Unit 1 Level 1, that was cleanly cut with a modern implement. The lack of faunal materials seriously hampers interpretations of subsistence at the site. For this reason a larger sample than usual of charred floral remains was sent for analysis, comprising nearly all the botanical specimens recovered. These remains were isolated by flotation from all features and from selected levels of the test units, as well as from the 6.4 mm (1/4") dry screens from those levels. They are all identified in Table 44.

There is little variety in the plant remains, but a few items are noteworthy. Most of the wood is pine, suggesting a drier environment at the time the site was occupied in comparison with the mostly hardwood bottomland of today. However, the contents of Feature 4, as noted, were predominantly oak with some elm, as well as pine. This indicates deliberate choice of this wood, probably for fuel. A small amount of oak was present in other proveniences. The high number of fernspores is actually even greater than what is represented on the table, as the labworkers sorting the materials from the flotation recovery could pick out only so many of these extremely tiny items, and we settled for sorting of a large sample of the total in each provenience. The wood and fernspores suggest a forest environment.

The identifiable seeds are a *Polygonum* (knotweed), a possible Vitaceae (grape) and several *Galium* (bedstraw). These weeds may have been collected for eating or they may have accidently become charred in campfires. Wild grape is plentiful in the area today, and the others undoubtedly exist there as well. The hickory nutshells and acorn fragments represent species known to have been utilized widely as foods by aboriginal Americans. They might also suggest a season of occupation, except that we also know from ethnographic accounts that such nutshells were saved for fuel after the nuts were consumed.

The ethnobotanical assemblage from the Overgrown Road site provides few real clues to the season of or reason for habitation at this locale. But the remains are not inconsistent with a general hunting/gathering camp type of occupation.

SUMMARY AND INTERPRETATION

Because this is a small domestic site of the Middle Woodland period, during which elaborate ceremonial mounds were constructed, it is the kind of site that has received little attention from archaeologists until recently. While nothing radically unusual was turned up by our tests, some observations can be made, even based on our extremely limited amount of testing.

The artifacts and features indicate a small habitation site utilized over a relatively short period of time. Lithic remains suggest no manufacture but maintenance of tools, which were made of exotic as well as local cherts. Use of such raw materials often occurs in Middle Woodland, but these appear to have been merely utilitarian items. Ceramics are about half plain and half Swift Creek Complicated-Stamped, suggesting both were for utilitarian use. The few exotic items seem to

TABLE 44. BOTANICAL REMAINS FROM THE OVERGROWN ROAD SITE, 8Gu38.

Provenience	WOOD			SEEDS		NUTSHELL	
	Pine	Oak	Mixed/Other	Fernspores	Other	Hickory	Acorn
Feature 2	23.1 g			~ 80			
Feature 3	24.9 g		.15 g pine & resin	75	unident .13 mm diam		
Feature 4	1.0 g	16 g	5 g oak & elm & pine 13 g oak & diffuse-porous hardwood 5.8 g ring-porous hardwood 1 g diffuse-porous hardwood <.5 g unident	70	1 *Polygonum* sp.		
Feature 5	1 frag*			97			
Feature 6	.1 g			63	1 *Galium*		
Feature 7	>.35 g			57			
Feature 8	.3 g			54			
Feature 9	3.7 g		1.4 g unident	104	11 *Galium*	9 frags	
Feature 10				7			
Feature 11	6.0 g		2.1 g unident	102	2 *Galium*		
Feature 12			2.1 g unident	51	1 *Galium*		
Feature 14	2.0 g						
TU 1 L 2			.2 g unident	34	1 Vitaceae? (eroded)		
TU 1 L 3	9.5 g			114			
TU 1 L 4			<.5 g unident	12			
TU 2 L 2	2.6 g		2.8 g unident				
TU 2 L 3	15.4 g		58.7 g pine & oak 3.4 g unident	20		1.5 g (6 frags)	2 fruits 1 cap
TU 2 L 4				34			
TU 2 L 5	<.5 g			17			
TU 2 L 6	<.5 g		< .5 g unident	14			
TU 5 L 1		4.8 g	< .5 g unident	33			
TU 5 L 2	<.5 g 1.1 g resin		.9 g unident	40	2 *Galium*		
TU 5 L 3	.6 g		1 g unident				
TU 5 L 4	1.9 g		5.1 g pine & ring-porous hardwood	35	1 partial seedcoat?		
TU 6 L 1	1.0 g		37 g pine & ring-porous hardwood	14			
TU 6 L 2	11.5+ g			X		.2 g	(1 frag)
TU 6 L 3	6.5 g			3+			

* unburned/undecayed wood below water table.

have been deposited in a domestic refuse context. Floral remains indicate a forested environment and possibly some utilization of local weedy and fruit plants for food. The radiocarbon date of A.D. 300 (or corrected date of A.D. 363) is quite consistent with the ceramics.

As more work is done in this region, this site may be better placed into an overall settlement pattern for this time period. The 1985 survey recorded a small Swift Creek burial mound at Howard Creek (Henefield and White 1986), north of the Overgrown Road site 30 km (18 miles) by water with some portage (White 1992 illustrates artifacts from this mound).

Some discussion is required of what was not found. There was no Weeden Island pottery. This is an interesting piece of evidence to add to the debate on whether or not the Weeden Island cultural manifestation is temporally or culturally distinct (or both) from the Middle Woodland Swift Creek "culture." As both are defined solely by ceramics, the debate is often unresolvable (Willey 1949, White 1985); we too often assume that different ceramics mean different time periods or different people. (Consider how not only do more of us drive Japanese cars these days, but now those cars are made in the U.S.; this sort of situation, which is not new to the twentieth century, should make us cautious of equating one artifact type or ceramic series with one entity!) An enormous amount of work remains to be done on prehistoric material culture and ethnicity, and on the concepts of Swift Creek and Weeden Island as cultural entities or merely as ceramic series.

Also not found at the Overgrown Road site were faunal remains. It would be hard to imagine a small group of people camped in this area, perhaps an extended family, not taking advantage of the terrestrial and riverine wildlife. Had they been preserved, there probably would have been many deer and freshwater fish bones, as well as those of other small animals. Likewise, the floral assemblage in total probably included a bountiful harvest of fruits, nuts, and seeds. This is the time period when people in the East supposedly were experimenting with horticulture. Would they have brought squash or gourd with them to camp?

A final note on the actual nature of the occupation is essential. The recent archaeological literature is full of explanations of small sites such as 8Gu38 in which they are termed short-term special purpose resource extraction sites. It is preferable in this case to call the site a camp. First of all, "camp" implies short-term settlement. Second, no special purpose can be inferred from the record here as yet; probably scores of wild resources were obtained from this rich environment. To be so successful, Middle Woodland folk probably had excellent generalized adaptations where they could camp in different spots throughout the year and take advantage of several resources at a time. As noted, the use of this rich land for such purposes continues today.

THE CORBIN-TUCKER SITE, 8CA142

SITE DESCRIPTION

The Corbin-Tucker site is situated on the west bank of an old meander channel of the Apalachicola, 2 km (1.2 miles) due west of the present river (Figure 1). It is a late prehistoric Fort Walton village, on the eastern edge of this rise in the low bottomland. It is unknown whether the river occupied the nearby meander channel when the site was inhabited. Today the small creek or slough in this channel, about 150 m east of the site, flows approximately 7 miles, meandering through the backswamp until it empties into the river at navigation mile 55.

This environment is a rich hardwood bottomland forest, with low areas such as sloughs forested with cypress and palmetto. The higher area where the site is located was once cleared for pasture, then plowed for a pine plantation. The site is a rather thin, shallow midden measuring about 200 m north-south and 100 m east-west, on the west side of a dirt road that gives access to the planted pine (Figures 26, 27). East of the road the terrain drops over 2 meters to the rim swamp through which flows the underfit creek or slough, a favorite local fishing spot. The landowner informed us that at this site, a relatively high spot on the wide floodplain of the Apalachicola, the land was always dry, even when it became an island in times of unusual spring flooding when the road was underwater.

The Corbin-Tucker site was recorded in 1986 during a survey on the Chipola River, a tributary of the Apalachicola (White and Trauner 1987:64-65); it is not on the Chipola but was brought to our attention during that work, and so incorporated into the report). At that time the crew picked up Fort Walton Incised pottery and many check-stamped and grit-tempered plain sherds. Freshwater mollusc shells littered the ground in some places, apparently plowed up from features. The landowners had collected Fort Walton ceramics (Figure 27), including an owl effigy adorno (broken off the rim of a pot).

This site was chosen for testing because it offered potential for recovering ceramics and subsistence data from a riverine agricultural site to compare with Fort Walton occupation farther downriver in the delta. In addition, there is lately much disagreement over the specifics of Fort Walton chronology in this valley. The latest and most complex societies in northwest Florida, Fort Walton chiefdoms are famous for construction of large temple mounds and burials of a few important individuals with high status artifacts. They were the natives who first greeted the Spanish explorers in the southeast, and were immediately devastated by the consequences of that contact.

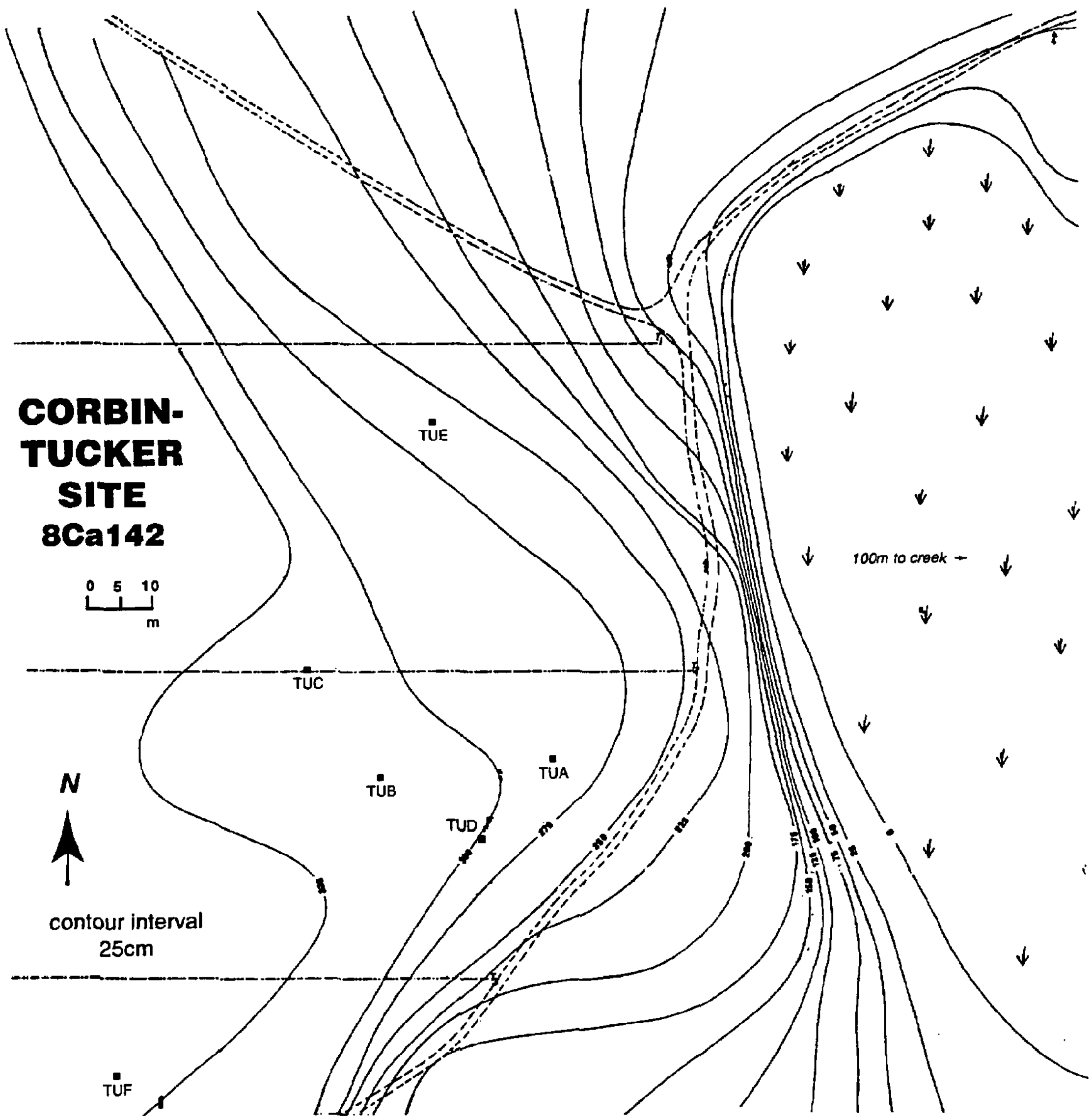

CORBIN-
TUCKER
SITE
8Ca142
0 5 10
m
N
contour interval
25cm
TUE
TUC
TUB
TUA
TUD
TUF
100m to creek

FIGURE 26.

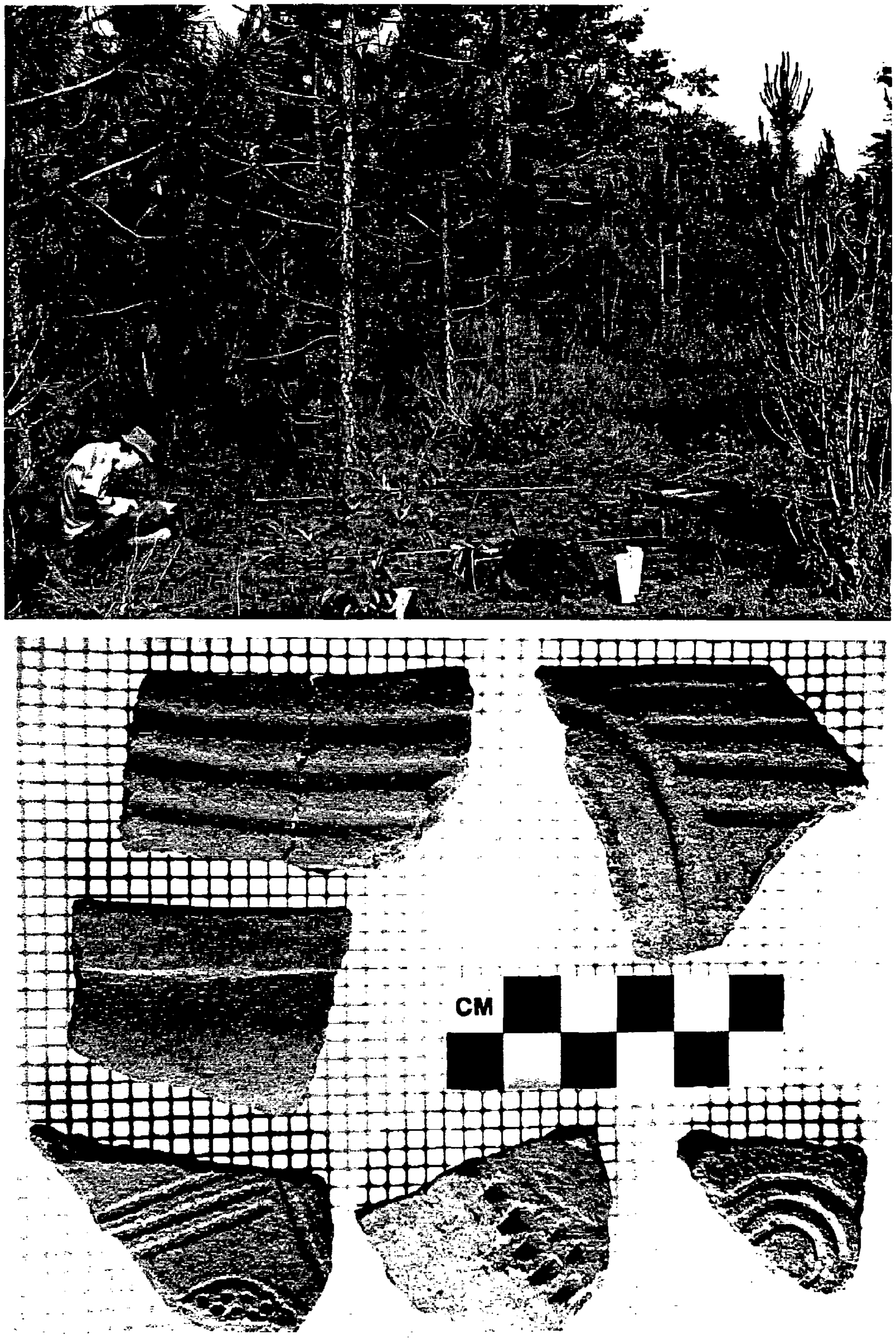


FIGURE 27. Top, view of Corbin-Tucker site facing north-northeast. Fieldworker C. Fuhrmeister is beginning Test Unit B. Bottom, Fort Walton ceramics in the collection of the Corbin family, from surface of site.

The origin of social complexity is an intriguing and important anthropological topic, and the development of Fort Walton culture in the Apalachicola and elsewhere in northwest Florida has lately been the focus of several studies which have actually raised more questions than they have answered (White 1982, Scarry 1984). There is no temple mound or even great extent of the village midden at Corbin-Tucker. Though our goals in testing here were to obtain basic data on material culture and technoenvironmental adaptation, we also ended up with fascinating social information from a cemetery with high status burials.

FIELDWORK

Excavations

Field operations at the Corbin-Tucker site were conducted from 3 to 15 June with a crew of 8 plus frequent volunteers, including youngsters of the Corbin family and others from Blountstown. The testing strategy for this site, the first investigated in the 1988 season, was to establish site boundaries through controlled surface collection, then locate as many units as could be completed in two weeks at locales where there were surface concentrations of cultural materials.

The first operation was surface collection in transects moving westward from points spaced at 75 m intervals all along the dirt road, beginning at the north fork at the northeast edge of the site. Though many transects were completed, only the first three (T1, T2, T3 on Figure 26) produced surface artifacts. In this fashion rough site boundaries were established.

As with the Overgrown Road site, digging in the soft alluvial sands here went much faster and easier than hacking through shell mounds, allowing a greater area to be tested. Six excavation units were dug, two each measuring 1 x 1 m, 1 x 2 m, and 2 x 2 m, totaling 14 square meters. Calculating in the different depths of excavation, our total was about 15.6 cubic meters. Based on the average depth of cultural deposits, which varied greatly, this total represents something over .9% of the site.

Excavation was in 10 cm arbitrary levels because the apparently single component site had no cultural or natural stratigraphy by which to maintain better control. All soils were dry screened through 1/4" (6.3 mm) or 1/8" (3.2 mm) mesh, a fast and easy process in the soft pale sand. Mesh size made little difference as there were no faunal remains and few lithic remains, and most pottery sherds were quite large, so little was missed. This is confirmed by the recovery of no more information in the soil samples processed through flotation than in the dry-screened deposits.

Features encountered, with the exception of the burial, which was troweled out carefully, were pedestaled and cross-sectioned. Both halves were bagged separately for total flotation except for a 1 liter sample saved for permanent storage for future analyses. Feature 1, a refuse pit with freshwater mollusc shell, had recognizable strata which could be removed separately.

Stratigraphy

Stratigraphy at Corbin-Tucker was fairly simple. A grayish brown (10YR5/3 to 4/4) plow zone averaging 25 cm thick cut into the top of the midden. Below this disturbed portion the truncated midden zone averaged about 45 cm thick, and was medium to light brown (10YR5/6), containing occasional charcoal flecks and artifacts. It gradually graded into a paler subsoil that ranged from light brown to yellowish white (10YR6/8 to 7/8), with orange mineral mottling. This all was probably a combination of cultural and natural stratigraphy, and was present in all units except Test Unit E, where there had been much prehistoric disturbance from burying people.

Excavation Units

Test Unit A, 2 x 2 m, on the east side of the site, was placed in an area where surface shell fragments were concentrated, in an effort to isolate the feature they may have come from. By Level 2 an oval refuse pit packed with shell was isolated and pedestaled in the center of the unit as Feature 1. (Figure 28) Two other small possible features (2 and 3) appeared in Level 4. After removing the levels around the features to a depth of 80 cm (Floor 8), we removed the features to complete the excavation.

Test Unit B, a 1 x 2 m rectangle oriented north-south, was located in the west central area of the site near a small concentration of surface pottery (Figure 27). It contained no cultural features, though many root stains and other natural discolorations. This unit was excavated to a total depth of 165 cm. The goal was to go beyond the bottom of the cultural deposits, deep enough to characterize well the natural subsoil, and to make sure no earlier components were present. Therefore beginning with Level 10 the level thickness was increased to 20 cm to make better time. Interestingly, in Level 7 (-60 to -70cm) and Level 10 (-100 to -120 cm), two tiny chert flakes were recovered; this indicated either much downward movement of small cultural items or else an extremely low density earlier prehistoric component.

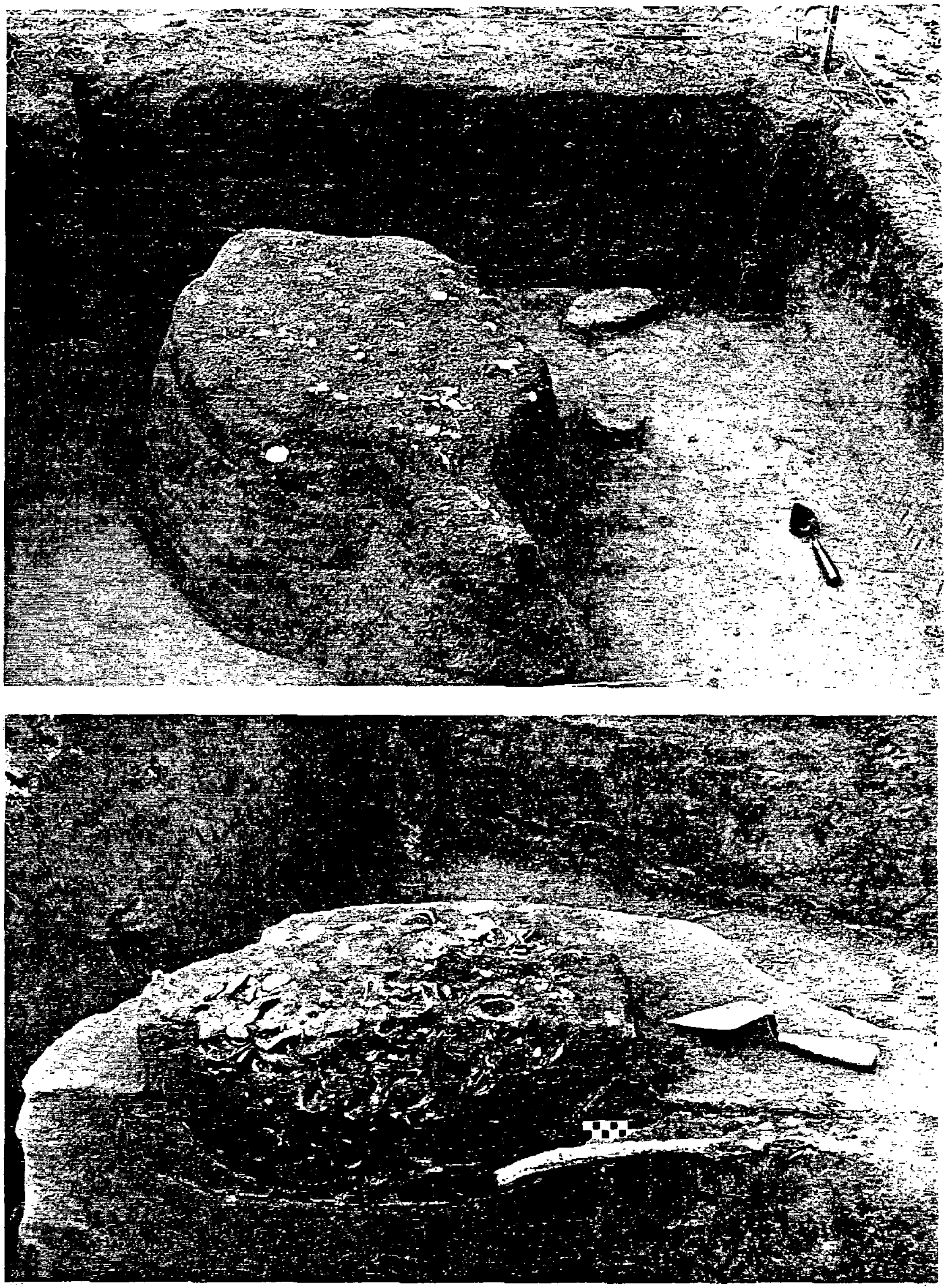


FIGURE 28. Feature 1 in Test Unit A at Corbin-Tucker site, 8Ca142. Top view of feature on pedestal showing top disturbed by plowing. Features 2 and 3 in right center. Bottom, cross-section of Feature 1 showing shell stratum (I) and dark zone below (stratum II). Trowels point north.

Test Unit C was another 1 x 2 dug on what turned out to be the northwest edge of the site. We were trying to approximate the location of the clay owl head found in 1986. At that time we had put flagging in a nearby tree, but we could not relocate it in 1988. Test Unit C was thought to be in its original vicinity until the last day of the excavation, when we learned that Test Unit E was actually near the owl effigy find. TU C had no features and few artifacts, and was taken to 125 cm depth.

Test Unit D, a 2 x 2 square, was placed in another area where there appeared a couple fragments of surface shell, though the possible feature of their origin was never found (they may have been plowed over from Unit A). Test Unit D was 20 meters southwest of Test Unit A, within the heaviest concentration of cultural materials at the site. One pit feature was encountered in this unit (Feature 4); total depth of excavation was 1 meter.

Test Unit E was a small square, 1 x 1 m, opened on the second-last day of work at the site to confirm the northern boundary. It was expected to yield few materials, much like Test Unit F at the south end. Instead it ended up as a test into an apparent cemetery. Feature 5 was the nomenclature originally given to the increasing evidence of a human burial turning up in this unit. By the time excavation was finished, and in the absence of any discrete boundaries for the grave, which contained several people and was clearly not all excavated by us, the whole unit was designated as Feature 5.

Because of the professional archaeological responsibility not to disturb any human remains more than necessary, and because our work at this site had to finish on time, we did not reach the bottom of cultural deposits in this square. On the last day we finally located our original orange flagging from 1986, now weathered pale yellow and barely visible as it flaked off, in a tree very near this unit. Clearly the owl head and other fancy ceramics were associated with this cemetery.

Test Unit F was a 1 x 1 m unit at the south end of the site. It contained no features and few artifacts, and was dug to 76 cm final depth. This evidence indicated it was close to the southern boundary of the cultural deposits.

Features

Feature 1 was the best, a stratified refuse pit with the only real sample of faunal remains preserved at the site (Figure 28). It was an oval measuring about 1 m north northwest-south southeast, and 88 cm wide. The uppermost 10 cm were disturbed, spread around by the plow. The feature had a total of 68.9 liters of fill, weighing 9 kg. In cross-section it was basin-shaped, about 50 cm deep, The top stratum was a black sandy matrix packed with freshwater mollusc shells; this overlay a zone of black soil with charcoal and sherds. The third stratum was evidently the brown soil (10YR4/4) created by leaching from the feature, and faded gradually into the lighter subsoil.

Within the naturally acidic soils perhaps the basic conditions caused by the presence of the shell was enough to preserve some bone fragments in this feature: gar fish bone and a raccoon jaw fragment, as well as other less identifiable fish, mammal and turtles. These were the only faunal remains recovered from the site (see later discussion and also Appendix 1B). This pit apparently functioned for garbage disposal, at least in its last use. It contained 6.5 kg of shells of freshwater molluscs and gastropods. Botanical remains identified were pine, oak, other unidentified woods, nutshells and seed fragments (see later discussion and also Appendix 5). A portion of the charcoal was sent for radiocarbon dating, and returned a result of 1080 $\pm$ 90 years B. P., or A.D. 870. This is probably too early, unless an earlier (late Weeden Island) component is present.

<u>Feature 2 and Feature 3</u> were two small dark oval stains appearing in Test Unit A at a depth of 45 cm, in the northeast corner. Feature 2 measured 15 cm long and 10 cm wide; Feature 3 was 30 cm long and 15 cm wide. Both were oriented northeast-southwest. In cross section Feature 3 branched into two tapered, flat bottomed shapes, and Feature 2 was a similar single one. Both extended about 20 cm deep until disappearing. They contained no cultural materials and could either be small early post molds (originating nearly 50 cm deeper than the top of Feature 1) or natural disturbances. The latter is more possible for Feature 3, which ended at a hollow opening.

<u>Feature 4</u> was a portion of what may have been a very shallow oval pit or natural disturbance in the southwest corner of Test Unit D. It disappeared after a few cm depth. Though it did contain a few sherds, it may have been some darker midden deposit smeared around by the activities of the prehistoric people.

<u>Feature 5</u> was the original designation given to the burial in Test Unit E.

<u>Burial Excavation</u>

When Test Unit E was first opened, Fort Walton Incised sherds, human teeth and a tiny green flake appeared in the screen. Shoveling was immediately halted and everything else uncovered painstakingly slowly and carefully, since the green was definitely copper, and very fragile. Several sherds of what turned out to be 5-pointed and other Fort Walton

Incised bowls were uncovered; some of these had been interred in an inverted position.

As more teeth and sherds were unearthed, adjacent to the center of the east wall appeared the rough outline of a badly decayed cranium, lying on the right side facing north. It had a few lower teeth articulated with the uppers. More slow troweling revealed that this was the head of an apparently important individual, buried with a greenstone celt placed over the neck, lying flat with bit pointing north. There was a green copper disc over the area near the right eye, as it appeared in the ground, positioned on end (Figure 29). Because it was first identified as an ear spool, it was thought to be dislodged from the right ear, the left earspool of the pair perhaps having been plowed away. Later the reconstructed frontal bone showed the circular greenish black stain from the copper to be right in the middle of the forehead.

Other clusters of teeth appeared just north of this cranium and a few cm above it, and also in the north center of the unit, associated with a long bone fragment and Fort Walton Incised and Point Washington Incised sherds of at least three incomplete vessels, including the 5-pointed open bowl. Later analysis demonstrated that at least five individuals were represented by the remains. There was no indication of any pit outline in which they were placed, nor any clear stratigraphy in the unit walls. The aboriginal disturbance and later more shallow plowing of the upper part had apparently obscured any stratigraphy; or else we had come down on the middle of a larger interment and therefore saw no edges.

This is a protected site; conservation of these deposits intact is preferable according to the Florida law on unmarked human graves. In consultation with the state archaeologist it was decided to recover for study only the materials already exposed. Thus the bottom of the cultural deposits was not reached.

We also provided reasonable support for a covering (general) law of archaeology best articulated by the Master on the Mountaintop to Kent Flannery (1986:514): that the burial is always found on the last (in this case, second-last) day of the field season, and much of it will extend into the unit profile.

CERAMICS

Pottery

Nearly 14.7 kg of potsherds were recovered at Corbin-Tucker, totaling 3052. They are summarized for the entire site on Table 45, and for each unit by level in Tables 46 through 51. Figure 30 graphs the relative frequencies by count and weight (showing, interestingly enough,

FIGURE 29. Burial *in situ* at the Corbin-Tucker site. Copper disc is in center of forehead, greenstone celt under chin of skull facing left (north). Sherds include corner of five-pointed open bowl (at left center).

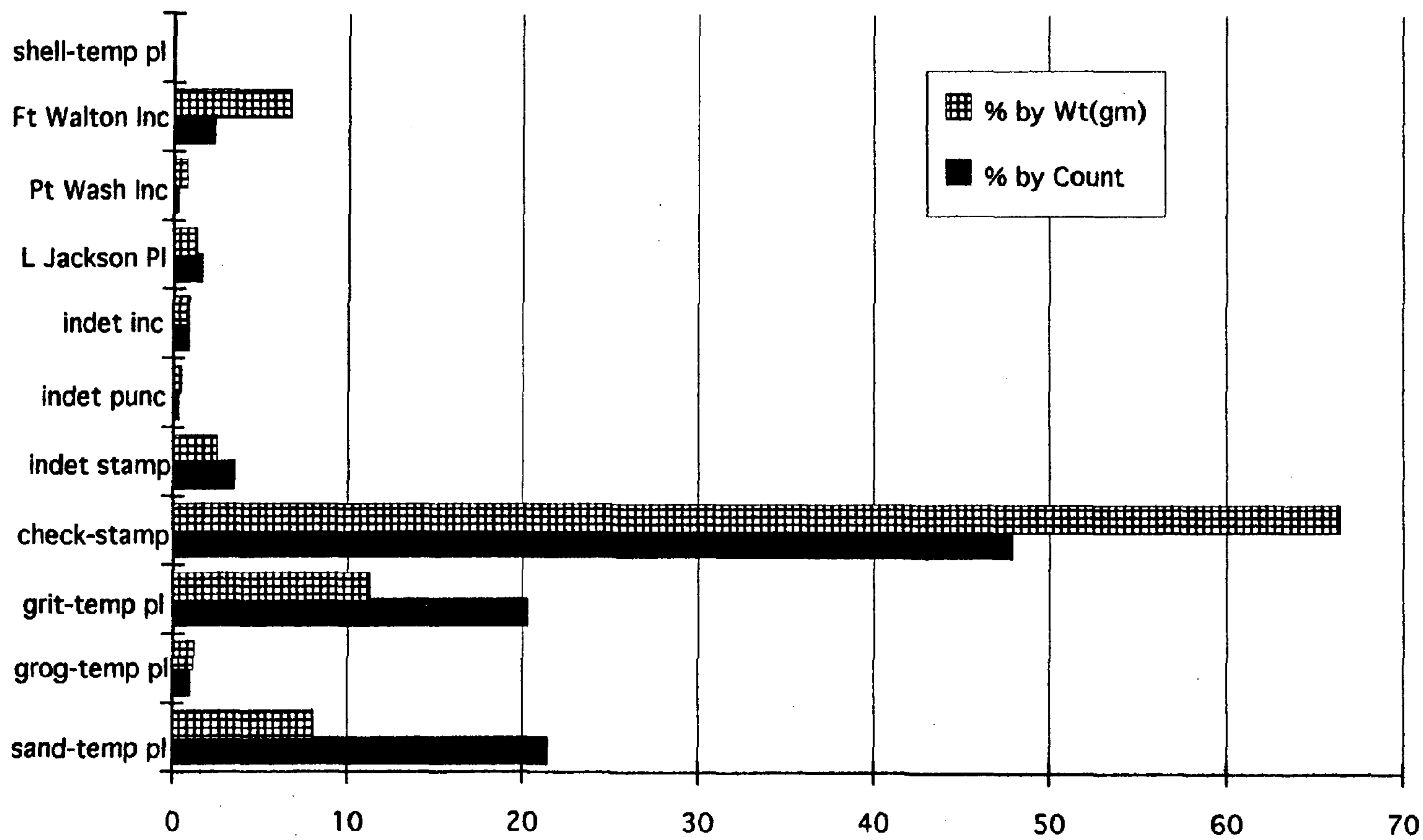


FIGURE 30. Graph of ceramic type relative frequencies at the Corbin-Tucker site.

TABLE 45. CERAMICS FROM THE CORBIN-TUCKER SITE, 8Ca142, BY GENERAL PROVENIENCE, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	TEST UNIT A CT	TEST UNIT A WT	TEST UNIT B CT	TEST UNIT B WT	TEST UNIT C CT	TEST UNIT C WT	TEST UNIT D CT	TEST UNIT D WT	TEST UNIT E CT	TEST UNIT E WT	TEST UNIT F CT	TEST UNIT F WT	MIXED LEVELS CT	MIXED LEVELS WT	FEATURES CT	FEATURES WT	SURFACE CT	SURFACE WT	TOTALS CT	TOTALS WT
SHELL-TEMP PL							1	3									1	13	2	16
FT WALTON INC									59	845			2	67			11	76	72	987
PT WASH INC									4	27			2	53			3	41	9	121
L JACKSON							1	2	43	137							7	57	51	196
INDET INC	1	1					4	10	10	22			1	1			13	105	29	139
INDET PUNC	1	22			1	7	4	22									5	24	11	74
INDET STAMP	56	195	2	7			30	84			6	12	2	14	5	19	7	34	108	364
CHECK-STAMP	183	1553	66	385	3	28	554	2203			12	56	13	48	10	25	622	5464	1463	9764
GRIT-TEMP PL	18	50	7	26	4	14	174	319	308	760	19	22	8	28	1	1	81	439	620	1658
GROG-TEMP PL	3	3			1	2	5	7	14	120			4	3			5	46	32	180
SAND-TEMP PL	124	130	66	69	7	21	184	147	74	82			5	9	15	64	180	658	655	1180
TOTAL	386	1955	141	487	16	72	957	2796	512	1992	37	90	37	222	31	109	935	6955	3052	14678
BY PROVIENCE																				
SHELL-TEMP PL																				
FT WALTON INC									12	42			5	30			1	1	2	7
PT WASH INC									1	1			5	24				1		1
L JACKSON									8	7							1	1	2	1
INDET INC									2	1			3				1	2	1	1
INDET PUNC		1			6	9		1									1			1
INDET STAMP	15	10	1	1			3	3			16	13	5	6	16	17	1		4	2
CHECK-STAMP	47	79	47	79	19	39	58	79			32	63	35	21	32	23	67	79	48	67
GRIT-TEMP PL	5	3	5	5	25	19	18	11	60	38	51	24	22	13	3	1	9	6	20	11
GROG-TEMP PL	1				6	2	1		3	6			11	1			1	1	1	1
SAND-TEMP PL	32	7	47	14	44	29	19	5	14	4			14	4	48	59	19	9	21	8
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE																				
SHELL-TEMP PL							50	21									50	79	100	100
FT WALTON INC									82	86			3	7			15	8	100	100
PT WASH INC									44	22			22	44			33	34	100	100
L JACKSON							2	1	84	70							14	29	100	100
INDET INC	3	1					14	7	34	16			3	1			45	76	100	100
INDET PUNC	9	30			9	9	36	29									45	32	100	100
INDET STAMP	52	54	2	2			28	23			6	3	2	4	5	5	6	9	100	100
CHECK-STAMP	13	16	5	4			38	23			1	1	1		1		43	56	100	100
GRIT-TEMP PL	3	3	1	2	1	1	28	19	50	46	3	1	1	2			13	26	100	100
GROG-TEMP PL	9	2			3	1	16	4	44	67			13	2			16	26	100	100
SAND-TEMP PL	19	11	10	6	1	2	28	12	11	7			1	1	2	5	27	56	100	100
% OF TOTAL																				
SHELL-TEMP PL																				
FT WALTON INC									2	6								1	2	7
PT WASH INC																				1
L JACKSON									1	1									2	1
INDET INC																		1	1	1
INDET PUNC																				1
INDET STAMP	2	1					1	1											4	2
CHECK-STAMP	6	11	2	3			18	15									20	37	48	67
GRIT-TEMP PL	1						6	2	10	5	1						3	3	20	11
GROG-TEMP PL										1									1	1
SAND-TEMP PL	4	1	2				6	1	2	1							6	4	21	8
% OF TOTAL	13	13	5	3	1		31	19	17	14	1	1	1	2	1	1	31	47	100	100

TABLE 46. CERAMICS FROM TEST UNIT A, CORBIN-TUCKER SITE, 8Ca142, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 1 (.36 m³)		LEVEL 2 (.36 m³)		LEVEL 3 (.28 m³)		LEVEL 4 (.40 m³)		LEVEL 5 (.28 m³)		TOTALS	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
INDET INC					1	1					1	1
INDET PUNC					1	22					1	22
CHECK-STAMP	75	519	72	567	30	429	5	35	1	3	183	1553
INDET STAMP	20	30	26	148	8	9			2	9	56	195
GRIT-TEMP PL	18	50									18	50
GROG-TEMP PL	3	3									3	3
SAND-TEMP PL	29	28	60	64	23	26	10	8	2	4	124	130
TOTAL	145	629	158	778	63	488	15	43	5	16	386	1955
% BY PROVIENCE												
INDET INC					2							
INDET PUNC					2	5						1
CHECK-STAMP	52	82	46	73	48	88	33	82	20	19	47	79
INDET STAMP	14	5	16	19	13	2			40	55	15	10
GRIT-TEMP PL	12	8									5	3
GROG-TEMP PL	2										1	
SAND-TEMP PL	20	4	38	8	37	5	67	18	40	27	32	7
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPES												
INDET INC					100	100					100	100
INDET PUNC					100	100					100	100
CHECK-STAMP	41	33	39	36	16	28	3	2	1		100	100
INDET STAMP	36	15	46	76	14	5			4	5	100	100
GRIT-TEMP PL	100	100									100	100
GROG-TEMP PL	100	100									100	100
SAND-TEMP PL	23	22	48	49	19	20	8	6	2	3	100	100
% OF TOTAL												
INDET INC												
INDET PUNC						1						1
CHECK-STAMP	19	27	19	29	8	22	1	2			47	79
INDET STAMP	5	2	7	8	2				1		15	10
GRIT-TEMP PL	5	3									5	3
GROG-TEMP PL	1										.1	
SAND-TEMP PL	8	1	16	3	6	1	3		1		32	7
% OF TOTAL	38	32	41	40	16	25	4	2	1	1	100	100

TABLE 47. CERAMICS FROM TEST UNIT B, CORBIN-TUCKER SITE, 8Ca142, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.20 m^3)		LEVEL 2 (.22 m^3)		LEVEL 3 (.18 m^3)		LEVEL 4 (.26 m^3)		LEVEL 5 (.20 m^3)		TOTALS	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
CHECK-STAMP	22	113	19	84	12	103	10	58	3	28	66	385
INDET STAMP			1	6	1	1					2	7
GRIT-TEMP PL	1	3			5	19	1	4			7	26
SAND-TEMP PL	17	17	24	27	16	18	8	6	1	1	66	69
TOTAL	40	132	44	117	34	141	19	68	4	29	141	487
% BY PROVIENCE												
CHECK-STAMP	55	85	43	72	35	73	53	84	75	98	47	79
INDET STAMP			2	5	3	1					1	1
GRIT-TEMP PL	3	2			15	14	5	6			5	5
SAND-TEMP PL	43	13	55	23	47·	13	42	9	25	2	47	14
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPES												
CHECK-STAMP	33	29	29	22	18	27	15	15	5	7	100	100
INDET STAMP			50	86	50	14					100	100
GRIT-TEMP PL	14	10			71,	74	14	16			100	100
SAND-TEMP PL	26	25	36	39	24	27	12	9	2	1	100	100
% OF TOTAL												
CHECK-STAMP	16	23	13	17	9	21	7	12	2	6	47	79
INDET STAMP			1	1	1						1	1
GRIT-TEMP PL	1	1			4	4	1	1			5	5
SAND-TEMP PL	12	3	17	5	11	4	6	1	1		47	14
% OF TOTAL	28	27	31	24	24	29	13	14	3	6	100	100

TABLE 48. CERAMICS FROM TEST UNIT C, CORBIN-TUCKER SITE, 8Ca142, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 1 (.46 m³)		LEVEL 2 (.20 m³)		LEVEL 3 (.20 m³)		LEVEL 4 (.22 m³)		LEVEL 5 (.18 m³)		TOTALS	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
INDET PUNC									1	7	1	7
CHECK-STAMP			2	22					1	7	3	28
GRIT-TEMP PL			1	5	3	9					4	14
GROG-TEMP PL							1	2			1	2
SAND-TEMP PL	1	1			3	13	3	8			7	21
TOTAL	1	1	3	26	6	22	4	9	2	13	16	72
% BY PROVIENCE												
INDET PUNC									50	50	6	9
CHECK-STAMP			67	82					50	50	19	39
GRIT-TEMP PL			33	18	50	42					25	19
GROG-TEMP PL							25	18			6	2
SAND-TEMP PL	100	100			50	58	75	82			44	29
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPES												
INDET PUNC									100	100	100	100
CHECK-STAMP			67	76					33	24	100	100
GRIT-TEMP PL			25	34	75	66					100	100
GROG-TEMP PL							100	100			100	100
SAND-TEMP PL	14	4			43	60	43	36			100	100
% OF TOTAL												
INDET PUNC									6	9	6	9
CHECK-STAMP			13	30					6	9	19	39
GRIT-TEMP PL			6	7	19	13					25	19
GROG-TEMP PL							6	2			6	2
SAND-TEMP PL	6	1			19	18	19	11			44	29
% OF TOTAL	6	1	19	37	38	31	25	13	13	19	100	100

TABLE 49. CERAMICS FROM TEST UNIT D, CORBIN-TUCKER SITE, 8Ca142, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.76 m^3)		LEVEL 2 (.40 m^3)		LEVEL 3 (.48 m^3)		LEVEL 4 (.36 m^3)		LEVEL 5 (.52 m^3)		LEVEL 6 (.28 m^3)		LEVEL 7 (.52 m^3)		TOTALS	
	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
SHELL-TEMP PL	1	3													1	3
L JACKSON PL	1	2													1	2
INDET INC	3	9	1	1											4	10
INDET PUNC	3	16	1	5											4	22
INDET STAMP	17	37	10	44	3	3									30	84
CHECK-STAMP	374	1447	112	485	48	211	4	18	7	17	7	16	2	10	554	2203
GRIT-TEMP PL	88	200	48	69	22	39	1	2	5	5	10	5			174	319
GROG-TEMP-PL	3	3									2	3			5	7
SAND-TEMP PL	112	109	50	32	15	4			3	1	1	1	3	1	184	147
TOTAL	602	1827	222	635	88	256	5	20	15	23	20	24	5	11	957	2796
% BY PROVIENCE																
SHELL-TEMP PL																
L JACKSON PL																
INDET INC																
INDET PUNC		1		1												1
INDET STAMP	3	2	5	7	3	1									3	3
CHECK-STAMP	62	79	50	76	55	82	80	90	47	75	35	64	40	94	58	79
GRIT-TEMP PL	15	11	22	11	25	15	20	10	33	20	50	20			18	11
GROG-TEMP-PL											10	13			1	
SAND-TEMP PL	19	6	23	5	17	2			20	4	5	2	60	6	19	5
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPE																
SHELL-TEMP PL	100	100													100	100
L JACKSON PL	100	100													100	100
INDET INC	75	88	25	12											100	100
INDET PUNC	75	75	25	25											100	100
INDET STAMP	57	45	33	52	10	3									100	100
CHECK-STAMP	68	66	20	22	9	10	1	1	1	1	1	1			100	100
GRIT-TEMP PL	51	63	28	22	13	12	1	1	3	1	6	2			100	100
GROG-TEMP PL	60	51									40	49			100	100
SAND-TEMP PL	61	74	27	22	8	3			2	1	1		2		100	100
% OF TOTAL																
SHELL-TEMP PL																
L JACKSON PL																
INDET INC																
INDET PUNC		1														1
INDET STAMP	2	1	1	2											3	3
CHECK-STAMP	39	52	12	17	5	8		1	1	1	1	1			58	79
GRIT-TEMP PL	9	7	5	2	2	1			1		1				18	11
GROG-TEMP PL															1	
SAND-TEMP PL	12	4	5	1	2										19	5
% OF TOTAL	63	65	23	23	9	9	1	1	2	1	2	1	1		100	100

TABLE 50. CERAMICS FROM TEST UNIT E, CORBIN-TUCKER SITE, 8Ca142, BY COUNTS AND WEIGHTS IN GRAMS.

TYPE	LEVEL 1 (.21 m^3) CT	WT	LEVEL 2 (.07 m^3) CT	WT	LEVEL 3 (.10 m^3) CT	WT	LEVEL 4 (.06 m^3) CT	WT	LEVEL 5 (.08 m^3) CT	WT	TOTALS CT	WT
FT WALTON INC	43	309	4	180	5	46	5	301	2	9	59	845
PT WASH INC	1	5			3	22					4	28
L JACKSON PL	41	122	2	16							43	137
INDET INC	10	22									10	22
GRIT-TEMP PL	277	684	20	36	6	29	1	3	4	8	308	760
GROG-TEMP PL	10	67	3	11	1	41					14	120
SAND-TEMP PL	63	74	1	1	9	6	1	2			74	82
TOTAL	445	1283	30	244	24	143	7	306	6	16	512	1992
% BY PROVIENCE												
FT WALTON INC	10	24	13	74	21	32	71	98	33	53	12	42
PT WASH INC					13	15					1	1
L JACKSON PL	9	9	7	6							8	7
INDET INC	2	2									2	1
GRIT-TEMP PL	62	53	67	15	25	20	14	1	67	47	60	38
GROG-TEMP PL	2	5	10	5	4	28					3	6
SAND-TEMP PL	14	6	3		38	4	14	1			14	4
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPES												
FT WALTON INC	73	37	7	21	8	5	8	36	3	1	100	100
PT WASH INC	25	19			75	81					100	100
L JACKSON PL	95	89	5	11							100	100
INDET INC	100	100									100	100
GRIT-TEMP PL	90	90	6	5	2	4			1	1	100	100
GROG-TEMP PL	71	56	21	9	7	34					100	100
SAND-TEMP PL	85	90	1	1	12	7	1	2			100	100
% OF TOTAL												
FT WALTON INC	8	16	1	9	1	2	1	15			12	42
PT WASH INC					1	1					1	1
L JACKSON PL	8	6		1							8	7
INDET INC	2	1									2	1
GRIT-TEMP PL	54	34	4	2	1	1			1		60	38
GROG-TEMP PL	2	3	1	1		2					3	6
SAND-TEMP PL	12	4			2						14	4
% OF TOTAL	87	64	6	12	5	7	1	15	1	1	100	100

TABLE 51. CERAMICS FROM TEST UNIT F, CORBIN-TUCKER SITE, 8Ca142, BY COUNTS AND WEIGHTS IN GRAMS.

	LEVEL 1 (.18 m³)		LEVEL 2 (.12 m³)		LEVEL 3 (.10 m³)		LEVEL 4 (.10 m³)		LEVEL 5 (.16 m³)		TOTALS	
TYPE	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
CHECK-STAMP	4	13			4	30	3	12	1	1	12	56
INDET STAMP			4	6	1	5			1	1	6	12
GRIT-TEMP PL	13	17	3	2	1	1	2	2			19	22
TOTAL	17	30	7	8	6	36	5	14	2	2	37	90
% BY PROVIENCE												
CHECK-STAMP	24	43			67	83	60	89	50	70	32	63
INDET STAMP			57	73	17	14			50	30	16	13
GRIT-TEMP PL	76	57	43	27	17	3	40	11			51	24
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100
% WITHIN TYPES												
CHECK-STAMP	33	23			33	53	25	21	8	2	100	100
INDET STAMP			67	53	17	42			17	5	100	100
GRIT-TEMP PL	68	78	16	10	5	5	11	7			100	100
% OF TOTAL												
CHECK-STAMP	11	15			11	33	8	13	3	2	32	63
INDET STAMP			11	7	3	5			3	1	16	13
GRIT-TEMP PL	35	19	8	2	3	1	5	2			51	24
% OF TOTAL	46	33	19	9	16	40	14	15	5	2	1002	100

that the check-stamped sherds from even this much later time period are still smaller, suggesting much domestic use, wear, and breakage).

Units in what is considered the domestic area in the southern portion of the site produced an extremely different assemblage than that from Test Unit E in the burial area. Two components may even be represented: The check-stamped (including all the indeterminate stamped, which doubtless is checked) and much of the plain may be a domestic early Fort Walton assemblage. Or it may be a second, earlier component from the Late Woodland (late Weeden Island), though not one sherd of any recognizable Weeden Island type was recovered.

Domestic Midden Area: The entire southern 2/3 of the site (surface and all units except E) produced nearly all check-stamped and plain ceramics. Most are gritty, and many also have grog temper, though they are not sloppy or linear in the stamp like those from the Early Woodland (Deptford) in the shell mounds.

Test Units A, C, and D had very small amounts of indeterminate incised or punctate. None of these could be identified as to type. There is the possibility that they are Weeden Island types, as well as the probability that they are Fort Walton. Test Unit D also produced a Lake Jackson and a shell-tempered plain sherd, even more support for the single component hypothesis. However, all of these could be from later disturbance of an earlier occupation, of course.

This kind of assemblage can be characteristic of early Fort Walton, but usually contains more Fort Walton Incised or at least Lake Jackson (Plain or Incised) sherds in larger amounts (cf. Willey 1949, White 1982). Without those types it could be characteristic of late Weeden Island, but again would need a few diagnostic types of that period, Carrabelle Incised and Punctated being the most common, or Keith Incised. None of the incised or punctated sherds from any units outside the burial area could unquestionably be labeled Fort Walton or Weeden Island types. As is clear from the original type descriptions (Willey 1949), the attributes often overlap. A body sherd with a few parallel incisions or some punctations on the surface does not give enough information for classification, and can be used to support either interpretation.

Burial Area: Analysis of the positioning and reconstruction of ceramics associated with the burial area (Test Unit E and surface of north end of site) at the Corbin-Tucker site was done by Charles Fuhrmeister as part of a senior honors thesis in anthropology at USF. His work is abstracted here.

Only one check-stamped sherd came from the burial area (from mixed levels). If the site actually has two components, this means that the later Fort Walton one extended farther north than the earlier (late Weeden Island) component. If the site is a single-component Fort Walton occupation, this means that the burial area was kept fairly clean of domestic refuse, if we can assume check-stamped pots were only for utilitarian purposes.

All the identifiable Fort Walton Incised ceramics at the Corbin-Tucker site came from the burial area, including those from mixed levels of Test Unit E (Table 45). Partial vessels and single sherds were apparently interred already broken with the dead people (see Figure 31); those closer to the surface were broken more by the plow. Sherds that would normally have been classed as plain grit-tempered were counted as Fort Walton Incised when they fit to make the plain portions of those types of vessels.

A majority of this pottery was tempered with large red grit particles, but the surfaces were smoothed and made well enough to obscure some of this temper, so that it was best seen in broken edges. Red grit temper particles have been noted as characteristic of Fort Walton and later aboriginal ceramics in this valley (White 1981, 1982).

After reconstruction of the (partial) vessels (listed by individual sherd count in Table 50) excavated in the cemetery area, Fuhrmeister (1989:18-19) was able to describe them as follows:

2 five-sided (5-pointed) Fort Walton Incised plates or open bowls. One is mostly complete, missing only one corner and some internal (plain) area. It is still too incomplete to determine whether or not there was any kill hole in the center. This vessel was inverted in the area of the leg bone and teeth, at the north end of Test Unit E, apparently with a certain individual. The other vessel is represented by a smaller fragment, consisting of one corner, interred right side up near the individual with the skull, copper disc, and celt (Figure 29). It is considered a 5-sided bowl based on the angle.

1 probably six-sided open bowl or plate, of a more common design similar to that illustrated in Moore (1901:444) and Willey (1949:461d). This came from the unit surface.

Several Fort Walton Incised bowls with serpentine incised designs incorporating zoned punctates. The most complete of these is a small bowl with a rim diameter of about 10 cm and height about 7 cm. Half of this bowl was found inverted about 20 cm above the individuals (Figure 31, top). Another rather large piece, reconstructed from plow zone sherds, is part of a larger probable beaker.

FIGURE 31. Fort Walton partial ceramic vessels from Corbin-Tucker site, Test Unit E, burial area. Top, small bowl from Level 1; bottom, most of five-pointed open bowl from Level 4.

6 qualitatively different Lake Jackson Incised rims with one to three nodes and several incised lines below the rim.

1 probable Point Washington Incised bottle. This type is recognized by the absence of punctations, and parallel curvilinear, almost guilloche-shaped incisions. This vessel was pieced together from sherds found at the burial level, about 65 cm depth, and above. The sherds are different colors depending on where they were found, with the plow zone pieces darker and more weathered.

The owl effigy adorno (Figure 32) and other Fort Walton Incised pieces (Figure 27) found by the landowners over the years are also associated with the burial area. The owl is naturalistically sculpted on all sides (apparently feather tufts are broken off the back of the head), and apparently would have been facing inward toward the vessel whose rim it adorned.

Associations with Fort Walton pottery from elsewhere are noted by Fuhrmeister (1989:19-20) as follows: According to Lazarus and Hawkins (1976:1) inward-facing rim effigies were early Fort Walton, carried over from the tradition of Weeden Island vessels; later in Fort Walton rim effigy heads faced outward as entire bowls became effigies.

Five-sided plates occur less often than six-sided ones. Moore (1901:460) illustrates a 5-sided bowl from Choctawhatchee Bay (westward along the Gulf from the Apalachicola drainage) with definite Southeastern Ceremonial Complex (Southern Cult) motifs. He illustrates another from the Chipola Cutoff mound, just 10 river miles down the Apalachicola from Corbin-Tucker, close to where the Chipola enters the bigger river. This mound, now gone, had everything from Weeden Island materials to Fort Walton remains apparently late enough to be from the very earliest period of contact, since they included European metals (Moore 1903:451, Fig. 100; Willey 1949; White and Trauner 1987). The vessel from Corbin-Tucker is very similar to that from the Chipola Cutoff.

Finally, the Lake Jackson Rim styles at this site are worthy of some comment. There are plain and ticked rims (which may also be from Fort Walton Incised vessels), notched rims, rims with nodes and small lugs, one even castellated (pointed) above the node. Some have one or two horizontal incisions below the rim and others have none. There are no handles or vertical grooves, rim treatments which might indicate later Fort Walton. There is no Lamar pottery, which would also be indicative of very late Fort Walton if it were present.

FIGURE 32. Artifacts from the Corbin-Tucker site: greenstone celt from burial, ceramic owl effigy from Corbin family surface collection.

Other Ceramic Materials

In this category are just a few miscellaneous items, as listed in Table 52. Some mostly small fragments may be daub, but are more likely something else, perhaps toys or leftover bits from pottery making. If this is a fairly sedentary village, it is surprising that no unquestionable and large daub remains were recovered. Elsewhere in the valley big fragments of this clay that would have been plastered on the outside of house walls are very common; they often have grass or cane pole marks and even fingermarks (White 1982). Either the houses at Corbin-Tucker were in an area of the site we did not test, or they did not build any in this fashion. Perhaps if it is an isolated ceremonial site the people did not actually stay here long, but just came to bury their dead (?).

TABLE 52. NON-VESSEL CLAY REMAINS FROM THE CORBIN-TUCKER SITE, 8Ca142.

Provenience	Description	Wt (g)
TU A L 1	1 poss daub frag	.8
TU A L 2	2 poss daub frag	1.9
TU A L 4	3 poss daub frags	3.6
TU A L 6	3 poss daub frags, crumbs	5.6
TU B L 1	1 tiny ceramic cylinder frag, bead preform?	.9
TU D L 1	6 poss daub frags	6.8
	1 irregular clay "squeezing" or rough adorno	3.3
TU D L 2	2 grit-tempered clay lumps, remains from pottery making?	3.1
TU D L 3	1 grit-tempered plain burnished cone, appears broken off pot	7.7
TU D L 5	1 poss daub frag	2.9

Other remains include a tiny cylindrical fragment of clay that may be a broken segment of a preform for a bead or a figurine fragment. It is 8.3 mm in diameter and 7.6 mm long. There is also an unusual rounded cone of grit-tempered, fired, burnished clay that clearly has broken off something at the base. It is 3 cm tall and 1.8 cm in diameter at the base, and might be a figurine arm or leg.

LITHIC MATERIALS

Chipped Stone

Only 10 chipped stone items were recovered at Corbin-Tucker (Table 53); little lithic tool production or use took place here. All specimens are secondary debitage, occasionally thermally altered, indicating a little sharpening, minimum maintenance of a very few stone tools.

TABLE 53. LITHIC MATERIALS FROM THE CORBIN-TUCKER SITE, 8Ca142.

Chipped Stone (counts/weights in grams)

Provenience	Block Shatter Frags	Secondary Flakes	Comments
Surface	1/4.0		pink, thermally altered, use wear
TU A L 1		2/3.2	
TU A L 4		2/<.5	very tiny, bifacial thinning flakes
TU B L 7		1/<.5	
TU B L 10		2/1.3	
TU C L 5	1/ .8		pink, thermally altered
TU C L 8		1/<.5	very weathered

Other Stone

Provenience	Material	Weight (grams)
Surface	1 quartzite pebble chip	1.1
TU D L 3	1 quartzite chip	.3
TU E burial	1 polished greenstone celt	2243.7

This is very typical of Fort Walton sites along the Apalachicola River. For unknown reasons these people barely used any chipped stone. Some archaeologists think sharpened cane arrows, such as noted in the accounts of the first European explorers, were prevalent, obviating the need for stone tools. This is not a good enough explanation, however, as earlier and later cultural groups in this valley left plenty of chipped stone debris (White 1981, 1982). So did late contemporaneous prehistoric Mississippian stage cultures elsewhere in the Southeast. No one has come up with any testable hypotheses for this phenomenon in the Apalachicola.

The paucity of chert at the Corbin-Tucker site does strongly support the single component Fort Walton characterization of the site, however. Late Weeden Island sites in this valley are usually full of chert debitage and tools. The three flakes in Test Unit A, in the vicinity of the feature dated to A.D. 870, a nice late Weeden Island date, may be some small evidence for a late Weeden Island presence, if only in that single feature.

In our attempts to ascertain the presence of any earlier prehistoric occupation by taking Test Unit B to greater depths, three weathered tiny flakes were unearthed below 70 cm, well out of the Fort Walton midden zone. Another one came from a deep level of Test Unit C. These four slim pieces of evidence could mean a very low density earlier occupation of this sandy ridge. Or they could simply be from the Fort Walton occupation, having drifted down due to trampling, rodent activity, and other natural and/or cultural processes.

Other Stone

Other than a couple quartzite pebble chips (and a few pieces of pea gravel, limestone, and sandstone concretions that are natural and therefore not included on Table 53), the only other stone encountered by the work at Corbin-Tucker was the greenstone celt (Figure 32). This artifact is 24 cm long, 2.2 kilograms (about a foot long and weighing five pounds), 8 cm wide at the bit and 4.6 cm at the butt end, and 4.3 cm thick at the thickest point. It is of greenstone that had to be imported from the Appalachian Mountains. Similar celts have been recovered in other burial contexts along the Apalachicola (White 1982). This one is not worn or utilized. Its position directly below the chin of the principal burial may also be interpreted as lying crosswise atop the left shoulder at the neck, bit end forward.

COPPER ARTIFACT

The copper disc (Figure 33) from the high status burial became more interesting as the analysis progressed. It is extremely thin, as if it were a covering for a wooden ear spool, unlike a solid copper ear spool, which would have been thicker. It is 4.6 cm in diameter and weighs 2.3 g. In the field we could see it had a raised central boss. Since it was in the ground on end *in situ* and hit by our hand tools, unfortunately we were responsible for some or possibly all of the breakage.

Appendix 3 presents the detailed physical and chemical analyses by all the specialists who donated their services toward the understanding of this artifact, as well as a description of the conservation procedure. I summarize these analyses and conclusions here.

The x-ray of the disc showed some cracks but no center hole, which would be expected of an ear spool for attachment. If it was just a cover for a wood spool, however, this would make more sense. Though conservator Maseman extracted some fragments of charcoal from behind the disc, it was not enough to suggest an ear spool. When he cleaned it thoroughly under the microscope with a tiny scalpel, this exposed better 11 raised bosses spaced about every centimeter around the circumference of the disc. It also showed areas of a hard black substance covering the copper, at places wrapping around the edge and continuing to the underside a short distance. A microprobe on a scanning electron microscope proved these areas to be coated with lead and other elements. Except for fragments sent for further examination, the disc was then stabilized with the appropriate chemical adhesive and reconstructed.

Maseman originally suggested that the lead coating was either pounded or rubbed on, maybe using a piece of galena. When polished it

FIGURE 33. Copper disc from Corbin-Tucker site. Top, top surface right after excavation. Bottom, top and bottom surfaces after cleaning, reconstruction, and conservation (note white polyester strips on upper right of bottom surface).

would have remained lustrous for perhaps an hour or two, then tarnished to a dull gray. If it was a central decoration of a headdress worn on the forehead, it may have been polished for certain ritual occasions. Lead-covered copper artifacts are not reported in the literature for early Fort Walton or other early Mississippian contexts, as far as I can ascertain. Willey (1949) notes occurrences of galena and plumbago (graphite) in northwest Florida mounds, but usually in Middle Woodland (early Weeden Island) contexts. Significantly, the later analyses by Scott and Palmer (Appendix 3B, 3C), as I understand them, indicate that the concentration of lead and other minerals on the outside of the disc could also have occurred by natural processes after burial of this object. In other words the lead was a trace element that migrated to the surface, and possibly not a deliberate coating.

Copper ear spools similar in size and shape have come from mound contexts along the Apalachicola. But they are more often Middle Woodland in cultural affiliation, perhaps 500 or more years older, though they are known from later contexts as well. Fuhrmeister notes (1989:23) two similar sheet copper artifacts with raised bosses along the perimeter found on the south Georgia coast by Moore and linked to the Southeastern Ceremonial Complex by Larson (1957:429).

I have discussed this copper disc with Calvin Jones of the Florida Division of Historical Resources, and in 1989 (at the Southeastern Archaeological Conference meeting in Tampa) showed it to Jonathan Leader of the South Carolina Institute of Archaeology and Anthropology. Both these experts stated that, based on its style, they thought the disc was most likely of early historic aboriginal manufacture. Scott's evaluation of the raw material (Appendix 3B) also considered it to be typical of historic period metalwork. This characterization is inconsistent with all the rest of the evidence from the site, however. No early historic (aboriginal or non-aboriginal) materials were recovered, nor any protohistoric materials (such as Lamar pottery), nor even anything unquestionably indicative of later Fort Walton.

Perhaps because such painstaking conservation and expensive analyses as those graciously provided by our specialists (Appendix 3) are not usually available to archaeologists, such materials as this enigmatic copper artifact have not yet been well recognized elsewhere. Despite conflicting data, however, and even with new (and even more confusing) evidence concerning copper recovered from further work at the site (see last section, below), the best reconstruction at present is still that the disc is from the early Fort Walton period, and that it probably covered a perishable (wood?) disc, with which it was affixed to the forehead (on a cloth/leather band or hat?) of the highest (?) status burial.

HUMAN SKELETAL REMAINS

Elements and Individuals

All of the very few skeletal remains, consisting of skull fragments and a long bone fragment, were the consistency of cheesecake when exposed in the ground. Most of the teeth were in crumbs. The bone and teeth had nearly decayed due to the acidity of the soil, no doubt, as had nearly all the rest of whatever animal bone the prehistoric people had left at the site. In order to reconstruct what little was possible of the skeleton and teeth and ascertain how many individuals were present, it was necessary to stabilize these fragments with a solution of PVA (Elmer's glue) and water. Unfortunately that meant giving up the chance for even an AMS radiocarbon date directly on the bone, as the ten grams of bone not worth treating were crumbs that would not yield enough carbon. The catalog of selected elements present, totaling only 154 grams, appears as Appendix 4, and Layman's report is abstracted as follows.

At least five individuals are represented by the remains excavated in the 1 x 1 m Test Unit E, according to the teeth recovered. Four are adults and one is a subadult. The osteological remains consist of 54 teeth and fragments, one reconstructed right anterior distal tibia, two left and one right petrous portions, and a reconstructed right frontal bone with nasal aperture and eye orbits, and a parietal bone and fragments. It is a mystery why only skull fragments and the tibia survived, unless they were the only elements interred, not an atypical situation.

Age determinations are based on dental attrition, and the subadult age is based on examination of deciduous teeth. Sex could not be determined for the skeletal remains, though the frontal bone (which was of the principal or highest (?) status burial) is estimated to be male, based on several areas of relative robustness. In the field there was some slight suggestion of frontal cranial deformation of this principal burial based on the shape of the skull outline in the ground (Figure 29). This condition could not be verified in the lab, partially, no doubt, because of post-mortem deterioration.

Dental remains, 54 whole and partial teeth, as well as numerous unidentifiable fragments, indicate the presence of at least five people, or at least their teeth. One right mandibular deciduous cuspid is an indication that one individual is a child.

Most of the teeth, especially central and lateral incisors and first and second molars, show excessive wear through the enamel, with molars often worn into the dentin. Excessive wear on the incisors could be from filing of teeth or using them as tools. Molar wear is most likely from diet. Many teeth have caries, including a few very large (and painful looking) ones. These are suggestive of an agricultural subsistence, with a starchy maize diet, which is more likely to cause cavities than the meats and greens of hunter-gatherers.

Burial Summary

Since we did not find any edges of a burial pit, nor get to the bottom of the cultural deposits in Test Unit E, it is unknown how big the grave was or how many individuals were present. Moreover, it cannot be determined whether entire bodies, just heads, or even just teeth were buried here with the principal (?) burial.

Perhaps the cranium of this one person was partially still present because of the preservative powers of the copper salts. Was the celt so evenly and closely placed beneath the chin because only the head was present even of the principal person? The soft yellow-brown sand showed no outline of other decayed bones to indicate whose partial lower leg is represented. It is possibly that of the principal person, though not in the right position for an extended or flexed skeleton, only for a possible bundle burial or a person buried on the right side in a sitting position with the legs extended straight out in front.

It is common for this time period in the Southeast that multiple interments are often present, sometimes just skulls or trophy heads with other individuals. Furthermore, honored dead were often left out to decay or buried, exhumed, and reburied (often multiple times) elsewhere in more fragmentary shape. The only other probably articulated groups of teeth besides those in the head (skull) were one group near the tibia at a slightly lower level than the head, and another group just above the head. While plowing may account for some of the disturbance, it did not extend deep enough to disturb the principal burial.

The best explanation for the burial area uncovered in Test Unit E is that it is part of a larger cemetery, where probably higher status dead were interred at different times. Subsequent ritual activity including exhumations and reburials continued disturbance of the area, so that the final archaeological record is a palimpsest of many different events.

The apparently most important person uncovered by our excavations was possibly a male, adult, buried with a large, heavy and unused greenstone celt that was doubtless a ceremonial object and put in an interesting position on the neck. It may have been a badge of office, symbol of woodworking, war, male status, or whatever. The person had a copper disc in the middle of the forehead probably attached to some sort of headdress. The disc may have been a glittery black or silvery color, but the evidence is tentative to indicate a lead coating. It is fun to speculate what else may have been present (feathers? leather? textiles? foods? woodcarvings?), but at present fruitless.

This person was buried either before or with at least three other adults and one subadult, whether entire bodies or partial skeletons or just heads, and all were probably part of a larger grave or else a much reutilized cemetery. Fort Walton ceramics of very decorative types, different from everyday domestic wares, were apparently first broken, then placed with the dead.

FAUNAL REMAINS

The few faunal remains preserved at this site and able to be recovered by our excavations were concentrated in Feature 1. They consist of shells and bone bits, as described in Appendix 1B, and listed in Table A1.22.

The dominant faunal specimens in this feature were shells of freshwater molluscs and terrestrial snails of several varieties (Unionidae, *Elliptio, Amblema, Obovaria, Viviparus, Polygyra, Pulmonata*). These could make an easy meal or snack by being steamed or boiled out of their shells. The vertebrate animals represented were turtle, fish, and unidentified mammal. The only specimens recognizable at the genus level were garfish bones. However, in addition to the fauna recovered from flotation of the feature fill, a raccoon left mandible fragment with a worn molar (1.8 g; not included in Table A1.22) was recovered from the disturbed (plowed) area on top the feature. Thus the pit seems to have held a simple accumulation of food garbage and charcoal, perhaps dumped in two episodes (strata) or else as one deposit from which organic materials leached downward to form a second, deeper stratum.

This faunal assemblage represents an interesting combination, with the emphasis again upon aquatic types. Enormous caution is needed in interpreting subsistence here, however, since the only faunal remains came from a single pit feature, and it is not 100% certain that this feature is Fort Walton in age, given the A.D. 870 date and non-diagnostic ceramics (check-stamped and plain).

BOTANICAL REMAINS

Botanical remains identified from the Corbin-Tucker site are described in detail in Appendix 5 and Table A5. They were very few and very small specimens, giving scant evidence for food procurement.

Feature 1, the shell/refuse pit, dated to the ninth century A.D., provided the most charcoal, predominantly pine, with some oak and less identifiable wood. Several small fragments of acorn and hickory nutshell in the feature are too small perhaps even to assume they are from human activity: if they are, they may have been for fuel as well as food. The only seeds were unidentified fragments except for a possible wax myrtle (*Myrica*) in stratum II. Much wood is unidentifiable. The primary identified wood is pine, including pine pitch; there are oak fragments, and some ring-porous and diffuse-porous hardwood specimens as well. These remains support the interpretation of this feature as a pit containing kitchen/domestic refuse.

All other botanical specimens identified are from test unit levels (both flotation and dry screen samples; total level volumes are given in ceramic Tables 45-51). Again the majority of samples are pine wood and resin, and unidentified/unidentifiable wood. Many proveniences produced unburned or partially charred wood that is probably modern. Test Unit A Level 3 produced a small fragment of plum/cherry (*Prunus*); this was a location near Feature 1. The only other interesting remains came from Test Unit E, the cemetery area, which produced more *Prunus* and several unidentified seeds (which may be fern spores) in addition to the typical pine and unidentified charcoal. This is not really enough evidence to say that different plant use was taking place in the cemetery area from that of the domestic portion of the site (the southern 2/3).

It is unclear why food plant remains are not present. The dental wear on the teeth and especially the caries suggest a maize diet, but so far no maize has been found, or any wild foods either. We know Fort Walton people ate maize and also wild plant foods, and we know Feature 1 had animal remains certainly indicative of food garbage.

SUMMARY AND INTERPRETATION

The Corbin-Tucker site may be more than what it seems. There may be a mound somewhere nearby in the forest (even large temple mounds can go unrecognized under heavy forest cover). The south end may be a late Weeden Island small village or camp, consistent with the most of the ceramic assemblage, the radiocarbon date, and even the shell pit (Feature 1), freshwater mollusc being frequently found in pits or even whole strata at Late Woodland as well as Fort Walton occupations (White 1981). However, the low reliability of chronological positioning based on a single radiocarbon date, coupled with the near absence of any chert remains as would be present at a Late Woodland site, and the occurrence of other early Fort Walton sites with a high percentage of check-stamped pottery, all argue for this site's characterization as a single component Fort Walton village and cemetery.

Since the 1988 investigations raised more questions than they answered, we took a brief opportunity to return to the Corbin-Tucker site in 1990, when another (unrelated) project brought USF archaeology students back to this area (but after the first draft of this report was submitted). The goal of the three days spent there was to obtain a better charcoal sample for radiocarbon dating, this time from the cemetery area. Test Unit E was expanded to a 2 x 2 m square (labeled E') with the same southwest corner, and the backfill was removed from the original 1 x 1 unit down to the unexcavated portion. Again, we did not intend to reach the bottom of the cultural deposits, only the top of the intact mortuary deposits. In case Test Unit E did not provide any charcoal, another unit, 1 x 2 m, labeled Test Unit G, was opened 10 m northeast of Test Unit E. In both excavations undisturbed evidence of mortuary activity was encountered immediately below the plow zone: In Test Unit G were long bone fragments, two skulls, teeth, another greenstone celt, a whelk (*Busycon*) shell dipper, and a ceramic mushroom-shaped object (pottery trowel?). None of these exotic artifacts was in very close association with individual bones. In Test Unit E' were additional bone fragments and teeth. In the center of the area of what was the north wall of original Unit E, fairly close to where the tibia was recovered in 1988, was another, thicker copper disc, with some charcoal under it. In the fill of both units there was Fort Walton Incised pottery throughout.

The second copper disc was removed for study, and after drying out in the laboratory it fell open to reveal that it was apparently two thin discs covering a wooden core. This artifact is currently undergoing conservation and analysis with John Maseman at the South Florida Conservation Laboratory in Pompano Beach. Analyses of data and materials recovered during this brief investigation are still in progress. Meanwhile the small piece of charcoal from under this second copper disc was sent for radiocarbon dating and returned an even more puzzling result than the previous date from this site: 1840$\pm$ 110 years B.P. or A.D. 110 (uncorrected; Beta 40905). The sample was very small (a quarter gram) and was given four times the normal counting time. It seems highly unlikely that the date is correct unless perhaps the copper disc or at least the burned wood underneath it had been curated by the Fort Walton people and their ancestors for something like a thousand years.

Clearly there are many conflicting kinds of information and unusual artifacts at this site. The data are insufficient to resolve any of the dating problems, and further radiocarbon dating is necessary before the archaeological investigations can be adequately described and interpreted. Still, the entire burial scenario, whether or not associated with the habitation area that was dated to A.D. 870, suggests some person or persons of higher social status within Fort Walton culture. Much further research needs to be done comparing these finds with late prehistoric social indicators elsewhere in the Southeast, including in this valley (White 1982). The exotic grave goods are so far not seen to be as numerous and unusual as those from the Southeastern Ceremonial Complex graves at the famous Lake Jackson site, a multiple temple and burial mound and plaza complex in Tallahassee. In fact, our Apalachicola finds barely fit into the definition of Southeastern Ceremonial Complex activity, probably just by virtue of the copper artifact.

Nonetheless, the archaeological record here attests to the greater sociopolitical and economic complexity that had evolved by this time period on the Apalachicola. Some people were considered more important and treated so at death. Others buried with or after the principal person may have been retainers, relatives, or something else, and may have been fragmentary skeletons, bundle burials or perhaps just skulls. Raw materials for exotic artifacts had to be obtained from some kind of long distance trade system. The *Busycon* shell dipper had to come from some 100 km (60 navigational miles) south in the Gulf. Greenstone may have come from the Georgia mountains, but we have as yet no idea where copper was obtained, except that it was not locally. The Apalachicola River was a very long prehistoric interstate highway, bringing the necessary kinds of imported materials and paraphernalia with which different social roles could be manifested.

SUMMARY OF ARCHAEOLOGICAL INVESTIGATIONS AND RECOMMENDATIONS FOR FUTURE WORK

The six sites tested have produced the first well controlled prehistoric cultural data from this part of the Apalachicola Valley. The four shell mounds yielded settlement and subsistence information and some insights into ceramic chronology, the Elliott's Point complex, and geomorphological change. The Overgrown Road site showed the character of a small domestic camp during the time period of spectacular burial mounds. The Corbin-Tucker site demonstrated early Fort Walton mortuary practices, domestic activity, and characteristics of subsistence and social systems. All the sites produced some biotic evidence from flotation of soil samples, and most yielded interesting (if not always appropriate) radiocarbon dates (Table 54). This chapter summarizes the new information on various aspects of different prehistoric time periods and indicates where the next research questions lie and what future study will involve.

APALACHICOLA DELTA SHELL MOUNDS: SUMMARY

Because the shell mounds are the first in the remote lower delta swamps to be so investigated, and because they have many similarities in both archaeological content and archaeological requirements, it is appropriate first to discuss them as a group, with a comparative focus.

Research Biases

These are the first prehistoric shell mounds in the lower valley river swamp environment of the Apalachicola delta to be professionally recorded (White 1987) and investigated, to my knowledge. It is also the first research of this type done by the Apalachicola archaeology program at USF. Several logistical problems had to be overcome to accomplish the operations. Shell mound studies here are still in the beginning stages of development as compared with other parts of Florida or elsewhere in the world (White 1991a). Many individual questions need more in-depth research, such as seasonality studies, artifact raw material source identification, comparative analysis of biotic species, and paleoenvironmental research that can tell us what fluvial, forest, and marine environments were like here at different times in the past. Only then can we move on even to examine settlement systems, not to mention social systems, at different time periods.

Our very small sample sizes of the archaeological record at these midden mounds doubtless are very biased; artifact types or assemblages, particular animal or plant species, or indications of specific cultural activities may be absent because they were in areas that we did not pick

TABLE 54. RADIOCARBON DATES FROM PROJECT SITES/COMPONENTS

Site	Provenience	Component	Sample Dated	Date Returned (Yrs B.P)	Uncorrected Calendrical Date*	Corrected Calendrical Date**	Associated Diagnostic Artifacts	Year Dated; Comments
Corbin-Tucker site, 8Ca142	Feature 1 (TUA) Stratum II	Fort Walton	5 g pine charcoal	1080 ± 90 (Beta 30633)	A.D. 870	(A.D. 670-1180) (A.D. 860-1010) A.D. 930	Turtle, garfish and other animal bone, freshwater mollusc & gastropod, check stamped & plain sherds, all in pit	1989 Date possibly incorrect; too early
	Cemetery, under second copper disc	Fort Walton	.25 g charcoal	1840 ± 110 (Beta 40905)	A.D. 110	(20 B.C.-A.D. 395) (A.D. 20-260) A.D. 164	Copper-covered wood disc, high status burial(s) Fort Walton Incised sherds	1990 Quadruple counting time for small sample; date still far too early; very probably incorrect
Overgrown Road site 8Gu38	TU 1, Feature 4 (refuse pit)	Swift Creek	16 g oak charcoal	1650 ± 50 (Beta 25771)	A.D. 300	(A.D. 230-570) (A.D. 379-430) A.D. 403	Plain & complicated-stamped sherds, chert flakes, quartz hemisphere(?) fragment, *Polygonum*, fern spores	1988
Depot Creek shell midden 8Gu56	TU C L 3 -33 to -47 cm	Deptford	7.6 g charcoal (pine wood, bark, hickory shell) (.9 g carbon)	2010 ± 100 (Beta 26898)	60 B.C.	(370 B.C.-A.D. 220) (120 B.C.-A.D. 90) 45 B.C.	Simple-stamped, check-stamped sherds; *Rangia* shell midden	1988
	TU C L 7 -88 to -106 cm	Late Archaic	1.9 g pine charcoal (<1 g carbon)	2970 ± 80 (Beta 26899)	1020 B.C.	(1425-890 B.C.) (1322-1092 B.C.) 1182 B.C.	Lg simple-stamped fiber-tempered sherds; *Rangia* shell midden	1988 AMS date
Van Horn Creek shell mound 8Fr744	TU 1 L 6 -65 to -81 cm	Late Archaic mixed with Early(?) Woodland	charcoal <1 g	1120 ± 75 (Beta 26897)	A.D. 830	(A.D. 775-1030) (A.D. 809-1000) A.D. 904	Fiber-tempered plain sherd, check-stamped sherds; oyster midden	1988, AMS date Date probably incorrect
Clark Creek shell mound 8Gu60	TU B L 11 -165 to -173 cm	Late Archaic or earlier	pine charcoal and hickory shell (total .3 g)	3970 ± 160 (Beta 31785)	2020 B.C.	(2895-2150 B.C.) (2490-2280 B.C.) 2453 B.C.	No ceramics (level just above had sand-tempered plain sherd, 4 each fiber-tempered plain and fiber-tempered simple-stamped; *Rangia* midden, some oyster	1989 Small sample given quadruple normal counting time to reduce error

* Calculated by subtracting 1950.

** C14 calibrations given first in ranges according to method of Klein, et al. 1982; second in ranges according to Stuiver and Pearson 1986 or Pearson and Stuiver 1986; third, an average calendar date for the two different methods.

to excavate. There is much to be done concerning establishment of the proper sample size of a shell midden (or any archaeological site) that will give a representative picture, and demonstrate how big a sample or how much analysis must be done before one reaches the point of diminishing returns.

Just establishing standard procedures for taking soil samples for flotation, for example, has required much trial and error. As noted, the shift in sample size from 4 liters to 9 liters during the second (1988) season resulted in larger and probably better samples (although less total faunal material was analyzed the second year, adding another set of biases to comparisons of the four shell mounds). But when taken as a 30 x 30 x 10 cm block, the sample seems seldom to amount to the ideal 9 liters, probably because of the difficulty of cutting a perfectly square block in the unruly, chunky whole shell. Measuring the sample in a plastic 2-liter pitcher would seem ideal. However this method also resulted in undersized samples if the shell was not packed down hard. During transport the shells and matrix settle in and pack more tightly, resulting in a smaller volume, just like the box of crackers that, as the label says, "settles during shipping" and appears half full when opened. Many archaeologists take column samples for flotation and biotic analyses from their shell middens, usually from the unit walls after excavation is completed. I suspect the same problems occur with this type of sampling, and I chose not to do it this way so as not to damage deposits that might be examined during future excavation.

Shell midden sites are lately receiving much attention as a group because of the common problems they present to archaeologists in a wide range of geographic areas (e.g., Waselkov 1987; symposium on shell midden archaeology organized by C. Claassen at the 1989 meeting of the Society for American Archaeology, Atlanta; Stein 1992). Claassen (1991b) noted the great variation in sampling techniques and sample sizes for different shell mound studies, and also pointed out that such sites are sometimes treated as "conflations of discrete deposits" and other times perceived as a "stew from millennia of activities" (page 254). The latter view was inescapable at the Apalachicola shell mounds, because of the lack of visible natural or cultural strata. Thus, the field strategy of excavation in arbitrary levels undoubtedly masked subtle cultural change through time, but it was inescapable. The lack of any culturally sterile strata between components does suggest continual occupation over the millennia at these sites, with one group coming in and churning up the last group's evidence, whether a year later or a century later, and with no recognizable soil development. However, through artifact associations in those arbitrary levels it was possible to suggest that different components had different horizontal and vertical extents. Further, listing of the sample sizes and other data (in artifact and faunal materials tables) should at least make possible comparative evaluation of this work.

Florida shell middens are being investigated and analyzed in great detail in the southern peninsula (e.g., Beriault 1986, Marquardt 1992). *Rangia* middens have long been known along the northern Gulf Coast and are the subject of much study in Louisiana and elsewhere (e.g., Gagliano et al. 1982, Neuman 1984, Claassen 1985, Jackson 1991). A growing familiarity with this large body of archaeological work will permit more informed examination of the Apalachicola shell mounds and, I hope, some insights into questions beyond just chronology and subsistence, such as circum-Gulf socio-economic interactions, correlations of settlement patterning with environmental change, and relationships of coastal groups with interior groups through time.

Cultural Chronology and Components Identified

As a first effort, this project has produced very interesting findings for the Apalachicola shell mounds. Each one is different, yet they have much in common. All seem to be dominated by the debris of **Early Woodland** occupation within middens of *Rangia* shells. All have a small percentage of oyster shell and an abundance of fish remains, with lesser amounts of turtle, mammals, and other fauna. The predominance of Early Woodland deposits may be related to environmental factors, not only the kinds that would have attracted people during this time and not other periods, but also the kinds that make these sites preserved and visible today. For example, the Late Archaic components that regularly underlie the Early Woodland materials may extend to even greater thicknesses that are not presently visible because most of the deposits are below the water table.

It may be possible to recognize earlier and later divisions of the Deptford Early Woodland ceramic assemblage based on ceramic type frequencies in stratigraphic sequence. All Deptford levels are dominated by check-stamped pottery, but the earlier have simple-stamped and fabric-marked types and the later see the introduction of the first complicated-stamped wares. Alternatively, this latter assemblage may also be labeled early Swift Creek. Somewhere in between these earlier and later assemblages is apparently an assemblage of just plain and check-stamped sherds that lacks the more diagnostic types. A radiocarbon date from Depot Creek shell mound places the earliest Deptford, with the diagnostic simple-stamped sherds but still half the assemblage check-stamped, at 60 B.C., or 45 B.C. if the date is recalibrated by the most current methods (Table 54). A connection between at least two shell mounds in the later Deptford or early Swift Creek is the unusual large herringbone-patterned complicated stamp on sherds found at both Yellow Houseboat and Clark Creek.

All the shell mounds appear to have **Late Archaic** cultural deposits underlying the Early Woodland materials. This cultural adaptation is marked not only by fiber-tempered pottery, including the rarer simple-stamped fiber-tempered variety, but also microtool industries and clay balls or "objects." All these are items included in the general Poverty Point-related Late Archaic complexes that extend across the Gulf of Mexico and in Florida are called Elliott's Point (Webb 1977, Lazarus 1958). This may be the first time such a complex is documented this far eastward along the Gulf, though it is known from the Choctawhatchee Bay area to the west, in Okaloosa, Walton, and Bay Counties. Work in progress has the objective of documenting this Late Archaic manifestation in greater detail and evaluating its relationships with similar archaeological cultures throughout the Southeast (Jones 1993, White and Estabrook 1994). Two dates obtained for this Late Archaic material culture in the Apalachicola are 1020 B.C. and 2020 B.C. (Table 54; corrected, these dates become even earlier: 1240 B.C. and 2453 B.C.).

Two shell mounds have **Fort Walton** components (Van Horn Creek and Yellow Houseboat). This late prehistoric adaptation is closely tied to intensive maize agriculture and large villages with temple mounds upriver along the Apalachicola. In the lower valley/estuary there is no evidence of this so far, only indications of a similar kind of collecting of abundant wild resources that earlier prehistoric peoples did. Whether these were different Fort Walton groups, perhaps more simply organized and seasonal, instead of sedentary, politically complex chiefdoms as in the interior, is still unknown. Agriculturalists from upriver could even have visited seasonally to hunt and fish (as they often do today).

Interesting among the data recovered from these four shell mounds is what was not present. There is no indication of full-blown Middle Woodland (Swift Creek-early Weeden Island) or Late Woodland (Late Weeden Island) occupation. No unquestionably Weeden Island ceramics were recovered. There is also no historic aboriginal occupation. These gaps may be due to sampling bias. Tentative data from survey identified at least one site on the north shore of Lake Wimico (Six Palms shell midden or Shell Point, 8Gu54) as early or late Weeden Island, and one on the south shore (Lake Wimico SE, 8Gu57) as Swift Creek (Henefield and White 1986). Huckleberry Landing site (8Fr12) is a Middle Woodland multi-mound

Rangia midden and burial mound center a few km southeast of Clark Creek shell mound on the south bank of the Jackson River (Moore 1902:234-238, Willey 1949:277-278), still in reasonable shape despite a century of looting. M.A. thesis work in progress by Brian Parker of USF has documented a few possible late Weeden Island sherds at the Thank-You-Ma'am Creek shell midden (8Fr755) on the east side of the delta. Future study will certainly involve more investigation of these sites.

Along the 107 river miles of the Apalachicola, Middle Woodland Swift Creek-Weeden Island burial mounds and villages and camps are numerous, often near or overlying Early Woodland sites. Several such sites are also recorded along the bay shores. Perhaps their adaptation did not include estuarine habitats as much as did that of slightly earlier peoples.

Similarly, Late Woodland, late Weeden Island period archaeological sites are apparently more numerous in the riverine interior than any other type from any other time period (White 1981, 1985). Why did these people, who utilized a larger range of environments than earlier or later in time, not inhabit the Apalachicola estuary and lower river swamp? This was the time when they were just beginning (or beginning to intensify?) maize agriculture (e.g., Milanich 1974); perhaps the low wetlands of the lower delta were not suitable for such farming.

A prehistoric site data base for the entire Apalachicola Valley being compiled by Terry Simpson (also as part of M.A. thesis work) does not show any Lower Creek/Seminole sites in the lower valley and very little evidence of contact period (sixteenth century) aboriginals. Again, it is unclear why this settlement pattern is apparent.

All these questions remain to be addressed. Meanwhile it cannot be forgotten that one other cultural component is present at some shell mounds, that of the early twentieth (and late nineteenth?) century beekeepers. Historic site studies are becoming more and more important in the Southeast, and comparison of the archaeological with the historic record often results in fascinating conclusions. Remains of such single-purpose economic activity sites would be especially interesting to study. Some investigations of turpentine stills and sawmills along the Apalachicola have already been carried out by historic archaeologists (Swanson 1985). Florida is the largest producer of honey in the nation, and the material record of the history of this business would be worthwhile and useful for future study. For this reason, though not described in this volume devoted to prehistory, modern artifacts (mostly crockery) from the shell mounds were also saved during our fieldwork.

Finally, it must be noted that none of the tests reached the bottom of the prehistoric cultural components. Excavation below the water table can and has been done (Purdy 1988) but it is difficult and expensive, and often destructive of a large portion of the site. To dig this deep in one of these shell mounds requires well points to pump out water, heavy machinery and careful engineering, as well as relatively larger amounts of funding to pay for all this. It has been done at other *Rangia* mounds in Louisiana, for example, with the aid of such equipment as well as other expensive tools such as helicopters and large cofferdams provided by oil companies (e.g., Neuman 1976).

In 1989 I wrote in the first draft of this monograph that excavation below the water table should be attempted at the Apalachicola shell mounds for several reasons: First, in a completely wet environment there might be excellent preservation of perishable remains that could give a truer picture of prehistoric life. At the Windover site near Cape Canaveral, for example, not only were wood, woven fibers, bone and human skeletal remains recovered from a burial ground in a pond, but also the brains of some of the 7500-year-old dead were preserved in their skulls. At south Florida shell mounds artifacts of wood, cordage, and other perishables have been recovered (Gilliland 1975), and in Louisiana similar items have been found (Duhe 1976) in *Rangia* shell mounds.

Second, the bottom of the Late Archaic deposits has not yet been reached at the Apalachicola delta shell mounds, and there may be a great deal more evidence. Third, there may exist far earlier cultural components under the Late Archaic materials. There is no reason to think earlier Archaic and even Paleo-Indian cultural adaptations could not include estuarine resource collection. Fourth, it would be interesting to reach the bottom of the cultural deposits and see what natural landforms first attracted early inhabitants. There certainly would also be much more information concerning the fluvial history of the Apalachicola delta and sea level fluctuations.

Since the time of the research described in this report, USF archaeology crews have completed one short field season of test excavation below the water table (summer 1993). With support from a Historic Preservation grant awarded by the Florida Division of Historical Resources, we lugged, pushed, towed, and even helicoptered in heavy de-watering equipment and conducted additional tests at Van Horn Creek shell mound and another site, Sam's Cutoff shell mound (8Fr754; White and Estabrook 1994). Both these sites are on the east side of the delta; we wished to test the hypotheses of differing subsistence strategies from east side to west, and of fluvial migration as well (see discussion below). The project met with only moderate success after dealing with the uncertainties of pumping and well point jetting, but we did get deeper into the Late Archaic. Materials and data from this work have just begun to be processed and analyzed in the laboratory. So far the interpretation of Van Horn Creek and the Late Archaic/Elliott's Point cultural manifestation in general presented in this report is well supported by the recovered information from the 1993 (second) season's work.

Material Culture

Ceramics: Ceramic materials at the Apalachicola shell mounds are, for the most part, similar to and just as numerous as at interior and coastal sites, for all time periods represented. This is despite the fact that, if the people were seasonal and mobile, they might be expected to carry fewer heavy, breakable containers such as clay pots and more skin bags or baskets and such. Perhaps this is evidence of pottery manufacture at the sites, though there is no known local clay source. Or a longer stay than just a month or two may be indicated. Or perhaps primary transport by boat makes carrying heavier things easier.

The Early Woodland ceramic assemblage is dominated by regular and linear check-stamped pottery, often of grog-tempered paste. Examples of this from at least two sites have fine parallel lines sometimes stamped or brushed on the interiors of the sherds, for some reason (incomplete smoothing during manufacture?). The Late Archaic fiber-tempered sherds are sometimes plain surfaced and sometimes simple-stamped; the latter is rarer inland. Unburned fiber fragments within a sample of this pottery from Depot Creek shell mound are conclusively identified as Spanish moss (*Tillandsia usneoides*).

Clay daub fragments are mostly scarce on the shell mounds, suggesting the absence of more permanent structures. There are a fair number from Clark Creek, however. Perhaps some mounds were more often settled, and for longer. Some pieces of clay may not be daub but just clay lumps or chunks from fire hearths or other activities. These are probably associated with the Late Archaic occupations. Similar clay chunks are common in Poverty Point-related complexes; they are thought to be for the same function as that of the more shaped clay balls or objects: probably dry roasting of foods in a pit (Hunter 1970, 1975).

Lithic materials: Stone tools at the Apalachicola shell mounds are not very numerous, in general, though there is variation from one shell mound to the next. The Late Archaic microlithic industry at Van Horn Creek is well established, especially by the presence of so many small cores. Jaketown perforators and other microtools are present at all the mounds except Depot Creek, too, though lesser amounts of debitage and cores suggest they were not manufactured at Yellow Houseboat or Clark Creek. At Depot Creek mound there is very little lithic debitage at all. The general picture from all the mounds is of very few and specialized stone tools throughout all the occupations. Since there is no local chert source very close, this may not be a surprise. Furthermore, subsistence activities in the wetlands of the river swamp and estuary may not have required many stone tools.

There has been much debate on the function of Poverty Point microliths (Ford and Webb 1956, Webb 1991). The general consensus seems to be that they were not principally for drilling or perforating, despite the names they have been given, but for engraving, chiseling, and scraping. Another general belief is that microtools are for shell artifact production (cf. Yerkes 1983 for later prehistoric microtools). While this is a reasonable suggestion, it does not fit with the fact that we have relatively few shell tools in the Apalachicola delta area (especially by comparison with south Florida). Similarly, if they were for bone tool production, where are all those bone tools? Only four were recovered by this project (two points, an engraved pin fragment, and a hook), though bone preservation of ecofacts was excellent. A possible clue comes from reviewing the material culture of other coastal wet sites, where wood is preserved. Duhe (1976:63-65) illustrates a wooden spool from Bayou Jasmine, Louisiana, which has tooling marks identical to those that would be produced by gouging with a hafted miniature chisel or microtool. Wood is abundant in these forested wetlands, and is the easiest raw material to obtain and to work. It has another attribute of possibly far more importance than we realize: it floats. Based on my knowledge of the quantities of crucial modern artifacts lost by archaeology crews dropping them out of the boats, I speculate that a very large portion of the material culture of prehistoric delta inhabitants was made of wood for practical reasons.

Other stone artifacts are rare; quartzite cobbles for hammers and grinders seem to be the most numerous, and they are not common. It is uncertain whether they were used for stone tool manufacture, grinding seeds and nuts, or even making fish paste. They probably were obtained from upriver, as well.

Other materials: As noted, there were only four bone artifacts recovered by our shell mound investigations. The curved fishhook from Depot Creek is a rare type, as compared with composite hooks, barbs, and so on (Walker 1989). Relatively few shell artifacts were recovered by this project, as well. Most of the latter were cut fragments (debitage?)

of *Busycon contrarium* (lightning whelk), columellae, and scooping or gouging artifacts. A few other shell species such as *Fasciolaria* (tulip) and *Melongena corona* (crown conch) always had signs of cutting or piercing and were present in such small numbers that I infer their use for some purpose other than or in addition to food.

There are several strata in the shell mounds that consist of shell and animal bone with no artifacts, especially the deep oyster layers at Van Horn Creek. Perhaps this is a confirmation of the diminished need for many tools to make a living here, or of the idea that much of the artifact inventory was of wood or other perishable materials.

Subsistence and Site Function

These cultural systems are treated together here because they are so interrelated, and because the general patterns seem to have held up from the earliest Late Archaic habitation of the shell mounds through Fort Walton times.

Ethnobotanical remains: For evidence of subsistence, few botanical remains have been preserved, and most of these are pine charcoal and occasional hardwoods. There are a few seeds and nutshells, but very little to indicate plant species importance. Perhaps fires were few and floral materials therefore just not preserved. Unless cooking, repelling bugs, or other activities such as hardening wooden spears were important, fires may not have been needed for any but two or three months of the year. Pines may have been more prevalent in a dryer environment that was perhaps present at times of lower sea levels. Today the river swamp is marsh or hardwood forest, with oaks, tupelo, cypress, cabbage palms (Edmiston and Tuck 1987). All the sites had yaupon holly trees (*Ilex vomitoria*) growing on them; this leaf is used for the famous aboriginal black drink of historic and protohistoric times.

The disappointing floral assemblages from these sites will not halt the continuing search for more botanical materials. A similar shell mound in Louisiana has already produced specimens of presumably cultivated squash and bottle gourd as early as the Early Woodland (Byrd 1976b). The question of the existence of horticulture/agriculture among the fishing/gathering/hunting peoples who left the Apalachicola shell mound components is of paramount importance.

Zooarchaeological remains: Faunal species by component for all the shell mounds are summarized in Table 55 (note that the proveniences and sample sizes for each component are not equivalent, making comparisons more biased).

The most obvious animal species at the shell mounds is the freshwater *Rangia* clam, indicating a river mouth type environment for collecting. People apparently ventured slightly farther out into the bays to get a few oysters as well. All the shell mounds have at least a few of both species, even when one is overwhelmingly dominant. In discussing salinity of the collecting environment and assuming it was

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TABLE 55. SUMMARY OF FAUNAL EVIDENCE BY COMPONENT AT FOUR APALACHICOLA DELTA SHELL MOUNDS (8Gu56, 8Fr744, J8Gu55, 8Gu60)

Identified Taxa - Common Name	Fort Walton (with Early Woodland mixed in)[1]	Early Woodland[2]	Early Woodland (with Late Archaic mixed in)[3]	Late Archic[4]
Mammals				
Cricetidae - Mice		X		
Sciurus carolinensis - Gray squirrel		X		
Sigmodon hispidus - Hispid cotton rat		X		
Neofiber alleni - Round-tailed muskrat		X		
Procyon lotor - Raccoon	X	X		
Sylvilagus sp. - Rabbit	X	X		
Odocoileus virginianus - White-tailed deer	X	X	X	X
Felis concolor - Panther	X			
Didelphis virginiana - Opossum		X		X
Birds				
Fulica americana - American coot		X		
Anatidae - Ducks	X			
Aves - Birds	X	X		X
Herps				
Alligator mississippiensis - Alligator	X	X		
Kinosternon sp. - Mud turtles	X	X		X
Pseudemys sp. - Cooters and Sliders	X	X		X
Trionyx ferox - Soft shell turtle	X	X		
Serpentes - Snakes		X		
Lacertilia - Lizards	X	X		
Reptilia - Reptiles	X			X
Rana sp. - Frogs		X		X
Fish				
Rajiformes - Rays		X		
Carcharhinidae - Requiem sharks	X	X		
Lepisosteus sp. - Garfish	X	X	X	X
Brevoortia sp. - Menhaden			X	
Clupeidae - Herrings		X		
Ariopsis felis - Hardhead catfish	X	X	X	X
Bagre marinus - Gafftopsail catfish	X			
Lepomis sp. - Sunfish		X		
Carangidae - Jacks	X			
Lutjanus sp. - Snapper			X	
Archosargus probatocephalus - Sheepshead	X	X		X
Sparidae/Sciaenidae - Porgies/drums	X	X	X	X
Cynoscion sp. - Seatrout	X	X		X
Leiostomus xanthurus - Spot				X
Micropogonias undulatus - Atlantic croaker	X	X	X	
cf. Sciaenidae - Drums	X	X		
Mugil sp. - Mullet	X	X		
Amia calva - Bowfin	X			

TABLE 55. SUMMARY OF FAUNAL EVIDENCE BY COMPONENT AT FOUR APALACHICOLA DELTA SHELL MOUNDS (8Gu56, 8Fr744, J8Gu55, 8Gu60) (Continued)

Identified Taxa - Common Name	Fort Walton (with Early Woodland mixed in)[1]	Early Woodland[2]	Early Woodland (with Late Archaic mixed in)[3]	Late Archic[4]
Shellfish				
Balanus sp. - Barnacle		X	X	X
Euglandina rosea - Terrestrial snail	X	X		X
Viviparus georgianus - Georgian mystery snail		X		X
Neritina sp. - Nerite	X	X		X
cf. Columbellidae - Dove shells		X		
Odostomia sp. - Odostome	X	X		X
Melongena corona - Crown conch		X		
Busycon contrarium - Lightening whelk	X	X	X	X
Fasciolaria tulipa - True tulip		X		
Pleuroploca gigantea - Florida horse conch		X		X
Phalium granulatum - Scotch bonnet				X
Ischadium recurvum - Hooked mussel		X		X
Geukensia demissa - Atlantic ribbed mussel		X		X
Mytilidae cf. Geukensia - Mussels	X	X	X	
Crassostrea virginica - Eastern oyster	X	X	X	X
Rangia cuneata - Rangia/freshwater clam[5]	X	X	X	X
Mactridae - Surf clams	X			
Pectinidae - Scallop		X		
cf. *Macrocallista nimbosa* - Sunray venus clam		X	X	
TOTALS	32	47	13	25

1 Total 4.7 kg remains from 8Fr744, Van Horn Creek TU1, L2 and 8Gu55, Yellow Houseboat, Tu2, L5 & L6.
2 Total 14.1 kg remains from 8Gu56, Depot Creek, TUC, L1, L3, L5; 8Gu60 Clark Creek, TUB L6; 8Fr744 Van Horn Creek, TU1, L4.
3 Total 2 kg remains from 8Fr744 Van Horn Creek, TU1, L6.
4 Total 14.5 kg remains from 8Gu56, Depot Creek, TUC, L7; 8Gu60 Clark Creek, TUB L11; 8Fr744 Van Horn Creek, TU1, L8, L10.
5 Includes unknown proportion of *Polymesoda*.

Shells used for artifacts from all proveniences at all sites are also included in this table.

the individual site's immediate environment, we of course make the assumption that people collect what is closest and easiest to get. The tenets of optimal foraging theory notwithstanding, humans do not always do things as efficiently as possible. Still, this explanation is the best (easiest?) at present, and the assumption is a common one in shell mound archaeology (e.g., Crook 1992).

As noted, for the Van Horn Creek mound farther to the east, oysters were more important earlier in time, possibly because of a more saline environment a few thousand years ago, before a lateral shift of the river channel brought a more freshwater regime. Today oysters live 7 to 12 km (4 - 7) miles south of these shell mounds in the bay (Livingston 1984:26).

Claassen (1986) has hypothesized different relative frequencies of shellfish types as time markers on the Atlantic coast, in association with different cultural components. Russo (1988) suggests those associations are drawn from too small a sample; they also do not take into account many local environmental factors, and may not be replicable with other data. No temporal patterning can be seen as yet in shellfish species data from the Apalachicola shell mounds, except for the oyster to *Rangia* shift probably resulting from geomorphological processes documented at Van Horn Creek. Similarly, seasonality studies have not yet been attempted, but are planned.

The contribution of shellfish to the total diet at the Apalachicola shell mounds is another research question just beginning to be investigated. As John Griffin (1988:295) points out, in an earlier period of Florida archaeology, it was axiomatic that all massive piles of shells were the product of "The Shellfish Eaters," while now the role of shellfish is almost reversed, with a tendency to downplay its importance in the subsistence pattern. Shellfish are often easy food to get in the lean months, and lately considered more as dietary supplements, not mainstays (Waselkov 1987). Byrd (1976a) evaluates *Rangia* clams as poor sources of both protein and calories. A sample of the edible meat equivalents she presents equates one 21-inch bowfin with 1270 clams, one deer with 25,310 clams, and the calories from one 100-lb deer as equivalent to the calories from 42,000 clams.

It is well known that shellfish leave more garbage relative to actual meat weight than do other animals. Many Florida archaeologists now emphasize the role of fishing in subsistence, with the prehistoric aboriginals stopping to gather shellfish while trying to catch the fish that prey upon the shellfish beds. A set of human actors often left out in reconstructing prehistory are children, who are by contrast extremely visible in most ethnographic accounts of subsistence activity. While I abhor presumed divisions of labor based on sex derived from historic/ethnographic accounts of behavior that took place millennia later than the archaeological record in question, I think divisions of labor based on age might be on far firmer ground. Tasks such as shellfish collection, which does not require extensive training, adult strength and motor skills, or detailed planning, could easily be done by children, even those who perhaps accompanied adults doing more complex work.

Shellfish may also be collected for other reasons besides food to be eaten at the sites. Easy to preserve by drying, salting, or smoking, they may have been stored in large amounts for later use or trade, thus leaving remains (shells) not really representative of the inhabitants' immediate diet. There is also the possibility that they were not human food but collected for fish or shrimp bait, or even for construction materials (Waselkov 1987; Riser 1987; Milanich 1987; Claassen 1991a; Voorhies, Michaels and Riser 1991), though the fact that the shells are all open and often broken may rule out the last possibility.

Table 55, which summarizes faunal remains for identifiable cultural components of the four shell mounds tested, indicates the numerous other shells present and gives some other subsistence clues. A few shellfish (or just shells) were clearly collected for artifact manufacture. Others may be commensals, for example the snails that may have crawled into the sites or the mussels that live on oysters. However, I believe that these species could just as easily have been thrown into the pot with the rest of the food and the meat extracted for food.

Before leaving the discussion of shellfish another comment is in order. During the autumn of 1993, while this monograph was being revised, it was discovered that many of the shells at the Apalachicola shell mounds identified as *Rangia* were actually *Polymesoda*, the marsh clam. This species is close to the same size and shape as *Rangia* and easily misidentified (Claassen 1985). Since it apparently inhabits the same kind of environment as *Rangia*, the *Polymesoda* may make little difference in the interpretation of subsistence. Future work with the data from this project will include isolating the proportions of both shellfish in the samples and establishing what significance this may have. Another project underway is measuring the sizes of clam and oyster shells from level to level to ascertain any decrease through time that might indicate either some environmental change or overexploitation of the shellfish beds by human predators.

Other animal species present at the shell mounds are numerous, as are the counts of individual bones and fragments. Both freshwater and marine species are present. A frequent item is the pneumatized bone (several different elements, according to the zooarchaeologists) of the jack and other fish. When we first encountered these bones we thought they were antler tips, but they are less dense than antler, though more dense than average fish bone. Although they apparently occur frequently at sites all over Florida, it is unknown if they are just food refuse. A couple specimens appeared to be cut. They are apparently preserved better because of their morphology, but there are so many in our samples that one is tempted to say they were being saved for something.

As indicated in Appendix 1 and summarized in Table 55, the major species utilized by Apalachicola delta shell mound inhabitants are fish and turtles. The emphasis is upon aquatic resources. Every level of every test has remains of fish. The zooarchaeologists note that our techniques were good enough to recover even the tiniest fish vertebrae, yet the predominant fish are big ones, not small ones that would likely be swept up in nets. The faunal specimens are often in tiny bits, however, possibly indicating food preparation techniques. Beriault (1986:160) suggests concentrations of tiny fish bone fragments may result from boiling fish to create a broth then straining out and discarding the bones.

The most ubiquitous of these big fish is the gar, present at all time periods at all the sites. These are very bony fish not often sought by modern fishers because of the time and trouble needed to clean them, according to local informants in the Apalachicola delta area (perhaps two of 50 local experts I asked have ever eaten them). However, they are said to be extremely easy to catch, lying still in shallow water long enough to be gigged with a fish spear. Based on ethnographic data and material culture from Louisiana shell mounds, Duhe (1976:59) illustrates a reconstructed 3-pronged fish gig made of a bone point (similar to the two recovered from Depot Creek) and two curved bones, hafted to a wooden handle. Imagining similar gadgets at the Apalachicola shell mounds is not difficult. If the work aspect were diminished by throwing the whole fish into the stewpot to boil down (either straining out the bones or making them soft and crunchy like today's anchovies or salmon), a bouillabaisse with lots of ingredients seems a likely candidate for the dietary mainstay of these aboriginals.

Other fish present in high frequencies are drums, croaker, sheepshead, and sea catfishes. All these inhabit both the bays and river mouth area (Edmiston and Tuck 1987). While these fishes might simply be the most easily identifiable (gar scales and otoliths, for example, are durable and unmistakable [Colley 1990]), they also may be a representative sample of the fish easiest to catch. This could be both for reasons of their typical behavior (sheepshead, for example, hang around shallow submerged structures or rock outcrops close to shore) and because many of them prey upon shellfish beds. It must also be kept in mind that fish can change their behavior in response to predator pressure, including human activity (Colley 1990). This may be another reason to suggest seasonal and intermittent occupation of shell middens.

Fish remains at these shell mounds, probably underrepresented due to their relative fragility, indicate an enormously rich and diverse resource that is easy to obtain in great abundance. They may be preserved in great quantities as well, by drying, smoking, salting, or fermenting (Wheeler and Jones 1989). They were probably the staple food of the indigenous inhabitants.

Besides fish, many turtle bones were recovered at all the shell mounds; the only other species common in all time periods is deer. Nearly as well represented are alligator, frog, raccoon and rabbit. Mice, squirrel and other small mammals as well as snake are present only in the Early Woodland. Birds are surprisingly rare given their abundance in the river swamp and estuary today; they occurred only in the later two components and in very small numbers. Though lately southeastern archaeologists have been alerted to the possibilities of prehistoric shrimping (Riser 1987, Milanich 1987, Voorhies et al. 1991), and though today the Apalachicola region is famous for it, we recovered no shrimp or any other crustacean remains (such as crawfish), even though our techniques would have picked up something as small as a shrimp mandible. Gulf Coast cuisine is unthinkable today without these ingredients, and they are extremely easy to obtain. But, as Neuman states (1984:120), prehistoric people would doubtless find it remarkable that today's Gulf Coast residents do not eat *Rangia*. A very good living could be made with a relatively small amount of work in the estuarine/river swamp environment, no matter what species were preferred or shunned, because of the great diversity and richness.

There is apparently little change in general subsistence from Late Archaic through Fort Walton periods here (Table 55). Even the radical shift from saltwater species to more freshwater fish and shellfish at Van Horn Creek on the eastern side of the delta during or after the Late Archaic is probably an indication of continuation of the same estuarine subsistence strategies in the face of change in aquatic ecosystems, the influx of fresh water due to the probable river channel shift eastward (Donoghue and White 1993).

There were not many cultural features except for enigmatic soil areas in the shell mounds, leaving interpretations of different activity areas uncertain. In terms of general site formation processes it seems reasonable to say that people came back again and again to inhabit these sites. They would have been easy to find, covered with bright white shell in the green swamp, and they afforded advantageous locations in terms of access to nearby resources and because of their high, dry condition in the middle of the wetland. They probably were all locations on immediate stream banks at or near shellfish beds. The lack of evidence such as daub and features suggests fairly brief periods of habitation.

Habitation in this environment was most likely shifting, seasonal, short-term and repeated. Sea level has clearly risen at least 1-3 meters since the shell mounds accumulated, and the climate and forests have grown wetter and more characterized by hardwoods than pine.

Nevertheless, the picture of subsistence emphasizes predominantly fresh and brackish water environments, with a lesser emphasis upon terrestrial and marine environments and general use of a wide range of fauna. The rich river swamp/estuarine ecosystem could easily have sustained large human populations. Work in southern peninsular Florida shell middens has demonstrated how similar rich estuarine environments apparently supported sedentary populations year round as long ago as the Archaic (Russo 1991) and historically supported tributary chiefdoms who needed no agricultural base (Marquardt 1986, Widmer 1988). Whether the latest occupants of some of the Apalachicola shell mounds were Fort Walton farmers catching fish seasonally while the corn grew upriver or subsisting entirely on wild resources is a question for further research. It has been suggested that the Apalachicola delta area, because of its size, was one of the few places along the Gulf of Mexico where maize was grown by peoples of complex chiefdoms late in prehistory (Knight 1984:215). Indeed, the presence of maize is now established some 250 km west along the Gulf in the Mobile delta, at a major Mississippian mound center (Gremillion 1993), though that does not necessarily mean it was being grown there. It is hard to imagine people working harder than they have to, however, and maize does not grow well in delta lowlands; resolution of this question awaits more extensive and pertinent data.

All but one of the shell mounds tested yielded human skeletal remains, mostly loose teeth, and the one skeleton from Yellow Houseboat. One example of tooth wear suggests some kind of tool-type use. Maybe there are loose teeth because the dead at these settlements were later transported elsewhere to be buried but a few small elements were left behind.

So far in this research it is too early to begin to answer questions concerning sociopolitical complexity or interaction systems, but examining these are long term goals. Another aim of the shell mound studies is to begin comparison of estuarine adaptation through time with coastal and interior riverine adaptations, and look at the entire Apalachicola system of prehistoric human life.

NEW INSIGHTS INTO APALACHICOLA VALLEY PREHISTORY: SUMMARY OF SITES/COMPONENTS

Late Archaic

There is now ample evidence for the presence of the Elliott's Point cultural complex in the deeper levels of the Apalachicola delta shell mounds. Microlithic tools and cores, clay balls or "objects" and clay lumps, and fiber-tempered pottery relate well to the Poverty Point cultural manifestation farther to the west along the Gulf Coast, though we do not have evidence of mounds, lapidary industries, or other elements of Poverty Point (so far). Continuing work on these older components will doubtless make possible some statements concerning wider socio-economic interactions across the Southeast (Jones 1993; White and Estabrook 1994). Fiber-tempered pottery is found all along the entire Apalachicola Valley and up the Chattahoochee, but the other accompanying artifacts so far are not. Besides dealing with questions of internal temporal chronology within this Elliott's Point manifestation, future work must examine it as a coastal/estuarine phenomenon.

Woodland

The predominant prehistoric cultural components recorded at this stage of research at the lower delta shell mounds, as noted, are Early Woodland overlying Late Archaic. It is probably no surprise that similar shell middens in south Louisiana so frequently have deposits from the same two time periods (Gagliano 1967; Neuman 1984), and that their relationships to present sea level are similar to those at the Apalachicola shell mounds. The implications of the shell mound faunal assemblage differences from the east to the west side of the delta during these time periods for indicating changes in fluvial geomorphology have already been discussed. I hope this work is a good beginning for geoarchaeological study in the entire valley. Hypothesized sea level rise associated with fluvial shifts in both the coastal area and the riverine interior has been described for the Savannah River Valley on the Atlantic coastal plain (Brooks et al. 1986); more of this type of work needs to be done in the Gulf of Mexico region.

For the Early Woodland, the Apalachicola investigations have recovered a large new body of Deptford materials for useful comparisons with the contemporaneous record in the riverine interior. So far there seems to be little difference in ceramic traditions. This work has perhaps better clarified the temporal relationships between the assemblages with the more diagnostic Deptford types (earlier; one date at 45-60 B.C. [Table 54]) and those with only the ubiquitous check-stamped and plain ceramics. Swift Creek ceramics at the shell mounds may represent a mixing in of later types with Deptford pottery near the end of the early Early Woodland or a separate occupation by later Early Woodland (or even early Middle Woodland) peoples.

The Middle Woodland record at the Overgrown Road site, well dated at A.D. 300-400 (Table 54), shows by this time near abandonment of the use of check-stamped pottery. This interpretation agrees with new data on interior riverine ceramic sequences for Middle to Late Woodland (from another project still in progress): At the Otis Hare site (8Li172), some

60 navigational miles upriver from Overgrown Road, a freshwater shell midden and apparent autumn campsite for over 600 years, earlier Middle Woodland ceramics are similarly all complicated-stamped and plain, and well dated to A.D. 300-400. By the tenth century the ceramic assemblage is again dominated by check-stamped and plain sherds. Furthermore, a few exotic artifacts are present in the domestic midden here as well, just as at Overgrown Road (White 1991b).

This project did not investigate any sites with later (any?) Middle Woodland (early Weeden Island) or Late Woodland (late Weeden Island) components. However the data we recovered in the Apalachicola delta will be useful in the debates concerning the overlapping of the Swift Creek and Weeden Island ceramic and other manifestations both in time and space.

Fort Walton

Perhaps the most interesting coastal/estuarine vs. interior comparisons possible for this project, not to mention the only discussion of social data possible, come from the three sites with Fort Walton components. At Yellow Houseboat and Van Horn Creek shell mounds plenty of Fort Walton ceramics, including a few with limestone temper, overlie earlier cultural deposits. Faunal remains at these shell mounds suggest exactly the same kind of general subsistence as for the earlier prehistoric peoples. The only difficulty is in precisely separating the Fort Walton deposits from earlier components when dealing with the finer points of plain ceramic sherds or individual faunal species/numbers. Thus, on Table 55 the summary of faunal evidence for Fort Walton is noted as probably mixed with Early (?) Woodland at both sites. Nonetheless the assemblages are little different from the unmixed early Woodland faunal assemblages. The suggestion here is, again, of small groups of people returning probably seasonally, repeatedly throughout the year/decade/century to camp, catch fish, and conduct other activities. The real questions may concern what they did the rest of the time.

Fort Walton populations in the interior of the Apalachicola Valley are known to be sedentary agriculturalists settled in large villages with complex sociopolitical systems (Willey 1949, Brose and Percy 1978, White 1982). This certainly seems the case at the Corbin-Tucker site, where the remains of burials of the dead (or parts of them) with different kinds of exotic artifacts demonstrate both social complexity of at least the ranked society type and economic systems that involved obtaining prized raw materials or finished non-utilitarian items from great distances. Many questions remain about this site, such as whether the habitation area to the south is contemporaneous with cemetery use and, if it is, whether it is even large enough to be a big agricultural village. The location on rich bottomland is ideal for agriculture; the main channel of the river may even have flowed adjacent to the site during the time of occupation, providing a better transportation and communication artery than would the smaller creek there presently.

Within the approximately 600-year time span of Fort Walton the two lower delta shell mound occupations and the middle valley cemetery may not even be contemporaneous. (And the two dates from Corbin-Tucker are more confusing than helpful [Table 54].) However these three sites produced the same kinds of pottery, and even, if the comparison is stretched, some hint of the same kinds of subsistence. At Corbin-Tucker the only faunal remains were from a single refuse pit, but they were predominantly from aquatic species, freshwater shellfish, fish, and turtles. Perhaps it makes sense to depend more on aquatic animals nearly everywhere in this watery wilderness, even for inhabitants of the interior portions of the valley. Movement and transportation by water were far faster than by land. Even far upriver from the lower delta network of tributary and distributary streams there are still countless small creeks and sloughs traversing bottomland and low uplands in this extremely large valley.

One ultimate question about the Fort Walton adaptation is whether the social complexity was universal among makers of this pottery at these three (and other) sites or whether the estuarine shell mound dwellers were perhaps more simply organized in (supposed) correlation with their subsistence mode. The corollary to this question, of course, is whether they were the same people who grew corn and had elaborate villages, temple mounds, and cemeteries upriver, or whether they were lower valley relatives who exchanged, say, *Busycon* shells, smoked shellfish, and dried fish for corn and squash. Though the information recovered by this work is still insufficient to address such issues, we know some directions for the next investigations.

PUBLIC ARCHAEOLOGY:
EDUCATION AND CULTURAL RESOURCES MANAGEMENT

Public archaeology has all along been a major part of this work. As an aid to research, interaction with the people who live in the region, who hunt, fish, and walk the land, and often collect its artifacts, is essential. During both field seasons (and subsequent years during other projects), public archaeology days were held at the Apalachicola National Estuarine Reserve, with talks, slide programs, and identification of artifacts brought in. In this fashion local residents and archaeologists could share information. In 1993 we even had movies, flint knapping, pottery making, and spear-thrower demonstrations.

A slide program demonstrating the archaeological record of the Apalachicola National Estuarine Research Reserve is being developed for educational use at the Reserve office. Besides teaching about the past, and how earlier peoples utilized this land we now inhabit, it also reinforces the ethic of conservation archaeology, the importance of preserving the human past.

Displays of artifacts are being constructed at the Reserve to further the public educational goals. I would like to see, as a not-so-long range goal, joint federal and state efforts to establish a true museum here, with both exhibits and research collections. Hundreds of local residents have artifact collections and data desperately in need of curation and conservation, and the public desire for such a museum is extremely high. Such cultural institutions are extremely rare or nonexistent in most of the Florida panhandle. As development and historic preservation go hand-in-hand in the Franklin County region and the historic city of Apalachicola is both more visited by tourists and more settled by newcomers, such a facility becomes even more attractive. The Apalachicola Reserve facilities already include a whole building devoted to living species of different regional environments. These animals are renewable resources; archaeological sites and other cultural resources are non-renewable.

For management of these fragile cultural resources, recommendations have been made to the Reserve manager about the threats from both natural and human action. Many of these have been generally incorporated into the Reserve management plan. Well meaning collectors dig potholes to recover pretty artifacts for their framed cases, but do not realize they are destroying the scientific record. There are intrepid looters, as well, making it in to extremely remote sites and even water-screening (see discussion of Van Horn Creek Shell mound). Such archaeological losses are permanent.

Besides learning general knowledge from the past, such as how earlier residents made a living, there is enormous potential to learn practical information. Data on paleoenvironments and species present and exploited by humans may indicate various aspects of the ecological system of great pertinence today. Modern specialists such as fisheries biologists often make management decisions based on very little background information (e.g., Sharp 1993), and virtually none of it gathered over the long term that archaeology is capable of studying. Perhaps overexploitation of resources was not limited to this century, for example. Perhaps other areas of human interaction with particular species or microenvironments are worthy of study to help policy-making in the future.

There are of course long range goals, but they will be impossible if these cultural resources are not well managed and allowed to deteriorate. This is where education becomes paramount, training the builders and developers, fishers, boaters, hikers, and hunters of today and tomorrow to conserve the record of the human past.

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APPENDIX 1

FAUNAL REMAINS FROM FIVE APALACHICOLA RIVER SITES

A: DEPOT CREEK AND VAN HORN CREEK SHELL MOUNDS (8Gu56, 8Fr744)

by Karen Jo Walker (1988), Florida Museum of Natural History

Zooarchaeological analyses employing fine-screen recovery techniques have become an integral part of archaeological research at sites occurring all along Florida's coastline. Estuaries, in particular, are a frequent focus of fine-screen studies due to the many prehistoric Native American sites found in these areas. The environmental setting for the present analysis is the Apalachicola estuarine system, which today ranks as one of Florida's most commercially important and controversial coastal ecosystems. The investigation of prehistoric human exploitation of its animal resources for subsistence purposes is beginning to add a diachronic perspective to our scientific knowledge of the Apalachicola area, in both cultural and environmental terms.

METHODS

Fauna collected in 1987 from the Van Horn Creek shell mound (8Fr744) Test Unit 1 and the Depot Creek shell mound (8Gu56) Test Unit C are all from indiscrete midden deposits as opposed to more circumscribed, enclosed features, such as garbage pits. Samples represent cultural deposits dating to Late Archaic, Deptford (Early Woodland), and Fort Walton times.

The samples were recovered by two methods. A four-liter volume of midden was collected from each 15 cm arbitrary level and water-floated for the extraction of biotic materials. The heavy and light fractions (A, B, C, or 6.35 mm, .86 mm and .29 mm mesh screens, respectively), containing vertebrate and invertebrate specimens, were sorted into floral, faunal, and other components. The remaining portion of the excavation level was put through a 1/4" (6.35 mm) screen on-site, whereupon all bone and any uncommonly occurring shell were collected. This collection comprises the second type of sample and is meant to complement the fine-screened, four-liter sample. The two sample types are necessarily analyzed and tabulated separately in the following tables. Six levels were analyzed from the Van Horn Creek shell mound (2, 3, 4, 6, 8, 10) and five levels were analyzed from the Depot Creek shell mound (1, 3, 5, 6, 7).

Specimens in this study were identified using the extensive zooarchaeological comparative collection located at the Florida Museum of Natural History, Gainesville. Scientific nomenclature and common names follow general laboratory usage for mammals, birds, reptiles, and crustacea; Robins et al. (1980) for fishes; and Abbot (1974) for molluscs. A composite list of all taxa identified in the shell mounds and their common names is presented as Table A1.1 (all large tables follow the text of this appendix). Fragment count, minimum numbers of individuals (MNI), and fragment weight were calculated for all samples, following standard zooarchaeological procedure (Wing and Brown 1979:118-126). Due to small vertebrate sample sizes, seasonality and comparative dietary analyses were not attempted.

Although archaeological commensal species often serve as valuable paleoenvironmental indicators, the Van Horn and Depot commensals do not provide significant data in this respect. For this reason their MNI counts were not included in the tabulations. For the most part, these are barnacles (*Balanus* sp.) and terrestrial snails (*Polygyria* sp., *Polydontes* sp., and *Euglandina rosea*). Thus, the presented MNI totals and percentages represent animals assumed to be purposefully exploited by the Van Horn and Depot peoples.

RESULTS AND INTERPRETATION

As always, environmental and cultural interpretation of zooarchaeological analyses must be carried out with caution due to the possibility of many biases. Sources of error include quality of preservation, sampling and processing procedures, and unknown cultural or environmental variables.

A total of 1,768 vertebrate and 8,890 invertebrate specimens (fragments) were examined for Test Unit 1 of the Van Horn Creek shell mound. Ninety-one percent (n = 1,615) of the vertebrate remains are from the floated, 4-liter sample. Similar results occur for Test Unit C of the Depot Creek shell mound, with a total of 2,113 vertebrate and 7,021 invertebrate specimens. Here, ninety-three percent of the vertebrate remains are from the fine-screened, 4-liter flotation sample. A quantitative summary for both sites is presented in Tables A1.2 and A1.3. Faunal data are given by provenience in Tables A1.4 through A1.8, A1.10 through A1.14.

In addition to these faunal samples, selected bone and shell specimens (some artifacts) from non-analyzed proveniences were examined (Tables A1.9 and A1.16). MNI counts for 4 liter and 1/4" samples shown above are not exclusive of each other. The counts show that at both sites, the fine-screened samples produced the highest MNI counts. However, without the 1/4" complements, rabbit, alligator, pond slider, black drum, mullet, and scotch bonnet would have been missing from the analysis of the Van Horn Creek shell mound. White-tailed deer, mouse, alligator, slider, mud turtle, seatrout, and lightning whelk would have been missing from the analysis of the Depot Creek shell mound.

Examination of numbers of taxa that are represented for a site can be a useful indication of natural faunal diversity (when all taxa are considered) or the extent of a people's subsistence routine (when only consumed taxa are considered). Minimum taxa numbers of different cultural components can be collapsed into one data set to project environmental setting and inter-site comparisons from a

TABLE A1.2
Van Horn Creek Shell Mound, 8Fr744

		#Frags	MNI	Wt. (g.)
4 Liter Sample	Vertebrate	1615	28	23.66
	Invertebrate	8874	348	16781.43
1/4" Screen	Vertebrate	153	25	97.77
	Invertebrate*	16	10	191.15

TABLE A1.3
Depot Creek Shell Mound, 8Gu56

		#Frags	MNI	Wt. (g.)
4 Liter Sample	Vertebrate	1970	26	38.36
	Invertebrate	7003	627	14487.89
1/4" Screen	Vertebrate	143	21	111.82
	Invertebrate*	18	7	199.22

* 1/4" invertebrate sample not collected systematically; most *Rangia* shells discarded as they were the major midden deposit component.

synchronic, spatial perspective. Minimum taxa identified for both sites were high relative to the small samples. This is largely the result of combining the 1/4" - screened material recovered from general excavation levels with the fine-screened 4-liter flotation sample. The Van Horn samples produced a total of 32 (including commensals) taxa whereas the Depot Creek samples produced a total of 23 taxa. Depot Creek shell mound is situated on Depot Creek close to where it empties into Lake Wimico. The Van Horn Creek shell mound is situated on Van Horn Creek, a minor stream farther east in the lower Apalachicola drainage system. The difference in numbers of taxa between the two sites in part might be explained by Van Horn's closer proximity to higher saline waters sometime in the prehistoric past.

The most obvious element of the two sets of midden samples is the two shellfish species, rangia clam (*Rangia cuneata*) and common oyster (*Crassostrea virginica*). Alligator and turtle appear in small amounts in both middens as do a variety of fishes. Most identified archaeological fishes are common estuarine species. Gar and sunfish (only one specimen) are typically freshwater fishes. Few deer bone specimens were found in these samples. The faunal assemblages, upon overall inspection of presence/absence of species (Tables A1.8, A1.15) offer no surprises. Species composition reflects local food resources.

The Depot Creek shell mound samples demonstrate a focus on collecting rangia clams whereas both rangia and oysters were targeted at the Van Horn Creek shell mound, apparently at different times in the past. Examination of the Depot Creek levels shows no significant variance in species composition, suggesting continuity in procurement of animal foods at this locale from Late Archaic through Early Woodland times. Analysis of the levels from Van Horn, however, provide a scenario of change. Figures A1.1 and A1.2 graphically describe the stratigraphic relationship between rangia clam and oyster. Through time, rangia clam replaces oyster as the dominant midden shellfish. Typically, rangia clam and oyster do not share habitat ranges due to different salinity preferences (Fairbanks 1963:4), the clam requiring less saline waters than the oyster.

It is probably unlikely that the prehistoric inhabitants of Van Horn Creek would collect shellfish outside of their locale. The change, instead, more probably reflects a change in local habitat resulting in the replacement of oyster communities with those of rangia clam. Although almost no rangia occurs in the lower levels (6, 8, 10) where oyster predominates, numbers of oyster still occur in the upper levels (2, 3, 4) where rangia clam predominates. This suggests that during later prehistory (Fort Walton?; Levels 2, 3, [4?]) populations of the two shellfish species either shared habitats to some degree or they were at least within close proximity of each other and of the Van Horn Creek shell mound site.

Supportive evidence of a habitat change includes the presence of freshwater alligator, pond slider, soft-shell turtle, and sunfish in Levels 2 and 4 and their absence in lower levels. Florida horse conch and scotch bonnet, requiring more saline conditions, occur in Level 10 (Table A1.14). Essentially, the environmental change reflected in the Van Horn samples is one of water and substrate conditions, changing from a tidal, brackish situation to a less saline one. Such change may be caused by geomorphological processes or even a change in sea level.

In sum, the two faunal assemblages suggest that inhabitants of both sites had similar subsistence practices. They targeted local shellfish beds and fished and hunted local turtles, alligator, and possibly deer. The Van Horn Creek shell mound samples document a possible change in local habitats with evidence of adaptation to that change by the site's inhabitants. Coastal environments are dynamic complexes. The study of archaeological sites that dot coastal landscapes such as the lower Apalachicola drainage system contributes to the knowledge of biological and geomorphological history as well as prehistoric human exploitation of these areas.

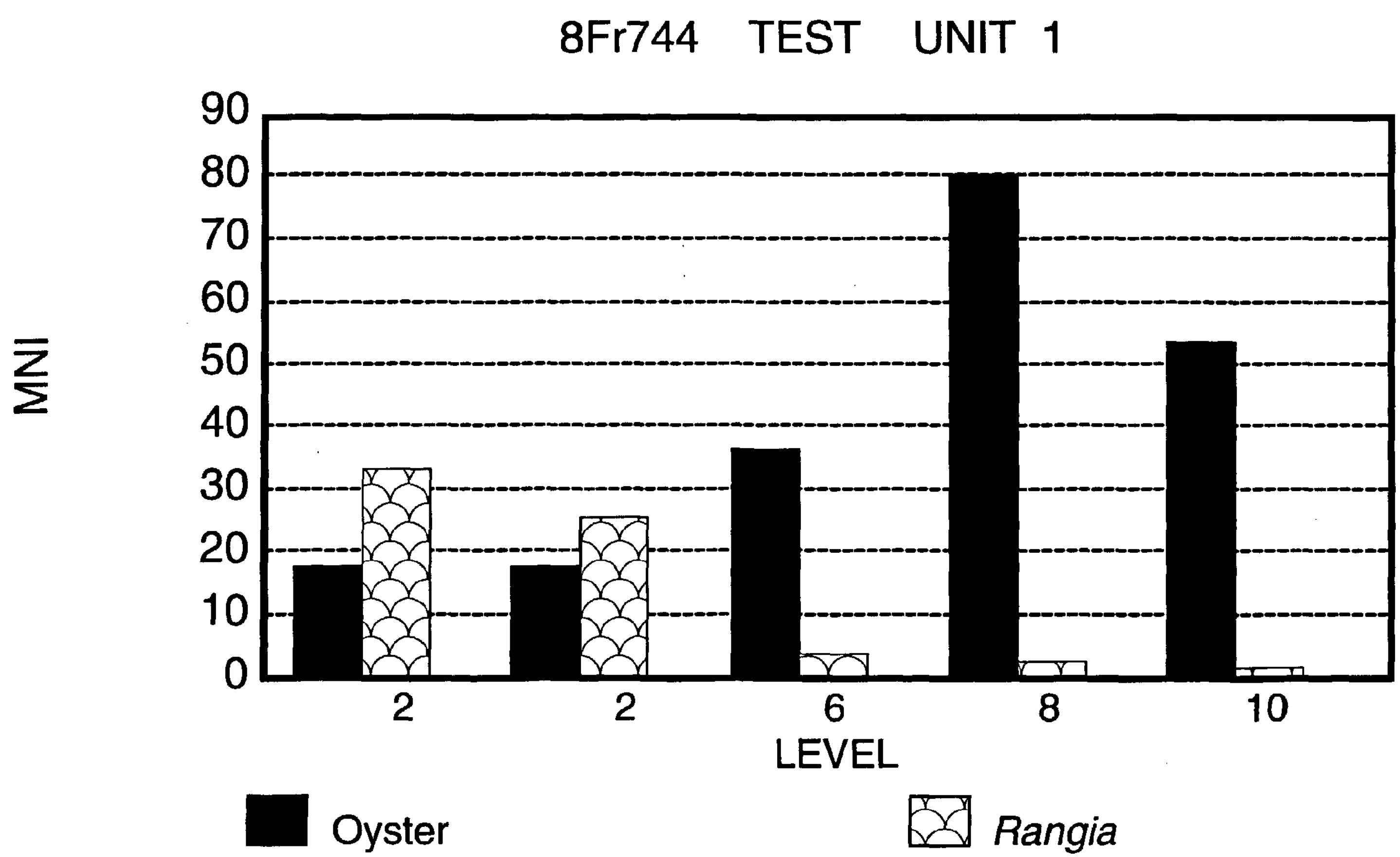

FIGURE A1.1. Bar graph showing relative amounts of *Rangia* and oyster shell by level in Test Unit 1, Van Horn Creek shell mound, 8Fr744.

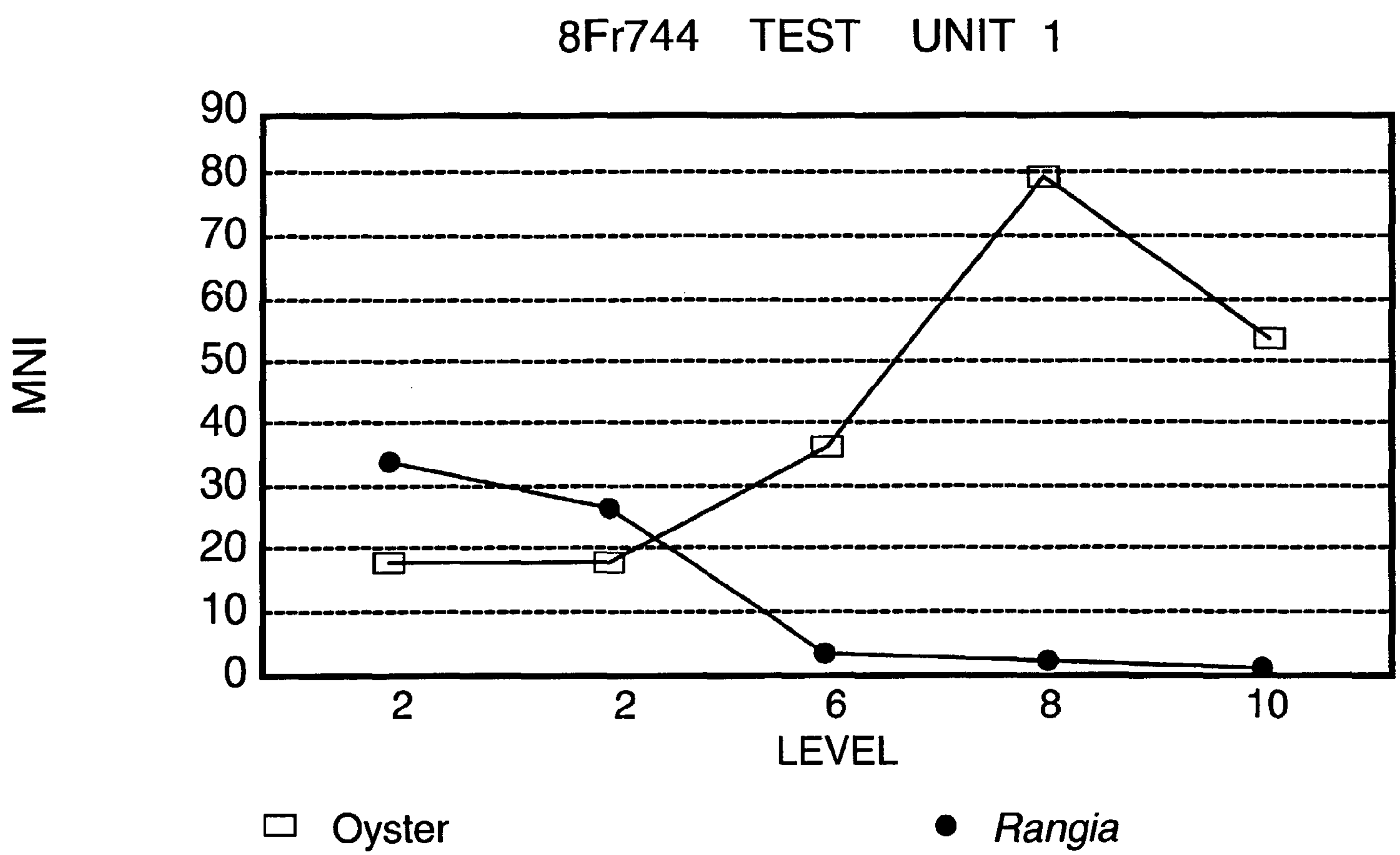

FIGURE A1.2. Graph of relative frequencies of *Rangia* and oyster shell by level in Test Unit 1, Van Horn Creek shell mound, 8Fr744.

B. *YELLOW HOUSEBOAT (8Gu55) AND CLARK CREEK (8Gu60) SHELL MOUNDS AND THE CORBIN-TUCKER SITE (8Ca142)*

by Judith E. Fandrich (August 1989), Florida Museum of Natural History

RESEARCH PROBLEM

This report presents the analyses of faunal material excavated in 1988 from the Corbin-Tucker site, 8Ca142, the Yellow Houseboat shell mound, 8Gu55, and the Clark Creek shell mound, 8Gu60. The shell mounds are located in the Apalachicola delta in Gulf County, a coastal county in an estuarine area. Corbin-Tucker is in Calhoun County, just to the north, an area dominated by the bottomland hardwood ecological community. Bottomland hardwoods are typical of the forests of the Apalachicola River and characteristically undergo seasonal flooding. The three sites also represent different time periods: the sample from 8Ca142 is from a Fort Walton village refuse pit; that from Yellow Houseboat documents, an Archaic through Fort Walton shell mound and that from Clark Creek documents a Woodland through Late Archaic shell mound.

It was expected that the samples analyzed from all three sites would reveal that fish were a major contributor to the aboriginal subsistence. Other researchers on South Carolina and Georgia coastal sites, especially, have reported that their excavated samples are characterized by estuarine fishes (Reitz 1987, Quitmyer 1985, Kozuch 1988, Fandrich 1989).

RELATED COASTAL RESEARCH

Russo (1987) discussed fauna identified at an Archaic coastal site in northwest Florida. He noted that estuarine fishes (mullet, ladyfish, jack, pinfish, Atlantic croaker, spot, silver perch, anchovy, shad, and menhaden) dominated the samples. In addition, there was evidence of exploitation during warm weather. He also observed that, since there was no uniform systematic method of collection of the faunal remains, some of the data may have been biased and not an accurate representation of the excavated units (p. 53). Walker's analysis of fauna from the other two shell mounds in this report (previous section) shows vertebrate samples dominated by garfish, with oysters being replaced by freshwater clams over time at one site, signaling environmental change.

Reitz (1982) analyzed faunal remains from coastal Georgia Mississippian sites. She suggested a general coastal pattern which included the "use of deer to some extent, varying from site to site but rarely more than 50% of the biomass or 11% of the individuals; low use of birds; occasional use of turtles, both marine and aquatic; heavy use of marine fishes, primarily small drums and catfishes" (p. 59).

The coastal strategies differ from the subsistence reported from riverine sites in South Carolina. Brooks and Canouts (1984) proposed a Woodland model which relied on hunting deer in the fall and a diffuse exploitation of riverine resources throughout the year; this model then changes during the Mississippian period to a more intense exploitation of fewer resources (p. 247).

Reitz's survey (1985) of six sites in the Savannah River Valley noted several commonalities. Typically, deer, turtles, and fish were important resources. In sites located above the Fall Line turtles appeared to be more important while below the Fall Line fish were more significant (p. 12).

Kozuch's manuscript (1988) on a coastal South Carolina site revealed a subsistence strategy that relied on oysters and estuarine fishes, with an emphasis on oysters during the Deptford period. Her report integrated data from both vertebrate and invertebrate remains.

My analysis (Fandrich 1989) of faunal remains from a coastal South Carolina site revealed a subsistence strategy that primarily targeted both juvenile fishes whose habitat was the tidal creeks, and the stout tagelus, a bivalve tolerant of fluctuating levels of salinity, whose habitat was the intertidal zone.

PROCEDURE

Preparation

The faunal samples discussed in this report are from flotation of soil samples that averaged twice as large as those of the previous year's excavations at Depot Creek and Van Horn Creek shell mounds: 9 liters or 30 x 30 x 10 cm. The recovery of small faunal remains was successful, as evidenced by the presence of two small gastropods, *Boonea impressa* and *Polygyria* sp. in the samples. Furthermore, the addition of waterscreening through 1/4" (6.35 mm) and 1/8" (3.2 mm) mesh added more and better information to the screened samples. Preliminary rough sorting was done before delivering the faunal sample to the Zooarchaeology Range at the Florida Museum of Natural History. Upon arrival at the museum the samples were fumigated, which is standard procedure. The faunal material was in excellent condition.

Zooarchaeological Methods

Two levels from each shell mound and the two strata in a shell pit feature from the Corbin-Tucker site were selected for analysis. The samples comprised 63 taxa, 11,130 identified vertebrate and invertebrate specimens calculated to represent a minimum number of 1126 individuals (MNI). Certain invertebrates (mollusca, bivalvia, mactridae, and unionidae) were weighed but not counted. MNI was recorded for specimens at the species and genus levels. If there were no representatives at those levels, MNI was recorded at a higher level.

Faunal identifications were made using the FMNH comparative skeletal collection. Fragments were identified to the closest taxon possible (Table A1.1). Information about identified specimens includes the following: element, quantity, side, sex, age, and size. Modifications caused by burning were noted. No visible butchering scars were evident. A worked deer bone occurred in Test Unit B Level 6 of Clark Creek shell mound.

Because different proveniences at the sites were associated with different time periods, the MNI was calculated separately for each provenience. In addition, MNI were derived from taxa identified at the genus and species level. Fauna identified at family, order, and class were not included in MNI quantification except in those cases where specimens identified to family or above are not represented at the generic level.

Theoretically, every fragmented element could define an individual. However, to deal with this, Chaplin's formula (1971):

$$GMT = C/2 + D$$

was used to calculate the MNI where:

GMT = grand minimum number of individuals

C = total number of comparable paired elements

D = total number of dissimilar elements.

It is known that Chaplin's method of calculating the MNI exaggerates the importance of the rarer fauna. However, it is a better approach than the paired element method (Casteel 1977).

Lastly, an attempt to determine seasonality by measuring *Rangia cuneata* was ruled out. Claassen (1986) discussed a procedure to arrive at seasonality by measuring the distance between the surficial rings. However, a malacological researcher at the Florida Museum of Natural History (Auffenberg 1989: personal communication) pointed out that the procedure as defined could not be replicated. Part of the problem is that archaeological specimens are too eroded to be measured. Also, the procedure itself is vague on how and where the measuring should be done.

ANALYSIS

The following analysis is based on the identified vertebrate and invertebrate species representing the 1126 MNI (Tables A1.17-A1.22). These species primarily occupy an aquatic habitat. However, there are also representatives of a terrestrial environment. This suggests wide-ranging generalized subsistence strategies.

Sylvilagus palustris (marsh rabbit) and *Sylvilagus* sp. (rabbit), when considered together were the most common mammal species based on calculations of MNI at the shell mounds (Table A1.21). The next most common were *Didelphis virginiana* (opossum), *Neofiber alleni* (round-tailed muskrat), and *Procyon lotor* (raccoon). One individual was recorded for each of the following: *Sciurus carolinensis* (gray squirrel), *Sigmodon hispidus* (hispid cotton rat), *Felis concolor* (Florida panther), *Odocoileus virginianus* (white-tailed deer). A total of 159 fragments of mammal bone with a weight of 51.93 grams and calculated to include 13 MNI were identified. The most interesting specimen was the

Florida panther whose presence at the Yellow Houseboat shell mound extends its archaeological range into a previously unreported area (Laurie Wilkins 1989; personal communication) Tables A1.25).

One *Anas* sp. (duck) from Yellow Houseboat and one *Fulica americana* (American coot) from Clark Creek were identified from 104 bird bone fragments, which weighed 13.32 grams. One *Drymarchon corais* (Indigo snake) was present at Clark Creek. The remainder of the serpent fragments were too damaged to assign them to genus. There were 13 fragments weighing a total of 1.75 grams. Alligator was present at both shell mounds. The twelve fragments weighed 3.26 grams.

The most common turtle at the shell mounds was *Kinosternon* sp. (mud turtle) which also contributed the most weight. Next in importance was *Pseudemys* sp. (cooter/slider), followed by *Kinosternon bauri* (striped mud turtle), then *Trionyx ferox* (soft shell turtle), and finally *Pseudemys floridana* (cooter). The MNI of turtles was 15, derived from 607 fragments weighing a total of 109.96 grams. All these turtles are aquatic species. Single individuals of *Rana* sp. (frog) at Clark Creek and Lacertilia (lizard) at Yellow Houseboat were observed.

The most common individual fish were *Lepisosteus* sp. (garfish), at both the inland late prehistoric site and the estuarine shell mounds, followed by shell mound species *Arius felis* (hardhead catfish), *Cynoscion arenarius* (sand seatrout), *Cynoscion* sp. (seatrout), and *Sciaenops ocellatus* (red drum). Single individuals were observed for *Bagre marinus* (gafftopsail catfish), *Archosargus probatocephalus* (sheepshead), *Mugil cephalus* (mullet), *Amia calva* (mudfish), and *Carcharhinus leucas* (bull shark). Together all the fishes weighed 145.84 grams, derived from 7479 fragments, yielding 32 MNI. In MNI, quantity, and weight, the garfish dominate the fish sample. The lone shark tooth from Clark Creek (Table A1.27) is from a species that has tolerance for fresh water.

The most frequently occurring bivalves at the shell mounds by MNI and weight were *Rangia cuneata* (freshwater clam), followed by *Elliptio cressidens* (heavy-toothed filter clam) at Corbin Tucker inland, and *Crassostrea virginica* (eastern oyster) at the shell mounds. Also present were bivalves *Amblema plicata* and *Obovario subrotunda*, and *Geukensia demissa* (Atlantic ribbed mussel). Gastropods present were Cirripedia (barnacle), Crassatelidae (crassatelid), *Neritina reclivata* (olive nerite), *Viviparus georgianus* (Georgian mystery snail), Pulmonata (land snails), *Polygyria* sp. (snail), and *Boonea impressa* (impressed odostome). Not all the fauna in the sample may have contributed to the subsistence economy. For example, *Boonea impressa* preys on *Crassostrea virginica* (Wells 1959:140). In every sample where there were oysters, the *Boonea* were also present.

CONCLUSION

The subsistence strategy pursued at all three sites was based on aquatic foods. In all locations the identifiable resources most depended on were garfish and turtles. At the shell mounds in the lower valley the freshwater clam contributed significantly to the subsistence. At the inland Corbin-Tucker site the filter clams and the Georgian mystery snail were important.

Birds were not significant in the samples. It is interesting that more mammals are present in the shell mounds than at the Corbin-Tucker site. This may be due to the characteristics of the latter's sample - mostly fragmented specimens from a refuse pit only preserved by proximity to shells in the pit which neutralized the effects of acid sandy soils. All other fauna at the site were not preserved, unlike the case at the shell mounds.

The overall subsistence strategies utilized at all three sites focused on the riverine resources of the Apalachicola. In addition, the targeted species seem to be the larger fish. Since tiny invertebrates were represented in the samples, small fish would have also been recovered if present. Since they are not present in the samples, it can be suggested that the subsistence strategy along the Apalachicola River differs from Atlantic coastal/estuarine prehistoric foodways and is more like the strategies pursued in the upper Savannah River Valley.

ACKNOWLEDGEMENTS

I appreciate the help I have had from many people who kindly answered my questions. Thanks are due to Dr. Elizabeth Wing, Dr. Elizabeth Reitz, Dr. Gary Morgan, Sylvia Scudder, Laurie Wilkinson, Kurt Auffenberg, Laura Kozuch, Lee Newsom, Irvy Quitmyer, and Mike Russo.

TABLE A1.1. LIST OF ANIMAL SPECIES IDENTIFIED AT FIVE APALACHICOLA ARCHAEOLOGICAL SITES.

Identified Taxon	Common Name	Identified Taxon	Common Name
Cricetidae	Mice	*Cynoscion arenarius*	Sand seatrout
Sciurus carolinensis	Gray squirrel	*Cynoscion* sp.	Seatrout
Sigmodon hispidus	Hispid cotton rat	*Leiostomus xanthurus*	Spot
Neofiber alleni	Round-tailed muskrat	*Micropogonias undulatus*	Atlantic croaker
Procyon lotor	Raccoon	*Pogonia cromis*	Black drum
Rodentia	Rodents	*Sciaenops ocellata*	Red drum
Sylvilagus palustris	Marsh rabbit	cf. Sciaenidae	Drums
Sylvilagus sp.	Rabbits	*Mugil cephalus*	Striped Mullet
Odocoileus virginianus	White-tailed deer	*Mugil* sp.	Mullet
Felis concolor	Panther	*Amia calva*	Bowfin
cf. Felidae	Cat	Osteichthyes	Bony fishes
Didelphis virginiana	Opossum	Vertebrata	Vertebrates
Mammalia	Mammals	*Balanus* sp.	Barnacle
Fulica americana	American coot	Cirripedia	Barnacles
Anatidae	Ducks	*Euglandina rosea*	Terrestrial snail
Aves	Birds	*Viviparus georgianus*	Georgian mystery snail
Alligator mississippiensis	Alligator	*Pulmonata*	Terrestrial snails
Kinosternon bauri	Striped mud turtle	*Polygyra* sp; *Polydontes* sp.	Terrestrial snails
Kinosternon sp.	Mud turtles	*Neritina reclivata*	Olive nerite
Pseudemys scripta	Pond Slider	*Neritina* sp.	Nerite
Pseudemys floridana	Cooter	cf. Columbellidae	Dove shells
Pseudemys sp.	Cooters and Sliders	*Boonea impressa*	Impressed odostome
Trionyx ferox	Soft shell turtle	*Odostomia* sp.	Odostome
Testudines	Turtles	*Melongena corona*	Crown conch
Drymarchon corais	Indigo snake	*Busycon contrarium*	Lightning whelk
Colubridae	Colubrid snakes	*Fasciolaria tulipa*	True tulip
Serpentes	Snakes	*Pleuroploca gigantea*	Florida horse conch
Lacertilia	Lizards	*Phalium granulatum*	Scotch bonnet
Reptilia	Reptiles	*Ischadium recurvum*	Hooked mussel
Amphibia cf. Ranidae	Amphibians cf. frogs	*Geukensia demissa*	Atlantic ribbed mussel
Amphibia	Amphibians	Mytilidae cf. Geukensia	Mussels
Rana sp.	Frogs	Mytilidae	Mussels
Rajiformes	Rays, etc.	Unionidae	Freshwater Mussels
Carcharhinus leucas	Bull shark	*Crassostrea virginica*	Eastern oyster
Carcharhinidae	Requiem sharks	*Dinocardium robustum*	Cockle
Lepisosteus sp.	Gar fish	*Rangia cuneata*	Rangia/freshwater clam
Brevoortia sp.	Menhaden	Mactridae	Surf clams
Clupeidae	Herrings	*Mercenaria* sp.	Quahog clam
Ariopsis felis	Hardhead catfish	Pectinidae	Scallop
Bagre marinus	Gafftopsail catfish	cf. *Macrocallista nimbosa*	Sunray venus clam
Ariidae	Marine catfishes	*Elliptio crassidens*	Heavy toothed filter clam
Lepomis sp.	Sunfish	Crassatelidae	Crassatelid
Carangidae	Jacks	Veneridae	Venus clams, etc.
Lutjanus sp.	Snapper	*Amblema plicata*	Freshwater mussel
Archosargus probatocephalus	Sheepshead	*Obovaria subrotunda*	Freshwater mussel
Sparidae	Porgies	Bivalvia	Bivalves
Sparidae/Sciaenidae	Porgies/drums	Mollusca	Molluscs
Gastropoda	Gastropods		

TABLE A1.4. FAUNAL REMAINS FROM DEPOT CREEK SHELL MOUND, 8Gu56, TEST UNIT C, LEVEL 1 (DEPTFORD).

From Flotation Sample (3.2 liters [2941g] = 2% of total level volume):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Lacertilia	3	0.25	1	0.59	TR	0.00
Testudines	10	0.83	1	0.59	0.60	0.03
Clupeidae	2	0.17	2	1.18	0.01	0.00
Lepisosteus sp.	14	1.16	1	0.59	0.10	0.00
Archosargus probatocephalus	1	0.08	1	0.59	0.02	0.00
Sparidae/Sciaenidae	1	0.08	(a)	(a)	TR	0.00
Micropogonias undulatus	1	0.08	1	0.59	0.10	0.00
Osteichthyes	215	17.86	(a)	(a)	5.20	0.24
Vertebrata	70	5.81	(a)	(a)	0.40	0.02
Total Vertebrata	317	26.32	7	4.13	6.43	0.29
Polygyra sp.	7	0.58	5	3.00	0.05	0.00
Crassostrea virginica	1	0.08	1	0.59	0.30	0.01
Rangia cuneata	879	73.01	156	92.31	1905.70	86.57
Mollusca (cf. Bivalvia)	(b)	(b)	(a)	(a)	288.90	13.12
Total Invertebrata	887	73.67	162	95.90	2194.95	99.70
Total from Flotation Sample	1204	100.00	169	100.00	2201.38	100.00

From 1/4" Dry Screen (from 16m^3 level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Mammalia, Large	1	12.50	1	20.00	0.80	1.13
Testudines	3	37.50	1	20.00	3.40	4.82
Sciaenidae	1	12.50	1	20.00	1.60	2.27
Total Vertebrata	5	62.50	3	60.00	5.80	8.22
Busycon contrarium	1	12.50	1	20.00	62.30	88.24
*Rangia cuneata**	2	25.00	1	20.00	2.50	3.54
Total Invertebrata*	3	37.50	2	40.00	64.80	91.78
Total from Dry Screen	8	100.00	5	100.00	70.60	100.00

* Invertebrates not collected systematically; most *Rangia* discarded.

(a) Bone/shell elements from family and class level identifications are not used in calculating MNI unless it is certain that the elements are not represented by any of the species or genus level individuals. This eliminates the possibility of counting individuals more than once.

(b) Fragments unidentifiable to class were not counted.

TABLE A1.5. FAUNAL REMAINS FROM DEPOT CREEK SHELL MOUND, 8Gu56, TEST UNIT C, LEVEL 3 (DEPTFORD)

From Flotation Sample (3.3 liters [3589g] = 2.3% of total level volume):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Mammalia, Small	4	0.19	1	0.52	0.08	0.00
cf. *Sylvilagus* sp.	1	0.05	1	0.52	0.57	0.02
Colubridae	1	0.05	1	0.52	0.04	0.00
Testudines	2	0.09	1	0.52	0.55	0.02
Rajiformes	1	0.05	1	0.52	0.02	0.00
Lepisosteus sp.	20	0.93	1	0.52	0.60	0.02
Clupeidae	5	0.23	1	0.52	0.02	0.00
Ariidae	1	0.05	1	0.52	0.02	0.00
Micropogonias undulatus	3	0.14	3	1.55	0.48	0.02
Osteichthyes	189	8.74	(a)	(a)	3.02	0.11
Vertebrata (cf. Osteich.)	714	33.02	(a)	(a)	11.07	0.39
Total Vertebrata	941	43.52	11	5.70	16.47	0.58
Euglandina rosea	5	0.23	2	1.04	0.55	0.02
Pectinidae	1	0.05	1	0.52	0.41	0.01
Crassostrea virginica	2	0.09	1	0.52	15.79	0.56
Rangia cuneata	684	31.64	178	92.23	2026.39	71.55
Bivalvia (cf. R. cuneata)	529	24.47	(a)	(a)	136.10	4.81
Mollusca (cf. Bivalvia)	(b)	(b)	(a)	(a)	636.50	22.47
Total Invertebrata	1221	56.48	182	94.30	2815.74	99.42
Total from Flotation Sample	2162	100.00	193	100.00	2832.21	100.00

From 1/4" Dry Screen (from 14m³ level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Cricetidae	1	2.38	1	7.69	0.09	0.13
Mammalia, Small	1	2.38	1	7.69	0.11	0.16
Mammalia	2	4.76	1	7.69	1.15	1.66
Alligator mississippiensis	1	2.38	1	7.69	2.37	3.43
Testudines	7	16.67	1	7.69	16.82	24.32
cf. Reptilia	2	4.76	(a)	(a)	12.21	17.66
Lepisosteus sp.	3	7.14	(a)	(a)	0.31	0.45
Osteichthyes	15	35.71	1	7.69	1.77	2.56
Vertebrata	3	7.14	(a)	(a)	2.85	4.12
Total Vertebrata	35	83.33	6	46.15	37.68	54.49
Polygyra sp.	4	9.52	4	30.77	0.03	0.04
Euglandina rosea	2	4.76	2	15.38	16.32	23.60
Crassostrea virginica	1	2.38	1	7.69	15.12	21.87
Total Invertebrata*	7	16.67	7	53.85	31.47	45.51
Total from Dry Screen	42	100.00	13	100.00	69.15	100.00

* Invertebrates not collected systematically; *Rangia* discarded.

(a) Bone/shell elements from family and class level identifications are not used in calculating MNI unless it is certain that the elements are not represented by any of the species or genus level individuals. This eliminates the possibility of counting individuals more than once.

(b) Fragments unidentifiable to class were not counted.

TABLE A1.6. FAUNAL REMAINS FROM DEPOT CREEK SHELL MOUND, 8Gu56, TEST UNIT C, LEVEL 5 (DEPTFORD).

From Flotation Sample (4 liters [4438g] = 2.7% of total level volume):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Testudines	17	0.59	1	1.20	0.81	0.02
Ariidae	1	0.03	1	1.20	0.08	0.00
Archosargus probatocephalus	2	0.07	1	1.20	0.03	0.00
Sparidae/Sciaenidae	5	0.17	(a)	(a)	0.05	0.00
Lepisosteus sp.	23	0.80	1	1.20	0.26	0.01
Micropogonias undulatus	1	0.03	1	1.20	0.59	0.01
Osteichthyes	115	4.01	(a)	(a)	0.90	0.02
Vertebrata (cf. Osteich.)	229	10.42	(a)	(a)	2.98	0.08
Total Vertebrata	463	16.14	5	6.02	5.70	0.14
Rangia cuneata	2406	83.86	78	93.98	2073.90	52.50
Bivalvia (cf. R. cuneata)	(b)	(b)	(a)	(a)	1870.40	47.35
Total Invertebrata	2406	83.86	78	93.98	3944.30	99.86
Total from Flotation Sample	2869	100.00	83	100.00	3950.00	100.00

From 1/4" Dry Screen (from 15m³ level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Mammalia	1	6.67	1	16.67	0.99	1.55
Testudines	3	20.00	1	16.67	4.24	6.64
Lepisosteus sp.	1	6.67	1	16.67	0.19	0.30
Archosargus probatocephalus	1	6.67	1	16.67	1.60	2.51
Cynoscion sp.	1	6.67	1	16.67	0.27	0.42
Osteichthyes	3	20.00	(a)	(a)	1.56	2.44
Vertebrata	4	26.67	(a)	(a)	2.40	3.76
Total Vertebrata	14	93.33	5	83.33	11.25	17.62
Crassostrea virginica	1	6.67	1	16.67	52.59	82.38
Total Invertebrata*	1	6.67	1	16.67	52.59	82.38
Total from Dry Screen	15	100.00	6	100.00	63.84	100.00

* Invertebrates not collected systematically; *Rangia* discarded.

(a) Bone/shell elements from family and class level identifications are not used in calculating MNI unless it is certain that the elements are not represented by any of the species or genus level individuals. This eliminates the possibility of counting individuals more than once.

(b) Fragments unidentifiable to class were not counted.

TABLE A1.7. FAUNAL REMAINS FROM DEPOT CREEK SHELL MOUND, 8Gu56, TEST UNIT C, LEVEL 7 (LATE ARCHAIC).

From Flotation Sample (3.3 liters [3370g] = 1.8% of total level volume):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Testudines	14	1.01	1	0.85	3.96	0.13
Sparidae/Sciaenidae	1	0.07	1	0.85	TR	0.00
Osteichthyes	5	0.36	(a)	(a)	0.10	0.00
Vertebrata	21	1.51	(a)	(a)	0.64	0.02
Total Vertebrata	41	2.95	2	1.71	4.70	0.15
Rangia cuneata	896	64.51	115	98.29	2481.14	83.63
Bivalvia (cf. R. cuneata)	452	32.54	(a)	(a)	27.00	0.91
Mollusca (cf. Bivalvia)	(b)	(b)	(a)	(a)	453.85	15.30
Total Invertebrata	1348	97.05	115	98.29	2961.99	99.84
Total from Flotation Sample	1389	100.00	117	100.00	2966.69	100.00

From 1/4" Dry Screen (from 18m³ level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Mammalia, Large	3	3.75	1	14.29	3.56	8.71
Kinosternon sp.	24	30.00	1	14.29	11.51	28.18
cf. *Pseudemys* spp.	6	7.50	2	28.57	6.95	17.01
Testudines	35	43.75	(a)	(a)	13.39	32.78
Archosargus probatocephalus	1	1.25	1	14.29	0.50	1.22
Osteichthyes	5	6.25	(a)	(a)	0.64	1.57
Vertebrata	4	5.00	(a)	(a)	0.51	1.25
Total Vertebrata	78	97.50	5	71.43	37.06	90.72
Euglandina rosea	1	1.25	1	14.29	2.45	6.00
Neritina sp.	1	1.25	1	14.29	1.34	3.28
Total Invertebrata*	2	2.50	2	28.57	3.79	9.28
Total from Dry Screen	80	100.00	7	100.00	40.85	100.00

* Invertebrates not collected systematically; *Rangia* discarded.

(a) Bone/shell elements from family and class level identifications are not used in calculating MNI unless it is certain that the elements are not represented by any of the species or genus level individuals. This eliminates the possibility of counting individuals more than once.

(b) Fragments unidentifiable to class were not counted.

TABLE A1.8. FAUNAL REMAINS FROM DEPOT CREEK SHELL MOUND, 8Gu56, TEST UNIT C: PRESENCE/ABSENCE BY LEVEL, 4-LITER AND 1/4" SAMPLES COMBINED.

Identified Taxa	Level*	1	3	5	7
Cricetidae		*			
Sylvilagus sp.		*			
Alligator mississippiensis		*			
Kinosternon sp.			*		
cf. *Pseudemys* sp.			*		
Colubridae			*		
Lacertilia	*				
Rajiformes			*		
Lepisosteus sp.		*	*	*	
Clupeidae	*	*			
Ariidae		*	*		
Archosargus probatocephalus		*	*	*	
Sparidae/Scieaenidae	*	*	*		
Cynoscion sp.			*		
Micropogonias undulatus		*	*	*	
cf. Sciaenidae		*			
Balanus sp.			*	*	*
Polygyra sp.		*	*		
Euglandina rosea		*	*		
Neritina sp.			*		
Busycon contrarium	*				
Crassostrea virginica		*	*	*	
Rangia cuneata		*	*	*	*
Pectinidae			*		

* Level 1/3/5: Identified as a Deptford-Early Woodland cultural deposit.
Level 7: Identified as a Late Archaic cultural deposit.

TABLE A1.9. SELECTED FAUNAL SPECIMENS FROM THE DEPOT CREEK SHELL MOUND, 8Gu56.

Cat.#	Provenience	Taxa	Description of Specimen
- 28	TU A, L 6	*Sylvilagus* sp.	1 left distal humerus fragment
		Sylvilagus sp.	1 right proximal femur fragment
		Sylvilagus sp.	1 left proximal femur fragment
		Busycon contrarium	2 fragments
		Dinocardium robustum	1 fragment
		Osteichthyes	1 articular fragment
- 33	TU A, L 9	cf. *Odocoileus virginianus*	bone fishhook
		Sylvilagus sp.	1 left distal humerus fragment
- 37	TU A, L 10	*Fasciolaria tulipa*	1 nearly whole shell
		Odocoileus virginianus	2 molars (1 deciduous)
		Archosargus probatocephalus	1 quadrate
		Procyon lotor	1 left mandibular fragment w/ 2 molars
- 57	TU A, L 15, F 3	*Odocoileus virginianus*	metapodial "point" in 2 pcs.
-104	TU D, L 4	*Busycon contrarium*	1 fragment
		Pectinidae	1 fragment

TABLE A1.10. FAUNAL REMAINS FROM VAN HORN CREEK SHELL MOUND, 8Fr744, TEST UNIT 1, LEVEL 2 (FORT WALTON, PERHAPS WITH SOME EARLY WOODLAND MIXED IN).

From Flotation Sample (3.3 liters [3394.8g] = 1.6% of total level volume):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Lepisosteus sp.	7	0.41	1	1.49	0.20	0.01
Ariopsis felis	3	0.18	2	2.99	0.77	0.03
Archosargus probatocephalus	2	0.12	1	1.49	0.15	0.01
Sparidae/Sciaenidae	5	0.30	(a)	(a)	0.07	0.00
Micropogonias undulatus	1	0.06	1	1.49	0.24	0.01
Osteichthyes	296	17.47	(a)	(a)	3.16	0.12
Vertebrata	10	0.59	(a)	(a)	0.55	0.02
Total Vertebrata	324	19.13	5	7.46	5.14	0.20
Polygyra sp.	15	0.89	2	2.99	0.17	0.01
Polydontes sp.	6	0.35	6	8.96	0.25	0.01
Euglandina rosea	1	0.06	1	1.49	0.10	0.00
Mytilidae	2	0.12	1	1.49	0.20	0.01
Crassostrea virginica	848	50.06	18	26.87	1201.09	46.13
Rangia cuneata	498	29.40	34	50.75	751.30	28.85
Mollusca (cf. Bivalvia)	(b)	(b)	(a)	(a)	645.70	24.80
Total Invertebrata	1370	80.88	62	92.54	2598.81	99.80
Total from Flotation Sample	1694	100.00	67	100.00	2603.95	100.00

From 1/4" Dry Screen (from .22m^2 level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Sylvilagus sp.	1	0.70	1	4.00	0.20	0.19
Mammalia	2	1.41	1	4.00	0.91	0.84
Alligator mississippiensis	5	3.52	1	4.00	10.38	9.62
Pseudemys scripta	11	7.75	1	4.00	18.80	17.42
Trionyx ferox	1	0.70	1	4.00	3.18	2.95
Testudines	21	14.79	1	4.00	9.14	8.47
Carcharahinidae	1	0.70	1	4.00	0.76	0.70
Lepisosteus sp.	11	7.75	1	4.00	3.33	3.09
Ariopsis felis	7	4.93	3	12.00	2.17	2.01
Archosargus probatocephalus	5	3.52	3	12.00	5.47	5.07
Pogonias cromis	2	1.41	1	4.00	1.39	1.29
Sciaeniops ocellata	5	3.52	2	8.00	2.58	2.39
cf. Sciaenidae	1	0.70	1	4.00	0.10	0.09
Mugil sp.	1	0.70	1	4.00	0.10	0.09
Osteichthyes	48	33.80	(a)	(a)	15.02	13.92
Vertebrata	14	9.86	(a)	(a)	6.24	5.78
Total Vertebrata	136	95.77	19	76.00	79.77	73.90
Euglandina rosea	4	2.82	4	16.00	18.28	16.94
Neritina sp.	1	0.70	1	4.00	0.38	0.35
*Rangia cuneata**	1	0.70	1	4.00	9.51	8.81
Total Invertebrata*	6	4.23	6	24.00	28.17	26.10
Total Screen Sample	142	100.00	25	100.00	107.94	100.00

* Invertebrates not collected systematically; most *Rangia* discarded.

(a) Bone/shell elements from family and class level identifications are not used in calculating MNI unless it is certain that the elements are not represented by any of the species or genus level individuals. This eliminates the possibility of counting individuals more than once.

(b) Fragments unidentifiable to class were not counted.

TABLE A1.11. FAUNAL REMAINS FROM VAN HORN CREEK SHELL MOUND, 8Fr744, TEST UNIT 1, LEVEL 4 (EARLY WOODLAND?).

From Flotation Sample (3.3 liters [3317.1g] = 1.5% of total level volume):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Cricetidae	2	0.09	1	1.56	0.02	0.00
Trionyx ferox	1	0.05	1	1.56	1.02	0.05
Testudines	3	0.14	(a)	(a)	0.27	0.01
Lepisosteus sp.	10	0.46	1	1.56	0.17	0.01
Ariopsis felis	1	0.05	1	1.56	0.08	0.00
Lepomis sp.	1	0.05	1	1.56	0.04	0.00
Archosargus probatocephalus	8	0.37	1	1.56	0.23	0.01
Micropogonias undulatus	2	0.09	2	3.13	0.65	0.03
Osteichthyes	25	1.15	(a)	(a)	1.12	0.05
Vertebrata	569	26.10	(a)	(a)	5.05	0.22
Total Vertebrata	622	28.53	8	12.49	8.65	0.38
Polygyra sp.	7	0.32	7	10.94	0.07	0.00
Euglandina rosea	1	0.05	1	1.56	0.08	0.00
cf. Columbellidae	1	0.05	1	1.56	0.01	0.00
Mytilidae	1	0.05	1	1.56	0.12	0.01
Crassostrea virginica	1169	53.62	18	28.13	1010.93	44.97
Rangia cuneata	378	17.34	27	42.19	544.15	24.21
cf. *Macrocallista nimbosa*	1	0.05	1	1.56	4.02	0.18
Mollusca (cf. Bivalvia)	(b)	(b)	(a)	(a)	680.05	30.25
Total Invertebrata	1558	71.48	56	87.50	2239.43	99.62
Total from Flotation Sample	2180	100.00	64	100.00	2248.08	100.00

From 1/4" Dry Screen (from .23m² level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Alligator mississippiensis	1	6.67	1	20.00	0.92	0.91
Archosargus probatocephalus	1	6.67	1	20.00	1.09	1.07
Osteichthyes	4	26.67	(a)	(a)	3.05	3.00
Vertebrata	5	33.33	(a)	(a)	2.98	2.93
Total Vertebrata	11	73.33	2	40.00	8.04	7.92
Neritina sp.	1	6.67	1	20.00	0.83	0.82
Ischadium recurvum	2	13.33	1	20.00	6.77	6.67
Crassostrea virginica	1	6.67	1	20.00	85.90	84.60
Total Invertebrata*	4	26.67	3	60.00	93.50	92.08
Total Screen Sample	15	100.00	5	100.00	101.54	100.00

* Invertebrates not collected systematically; *Rangia* discarded.

(a) Bone/shell elements from family and class level identifications are not used in calculating MNI unless it is certain that the elements are not represented by any of the species or genus level individuals. This eliminates the possibility of counting individuals more than once.

(b) Fragments unidentifiable to class were not counted.

TABLE A1.12. FAUNAL REMAINS FROM VAN HORN CREEK SHELL MOUND, 8Fr744, TEST UNIT 1, LEVEL 6 (MIXED EARLY WOODLAND? AND LATE ARCHAIC)

From Flotation Sample (3 liters [2492.7g] = 1.3% of total level volume):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Lepisosteus sp.	2	0.25	1	1.89	0.05	0.00
Brevoortia sp.	1	0.13	1	1.89	0.01	0.00
Ariopsis felis	1	0.13	1	1.89	0.11	0.01
Ariidae	3	0.38	(a)	(a)	0.28	0.01
Lutjanus sp.	1	0.13	1	1.89	0.05	0.00
Micropogonias undulatus	3	0.38	3	5.66	0.82	0.04
cf. Sciaenidae	4	0.50	1	1.89	0.10	0.00
Osteichthyes	174	21.78	(a)	(a)	1.20	0.06
Vertebrata	3	0.38	(a)	(a)	0.18	0.01
Total Vertebrata	192	24.03	8	15.09	2.80	0.14
Balanus sp.	3	0.38	3	5.66	0.57	0.03
Mytilidae	1	0.13	1	1.89	0.09	0.00
Crassostrea virginica	584	73.09	37	69.81	1611.42	79.44
Rangia cuneata	18	2.25	3	5.66	29.05	1.43
Veneridae	1	0.13	1	1.89	2.56	0.13
Mollusca (cf. Bivalvia)	(b)	(b)	(a)	(a)	381.90	18.83
Total Invertebrata	607	75.97	45	84.91	2025.59	99.86
Total from Flotation Sample	799	100.00	53	100.00	2028.39	100.00

From 1/4" Dry Screen (from .24m³ level):

Odocoileus virginianus	1	100.00	1	100.00	2.25	100.00
Total Screen Sample*	1	100.00	1	100.00	2.25	100.00

* Invertebrates not collected.

(a) Bone/shell elements from family and class level identifications are not used in calculating MNI unless it is certain that the elements are not represented by any of the species or genus level individuals. This eliminates the possibility of counting individuals more than once.

(b) Fragments unidentifiable to class were not counted.

TABLE A1.13. FAUNAL REMAINS FROM VAN HORN CREEK SHELL MOUND, 8Fr744, TEST UNIT 1, LEVEL 8 (LATE ARCHAIC OR EARLIER).

From Flotation Sample (6.8 liters [6394.7g] = 3% of total level volume):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
cf. *Odocoileus virginianus*	1	0.03	1	1.04	0.34	0.01
Lepisosteus sp.	7	0.19	1	1.04	0.28	0.01
Archosargus probatocephalus	1	0.03	1	1.04	0.01	0.00
Osteichthyes	292	8.06	(a)	(a)	3.64	0.07
Vertebrata	14	0.39	(a)	(a)	0.83	0.01
Total Vertebrata	315	8.70	3	3.13	5.10	0.09
Balanus sp.	13	0.36	5	5.21	1.00	0.02
Polygyra sp.	2	0.06	2	2.08	TR	0.00
Polydontes sp.	1	0.03	1	1.04	0.03	0.00
Ischadium recurvum	67	1.85	3	3.13	9.76	0.17
Crassostrea virginica	3205	88.49	80	83.33	4537.40	81.07
Rangia cuneata	19	0.52	2	2.08	16.34	0.29
Mollusca (cf. Bivalvia)	(b)	(b)	(a)	(a)	1027.60	18.36
Total Invertebrata	3307	91.30	93	96.88	5592.13	99.91
Total from Flotation Sample*	3622	100.00	96	100.00	5597.23	100.00

* No fauna recovered from 1/4" dry screen for Level 8 (total level volume = .23m^3).

(a) Bone/shell elements from family and class level identifications are not used in calculating MNI unless it is certain that the elements are not represented by any of the species or genus level individuals. This eliminates the possibility of counting individuals more than once.

(b) Fragments unidentifiable to class were not counted.

TABLE A1.14. FAUNAL REMAINS FROM VAN HORN CREEK SHELL MOUND, 8Fr744, TEST UNIT 1, LEVEL 10 (LATE ARCHAIC OR EARLIER).

From Flotation Sample (4 liters [3048.4g] = 1.8% of total level volume):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Lepisosteus sp.	10	0.92	1	1.54	0.21	0.01
Ariopsis felis	1	0.09	1	1.54	0.10	0.00
Ariidae	1	0.09	(a)	(a)	0.06	0.00
Leiostomus xanthurus	1	0.09	1	1.54	0.02	0.00
Osteichthyes	74	6.83	(a)	(a)	1.24	0.05
Total Vertebrata	87	8.03	3	4.62	1.63	0.07
Balanus sp.	5	0.46	3	4.62	0.80	0.03
Pleuroploca gigantea	1	0.09	1	1.54	24.33	1.04
Ischadium recurvum	25	2.31	3	4.62	5.26	0.22
Crassostrea virginica	954	88.01	54	83.08	2300.50	98.25
Rangia cuneata	12	1.11	1	1.54	9.05	0.39
Total Invertebrata	997	91.97	62	95.38	2339.94	99.93
Total from Flotation Sample	1084	100.00	65	100.00	2341.57	100.00

From 1/4" Dry Screen (from .23m³ level)

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Phalium granulatum	1	25.00	1	33.33	10.80	61.19
Ischadium recurvum	3	75.00	2	66.67	6.85	38.81
Total Screen (all invertebrata) Sample*	4	100.00	3	100.00	17.65	100.00

* Invertebrates not collected systematically. *Crassostrea* and *Rangia* discarded.

(a) Bone/shell elements from family and class level identifications are not used in calculating MNI unless it is certain that the elements are not represented by any of the species or genus level individuals. This eliminates the possibility of counting individuals more than once.

TABLE A1.15. FAUNAL REMAINS FROM VAN HORN CREEK SHELL MOUND, 8Fr744, TEST UNIT C: PRESENCE/ABSENCE BY LEVEL, 4-LITER AND 1/4" SAMPLES COMBINED.

Identified Taxa	Level*	2	4	6	8	10
Cricetidae			*			
Sylvilagus sp.		*				
Odocoileus virginianus				*	*	
Alligator mississippiensis		*	*			
Pseudemys scripta		*				
Trionyx ferox		*	*			
Carcharhinidae		*				
Lepisosteus sp.		*	*	*	*	*
Brevoortia sp.				*		
Ariopsis felis		*	*	*		*
Ariidae				*		*
Lepomis sp.			*			
Lutjanus sp.				*		
Archosargus probatocephalus		*	*		*	
Sparidae/Sciaenidae		*				
Leiostomus xanthurus					*	
Micropogonias undulatus		*	*	*		
Pogonia cromis		*				
Sciaenops ocellata		*				
cf. Sciaenidae		*		*		
Mugil sp.		*				
Balanus sp.				*	*	*
Polygyra sp., *Polydontes* sp.		*	*		*	
Euglandina rosea		*	*			
Neritina sp.		*	*			
cf. Columbellidae			*			
Odostomia sp.			*			
Pleuroploca gigantea						*
Phalium granulatum						*
Ischadium recurvum			*		*	*
Mytilidae		*	*	*		
Crassostrea virginica		*	*	*	*	*
Rangia cuneata		*	*	*	*	*
cf. *Macrocallista nimbosa*			*			
Veneridae				*		

* Level 2: Identified as a Fort Walton cultural deposit.

Level 4: Identified as a Woodland (Early?) cultural deposit.

Level 6: Identified as a mixed Woodland-Late Archic cultural deposit.

Level 8-10: Identified as a Late Archaic cultural deposit.

TABLE A1.16. SELECTED FAUNAL SPECIMENS FROM VAN HORN CREEK SHELL MOUND, 8Fr744.

Cat.#	Provenience	Taxa	Description of Specimen
- 39	TU 2, L 2	*Busycon contrarium*	1 large fragment
- 51	TU 2, under H2O	*Pleuroploca gigantea*	1 columella fragment
- 54	TU 3, L 1	Carangidae	1 spine, pneumatized
		Carangidae	1 cleithrum fragment, pneumatized
		Sylvilagus sp.	1 left mandibular fragment
- 55	TU 3, L 2	*Busycon contrarium*	2 fragments
- 72	TU 4, L 2	*Alligator mississippiensis*	1 skull fragment
		Archosargus probatocephalus	1 left premaxilla
		Carangidae	1 spine, pneumatized
		Carangidae	1 cleithrum fragment, pneumatized
- 73	TU 4, L 2 E wall	*Alligator mississippiensis*	4 basioccipital area fragments
- 74	TU 4, L 3	Anatidae	1 proximal coracoid fragment
- 80	TU 4, L 6	*Mercenaria* sp.	1 valve fragment
		Melongena corona	1 fragment
- 81	TU 4, L 7	*Busycon contrarium*	1 columella fragment
	TU 3, L 11	Vertebrata, unidentified	1 fragment of carved bone pin

TABLE A1.17. FAUNAL REMAINS FROM YELLOW HOUSEBOAT SHELL MOUND, 8Gu55, TEST UNIT 2, LEVEL 5 (MIXED EARLY WOODLAND (?) AND FORT WALTON).

8 Liter (10,957g) flotation sample (5.3% of total level volume) and all waterscreen recovery combined (1/4" or 1/8" screen, .15 m^3 level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Mammalia	8	0.22	2	7.41	1.49	1.64
Sylvilagus	3	0.08	1	3.70	2.64	2.91
Rodentia	3	0.08	1	3.70	0.47	0.52
Procyon	5	0.13	1	3.70	4.29	4.73
Felis	1	0.03	1	3.70	0.53	0.58
Aves	7	0.19	1	3.70	0.99	1.09
Anas sp.	1	0.03	1	3.70	0.85	0.94
Reptilia	1	0.03	1	3.70	0.31	0.34
Alligator mississippiensis	11	0.30	1	3.70	1.41	1.56
Kinosternon bauri	74	2.00	1	3.70	11.20	12.35
Kinosternon sp.	23	0.62	1	3.70	2.78	3.07
Pseudemys sp.	156	4.21	1	3.70	18.95	20.90
Lacertilia	1	0.03	1	3.70	0.13	0.14
Osteichthyes	2839	76.63	1	3.70	34.47	38.02
Lepisosteus	38	1.03	2	7.41	2.35	2.59
Ariidae	1	0.03	1	3.70	0.21	0.23
Bagre	5	0.13	1	3.70	0.52	0.57
Arius	15	0.40	3	11.11	1.89	2.08
Sparidae	1	0.03	1	3.70	0.71	0.78
Sparidae/Sciaenidae	1	0.03	1	3.70	0.20	0.22
Cynoscion sp.	1	0.03	1	3.70	0.56	0.62
Amia calva	3	0.08	1	3.70	0.29	0.32
Vertebrata	507	13.68	1	3.70	3.43	3.78
Total Vertebrata	3705	100.00	27	100.00	90.67	100.00
Mollusca	18	4.36	1	0.47	1.36	0.07
Bivalvia	58	14.04	1	0.47	2.05	0.11
Mactridae			1	0.47	759.60	40.07
Rangia cuneata	279	67.55	155	72.43	1131.90	59.71
Boonea	6	1.45	6	2.80	0.01	0.00
Polygyra	52	12.59	50	23.36	0.90	0.05
Total Invertebrata	413	100.00	214	100.00	1895.82	100.00
Totals	4118	100.00	241	100.00	1986.49	100.00

TABLE A1.18. YELLOW HOUSEBOAT SHELL MOUND, 8Gu55, TEST UNIT 2, LEVEL 6 (MIXED EARLY WOODLAND (?) FORT WALTON).

4.5 liter (6,260g) flotation sample (5.6% of total level volume) and all waterscreen recovery combined (1/4" or 1/8" screen, .08 m³ level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Mammalia	9	6.43	2	14.29	2.18	14.17
Rodentia	1	0.71	1	7.14	0.13	0.85
cf Felidae	1	0.71	1	7.14	1.88	12.22
Aves	2	1.43	1	7.14	0.22	1.43
Kinosternon sp.	6	4.29	1	7.14	1.09	7.09
Pseudemys sp.	10	7.14	2	14.29	4.52	29.39
Osteichthyes	58	41.43	1	7.14	3.41	22.17
Lepisosteus sp.	15	10.71	2	14.29	0.44	2.86
Ariidae	7	5.00	1	7.14	0.57	3.71
Arius felis	1	10.71	1	7.14	0.06	0.39
Vertebrata	30	11.43	1	7.14	0.88	5.72
Total Vertebrata	140	100.00	14	100.00	15.38	100.00
Bivalvia	98	91.59	3	27.27	9.32	27.13
Rangia cuneata	6	5.61	6	54.55	24.95	72.63
Polygyra	3	2.80	2	18.18	0.08	0.23
Total Invertebrata	107	100.00	11	100.00	34.35	100.00
Totals	247	100.00	25	100.00	49.73	100.00

TABLE A1.19. FAUNAL REMAINS FROM CLARK CREEK SHELL MOUND, 8Gu60, TEST UNIT B, LEVEL 6 (EARLY WOODLAND).

7 LITER (8,403 g)flotation sample (4.4% of total level volume) and all waterscreen recovery combined (1/4" or 1/8" screen, .16 m³ level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Mammalia	86	1.75	1	2.17	14.32	6.95
Didelphis	4	0.08	1	2.17	2.44	1.18
Rodentia	11	0.22	1	2.17	2.50	1.21
Sylvilagus palustris	1	0.02	1	2.17	0.49	0.24
Sylvilagus sp.	5	0.10	1	2.17	1.97	0.96
Sciurus	1	0.02	1	2.17	0.16	0.08
Sigmodon	2	0.04	1	2.17	0.71	0.34
Neofiber	4	0.08	2	4.35	1.40	0.68
Procyon	1	0.02	1	2.17	0.44	0.21
Odocoileus	11	0.22	1	2.17	12.68	6.15
Aves	90	1.83	1	2.17	11.03	5.35
Fulica	1	0.02	1	2.17	0.11	0.05
Serpentes	12	0.24	1	2.17	1.20	0.58
Drymarchon	1	0.02	1	2.17	0.55	0.27
Alligator	1	0.02	1	2.17	1.85	0.90
Testudines	18	0.37	1	2.17	9.88	4.79
Kinosternon bauri	24	0.49	2	4.35	6.82	3.31
Kinosternon sp.	229	4.66	2	4.35	28.58	13.87
Pseudemys floridana	12	0.24	1	2.17	9.88	4.79
Pseudemys sp.	3	0.06	1	2.17	6.39	3.10
Trionyx	26	0.53	1	2.17	6.05	2.94
Amphibia	2	0.04	1	2.17	0.15	0.07
Rana sp.	1	0.02	1	2.17	0.04	0.02
Carcharhinus	1	0.02	1	2.17	0.21	0.10
Lepisosteus	292	5.95	4	8.70	16.12	7.82
Arius	31	0.63	4	8.70	5.08	2.46
Sparidae/Sciaenidae	5	0.10	1	2.17	0.07	0.03
Cynoscion arenarius	4	0.08	3	6.52	1.81	0.88
Cynoscion sp.	1	0.02	1	2.17	0.01	0.00
Archosargus	5	0.10	1	2.17	2.81	1.36
Sciaenops	5	0.10	2	4.35	1.12	0.54
Mugil	1	0.02	1	2.17	0.22	0.11
Osteichthyes	3729	75.93	1	2.17	52.61	25.53
Vertebrata	291	5.93	1	2.17	6.41	3.11
Total Vertebrata	4911	100.00	46	100.00	206.11	100.00
Bivalvia			1	0.33	2.95	0.13
Rangia	235	51.65	121	40.07	2221.01	94.54
Crassostrea	16	3.52	11	3.64	114.69	4.88
Geukensia	20	4.40	1	0.33	1.58	0.07
Crassatelidae	2	0.44	2	0.66	0.67	0.03
Gastropoda	25	5.49	14	4.64	0.55	0.02
Cirripedia	1	0.22	1	0.33	0.06	0.00
Polygyra sp.	120	26.37	115	38.08	0.61	0.03
Boonea	28	6.15	28	9.27	0.03	0.00
Neritina	7	1.54	7	2.32	6.13	0.26
Viviparus	1	0.22	1	0.33	0.96	0.04
Total Invertebrata	455	100.00	302	100.00	2349.24	100.00
Total	5366	100.00	348	100.00	2555.35	100.00

TABLE A1.20. FAUNAL REMAINS FROM CLARK CREEK SHELL MOUND, 8Gu60, TEST UNIT B, LEVEL 11 (LATE ARCHAIC OR EARLIER).

9 liter (8,627.9 g) flotation sample (<10% of total level volume) and all waterscreen recovery combined (1/4" or 1/8" screen, <.08 m³ level):

Taxa	Number Ident. Frags.	% of Total	Minimum Number Indiv.	% of Total	Bone/ Shell Wt (Grams)	% of Total
Didelphis	1	0.53	1	8.33	0.99	7.96
Aves	3	1.60	1	8.33	0.12	0.96
Reptilia	1	0.53	1	8.33	0.68	5.47
Testudines	1	0.53	1	8.33	0.27	2.17
Kinosternon sp.	15	8.02	1	8.33	1.37	11.01
Pseudemys sp.	3	1.60	1	8.33	1.64	13.18
Amph cf *Rana*	2	1.07	1	8.33	0.06	0.48
Osteichthyes	123	65.78	1	8.33	4.79	38.50
Lepisosteus	2	1.07	1	8.33	0.06	0.48
Ariidae	6	3.21	1	8.33	0.86	6.91
Cynoscion sp.	1	0.53	1	8.33	0.21	1.69
Vertebrata	29	15.51	1	8.33	1.39	11.17
Total Vertebrata	187	100.00	12	100.00	12.44	100.00
Mollusca					744.70	21.44
Bivalvia					345.42	9.95
Rangia	347	55.88	183	64.44	1875.90	54.02
Crassostrea	77	12.40	12	4.23	500.23	14.40
Mytilidae cf Geukensia	109	17.55	1	0.35	3.76	0.11
Crassatelidae	1	0.16	1	0.35	0.99	0.03
Viviparus	1	0.16	1	0.35	0.92	0.03
Polygyra sp.	78	12.56	78	27.46	0.35	0.01
Boonea	8	1.29	8	2.82	0.58	0.02
Total Invertebrata	621	100.00	284	100.00	3472.85	100.00
Total	808	100.00	296	100.00	3485.29	100.00

TABLE A1.21. FAUNAL REMAINS FROM YELLOW HOUSEBOAT (8Gu55) AND CLARK CREEK (8Gu60) SHELL MOUNDS, PRESENCE/ABSENCE BY LEVEL, FLOTATION AND WATERSCREEN SAMPLES COMBINED.

	Clark Creek* TU B		Yellow Houseboat** TU 2	
Identified Taxa	**Level 6**	**Level 11**	**Level 5**	**Level 6**
Mammalia	x		x	x
Didelphis	x	x		
Rodentia	x		x	x
Sylvilagus palustris	x			
Sylvilagus sp.	x		x	
Sciurus	x			
Sigmodon	x			
Neofiber	x			
Procyon	x		x	
Odocoileus	x			
Felis			x	x
Aves	x	x	x	x
Anas			x	
Fulica	x			
Reptilia		x	x	
Serpentes	x			
Drymarchon	x			
Alligator mississippiensis	x		x	
Testudines	x	x		
Kinosternon bauri	x		x	
Kinosternon sp.	x	x	x	x
Pseudemys floridana	x			
Pseudemys sp.	x	x	x	x
Trionyx ferox	x			
Lacertilia			x	
Amphibia	x			
Rana sp.	x	x		
Carcharhinus	x			
Lepisosteus	x	x	x	x
Arius felis				x
Ariidae	x	x	x	x
Sparidae/Sciaenidae	x		x	
Bagre			x	
Cynoscion arenarius	x			
Cynoscion sp.	x	x	x	
Amia calva			x	
Archosargus	x			
Sciaenops	x			
Mugil	x			
Osteichthyes	x	x	x	x
Vertebrata	x	x	x	x
Mollusca		x	x	
Bivalvia	x	x	x	x
Mactridae			x	
Rangia	x	x	x	x
Crassostrea	x	x		
Geukensia	x	x		
Crassatelidae	x	x		
Gastropoda	x			
Cirripedia	x			
Polygyra sp.	x	x	x	x
Boonea	x	x	x	
Neritina	x			
Viviparus	x	x		

* Level 6: Early Woodland cultural deposits, level 11: Late Archaic.
** Both levels: Probable Fort Walton-Early(?) Woodland combined.

TABLE A1.22. FAUNAL REMAINS FROM THE CORBIN-TUCKER SITE, 8Ca142, FEATURE 1, TEST UNIT A.

From Northeast 1/2 of Feature Stratum I (10.75 liters/13,511.7 g, all floated):

Taxa	Number Ident. Frags.	Minimum % of Total	Bone/ Number Indiv.	% of Total	Shell Wt (Grams)	% of Total
Testudines	4	1.65	2	40.00	0.40	3.07
Osteichthyes	6	2.48	1	20.00	0.10	0.77
Lepisosteus sp.	229	94.63	1	20.00	12.50	95.93
Vertebrata	3	1.24	1	20.00	0.03	0.23
Total Vertebrata	242	100.00	5	100.00	13.03	100.00
Bivalvia	1	0.26	1	0.45	1.20	0.05
Unionidae			1	0.45	905.00	38.54
Elliptio	276	72.25	145	65.91	1378.00	58.69
Obovaria	8	2.09	6	2.73	25.80	1.10
Gastropoda	19	4.97	1	0.45	0.50	0.02
Viviparus	40	10.47	28	12.73	37.40	1.59
Pulmonata	3	0.79	3	1.36	0.06	0.00
Polygyra	35	9.16	35	15.91	0.10	0.00
Total Invertebrata	382	100.00	220	100.00	2348.06	100.00

From Northeast 1/2 of Feature, Stratum II (25.24 liters/32,415.7 g, all floated):

Taxa	Number Ident. Frags.	Minimum % of Total	Bone/ Number Indiv.	% of Total	Shell Wt (Grams)	% of Total
Mammalia	1	1.59	1	20.00	0.22	5.63
Testudines	3	4.76	1	20.00	0.14	3.58
Osteichthyes	42	66.67	1	20.00	0.96	24.55
Lepisosteus sp.	11	17.46	1	20.00	2.57	65.73
Vertebrata	6	9.52	1	20.00	0.02	0.51
Total Vertebrata	63	100.00	5	100.00	3.91	100.00
Bivalvia			1	1.72	68.10	32.17
Unionidae			1	1.72	21.70	10.25
Amblema	1	1.27	1	1.72	10.00	4.72
Elliptio	12	15.19	6	10.34	49.40	23.33
Obovaria	3	3.80	2	3.45	17.50	8.27
Gastropoda	17	21.52	1	1.72	0.72	0.34
Viviparus	42	53.16	42	72.41	44.20	20.88
Polygyra	4	5.06	4	6.90	0.08	0.04
Total Invertebrata	79	100.00	58	100.00	211.70	100.00
TOTAL (NE 1/2 of feature)	766		288		2576.70	

APPENDIX 2

CATALOG OF HUMAN SKELETAL REMAINS FROM BURIAL AT YELLOW HOUSEBOAT SHELL MOUND, 8Gu55

By Laura Clifford, University of South Florida Graduate Program in Anthropology

Provenience Number	Weight (g)	Item Description	Orientation	Comments
10-01	21.8	tibia	r	proximal, attaches to 10-2 and 10-3
10-02	39.2	tibia	r	distal, attaches to 10-1
10-03	2.9	tibia	r	shaft, attaches to 10-1
10-04	9.3	tibia	r	distal
10-05	4.9	tibia	r	shaft
10-06	2.0	tibia	r	shaft
10-07	0.8	tibia	r	shaft
10-08	1.2	tibia	r	shaft
12-01	5.7	fibula	r	distal, attaches to 12-2 and 12-6
12-02	9.6	fibula	r	shaft, attaches to 12-3 and 12-1
12-03	4.5	fibula	r	proximal, attaches to 12-2 and 12-5
12-04	3.7	fibula	l	distal
12-05	1.2	fibula	r	proximal, attaches to 12-3
12-06	0.5	fibula	r	distal, attaches to 12-1
13-01	49.0	tibia	l	proximal, attaches to 13-2
13-02	6.4	tibia	l	proximal, attaches to 13-1
13-03	5.3	tibia	l	proximal
13-04	1.1	tibia	l	shaft
13-05	1.1	tibia	l	shaft
13-06	28.0	tibia	l	condyle
14-01	6.5	fibula	l	shaft, attaches to 14-2
14-02	10.6	fibula	l	shaft, attaches to 14-3 and 14-1
14-03	4.3	styloid process	l	attaches to 14-2
16-01	7.8	patella	r	
16-02	149.2	femur	r	distal, attaches to 16-3
16-03	106.7	femur	r	proximal, attaches to 16-2
16-14	1.3	rib	r	
17-01	29.9	pelvis	r	sacro-iliac joint, male
17-02	4.1	vertebra	n	lumbar
17-03	5.0	pelvis		iliac crest portion
17-04	3.8	vertebra	n	lumbar
17-05	4.5	pelvis		acetabulum
17-06	3.4	pelvis		
17-07	3.6	pelvis		ilium
17-08	3.3	pelvis		ischium
17-09	2.0	vertebra	n	
17-10	3.0	pelvis		ilium crest
17-11	1.4	none		indeterminate fragment
17-12	1.4	vertebra	n	inferior articular process
17-13	0.8	pelvis		
17-14	0.8	pelvis		centrallium section
17-15	1.0	vertebra	n	inferior articular process
17-16	0.8	pelvis	r	area of inferior iliac spine
17-17	0.5	pelvis		
18-01	11.2	vertebra	n	lumbar
18-02	4.8	vertebra	n	cervical
18-03	2.6	vertebra	n	inferior articular process
18-04	1.0	rib		
18-05	1.6	vertebra	n	
18-06	2.0	vertebra	n	
18-07	0.9	vertebra	n	transverse process
18-08	0.5	vertebra	n	body rim

APPENDIX 2 (Continued)

Provenience Number	Weight (g)	Item Description	Orientation	Comments
18-09	0.8	vertebra	n	inferior articular process
18-10	0.6	vertebra	n	inferior articular process
19-01	3.6	rib		
19-02	2.4	rib		
19-03	1.5	rib		
19-04	1.3	rib		
19-05	0.8	rib		
19-06	0.9	rib		
19-07	0.4	rib		
19-08	0.5	rib		
19-09	0.5	rib		
19-10	0.5	rib		
19-11	0.5	rib		
19-12	0.3	rib		
19-13	0.2	rib		
19-14	0.3	rib		
19-15	0.3	rib		
19-16	0.4	rib		
20-01	3.3	rib	l	
20-02	2.1	rib	l	
20-03	2.9	rib	l	
20-04	4.9	rib	l	
20-05	3.3	vertebra	n	inferior articular process
20-06	3.4	rib	l	
20-07	1.7	rib	l	
20-08	1.6	rib		
20-09	1.3	rib		
20-10	1.1	rib		
20-11	1.3	rib	l	
20-12	1.5	vertebra	n	
20-13	2.5	vertebra	n	inferior articular process
20-14	0.7	rib		
20-15	1.4	clavicle		
20-16	1.1	vertebra	n	
20-17	0.6	rib		
20-18	0.6	rib	l	
20-19	0.9	rib	l	
20-20	1.5	vertebra	n	inferior articular process
20-21	0.4	rib		
20-22	0.4	rib		
20-23	0.4	vertebra	n	spinous portion
20-24	0.5	vertebra	n	
20-25	0.5	vertebra	n	inferior articular process
20-26	0.5	vertebra	n	inferior articular process
20-27	0.3	rib		
20-28	0.4	rib		articulates with vertebra
20-29	0.2	rib		
20-30	4.3	vertebra	n	
20-31	3.3	vertebra	n	
21-01	4.8	rib		
21-02	2.0	vertebra	n	
21-03	1.5	rib		spinal articular surface
21-04	2.4	rib		
21-05	7.6	clavicle	r	sternal articulation
21-06	0.8	vertebra	n	
21-07	4.2	rib		
21-08	4.7	rib		

APPENDIX 2 (Continued)

Provenience Number	Weight (g)	Item Description	Orientation	Comments
21-09	1.4	rib		
21-10	2.3	rib		spinal articular process
21-11	2.0	vertebra	n	inferior articular process
21-12	0.6	rib		
21-13	1.2	rib		
21-14	1.0	rib		
21-15	0.7	rib		
21-16	0.7	rib		
21-17	0.7	rib		
21-18	1.5	vertebra	n	inferior articular process
21-19	2.5	vertebra	n	spinous portion
21-20	1.5	vertebra	n	transverse process
21-21	2.2	vertebra	n	inferior articular process
21-22	1.6	vertebra	n	inferior articular process
21-23	1.0	vertebra	n	spinous portion
21-24	1.0	vertebra	n	inferior articular process
21-25	0.8	vertebra	n	inferior articular process
21-26	0.8	vertebra	n	spinous portion
22-01	4.6	rib		
22-02	4.4	rib		
22-03	3.9	rib		
22-04	3.0	rib		
22-05	1.6	vertebra	n	inferior articular process
22-06	1.0	rib		
22-07	1.2	rib		
22-08	0.9	rib		
22-09	1.4	rib		
22-10	0.7	vertebra	n	inferior articular process
22-11	0.7	rib		
23-01	5.3	humerus	r	distal
23-02	5.4	humerus	r	distal, attaches to 23-3
23-03	8.3	humerus	r	distal, attaches to 23-2
23-04	11.1	humerus	r	attaches to 23-2 and 23-3
23-05	29.5	humerus	r	attaches to 23-4
23-06	5.1	clavicle	l	
23-07	2.3	metacarpal	r	index finger
23-08	1.6	phalanx	r	
23-09	1.3	metacarpal	l	little finger
23-10	1.5	humerus	r	
24-01	25.6	humerus	l	distal, attaches to 24-1 and 24-2
24-02	23.0	humerus	l	proximal, attaches to 24-1
24-03	3.9	humerus	l	distal, attaches to 24-3 and 24-1
25-01	11.4	ulna	l	proximal, attaches to 25-3
25-02	24.0	ulna	r	
25-03	13.2	ulna	l	distal, attaches to 25-1
25-04	7.4	radius		
25-05	6.4	radius		
25-06	6.1	radius	r	proximal
25-07	2.1	radius		
25-08	1.9	ulna	r	distal
25-09	4.8	ulna	l	proximal
25-10	3.0	humerus	l	distal
25-11	3.2	ulna	l	proximal
25-12	1.9	radius	r	distal
25-13	1.1	metacarpal	r	
25-14	0.5	ulna		
25-15	0.9	metacarpal	r	index finger

APPENDIX 2 (Continued)

Provenience Number	Weight (g)	Item Description	Orientation	Comments
25-16	1.1	radius		
25-17	0.9	radius		
25-18	0.5	phalanx	r	little finger
25-19	0.8	ulna		
25-20	0.5	none		indeterminate fragment
25-21	0.9	none		indeterminate fragment
25-22	0.5	none		indeterminate fragment
25-23	1.0	radius	l	proximal
26-01	6.5	radius	r	distal
26-02	2.4	rib	r	
26-03	3.0	rib	r	
26-04	0.4	rib	r	
26-05	2.4	rib	r	
26-06	2.8	metacarpal	l	index finger
26-07	1.4	phalanx	l	
26-08	1.8	phalanx	r	second
26-09	1.8	indeterminate fragment		
26-10	0.8	rib	r	
26-11	1.3	rib	r	
26-12	0.7	rib	r	
26-13	0.8	rib	r	
26-15	0.5	rib	r	
26-16	0.3	rib	r	
26-17	0.7	rib	r	
26-18	0.5	rib	r	
26-19	1.0	radius	r	distal, styloid process
26-20	0.9	phalanx	r	little finger
26-21	0.6	rib	r	
26-22	0.3	rib	r	
26-23	1.6	none		indeterminate fragment
26-24	1.0	rib	r	
26-25	0.6	rib	r	
26-26	0.1	none		indeterminate fragment
26-27	0.2	rib	r	
26-28	0.4	rib	r	
26-29	0.3	none		indeterminate fragment
26-30	1.5	turtle bone		was near ribs
26-31	0.4	rib	r	
26-32	0.6	rib	r	
26-33	0.3	rib	r	
26-34	0.3	none		indeterminate fragment
26-35	0.3	rib	r	
26-36	0.5	none		indeterminate fragment
27-01	1.8	rib		
27-02	2.0	rib		
27-03	0.2	terminal phalanx		hand
27-04	0.2	terminal phalanx		hand
27-05	0.9	phalanx		
27-06	1.5	phalanx		
27-07	2.5	phalanx		
27-08	3.7	phalanx		
27-09	3.8	phalanx		
27-10	2.5	phalanx		
27-11	0.8	indeterminate fragment		
27-12	0.6	indeterminate fragment		
27-13	0.9	indeterminate fragment		
27-14	0.5	indeterminate fragment		

APPENDIX 2 (Continued)

Provenience Number	Weight (g)	Item Description	Orientation	Comments
27-15	0.3	indeterminate fragment		
27-16	0.2	indeterminate fragment		
27-17	0.4	indeterminate fragment		
27-18	0.6	indeterminate fragment		
27-19	0.8	indeterminate fragment		
27-20	1.0	indeterminate fragment		
27-21	1.0	indeterminate fragment		
27-22	1.1	indeterminate fragment		
27-23	1.0	indeterminate fragment		
27-24	3.6	tarsal		
27-25	2.6	tarsal		
27-26	2.6	tarsal		
27-27	2.6	rib		
28-01	3.0	rib		
28-02	1.3	indeterminate fragment		
28-03	16.9	talus	l	
28-04	4.7	tarsal	l	
28-05	1.7	tarsal	l	
29-01	0.3	pm2	l	lower
29-02	0.3	m2	r	lower
30-01	0.3	pm2	r	lower
30-02	0.3	m1	r	lower
30-03	0.3	m2	l	lower
30-04	0.3	m2	l	upper
50-01	1.8	phalanx	l	
50-02	3.6	tarsal		

Total 1049.6

APPENDIX 3

REPORT ON COPPER DISC FROM CORBIN-TUCKER SITE, 8Ca142

A. ANALYSIS AND CONSERVATION OF COPPER DISC by John Maseman, South Florida Conservation Center, Pompano Beach

LAB. NO.: 89026

ITEM: Copper Ear Disk

SOURCE: Nancy Marie White
College of Arts and Sciences
Department of Anthropology
University of South Florida
Tampa, FL 33620

OWNER'S IDENTIFICATION NUMBER: Corbin-Tucker 8-Ca142-310

SITE: Corbin-Tucker Site, Apalachicola River Valley Northwest Florida, USA.

BURIAL ENVIRONMENT: Human burial in acidic sandy soil.

DESCRIPTION OF OBJECT:

MATERIAL(S): The object was made from a sheet of copper

DIMENSIONS: 4.6 cm in diameter X about 0.05 cm thick

WEIGHT: 2.3 g (before treatment)

PROVENCE: Northwest Florida 1080 B.P.

CONDITION REPORT: The object was generally in fair condition. The original shape had been retained with only a small amount of deformation around the edges and an indentation on the central raised area. About 85% of the disk area survived, including some small fragments. A number of cracks were visible in the metal. The surface was covered with soft light and harder dark green copper corrosion products. Some areas seemed to be undergoing active corrosion. Overlying the corrosion on the underside surface was a mixture of sandy soil and a soft yellowish-white material.

INSTRUCTIONS FOR TREATMENT: Clean and stabilize.

DATE RECEIVED: 02 April 89 **DATE COMPLETED:** 24 May 89

ACCOUNT OF TREATMENT: The object was first weighed (2.3 g) and pre-treatment photographs taken. An X-ray was taken at the University of South Florida's Medical School; it showed the location of unseen cracks. In addition, the different densities exhibited in the X-radiograph showed that a great deal of un-corroded metal still remained in the object. An exposure at 70kV for 60 seconds is generally required for this type of material. The actual exposure was at 50kV for .013 (300mA).

A stereo microscope (X10) was used to study the surface. A small fragment of carbonized wood was removed from the debris adhering to the underside. Samples of the yellowish-white substance [probably bone] were also removed for later study. The microscope study showed that there was a stable hard dark green patina layer covering the object's surface and it was possible and necessary to remove any dirt and loose corrosion products. Removal was undertaken mechanically using a No. 15 scalpel under a stereo microscope. During this process areas of a hard, black layer overlying the copper patina were uncovered. Some of these areas wrapped around the edge and slightly onto the underside surface.

No tool marks were seen; however, a total of eleven small (0.2 cm dia.) raised areas were found spaced about every 1 cm around the object near its edge. Following this, the surface was brushed in a circular motion with a glass fiber brush. This action helps to produce a more uniform surface and removes any remaining dirt. It is necessary when using this type of brush to wear gloves, eye protection, and a dust mask to reduce the danger of coming into contact with the broken glass fibers, which can cause a great deal of irritation. The object was washed by immersion in ethanol for five minutes to remove any dirt or glass fibers, then degreased by immersion in acetone for two minutes. The stabilization of the metal was begun by immersing the object in a solution of 3% BTA (benzotriazole) in ethanol for 24 hours. It was then immersed in pure ethanol for 30 seconds to remove excess BTA from its surface. Fragments were then joined to the object using an Acryloid B72 adhesive. Thin strips of a non-woven polyester mesh were fixed to the underside surface of these joins using the Acryloid B72 adhesive to reinforce the bond. Two coats of a solution of 30% Incralac in toluene were painted on the surface of the object as a protective coating.

ANALYTICAL TESTS: A mechanically cleaned but otherwise untreated fragment was subjected to a microprobe on a scanning electron microscope. This probe was done at the University of Miami's Marine Sciences Department by Pat Blackwelder. Due to the high metallic content of the sample no coating of the fragment was required. The areas of a hard black material as mentioned above were shown to contain a higher level of lead (probe No. 5) than an adjacent area which had been cleaned to the copper patina (probe No. 4). Other elements detected (probes No. 1-5) on all surfaces were Ca, Cl, Fe, P and Si. The lead was then further analyzed using XRD or XRF by David Scott at the Getty Conservation Institute.

B. REPORT ON LEAD ANALYSIS OF COPPER DISC by David Scott, The Getty Conservation Institute, Scientific Program, Marina del Ray, California

DATE: 3/26/90

LAB NO: 694.0.90

ITEM: Corroded Fragment of Copper Sheet from an Excavation in Florida sent for study by John Maseman

The x-ray fluorescence analysis of the copper sheet fragment shows a fairly typical spectrum of impurity elements associated with historical period metalwork. The x-ray fluorescence analysis demonstrates the presence of lead, a little zinc, nickel and manganese as characteristic impurities. The surface shows the presence of traces of a number of elements including some sulfur, a little phosphorus, some calcium, some titanium; in general it is hard, on the x-ray analysis of this sample, to say that any enrichment in lead has taken place. A second analysis was then carried out on a darker area of the patinated surface with the following results: the second scan shows slightly more calcium and slightly less titanium; content of manganese is also less; content of iron is also less; content of nickel is less, and content of copper is greater; content of zinc is less; lead is virtually identical through both scans, and the accelerating secondary target is very similar throughout, too.

My cursory perusal of this object suggests that, first, precise conclusions are going to be difficult to draw because it is so heavily and completely corroded; second, the dark areas on the surface are probably a combination of cuprite and other minerals, and the lead which is present is diffused throughout the material and is not really part of the surface coating. The reverse side of the small fragment shows a very similar element distribution with less lead content, but still a substantial amount of lead is present in the material. The conclusion that one could draw from the present spectra is that enrichment in lead and copper corrosion products has occurred on the front surface as compared with the reverse. From examining the crust that is present, I don't think that there is any real evidence of a lead coating and suggest that this analysis is sufficient to answer the question which has been posed by John Maseman [whether the disc was deliberately coated with lead].

C. ANALYSIS OF A FRAGMENT OF THE COPPER DISC by Jay Palmer, Department of Chemistry, University of South Florida and Jay W. Palmer and Associates, Technical Consultants, Tampa

[This analysis was done on another cleaned, untreated fragment of the copper disc plus a very small amount of soil cleaned off the frontal bone of the skeleton near where the disc lay, plus a very small amount of soil taken from the one-liter permanent soil sample from Test Unit E, Level 4, the burial area.]

Analyses of the copper ear disc by the South Florida Conservation Center technical people using steromicroscopic, x-ray diffraction and scanning electron microscopic probe techniques has revealed that the disc still contains a considerable amount of uncorroded metal. These analyses also show that the disc is covered by a stable hard dark green patina. And overlying this patina were areas of a hard, black layer, of which one area was analyzed by a scanning electron microscope probe. Since the black layer was so metallic, no other metal coating was needed on the sample for analysis. Evidence of copper, lead, phosphorous, calcium, aluminum, silicon, iron, chloride and titanium were found. No sulfur was detected.

The iron, aluminum, titanium and silicon can be the result of contamination by various clays. Chloride is found in ground water. The calcium and phosphorous could result from the dissolution of the skull bones by carbon dioxide resulting from the decay of skin, flesh and brain matter from the skull. The presence of lead suggests that it may have been used as a decoration on the copper disk perhaps as particles of the metallic blue-gray colored lead sulfide mineral, galena (PbS).

The oxidation potential-pH phase diagrams show that both metallic lead and copper can coexist at the pH of 5.60 measured in the sandy dirt found near the skull and the pH of 6.04 measured in the material found within several centimeters of the burial, if the ear spool is present in wet, strongly reducing conditions. Under these conditions, lead sulfide can be converted to metallic lead. Carbon dioxide generated by the decaying flesh would sweep out the by-product hydrogen sulfide and provide a pH of 5.6 - 6.0. Thus both metallic lead and copper can occur together in the ear spool under the conditions found in the burial.

APPENDIX 4

CATALOG OF HUMAN SKELETAL REMAINS FROM TEST UNIT E, CORBIN-TUCKER SITE, 8Ca142

By Sylvia Layman, University of South Florida Graduate Program in Anthropology

Provenience Number	Weight (g)	Orientation	Description
000-00-01	12.6	R	frontal/nasal/eye orbit
000-00-02	0.6	R	cranial frag
000-00-03	0.4	R	cranial frag
000-00-04	0.1	R	cranial frag
000-00-00	0.5		bone frags
295-01-01	7.1	L	petrous portion
295-01-00	0.1	?	bone frags
296-02-00	1.0	?	bone frags
296-02-00	0.1	?	bone frags
297-03-01	0.8	L	mandibular M1
297-03-02	0.3	L	mandibular M1 root
298-04-01	0.9	R	maxillary M3
299-05-01	0.8	L	maxillary M3
299-05-00	0.1	L	teeth frags
300-06-01	1.6	L	mandibular M1
302-07-01	1.1	L	mandibular M1
302-07-02	0.3	L	mandibular M3 (determined by lack of wear)
302-07-03	0.4	L	maxillary PM1
302-07-04	0.3	R	mandibular PM2
302-07-00	1.0	?	7 bone frags
302-07-00	1.0	?	7 teeth frags
305-08-01	0.1	L	mandibular 1 lateral frag
305-08-02	0.2	L	mandibular PM2
305-08-00	0.2	?	bone frags
305-08-00	0.2	?	teeth frags
307-09-01	16.5	R	anterior distal tibia
307-09-00	1.3	?	bone frags
307-09-00	0.8	?	teeth & max or mand frags
309-10-01	6.4	L	petrous portion
309-10-02	7.4	R	petrous portion
309-10-03	0.8	?	? skull frag
309-10-00	1.0	?	bone frags
309-10-00	0.2	?	bone frags
311-11-01	1.3	L	mandibular M2 or M1
311-11-02	1.3	L	maxillary M2
311-11-03	0.8	L	maxillary M1 or M2, large cavity on buccal side
311-11-04	0.6	L	maxillary M3 permanent, small cavity
311-11-05	0.3	L	mandibular PM1
311-11-06	0.3	L	mandibular PM2
311-11-07	0.3	L	mandibular PM2
311-11-08	0.2	R	maxillary PM1
311-11-09	0.2	L	mandibular lateral I
311-11-10	0.2	L	mandibular central I
311-11-00	1.5	?	teeth and bone frags
311-11-00	0.2	?	bone frags
311-12-01	5.8	R	mandibular frag w/PM1, PM2 attached
311-12-02	1.6	L	mandibular MP1 (distal cavity) & PM2 attached
311-12-03	2.2	R	maxillary M1, small cavity
311-12-04	0.7	R	maxillary cuspid
311-12-05	0.2	R	mandibular deciduous cuspid, distal/lingual cavity on occlusal surface
311-12-00	0.9	?	root frag
311-12-00	1.2	?	bone frag
311-12-00	0.3	?	tooth frags
311-12-06	2.0	R	maxillary M2 w/bone frag, small distal lingual cavity
312-13-01	23.7	R	parietal frag

APPENDIX 4 (Continued)

Provenience Number	Weight (g)	Orientation	Description
312-13-02	5.3	?	cerebral skull frag
312-13-03	1.1	?	skull frags
312-13-04	1.6	?	skull frag
312-13-05	0.6	?	skull frag
312-13-06	1.2	L	possible occipital condyle
312-13-00	1.5	?	skull frags
318-14-01	0.3	R	maxillary PM2
318-14-02	0.7	R	maxillary M1
319-15-01	0.2	L	mandibular M3
320-16-00	0.1	?	bone frags
321-17-01	0.5	R	mandibular M3
321-17-02	0.7	L	maxillary M2
321-17-03	1.0	L	maxillary M1
321-17-04	0.5	L	maxillary PM2
321-17-05	0.5	L	maxillary PM2
321-17-06	0.2	R	maxillary lateral I
321-17-07	0.2	R	maxillary lateral I
322-18-01	0.3	R	mandibular PM2
322-18-00	0.1	?	bone frags
323-19-01	0.3	R	maxillary M1 or M2
323-19-00	0.1	?	tooth frags
324-20-01	0.1	L	maxillary central I
324-20-00	0.1	?	tooth frags
325-21-01	0.1	R	maxillary central I
325-21-02	0.2	R	maxillary PM1
325-21-00	0.4	?	teeth frags
325-21-00	0.3	?	bone frags
328-22-00	0.1	?	teeth/bone frags
329-23-01	0.1	R	maxillary lateral or central I frag
329-23-00	0.1	?	tooth frags
330-24-01	0.4	R	condyle
330-24-02	8.2	R	temporal
330-24-03	0.1	?	? frag
330-24-04	1.6	?	? frag
330-24-00	0.2	?	? frag
331-25-01	1.1	L	mandibular M2
331-25-02	1.3	L	mandibular M1, buccal cavity
331-25-03	0.6	L	mandibular PM2
331-25-05	0.5	R	maxillary cuspid
331-25-06	0.3	R	mandibular lateral I
331-25-07	0.2	L	mandibular central I
331-25-08	1.3	?	? frag
331-25-00	0.4	?	bone frag
332-26-01	0.3	L	mandibular lateral I
332-26-02	0.2	R	mandibular central I
332-26-03	1.4	?	mandible
334-27-00	0.8	?	bone frags
335-28-00	0.2	?	bone frags
303-29-01	0.7	R	mandibular M1
303-29-02	0.3	R	mandibular M root frag
303-29-00	0.5	?	bone frags
303-29-00	0.6	?	teeth frags
283-30-00	0.3	?	teeth frags
331-25-04	0.4	L	mandibular PM1
319-15-00	0.0	L	dentine and pulp frags
331-25-00	0.9	?	bone frags
332-26-00	0.3	?	bone frags
312-13-07	0.5	?	skull frag

Total 154.1

APPENDIX 5

FLORAL REMAINS FROM THE CORBIN-TUCKER SITE 8Ca142

By Michelle Alexander, Rollins College, Winter Park, Florida

Fifty-three samples from the Corbin-Tucker Site were received for analysis. These samples are from soil samples taken in the field during excavation, floated in the lab and sorted for botanical remains by the University of South Florida crew.

Methods

When the samples were received all were quick-scanned to check their condition. A number of them were wet or still covered with sand and had to be rinsed and air dried. All samples were examined through a stereoscope (10x70x); botanical remains were sorted, identified, counted, weighed and placed in labeled containers. Twenty fragments of wood charcoal were selected at random from each provenience sample and snapped in two to expose fresh cross-sections for identification. Not all samples were large enough to remove 20 fragments. For these small samples 5, 10, or 15 wood fragments were selected depending on the size of the sample. Floral species present are listed in Table A5.

Results of Analysis

There was no evidence of corn or any other cultigen in the samples from unit levels. The only evidence representing potentially edible plant food was a few fragments of *Prunus* (Plum/Cherry) wood charcoal in the samples. There were 55.83 grams of wood charcoal, 44% *Pinus*, 1% *Prunus*, 30% unidentified wood, 16% unidentifiable wood, 7% pitch, and less than 1% pith and unidentified monocot. While pine is the most common wood, because of the small quantity one cannot assume utilization. At the same time the wood in this assemblage does not represent the naturally occurring diversity of trees in this area.

Test Unit A contained the largest quantity of wood charcoal in the assemblage: 36.54 g wood (even without including the feature samples). Second was Test Unit E with 12.86 g wood, then Test Unit F with 4.1 g wood charcoal and Test Unit C with 2.42 g wood.

For C-14 dating, Level 4 of Test Unit C should be suspect, containing uncarbonized or partly carbonized wood. Test Unit E Levels 2 and 3 also contain a small quantity of only partly carbonized wood charcoal. Test Unit A Level 7 has been compromised; one wood charcoal fragment (approximately 0.02g) from another level was accidently included in a Level 7 sample. However, I do not think this would greatly affect a date.

Examination of macrobotanical remains from Feature 1, Test Unit A, also reveals no evidence of cultivated plant foods. In addition there are only a few fragments of plant remains from wild food plants. *Prunus* (Plum/Cherry), *Quercus* (acorns), *Carya* (hickory nuts) were present, in very small quantities, perhaps too small to assume they were utilized. The only seeds were fragments except for a possible *Myrica* (wax myrtle). There were a few small fragments of bone which I pulled out and labeled. The primary wood again is pine. There was a fragment of oak, probably of the red oak family. A ring-porous wood that could not be identified and a few diffuse-porous were found in fragments too small to identify. The unidentified wood was either too small to classify, or only 20 fragments were taken from the sample to identify and what remained was untested. For radiocarbon dating of Feature 1, FS [Catalog no.] 261 Stratum 1, FS 264, 263 of Stratum II look good. The SW1/2 Stratum I FS 259 had sand in the wood (I don't know how this would affect the date) and FS 257 was also sandy. FS 256 seemed all right as did FS 260. I would not use FS 258 as some of the wood in the sample had a reddish look to it and is probably not totally carbonized or has some fresh wood mixed in. Whether this lack of subsistence remains in Feature 1 is due to the poor preservation or to sampling bias is unknown.

TABLE A5. FLORAL REMAINS FROM THE CORBIN-TUCKER SITE, 8Ca142 (RECOVERED BY FLOTATION OF FEATURE FILL AND FOUR LITER SAMPLES FROM LEVELS, PLUS DRY SCREEN OF ALL LEVELS)

Provenience	Pine	Unidentified/Other Wood	Seeds	Nutshell	Comments
NE 1/2 Stratum I Feature 1 (TUA)	2.03 g	3.89 g; .14 g pitch;			good for C^{14}
NE 1/2 Stratum II Feature 1	4.15* g	8.54 g; .75 g pitch; .25 g dif-porous; .07 g ring-porous	.01 g *Murica*? .01 g unident (several)		good for C^{14}
SW 1/2 Stratum I Feature I	3.61 g	2.75 g; .01 g oak; .17 g pitch; <.01 g dif-porous		<.01 g acorn	some sand in wood
SW 1/2 Stratum II Feature 1	2.89** g	6.48 g; 6.6 g pitch; .11 g dif-porous	.01 g unident frag	.01 g hickory <.01 g acorn	sandy
TU A L 3	4.56 g	5.85 g; .18 g pitch; .48 g *Prunus*; 2.2 g unburned/partly burned			gall present
TU A L 4	5.67 g	1.47 g; 3.1 g unburned			
TU A L 5	3.17 g	.8 g; 1.79 g pitch; .94 g unburned			gall present
TU A L 5 near F 1	.7 g	.91 g			gall present
TU A L 6	.57 g	1. g; .55 g pitch; .82 g unburned			gall present
TU A L 7	1.67 g	1.03 g; .02 g pitch			
TU A L 8	.74 g	3.6 g; .26 g pitch			
TU A L 9	1.13 g	6.2 g			
TU C L 3	.64 g	.45 g			
TU C L 4	.30 g	.35 g; .08 g pitch; .41 g unburned			
TU C L 5		.17 g; .01 g pitch			gall present
TU E L 2	.62 g	1.51 g; .3 g pitch; 3.9 g unburned			gall present
TU E L 3	.06 g	.8 g; .26 g unburned; .01 g monocot			gall present
TU E L 4	1.34 g	3.61 g; .11 g pitch; .24 g *Prunus*; 1.94 g unburned	present		gall present
TU E L 5	1.5 g	2.5 g; .11 g pitch; .82 g unburned	present		gall present
TU F L 3	.43 g	.56 g; .08 g pitch			gall present
TU F L 4	.27 g	.48 g; .09 g pitch			gall present
TU F L 5	1.38 g	.52 g; .02 g pith			gall present

* Sent for radiocarbon date combined with **.

** Only 1 g of this sent for radiocarbon date.