SIXTEENTH-CENTURY EUROPEAN CONTACT
SITES ALONG THE FLORIDA GULF COAST

By

MARK THOMPSON ALLENDER

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ACKNOWLEDGEMENTS</th>
<th>iii</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>x</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xi</td>
</tr>
<tr>
<td>KEY TO ABBREVIATIONS</td>
<td>xii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>xiii</td>
</tr>
</tbody>
</table>

## CHAPTERS

<table>
<thead>
<tr>
<th>1 INTRODUCTION</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 FLORIDA GULF-COAST INDIANS IN THE SIXTEENTH CENTURY</td>
<td>7</td>
</tr>
<tr>
<td>Fort Walton</td>
<td>8</td>
</tr>
<tr>
<td>Pensacola</td>
<td>16</td>
</tr>
<tr>
<td>Apalachee</td>
<td>19</td>
</tr>
<tr>
<td>Safety Harbor</td>
<td>20</td>
</tr>
<tr>
<td>Calusa</td>
<td>26</td>
</tr>
<tr>
<td>The Keys Indians</td>
<td>31</td>
</tr>
<tr>
<td>3 SIXTEENTH CENTURY EXPLORATIONS ON THE FLORIDA GULF COAST</td>
<td>33</td>
</tr>
<tr>
<td>4 THE NEW SPAIN FLOTAS</td>
<td>54</td>
</tr>
<tr>
<td>Origin and Evolution of the Flota System</td>
<td>54</td>
</tr>
<tr>
<td>Sailing Route from Vera Cruz to Havana</td>
<td>67</td>
</tr>
<tr>
<td>5 SIXTEENTH-CENTURY CONTACT SITES</td>
<td>89</td>
</tr>
<tr>
<td>Contact Sites and Shipwreck Material</td>
<td>89</td>
</tr>
<tr>
<td>Criteria and Methodology</td>
<td>94</td>
</tr>
<tr>
<td>Description of Sites</td>
<td>97</td>
</tr>
<tr>
<td>Baldwin County (Alabama)</td>
<td>97</td>
</tr>
<tr>
<td>Santa Rosa County</td>
<td>100</td>
</tr>
</tbody>
</table>
Okaloosa County .................................................. 103
Walton County .................................................. 106
Gulf County ...................................................... 119
Wakulla County .................................................. 121
Citrus County .................................................... 131
Hernando County ................................................ 137
Pinellas County ................................................... 139
Hillsborough County ............................................ 156
Manatee County ................................................. 167
Sarasota County .................................................. 181
Charlotte County ............................................... 182
Lee County ....................................................... 184
Collier County ................................................... 200
Monroe County ................................................... 205

6 CONTACT SITES AND SPANISH SHIPWRECKS:
   ARTIFACT COMPARISONS AND INTERPRETATIONS ....... 207

   Material Comparisons ......................................... 208
   Interpretations ................................................ 220
   Impact of European Diseases ................................ 248

7 CONCLUSION .................................................. 256

APPENDIX: SITES OF UNKNOWN HISTORICAL PERIOD OR
   UNCERTAIN LOCATION ........................................... 262

REFERENCES ..................................................... 269

BIOGRAPHICAL SKETCH ......................................... 298
LIST OF TABLES

1 Sixteenth-Century Contact Sites By County......... 222
2 Sites Yielding Artifacts of Silver and Gold (By County)................................. 227
3 Sites Yielding Glass Beads (By County).............. 231
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sailing Route Described by Vázquez de Espinosa</td>
<td>71</td>
</tr>
<tr>
<td>2</td>
<td>Sailing Route Described by Villalobos Vellerino</td>
<td>75</td>
</tr>
<tr>
<td>3</td>
<td>Sailing Route Described by Guillaume Delisle</td>
<td>77</td>
</tr>
<tr>
<td>4</td>
<td>Sailing Route Described by Bernard Romans</td>
<td>81</td>
</tr>
<tr>
<td>5</td>
<td>Spatial Distribution of Sixteenth-Century Contact Sites</td>
<td>221</td>
</tr>
<tr>
<td>6</td>
<td>Spatial Distribution of Sites Yielding Artifacts of Silver and Gold</td>
<td>226</td>
</tr>
<tr>
<td>7</td>
<td>Spatial Distribution of Sites Yielding Glass Beads</td>
<td>230</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
<td></td>
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<tr>
<td>A.D.</td>
<td>Anno Domini (refers to dates in the Christian era)</td>
<td></td>
</tr>
<tr>
<td>AMNH</td>
<td>American Museum of Natural History, New York</td>
<td></td>
</tr>
<tr>
<td>CGCAS</td>
<td>Central Gulf Coast Archaeology Society</td>
<td></td>
</tr>
<tr>
<td>FMNH</td>
<td>Florida Museum of Natural History, Gainesville</td>
<td></td>
</tr>
<tr>
<td>FMSF</td>
<td>Florida Master Site Files</td>
<td></td>
</tr>
<tr>
<td>FPS</td>
<td>Florida Park Service</td>
<td></td>
</tr>
<tr>
<td>FSU</td>
<td>Florida State University, Tallahassee</td>
<td></td>
</tr>
<tr>
<td>HPM</td>
<td>Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Massachusetts</td>
<td></td>
</tr>
<tr>
<td>ITMM</td>
<td>Indian Temple Mound Museum, Fort Walton Beach</td>
<td></td>
</tr>
<tr>
<td>NMAI</td>
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<td>RSPF</td>
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<tr>
<td>UPM</td>
<td>University of Pennsylvania Museum, Philadelphia</td>
<td></td>
</tr>
<tr>
<td>USF</td>
<td>University of South Florida, Tampa</td>
<td></td>
</tr>
<tr>
<td>WPA</td>
<td>Works Progress Administration</td>
<td></td>
</tr>
<tr>
<td>YPM</td>
<td>Yale Peabody Museum, New Haven, Connecticut</td>
<td></td>
</tr>
</tbody>
</table>
Abstract of Thesis Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Master of Arts

SIXTEENTH-CENTURY EUROPEAN CONTACT SITES ALONG THE FLORIDA GULF COAST

By

Mark Thompson Allender

December, 1995

Chairman: Barbara A. Purdy
Major Department: Anthropology

This study proposes an alternative to the prevailing theories which concern European-Indian contact in sixteenth century Florida. It will be shown that most Indian contact with Spaniards was probably a result of the many Spanish ships that wrecked on the Florida coast in the sixteenth century. The traditional research focus, which emphasizes the interaction of Spanish expeditions with the Florida Indians, will be downplayed and examined only briefly.

The Spanish fleets or flotas were the source of many Florida shipwrecks. The origins of the Spanish fleet system, and its development in the sixteenth century, will be discussed. A special emphasis is placed on the New Spain flota and its gradual evolution throughout the sixteenth century. The sailing route of the homeward-bound flotas from Vera Cruz to Havana will be looked at in detail. The
contradictory historical descriptions of this sailing route, and the impact this route may have had on Indians living along the Florida Gulf coast, will be examined.

The relationship between Spanish shipwreck artifacts and European contact materials will be discussed. This discussion includes descriptive summaries of Florida Gulf coast Indian sites with known or suspected sixteenth-century dates of contact. Materials from Spanish shipwrecks will be compared with artifacts from contact sites. This comparison will show the similarity between shipwreck artifacts and European contact materials, and that any of the artifacts from contact sites could have come from the wrecks of homeward-bound Spanish ships. These shipwreck artifacts include European glass beads, an important artifact type usually considered a trade item. The use by Europeans of glass beads within nontrade contexts will be explored.

The general conclusion which emerges with this new information is that during the sixteenth century, European contact with Florida Gulf coast Indians was probably relentless. Spanish-Indian contact was not punctuated over time, nor was it dependent upon the presence of Spanish expeditions every decade or so. This not only suggests a far more complex picture of Spanish contact with the Indians in sixteenth century Florida, but it also places within a completely different perspective the intensity of European diseases endured by the Florida Indians.
CHAPTER 1
INTRODUCTION

This study has two primary objectives. The first is to identify sixteenth-century European contact sites in counties on the Florida Gulf coast, and the second is to propose an alternative to the prevailing theory of how European artifacts came to be at early-period contact sites. To accomplish these objectives, this study will examine the following: 1) Indian groups believed to have been living on the Florida Gulf coast at the time of initial Spanish contact; 2) Recorded Spanish expeditions to the Florida Gulf coast in the sixteenth century, including the earliest known sightings of the Florida peninsula; 3) Known or suspected sixteenth-century European contact sites on the Gulf coast of Florida; and 4) Spanish treasure fleets and their potential impact on coastal Indian groups.

Previous European contact studies have examined sites in certain areas of the state, yet none have looked at the Florida Gulf coast as a unit. Shenkel (1967) discussed contact sites on the Gulf coast from Tampa Bay to Northwest Florida, Scarry (1990) has summarized sites in the Choctawhatchee Bay area, and Marrinan et al. (1990) have
identified sites near Apalachee Bay. Mitchem (1989a-b, 1990) analyzed several contact sites from Apalachee Bay to Collier County, and Safety Harbor sites, including a number of contact sites, from the Withlacoochee River to Monroe County. Milanich and Hudson (1993) have discussed a number of sites along the presumed route of the Hernando de Soto entrada of 1539, and Goggin (1949a) has described sites, including many with contact material, in the Glades area.

A summary list of Florida contact sites compiled by Hale Smith (1956) included ten Gulf coast sites which Smith dated to the sixteenth century. Though this figure is much smaller than the number of contact sites in the present study, Smith had less site data to work with in the 1950s, and virtually no information available on the various types of beads, bells, and other European artifacts discovered at sites. In the absence of diagnostic evidence, Smith frequently used quantities of European goods to help date a site, presuming that sites with fewer European goods probably dated earlier than sites yielding more. The work by Smith greatly underestimated the actual number of Florida contact sites, and many of the sites he reported date to far earlier than was suggested (Marvin Smith 1983).

Most European contact studies suggest that nearly all European artifacts found at Florida contact sites (and at other sites in the southeast) originated from sixteenth-century Spanish expeditions, most notably those of Pánfilo
de Narváez and Hernando de Soto. This perspective is well-illustrated in a discussion of European glass beads by Smith and Good (1982:45), who write that the "distribution of North American archaeological sites producing these beads is interesting (Figure 9). The majority are in coastal areas of Florida, Georgia, and Alabama. These are precisely the areas most often visited by early Spanish explorers."

Yet an alternative approach, and the one emphasized in this study, is in the recognition that coastal areas are precisely where shipwrecks occur. Beginning in the early sixteenth century, Spanish ships heading home from the New World used sailing routes which ran the perimeter of the Florida coast. Since documented and undocumented shipwrecks were remarkably frequent, the Florida Indians not only were guaranteed contact with the Spaniards on a consistent basis, but were furnished with a continual supply of European goods obtained through salvage. This suggests that the Indians were far from dependent upon infrequent Spanish expeditions for the procurement of European goods, and indicates a considerably more complex picture of Spanish-Indian contact in sixteenth century Florida.

The present study is divided into seven chapters and an appendix. The following chapter, Chapter 2, identifies some of the major Indian groups who lived on the Florida Gulf coast at the time of initial Spanish contact in the sixteenth century. These groups include the Pensacola, Fort
Walton, Apalachee, Safety Harbor, Calusa, and Keys Indians. The most heavily documented groups are the Calusa and Safety Harbor groups who dwelt in peninsular Florida, and the least documented are the Fort Walton and Pensacola peoples who lived in the panhandle and along the Northwest Florida coast.

Chapter 3 provides a summary of the activities of sixteenth-century Spanish explorers on the Florida Gulf coast. This synopsis includes the earliest suspected sightings of Florida and extends to the activities of Pedro Menéndez de Avilés on the Southwest Florida coast in the mid- to late 1560s. Since the historical accounts of these expeditions have been documented thoroughly by others and no purpose would be served in describing them again in detail, they are outlined only briefly.

Chapter 4 is divided into two sections. The first deals with the origin of the Spanish fleet or flota system and its gradual development during the sixteenth century. The second section focuses on the New Spain (or Mexican) flotas and the sailing route they used through the Gulf of Mexico from Vera Cruz to Havana. This sailing route is examined in detail to determine what effect its proximity may have had on the Florida Gulf coast Indians.

Chapter 5 is divided into three sections. The first deals with the correlation between shipwrecks and European artifacts from contact sites. The second section outlines
the criteria and methodology used to identify an Indian site as European contact, and more specifically, European contact that dates to the sixteenth century. The third section provides descriptive summaries of 46 Indian sites which most likely have sixteenth-century contact components.

Chapter 6 also is divided into three sections. The first compares materials from Spanish shipwrecks in the Gulf of Mexico with European artifacts found at contact sites on the Gulf coast. The second section evaluates how the Indians probably obtained most European goods, and demonstrates why Spanish shipwrecks provide the simplest and most reasonable explanation for the presence of most European artifacts in contact sites dating to the sixteenth century. The third section focuses briefly on European-introduced diseases and examines the impact on the Indians of Old World disease and its possible role in the distribution of many contact sites.

Chapter 7 is the conclusion. This chapter evaluates the links between Spanish sailing routes, shipwrecks, and contact material, and concludes that most European artifacts could have come from Spanish shipwrecks. Though at least some of the European objects found at contact sites originated from Spanish expeditions, such a theoretical emphasis may produce a distorted picture of European contact in sixteenth century Florida.
An appendix lists more than 80 Indian sites from which European artifacts have been recovered. Unfortunately, most of these sites have yielded European objects which for a number of reasons are difficult to date accurately. Some of the sites have been so poorly documented that their locations also are uncertain. Though many of these sites are important contact sites with sixteenth century components, not enough is known about them to demonstrate conclusively that they actually date to this time period.
The Indian groups who were living on the Florida Gulf coast at the time of initial European contact are generally difficult to identify. Aboriginal peoples inhabiting the Florida panhandle west of the Ochlockonee River are described only vaguely by historical accounts written in the sixteenth century, and more detailed accounts of the area written in the late seventeenth century in fact may have been describing native groups who had migrated to the area from outside the state (Gardner 1969:7; Hann 1988b:61).

Nor is it easy to identify the Indians living in the coastal zone northward from the mouth of the Withlacochee River to the Aucilla River, an area which includes coastal Taylor, Dixie, and Levy Counties. This region is not well known archaeologically during late precolumbian times, and though there are no historical descriptions of the peoples living here at the time of Spanish contact, it is likely that Alachua Tradition peoples (A.D. 800-1700) roamed to this part of the coast from North Central Florida (Johnson and Kohler 1987:282; Milanich 1994,1995).
Both archaeological research and historical accounts have provided relatively more information on the Safety Harbor groups who dwelt south of the Withlacoochee River to the Charlotte Harbor area, and on the Calusa who inhabited the coastal strand from Charlotte Harbor to the Ten Thousand Islands on the Southwest Florida coast (Marquardt 1992a; Mitchem 1989b, 1989c; Widmer 1988). The general discussion of Gulf-coastal Indian groups that follows is taken mainly from studies by Milanich (1994, 1995) and Milanich and Fairbanks (1980). The discussion of Safety Harbor groups is based primarily on research by Milanich (1994, 1995) and Mitchem (1989b).

**Fort Walton**

The Fort Walton culture of Northwest Florida was the most politically complex culture in the state, and as a society probably also had the greatest population density. Fort Walton developed out of the late Weeden Island-Wakulla culture during the late prehistoric period, and its peoples practiced patterns of intensive agriculture, hierarchial settlements, and mound building similar to those practiced by the contemporaneous Mississippian societies in the interior Southeast. There is no doubt that Fort Walton was a Mississippian culture having a sociopolitical system far more developed than any other Florida aboriginal culture which preceded it.
Fort Walton sites are found west of the Aucilla River, and extend across the Apalachicola River valley possibly as far west as Mobile Bay. From the Gulf coast Fort Walton sites continue into the Chattahoochee River basin in southeastern Alabama and southwestern Georgia and the adjacent coastal plain. The geographical distribution of Fort Walton sites is nearly identical to the earlier Wakulla culture, which tends to confirm that Fort Walton developed out of that late Weeden Island-period culture around A.D. 900-1000.

A number of spatial and temporal variations have been recognized within the Fort Walton region. In addition to the Chattahoochee River valley and areas of Georgia and Alabama, these Fort Walton variants include the Apalachicola River valley, the Tallahassee Hills, the Marianna Lowlands, and the Gulf coastal region from the mouth of the Aucilla River west to St. Andrews Bay. Although Fort Walton sites are distributed west from Choctawhatchee Bay and beyond, it is often difficult (in this western part of the coastal region) to differentiate by means of ceramic collections those sites which are associated with Fort Walton from those which are identified with the Pensacola culture.

The Fort Walton variant recognized in the Apalachicola River valley includes sites on the upper and lower parts of the river. Soils in this region would have been excellent for aboriginal farming, and along the lower portion of the
river are extensive areas of freshwater wetlands. Though Fort Walton sites, including large mound complexes, are located all along the river basin from Apalachicola Bay to the Georgia-Alabama state line, the greatest numbers of large sites are found some distance from the coast in or near the upper Apalachicola valley.

It has been suggested that along the Apalachicola, sites can be divided into early, middle, and late Fort Walton phases, known respectively as Cayson (A.D. 1000-1200), Sneads (A.D. 1200-1400), and Yon (A.D. 1400-colonial period). In the Cayson phase, it is thought that at least several chiefdoms were present in the region, probably each having authority over a mound complex and outlying villages. During the Sneads phase population probably increased, and in the Yon phase, or late Fort Walton, changes appear in the archaeological record. These changes have been dated to precolumbian times, or post-A.D. 1400, yet it is conceivable that future dating will show these variations were a result of the European presence in the New World following A.D. 1492.

The Tallahassee Hills, a second Fort Walton variant, is an inland, upland region located between the Ochlockonee and Aucilla Rivers. This area is characterized by mixed hardwood and pine forests, and by fertile soils which are excellent for agriculture. Fort Walton sites are especially numerous in the vicinity of present-day Tallahassee, and
become less numerous heading east to the Aucilla River. Between the Tallahassee Hills and Apalachicola River valley, in Liberty and Gadsden Counties, Fort Walton sites also are fewer in number. This may indicate that Fort Walton culture in northwest Florida was composed of a number of regional chiefdoms and was never a single political unit. The two cultural phases defined for the Tallahassee Hills region are Lake Jackson (A.D. 1100-1400, early and middle Fort Walton) and Velda (A.D. 1400-colonial period, late Fort Walton).

A third Fort Walton cultural-variant is recognized in the Marianna Lowlands, a region which lies west of the upper Apalachicola River valley in Calhoun and Jackson Counties. Surveys along the Chipola River and excavations at the Waddells Mill Pond site revealed the presence of farmsteads. Though a single, small platform mound has been reported in the region, mound-village complex sites are infrequent or absent. Excavations revealed at the Waddells Mill Pond site that the village was palisaded, an architectural feature unreported elsewhere in the Fort Walton region.

A fourth Fort Walton variant is found along the Gulf coast west of the Aucilla River. Sites within this region include platform mounds and burial mounds, dirt middens away from the coast in the pine flatlands, and coastal shell middens. Most of the mounds and middens are situated on or near bays and estuaries at the mouths of rivers. Evidence of coastal farming has been reported, yet it is likely that
agriculture was less important on the coast than within the inland regions. At present, no separate cultural phases have been defined for the Gulf coast region.

Fort Walton groups inhabiting the interior were intensive maize agriculturalists who supplemented their diet with other cultigens (beans and cucurbits) and with foods found in the wild. A number of Fort Walton sites, nearly all in the interior, have yielded evidence of farming. Charred maize kernels or cobs have been found at sites in the Marianna Lowlands, in Leon County, and in the Chattahoochee and Apalachicola River valleys. The number of Fort Walton sites from which maize has been recovered is large compared to earlier Wakulla-Weeden Island sites in these same regions, a reflection of the increased importance of this grain to the Fort Walton diet. Beans and squash are other cultigens identified at Fort Walton sites.

The wild plants and animals consumed by Fort Walton groups were similar to those exploited by the preceding Weeden Island peoples. Hickory nut, acorn, persimmon, maypop, and wild cherry were eaten, as probably were saw palmetto and cabbage palm seeds and chinquapin. Animals hunted by Fort Walton groups included squirrel, turkey, deer, and a variety of birds. Many types of fish and turtles were caught, and shellfishing was common at coastal locations.
It appears that the collections of shell, bone, and stone artifacts found at Fort Walton village middens do not vary significantly from those recorded at earlier Weeden Island sites. It is clear there was trade between inland and coastal peoples since marine objects, such as shell tools and ornaments and shark teeth, are found inland. One new item in the stone inventory is a small, triangular flint or chert arrow point similar to those recovered from Mississippian period sites elsewhere in the Southeast.

Fort Walton utilitarian pottery is mostly plain and undecorated, which makes it similar to earlier Weeden Island village ceramics. Unlike Weeden Island, though, the most popular Fort Walton utilitarian vessel-shapes are collared globular bowls and open bowls. Some vessels have small lugs or loop or strap handles, and a small percentage of the plain ceramics has notched lips. The most common tempering in Fort Walton pottery is quartz sand and crushed pottery fragments. Some of the crushed-shell tempered ceramics found in the western panhandle also may be Fort Walton.

The Fort Walton sociopolitical system was one of elites and commoners, which is reflected in the hierarchy of site types recognized for the Tallahassee Hills, and hinted at for the Marianna Lowlands and Apalachicola River drainage. The Lake Jackson site, located in Leon County, was at the top of the site hierarchy during the Lake Jackson phase. This site features an extensive village midden, a plaza, and
seven mounds which served as foundations for building structures. The Lake Jackson site functioned for a time as the major Lake Jackson-Fort Walton capital city, and was the residence of the chief, his family, and other elite persons who ruled the capital and the surrounding villages and homesteads.

The Fort Walton chief of the capital, or paramount chief, had both religious and civic duties including the control of goods and resources and their redistribution. Food, animal hides, exotic items and other goods were dispensed as tribute to the paramount chief by the lesser chiefs of outlying communities, who in turn collected goods from villagers. In return for their tribute, the lesser chiefs received respect, protection, and other benefits from the paramount chief. The common people or villagers who lived in the outlying areas probably provided labor for agricultural fields owned by the chiefs, and for the building and maintenance of community structures.

The treatment of the dead within the Fort Walton community depended upon social ranking. The common people were buried in cemeteries, the use of which in late precolombian Florida was nearly unique to the Mississippian Fort Walton and Pensacola peoples. Burial mounds (not to be confused with pyramidal mounds containing elite burials) have yielded flexed and secondary burials, but were less common than cemeteries. Higher ranked individuals were
given special burial in the floors of buildings or temples built on top of the platform mounds.

Elite individuals both in life and death wore special objects, such as the Southeastern Ceremonial Complex paraphernalia, which symbolized their power. These special objects gave notice to others of the lofty position of the wearer, and the ability to provide for the common people a connection to the supernatural. Even so, commoners had their own use of symbolism. Highly decorative pottery has been found in special contexts, such as with interments in houses, and in mounds and cemeteries. Sometimes urns were used for interment and on other occasions ceramic vessels were inverted over the skull of an individual. This suggests that the use of special vessels and particular decorative motifs was not limited to the elite.

Ceramics recovered from burial contexts in mounds and cemeteries include mass deposits, often intentionally or "ceremonially" broken, and vessels interred with individual burials. Many of the design motifs on Fort Walton pottery are basically identical to the decorated ceramics of other Mississippian cultures. Decorated vessels are often in the form of cazuela bowls and bottles, usually inscribed with incised curvilinear motifs and occasionally with rectilinear designs. Fort Walton curvilinear designs include scrolls, loops, volutes, and circles (many multiple lined), and usually are interlocking and repeated around the entire
vessel. Other ceremonial or special use vessels include shallow bowls with lateral extensions (often forming four or six extensions), gourd effigies, flattened globular bowls, and collared globular bowls. Animal head adornos sometimes are found on special vessels, particularly bowls, and exhibit a greater variety than earlier Weeden Island effigy vessels.

**Pensacola**

Sites identified with the Pensacola culture are distributed west from Choctawhatchee Bay to Mobile Bay in Alabama and into Louisiana. Their overall distribution is not restricted to Florida, since Pensacola sites in greater numbers are found outside the state. Most recent dating suggests the Pensacola culture in Florida dates from A.D. 1200 and into the colonial period. In the eastern panhandle, Pensacola is contemporaneous with the late Fort Walton phases, and in the western panhandle it follows the early Fort Walton period.

Most of the archaeological work connected with the Pensacola culture has been done in the Mobile Bay area. Though two regional variants, Bottle Creek (A.D. 1200-1450) and Bear Point (A.D. 1450-1700), have been defined for Pensacola around Mobile Bay, it is uncertain how well these variants apply to Florida. Two Pensacola regional-variants also have been suggested for Florida: Hogtown Bayou-Point
Washington variant on Choctawhatchee Bay, and La Casa in the region of Pensacola and Perdido Bays.

The majority of Pensacola sites have been found on the coast or near it. The coastal features with the greatest importance for Pensacola groups were the shallow bay-estuary systems, such as Perdido, Pensacola, and Choctawhatchee Bays, where most Pensacola sites are found. Surveys in the upland areas of the north Florida panhandle have yielded little evidence of Pensacola cultural presence, and in the eastern panhandle there often is uncertainty as to whether specific artifact collections are Pensacola or Fort Walton.

Recent archaeological research has suggested that Pensacola was not a true Mississippian culture. Cultural traits of Mississippian Fort Walton, such as cleared-field agriculture, a well-developed hierarchical settlement pattern, multiple-mound village complexes with platform mounds, the presence of elites and stratified society, and a complex political organization, were apparently absent in the Pensacola culture. Pensacola peoples placed greater dependence upon coastal resources than inland farming, though the exact role of agriculture in the Pensacola economy still is debated.

The best material evidence for the spatial distribution of Pensacola peoples is the shell-tempered Pensacola pottery series, originally defined by Gordon Willey (1949:464-466). Pensacola sites on St. Andrews Bay and near the Apalachicola
River have yielded 10-20% shell-tempered pottery, which increases to 50% in the vicinity of Choctawhatchee Bay and to 80% in the area of Pensacola and Perdido Bays. While shell-tempered pottery remains the best cultural marker, it is likely that Pensacola groups also used sand-tempering.

The four types of Pensacola sites recognized in Florida are coastal shell middens, truncated pyramidal platform-mounds, cemeteries, and burial mounds. Coastal shell middens are the most numerous sites, though few have been excavated. Cemeteries have been found in the western panhandle, particularly around Choctawhatchee Bay, and in the vicinity of present-day Pensacola. Pensacola burial mounds also are reported, though their frequency has not been determined.

Though the only pyramidal platform-mound reported to date is the famous mound at present-day Fort Walton Beach, Jolly Bay Mound on Choctawhatchee Bay and McBee Mound near Alaqua Bayou also may have been platform mounds. The Fort Walton Mound is situated next to a village midden, both of which together are likely the remains of the capital town of a single, Pensacola political unit. The mound summit probably was the foundation for a home or temple used by a high-ranking chief, and human remains found in the eastern side possibly are those of individuals connected with the leader. Nearby shell middens on Choctawhatchee Bay also may have been the remains of outlying villages and homesteads
having political and religious ties to the capital where the paramount chief lived.

**Apalachee**

The Apalachee were descendants of Fort Walton peoples who were part of the Lake Jackson and Velda cultural phases. The territory of the Apalachee extended from the west bank of the Aucilla River to just west of the Ochlockonee River, and from the Gulf coast to the vicinity of the Georgia border. Most of the historic Apalachee sites were in present-day Leon and Jefferson counties where the Spanish mission system was established in the early seventeenth century (Hann 1988a).

Prior to the seventeenth century, the Apalachee possessed a culture similar to that identified with the Mississippian ceremonial centers, and were the largest and most politically complex native group in colonial Florida. Agriculture was practiced in a far more extensive and intensive manner than anywhere else in the state. The Apalachee used cleared-field farming techniques, cultivating maize, beans and cucurbits. They supplemented their diet by fishing, hunting, and collecting wild foods.

Throughout most of the Spanish contact period in the sixteenth century, the Apalachee probably continued to maintain their Fort Walton material culture. Yet as a result of contact with the Spanish and population decline in
the sixteenth century, the Apalachee began to experience great change in their way of life. These changes must have been fairly rapid. One of the most important changes was that more independent villages began to replace the centralized authority of the Fort Walton period chiefdoms. By the time of the Spanish Mission period, beginning about 1633-1635 in Northwest Florida, the Apalachee material culture had been displaced by the Leon-Jefferson complex. Leon-Jefferson was characterized by complicated-stamped ceramics, burial in cemeteries rather than mounds, and living in villages without temple mounds (Boyd, Smith, and Griffin 1951).

Safety Harbor

The Safety Harbor culture developed out of the late Weeden Island-period in the central Gulf coastal region after A.D. 900. First defined by Willey (1949:475-488) and named after a site on Tampa Bay, Safety Harbor represents a Fort Walton-influenced elaboration of the earlier Weeden Island way of life. Safety Harbor sites extend south from the mouth of the Withlacoochee River to Charlotte Harbor, and are found mostly along the coast. Though Safety Harbor artifacts, particularly decorated ceramics, occasionally are found south of Charlotte Harbor, these objects are probably trade items and are not indicative of Safety Harbor culture.
Radiocarbon dates from early Safety Harbor contexts, and the presence at some sites of European artifacts dating to the sixteenth- and seventeenth centuries, have provided a basis for dividing Safety Harbor into two pre columbian- and two postcontact phases. The pre columbian phases are Englewood (A.D. 900-1100) and Pinellas (A.D. 1100-1500), and the post contact phases are Tatham (A.D. 1500-1567) and Bayview (A.D. 1567-1725). It also has been suggested that Safety Harbor can be divided into four subregions, which include Northern Safety Harbor, Circum-Tampa Bay, South-Central (or Manasota), and Inland Safety Harbor. Though the division of Safety Harbor into regional variants is based primarily on presumed differences in village ways of life, all these regions shared similar ideology, patterns of burial mound ceremonialism, and possibly sociopolitical organization.

The Northern Safety Harbor subregion includes Citrus, Hernando, and Pasco Counties. Though most of the midden sites and isolated burial mounds in this subregion are scattered widely, the nucleated nature of the famous Crystal River site, with its mound-village complex and possible dating to the Pinellas Phase, may be an exception to the this presumed settlement pattern. A number of shell middens also have been reported in the region known as the Cove of the Withlacoochee, and larger midden sites have been found on the coast.
Though it is likely that farming was practiced to some extent in this northern region, the basic survival strategies of these Safety Harbor groups probably were a continuation of the marine- and freshwater-based subsistence patterns of earlier Weeden Island peoples. A new artifact that makes its appearance in this region (and in all the other Safety Harbor subregions) is the Pinellas Point, a small triangular point used to tip arrows. The recovery of these lithic points from sites along the Central Gulf coast confirms the use of bow and arrow by Safety Harbor groups.

The variant Safety Harbor culture recognized in the Circum-Tampa Bay region, where the densest distribution of Safety Harbor sites are reported, includes southern Pasco, Pinellas, Hillsborough, and northern Manatee Counties. Though most of the archaeological work in the region has concentrated on community settlement patterns and mound excavations, it appears nonetheless that the Safety Harbor groups relied heavily upon hunting and fishing. Numerous shell midden sites around Tampa Bay demonstrate that the Safety Harbor peoples survived as the earlier Weeden Island groups, relying on saltwater and freshwater habitats for fish and other resources. Maize agriculture may have been present though the evidence is not.

Fifteen large, Safety Harbor sites, each featuring a platform mound and associated shell middens, have been recorded in the Tampa Bay region. All these mound-village
complexes are located close to the Gulf shoreline or around Tampa Bay, particularly at the mouths of rivers or streams which empty into the bay, or upstream a short distance from the shore. Each of these complexes has a similar settlement plan, which includes: 1) A plaza with surrounding village middens; 2) A platform mound, which probably served as the base for a temple or another important building; and 3) One or more burial mounds. Each of the platform mounds had a ramp which extended down the side to the surrounding plaza.

While it is reasonable to assume that these platform mound-village complexes and outlying settlement areas represented separate political entities, it is likely that Safety Harbor culture was not organized into Mississippian chiefdoms. The density and distribution of Safety Harbor sites have more in common with the coastal Pensacola culture than with Fort Walton sites in the Tallahassee Hills. The agricultural economic system that formed the basis for the Mississippian way of life was not possible in coastal Florida. Since there is no evidence for extensive agriculture in the Safety Harbor region, it is clear that intensive farming was an essential ingredient for a Mississippian sociopolitical system.

Safety Harbor coastal sites have yielded more artifacts of shell than stone, which is true of all precolumbian coastal peoples in Florida. Shell objects from midden sites include pick-like artifacts, celts, plummets, and hafted
whelk shells, usually called hammers. Stone artifacts include Pinellas Points, Ichtucknee and Tampa Points, reutilized Archaic-period projectile points and knives, scrapers, and sandstone grinding stones. Tools also were made from agatized coral, outcroppings of which are found north of Tampa Bay.

The South-central Safety Harbor subregion extends south from southern Manatee County to Charlotte Harbor. Scattered Safety Harbor settlements are found on the coast and further inland, but relatively little archaeological work has been done on these dispersed sites. Most of the utilitarian pottery in this subregion is undecorated and tempered with quartz sand.

The fourth Safety Harbor cultural-variant, the inland subregion, includes Hardee, Polk, and eastern DeSoto Counties. Numerous surveys in the phosphate district of Hardee County and adjoining areas have revealed the presence of dispersed settlements and isolated burial mounds, though the density of these sites is far less than that found on or near the coast. One of the burial mounds, known as Philip Mound, yielded Safety Harbor ceramics together with a large collection of European artifacts. Utilitarian pottery in this subregion differs from that found in other Safety Harbor cultural variants, yet the decorated or ceremonial ware from burial mounds is the same. The most common,
utilitarian ceramics found in the inland subregion are St. Johns Plain and Belle Glade Plain.

Safety Harbor groups often used burial mounds in combination with charnel houses, a mortuary trait shared with Weeden Island and Weeden Island-related peoples. There is reasonable certainty of a direct link between the bundled secondary remains often found at burial sites and charnel house use. Platform mounds, which commonly served as the foundation for charnel houses, sometimes became burial mounds when human remains were taken from a charnel structure and then buried in or on the platform mound. Occasionally Safety Harbor platform- and burial mounds were constructed on top of older mounds dating to Weeden Island and/or early Safety Harbor times.

Safety Harbor burials, which included bundled burials, massed burials of secondary remains, primary interments, and cremations, often were accompanied by grave goods. Some of the objects found in Safety Harbor burial mounds include pottery (whole vessels and fragments), shell beads, Busycon cups, galena, hematite ore, copper items, projectile points, stone celts, a variety of shell and stone pendants and plummets, and artifacts of European origin or manufacture.

Safety Harbor burial mounds have yielded decorated pottery types such as Safety Harbor Incised, Pinellas Incised, Sarasota Incised, and Englewood Incised. Some of the Safety Harbor ceramics recovered from burial contexts
are Middle Mississippian forms, and are most closely related to Fort Walton pottery types. These vessel forms include open, cazuela, and globular bowls; beakers; jars; and bottles. Some bowls and jars have two or four loop (or strap) handles, and others have rim lugs. Crude or stylized animal effigy adornos were placed along the rims of a few vessels. Pottery decorations similar to Fort Walton motifs include parallel lines incised in various curvilinear and rectilinear forms, and incised and punctated quilloches and scrolls. Occasionally Southeastern Ceremonial Complex symbols were incised on Safety Harbor pottery.

There may have been some changes in sociopolitical organization between the late Weeden Island and Safety Harbor periods, yet the material evidence does not suggest a dramatic shift to more intensive agriculture, nor to a decline in the use of nondomesticated food resources. The adaptation of Mississippian social and political structures by late Weeden Island peoples may have been a means to cope with and reduce the pressure from an increasing population.

Calusa

The Calusa were one of the first North American native-societies to be contacted and described by Spanish explorers of the New World. The Calusa realm lay in the coastal strand of the southwest Florida coast from Charlotte Harbor southward to the Ten Thousand Islands, an area which
corresponds with the Caloosahatchee archaeological region. The northern boundary of the Calusa probably was formed by the Tocobaga, a Safety Harbor group who lived on Tampa Bay, and the eastern boundary by a group known as the Mayaimi, who occupied the shore of Lake Okeechobee. The Tequesta, Jeaga, and Ais lived further east in settlements on the Florida Atlantic coast (Widmer 1988).

In terms of political authority, population size, and influence over neighboring tribes, the Calusa were the most important Indian group in South Florida. All of the native societies in the region, except for the Tocobaga, at one time or another were allied with the Calusa. Calusa hegemony extended over much of South Florida, and political control was maintained through strategic marital alliances, warfare, and the extraction of tribute.

In historic times, the central authority figure in these alliances was Carlos, the Calusa paramount chief, who resided with his family and advisors in the capital city of Calos, thought to be located on Mound Key in Estero Bay. More than 50 villages were ruled by Carlos, whose great political power was demonstrated in his personal supervision of the redistribution of Spanish shipwreck materials, such as gold, silver, and other valuables, to allied chiefs in South Florida (Fontaneda 1945; Marquardt 1992b; Widmer 1988).
The complex political system of the Calusa is best explained by the subsistence potential of both the Southwest Florida coastal waters and wetlands and grasslands of the Okeechobee Basin, and by the need to maintain routes of exchange through which food resources could be redistributed rapidly. The key to this system was the potential of the natural environment to yield easily obtainable and storable food surpluses. Food was transported from one location to another along established political and economic channels through a network of artificially constructed canals (Widmer 1988).

It is recognized widely that Calusa subsistence patterns were almost certainly nonagricultural. Fish and shellfish comprised the bulk of the diet, and land fauna such as deer, racoon, reptiles, and birds provided supplements, as did wild plant foods. Shellfish, such as oysters, were an important food resource probably eaten on a seasonal basis. The abundance of fish in the southwest Florida coastal waters, and its importance in the Calusa diet, both are emphasized by various sixteenth-century ethnohistoric sources (Marquardt 1992b; Solís de Merás 1964; Widmer 1988).

Calusa settlement patterns consisted of a series of large, nucleated villages, and a few smaller ones, situated linearly in the coastal zone. Coastal sites included two types: 1) Shell middens on the mainland, especially around
inlets, and on the offshore keys and islands; and 2) Larger sites combining shell middens with various mounds, ridges, platforms, and causeways built mostly of shell but sometimes of shell and earth. South of Estero Bay and north of Naples, a break occurs in the distribution of these larger sites. The scarcity of larger sites in this part of the coast, where a highly productive marine-resource base is lacking, tends to confirm that coastal resources played a critical role in the maintenance of this sedentary adaptation (Widmer 1988).

Calusa ceremonial construction included temple or platform mounds, canals, and burial mounds. Historic sources refer often to Calusa temples, and the archaeological record has revealed a number of temple and burial mound structures, including those at Mound Key. Platform mounds up to 125 m long and 5 m high, with lesser mounds built on top, have been observed at a number of sites. Artificially constructed canals, some more than 4 km in length, 10 m in width and 2 m in depth, commonly are found in the region. Many of these canals probably have a ceremonial purpose, and at least some of them lead to a group of burial mounds apparently isolated from the main village. The Calusa practice of placing human burials in sand mounds began during the Caloosahatchee II period, or around A.D. 650, and continued through historic times (Marquardt 1992a; Widmer 1988).
Pottery from the Caloosahatchee region is generally undecorated and sand tempered. The dominant plainware, Belle Glade Plain, began to decrease in importance by the beginning of the Caloosahatchee IV period, or around A.D. 1350/1400, though it continued to dominate within the Belle Glade area. It was also about this time in the Everglades area that pottery incising ceased, and the only decorations which persisted were the lip and rim treatments of a pottery known as Glades Tooled. Beginning around A.D. 1200, pottery commonly was interred as grave offerings in the sand burial mounds of the Caloosahatchee area and the southwestern coastal zone of the Circum-Glades region. Vessel shapes were the same bowl-types commonly found throughout South Florida (Marquardt 1992a:431; Widmer 1988:96).

Calusa society was stratified and had at least three divisions: An upper class or nobility, vassals or commoners, and slaves. The upper class included the paramount chief, his royal family and nobles. Calusa nobility, having privileged access to wealth, did not have to work. The paramount chief acted as an intermediary with the spirit world, and his well-being was tied to the prosperity of all. A chief priest and captain-general assisted the paramount, and military and spiritual specialists managed the political and ideological realms. Commoners were denied access to their own surplus, which was extracted from them by the nobles, military, and others, and sometimes redistributed by
the paramount chief. The slave class generally were individuals taken in warfare, and during historic times, included survivors of Spanish shipwrecks (Marquardt 1992b; Solís de Merás 1964; Widmer 1988).

The Keys Indians

The political, demographic, settlement and subsistence patterns of the Calusa were well established in southwest Florida by about A.D. 800, and it was about this time that Indian groups moved southward out of the Florida peninsula into the Keys. The material culture of the Keys Indians was a variant of the Glades tradition of the Circum-Glades region. Archaeological sites in the Keys have yielded tools and ornaments of bone, shell, stone, and shark-teeth, and sand-tempered ceramic sherds. The diet of the Keys Indians was largely fish, turtle, mollusks, and sea mammals, particularly whales, and canoes were used to exploit the rich marine environment. Land animals such as deer, bear, and raccoons also were eaten, as were a variety of plant foods.

The Keys Indians probably formed a number of separate tribes. Some of these Indian groups, which were probably small in size, included the Matecumbe, Cuchiaga, Guarugunbe, and Tancha. Throughout the colonial period, tribute in one form or another was paid (depending upon the political situation) to either the Calusa or Tequesta. Early in the
sixteenth century, the Indians living in the Keys began salvaging shipwrecked Spanish ships. Much of the salvaged cargo became tribute to the paramount chief, who retained a large share and distributed the remainder to South Florida groups under his authority (Fontaneda 1945; Milanich 1995).
During the early years of Spanish exploration in the New World, colonization was limited to the island of Hispaniola. Ships destined to Hispaniola from Spain sailed south to the Canary Islands, then followed the trade winds on a southwesterly and westerly course until sighting land in the Lesser Antilles. Ships returning to Spain from the Indies were forced to sail far to the north to clear the trade winds, a course which often drove them west of their intended route through the Florida straits on account of contrary winds and currents along the northern coasts of Hispaniola and Cuba (Haring 1964:222; Sauer 1971:25).

This combination of contrary winds and currents meant that at a relatively early date, Spanish ships occasionally were in sight of the Florida coast. The Spanish also became aware of the Florida shore through frequent slaving expeditions to the Bahamas and other islands in the Indies. The earliest known chart or representation of Florida and the Florida Straits is illustrated in the Alberto Cantino Map of 1502 (Harrisse 1969:78; Skelton 1958:Figure 35). This famous Portuguese map gives the first notice of the
Florida Keys, described as "cabo de martires," and confirms that Cuba was known to be an island fairly early in the years of Spanish exploration (Sauer 1971).

Six years after the appearance of the Cantino Map, Cuba was officially circumnavigated by an expedition commanded by Sebastian de Ocampo. The Ocampo expedition marks the first recorded entry of Spanish vessels into the Gulf of Mexico, and on this occasion the coast of Florida possibly was sighted (Harrisse 1969:98; Lowery 1959a:129). That same year, Spanish colonization in the Indies was extended from Hispaniola to the island of Puerto Rico. Shortly thereafter, in 1509, the Spaniards occupied the island of Jamaica, which was followed two years later by the settlement of Cuba (McAlister 1984:94).

The first governor of Puerto Rico, Juan Ponce de León, took an active role in the exploitation of the native populations and placer gold deposits on the island. When Juan Ponce was removed from the Puerto Rican governorship in 1511, by which time the native peoples and placer gold had declined sharply, the former governor looked for profitable opportunities elsewhere in the Indies. Juan Ponce succeeded in obtaining a royal patent to explore reported lands to the north of Hispaniola, and to search for the island of Beniny (or Bimini), reputed to have a spring which provided restorative qualities (Lowery 1959a; Peck 1992:135).
Ponce de León outfitted three ships at his own expense, and on March 3, 1513, set sail on a northwesterly course from the Port of San German in Puerto Rico. After passing through the Bahama Islands, on April 2 he landed on the Florida coast at a point believed to be a short distance south of present-day Melbourne Beach. Ponce de León believed the land was an island, and named it "La Florida" for its beautiful woodlands and the time of its discovery, Pascua Florida, or the Feast of Flowers (Davis 1935:16-17; Peck 1992:146).

Sailing south along the coast, Juan Ponce discovered the northward flowing Gulf Stream, a "current...so great it was more powerful than the wind" (Davis 1935:17). The Spaniards clashed briefly with the Indians at a number of points along the coast, and then on May 8 they doubled Cabo de Corrientes (a point south of Jupiter Inlet) before running down the Hawk Channel between the outer reef and Florida Keys. The expedition coasted west along the Keys until reaching the islands of Tortugas, which Juan Ponce named Los Mártires since at a distance they had the appearance of men suffering (Davis 1935; Peck 1992).

After steering north-northeast from Tortugas, on May 24 the expedition made landfall on the mainland Florida coast at a point probably just north of Gasparilla Island. From here Juan Ponce sailed south past the islands of La Costa, Captiva, and Sanibel to the wide and deep entrance to San
Carlos Bay at the mouth of the Caloosahatchee River (Peck 1992:149). Some researchers have proposed Charlotte Harbor as his official landing point, yet Peck (1992:150) notes it is far more likely Juan Ponce chose San Carlos Bay since Charlotte Harbor "is a large, shallow, almost landlocked inland bay with only a tortuous, winding, dredged entrance through nearly three miles of offshore shoals."

The Spanish vessels remained in the harbor for nine days, during which time a group of Indians, probably Calusa, ventured out in canoes to visit the newcomers. After a brief conflict, a Spanish landing party went ashore, breaking up some old canoes and capturing four native women. At other times relations between the Indians and Spanish were more peaceful, and on those occasions a small amount of trade was conducted. The natives also informed Juan Ponce of the Indian chief known as Carlos, who was reported to possess gold. As Ponce awaited a fair wind to search for Carlos, a canoe arrived bearing an Indian who understood Spanish. The Spaniards supposed the Indian to be from Hispaniola or one of the other Spanish-occupied islands (Lowery 1959a:141-142).

An increase in Indian attacks and the failure to meet Carlos persuaded the disappointed Spaniards to abandon the Florida coast. On June 14 the expedition set sail, stopping at a nearby island (probably Sanibel) for water and firewood. Heading south, the Spaniards reached Tortugas,
then briefly explored the Cuban coast as they rounded Cape Florida. From the coast of Cuba Juan Ponce retraced his original route through the Bahamas, where he encountered a ship piloted by Diego Miruello, possibly on an expedition unlicensed by the Crown. After a voyage of more than six months, and having failed to locate his Islands of Beniny, Ponce de León returned to Puerto Rico (Davis 1935; Lowery 1959a; Peck 1992).

In 1516, Diego Miruello, who is the same individual believed to have been encountered by Juan Ponce in the Bahamas, sailed from Cuba on a direct course for Florida. Here he obtained gold from the Indians in return for items of glass and iron. Neither the latitudes nor the coast where these trading activities took place were recorded, and without further investigation, Miruello returned to Cuba (Barcia 1951:3; Weddle 1985:187).

In February of 1517, Francisco Hernández de Córdova sailed from Havana with three ships and 110 men, including the pilot Anton Alaminos who had accompanied the voyage of Ponce de León. Originally planned as a slaving trip, the expedition shortly after departure became one of discovery. Córdova sailed to the west, and eventually sighted the Yucatán Peninsula following 21 days of stormy weather (Díaz del Castillo 1938:28; Sauer 1971:30).

Córdova made contact with the Yucatán Indians and with other native peoples living along the Mexican coast.
Relations with the natives were not always peaceful, and a series of running battles eventually cost the Spanish expedition nearly half its men. With the coastal Indians thoroughly aroused and most of the expedition members wounded, Córdova decided to return to Cuba. Since water supplies were dangerously low, the pilot Alaminos suggested heading to the area on the Florida coast visited by Ponce de León four years earlier. Alaminos at that point calculated their distance from Florida as 70 leagues, or about 250 miles (Chardon 1980; Diaz del Castillo 1938:34-35).

Accepting the advice of his pilot, Córdova sailed across the Gulf of Mexico to the area on the Florida coast, possibly San Carlos Bay, remembered by Alaminos. Since the distance traveled by Córdova was 70 leagues, and the time required to make that distance was four days, it is obvious his point of departure was not the Yucatán Peninsula as generally is assumed. Diaz del Castillo (1938:34-35) records a storm which may have blown the ships off course, possibly to the Northwest Florida coast, where the limits of the discoveries by Juan Ponce were recorded in an early sixteenth century chart (Martin and Martin 1982:11). The distance and time required to make a sailing voyage from the Northwest Florida coast to San Carlos Bay is consistent with the description by Diaz del Castillo (1938:35).

The Córdova expedition eventually landed inside a bay, where the Spaniards while digging for water were attacked by
the Indians. Córdova himself was wounded, and the next day the ships sailed from the Florida coast for Cuba. As a result of his wounds, Córdova died in Cuba ten days after his arrival (Díaz del Castillo 1938:36; Lowery 1959a:149).

A short time following the Córdova debacle, the governor of Jamaica, Francisco de Garay, received official permission to arm, man, and provision four vessels to explore the northern mainland coast. His objective was to search the region between the discoveries by Ponce de León and Diego Velazquez (governor of Cuba) for a water passage connecting the Gulf of Mexico with the Pacific Ocean. In March, 1519, four ships set sail from Jamaica under the command of Alonso Alvarez de Pineda, who was acting as agent for Garay. Proceeding through the Yucatán Channel, the expedition sailed northward until sighting land somewhere along the Northwest Florida coast (Lowery 1959a:150; Weddle 1985:99).

Disappointed in his attempts to locate the anticipated water passage by sailing east, Alvarez coasted southward to the Florida Cape. Alvarez found his progress eastward around the Cape blocked by contrary winds and currents, so he was forced to double back and retrace his course along the Gulf coast (Weddle 1985:100). Alvarez landed at various points on the coast, establishing landmarks showing the extent of his discoveries and making note of rivers, bays, and native peoples in those regions (Lowery 1959a:150).
The most well known account of the Alvarez expedition is the summary given by Garay in his contract of 1521. Another source is the report Alvarez gave to Garay which is contained in the manuscript rutter by Alonso de Chaves. This set of sailing directions has a number of discrepancies which derive primarily from the uncertain location of the Bay of Miruelo (apparently Apalachee Bay), which is a key point of reference in the descriptions. From the Bay of Miruelo to Cape Florida are two series of coastal directions and distances, one running south from the Bay and the other returning north from the Cape, which generally correspond with that portion of the Alvarez voyage (Hoffman 1991:49).

In a voyage lasting eight or nine months, Alvarez had discovered more about the Gulf coast than any previous explorer. His expedition produced a map, known as the Pineda Map, which shows the Gulf in more or less accurate proportions (Martin and Martin 1982:11). This first known map of the Gulf of Mexico proved that Florida was not an island, and recorded the discovery of the mouth of the Mississippi River (Rio del Espiritu Santo). Both Tampa Bay and Charlotte Harbor are shown on the map, and a notation written north of Tampa Bay credits Ponce de León (see previous discussion of Córdova) with reaching a point much farther up the Gulf coast than usually has been supposed (Milanich and Milbrath 1989:15; Weddle 1985:100-101).
On February 20, 1521, Juan Ponce de León sailed from Puerto Rico in a second attempt to conquer Florida. The expedition consisted of two ships carrying 200 men and 50 horses, and included a variety of domestic animals, agricultural implements, and weapons (Gannon 1965:3). Besides the establishment of Catholic missions among the Indians, the enterprise had at least two objectives: The first was to plant a Spanish colony in Florida, and the second, to determine if Florida was an island, or part of a land mass connected to the Mexican territories recently conquered by Cortés (Harrisse 1969:160). The latter objective suggests Juan Ponce was unaware of the discoveries by Alvarez a few years earlier.

While it generally is assumed that Ponce de León landed on the west coast of Florida, possibly near Charlotte Harbor, the precise location of his attempted settlement is unknown. Almost as soon as the Spaniards went ashore, things began to go wrong. The Indians fiercely attacked the Spanish settlers, killing many and wounding Juan Ponce. The survivors were forced to abandon their settlement attempt and reembark the ships. One of the ships sailed to Vera Cruz, and the other, with Juan Ponce aboard, sailed to Cuba where he soon died of his wounds (Davis 1935). Though the precise duration of this expedition is uncertain, Harrisse (1969:161) notes that it lasted at least five months, which
may suggest that far more of the Florida coast was explored than commonly is assumed.

In 1526, Pánfilo de Narváez, one of the more experienced military-commanders in the New World, was granted authority by the Spanish Crown to conquer the territory extending from the **Rio de las Palmas** (Rio Grande) to Cape Florida. On April 14, 1528, Narváez landed on the Florida gulf coast near Tampa Bay with an army of 400 men and 40 horses. Going ashore, the Spaniards came across an abandoned Indian village where they found some netting and a gold rattle. Narváez commanded one of his ships to sail north to an unspecified bay (probably Apalachee Bay) for a later rendezvous, while the remaining expedition members headed inland (Bandelier 1922; Lowery 1959a; Milanich 1990).

At the north end of Tampa Bay, the Spanish explorers came across an Indian village with a large quantity of European and Mexican goods. The villagers informed the Spaniards that these goods, which included objects of gold, were salvaged from a ship which had wrecked on the nearby shore. The Indians said that gold was not native to the area, but was abundant in a province called Apalachen (Bandelier 1922:12-13; Fernández Oveido y Valdés 1853:583).

On May 1, the army marched northward to Apalachen, or Apalachee, encountering no native peoples until reaching the Withlacoochee River. Proceeding north, the explorers crossed the Suwanee River and soon reached the province of
Apalachee. After a stay of 25 days in that province, where they were under constant attack by the Indians, Narváez and his men headed south to the Indian village of Aute, a march of nine days from Apalachee (Bandelier 1922).

In Aute, the Spaniards were relieved to find a great deal of food, yet the Indians persisted in their attacks. Many of the expedition members, including Narváez, fell ill, and so it was decided to head further south toward the sea. Since the rendezvous vessel never had arrived and there was still no sign of it, a decision was made to build boats for an escape westward to New Spain, believed to be a short distance away. Although none of the Spaniards were ship builders, five makeshift boats were completed.

On September 22, Narváez and the remaining members of his expedition sailed from a bay they named the Bay of Horses (probably Apalachee Bay), and headed toward New Spain. The incredible story of their attempted escape to New Spain, and the trials endured by the participants, are well-known. Of the 242 individuals who made the voyage, nearly all were drowned at sea or washed ashore, and only four survivors ultimately made it to Mexico City some years later (Bandelier 1922; Milanich 1990:11).

Marrinan et al. (1990) have written that the Narváez expedition is probably responsible for the concentration of early sixteenth-century materials found at a number of Indian sites in the vicinity of St. Marks-Apalachee Bay.
Though the exact location of the village of Aute is unknown, three possible sites have been suggested, including Marsh Island, Work Place, and St. Marks Wildlife Refuge Cemetery (all three are discussed in later chapters). It also has been suggested that St. Marks cemetery is the best candidate for a Narváez-related Indian site, and though it lacks an identified habitation area, it is possible the cemetery was used by the Aute villagers (Marrinan et al. 1990:77).

The next major attempt to explore the Florida interior was financed and lead by Hernando de Soto. On May 18, 1539, a fleet of nine ships sailed from Havana with a complement of 620 men, 223 horses, and 300 pigs. The ships arrived on the Florida west coast on May 25, the festival day of Espiritu Santo. Several days later, de Soto landed on the shores of Bahía Honda (Tampa Bay), the same bay visited by Narváez. Shortly after going ashore, the expedition encountered Juan Ortiz, a Spaniard left behind by one of the ships looking for Narváez. Since Ortiz had lived among the Florida Indians for 12 years, he became valuable as an interpreter (Milanich and Milbrath 1989:17-18; Smith 1866).

De Soto spent a period of six weeks in reconnaissance of the surrounding area. He learned from the Indians of a country abundant in gold deposits further north, and since prospects of mineral wealth in the immediate vicinity seemed dim, the army marched further inland. In October, the expedition established a winter camp at Anhaica (located
within present-day Tallahassee), the main town of the Apalachee Indians. Under constant threat from Indian attack, the Spaniards spent five months in Apalachee in a state of siege, and on two occasions the Indians succeeded in burning part of the Spanish encampment (Gannon 1965; Smith 1866).

Archaeological excavations in Tallahassee at the Martin site, thought to be at Anhaica, have yielded sixteenth-century European materials believed to be associated with the de Soto winter encampment. Most of the Indian pottery from the site dates to the late Fort Walton period, or from about A.D. 1450 to 1600. European materials, many of which date to the sixteenth century, include Spanish Olive jar fragments, majolica fragments, iron artifacts, copper coins, and glass beads. The iron artifacts include wrought iron nails, a crossbow dart tip, and fragments of chainmail. One of the more important finds, a pig mandible found in a sixteenth century context, lends credibility to the theory that the site was Anhaica since all the de Soto chroniclers mention that the expedition took along pigs as food (Ewen 1989).

In March, 1540, de Soto abandoned his winter camp at Anhaica and headed north across Georgia and the Carolinas. The expedition crossed the Appalachian Mountains into Tennessee, and followed the Tennessee River Valley into Alabama. In Alabama, at Mabilla, a fierce battle with the
Indians ended in Pyrrhic victory for de Soto. The Spaniards regrouped and spent the winter in Mississippi, where a series of costly battles were fought with the Indians at Chicasaw, Alibamu, and Quizquiz (Milanich and Milbrath 1989).

In the spring of 1541, the Spanish explorers crossed the Mississippi River into Arkansas, where the next year was spent visiting Indian villages and searching for gold. The Spaniards returned to the Mississippi, where de Soto fell ill and died on June 20, 1542. The remaining expedition members, led by Luis de Moscoso, made a futile attempt to reach New Spain on foot. Getting as far as present-day Texas, the party was forced to retrace their steps back to the Mississippi.

The Spaniards spent the first six months of 1543 building boats for an escape by water to New Spain. In late June, the Spaniards launched their boats downriver and reached the Gulf in 20 days. On September 11, 1543, the 311 survivors of the original expeditionary force of 620 men reached New Spain at a Spanish village near present-day Tampico, Mexico (Milanich 1990:13; Smith 1866).

Despite the failures of Ponce de León, Narváez, and de Soto, there remained an urgent need by the Spanish for permanent settlements in Florida. First, a series of missions on the coast would make it possible to convert the Indians to Christianity. Second, an overland route was
envisioned running from New Spain to the region of Pensacola Bay and terminating at Santa Elena on the Atlantic coast. Since so many ships had been lost in Florida, this proposed land route could be used to move goods more safely from New Spain to the Atlantic, where the merchandise would be loaded aboard ships bound for Spain. Third, the presence of settlements could aid in the protection of Spanish sailing routes along the Florida coast, where shipwreck victims could be assisted and ship cargos salvaged. And fourth, Spanish settlements on the Gulf and Atlantic coasts could be used to block growing French interest in the region (Gannon 1965; Hudson, Smith et al. 1989; Milanich 1990, 1995).

On June 11, 1559, a fleet of 13 ships bearing 1500 soldiers and settlers left the port of San Juan de Ulúa for a new colonization effort on the Gulf coast. Commanded by Tristán de Luna y Arellano, the fleet took 31 days to make landfall on the Florida coast, probably just west of Apalachee Bay (Hudson, Smith et al. 1989:125). The ships coasted west to Bahía Filipina (Mobile Bay), and then sailed east making landfall at Ochuse (Pensacola Bay) on August 14. Going ashore at Pensacola Bay, the Spaniards found only a few Indian fishermen. No native populations were discovered around the bay, and two minor reconnaissance expeditions sent further inland also "found neither towns, natives, or food...." (Priestley 1928:xxxv).
Five days after the arrival of the fleet, a hurricane hit Pensacola Bay, destroying all but three ships. A great number of Spaniards were killed, and many of the food supplies on board the ships were lost. Faced with the prospect of starvation, Luna sent inland a detachment of 200 men to locate an Indian village from which food could be obtained. A large Indian town, Nanipacana, was discovered 40 leagues from the coast. As the food supplies seemed promising there, Luna moved most of the colonists to this new location (Priestley 1928:xxxix).

Ultimately, Luna failed to sustain his colonizing enterprise. In March, 1561, a Spanish ship under the command of Angel de Villafañe arrived at Pensacola Bay. Villafañe had been appointed by the Viceroy of New Spain to replace Luna as commander of the floundering colony. Leaving behind a company of 50-60 men, Villafañe took the remaining settlers to colonize Santa Elena on the Atlantic coast. This venture by Villafañe also proved unsuccessful. After six or seven months, when it appeared survival was no longer possible, the settlers remaining at Pensacola Bay returned to New Spain (Gannon 1965:16-17; Lowery 1959a).

With little to show for all the disastrous colonization efforts in Florida, Philip II decreed on September 23, 1561, that the region was closed to further exploration. Then on March 30, 1565, alarming news reached the Spanish king of French settlements in Florida. In 1562, the French
commander Jean Ribault, accompanied by René de Laudonnière, had established a colony on the Atlantic coast in present-day South Carolina. Since abandoned, the Ribault colony was succeeded in 1564 by a second French colony, Fort Caroline, set up by Laudonnière on the St. Johns River (Lowery 1959a, 1959b; Lyon 1976:56).

The establishment of Fort Caroline in a Spanish province represented not only an act of open aggression by France toward Spain when both countries were formally at peace, but the presence of a French colony on the Atlantic coast posed a direct threat to Spanish treasure shipments and lines of communication (Gannon 1965; Lyon 1976:69). Pedro Menéndez de Avilés, created adelantado (i.e., Spanish colonial official who represented the crown) by virtue of his asiento or contract with King Philip II, took upon himself the task of settling and securing for Spain the Florida province, which extended from the West Florida panhandle around the Florida Keys to what is now Newfoundland. On September 15, 1565, Menéndez founded the Spanish settlement at St. Augustine, and then rapidly expelled the French from Florida. With the French eliminated, Menéndez proposed to anchor and defend Florida with the construction of fortifications along its perimeters and by using Cuba as a base of supply (Lyon 1989).

On February 10, 1566, Menéndez sailed with seven ships and 500 soldiers from Havana for the Florida coast. A
primary objective in his voyage was to discover a deep-water passage between the Keys and Dry Tortugas. This passage, which soon became known as Cuchiaga Passage, was of great importance as a time-saving measure for the large ships of the treasure fleets returning to Spain from Tierra Firme and New Spain (British Government et al. 1863:113; Lyon 1989). Once Menéndez located the Cuchiaga Passage and found the navigation there to be suitable, he proceeded toward the Southwest Florida coast to search for Spanish shipwreck victims reportedly held captive by the Indians (Solís de Merás 1964:138-139).

Arriving at Charlotte Harbor, which Menéndez named San Antonio, the Spanish made contact with the cacique Carlos, paramount chief of the Calusa. Over the years Carlos had held captive more than 200 shipwreck victims, many of whom had been sacrificed during native feasts and dances. Menéndez established friendly relations with Carlos, and bartered for the release of some of his captives. After a short and relatively amiable visit with the Calusa, Menéndez set sail for St. Augustine with several Indian passengers and seven Spanish shipwreck survivors newly-ransomed from Carlos (Solís de Merás 1964).

In March, 1567, Menéndez returned to the harbor of San Antonio accompanied by Father Juan Rogel, who soon would establish a mission among the Calusa (Gannon 1965:32). During his absence, Menéndez had ordered the construction of
a blockhouse, which was to be manned by a garrison of 30 soldiers. Menéndez had a strong interest in discovering a water passage from the Gulf of Mexico to the St. Johns River. If such a waterway could be located, it would have been profitable to Menéndez and his shipping interests (Lyon 1989:159). The Calusa informed him that the water passage he sought was not at San Antonio, but at an Indian village called Tocobaga 50 leagues away (Solís de Merás 1964:223).

Three days after his arrival at San Antonio, Menéndez sailed north for the Indian village of Tocobaga. Entering Tampa Bay and anchoring secretly at night near the village, Menéndez was greeted the next day by a Christian captive sent with a message of goodwill from the cacique Tocobaga. The Christian captive was Portuguese, the sole survivor of a Spanish ship wrecked six years earlier on the coast nearby. The Indians reportedly had killed all the ship passengers within one hour of their struggling ashore, and the Portuguese had managed to escape the same fate by hiding in the woods. A month after his escape, he was captured by Indian fishermen who brought him to Tocobaga (Solís de Merás 1964:224-226).

Four days were spent at Tocobaga, during which time a reluctant truce was initiated by Menéndez between the caciques Tocobaga and Carlos. Since the anticipated water passage could not be located, Menéndez left behind at Tocobaga a garrison of 30 soldiers commanded by Captain
García Martínez de Cos, "who remained sorely against his will" (Solís de Merás 1964:228). During his return voyage to San Antonio, Menéndez perceived that Carlos was becoming increasingly hostile. As a precaution, the blockhouse at Carlos was fortified with culverins and a garrison of 50 soldiers, and with Father Rogel remaining behind, Menéndez returned to Havana (Solís de Merás 1964:229).

In the course of his Florida enterprise, Menéndez had established a line of forts on each side of the peninsula. These fortifications were located at Tocobaga (Tampa Bay), Carlos (Charlotte Harbor), Tequesta (Biscayne Bay), and Ays (St. Lucie). Situated along the route of the homeward-bound treasure fleets, all of the forts were in areas of high shipwreck frequency and where shipwreck victims cast ashore were most likely to be mistreated or killed by the Indians (Connor 1925; Lowery 1959b:287).

Over time Menéndez found he was unable to sustain his Florida fortifications, and despite their importance to Spanish interests, the forts soon were abandoned. The garrison at San Antonio was deserted in 1570, due in no small part to the hostility of Carlos. The cacique had killed many Spaniards, including those captured from ships anchored in the harbor. Meanwhile at Tampa Bay the Tocobaga Indians had wiped out the entire Spanish garrison left behind by Menéndez. Failing in his attempt to obtain peaceful relations with the natives and his patience at an
end, Menéndez made a formal request to the King to permit either the destruction or enslavement of the rebellious Florida Indians. The Spanish crown would not cooperate, however, and the request by Menéndez was denied (Connor 1925:81; Lewis 1978; Lyon 1989).

The Menéndez enterprise was the last of the Spanish attempts to explore and settle the Florida Gulf coast in the sixteenth century. Neither the Calusa nor the Tocobaga ever were Christianized, and the coastal Indians persisted in their practice of wholesale slaughter of shipwreck victims (Connor 1925). Aside from the Spanish treasure fleets which sailed along its shores, the Florida Gulf coast virtually was ignored, both strategically and religiously, until the late seventeenth century (Manucy 1959; TePaske 1971:18-19).
CHAPTER 4
THE NEW SPAIN FLOTAS

In the sixteenth century, Spain was the major shipping power in Europe, and shipping was the lifeline of the Spanish empire. In the early years of Spanish trade with the West Indies, merchant vessels often sailed alone in accordance with individual time schedules. But as the dangers increased to its maritime lifeline, Spain was forced to implement a series of measures to insure the safe arrival of its New World cargos (Phillips 1986). One of these measures was the formation of armed merchant convoys, which as a system evolved gradually over a period of many years. The heyday of the Spanish fleet system was in the last half of the sixteenth century, a time when commerce between Spain and the Indies was at its peak (Hamilton 1934:187).

Origin and Evolution of the Flota System

In the early years of the Indies trade, as the number of transatlantic sailings increased after the voyages of Columbus, the Spanish government recognized the need for centralized and authoritative control over its American enterprise. In 1503, the Casa de Conratación, or House of
Trade, was established in Seville for this purpose. The Casa was to serve as a clearinghouse for all overseas matters, and its duties included the organization of outbound fleets, inspection of cargos, writing of manifests, collection of export duties, control of piloting and cartography, and the receipt and recording of precious metals shipped to private individuals or the king. Nearly every aspect of American trade was controlled by the Casa, and no ship was permitted to sail to the Indies, conduct trade, or exchange merchandise without a license from it (Góngora 1975:85; McAlister 1984:244).

Once the regulations had been complied with in Seville, colonial traders during the first few decades of the sixteenth century were free to sail to the West Indies at any time they chose (Garcia 1967:61). On some occasions vessels sailed alone, and on others they traveled in groups (Hamilton 1934:18; Lovett 1986:84-85; Peterson 1975:65). Yet as it became increasingly clear that a ship was unsafe sailing alone, group sailings became more frequent. Ships traveling in groups were able to provide mutual aid in the event of bad weather or attack by corsairs, and the pilots or navigating officers of a group sailing could consult one another during the course of a voyage, which gave passengers and crew a greater sense of security (Parry 1966:133).

Despite the advantages of sailing in groups, most Spanish merchants continued to set their own timetables and
sailed alone in order to take better advantage of changing market conditions. However, by the late 1520s the presence in the Caribbean of French corsairs posed a greatly increased vulnerability to ships sailing on their own. This prompted the Spanish crown to decree in 1526 that all ships sailing to the Indies must travel in protective convoy (Parry 1969; Phillips 1986). Vessels were to be properly armed and sail in groups of at least ten, with the official assembly points designated as Seville and Santo Domingo. The Armada of the Ocean Sea, an armed naval escort, would accompany the fleets from Spain to the Canary Islands, and then would rendezvous with the returning merchant ships in the Azores as they sailed to Seville from Santo Domingo (Hoffman 1980:28).

The idea of merchant ships sailing in convoy was not an original one. Prior to the first crusade (A.D. 1096), the Genoese and Venetians used convoys to protect shipping, as did Genoese, Venetian, and Pisan merchants in the twelfth century (Lewis and Runyan 1985). Throughout the twelfth and thirteenth centuries, Venice sent its merchant convoys to Alexandria, Cyprus, and Syria twice a year, similar to a system instituted in the 1550s by Spain. In the early fourteenth century, annual convoys of Italian ships, called the Flanders galleys, began a maritime supply route to northern and western Europe, and in the late fifteenth
century merchant convoys shipped Castilian wool to northern Europe (Elliot 1963:109; Lane 1975; Parry 1969).

In 1543, a new system of convoys was put into effect which improved upon that established in 1526. The cédula of 1543 stipulated that only ships with capacities of 100 tons or more could carry cargo to the Indies, and that two group sailings were to leave Spain each year, one in March and the other in September. Each of the fleets was to be protected by a warship, which would accompany them to the Indies and then provide escort from the assembly point at Havana until arrival at Seville. Though Santo Domingo continued to remain an important Caribbean port, its location far to the windward of Havana dictated that ships sailing from there were permitted to form their own convoy for the return to Spain (Haring 1964:201; Hoffman 1980:33).

From 1544 to 1552, convoys sailed to the New World in increasing numbers, yet a comprehensive system of fleets for the Indies trade still did not exist. Then beginning in 1552, when war had resumed between France and Spain, the evolution of the Spanish fleet system took a decisive turn (Lovett 1986:65). On the heels of a short-lived scheme by Charles I to abolish convoys altogether, the Crown in 1553 issued a cédula restoring the semiannual flotas officially instituted in 1543. According to the revised plan, one of the fleets was to leave Spain in January and the other in September, each escorted by four warships. After reaching
the Caribbean, one of the warships would escort vessels bound for Santo Domingo and the islands, another would sail with the Tierra Firme ships to Nombre de Dios, and the two remaining warships were to accompany the Mexican fleet as far as Cape San Antonio, from which point the warships sailed alone to Havana (Haring 1964:203).

Prior to the royal cédula of 1553, it was not customary for any of the Spanish warships to accompany the Mexican fleets as far as the port of Vera Cruz. Small merchant ships from Mexico typically sailed to Havana (or in earlier years to Santo Domingo), where the cargo was transferred to the fleet sailing for Spain. Beginning in 1554 this system was modified, as one or more warships of the convoy always escorted the merchant ships to pick up the gold and silver bullion in Vera Cruz (Haring 1964:206-207).

The new importance placed on shipping from Mexico provides strong evidence for an increasing, colonial export production. The very first shipment of goods exported from Mexico left the port of Vera Cruz in December, 1522 (Diaz del Castillo 1938:373). Loaded onto three caravels, the consignment included treasure taken from Montezuma, and the personal loot of Cortés and his soldiers. In 1523, as the caravels cleared the Azores in the final leg of their voyage, two of the ships were captured by a French corsair and their cargo diverted to France. When news of the loss reached Cortés, a second treasure shipment was sent from
Vera Cruz in 1524, and over the next few years much more treasure followed (Anderson 1941:47; Haring 1915:442; McAlister 1984:200).

In the years immediately following the conquests by Cortés, Spanish trade with Mexico grew rather slowly. Then with the discovery of immense gold and silver deposits, the first in the New World to be exploited by Spain, Mexican colonial trade expanded rapidly. The first silver mines were discovered in 1531 or 1532, and in 1536 the first New World mint was established at Mexico City (Nesmith 1955). After the famous Zacatecas silver strike of 1548, large strikes were made at Guanajuato, Pachuca and Fresnillo in the 1550s, and at Santa Bárbara in 1567 (Bakewell 1971; Hamilton 1934:33; Lovett 1986:76; McAlister 1984:228).

These huge Mexican silver strikes, together with the major find at Potosí in Peru, were important catalysts in the first great, American silver boom. The silver boom accelerated greatly in 1554 when the patio process of amalgamation with the use of mercury and salt was developed at Pachuca. This process permitted the exploitation of lower grade ores, since the percentage of silver extracted was much greater. As a consequence, in the years 1556-1560, New Spain experienced a significant increase in precious metal exports (Hamilton 1934; Haring 1947:245).

In 1561, following a series of successful corsair attacks on Spanish shipping, the Casa de Contratación and
Merchants Guild of Seville complained to Philip II about the manner in which the Indies trade was being conducted. While the decree of 1553 had restored the semiannual convoys, the following year a second cédula announced that whenever eight or ten properly-armed ships were ready to sail to the Indies, they could receive a license to depart (Haring 1964). In August of 1554, another royal decree apparently reduced to six the required number of ships (Veitia Linaje 1977:210). The Casa and Merchants Guild argued that these measures were increasingly inadequate, and advocated a return to the system of twice-yearly convoys (Hoffman 1980).

In July, 1561, the Spanish crown reestablished the semiannual convoy system. The penalty for a ship owner failing to sail to the Indies in convoy was forfeiture of cargo and vessel (Haring 1964:206; Hoffman 1980:95). The fleets were expected to sail from Spain twice a year, one in January and the other in August, and were to include an armed flagship, the capitana, and a vice-admiral, the almiranta, each of which was to carry 30 soldiers. As a fleet reached Dominica, it was to divide into two squadrons: The capitana escorted one squadron to Tierra Firme (i.e., Cartagena and the Isthmus of Panama), and the almiranta accompanied the other group to New Spain (Andrews 1978:67).

Spanish officials, however, found it virtually impossible to enforce these and other regulations, in particular those that dealt with the ban on individual
sailing ships, or sueltos, which traveled apart from the convoys. The royal scheme also suffered from certain serious flaws, as experience had shown it was frequently difficult to put together two mixed fleets, each comprising Tierra Firme and New Spain components, in a single year. Delays in the departure of one fleet invariably caused the postponement of the other (Andrews 1978:67).

Recognizing the weaknesses in the present system, the Spanish government in the years 1564-1566 gave the Indies navigation the organization it retained with little variation until the mid seventeenth century. The famous ordinances issued on October 18, 1564 inaugurated the system of two separate convoys: The fleets sailing to Tierra Firme became known as the galeónes, acquiring the collective name from their escort of six or eight warships, and the fleets destined for New Spain came to be known specifically as the flotas. For the first time a sharp distinction was made between the New Spain and Tierra Firme contingents, and though on occasion they were forced to sail together, the two fleets from this time forward always maintained their separate character and organization (Elliot 1963:176-177; Haring 1964:207; Lynch 1965:157; Walker 1979:4).

The New Spain flota was expected to sail from Spain in April (in 1582 changed to May) accompanied by ships bound for Cuba, Hispaniola, and Honduras. Once inside the Caribbean, the flota separated from the ships destined for
the Greater Antilles, and then sailed directly to New Spain. The Tierra Firme fleet was to leave Spain in August in convoy with merchant ships sailing to Cartagena, Santa Marta, and the other ports on the northern coast of South America. After arrival in the Caribbean, the fleet parted company with the mainland contingents, and sailed to the port of Nombre de Dios on the Isthmus of Panama (Haring 1947:304; Lovett 1986:87).

In spite of royal design, the fleets rarely succeeded in keeping the time-schedules. Annual sailings were not automatic, but the ideal worked towards and sometimes achieved. Beginning about 1580, a year was often skipped, and towards the middle of the seventeenth century annual sailings became increasingly irregular. Official scheduling also required both fleets to winter in the Indies. The New Spain fleet was expected to depart from Vera Cruz in February, and the Tierra Firme fleet from Cartagena in January, in order for both groups to be in Havana by March. Neither of the fleets were supposed to sail from Havana before March 10, since weather conditions were more favorable after that time (Andrews 1978:67; Haring 1964).

The Spanish crown implemented a number of other measures, in addition to the fleet systems, to tighten control of its Indies trade. Vera Cruz, Cartagena, Nombre de Dios (Porto Bello beginning in 1598), and Havana became the only legal American ports of entry for the Spanish
fleets. In 1573, rights to trade with the Indies were withdrawn by the King from all Spanish maritime cities other than Seville and Cadiz. Also, a merchants guild was set up in Mexico in 1592 and in Lima in 1613, officially confirming the monopoly of the overseas trade already held by the two viceregal capitals (McAlister 1984:363).

After the successful oceanic passage to the Philippines by Miguel Lopez de Legazpi in 1564, a voyage which at last fulfilled the dream of Columbus, direct Spanish trade with the Far East became a reality. Miguel Lopez established a Spanish settlement at Manila Bay in 1572, and at the same time direct trade connections were opened with China, which soon was to become the principal source of Spanish trade with the Orient. In 1573, two Spanish galleons with a rich cargo from the Philippines arrived at the Mexican port of Acapulco, and by 1576 the galleon trade between New Spain and Manila was firmly in place (Schurz 1939).

The Manila trade lasted until the early nineteenth century, though its peak years were from the 1580s through the 1620s (Parry 1966:132). Silver was the single, most important commodity exported from New Spain to Manila. Other products included cacao from Guayaquil, cochineal from Mexico, oil from Spain, wines, and an assortment of other staples. While silks were the most valuable part of the cargos shipped from the Philippines to Mexico, the Manila galleons carried an infinite variety of other goods, which
included cottons, wools, Oriental rugs and carpets, combs, finely carved boxes, hemp, gems, pearls, gold bullion and jewelry, beads of all kinds, porcelains, ivory, beds, tables, chairs, dyestuffs, spices, camphor, balsam, iron nails, sheet iron, tin, lead, and gunpowder (Schurz 1939).

New Spain was the principal market for the cargos of the Manila galleons. The official eastern terminus of the Manila trade was the port of Acapulco, where most of the goods were sold in a fair to buyers from Mexico, Peru and Seville. At the conclusion of the fair, the Peruvian buyers shipped their purchases south to Panama City, the Mexican merchants carried their goods by mule to Mexico City, and agents of the Sevillean merchants hauled their merchandise overland to the port of Vera Cruz where it was loaded aboard vessels of the New Spain flota and shipped to Spain (Marx 1987:14; Schurz 1939:361-362).

The most important export from Mexico, silver bullion and coin, reached a peak outflow from about 1575-1610 (Chaunu and Chaunu 1983). From 1524-1531, gold exports surpassed those of silver by a huge ratio, but from the early 1540s on silver exports exceeded greatly those of gold. Products other than precious metals made up about 35% of the cargo value on the returning flotas, and in estimated order of value included cochineal, cattle hides, indigo, sugar, and medicinal plants. Until about 1570 the principal Spanish exports to Mexico were grain, oil, and wines. As
the Indies began producing increasing amounts of these staples, Spanish exports shifted to mercury (used in silver refining), fine foods, spices, books, paper, high-quality textiles, and other luxury goods (Brading and Cross 1972; Haring 1915:447; McAlister 1984).

The number of merchant ships that sailed in the flotas was never constant, but could vary considerably from year to year depending upon conditions of the trade, size of the vessels employed, and safety of the sailing routes (Haring 1964:211; Veitia Linaje 1977:194). One of the more peculiar features of the Spanish transatlantic trade was that a greater number of ships sailed to the Indies than returned. For example, Lovett (1986:96) estimates that of 10,635 ships that sailed to the Indies from 1504-1650, less than 70% returned to Spain.

Shipwreck and capture by corsair account for some of this imbalance, yet economics played a far more important role. Exported goods from Spain had more bulk than goods imported from the Indies, which meant that less cargo space and fewer ships were needed for the return to Seville. Consequently, merchants frequently bought old and worn out ships which could be trusted to make one more transatlantic voyage, and then sold the ships for scrap after unloading their cargo in the Indies (Haring 1964:211; Lovett 1986:96).

As the resulting attrition in vessels strained the Spanish shipping and shipbuilding industry, the Crown
ordered that without royal permission it was forbidden to take a ship to the Indies with the purpose of selling it for scrap (Andrews 1978:57; Veitia Linaje 1977:218). But contrary to regulations, increasing numbers of aging and unseaworthy ships continued to sail to the Indies (Parry 1966:258). Provoked by his experience as a passenger in an Indies fleet sailing from Spain in 1552, a priest wrote in complaint to the Council of the Indies of the "frauds and treacheries" that permitted unseaworthy ships, rotten-hulled vessels "leaking water like sieves and so laden with merchandise and people that they could neither navigate nor defend themselves," to attempt a transatlantic crossing (Arnold and Weddle 1978:9).

While ships that sailed from Spain were usually in poor condition, those ships that returned to Spain were often in an appalling state. Sailing in the warm tropical waters of the Caribbean and Gulf of Mexico, wooden-hulled ships fell prey to the wood-boring shipworm (*Teredo navilis*), which had brought misery to ships as early as the fourth voyage of Columbus. Lead sheathing and thin copper plating sometimes were added to ship hulls to lessen teredo destructiveness, but the practice was not universal.

The wretched condition of homeward-bound Spanish ships is illustrated well by urgent requests to Charles I in 1554 by the Merchants Guild in New Spain. The Merchants Guild urged the Crown to order the Mexican viceroy to insure that
the flotas leaving Vera Cruz were not delayed by lawsuits and appeals, since every year "the worms eat eight or ten ships there," and those ships that left port were often in such poor condition that they sank before reaching Spain (Haring 1964:277-278).

Sailing Route from Vera Cruz to Havana

The homeward bound flotas were required by law to sail from the port of Vera Cruz, which was nothing more than a shanty town housing only customs and treasury officials, local traders, tavern keepers, and laborers employed in loading and unloading cargo. Most of the area population lived in the town of Jalapa located higher up in the interior where the climate was healthier. When the flotas arrived from Spain, representatives of importing merchants, guards of the silver shipments, and mule teams all arrived from Mexico City for the great fair at Jalapa, where the ship cargos were bought and sold. At the conclusion of the fair, the mule teams hauled their purchased goods back to Mexico City, and the flota sailed with its return freight to Spain (Haring 1964:204; Parry 1966:129; Peterson 1975:88).

As a harbor, Vera Cruz suffered from its complete exposure to hurricanes during the summer and to violent 'northers' nearly year-round. Smaller ships engaged in the islands and coastal trade tended to use the port at the mouth of the Antigua River, while the masters of the larger
transatlantic ships preferred to anchor at the small island of San Juan de Ulúa 15 miles down the coast. This meant that for most of the sixteenth century Vera Cruz was not one but two harbors, and not until 1600 was the town itself moved to a new site directly opposite San Juan de Ulúa (Haring 1964:204; Parry 1966:128-129).

From the early 1520s until 1600, more than 1,000 ships carrying well over 250,000 tons of merchandise destined for Spain departed from the port of Vera Cruz (Chaunu and Chaunu 1983). In the first half of the sixteenth century, the flotas and individual ships usually sailed to Santo Domingo before making their transatlantic crossing. But by the middle years of the sixteenth century, the port of Havana slowly was transcending in prominence the port of Santo Domingo, and soon became the most important distribution and rendezvous center for the homeward-bound Indies fleets (Andrews 1978:58; Haring 1964:227).

Most of the Spanish shipping sailed in annual convoys which followed well-known sailing routes. From Spain the New Spain flotas headed southwest from the Andalusian coast to the Canary Islands, and then steered west, generally sighting land at Dominica, Guadelope, or at one of the other islands in the Lesser Antilles. Once inside the Caribbean the flotas separated from the merchant ships bound for Honduras and the Greater Antilles, and after sailing past
the southern shores of Puerto Rico, Hispaniola, and Cuba, steered toward Vera Cruz (Haring 1964:223; Parry 1966:134).

The Spanish crown placed great importance on the prompt sailings of the Indies fleets both to and from Spain. The royal ordinances of 1561-1564 had specified that the New Spain flotas were to sail from Spain in April, and after wintering in Vera Cruz, depart for home in February or no later than March 1 (Arnold and Weddle 1978:170; Haring 1964:207). The flotas, however, rarely sailed on time, and the reasons for their perpetual delays were nearly endless. As a result, the flotas usually left Vera Cruz in late March, April, May, and early June, not by March 1 as officially decreed (Chaunu and Chaunu 1983:202-203).

Sailing ships of the sixteenth century, like all sailing vessels, were at the mercy of unpredictable weather, ocean currents, and prevailing winds. Every sailing voyage also was affected by the competence of the pilot and crew, sailing qualities of the ship, accuracy of charts, and methods of navigation. Since these variables all tended to limit the choices available to a sixteenth century mariner, shipping often was restricted to only a few sailing routes (Andrews 1978:2).

Four different sailing routes have been described in various historical accounts, or detailed on maps and charts, for the ships that sailed from Vera Cruz to Havana. In view of the limiting factors placed upon a sixteenth-century
mariner who attempted a transoceanic crossing, each of these four sailing routes will be analyzed, together with the variables affecting a voyage in the Gulf of Mexico, to determine the route most commonly used by the flotas sailing from Vera Cruz to Havana. A section in Chapter 6 will examine the importance of this sailing route and its impact on Indians living on the Florida Gulf coast.

The first sailing route to be examined is illustrated in Figure 1. Primary historical sources for this sailing route include the Coronelli map (Portinaro and Knirsch 1987), the López map (Skelton 1958:164), McDonald and Arnold (1979:310), and Vázquez de Espinosa (1942:2). Descriptions of this route by secondary sources include Haring (1964:227), Lovett (1986:88), Peterson (1975:75), and Wolf (1982:138). Around 1620, Vázquez de Espinosa (1942:2) described this sailing route in the following manner: "From Vera Cruz it is 300 leagues' sail to Havana; on leaving port they [the flotas] head NE up to 25 degrees; from there they steer E. till they sound at the Tortugas, and from them they run to Havana."

Prior to an evaluation of this first sailing route, it is essential to have a basic understanding of the wind system in the Gulf of Mexico. The northeast trade winds blow steadily from the east across the entire Gulf almost year round. The trade winds generally blow from the northeast and east-northeast in September through February,
Figure 1. Sailing Route Described by Vázquez de Espinosa
and from the southeast and east-southeast in March through August (Hastenrath and Lamb 1977; Minerals Management Service 1986). Some weakening of the trade winds occurs in the winter months, the time of the cross winds known as nortes or northers, which frequently bring violent weather to many parts of the Gulf. The dangers from northers in the winter, the frequent hurricanes from June to November, and the difficulty of access to Havana from December to March, tended to restrict shipping activity between Vera Cruz and Havana to the late spring and early summer (Andrews 1978:2-3; McAlister 1984:238; Pares 1963:89).

The prevailing easterly winds in the Gulf of Mexico present a serious challenge to the accuracy of the sailing route description by Vázquez de Espinosa. No sailing ship can sail directly into the wind, and the merchantmen of the Indies fleets were no exception (Marshall 1990:41). A ship sailing from west to east in the Gulf of Mexico and the Caribbean faced the same headwinds as a ship returning from the Indies to Europe (Andrews 1978; Horsfall 1948). Ships sailing to Europe were forced to steer well to the north to get out of the trade winds before making an attempt eastward at about 30-32 degrees latitude, a homeward route first discovered by Columbus in 1493 (Haring 1964; Morison 1974:84; Parry 1966:44-45).

Though it was impossible for a ship to sail directly into the wind, the alternative was to sail close-hauled and
point into the wind at an angle. Square-riggers, the most common type of ship used in the Indies trade, could not point very well, and were at a great disadvantage when tacking (i.e., sailing a zigzag course) against the trade winds (Chaunu and Chaunu 1983; Hoffman 1980:6). Nearly any ship can sail at a right angle to the wind, but a sixteenth century square-rigger under ideal conditions could sail no better than one point, or 11 1/4 degrees less than a right angle, into the wind. Lateen-rigged ships such as caravels could sail somewhat closer to the wind, but since they lacked a deep keel they had a tendency of slipping sideways and still could not do much better than two or three points (DeCamp 1963:122; Marshall 1990:40).

The square-rigged Spanish galleons and naos engaged in the Indies trade possessed the worst possible sailing qualities. The typical galleon was lumbering, top-heavy, and difficult to steer. Frequent groundings in familiar harbors provide a significant comment on the handling qualities of these ships (Andrews 1978:99; Parry 1969:180). Forecastsles were high and massive, poops were considerably taller, and both created a severe disproportion of structure below and above the water line. Spanish ships, one sixteenth century writer observed, "were built as high as churches" (Klarwell 1926:172).

Tacking one point into the wind on each course must have been extremely difficult, and in a fresh wind
impossible (Haring 1964:263; Horner 1990:62; Parry 1969:78). Columbus attempted this sort of course against the northeast trades, and in a period of 28 days sailed an average distance of only six miles a day (Morison 1974:242). Since the sailing route that Vázquez de Espinosa describes runs directly into the face of easterly headwinds, it is unlikely that this route was used regularly by the New Spain flotas.

A second historically-described sailing route from Vera Cruz to Havana is shown in Figure 2. Primary accounts of this sailing route are provided by Escalante de Mendoza (1985:170-171) and Villalobos Vellerino (1984:23-24). A secondary description of this route is found in Coastal Environments (1977a, 1977b). The sailing route descriptions by Escalante de Mendoza in 1575 and Villalobos Vellerino in 1592 are nearly identical, and a translation of the sailing directions by the latter individual is as follows:

Departing from San Juan de Ulúa for Havana one must sail northeast until reaching 26 degrees latitude, after which one must sail east not going above or below said latitude of 26 degrees until arriving on the Florida coast at a depth of 50 brazos [a Spanish braza is 5.5 to 6 English feet]. Then sail south keeping to that depth until encountering shallows which indicate one is near the Tortugas...then sail south quartering southwest until reaching deep water, then sail southeast quartering to the south until sighting...the port of Havana...(Villalobos Vellerino 1984:23-24).

Though the sailing route described by Villalobos Vellerino lies one degree higher in latitude than the route described by Vázquez de Espinosa, in most other respects the two routes are identical. Ships sailing either one of these
Figure 2. Sailing Route Described by Villalobos Vellerino
two routes would have been forced to steer directly into headwinds for nearly the entire voyage. This distinguishing feature, for the same reasons discussed earlier, likewise eliminates the sailing route described by Villalobos Vellerino.

A third sailing route from Vera Cruz to Havana, described as a "great arc" by Hoffman (1980:6), is shown in Figure 3. The primary historical sources for this sailing route, all dating to the eighteenth century, include the Renard (1703), Delisle (1722), Homann (1725), Moll (1727), Poppel (1733), Lotter (1757), and Jefferys (1775) maps (Cumming 1962; Martin and Martin 1982; Portinaro and Knirsch 1987). Secondary sources include Garrison et al. (1989), Hoffman (1980), Horner (1990), and Walker (1979).

According to Garrison et al. (1989), the Loop Current is the primary mechanism which enabled ships of the New Spain flotas to use this sailing route. The Loop Current is a highly variable, current feature that originates as the Gulf Stream flow through the Yucatán Strait, and then penetrates northward into the Gulf of Mexico before turning anticyclonically and exiting through the Florida Straits (Gore 1992:68; Vukovich et al. 1978:65). Occasionally Loop Current waters intrude as far north as the Mississippi-Alabama shelf (Minerals Management Service 1986), and it is this intrusive component that is said to have assisted the flotas sailing from Vera Cruz to Havana.
Figure 3. Sailing Route Described by Guillaume Delisle
Yet ocean currents, which in the Gulf of Mexico are uncertain and irregular in direction, are not mentioned in any of the known sailing instructions (Arnold and Weddle 1978:99; Ware 1982:24). More importantly, the complex nature of the Loop Current would have prevented its use as a reliable west-east sailing aid in the northern Gulf of Mexico (Vukovich et al. 1978). The Loop Current is not a clearly defined, unchanging system, but is "rather the sum total of all the highly variable current patterns occurring offshore over a given season" (Gore 1992:69-70), and its actual "location" at any given time is definable only in statistical terms (1992:70). Substantial variation of the Loop Current can occur during a single month, and associated gyres and meanders are remarkably dynamic (EOS 1993:338; Vukovich et al. 1978). The erratic, unpredictable positioning of the Loop Current boundaries month by month and year by year strongly suggest its undependability as a sailing aid to the flotas.

A second weakness in this proposed sailing route is that once a ship left the port of Vera Cruz, and contrary to navigational practices of the time, land was never sighted again until nearing Havana. Since navigational instruments were often less than adequate in determining true position of a ship at sea, much of the sailing routes in the Gulf of Mexico and Caribbean lay close to or within sight of land (Arnold and Weddle 1978:178). Dead reckoning, the most
basic form of navigation, was used by ship pilots to determine position, estimates of speed, direction sailed, and time elapsed since the last known or estimated position. The instruments used to measure these variables often were inaccurate (Haring 1964:314; Phillips 1986:130; Taylor 1958), and as a navigational method, dead reckoning was described by a late sixteenth-century navigator as "an uncertaine guesse; and if you please to call it a probable conjecture, you shall grace it with the uttermost" (Barlowe 1972:H3).

Computations of latitude, though frequently attempted in the course of a voyage, were often faulty, and the determination of longitude was entirely a guess until the invention of the sea-going chronometer in 1759 (Marshall 1990:67; Parry 1969:113; Taylor 1958:153). All this meant that by necessity navigators felt much safer with the coast occasionally in view. Mariners did not deliberately sail close to land or 'hug the shore', but capes and headlands were viewed often enough to be sure of the ship's position (Arnold and Weddle 1978; Hoffman 1980:6; Parry 1969; Taylor 1958:63; Ware 1982). Ship navigators using the great arc route, however, would have had little or no opportunity to sight bearing points on the coast, which would have created uncertainty concerning the true position of the ship.

A third weakness in this proposed sailing route is that a ship would have found insufficient easting (i.e., steering
to the east) in the southern leg of the voyage. When sailing from the mouth of the Mississippi River to the Florida Straits, it was necessary to avoid immediately heading south since there was a risk of falling in the way of the trade winds too soon (British Government et al. 1863:266). In order to reach Dry Tortugas from the Mississippi, a ship was forced to steer ESE until finding the edge of soundings between 26 and 27 degrees latitude on the Florida coast. Ships southbound through the Gulf frequently sailed too far west, and in the process were blown off course to the coasts of Texas or Mexico (Blunt 1822:297; Romans 1962:LXXIV-LXXV; Ware 1982:46,136).

The fourth sailing route to be examined is illustrated in Figure 4. Primary historical sources for this route include British Government et al. (1863:290), McDonald and Arnold (1979:309-312), Roberts (1763), and Romans (1794, 1962). Descriptions of this sailing route by secondary sources include Andrews (1978), Arnold and Weddle (1978:178), Ewen (1990:264), Fernald and Purdum (1992:86), Lewis (1978), Marx (1968,1987), and Peterson (1972:85). Andrews (1978:2) writes that ships sailing through the Gulf from Vera Cruz to Havana later than April (actually February) were liable to get embayed to the west of the Florida peninsula. Mendel Peterson (1972:85) states that the flotas sailed from Vera Cruz up the Texas coast, then into the Gulf of Mexico and down the west coast of Florida past Dry
Figure 4. Sailing Route Described by Bernard Romans
Tortugas to the port of Havana. Lewis (1978:22) reported seeing this sailing route on Gulf coast maps dating to 1700 and earlier. In a letter dated February 24, 1994, Robert Marx writes that at least a dozen Spanish derroteros (books on sailing directions), and hundreds of letters from Captain Generals, Admirals, ship captains, and pilots, describe this as the sailing route of the flotas from Vera Cruz to Havana.

In 1583, Pilot Major Francisco Manuel described this sailing route in a set of instructions for ships heading from Vera Cruz to the Florida Straits. Sailing north from Vera Cruz, a ship first sighted land on the Florida coast north of the Rio Espiritu Santo (Suwanee River), then steered south along the coast until reaching Tortugas. The Rio Espiritu Santo referred to in these instructions has been identified by Coastal Environments (1977a) as the Mississippi River, clearly an error since Manuel places the river 25 leagues (about 90 miles) north of Tampa Bay (Chardon 1980; McDonald and Arnold 1979:311). As the Spaniards were notorious for their repetitive use of place names (Morison 1974:505), a second Rio Espiritu Santo corresponding with the present Suwanee River is found on a number of seventeenth- and eighteenth century maps, which include the Blaeu (1660), Coronelli (1689), Homann's (1714), Renard (1703), Rossi (1687), Sanson (1656), and Wit (1690) maps (Portinaro and Knirsch 1987). McDonald and Arnold (1979:311) also mention a sixteenth-century Spanish map of
the Gulf of Mexico and Caribbean that shows this same feature.

In 1763, William Roberts described the sailing route of the Spanish flotas as follows:

This bay [Tampa Bay], which lies from west to east in about 27 deg. 30 min. north latitude, is capable of receiving the largest fleet that ever was collected in this part of the world, and may, in case of any future rupture, be of great importance to the crown of Great Britain; for the galleons in their passage from Vera Cruz to the Havana are obliged, by reason of the N.E. trade winds, to stretch away to the northward, and as soon as they have made La Sunda [bank of soundings from Cape St. Blais to Dry Tortugas], they keep as near the coast of Florida as possible, and generally fall in with some men of war that cruize to the northward of the Tortugas on purpose to meet and convoy them to the Havana...these Spanish ships are obliged to fetch a compass as close under it [the Florida coast] as they can, in order to get a wind large enough to carry them sufficiently eastward to fall down upon Cuba, where there is a general juncture made of their several fleets bound to Europe, after which they sail together through the straits of Bahama (Roberts 1976:vii,17-18).

Bernard Romans in 1775 described this same sailing route from Vera Cruz to Havana in the following manner:

It was communicated to me by a gentleman whose name was Don Manuel Hidalgo, a very experienced commander, who assured me that the Spanish galleons from La Vera Cruz in order to avoid the east winds keep far enough north to make the Bay of Tampa, from which they shape their course so as here to disembogue out of the Gulph of Mexico into that of Florida, passing a little east of the Key Marques. I have seen two of these ships on the coast of West-Florida, not far south of Cape Blas; which circumstance and that of three galleons being cast away near the bay of St. Bernard, seem to confirm that gentleman's information (Romans 1962:XL). The Key [Key West] lies on the way of the Spanish ships, from the westward, on account that in coming from the western part of the Mexican Gulf, those ships, to run out of the way of the eastern, or trade wind, must go as far north as the coast of West Florida will allow them; thus they are forced to attempt the making of the Dry Tortugas, which often leads them farther east, and
then the currents generally render it difficult for them to get out, unless they should know the passage through Boca Grande. For this reason, a vessel in the proper season, cruizing to the north of Key West, or laying to the westward of it, can hardly fail of meeting the above said ships (Romans 1794:68).

These sailing route descriptions by Manuel, Roberts, and Romans all accurately reflect the difficulties facing square-rigged ships in stretching across the trade winds. Since the square-riggers eastbound from Vera Cruz were unable to sail directly into the wind, they were forced in effect to sail around it (DeCamp 1963:121-122; Hoffman 1980:6). In their tedious beat against the trades, the flotas sailed north or northeast from Vera Cruz until eventually sighting the coast of West Florida, which was the region extending from the Mississippi to Apalachicola Rivers (Gannon 1965:90). Since the trade winds are generally less steady in this part of the Gulf, mariners found it easier here to obtain sufficient easting for the southward tack to Havana (Hastenrath and Lamb 1977).

From the Northwest Florida coast the flotas sailed southeast, often using Anclote Key, just north of Tampa Bay, as a focal point for determining their position (True 1954:82; Ware 1982:136). As the flotas made their way past Tampa Bay and the coastal regions southward, the dangerous shoals surrounding the Florida Keys and Dry Tortugas were approached with special caution and frequent soundings. The flotas often exited the Gulf into the Florida Straits
through the Cuchiaga Passage, which in later years became known as Boca Grande Channel (British Government et al. 1863:113; Lyon 1988:5; Romans 1962; Ware 1982:157).

In accordance with common navigational practice of the time, much of this sailing route was within sight of land (Arnold and Weddle 1978; Hoffman 1980). Sailing close to shore usually provided favorable winds and better opportunities for computing true position of the ship. British Government et al. (1863:47) noted that it was "well known to every seaman, that an offshore wind is not dangerous, and it permits a continuation of your voyage; for, though it may blow very hard, it can raise no sea, and you can regulate your sail accordingly." When the coast was in sight, the navigator took compass bearings on prominent landmarks to fix his position. When land was out of sight, the lead and line was used to get a rough idea of position by taking frequent soundings and samples of the sea bottom (Parry 1969; Taylor 1958:35,131; Thurston 1972:26).

The average sailing time from Vera Cruz to Havana was nearly five weeks (or 34 days). In a typical voyage, a ship traveled a distance of about 50 miles a day, and logged a total distance of about 1700 miles (Chaunu and Chaunu 1983). The first three sailing routes described earlier each have total sailing distances of approximately 1150 miles, 1250 miles, and 1350 miles respectively. The total sailing distance of the fourth route, about 1700 miles, is identical
to the actual, average sailing distance recorded for the flotas by Chaunu and Chaunu.

All this leads to a critical question: If sailing ships were at the mercy of prevailing winds and currents, how can there be four different sailing routes from Vera Cruz to Havana? The historical descriptions of these routes tend to be more indirect and northward over time, which seems to imply that over the past 500 years ship technology and navigational practices have become worse. As this of course is not true, and since the trade winds have not changed over the past several centuries (Moran and Morgan 1991:250), it must be concluded that the sailing routes have not changed over time, but rather the accuracy in their descriptions has improved.

The key to sorting out these four sailing routes is to examine the prevailing winds in the months when the flotas customarily departed from Vera Cruz. British Government et al. (1863) write the following:

Supposing, then, a ship to sail from Vera Cruz during the season of the Norths [October through February], the first care must be to steer North, or N.N.E., taking care never to keep very close hauled, in order to reach the parallel 25 degrees as soon as possible; and then haul as close as may be to the wind, for the purpose of gaining longitude eastward...With the North wind you should haul up for the Tortugas bank of soundings [extending from Cape St. Blais to Dry Tortugas], which should not be left to run over for the coast of Cuba, near Havana...(British Government et al. 1863:289-290).
Although these sailing instructions are essentially the same as those furnished by Vázquez de Espinosa (1942) and Villalobos Vellerino (1984), the critical difference is the proviso that the sailing route was to be used in October through February, the season of the northern winds. Since the flotas hardly ever sailed from Vera Cruz in October to March (Chaunu and Chaunu 1983), this route would have been used but rarely. This suggests that the sailing routes described by Vázquez de Espinosa and Villalobos Vellerino can be identified with the officially decreed months of departure from Vera Cruz, not the actual ones (Haring 1964:207; Phillips 1986:10-11).

There is less certainty concerning the seasonal wind effect on ships attempting to use the third, or great arc sailing route, since the only primary, historical sources for this route are eighteenth-century maps. However, as both the Popple map (1733) and Moll's Atlas Minor (1727) depict prevailing winds from the northeast, it is possible that the great arc was a winter sailing route. Still, the common cartographical practice at the time of borrowing information from a "mother map" (Jackson et al. 1990), in addition to the other deficiencies outlined above, question the source-accuracy for this third sailing route.

The fourth sailing route conforms favorably with the prevailing winds in late March through June, the actual
sailing months of the flotas from Vera Cruz. The following set of sailing instructions ably illustrates this:

If the departure from Vera Cruz be between the end of March and the middle or end of June, you need not then keep close hauled to the breeze, nor work to the eastward on reaching the parallel of 25 degrees, because such a route would be crossing the middle of the Gulf, or nearly so, where you would find nothing but stubborn winds from the eastward, and many calms, that would greatly retard the navigation; the most advisable method, at this period of the year, is to continue steering to the North or N.N.E., with the wind rather free, until nearly reaching the vicinity of the northern coast; when, about the parallel of 28 degrees or 29 degrees, the land-winds and sea-breezes will greatly facilitate the progress to the eastward, as far as the Tortugas Soundings [extending from Cape St. Blais to Dry Tortugas], which, by a south course, may be quitted to the westward of the Tortugas (British Government et al. 1863:290).

To summarize, the sailing route described by British Government et al. (1863), Roberts (1976), Romans (1962), and others accurately represents the limitations faced by square-rigged ships sailing east from Vera Cruz through the Gulf of Mexico. The easterly winds in March to September made it necessary to sail far to the north before sounding at the higher latitudes along the Florida Gulf coast, where winds were more favorable for setting a course southward. Ships sailing this route were often within sight of the coast, taking advantage of land breezes to further progress and using coastal landmarks to establish position. Though variations in wind, current, and time of departure sometimes permitted a different course, this was the principal sailing route used by the New Spain flotas and individual ships that sailed from Vera Cruz to Havana.
CHAPTER 5
SIXTEENTH-CENTURY CONTACT SITES

Contact Sites and Shipwreck Material

For nearly 300 years the New Spain flotas sailed, often at regular intervals, along the Florida Gulf coast. Flota ships and individual sailing vessels heading from Vera Cruz were often unseaworthy, overloaded with cargo, and feebly manned by inexperienced crews. As a result, substantial numbers of ships wrecked on the Florida shore. Weather posed the greatest hazard, as sooner or later nearly every oceanic crossing was hit by storms or contrary winds. Even well known shoals and reefs presented a serious threat to safety since charts were often inaccurate, and ship pilots (until the seventeenth century at least) were frequently unable to calculate their exact or approximate position during a voyage (Horner 1990:24; Peterson 1975:75; Taylor 1958:199-200,216-217). Shipwrecks were astonishingly frequent, and ships laden with merchandise were lost on nearly every homeward voyage to Spain (Arnold and Weddle 1978; Haring 1964; Horner 1990).

The Florida Indians who lived along the coast recovered large quantities of this Spanish shipwreck material. The
salvage activities of the coastal Indians are well known, and materials from wrecked ships were recovered in a variety of ways. Ships that wrecked close to shore were picked over by Indian boarding parties, sometimes entire villages, who often accompanied their plundering with much shouting and riotous celebration. Vessels that foundered further from shore were salvaged with the use of canoes and native divers; buoyant debris floating in was picked up along the beach. The Indians either killed or enslaved the shipwreck survivors, whose personal belongings were taken from them and the bodies that washed ashore (Bushnell 1981; Dickinson 1945; Lyon 1980; Solís de Merás 1964).

Shipwreck salvage by the Florida Indians began in the earliest days of Spanish exploration and conquest in the New World. The Narváez expedition of 1528 was barely ashore when it found in the vicinity of Tampa Bay an Indian village with "many boxes of merchandise from Sevilla. In every one of them was a corpse covered with painted deer hides....We also found pieces of linen and cloth, feather head dresses that seemed to be from New Spain, and samples of gold" (Bandelier 1922:12-13). Earlier at a nearby Indian village Narváez also had found a gold rattle (Bandelier 1922:10), which may have been similar to a Peruvian gold rattle illustrated by Tushingham (1976:Figure 116). When the Spaniards questioned the Indians concerning the source of these goods, "they told us by signs that they had found it
in a vessel that had been lost on this coast and in that Bay" (Fernández Oveido y Valdés 1853:583).

Most archaeologists and historians have identified the bulk of European materials found at Indian sites as trade goods introduced by the earliest Spanish explorers. Marrinan et al. (1990) suggest the European artifacts from St. Marks Wildlife Refuge Cemetery site (8WA15) were introduced by the Narváez expedition of 1528 (see discussion in Chapter 3). Marvin Smith (1987:45) notes that European artifacts from contact sites dating to 1525-1565 in the interior southeast would include only goods introduced by the expedition of Hernando de Soto. Langford (1990) has identified a number of artifacts, including an Aztec-crafted copper plate, with the Luna expedition of 1559. And concerning the Ruth Smith (8CI200), Tatham (8CI203), and Weeki Wachee (8HE12) Mounds, Mitchem states the following:

The similarity of European bead assemblages from the three sites strongly suggests that the people buried in all three mounds were contacted by the same Spanish expedition(s). The glass beads leave no doubt that contact occurred during the early sixteenth century, and the geographical location of the sites indicates that the two most likely sources of the beads were the expeditions of Pánfilo de Narváez in 1528 and Hernando de Soto in 1539 (Mitchem 1989c:335).

A different theoretical perspective, and the one explored in the present study, is expressed by Hale Smith (1971:60-61), who writes that during "the Early Historic Period, 1500-1600, trade goods, although present, were not coming into Florida in any great quantity. The Indians
probably received the bulk of European materials from the wrecks of various vessels." Milanich (1995:41) likewise notes that many European artifacts "came from wrecked Spanish ships that were salvaged by native people." These statements suggest that the presence of European contact materials can be traced to the widespread Indian practice of shipwreck salvage. Also, much of the spatial distribution of these artifacts can be attributed to extensive Indian trade networks in place long before the voyage of Columbus.

Milanich and Hudson (1993:15-16), in an effort to link European artifacts with the route of the de Soto expedition in Florida, correctly argue that "just finding Spanish artifacts is not strong evidence of de Soto's presence. We must be able to show that the artifacts date from the 1530s or earlier and are not items salvaged from Spanish ships or given out by seventeenth-century Spanish missionaries." The present study will show, however, that Spanish shipwrecks could have yielded any of the European artifacts found at Indian sites which date or are presumed to date to the sixteenth century.

Yet what difference does it make whether European goods were introduced to the Indians by Spanish explorers or were obtained by Indians from shipwrecks? Since the question ultimately goes to the heart of what really happened in Florida during the sixteenth century, the difference is indeed critical. The former view states that most European
goods from early period sites came to the Indians (either directly or indirectly) from Spanish explorers, and that these goods often can be used to confirm the presence or trace the approximate route of a particular Spanish expedition (Curren 1986; Hudson, DePratter et al. 1989; Hudson and Smith 1990; Hudson, Smith et al. 1989; Milanich and Hudson 1993; Mitchem 1989a-1989c, 1990; Williams 1989). Individually, these expeditions (particularly those of Narváez and de Soto) were destructive to the Indians through warfare and possibly the spread of disease. Indian peoples directly in the path of the Spaniards probably would have been the most affected. Yet over time, Indian contact with the Europeans would have been punctuated and less intense, with large time gaps in between of little or no contact.

The latter view, which suggests that nearly all European contact materials originated from shipwrecks, is based on the sailing routes of homeward-bound Spanish ships, the salvage activities of the Indians, and the types of European goods found at contact sites. Spanish sailing routes stretched along the length of coastal Florida, and from Vera Cruz alone more than 1100 individual sailings were recorded in the sixteenth century (Chaunu and Chaunu 1983). On account of frequent shipwrecks, and the necessity of anchoring in protected harbors at the approach of bad weather, European contact with the Indians was not punctuated over long periods of time but most likely was
constant. This suggests that Old World diseases, against which Europeans had limited immunity but the Indians had none, probably caused continual epidemics which devastated large segments of the Florida Indian population.

In order to demonstrate this theoretical perspective, the following discussion provides a summary of reported sixteenth-century contact sites on the Florida Gulf coast. Published and nonpublished sources are summarized, together with the Indian and European artifacts recovered from the sites. Emphasis is placed on showing the plausibility of shipwrecks as the primary source for the European artifacts. In Chapter 6, it will be shown that these European goods, which include glass beads, pottery, and objects of precious and nonprecious metal, were among the types of materials commonly found aboard Spanish ships heading to Europe from the Indies.

**Criteria and Methodology**

European contact sites on the Florida Gulf coast are generally those where Indian artifacts diagnostic of the Pensacola, Fort Walton, Safety Harbor, Caloosahatchee IV, or Glades III cultural periods are found to be associated with materials of European origin or manufacture. European goods found at Indian habitation sites or burial sites do not in themselves always represent absolute physical evidence of European contact, since objects often were obtained through
Indian trade networks across the state, and from shipwrecks without survivors. Indian habitation sites were village or household locations, or areas of food procurement, chiefly characterized by refuse deposits in the form of shell midden or mounds. Burial sites are generally sand or dirt mounds, and occasionally cemeteries, into which the Indians placed their dead, often accompanied by burial goods.

The archaeological sites which will be examined in the following sections can be placed into three general categories: 1) Sites producing European artifacts which are sufficiently diagnostic to suggest a sixteenth-century contact date; 2) Sites yielding European artifacts which are nondiagnostic, but other factors suggest a sixteenth-century contact date; and 3) Sites of unknown historical period or uncertain location. Since many sites have been looted or excavated unscientifically, accurate dating is often difficult. Moreover, written accounts of excavations in the nineteenth- and early twentieth centuries often ignored or only vaguely described many of the European artifacts recovered. Unfortunately, many of these objects now are missing from museum collections where they were deposited.

The first category of sites are those yielding European materials diagnostic of the sixteenth century. Since few Indian artifacts can be attributed to a specific century, the present study will place greatest reliance for dating on objects of European origin or manufacture, which include
coins, glass beads, lapidary beads, majolica, Spanish Olive Jar, and copper or brass bells. In the following sections, the most common artifacts used to classify a contact site as sixteenth century include silver and copper coins predating 1580, amber beads, Florida Cut Crystal beads, Nueva Cadiz beads, faceted Chevron beads, olive-shaped dark blue or purple tumbled cane beads with applied white stripes, wire-wound seed beads, Early Style Olive Jar, Melado, and early variety Columbia Plain majolica (Deagan 1987; Goggin 1960a, 1968; Smith 1983, 1987).

The second category includes sites that have yielded European artifacts which are temporally undiagnostic, yet other factors suggest contact in the sixteenth century. These other variables include: 1) Cross-dating of materials with a contemporaneous site securely dated to the sixteenth century; 2) Direct association of European materials with Indian artifacts diagnostic of the Fort Walton and Pensacola cultures; 3) Absence of Leon-Jefferson pottery and other artifact types associated with the seventeenth-century Spanish Mission Period; and 4) Presence of secondary burials.

The third category of sites are those that have an unknown historical period or uncertain location. These are sites which are difficult to place into a definite time period. Though a large number of sites in this group have sixteenth-century contact components, accurate dating of the
European artifacts is hindered due to a number of problems, which include: 1) The artifacts are described inadequately; 2) The artifacts have been described adequately, but the date range is too broad; 3) The artifacts are described, but the artifact type is not temporally diagnostic; and 4) The artifacts are diagnostic of the sixteenth century, but have been recovered from sites whose locations are uncertain. Sites in this third category are listed in the Appendix.

**Description of Sites**

**Baldwin County (Alabama)**

**Bear Point Mound (1BA1)**

The Bear Point Mound is located about 150 yards northwest of the tip of Bear Point near the mouth of Perdido Bay. Since Perdido Bay forms the coastal boundary between Alabama and Florida, Bear Point Mound has been included with descriptions of European contact sites located in Florida.

G.M. Sternberg (1876) conducted extensive excavations at the Bear Point site in the 1870s. Sternberg reported that the mound was nearly circular with a diameter of about 100 feet, and was constructed of yellow sand. It was built upon sloping ground, with the lower or west side measuring about 12 to 15 feet in height, and the opposite or east side measuring six to eight feet in height. Considerable amounts of shell midden surrounded the burial mound, and since pottery recovered from both areas was identical, Sternberg
concluded that the same group of people responsible for the midden formation used the mound for burying their dead.

Burials in the mound were secondary, with bundle burials and single isolated skulls well represented. Sternberg recovered aboriginal pottery and pottery fragments from the body of the mound, and found associated with burials an iron spike and a single, undescribed glass bead. Previous excavators had taken perforated shell discs from the surrounding midden, and blue glass beads and iron fragments in association with burials from the mound (Sternberg 1876:283-289).

Clarence B. Moore (1901) excavated at Bear Point, and described the burial mound as roughly circular with a basal diameter of 80 feet, a summit plateau of 63 feet across, and a height ranging from six to 15 feet. According to Moore, the mound had been constructed in two layers or phases. The first or lower layer originally served as a habitation mound, which later was used as a base for the second layer or burial mound.

Moore recovered 44 secondary burials, all from the upper layer of the mound. Several individuals often were found buried in the same grave. Moore reported the practice of inverting a ceramic bowl over the skull, and the ceremonial perforating or "killing" of ceramic vessels. Ceremonial killing was an Indian custom that involved knocking out the bottom, or making a hole through the
bottom, of vessels previous to burial with the dead, with the idea that the mutilation 'killed' the vessel, freeing its soul to accompany that of its owner into the next world (Moore 1922:12-13).

Indian artifacts found associated with burials included shell beads, shell earplugs, hammerstones, projectile points, pebble hammers, stone celts and chisels, discoidals, and pottery (Moore 1901:424-432). Pottery described by Moore has been classified by Willey (1949:199) as Pensacola Plain, Pensacola Incised, and Pensacola Three-Line Incised. Zoomorphic and anthropomorphic ceramic adornos also were recovered. Some of the pottery is now in collections at AMNH (#5100-5102) and HPM (#23612,56696-56698).

Moore found a variety of European artifacts in direct association with burials. The remains of a wooden box contained two skulls, four femurs, four tibia, two scapulae, a clavicle, certain ribs and vertebrae, and some undescribed glass beads. Originally measuring about two feet square, the wooden box was badly deteriorated, though the rusted nails and small iron clamps were still evident. Other European materials taken from the mound included 12 silver buttons, an iron fragment, iron nails, an iron object described as a probable cutlass handle, an iron spike, a small piece of sheet brass or copper with stamped decoration, undescribed glass beads, and an undated silver coin (Moore 1901).
Examination of the silver coin by the United States Mint determined it had been struck in New Spain during the reign of Charles and Joanna, which lasted from 1521 to 1556 (Lynch 1965:99; Moore 1901:426). As 1536 was the earliest that the Spanish began minting silver and copper coins in Mexico City, the dating can be narrowed further to 1536-1556 (Nesmith 1955:8). In addition, Smith and Good (1982) have identified one of the glass beads recovered by Moore as a faceted Chevron, which dates to 1500-1600 (Smith 1983:155).

The dates provided by the silver coin and faceted Chevron bead suggest European contact at the site in the sixteenth century, possibly as early as the first half of the century. The Indian ceramics collected by Moore, including loop handles and shell-tempered polished black ware, indicate Bear Point Mound is associated with the Pensacola culture and dates to the Fort Walton Period (Willey 1949:199-200). The wooden box containing human remains is reminiscent of the boxes and other shipwreck debris found near Tampa Bay by Narváez (Bandelier 1922).

Santa Rosa County

Navy Liveoak Reservation Cemetery Site (8SR36)

The Navy Liveoak Reservation Cemetery site is located 1.6 miles east of the Pensacola Beach overpass and just south of US 98. The site is characterized by a number of low rises, similar to small sand mounds, and covers an area of about two acres. The surrounding terrain is generally
flat, and the cemetery itself is situated on the west side of a gradual slope.

In the early 1960s, the site was excavated under the supervision of William Lazarus of ITMM. Pits were dug in and around the small, sand burial mounds, with special attention directed toward the central cemetery area. The excavations yielded at least 16 burial locations, though probably far more were actually present. Types of burial included secondary bundle, single skull, a possible massed secondary burial, and an "urn" burial. The urn burial consisted of a single skull placed on a large ceramic platter with a small shell-tempered, unperforated bowl inverted over the skull. The presence of charcoal was noted throughout the excavations (Lazarus et al. 1967).

Burials at the site were found accompanied by Indian and European artifacts. Aboriginal pottery included Pensacola Incised, Pensacola Series Blackware, Moundville Engraved, and Fort Walton Incised types. Three Pensacola Incised bowls, probably used for black drink ceremonies, were found stacked one inside the other (Lazarus et al. 1967:Figure 2). Two caches of six shell-tempered Blackware bottles, all "pre-killed" (i.e., prior to shaping), were discovered near interments in the presumed central burial area. Other ceramic items included eight large (10-15" rim diameter) globular casuela bowls, three bird effigies, an eagle effigy, a frog effigy, four adornos, and a dipper
handle. Nonceramic Indian artifacts included 80 shell beads, three shell pendant fragments, a shell spoon, a Busycon shell, worked shell fragments, hematite, a hematite hone, and many fragments of chert (Lazarus et al. 1967).

European artifacts found associated with burials included a large brass disc (4" in diameter), three iron spikes, an iron knife or sword fragment, many unidentified iron fragments, copper fragments, and over 40 glass beads. The large size of the brass disc, which was found with the secondary bundle burial of an infant, suggested to the excavators that it may have been part of a ship (Lazarus et al. 1967:110, Figure 4a). The glass beads, identified by Marvin Smith (1983:Table 1), include faceted Chevron, drawn opaque turquoise blue, simple tumbled with compound stripes, simple tumbled with simple stripes, and medium transparent blue tumbled. The faceted Chevron bead (1500-1600) is an excellent sixteenth-century marker, and the drawn opaque turquoise blue, or Ichtucknee Blue beads, date to 1575-1720 (Deagan 1987; Smith 1983:148).

The Navy Liveoak site is clearly a Fort Walton period cemetery site identified with the Pensacola culture. Its use extends well into the seventeenth century, and the cemetery apparently was associated with nearby village sites known as Tent Camp (8SR11) and La Casa (8SR12). Indian pottery from the cemetery compares favorably with types recovered from Bear Point Mound (1BA1) and Alaqua Bayou
(8WL30), both Fort Walton sites coin dated to the sixteenth century (Lazarus 1965; Lazarus et al. 1967; Moore 1901:426). Leon-Jefferson or Mission Period ceramics, a type dating to post-1630, were not found at the site. The presence of the faceted Chevron (1500-1600), and possibly the Ichtucknee Blue beads (1575-1720), suggest a Spanish contact component which dates to the sixteenth century.

**Okaloosa County**

**Holly Branch Site (8OK35)**

This burial site was located 700 feet west of Holly Branch near the southern shore of Choctawhatchee Bay. Since the terrain was fairly level, the site was probably a cemetery rather than a mound. In 1959, the cemetery was discovered by three boys, Harold and Rex Chambless and a relative, who dug a pit measuring five by ten feet. A brief description of their work, which was summarized by William Lazarus, is recorded in the FMSF.

Excavations revealed two burials, both single skulls, with pottery vessels inverted over them. Covering one of the skulls was an un killed, Fort Walton Incised vessel, and over the other was a killed, Pensacola Incised casuela bowl. The skulls were analyzed by Adams and Lazarus (1960), who made sketches of how the two individuals may have appeared. The burial found with the Fort Walton Incised bowl probably was male, and the other individual, who showed marked signs
of fronto-occipital flattening, was apparently female. A third cranial fragment was found in the spoil dirt.

The FMSF records a number of artifacts recovered by the Chambless brothers and by others who excavated in the disturbed fill. Many of these objects are in a collection at ITMM. Objects of shell include an ear pin (or drill) 5" long by 3/16" in diameter, several beads (one painted red), two celts, and some tools. Stone artifacts include a cache of eight to ten projectile points; a cache of six to eight smooth egg-sized stones of red, white and yellow; two well-made 'chunkey' (or gaming) stones; a thin, red rectangular sandstone with two drilled holes; and a carved head (4 1/2" high by 2 1/2" wide) of micaceous limestone.

The most remarkable finds were Indian ceramics. The Chambless brothers recovered 16 unbroken vessels, the major portions of at least ten others, and several hundred sherds, all Fort Walton and Pensacola Series types (Adams and Lazarus 1960:92). Lazarus has described and sketched several of these vessels, which include two Fort Walton collared, globular bowls; a Fort Walton Incised bowl (found with the first burial) with handles or ears; a Pensacola Incised casuela bowl (found with the second burial) with four knob adornos; two other Pensacola Incised casuela bowls; five Fort Walton Incised casuela bowls; and a Fort Walton Incised plate. Other items included fragments of a sand-tempered casuela bowl with spout; two complete,
unidentified casuela bowls; and two unidentified, high-collared globular bowls.

The site also has produced a number of rather unusual pottery forms. Lazarus and Fornaro (1975) write that at least eight Fort Walton Incised six-pointed plates were recovered from here (1975:Figure 19, Table 4). This unique plate style, apparently limited to Fort Walton sites in the vicinity of Choctawhatchee Bay, has been recorded from the Fort Walton Temple Mound (8OK6), Alaqua Bayou (8WL30), Point Washington Cemetery (8WL16), Hogtown Bayou (8WL9), and six other sites in Okaloosa, Walton and Bay Counties. Two stopper-like objects, whose precise function is unclear, and a bowl with a base, also were found at the site. These were described and illustrated in the FMSF by Lazarus. The stopper-like objects are similar to those recovered from Hogtown Bayou (8WL9), Chipola Cut-Off Mound (8GU5) and Moundville (Moore 1903a:462, Figure 129; 1905:202).

Holly Branch appears to be a single-component cemetery site associated with the Pensacola culture. In the early 1960s, Hale Smith excavated here, and according to a letter (dated November 18, 1994) from Gail Lynn Meyer, Museum Assistant at ITMM, Smith and two local helpers found a burial in direct association with a small, blue glass bead. The direct association of a glass bead with a Pensacola burial suggests European contact in the sixteenth century: Radiocarbon dates obtained from Four Mile Point 1 (8WL38)
support this dating. Lazarus noted in the FMSF that the Fort Walton Incised plate is similar to one found over a skull at Alaqua Bayou (8WL30), a site which has been coined dated to the sixteenth century.

Walton County

Hogtown Bayou Cemetery Site (8WL9)

This cemetery site is located on the south shore of Choctawhatchee Bay at the southwest corner of Hogtown Bayou. Situated in a thick hammock, the cemetery was characterized by low rises of sand and scatters of pottery projecting above the ground surface. Excavations at the site by C.B. Moore (1918:535-541) yielded over 100 burials, including massed secondary, single skull, bunched, and "urn" burials. Moore reported that the urn burials, or skulls with ceramic vessels inverted over them, were common. Indian ceramics and other artifacts, including European goods, were found in direct association with burials. Pottery from the site was described but not illustrated, with the exception of a small stopper-like object (Moore 1918:Figure 18). Ceramics were typical of those found at nearby excavations, including Point Washington Cemetery (8WA16), and many of the vessels had been ceremonially killed.

Stone artifacts found with burials included projectile points, beads, knives, celts, hones, and discoidals. Other aboriginal artifacts included shell beads, shell ear-pins, shell tools, and two sheet copper lancehead-like objects.
European items associated with burials included undescribed glass beads, a tubular glass bead, undescribed iron objects, iron scissors, a brass bell, and a tin disc 2.25" in diameter and 4" thick (Moore 1918). The extraordinary size of the tin disc is similar to that of the brass disc recovered from the Navy Liveoak Cemetery site (8SR36), suggesting it too may have originated from a ship.

A large collection of artifacts at NMAI includes 101 pottery vessels, a pottery sherd (#064599), a stopper-like pottery object (#064593), a shell implement (#060242), a large shell ornament (#060241), a stone celt (#060238), a stone projectile point (#060240), a round 'chunkey' stone (#060237), a fragmentary stone knife (#060239), a cylindrical stone bead (#060236), and a metal ornament (#064592).

Ceramics from the cemetery are undoubtedly Fort Walton and Pensacola Series types (Scarry 1990:97-98; Willey 1949:220). Moore (1918:537) described the use of white filler-pigment in the incised lines of many of the decorated vessels. This elaborate decorative technique, known as the Hgotown Bayou Epigonal Style (Fairbanks 1965:258-259), also has been reported at Bear Point Mound (1BA1) and at Alaqua Bayou (8WA30), both of which have sixteenth-century contact components (Lazarus 1965; Moore 1901).

The cemetery at Hgotown Bayou is a Fort Walton period mortuary-site. Though the European artifact descriptions by
Moore are not detailed enough for precise dating, Fairbanks (1965:259) reported the discovery at the site of a drawn opaque turquoise (Ichtucknee) blue glass bead, which as a type dates from 1575 to 1720 (Deagan 1987). Hale Smith (1956:26) speculated that European contact at Hogtown Bayou dated to 1500-1600, which the discovery and dating of the copper coin at Alaqua Bayou (8WL30), and the radiocarbon dates from nearby Four Mile Point 1 (8WL38), tend to confirm (Mikell 1994:251). John Scarry (1990:98) has suggested that contact at the site probably dates to the middle or latter part of the sixteenth century.

**Point Washington Cemetery Site (8WL16)**

The Point Washington Cemetery site is located near the south shore of Choctawhatchee Bay about 3 1/2 miles west of Point Washington. First recorded by Moore (1901:472-496), the site consisted of numerous low (about 1 foot high) mounds of sand, and was similar in character to Hogtown Bayou Cemetery (8WL9). Excavations by Moore yielded single and multiple secondary burials, including single skull, skulls and long bones, bundle, and massed secondary burials. Mass deposits of bone, possibly a single interment, were discovered in three of the mounds, one of which contained 17 skulls. Although Moore did not report the total number of burials he encountered, judging by his general descriptions the number must have been fairly high.
Burials were found accompanied by both Indian and European artifacts. Nonceramic aboriginal objects included shell beads, undecorated shell gorgets, two shell pendants, a shell tool, a hoe-shaped limestone implement, a large stone hone, pieces of chert, and two stone projectile points. Pottery was found associated with burials and in mass concentrations unassociated with burials. Many of the ceramic vessels had been ceremonially killed. Urn burials, or the practice of inverting ceramic vessels over burials, also were present (Moore 1901).

Much of the pottery illustrated by Moore (1901:Figures 76-121) has been identified by Willey (1949:225) as Fort Walton Incised, Lake Jackson Plain, Point Washington Incised, Pensacola Incised, Pensacola Three-Line Incised, and Pensacola Plain. A large number of the pottery vessels are in a collection at NMAI, two vessels are at HPM (#56701,56728), and one vessel each is at RSPF (#38938), AMNH (#5105), and UPM (#22181A). One of the Pensacola Incised vessels (Moore 1901:Figure 109) is nearly identical to a vessel found with a burial at Bear Point Mound (1BA1). The vessel from Bear Point was found associated with numerous European artifacts, including a Mexican silver coin dating to 1536-1556 (Moore 1901:426). Moore also mentions many cross-correlations in ceramic types with those found at Hogtown Bayou (8WL9).
European artifacts reported by Moore included an iron chisel, a number of undescribed glass beads, and two glass finger-rings found loose in the sand. The iron chisel was found with a cranium which lay below an inverted unperforated vessel (Moore 1901:473,478). In 1959, excavations at the site by William Lazarus also yielded several unidentified fragments of iron (Scarry 1990:96).

The glass finger rings are one of the more unusual, European artifacts reported at a Fort Walton or Pensacola site, and apparently have not been recorded from any other Indian site in Florida. Though Moore describes these rings as glass, it perhaps is more likely that they were made of rock crystal, due to the greater tensile strength and popularity of the latter material as a finger ring. Rings were extraordinarily popular in sixteenth century Europe (Bradford 1953; Gregorietti 1969; Kunz 1917), and "rings of every kind were owned and worn in great profusion by both men and women" (Ward et al. 1981:89). Rock crystal rings were manufactured in the Middle Ages and Renaissance (Dalton 1912; Hackenbroch 1979:39; Toussaint 1967:167), and it was during the sixteenth century that the carving of rock crystal became popular (London Museum Catalogues 1928:26).

The Point Washington Cemetery is identified with the Pensacola culture, and dates to the Fort Walton period (Willey 1949:225-226). The site shares many cultural affinities with Bear Point Mound (1BA1) and Alaqua Bayou
(8WL30), both coin-dated to 1536-1556 (Lazarus 1965). Though Moore does not describe in great detail the European artifacts from Point Washington, the artifactual cross-correlations with Bear Point Mound and Alaqua Bayou, and possibly the glass (or rock crystal) finger rings, suggest that Spanish contact at the site probably dates to the sixteenth century (Scarry 1990:98; Smith 1956:26).

Bunker Cut-Off Mound (8WL21)

The Bunker Cut-Off Mound was located at the southeast end of Choctawhatchee Bay about three miles up the Choctawhatchee River. Completely excavated by Moore (1918:519-521), the mound was circular, measuring 43 feet in diameter at the base and nearly four feet in height. The mound yielded about seven burials, all secondary, including bundle and single skull interments. Though some of the burials were found below the mound base, it is unclear whether these burials were made before or after the mound was constructed.

Artifacts were found associated with only two burials. A truncated discoidal stone accompanied a bundle burial, and a biconical clay pipe with a red-painted bowl was found with a single skull burial. Cultural materials recovered from the body of the mound included a hammerstone, a limestone object, a flint projectile point or knife, flint fragments, pottery fragments, and a large iron spike. Pottery was similar to decorated types Moore (1918:519) had recovered
"from cemeteries along the Florida coast between Perdido Bay and the Choctawhatchee River." This implies Fort Walton and Pensacola Series types; a single line drawing of a decorated fragment confirms this (Moore 1918:Figure 1; Willey 1949). A check-stamped pottery fragment also was recovered from the site (Moore 1918:519). A collection at NMAI includes a stone blade (#172058) and a pottery fragment (#180328).

Though the large iron spike was the sole European object reported from the mound, Fairbanks (1965:259) wrote that the spoil dirt left behind by Moore "recently yielded a small copper harness bell. It is clearly copper rather than the brass of later bells. In addition, it lacks the cast "RW" mark of English trade bells. I surmise it to be of either French or Spanish origin." Since the time of the writing by Fairbanks, far more accuracy in the dating of bells has been achieved through development of brass and copper bell chronologies (Brain 1979). Unfortunately, nothing more is known about the copper bell, and its present location is unknown.

The Bunker Cut-Off site is a Fort Walton-period burial mound associated with the Pensacola culture. Though not enough is known of the iron spike and copper harness bell to suggest by themselves a precise European-contact date, Hale Smith (1956:28) notes the absence of Leon-Jefferson traits, which suggests the contact component probably dates to the sixteenth century. On the basis of artifactual cross-
correlations with other European contact sites around Choctawhatchee Bay, Scarry (1990:98) proposes a mid- to late sixteenth century date of contact at Bunker Cut-Off.

Alaqua Bayou Site (8WL30)

The Alaqua Bayou site is located on the north shore of Choctawhatchee Bay near the south end of Alaqua Bayou. This Indian cemetery site, first recorded by William Lazarus in 1957, is characterized by a number of small sand mounds within an area of about one acre. Burials from the site, all secondary and poorly preserved, included skulls with long bones and urn burials. The urn burials consisted of vessels inverted over crania with long bones, and at least one full urn burial of an infant (Lazarus 1965).

Excavations at the site, including those by Lazarus in 1957, yielded large deposits of ceremonially killed pottery. Ceramics included Fort Walton and Pensacola Series types, and a large quantity of rim effigies representing human, animal, and reptilian forms (Scarry 1990:97). The ceramic decorative motif referred to as the Hogtown Bayou Epigonal Style also was well represented (Lazarus 1965:221-222).

A small quantity of European materials have been reported from the site, including a roughly reworked piece of iron, a fragment of gold or pyrite, and a copper coin (Fairbanks 1965:259; Scarry 1990:96). The copper coin and a variety of Fort Walton pottery fragments were found closely associated with a burial at a depth of 1 1/2 feet in
undisturbed earth. Located near the center of the site, the poorly preserved burial was apparently a secondary bundle burial. The coin (now in a collection at ITMM) was identified as a two-maravedis piece minted in Santo Domingo during the Spanish reign of Charles I (1532-1557). Two suspension holes near its rim, and evidence of pitting on the reverse side, suggest the coin may have been worn as an ornament (Lazarus 1964,1965).

The Alaqua Bayou site is undoubtedly contemporaneous with the Bear Point phase sites of the Mobile Bay area, and is the second known Fort Walton-period burial site from which a sixteenth-century Spanish coin has been recovered. The presence and dating of the copper coin in an undisturbed, Fort Walton-period burial context, and the apparent association of the coin with a secondary burial, suggests European contact in the sixteenth century (Lazarus 1964,1965:223; Moore 1901:426; Scarry 1990:98).

Four Mile Point 1 (8WL38)

This village-midden site is located on the south shore of Choctawhatchee Bay on the west side of Four Mile Point. The site consists of many distinct shell-middens, including a larger midden mound, which extend up to 150 m inland from the bay. First reported by Fairbanks (1958), the site also was visited by Nidy (1974:5), who described the midden mound as a crescent-shaped shell midden four feet high and 50 feet
long. Originally recorded as two sites (8WL38 and 8WL39), the site now is considered a single unit.

The first systematic investigations at the site were those by a 1993 Okaloosa-Walton Community College field-school. The project was supervised by Greg Mikell (1994), who provided a detailed summary of the excavations. The midden mound (Feature 1), the central feature of the site, is described as a crescent-shaped linear ridge measuring 30 m north-south, ten m east-west, and 75 to 85 cm in height. Across the site are scattered many lesser, shell midden deposits ranging from 25 to 50 cm in depth, and composed primarily of black to dark grayish-brown sand and oyster shell. Faunal remains and pottery fragments are abundant within the middens.

Testing of the midden mound revealed five strata. The basal midden deposit (Stratum 6) yielded charcoal samples radiocarbon dated to around A.D. 1283, the earliest radiocarbon date recorded from the mound. A layer of "clean" shell (Stratum 5), probably used as a platform, was built on top of the basal deposit. This shell layer was covered in turn by a shell midden mantle (Stratum 4), on top of which were added two shell midden layers (Stratum 2 and 3), apparently a cap or final depositional stage.

Excavations in the midden mound and other areas yielded large quantities of faunal and charred plant remains. Most abundant were shellfish, with the species *Crassostrea*
virginica (Virginia oyster) predominating. Estuarine fish species constituted the highest numbers of vertebrate faunal remains, but also present were white-tailed deer, raccoon, opossum, rodent, turkey, cormorant, alligator, freshwater turtle, freshwater fish, and snake. Two domesticated plant foods, maize and squash or bottle gourd, were identified, as were the carbonized seed remains of grape, persimmon, hickory nut, and sumac. It is uncertain whether maize and squash were grown in the coastal area around the site, where the soils are poor and sandy, or were acquired through trade with inland coastal populations (Mikell 1994).

Pottery from the site includes only Fort Walton and Pensacola Series types. Fort Walton ceramics include Carrabelle Punctated, Cool Branch Incised, Fort Walton Decorated, Fort Walton Incised, Jefferson Ware, Lake Jackson Incised, Lake Jackson Plain, Lamar Bold Incised, Lamar Complicated Stamped, Leon Check Stamped, Marsh Island Incised, Ocmulgee Fields Incised, Point Washington Incised, and residual plain. Pensacola Series types include Bell and Mississippi Plain, D'Olive Incised, Moundville Incised, Mound Place Incised, Pensacola Incised, and Carthage Incised.

Sand-tempered Fort Walton wares account for about 75% of the recovered pottery, none of which were whole vessels. Vessel shapes include carinated, collared, casuela, flaring rim, simple restricted, and shallow plate-like bowls;
collared and everted rim jars, beakers, and bottles. Rim effigies included stylized frog and bird heads, and a stylized eagle head. Other ceramic objects include 11 complete or partial discs, and an ovate, teardrop-shaped adorno (Mikell 1994:245-246).

Shell artifacts from the site include six beads, four pendants, a broken *Busycon* cup, a *Busycon* spatula-like object, and a variety of tools. Bone artifacts include awls, bevel-edged wedges or chisels, projectile points, and gar-scale projectile points. Objects of stone include a chert projectile point, grinding stones, and various other chert tools and stone artifacts (Mikell 1994).

In the upper portion of the midden mound was an intrusive fire pit or hearth (Feature 2), a charcoal sample from which produced a calibrated radiocarbon date range of A.D. 1468 to A.D. 1552. At a depth of 23 cm below the mound summit and less than 12 cm west of the edge of Feature 2 was a cache including 22 *Dasyatidae* (stingray) spines, an engraved ceramic disc, two *Olivella* shell beads, an altered alligator scute, a cut and burned freshwater turtle shell fragment (possibly a broken gorget), and a brass buckle. The ceramic disc is decorated with an equal-armed cross, possibly meant to be a Christian cross. This cache, including the brass buckle, may have been a medicine bundle or some sort of ceremonial hoard (Mikell 1994:241).
Three other metal artifacts came from the midden mound. A small hand-wrought iron nail was found directly associated with a Lake Jackson rim sherd at 19 cm below the surface, and a thin, rust-encrusted iron band fragment was located at 22 cm below the surface and 12 cm from the iron nail. Both of these objects were taken from the base of Stratum 2, less than ten meters from Feature 2 (Mikell 1994). The third iron artifact was a spike that looters had unearthed and discarded. The iron spike is similar to others which have been found at Indian cemeteries on the Florida Gulf coast (Greg Mikell, personal communication 1995).

Within the midden mound was a deep, basin-shaped fire pit or trash pit (Feature 3), which produced a calibrated, radiocarbon date range of A.D. 1209 to A.D. 1310. This feature is significant since it was associated with a line of postmolds (Features 4-6) that could have been a wall, though no wall trench was discovered. An ash lens (Feature 7) at the base of the shell midden on the slope of the mound yielded a radiocarbon date range of A.D. 1452 to A.D. 1537, a date consistent with the upper portion of the mound (Mikell 1994).

Four Mile Point 1 was a Fort Walton-period village site occupied between A.D. 1200 and A.D. 1550. The large midden mound was a refuse pile intentionally built up over an existing midden deposit. Since no human remains were encountered, the structure probably was not a burial mound.
The site is particularly important since it is the only known Fort Walton site, with a European contact component, from which radiocarbon dates have been obtained (Greg Mikell, personal communication 1995). The radiocarbon dating of Feature 2, which included the brass buckle, and the iron band, hand-wrought iron nail, and iron spike recovered nearby, strongly indicate Spanish contact at the site dating to the first half of the sixteenth century.

**Gulf County**

**Chipola Cut-Off (8GU5)**

The mound near Chipola Cut-Off was located about 40 yards from the north bank of a canal which connects the Apalachicola and Chipola Rivers some miles above their juncture. Built of brown sand with a clay admixture, the mound measured about 45 feet in diameter at its circular base, and five feet in height. The mound was completely excavated by Moore (1903a:445-466), who encountered burials in 42 different locations. The burials, all of which were secondary, included flexed, bundle, and single skull, and were grouped mostly at the southern margins of the mound.

Ceramic types clearly indicated Weeden Island and Fort Walton components. Though pottery was scattered throughout the mound, most of it was found in a large concentration near the greatest number of interments, and was rarely associated with individual burials (Moore 1903a:446). Willey (1949:255) classified pottery described by Moore as
Fort Walton Incised, Point Washington Incised, Lake Jackson Plain, Pensacola Incised, Weeden Island Incised, Weeden Island Plain, and Swift Creek Complicated Stamped.

A collection of pottery from the mound at RSPF includes a Lake Jackson Plain vessel (#39267), a Fort Walton Incised vessel (#39313), and a St. Petersburg Incised jar (#39053). A large collection of pottery is at NMAI (#170195,170272, 171820,172059-172060,174041-174055,174515-174516,174922-174929,174945), and another collection is at HPM (#23615-23616,62700). Three stopper-like ceramic objects and many loop handles also were recovered by Moore. Nonceramic Indian materials associated with burials included hematite ore, stone celts, sandstone hones, small flakes of chert placed together, bone awls, bone fishhooks (NMAI #170255-170256), and a variety of shell tools and ornaments (Moore 1903a).

A number of European artifacts also were found associated with burials. In a pit beneath the mound base was a burial accompanied by two undecorated sheet brass discs and three undescribed glass beads. Moore noted that many other glass beads probably remained undiscovered, since the bottom of the pit was below the water table. Fragments of a third brass disc were found with the skull of a child, and another glass bead was found in the body of the mound (1903a:446-447). Though the brass discs and undescribed glass beads provide little information for precise dating,
their association with Fort Walton materials, and the absence of any reported Leon-Jefferson ceramics, suggests Spanish contact in the sixteenth century (Smith 1956:30).

Wakulla County

Marsh Island Mound (8WA1)

The Marsh Island Mound was located at the northeast boundary of Ochlockonee Bay about 100 yards north of the shore. Prior to its complete excavation by Moore (1902:274-281), the mound was oblong with rounded corners, measuring 96 feet in diameter at the base east-west, 68 feet north-south, and seven feet in height. Burials were discovered in two culturally distinct groups or components. The lower component yielded about 100 burials, many multiple, all located at, above, or below the mound base. Moore reported secondary bundle, single skull, and primary flexed burials from this part of the mound, and on top of some of the burials were scatterings of shell. None of the crania showed signs of fronto-occipital deformation.

In the body of the mound and associated with burials were found smoothing stones, celts, plumbago and hematite ore, stone hones, plummets, pebble hammers, sheet-mica fragments, a biconcave quartzite disc, and pottery (Moore 1902:274-277). A large concentration of ceremonially killed pottery was discovered near the eastern margin of the mound, and other masses of pottery were encountered in the body of the mound. Ceramics from the lower mound component were
illustrated by Moore (1902) and identified by Willey (1949:288) as Weeden Island types.

The upper mound component yielded seven burial pits, most of which contained the remains of more than one individual. Burials were all secondary, including massed skulls and long bones, massed skulls, single skull, and an urn burial. All the burials came from the upper two or three feet of the mound, and most of the skulls showed signs of fronto-occipital deformation. The urn burial consisted of a ceramic vessel which held the remains of an infant, and a second vessel inverted over the burial container as a cover. Neither of the vessels had been ceremonially killed (Moore 1902:275-277, Figure 241).

The only other Indian artifacts found with burials in the upper mound component were three knobbed shell pins and a large shell bead. European materials discovered in association with the burials included several unidentified articles of iron, a pair of iron scissors, four copper or brass "sleigh" bells, 11 rolled sheet brass beads, two sheet brass bracelets (with the urn burial), and a number of undescribed glass beads (Moore 1902:275).

A collection of artifacts from the mound at NMAI includes nine pottery vessels (#173999-174005,174919-174920), a pottery fragment (#174921), shell beads (#170023), a stone celt (#171801), a stone discoidal
The lower mound component, which presumably can be identified with the original builders of the mound, dates to the Weeden Island period, and the upper component belongs to the Fort Walton period (Willey 1949:287-288). Secondary burials, urn burials, and knobbed shell earpins are characteristic of the Fort Walton period, and are less common or unknown during the Leon-Jefferson Period in the seventeenth century (Goodyear 1972:49; Smith 1956:31; Willey 1949:287). One of the ceramic vessels associated with the urn burial (Moore 1902:Figure 241) has been identified as Point Washington Incised, var. Crowder, a late form found in sixteenth- and seventeenth-century contexts in Apalachee province (Marrinan et al. 1990:76-77).

Dating the European artifacts described by Moore presents a challenge. Rolled sheet brass beads, found on Indian sites believed to date to the mid sixteenth century, were even more popular during the early seventeenth century. The sheet brass bracelets, found with the urn burial, also were a popular item during the early seventeenth century (Smith 1987). The four copper or brass bells, identified by Moore as "sleigh bells," could date to the seventeenth century, yet their classification as sleigh bells is uncertain. Despite the questions, based on the presence of Fort Walton cultural characteristics and the absence of
Leon-Jefferson traits, Hale Smith (1956:31) suggests the intrusive burials at Marsh Island date to the late Fort Walton period, or about 1575.

St. Marks Wildlife Refuge Cemetery Site (8WA15)

This well-known burial mound site was located within the St. Marks National Wildlife Refuge about 1 1/3 miles northeast of the St. Marks Lighthouse. The mound was built of white sand, and measured 50 feet in length and 30 feet in width. The first recorded excavations at the site were those by William Kary (1940) from 1937 to 1939. Kary observed a single stratum in the mound, throughout which were burials in no detectable order at depths of one to four feet. Most of the burials were extended and some were flexed.

Grouped together, as though all buried at the same time, were a number of massed individual burials. These massed burials, together with an unusually high ratio of infant and small child burials to those of adults, led Kary to believe that many of the individuals had been the victims of disease epidemics introduced by the Europeans. The total number of burials could not be determined due to the damage caused by rampant looting (Kary 1940:1).

Most of the artifacts, which included an interesting variety of Indian and European objects, were found in direct association with burials. Aboriginal artifacts included a polished stone ax; polished stone discoidals; stone celts;
stone pendants; a polished, quartz crystal pendant; red ochre; finely made, projectile points; shell objects; and a clay elbow pipe (Kary 1939, 1940). A complete ceramic vessel (unkilled) and a large quantity of pottery fragments, including check-stamped and Fort Walton Incised wares, also were recovered (Kary 1940; Willey 1949:299).

European items found with burials included metal artifacts and a great number of glass beads. Copper (or brass) objects from the mound, some possibly made from non-European copper, included a crested bird ornament; a triangular gorget or pendant (6" long) with wood backing; a gorget (7 1/4" inches long by 3 3/8" wide) with two large bosses; a bead with incised spiral decoration; two perforated discs; two triangular pendants; and an incised plate depicting human and animal figures on its surface (Goggin 1947; Kary 1940). Most of these metal artifacts, as with those from other contact sites, were crafted by the Indians from metals originating in Europe, Central America, and South America (Leader 1985; Willey 1949:298).

The crested bird ornament, which probably represents an ivory-billed woodpecker, is considered to be an object of ceremonial significance and is nearly identical to ones illustrated by Rau (1878) and described by Goggin (1949a). The incised plate, found on the chest of a small child, had two suspension holes at one end and apparently was cut from a larger piece. The plate depicts the lower half of the
body of a European (wearing sandals and knee-length pantaloons), and what appears to be a stag (Kary 1940:Figure A2). This plate is possibly the earliest representation of a European by a native American in the southeast (Willey 1949:298-299). Though the plate was destroyed in a fire some time after it was excavated, a plaster cast of the original is now at FMNH (#94691).

Artifacts of brass included a European mordaunt (tip end of a scabbard or dagger sheath), a nested cup (or scale) weight, and a small Clarksdale bell (Kary 1940). The mordaunt, reworked into a pendant and found with a string of undescribed beads, was dated by Stephen V. Grancsay of the Metropolitan Museum of Art, New York, to the first half of the sixteenth century (Goggin 1947:274). An early sixteenth-century mordaunt similar to the one found by Kary (1940:Figure A-11) has been illustrated by Deagan (1988: Figure 10e).

The cup weight, 3 1/8" in diameter at the mouth and 2 3/4" at the base, was part of a set of nested cup weights, which are simply cup-shaped weights which fit precisely into each other. In use since the days of ancient Rome, nested cup weights were employed mostly in commerce, such as the weighing of coins, bullion, gems, and other commodities. Cup weights usually were made of brass, and varied greatly in size and decoration (Danforth 1988:10-13). Brass nesting weights similar to the one found by Kary (1940:X-5) were
recovered from a 1554 New Spain flota shipwreck, and from the wrecksite of the 1766 New Spain flota vessel El Nuevo Constante. Two complete sets of nested cup weights were recovered from a ship that wrecked in the 1715 flota disaster, and recoveries from other shipwrecks also have been reported (Arnold and Weddle 1978; Pearson et al. 1981).

The Clarksdale bell, an early variety of sheet brass bell, is a type dating from the early sixteenth century to the first third of the seventeenth century, and has been found at a number of sites in the southeast (Smith 1987). Other metal artifacts recovered by Kary include a perforated silver disc (3" in diameter), a rolled sheet-silver bead (3/16" long and 3/16" in diameter), silver disc beads, a gold ornament (5 3/4" in diameter), gold beads, a gold cap, and a probable iron knife-blade (Goggin 1947; Kary 1940).

Kary discovered many glass beads, including faceted Chevron, rounded Chevron, small blue seed beads, and black olive-shaped beads with white stripes. The most common glass beads were faceted Chevron, an excellent sixteenth-century marker (Goggin 1947; Smith 1987:148). Olive-shaped striped beads have been recovered from other Florida contact sites where tightly controlled contexts have suggested a date of 1500-1550 (Mitchem 1988:5).

At about the same time of the excavations by Kary, Montague Tallant visited the site and recovered a number of artifacts, several which are now at SFM. Indian artifacts
in the Tallant collection included shell beads, a stone bead, a small slate celt, and a stone discoidal (Branstetter 1989). Objects of brass, which Tallant described as copper, included five buttons (SFM #1957), four discs (#A1956), three pendants (#A2306), four Clarksdale bells (#A1963-1966), and a cup weight (#A2303).

Other metal artifacts recovered by Tallant included a decorated, triangular-shaped silver pendant 7 3/4" in length (SFM#A1951); a silver chain (13 1/2" in length); two gold buttons (#A1959, A6955); a gold disc (2" in diameter) with an embossed rosette design (#A6954); and a cast-gold anthropomorphic figurine (#A6952). The cast gold figurine is finely detailed, and is an example of the Quimbaya Style of Columbia (Jones 1974:25-27; Mitchem 1988:6). Nonmetallic artifacts included undescribed glass beads and a round amber bead (3/4" in diameter). Amber beads range in time from 1525 to 1600 (Smith 1983).

Surface collections at the St. Marks cemetery site by Goggin, Smith, and Griffin in 1946, and by Griffin the following year, yielded a large collection of Indian pottery fragments. Ceramic types identified in both collections suggested Santa Rosa-Swift Creek, Weeden Island, and Fort Walton periods of occupation (Goggin 1947; Griffin 1947).

An FSU field school, directed by Hale Smith, systematically excavated the site in 1950. Since the mound had been disturbed severely by looters, the excavations
failed to yield any positive information on the associations of European and Indian materials. No clearly defined burials were uncovered, and the only clue to the cemetery boundaries was the presence of human bone fragments and glass beads (Johnson 1969:3; Smith 1956:31-33). Diagnostic Indian ceramics included Point Washington Incised, Fort Walton Incised, Pensacola Incised, and possible Gulf Check-Stamped decorated wares. Nonceramic aboriginal artifacts included chert flakes anddebitage, a rounded chunk of limestone, shell columellae, and shell beads (Majors 1987a; 1987b:17-19).

The 1950 excavations yielded a number of European artifacts, including a perforated brass disc (30 mm in diameter), a large (14 mm long) Nueva Cadiz bead, two transparent-purple spheroid beads, a cane bead, two olive-shaped beads (one black, one blue) with white stripes, six faceted Chevron beads (seven layers), a Florida Cut Crystal bead, a silver coin bead, and a European-made silver bead (Johnson 1969:3-11; Majors 1987b:18-19). The Nueva Cadiz bead and olive-shaped striped beads are types which date to the first half of the sixteenth century. The transparent purple beads date to 1540-1590, the Florida Cut Crystal bead has a date range of 1550-1600, and the faceted Chevron beads date to 1500-1580 (Smith 1983; Smith and Good 1982).

Many other excavations at the site have produced large quantities of artifacts now in private holdings and museum
collections, the largest of which are at SFM and FMNH (Mitchem 1989a). In the collections are more than 800 small silver disc-beads, tumbaga beads, and a Florida Cut Crystal bead (Mitchem 1988). In testing 42 of the silver disc beads, Leader determined they were 0.999 pure silver. This is a fineness not found in nature, and means the silver in the beads must have been purified in a European refining process, possibly in South America or Mexico (Jonathan Leader, personal communication 1994). The tumbaga beads are manufactured from tumbaga, an alloy of gold and copper originating from the Caribbean, Ecuador, and Peru (Bray 1974; Gallo 1967). The fineness of the silver beads, and the place of tumbaga manufacture, suggest these materials were salvaged from Spanish ships wrecked on the coast.

The Indian ceramics and stone discoidals from St. Marks Cemetery site indicate a Fort Walton period of occupation, preceded by use which extended from Deptford through Weeden Island times (Johnson 1969; Willey 1949:299). The material evidence of sixteenth-century European contact is quite strong. The large Nueva Cadiz bead, olive-shaped striped beads, and brass mordaunt all suggest contact in the first half of the sixteenth century. The Florida Cut Crystal beads date to 1550-1600, and the amber bead, faceted Chevron beads, and transparent purple beads are all excellent time markers of the sixteenth century (Mitchem 1988; Smith 1983).
Citrus County

Ruth Smith Mound (8CI200)

The Ruth Smith Mound was located about 1.2 km southwest of the Withlacoochee River and 0.7 km east of Lake Tsala in a region known as the Cove of the Withlacoochee. Discovered by the landowners in 1955, the mound was looted and dug up by relic collectors over a period of many years, and in the late 1970s a bulldozer completely leveled it. The burial mound apparently was isolated since no Indian village area associated with it has been identified. Prior to its final destruction, the mound measured about 10 to 15 m in diameter and 1.5 to 2.0 m in height (Mitchem et al. 1985:181).

Private collectors recovered from the mound a quantity of Indian and European artifacts together with human burials, which were flexed and bundle types. Indian pottery included Safety Harbor Incised, Pinellas Incised, Point Washington Incised, and St. Johns Check Stamped. Nonceramic Indian artifacts included shell beads, Pinellas projectile points, chert flakes, shark teeth, a polished stone bead, and a steatite bead (Mitchem 1989b:25; 1989c:320).

European items from the mound include glass beads, objects of metal, and a pottery fragment. The glass beads include 21 Nueva Cadiz beads (three types), ten faceted Chevron beads (two types), and a small, faceted seed bead of medium-transparent blue glass. Metal artifacts include 35 small silver disc-beads, four spheroid silver beads, nine
rolled sheet-silver beads, three silver rod beads, a rolled sheet-gold bead, a spheroid gold bead, three rolled iron beads, a large iron chisel or celt (round cross-section), an unidentified iron fragment, and three small interlocking brass-rings. The pottery fragment is a drilled piece of Green Bacín, a green lead-glazed coarse earthenware (Mitchem 1989c:320-321; Mitchem et al. 1985).

In 1984, archaeologists from the University of Florida-Florida State Museum tested the mound site for any remaining features or burial pits. The investigation revealed that nothing remained of the burial mound. Surface collections and test excavations yielded shell beads and fragments, chert tools and fragments, 11 Pinellas projectile points, Indian pottery sherds, and more than a thousand fragments of human bone. The predominant pottery types were sand tempered plain and Pasco Plain, with St. Johns Plain, St. Johns Check Stamped, Dunn's Creek Red, and Safety Harbor Incised also represented. The only artifacts of possible European origin were a badly corroded iron fragment and a probable rolled iron bead (Mitchem et al. 1985:181; Mitchem and Weisman 1984).

The diagnostic Indian artifacts from Ruth Smith Mound indicate that it was constructed during the Safety Harbor period. Some of the pottery types suggest interaction with contemporaneous Alachua Tradition groups to the north. Many of the European objects provide evidence of Spanish contact
in the sixteenth century, probably in the first half of the century. Nueva Cadiz beads normally are found in contexts predating 1575, faceted Chevron beads date to 1500-1580, and Green Bacín has a date range of 1490-1600 (Deagan 1987; Smith 1983). While the metal artifacts are less diagnostic, based on similar finds at sites which some researchers believe to be associated with the Luna expedition, the iron chisel may date to around 1560 (Smith 1987).

Tatham Mound (8CI203)

Tatham Mound was located near the Withlacoochee River in a dense thicket surrounded by swamp. Discovered in 1984, the mound due to its isolation was undisturbed by artifact collectors and looters, which presented an unusual learning opportunity for archaeologists. The mound was roughly square in shape, measuring about 17 m across and 1.7 m high. Though surveys of the area surrounding the mound failed to identify an associated village location, at least two habitation sites yielding small amounts of Safety Harbor artifacts have been recorded nearby (Mitchem 1989c).

In 1985 and 1986, University of Florida-Florida State Museum archaeologists excavated the burial mound. It was revealed that the mound was built in two stages. The lower stratum was built prior to Spanish contact in the period AD 775-1450 (based on calibrated radiocarbon dates), and the upper stratum probably was constructed a short time after contact. The remains of at least 77 individuals were laid
out in rows near the mound surface, apparently all having died within a short period of time. Since none of the bones showed signs of wounds characteristic of warfare, this mass die-off may have been the result of disease epidemics, possibly introduced by Spaniards (Mitchem 1989b:529-530).

The secondary remains of 213 to 273 individuals were found in between and on top of the 77 individuals laid out in rows. Two of the secondary bones showed evidence of having been cut with a sharp metal weapon such as a sword (Mitchem 1989b). Though wounds of this type may have been caused by conflict with the Spanish, another explanation is that the injuries were a result of the institutionalized warfare which existed among the Indians themselves.

The Indians understood the advantages of metals in warfare, and since sword fragments have been found at a number of contact sites, it is probable that the Indians wielded metal swords against each other (Purdy 1977). In a discussion of the King site, where many multiple burials showed evidence of wounds from European weapons, Smith (1989:142) observes that it is "not certain whether these cuts were the result of conflict with Europeans, such as that chronicled during the de Soto expedition, or if they represent wounds from aboriginal warfare after the introduction of metal weapons and tools."

The mound excavations yielded a large variety of Indian artifacts, including objects of shell, stone, and pottery.
The most abundant shell artifacts were beads, yet the mound also yielded 19 Busycon cups (with fragments of others), a circular shell gorget, a shell celt, and some freshwater clam shells. Stone artifacts included 105 Pinellas Points, four ground and polished celts of non-Florida stone, a ground and polished pendant of non-Florida stone, two quartz crystal pendants, and many chert tools and flakes. Most of the pottery was typical Safety Harbor types, though a small number of Alachua Tradition ceramic types also were found.

The upper mound stratum produced a large collection of European artifacts, including 152 glass beads, 298 metal beads, and a number of other metal objects. The glass beads included 39 Nueva Cadiz Plain, 24 Nueva Cadiz Plain Faceted, a Nueva Cadiz Twisted Faceted, 22 faceted Chevron (seven layer), seven wire-wound seed beads, and ten seed beads. Metal beads included 268 small silver disc-beads, ten drilled silver rod, eight rolled sheet silver, two barrel-shaped silver, six rolled sheet gold, two rolled sheet brass or bronze, a rolled sheet brass, a rolled sheet bronze, and a rolled iron bead (made from iron plate).

Other metal artifacts included a silver socketed, celt effigy pendant, a domeshaped silver disc, a small domeshaped sheet-gold object, six copper fragments, a copper or brass fragment, a domeshaped brass object, three miscellaneous iron fragments, two iron spikes, an armor plate, a small iron spike (square cross-section), a large iron chisel
European artifacts accompanied a total of 19 burials, including a mother and infant burial found with 68 beads of glass, silver, and gold. Metallic analysis revealed that the silver artifacts varied in fineness from 0.925, which corresponds with silver coins, to 0.999, similar to silver ingots or other sources of pure silver. All but one of the gold artifacts were made of 22k gold, which indicates a material origin of South or Central America (1989b:460; Mitchem and Leader 1988:46-47). The fineness of the precious metals indicates that the Indians salvaged these materials, and probably the other European goods as well, from Spanish shipwrecks along the coast.

Tatham Mound is a Safety Harbor-period burial mound, and the large number of diagnostic glass beads strongly suggests Spanish contact in the sixteenth century, possibly in the period 1525-1550. These glass beads include faceted Chevron (1500-1600), Nueva Cadiz Plain (1500-1550), Nueva Cadiz Twisted (1500-1550), and wire-wound seed beads (1500-1600). Though the metal artifacts are less reliable for accurate dating, the objects of iron are similar to those found elsewhere in early New World contexts (Smith 1987:35-36).
Hernando County

Weeki Wachee Mound (8HE12)

The Weeki Wachee Mound is located on the property of the Weeki Wachee Springs attraction, which is 25 miles west of Brooksville and five miles east of the Gulf of Mexico. The burial mound, originally measuring about 13.7 m across and 0.8-0.9 m in height, was discovered in 1969 as a result of gardening activities which exposed artifacts and human bones on the mound surface. Archaeologists from the Florida State Museum were contacted, and in 1970 the mound was excavated partially by Robert Allen, an anthropology student at the University of Florida (Mitchem 1989c:324).

Excavations revealed that the mound had been built in two stages. First, a small sand mound about 0.4 m high was constructed and burials were placed in it. Later on burials were placed on the mound surface and then covered over with a sand layer 0.4 m in thickness. Most of the 63 burials were secondary, yet eight primary flexed burials and some cremations also were encountered. Busycon shells found in the upper sand layer suggested ceremonial use of the black drink after the completion of the mound (Mitchem 1989c).

Most of the Indian artifacts were pottery vessels and vessel fragments. The most common ceramics were typical Safety Harbor decorated and plain wares. Fort Walton and Alachua Tradition types also were discovered, suggesting some interaction with groups to the north. Shell artifacts
included more than 343 beads, many in direct association with burials. Stone objects included tool fragments, chert flakes, and a polished bead of non-Florida stone (Mitchem 1989c; Mitchem et al. 1985).

Excavations also yielded European objects, all of which were beads. These included 127 glass beads, 151 silver beads, and an amber bead. Most of the beads were found associated with four burials, including an infant burial. The glass beads consisted of 59 Nueva Cadiz Plain, 29 Nueva Cadiz Plain Faceted, two Nueva Cadiz Twisted, 20-24 faceted Chevron, 12 olive-shaped striped varieties, and a Gooseberry bead. The silver beads included 124 small disc beads and 27 spherical beads. Metallic analysis of 21 of the silver beads revealed a fineness roughly corresponding with coin silver, suggesting the beads may have been made from silver coins salvaged from Spanish shipwrecks (Mitchem 1989c).

The types of Indian artifacts from the site clearly indicate that Weeki Wachee Mound was constructed by a Safety Harbor group. The presence of the diagnostic glass beads provides strong evidence for Spanish contact in the sixteenth century (Mitchem et al. 1985). The faceted Chevron beads date to 1500-1600, and the olive-shaped striped varieties also are excellent sixteenth-century time markers. The Nueva Cadiz beads are diagnostic of the first half of the sixteenth century, and the amber bead, a
lapidary type, dates to 1525-1600. The Gooseberry bead has a date range of 1525-1750 (Smith 1983; Smith and Good 1982).

Pinellas County

Safety Harbor Site (8PI2)

The Safety Harbor site is located on the west side of Old Tampa Bay on Phillippe Point about one mile north of the town of Safety Harbor. Originally the site consisted of an immense flat-topped shell mound, a sand burial mound, and a village or habitation area. The shell mound measured 150 feet across at the base, about 50 by 100 feet at the summit plateau, and more than 20 feet in height (Willey 1949:140). S.T. Walker (1880a:410) described it as one of the largest shell mounds on Tampa Bay. The sand burial mound was 80 feet in diameter, 10 to 12 feet in height, and sat about 400 yards northwest of the shell mound. The village area, characterized by several acres of shell midden, ran mostly along the shore. Excavations and construction activity have reduced the site to the one large shell mound (Griffin and Bullen 1950; Willey 1949:136,140).

The site was mentioned briefly by Brinton (1859), Walker (1880a), and Moore (1900), but none of these individuals excavated here. The first recorded excavations at the site were those by Matthew Stirling in 1929 and 1930. Stirling directed most of his attention to the sand burial mound, which he excavated down to subsoil base (Stirling 1930:186; 1931:168-172). The mound was stratified, and had
been built up with successive layers of sand. Excavations produced over 100 burials, all secondary, which had been placed throughout the mound in no apparent order (Willey 1949:136).

Most of the pottery was found in a mortuary deposit near the edge of the mound base, and many of the vessels had been ceremonially killed. Willey (1949:138) has classified pottery from the burial mound (NMNH #351513-351525), and from the habitation area (#351526-351536, 362378-362386) where Stirling also tested. Nearly all the ceramics from both areas were Safety Harbor types, and earlier Weeden Island types were not found. Stone, shell, and bone artifacts from the burial mound and from the habitation area between the mounds also were described by Willey (1949). Stone artifacts from the site in a collection at FMNH have been analyzed by Mitchem (1994).

Stirling found a small quantity of European artifacts associated with burials in the upper portion of the mound. These artifacts included a rolled sheet-silver bead (NMNH #351514), a sheet silver ornament, and two iron axes (#351513, 384087). No European objects were found in the lower levels of the mound, where artifacts of any kind were rare, or in the mortuary deposit at the mound base (Mitchem 1989b; Stirling 1931:172; Willey 1949:139).

In 1948, excavations at the site by FPS focused in three areas: 1) The large pyramidal shell mound; 2) A small
hillock located northwest of the shell mound; and 3) A portion of the presumed village area southwest of the shell mound. Testing of the upper eight feet of the shell mound revealed a complex structure with successive layers of construction and habitation. Post molds were discovered but no house patterns could be determined. Whether the structure was a domiciliary mound, a temple mound, or a combination of the two, is uncertain. Excavations in the small (4 feet high) hillock revealed it was a natural feature, and testing in the habitation area exposed postholes and pits but no definite house patterns. Artifacts from all three areas (FMNH #97199-97225, 97231-97234) included Safety Harbor and Leon-Jefferson types, with no Weeden Island-related objects reported (Griffin and Bullen 1950; Mitchem 1989b:52; Willey 1949:142).

Subsequent excavations and surface collections at the site have generated a variety of European artifacts, some dating to the sixteenth century. A large fragment of Yayal Blue on White majolica and a small copper coin were found washed out on the beach (Goggin 1953:11; 1954a:152-153). Yayal Blue on White dates from the late fifteenth- to early seventeenth century, and reached a peak of popularity around 1550 (Deagan 1987:58). The copper coin, identified by Sydney P. Coe of the American Numismatic Society, is a Portuguese ceitel minted during the reign of John III of Portugal, A.D. 1521-1577 (Goggin 1954a:153).
Other European ceramics from the site include two fragments of melado, a fragment of Green Lebrillo, and many Spanish Olive Jar fragments (Goggin 1953:11; Griffin and Bullen 1950; Mitchem 1989b:55). Melado is a lead-glazed earthenware which dates to 1490-1550, and Green Lebrillo dates to 1490-1600 (Deagan 1987:48-49; Goggin 1968:227). The Spanish Olive Jar includes a number of thin body fragments and strap handles characteristic of Early Style Olive jar, which dates to 1500-1580 (Goggin 1960a).

The Safety Harbor site is the type site for the Safety Harbor cultural phase. It appears to be a single component habitation and burial complex with an intensive Safety Harbor occupation. An underlying Weeden Island-related component is apparently absent (Mitchem 1989b:57; Willey 1949). Occupation extended well into the seventeenth century, and possibly as late as the early 1700s, based on the discovery of Leon-Jefferson ceramic types. The Leon-Jefferson pottery may be evidence of trade with groups from Northwest Florida, or it may suggest the presence of refugee groups from the same area (Griffin and Bullen 1950).

Due to its location and large size, the Safety Harbor site generally is believed to be Tocobaga, the Indian village on Tampa Bay visited by Pedro Menéndez in 1567 (Bullen 1978; Swanton 1946:195-196). Menéndez left behind at Tocobaga a garrison of 31 soldiers, who within a year were wiped out by the Indians (see discussion in Chapter 3).
Though many of the European artifacts from the site probably came from Spanish shipwrecks, it is possible that some of the materials may have originated from this short-lived Spanish garrison.

**Johns Pass Mound (8PI4)**

Johns Pass Mound was a sand burial mound situated on a low mangrove island at the southeast end of Johns Pass. S.T. Walker visited the site in 1879, and found it virtually undisturbed. The mound was oval-shaped, measuring 50 feet in length, 25 feet in width, and less than three feet in height. Erosion had exposed an abundance of human skeletal material on the surface of the mound and a large quantity of pottery fragments at the mound base. In excavating the mound Walker discovered 40 burials, all the fully extended remains of mostly children and infants. A rolled sheet-silver bead (NMNH #A035642) and an undescribed glass bead were the only artifacts Walker reported from the mound (Walker 1880a:401-403).

A few decades later, the mound was excavated by C.B. Moore (1903a:434-436), who found the site heavily disturbed. The mound was circular in shape, measuring 35 feet in diameter at the base and about two feet in height. Moore discovered six flexed burials and a large, secondary burial deposit. Though sand stained from red ochre was found with some of the interments, none of the burials were accompanied by artifacts. The only artifacts were pottery fragments and
10-12 unperforated *Busycon* cups. Pottery included check stamped, incised, punctated, shell tempered, and loop-handled wares. A collection of sherds illustrated by Moore (1903a:Figure 88) were identified by Willey (1949:332) as two fragments of Pinellas Incised and six fragments of Safety Harbor Incised. Three of the pottery sherds are in a collection at HPM (#23627), and another pottery fragment is at NMAI (#180269).

Ceramics from the site in a collection illustrated by Ozzie Ostrander (1960) and identified by William Sears includes fragments of Pinellas Incised, Pinellas Plain, Safety Harbor Incised, Lake Jackson Plain, Fort Walton Incised, St. Johns Plain, St. Johns Check Stamped, and sand tempered plain wares. Ostrander (1960:77) reported that this collection of pottery "came from some distance to the west of the mound, between it and a graveyard area where human bones and skulls were exposed." This collection also included three *Busycon* cups and a frog-effigy pottery handle. Other artifact collections from the mound are at YPM (#21582) and RSPF (#38978,39319).

The pottery descriptions by Moore and Ostrander clearly indicate the site is a Safety Harbor-period burial mound. The only reported European objects are the undescribed glass bead and rolled sheet-silver bead found by Walker. The glass bead has been identified as a Florida Cut Crystal bead by Fairbanks (1968:14) and Goggin (1960b:27-28), citing
Bushnell (1937:33) as their source. However, Bushnell did not specifically mention Johns Pass Mound, but referred only to Florida Cut Crystal beads Walker had recovered from burials near Tampa Bay. This means that the bead may not have been Florida Cut Crystal. Also, Mitchem (1989b:58) assigns NMNH accession #35643 to the bead from Johns Pass Mound, but a letter (dated May 13, 1994) from Deborah Hull-Walski, Collections Manager at NMNH, states there is no record of this glass bead in the NMNH inventory.

The only other European artifact found by Walker is the rolled sheet-silver bead. As noted in an earlier section, most metal beads from contact sites were manufactured by Indian craftsmen using non-native sources of metal obtained primarily from Spanish shipwrecks. Though the rolled sheet-silver bead is not in itself a temporally diagnostic artifact, it is probably a sixteenth century type.

On the Florida Gulf coast, rolled sheet-silver beads have been reported from 14 Indian sites, 12 of which have produced European artifacts diagnostic of the sixteenth century (Alllerton et al. 1984; Goggin 1960b; Mitchem 1989b). Rolled sheet-silver beads from these 12 sites are associated most commonly with Nueva Cadiz (1500-1550), Florida Cut Crystal (1550-1600), and faceted Chevron (1500-1600) beads. They are found far less frequently with diagnostic European artifacts whose date range extends beyond the sixteenth- or early seventeenth centuries. This
suggests that the rolled sheet-silver bead from Johns Pass Mound probably represents a Spanish contact component dating to the sixteenth century.

Bayview/Seven Oaks Site (8PI7)

The Bayview site (8PI7) was described by S.T. Walker as a sand mound located on the south side of Alligator Creek and a mile north of Bayview Post Office. Circular in shape, the mound was 46 feet in diameter and less than three feet in height. Excavations by Walker revealed burials densely packed in three distinct strata. The method of burial was undescribed except that it differed only slightly from secondary bundle burials Walker had observed in a mound on the Anclote River (Walker 1880a:410, Plate III).

Though the bottom layer of the mound yielded pottery, none of the burials were accompanied by artifacts. Burials in the middle and upper strata, however, were found with a large quantity of European materials, which included glass beads (NMNH #35334-35345), metal beads, a looking glass fragment (#35314), iron scissors (NMNH #35313), and brass and copper ornaments (Mitchem 1989b:61; Walker 1880a:410). Mitchem (1989b:61) has identified some of the beads in this large collection as tumbled Chevrons, faceted Chevrons, opaque turquoise blue, transparent green spheroid, barrel-shaped Gooseberry, Florida Cut Crystal, spheroid Cornaline d'Aleppo, eye beads, and a great variety of seed beads.
Other European artifacts included a Flushloop Bell (NMNH #353518), an Early Style Spanish Olive Jar neck (#35320), a silver "ceremonial" tablet (#35343), and the basal portion of a majolica vessel (#35327). The collection of Indian pottery from the site at NMNH (#35315-35326) includes four fragments of Safety Harbor ware (Allerton et al. 1984:28; Mitchem 1989b:61; Willey 1949:334).

A number of beads recovered from Walker's spoil dirt are described in the FMNH site files. Listed by Mitchem (1989b:Table 8), glass beads in this collection include drawn opaque turquoise-blue, spherical and ovate Gooseberry, Corinaline d'Aleppo, undescribed Chevron, and transparent dark-blue seed beads. Nonglass beads include four spherical silver coin beads, two rolled sheet-silver beads, and 12 shell disc beads.

Mitchem (1989b:63-64) states that the Bayview site (8PI7) recorded by Walker, and the Seven Oaks site (8PI8) reported by Willey (1949:334-335), are probably one and the same site. The location given by Walker for the Bayview site and that provided by Willey for the Seven Oaks site, apparently are descriptions of a single burial mound south of Alligator Creek (Walker 1880a:410; Willey 1949:Map 19, 334). The FMSF now lists the two sites under the single designation Bayview/Seven Oaks site (8PI7).

A large quantity of artifacts from the burial mound, attributed to the Seven Oaks site, are in a collection at
FMNH. Indian ceramics include a variety of Weeden Island and Safety Harbor types, and nonceramic artifacts include a large collection of shell beads (Willey 1949). European ceramics in this collection include five fragments of early-variety Columbia Plain majolica and two fragments of lead-glazed coarse earthenware (Mitchem 1989b:64, Table 8).

Glass beads in the FMNH collection, many identified by Mitchem (1989b:Table 8), include Nueva Cadiz Plain; faceted Chevron; spherical transparent purple; Gooseberry; small olive-shaped, opaque medium blue; Corinaline d'Aleppo; and wire-wound transparent, light medium-blue seed beads. Lapidary beads in the collection include four Florida Cut Crystal beads, a large spherical amber bead, and two faceted garnet beads. Metal artifacts include drilled silver rod beads, barrel and olive-shaped silver beads, spherical and oblate silver beads, silver coin beads, a hammered silver object with engraved design, a perforated copper or brass disc, bronze hinges, and a bronze plummet (Goggin 1954a:155, 1954b:27; Mitchem 1989b). A large spherical clay bead with gilded exterior, known as Seven Oaks Gilded Molded, is also in the FMNH collection (Goggin 1960b).

In the late 1960s, a local historical group excavated the remaining portions of the mound. The excavations produced 76 secondary burials together with many Indian and European artifacts (Mitchem 1989b:70). Indian items include several Busycon cups and shells, and a large number of
Weeden Island and Safety Harbor pottery fragments. European ceramics include three early-variety Columbia Plain fragments, many lead-glazed earthenware fragments, and many Spanish Olive Jar fragments (some with handles). Glass beads include five faceted Chevron, an olive-shaped striped bead, a colorless Gooseberry, and six drawn opaque turquoise-blue beads. Metal artifacts include two drilled silver rod beads, four spherical silver beads, and a pair of iron scissors (Mitchem 1989b:Table 9).

The diagnostic Indian pottery demonstrates that the Bayview/Seven Oaks site was a Safety Harbor-period burial mound with an earlier Weeden Island-related component (Mitchem 1989b:64; Willey 1949:334-335). Evidence of sixteenth-century European contact at the site is abundant. The Nueva Cadiz, wire-wound seed, olive-shaped striped, and several other of the glass beads are diagnostic of the first half of the sixteenth century (Smith 1983; Smith and Good 1982). The faceted Chevron and amber beads are excellent sixteenth-century markers, and the Florida Cut Crystal beads date to 1550-1600 (Smith 1983). The early-variety Columbia Plain majolica (1492-1550) and Early Style Spanish Olive jar fragments (1500-1580) are good indicators of sixteenth century contact. The Gooseberry (1550-1750), Cornaline d'Aleppo (1575-1800), drawn opaque turquoise blue (1575-1720), and faceted garnet (1550-1650) beads also may represent a sixteenth century component (Deagan 1987).
Maximo Point Site (8PI19 and 8PI31)

The Maximo Point site is located on Tampa Bay at the southwest tip of the Pinellas peninsula. This extensive site was first reported by Walker (1880a:404-405), who described the primary feature as an immense shell mound 15 feet in height and several hundred feet in length. The mound was level on top with three of its sides nearly precipitous, and at the south end was a ramp leading to the summit. Embankments of shell with heights from three to five feet ran from the mound to the shore and in other directions. Excavations by Walker yielded little except a few pottery fragments and the sharpened end of a cedar post. Bushnell (1937:32-33) has reported that Walker found other artifacts, now in a collection at NMNH (#A035775), which include undescribed silver beads, some small Cornaline d'Aleppo beads, and a Florida Cut Crystal bead.

Years following these excavations, Moore visited the site and sketched a site plan of the shell mounds, ridges, and features described by Walker. The principal shell mound was circular, measuring more than 100 feet in diameter at the base and more than ten feet in height. Moore also described extensive shell middens, ridges, and earthworks, many of which were not included on his site plan. Denied permission by the owner to excavate, Moore tested one of the sand mounds and encountered poorly preserved human skeletal material just below the surface (Moore 1900:354,Figure 1).
In 1957, the site was test excavated by William Sears (1958), who concluded that the principal shell mound probably had served as a temple or platform mound. Pottery fragments found in the shell mound and midden or village area were all common Safety Harbor types. Though the absence of Leon-Jefferson ceramics and European artifacts suggested to Sears that the site probably was abandoned prior to Spanish contact, the European beads found by Walker and reported by Bushnell indicate some postcontact use of the site.

In the early 1960s, salvage excavations at the site by Frank Bushnell (1962) yielded ceramic and other artifact types indicating late Weeden Island-related and early Safety Harbor periods of occupation. More recent excavations at the western part of 8PI31 in 1973, and at the remaining western portion of 8PI19 in 1986, tend to confirm a Safety Harbor component (Mitchem 1989b:32-33). The European artifacts recovered by Walker--the Florida Cut Crystal bead (1550-1600), and possibly the Cornaline d'Aleppo beads (1575-1800) and silver beads--suggest Spanish contact in the latter half of the sixteenth century.

Narváez Midden (8PI54)

Known locally as the Narváez site or Jungle Mound, this immense site is situated on the mainland shore of Boca Ciega Bay across from Johns Pass. It consists of a village midden-burial mound complex whose primary feature is a large
flat-topped mound measuring about 300 yards north-south, 100 yards east-west, and 28 feet in height at its highest point above the bay. Built on top of the mound is the residence of Harold C. Anderson, who for many years has protected the integrity of the site. To the north is a burial mound, called Jungle Prado Mound (8PI100), which was discovered in the 1940s and probably was associated with the Indian village. What appears to be a ramp slopes down from the primary mound towards the bay. North of the main mound are several small shell middens, and to the northeast is a lesser flat-topped mound (Berkeley 1995; Bushnell 1966:115).

In 1916, R.D. Wainwright (1916:144) visited the site and noted that it was characterized by several low-lying shell mounds and an impressive shell ridge which extended about two miles northward along the shore. Eight years later, Jesse Fewkes used an auger at the site to drill down to a depth of 27 feet into the top of the large pyramidal mound. Fewkes recovered some artifacts, but he apparently made no report of his findings (Terry Simpson, personal communication 1995).

In 1964, the large pyramidal mound was test excavated by Frank Bushnell, Professor of Biology at St. Petersburg Jr. College. The excavations produced a large quantity of Indian artifacts. Stone artifacts included sandstone hones, a quartz pebble plummet, a limestone plummet, Pinellas projectile points, flint hammerstones, a lump of steatite,
and various fragments. Objects of shell included an Olive shell bead, perforated arca shells, and a Strombus celt. Objects made of Busycon shell included a hoe, a bowl, columella beads, a hammer, a columella chisel or gouge, and a columella plummet. Faunal remains included deer, turtle, stone crab, alligator, opossum, raccoon, and several varieties of fish (Bushnell 1966). Excavations at the site by others also have produced large quantities of artifacts, including a fragment of bone incised with a possible stylized hand motif (Gamble and Warren 1966:154), and a black slate, ceremonial tablet (Allerton et al. 1984:45).

The excavations by Bushnell also produced large quantities of Indian pottery, almost all Safety Harbor types, and several European artifacts. The pottery included fragments of Pinellas Plain, Pinellas Incised, Pinellas strap handles, St. Johns Check Stamped, St. Johns Incised, and Jefferson ware (found in the uppermost level). The European objects included three iron nails and six fragments of Spanish Olive jar. The iron nails and four of the Spanish Olive jar fragments were recovered from a depth of 12-18" (Bushnell 1966:Figure 2). Other excavators at the site have reported European artifacts including a small iron chisel (square in cross section); an unidentified metal fragment; two iron, sword blade fragments (Mitchem 1989b:87); and four blue, glass seed beads (Frank Bushnell, personal communication 1994).
In 1994, the Central Gulf Coast Archaeological Society (CGCAS), under the direction of Terry Simpson and assisted by professional archaeologists, began excavations here as part of a local effort to have the site placed on the National Register of Historic Places. Two excavation units were placed on top of the large pyramidal mound near the area where Frank Bushnell excavated in 1964. These ongoing excavations so far have produced an fascinating collection of faunal remains, Indian artifacts, and objects of European origin or manufacture. Indian objects include several stone and shell plummets; bone pins, beads, and fish hooks; many shell beads; shark teeth (both modern and fossilized); two Pinellas projectile points; and pottery, all of which is Safety Harbor plain and decorated ware (Berkeley 1995).

The European artifacts include glass beads, pottery, iron fragments, and objects of unidentified metal. Marvin Smith (n.d.) has identified the glass beads, which include a transparent, medium blue bead (and two fragments); two opaque, turquoise blue beads (one with lobes); an opaque, turquoise-blue seed bead; two seed beads and a bead of transparent navy blue; an unidentified bead or piece of jewelry resembling Nueva Cadiz plain; a tumbled, barrel-shaped Gooseberry bead; a flattened "Corn Bead" of yellow glass; a Cornaline d'Aleppo bead; a wire wound bead of transparent green glass; a black bead; and a barrel-shaped emerald-green cane bead.
The European pottery includes several Spanish Olive jar fragments which are thin body-scherds ranging from 6.9 to 9.6 mm in thickness. A fragment of probable Columbia Plain majolica also has been recovered (Terry Simpson, personal communication 1995). Early forms of Columbia Plain in the circum-Caribbean area date from 1492 to 1550; later forms date from 1550 to 1650 (Deagan 1987:57).

There is hardly any question that the Narváez site was a major, Safety Harbor village complex. The large pyramidal mound, possibly a temple mound, with its ramps and plaza areas also suggests a religious or ceremonial use of the site (Luer and Almy 1981). Smith (n.d.) writes that the collection of glass beads may represent a contact component that dates to the first half of the seventeenth century. However, the thin body (Early Style), Spanish Olive jar sherds also suggest earlier European contact that dates to around 1500-1580 (Goggin 1960a).

The Narváez site is named after Pánfilo de Narváez, who many believe may have landed here in 1528 after entering Boca Ciega inlet through nearby Johns Pass (Swanton 1946:37). Whether or not Nárváez actually landed here is uncertain, yet the European artifacts found by Bushnell and by CGCAS were associated directly with Safety Harbor wares. The Spanish Olive jar was found at depth, which appears to eliminate Cuban fishermen as its source (Goodyear (1972:33). The Early Style Spanish Olive jar sherds suggest contact
dating to the sixteenth century, and many of the glass beads indicate an occupation at the site which probably extends into the seventeenth century. Bushnell (1966:123) notes that both the Narváez site and Safety Harbor site (8PI2) most likely date to the same time period.

**Hillsborough County**

**Thomas Mound (8HI1)**

Thomas Mound was located on the north bank of a large bayou which joins with the Little Manatee River about 1 1/2 miles west-northwest of Ruskin. The two primary features of the site were a substantial shell midden which extended 60 m along the shore of the river bank, and a sand burial mound. The burial mound was roughly in the form of a truncated cone, measuring 60 feet in diameter at the base and six feet in height. The shell midden was 65 m south of the burial mound, suggesting it was a habitation area for the people who used the mound as a burial place (Willey 1949).

Test excavations at the site by C.B. Moore (1900:358-359) produced 112 burials, all tightly flexed, and revealed that the mound was constructed of pure white, unstratified sand. Most of the pottery fragments were plain, others were decorated with incisions and punctations, and one fragment was stamped. Artifacts found associated with burials included a shell cup, a shell bead, a chert projectile point, a large chert flake, a small hammerstone, a smoothing stone, a worked fossil shark tooth, three stone pendants
(one representing the head of a bird), two pieces of looking glass, and a number of blue glass beads.

Moore donated some of these artifacts to the Putnam Museum (formerly Davenport Public Museum) in Davenport, Iowa. These objects included the stemmed (Archaic) projectile point (#2370), the worked fossil shark tooth (#2373), and the two pieces of looking glass (#2377). A letter dated January 12, 1995 from Scott Roller, Collections Manager/Registrar at Putnam Museum, relates that the other artifacts given to the museum and catalogued, which include 11 blue glass beads referred to by Mitchem (1989b:98-99), are possibly no longer in the collection.

In 1935-1937, the Thomas Mound was excavated completely by WPA crews sponsored by the State of Florida and supervised by J. Clarence Simpson. More than 300 burials were recorded, including 208 secondary, 98 primary (tightly flexed and semiflexed), 74 isolated skulls, and three cremations. In the lower level of the mound, all the burials were primary flexed or extended, and in the upper or later level, all burials were secondary bundles with the exception of a single cremation (Bullen 1952; Simpson 1937).

The WPA excavations produced collections of pottery which show that the mound was a Weeden Island-related burial mound with a relatively minor, Safety Harbor component. European artifacts recovered by the WPA crews included an embossed silver pendant, a triangular piece of sheet copper,
a rolled sheet-silver bead, 200 seed beads of blue and white, and two metal tablets or pendants, one of brass and the other of silver (Bullen 1952; Willey 1949).

Bullen (1952:19) notes that the European objects from Thomas Mound are typical of those used by Florida Indians during the early postcolumbian period, and differ from those types characteristic of the Leon-Jefferson complex in the seventeenth century. Though intrusion at the site is a possibility, the horizontal distribution of the European objects indicates a continued occupation from Weeden Island through early postcontact Safety Harbor (Bullen 1952:19, Figure 3). This suggests that the European artifacts, and the rolled sheet-silver bead in particular (see previous discussion of 8PI4), probably represent a sixteenth-century contact component.

Picnic Mound (8HI3)

Picnic Mound, also referred to as Thatcher Mound, was located on the south bank of Hurrah Creek about 1/2 mile southwest of the town of Picnic. The mound was 60 to 70 feet across at the base, about four feet in height, and apparently was built on an artificial shell ridge. In 1937, excavations by the WPA revealed the mound was composed of "dark, heavy, loamy sand," and despite previous disturbance, the presence of at least two strata was determined (Bullen 1952:62). Screening of the disturbed upper layer yielded fragmentary skeletal material, nearly 100 Pinellas
projectile points, and a large variety of glass beads. The lower part of the mound produced 77 undisturbed burials, including 33 flexed, 22 secondary or bundle, 18 isolated skulls, an infant buried in a Busycon dipper, a cremation, and two burials of indeterminate nature (Bullen 1952).

Artifacts were found associated with 11 burials. These included Busycon cups, shell beads, two copper-covered wooden ear spools, a copper-covered stone earspool, a bead made of fossilized manatee bone, two copper-covered bone ornaments, fragments of iron and copper, and two large blue glass beads. Indian pottery, which was found distributed at random throughout the upper and lower mound levels, included types mostly diagnostic of Weeden Island and Safety Harbor cultural complexes. Most of the decorated and some of the undecorated ceramics are in a collection at FMNH (#76658-76735). Other Indian artifacts included stone tools, stone pendants, stone projectile points, three pieces of galena, two pieces of mica, and a variety of shell and bone artifacts (Bullen 1952).

European materials recovered from the body of the mound included many glass beads, an iron celtiform ax, fragments of iron, a centrally-perforated silver disc, a decorated silver pendant, an undescribed silver pendant, and a small silver claw- or fang-like object 1 5/8" in length (Bullen 1952:69, Figure 22A-B). The silver claw-like artifact almost certainly was an object of European jewelry worn as an
amulet, and its description bears a striking resemblance to a sixteenth-century talismanic pendant illustrated by Steingräber (1957:Figure 231). The pendant possibly was worn to ward off the "evil-eye" (see discussion of 8CH1). Though Bullen (1952:69) remarks that the amulet "was made in middle America and, undoubtedly, came from the wreck of a Spanish vessel," he failed to specify why he believed the source was Latin America.

Though most of the European artifacts from Picnic Mound have been lost, a small collection of glass beads is at FMNH (#102466). Listed and identified by Mitchem (1989b:Table 11), the collection includes three wire-wound translucent-green seed beads; four translucent, dark-purple seed beads; a marvered cobalt-blue bead; Cornaline d'Aleppo beads; and many fragments of opaque turquoise-blue beads. The wire-wound seed beads, which date to 1500-1600, provide evidence of European contact in the sixteenth century. The marvered blue bead, translucent dark-purple seed beads, Cornaline d'Aleppo beads, and opaque turquoise-blue beads also may represent a sixteenth-century contact component (Deagan 1987).

**Jones Mound (8HI4)**

The Jones mound site was located near the east bank of Pemberton Creek about a mile southeast of Lake Thonotosassa. The two principal features of the site were a sand burial mound and a horseshoe-shaped sand ridge that partially
surrounded the mound. The burial mound was constructed of yellowish-brown sand, and was 70 feet in diameter and three feet in height. The horseshoe-shaped ridge faced with its open end toward the east, and was about one foot in height (Bullen 1952; Simpson 1939).

In 1937, WPA crews completely excavated the burial mound. The project was supervised by Simpson, who reported a total of 179 burials, nearly all in very poor condition. Burials included 135 very tightly-flexed individuals, four secondary bundle burials, 13 infant or young child burials, 14 isolated skulls, a single cremation, and 12 burials of uncertain nature. Simpson discovered two mound features similar to house floors, which consisted of black, greasy hard-packed soil mixed with ash and charcoal, ranging from 6-8" in thickness. Each of the layers was associated with a firepit, which held deposits of charcoal and ash mixed with burned shell and bone fragments. Though no postmolds were discovered, both floor areas probably were part of charnel structures (Bullen 1952:43-45; Simpson 1939:59).

Many of the burials were found in direct association with artifacts. Indian artifacts included shell beads and pendants, Busycon cups, stone celts and pendants, stone projectile points (many were triangular-shaped), stone tools, fossil shark teeth, and coral pendants. The mound produced a total of 54 polished stone pendants (or plummets), most of which were associated with burials and
worn on the neck. Many of the pendants were carved to represent the heads of deer or birds, and several were shaped like duckheads. Triangular-shaped projectile points, which are diagnostic of Safety Harbor, were found in the eastern ends of the sand ridge and in the upper portions of the mound. Sand stained from red ochre also was reported with some of the burials (Bullen 1952; Simpson 1939:59-60).

Pottery fragments were found scattered throughout the mound, yet most of the pottery was found in caches where it had been deposited after apparent ceremonial breakage. The pottery types clearly indicate mixed occupation during the Weeden Island-related and Safety Harbor periods (Willey 1949:337). A small collection of pottery at FMNH (#76639-76657) includes fragments of Pinellas Incised, Safety Harbor Incised, and Pinellas Plain with notched rims. The FMNH collection includes neck fragments of two Safety Harbor Incised water bottles, and a restored Safety Harbor Incised vessel (Bullen 1952:55, Figure 20).

Simpson recovered a small number of European artifacts, which included a broken, green glass bead, several fragments of sheet copper or copper alloy, a copper bead, and a broken "trade" pipe. One of the sheet copper fragments was analyzed and found to contain a relatively large amount of nickel, which indicates European origin or manufacture. The glass bead was found near the surface, and the other objects were scattered throughout the mound (Bullen 1952:57).
Jones Mound shares at least three interesting features with other Safety Harbor contact sites in the study area. First, the charcoal and ash floors probably are associated with charnel structures, evidence of which has been discovered at Parrish Mound 2 (8MA2) in Manatee County (Willey 1949:146-152) and Tatham Mound (8CI203) in Citrus County (Mitchem 1989b). Second, both Jones Mound and Parrish Mound 3 (8MA3) had horseshoe-shaped sand ridges which partially encircled them (Stirling 1935:381). And third, Simpson (1939:60) reported at Jones Mound a burial that was found associated with freshwater mussel shells, a feature shared with Weeki Wachee Mound (8HE12) and Tatham Mound (8CI203), both of which have yielded European objects diagnostic of the sixteenth century (Mitchem 1989b).

Jones Mound was built during Weeden Island times and underwent major changes in Safety Harbor. Though the European artifacts are nondiagnostic, based on the diagnostic Safety Harbor artifacts, the characteristics shared with other Safety Harbor contact sites, and the absence of Leon-Jefferson artifacts, the contact component probably dates to the sixteenth century. According to Bullen (1952:60-61), the mound was used for burial purposes from about A.D. 1100 to A.D. 1600. Bullen also observed that Jones Mound shares several similarities with Thomas Mound (8HI1), and based on the types of burial goods, both
mounds may have been the final resting places for special
groups or comparatively wealthy villagers.

Buck Island (8HI6)

The mound at Buck Island was located on the south side
of Cypress Creek about one mile west of its juncture with
the Hillsborough River. Buck Island has an area of about 20
acres, and is located in the middle of a dense cypress
swamp. The island surface consists of various sand ridges
which show evidence of habitation, and a badly disturbed
burial area or mound. The burial area apparently was
constructed by digging a large pit, placing burials at its
margin, and then covering the burials with sand.

Excavations at the site by WPA crews yielded a total of
28 secondary burials, some multiple, which were found at
depths from one to three feet. Some of the burials were
accompanied by artifacts, which included three stone beads,
a Busycon shell, pottery fragments, and a gold disc with a
central gold button. The gold disc, discovered beneath a
skull, was decorated with a rounded swastika design, and the
smaller gold button was found nearby (Bullen 1952:Figure
24a,75-77).

The diagnostic Indian pottery and large number of
Pinellas projectile points indicate mixed Weeden Island-
related and Safety Harbor periods of occupation at the site.
Some of this pottery is in a collection at FMNH (#76736-
76787). Stemmed (Archaic) projectile points and a number of
stone tools from the site also suggest a preceramic period of occupation (Bullen 1952:77-78; Willey 1949:336).

A collection of European artifacts from the Buck Island site at USF (Department of Anthropology) includes two faceted Chevron beads, a rolled sheet-silver bead, and a drilled, silver rod bead. In the 1930s, Montague Tallant also recovered a gold ornament from the site, and in 1978 or 1979, a Nueva Cadiz bead associated with human bones reportedly was looted from here (Mitchem 1989b:110-111). Nueva Cadiz beads generally are found in contexts dating to the first half of the sixteenth century, and faceted Chevrons date to 1500-1600 (Smith 1983). These diagnostic glass beads, and probably the gold and silver artifacts, suggest Spanish contact in the sixteenth century.

Branch Mound (8HI10)

Branch Mound was located on the east side of Cypress Creek about 1/4 mile south of the Hillsborough-Pasco County line. The mound was roughly circular with a diameter of 40 to 50 feet and a maximum height of two feet. In 1936, excavations by the WPA uncovered six burials, including two secondary bundle, two semiflexed, an isolated skull, and a cremation. All the burials were at shallow depths and were arranged in a semicircle (Bullen 1952; Simpson 1937:115).

Artifacts included 14 whole or fragmentary projectile points, a sandstone abrader, three stone scrapers, a piece of burnt chert, pottery fragments, an incomplete ceramic
vessel, and five small glass beads, whole and fragmentary. Though the pottery was not described, both plain and decorated wares were listed. One of the pottery fragments, a section of decorated lug handle, suggests a Safety Harbor type. One glass bead was found with an isolated skull, another accompanied a bundle burial, and the remainder were found at or near the mound surface (Bullen 1952).

Bullen (1952:33) concluded that "the Branch Mound was built and used for burial purposes near the middle of the Safety Harbor period, about 1550 A.D." Since the burials were arranged in a semicircle, the individuals probably all were buried at the same time. Though the glass beads are not described and therefore impossible to identify, their association in the mound with the decorated lug handle and the cremation suggests probable Spanish contact dating to the sixteenth century (1952:33).

**Grantham Mound (8HI14)**

In 1920, excavations at the Grantham Mound, which is located near the town of Lutz, produced a number of artifacts now in a collection at FMNH (#15069-15073). These items include shell beads, a St. Johns Plain rim sherd, and two Nueva Cadiz Twisted glass beads. The presence of the Nueva Cadiz beads suggests that Grantham Mound is a Safety Harbor site, probably a burial mound, and that Spanish contact at the site dates to the first half of the sixteenth century (Deagan 1987; Mitchem 1989b:116).
Manatee County

Parrish Mound 1 (8MA1)

Parrish Mound 1 was located northeast of the south branch of the Little Manatee River, about 16 miles northeast of the town of Parrish. Built of white sand, the mound was 44 feet in diameter north-south, 38 feet east-west, and about five feet in height. At the south edge of the mound was a depression, 22 feet in length and 12 feet in width, which probably served as the aboriginal borrow pit.

In 1933, the mound was excavated by Lloyd Reichard through the WPA and under the sponsorship of the Smithsonian Institution. The project was summarized briefly by Stirling (1935:378-379). Reichard discovered a total of 27 burials, all of which were secondary and poorly preserved. The mound showed signs of prior disturbance, and Reichard was informed that a few years previous a collector had removed 16 burials from the disturbed areas (Stirling 1935:378; Willey 1949:143).

Several whole or nearly whole ceremonially-killed vessels had been placed in the mound, apparently as general mortuary offerings, and were not associated with individual burials. These vessels and vessel fragments were Safety Harbor and Glades Complex types. Pottery collections from the site at NMNH (#383190-383238), FMNH (#82131 and 99373), and FSU include Pinellas Plain, Pinellas Incised, St. Johns Check Stamped, St. Johns Plain, Belle Glade Plain, Biscayne
Check Stamped, Lamar Complicated Stamped, and sand-tempered plain whole vessels and fragments (Mitchem 1989b:148; Willey 1949:144). Nonceramic Indian artifacts include six Busycon cups, two disc-shaped shell rings, three worked shell fragments, and ten Pinellas projectile points (Stirling 1935:379; Willey 1949).

A large quantity of European artifacts, mostly glass beads, were found associated directly with individual burials. Stirling (1935:379) reported that the mound yielded "many thousands of small European glass beads of many different colors," in some cases "found sufficiently undisturbed to indicate they had been used as neck ornaments, bracelets, and bags." Willey (1949:145) described several hundred of these as glass seed beads of dark blue, light blue, white, and yellow. Another several hundred of the small glass beads were of opaque shades of yellow, blue, white, dull red, and black, and translucent shades of green, amber, blue, and lavender. A collection at FMNH (#82132) includes some of the seed beads, which are about 1100 in number (Mitchem 1989b).

Willey (1949:145) also reported several large glass beads, two of which are in the collection at FMNH. One of the glass beads is a unique form of faceted Nueva Cadiz Plain, and the other is "a unique olive-shaped striped bead of opaque brick red with three spiral white stripes over a core of translucent burgundy red" (Mitchem 1989b:149-150).
Glass beads similar to the olive-shaped striped bead were found at Tatham Mound (8CI203) and St. Marks Wildlife Refuge Cemetery site (8WA15). An emerald-green pentagonal-drilled bead (NMNH #383204) and a green "Punta Rassa" pendant (#383205) were among the other glass artifacts (Goggin 1960b:31; Stirling 1935:379; Willey 1949:Plate 58e-f). A collection of 18 Florida Cut Crystal beads are at NMNH (#383197A).

European ceramics from the mound included ten fragments of pottery with an olive-green glaze (Willey 1949:145). George Avery has identified one of these now in a collection at FMNH (#82131) as a body fragment of Early Style Olive jar (George Avery, personal communication 1993).

Nonceramic European artifacts included three rolled sheet-silver beads (NMNH #383206), a twisted cone of rolled sheet gold (#383198), a copper ear ornament (#383203), and two fragments of tortoise shell comb (#383199). The rolled cone of sheet gold is identical to one recovered from Bee Branch 1 site (8GL1) on the Caloosahatchee River (Willey 1949:145-146,Plate 58). It also is similar to gold cones illustrated by Gallo (1967) which were incorporated into precontact Peruvian jewelry. The copper ear ornament is a disk with an attached hollow-button center, and according to Willey (1949:144), differs from those found in Florida mounds of earlier periods. Tortoise shell combs are
discussed in the summary of Mobley Scrub site (8MA58), and in the following chapter.

The Glades Complex and Safety Harbor pottery types from Parrish Mound 1 probably are related to the same time period. A Safety Harbor dating of the burial mound is substantiated by the presence of the European artifacts, several of which provide strong evidence for Spanish contact in the sixteenth century. The Nueva Cadiz Plain bead and olive-shaped striped bead suggest contact dating to the first half of the sixteenth century, and the Florida Cut Crystal beads indicate contact in the last half of the sixteenth century (Mitchem and Leader 1988; Smith 1987). The Early Style Olive jar fragment dates to 1500-1580 (Goggin 1960a:23).

**Parrish Mound 2 (8MA2)**

Parrish Mound 2 was located about 1/2 mile south of the south fork of the Little Manatee River. The mound was highest and had the greatest slope at its north end, and once probably had a flat platform surface. Previous to excavations by Lloyd Reichard in early 1934, the mound was about 63 feet in diameter north-south, 65 feet east-west, and six feet in height (Stirling 1935:379-380).

Excavations revealed that the sand structure had been used both as a mortuary mound and as a base for a building. A large crematory pit had been dug into the original mound base, and bodies of the dead were burned in the pit. Then a
sand mound was constructed over the pit, and cremated secondary remains were placed in the body of the mound. A few primary burials also had been placed in the mound and cremated in situ in small log crypts.

As a final phase, a near-rectangular wooden building or enclosure was raised on top of the mound. In the southeast corner of the building was built a raised platform, which possibly was a crematory altar or place of safekeeping for the remains of the dead. At some point the wooden building was destroyed by fire, leaving behind a large quantity of charred human bones on the raised platform (Stirling 1935:380; Willey 1949).

Within the charred building enclosure were found 32 secondary cremated burials and two uncremated burials of small children. Outside the enclosure in the body of the mound, five secondary and two primary in situ cremations were discovered. Though Stirling (1935:380) reported 41 distinguishable burials, all but two of them cremated, the scattered placement of the cremations and the poor bone preservation suggest the mound held a far greater number of individuals (Willey 1949).

Artifacts accompanied one of the primary in situ cremations and many of the cremated secondary burials. An owl-effigy bottle had been recovered intact by a previous excavator, yet Reichard failed to locate any complete ceramic vessels. Pottery from the mound fill included
fragments of Pinellas Plain, Pinellas Incised, Glades Plain, and Belle Glade Plain. Nonceramic artifacts included three Pinellas projectile points (NMNH #383220), a tubular stone bead (#383217), a stone plummet (#383216), four perforated Busycon cups, a Busycon pick, and two circular shell beads (#383213). In addition to the charred posts and timbers of the wooden building, two carved fragments of charred wood (NMNH #383214), one found with a burial, and several charred fragments of cordage or rope (#383221) also were discovered (Willey 1949:150-151, Plate 59).

The burial mound produced European artifacts less numerous but similar to those recovered from Parrish Mound 1. These objects included three glass seed beads (two light blue and one white), a tortoise shell comb, and a small brass pendant (NMNH #383218) shaped somewhat like a fleur-de-lis. The tortoise shell comb, which was found associated with a burial, was nearly identical to the comb fragments discovered at Parrish Mound 1 (Stirling 1935:381; Willey 1949:151, Plate 59a, 59b).

Parrish Mound 2 is a Safety Harbor burial mound, and is contemporaneous with Parrish Mound 1. The Indian artifacts from both sites are similar, and the glass seed beads and tortoise shell comb from Mound 2 are identical in type to those found at Mound 1 (Willey 1949:150). Since the Spanish contact component at Parrish Mound 1 is dated securely to
the sixteenth century, the European materials from Parrish Mound 2 probably also date to the same time period.

**Parrish Mound 3 (8MA3)**

Parrish Mound 3 was located northeast of Parrish on the north bank of Gamble Creek. Stirling (1935:381) described the mound as circular, measuring 68 feet across and seven feet in height. Surrounding the southern edge of the mound was a horseshoe-shaped sand ridge 30 feet in width and three feet in height. This ridge continued north for about 150 feet where both branches gradually tapered off into the surrounding ground level. A gully or depression 17 feet in width and two feet in depth ran along the inside of the ridge, separating it from the mound (Willey 1949:152).

Complete excavation of the mound revealed it was constructed entirely of sand, and that it lacked any distinctive structural features. Stirling encountered 212 recognizable burials, all poorly preserved. The interments were all secondary bundle burials with the exception of a single cremation (Stirling 1935:381). Due to the previous site disturbance and poor bone preservation, the number of burials was probably far greater than that recorded by Stirling.

Indian pottery was recovered in relative abundance. Complete or nearly complete ceramic vessels included two Safety Harbor Incised (NMNH #383225,383227), a Lamar Complicated Stamped (#383224), a Pasco Red (#383226), and a
Glades Plain (Willey 1949:153,Plate 54A). These types of mortuary ware place the mound, together with Parrish Mounds 1 and 2, in the Safety Harbor period. Pottery fragments in the NMNH collection include Safety Harbor Incised, Pinellas Plain, Pinellas Incised, Biscayne Plain, Biscayne Check Stamped, Glades Plain, and Belle Glade Plain. Several fragments of Papys Bayou Punctated, an earlier Weeden Island type, were recovered from the mound and probably represent a single "antique" or holdover vessel placed in the mound as an offering. All of the whole or nearly whole vessels were killed intentionally (Willey 1949:153-154).

Nonceramic artifacts from the mound were similar to those from Parrish Mounds 1 and 2. The only shell objects were 14 Busycon cups, most of which were killed intentionally. Three of these cups are in a collection at FMNH (#99374). Stone artifacts included several stemmed (Archaic) and Paleo projectile points (NMNH #383230-383231), and a number of chert flakes (Willey 1949:154-155,Plate 54b). These early-period projectile points probably were found and reutilized by the users of the mound. Stirling (1935:382) also mentions red ochre accompanying some of the burials.

Artifacts found associated with the cremation included two stemmed, flint projectile points (NMNH #383230-383231), five small glass beads (NMNH #383235), and several iron fragments adhering to a sandstone abrading stone (#383236).
Most of the European items from the site were found with the cremation. Willey (1949:155) describes the iron fragments as a chisel 14 cm in length (square cross-section), a sword or knife-blade fragment, a possible gun-barrel fragment, and five small, miscellaneous fragments. Mitchem (1989b:155) notes that several of the iron objects have preserved wood attached to them, which suggests they were once a part of wooden barrels. European artifacts from the body of the mound included a short, blunt iron chisel, and a few glass beads, mostly blue or white in color. The rectangular iron chisel (NMNH #383236) is 6 cm in length, flat (0.9 cm thick), and has a beveled bit end (Mitchem 1989b:156).

Parrish Mound 3 is a Safety Harbor burial mound whose use was concurrent with that at Parrish Mounds 1 and 2 (Willey 1949). The similarity in artifacts from all three Parrish mounds, combined with the diagnostic European objects found at Parrish Mound 1, suggest that Spanish contact at Parrish Mound 3 dates to the sixteenth century. Though the description of the glass beads from Parrish Mound 3 is insufficient for precise dating, Mitchem (1989b:158) and Stirling (1935:382) both state that the use of the mound probably dates to the period of initial Spanish contact.

**Palma Sola 3 Site (8MA10)**

The Palma Sola 3 site is located about 1/2 mile from the town of Palma Sola. The site was visited in 1916 by R.D. Wainwright, who described it as a sand mound 39 feet in
diameter and four feet in height. Wainwright discovered a poorly preserved, human burial at a depth of three feet, and relic collectors with him found many glass beads by sifting sand from the mound fill (Wainwright 1916:140). Montague Tallant (n.d.:2) reported that the mound had been dug up badly by area residents who recovered decorated pottery, blades, gold and silver beads, and many glass beads.

According to Mitchem (1989b:161-162), Palma Sola 3 is probably the same site known as Lone Pine Mound or Bead Mound. A list of artifacts from Lone Pine Mound (in the private Burnworth Collection) on file at SFM includes six copper discs, a copper gorget, a copper cone, a small pot, glass beads, and miscellaneous items of copper, silver, and gold. Five majolica fragments from Lone Pine Mound in the Burnworth Collection have been identified as: 1) Columbia Plain (probably late form, 1550-1650); 2) Probable Mexico City White (1550-1650); 3) Aucilla Polychrome (1650-1700); 4) Puebla Polychrome (1650-1725); and 5) Puebla Blue on White (1675-1830).

In the FMSF, a letter (dated December 9, 1982) from William Burger mentions a private collector who has in his possession a quantity of Safety Harbor Incised pottery fragments and over 1,000 glass beads from the site. Another private collection includes two Florida Cut Crystal beads, three rolled sheet-silver beads, six small silver disc-beads, and many glass seed beads of blue, white, green,
turquoise blue, yellow, colorless, and Cornaline d'Aleppo glass (Mitchem 1989b:162).

The Palma Sola 3 site was probably a Safety Harbor burial mound, and the presence of the Florida Cut Crystal beads (1550-1600), and possibly the Cornaline d'Aleppo beads (1575-1800), suggest Spanish contact in the latter half of the sixteenth century. The site was used by the Indians over a long period of time, as Mitchem (1989b:161) notes that private collections from the mound include numerous glass beads dating to the late sixteenth- and seventeenth centuries.

Musgrave Mound (8MA34)

This site was described by Tallant (n.d.: 3) as a burial mound of pure white sand that measured 80 feet in diameter and 5 1/2 feet in height. Tallant reported that collectors had recovered glass beads and objects of gold from the mound, and that a person known to him had found three arrowhead-shaped artifacts of gold with suspension holes. Another individual recovered a gold bead of open wire work measuring 3/8" in diameter.

As a European artifact type, open-work gold beads are more suggestive of the Middle Ages and Renaissance than the later seventeenth century (Dubin 1986:Figure 62; Smith 1908:124,200; Steingräber 1987:137-138). The arrowhead-shaped gold objects, if they originated from Europeans, may also date to the former time period (Lightbrown 1992:97-98).
Douglass (1890a:24) mentions an arrowhead-shaped gold artifact which also was found near Charlotte Harbor. Though the brief report by Tallant mentions no Indian artifacts, it is safe to assume the site was a Safety Harbor burial mound. The gold bead, and perhaps the other gold ornaments, suggest a likely sixteenth-century contact component.

**Myakka River #1 Mound (8MA57)**

The Myakka River #1 Mound, also referred to as Wingate Creek Mound, was located in an area of scrub near the Myakka River. Excavated by Harry Schoff in the 1930s, the mound measured 50 feet in diameter, 4 1/2 feet in height, and was constructed of yellow and white sand. A sand ridge two feet in height completely encircled it. Burials were poorly preserved, and artifacts from the mound included undescribed glass beads, Indian pottery, and several undescribed objects of silver (Tallant n.d.:6).

The site was probably a Safety Harbor burial mound, and European artifacts reported from it suggest contact in the last half of the sixteenth century. Mitchem (1989b:179) reports a private collection which includes a Florida Cut Crystal bead, and seed beads of blue, white, green, yellow, and colorless glass. The Florida Cut Crystal bead dates to 1550-1600, and the seed beads could date to this time or later (Deagan 1987).
Mobley Scrub (8MA58)

Mobley Scrub was an Indian cemetery site excavated by Montague Tallant (n.d.:6). According to Tallant, the cemetery was made of pure white sand, and from it he recovered a total of 77 burials, some from a depth of 4 1/2 feet. An infant burial was accompanied by a string of blue glass beads of various sizes, and another burial, referred to by Tallant as "female," was associated with a tortoise shell comb. No other artifacts were found at the site.

Indian sites in Florida have produced few tortoise shell combs, but when reported, such combs usually are associated with European artifacts diagnostic of the sixteenth century. Moore (1895:513-514) described a tortoise shell comb (NMAI #170024), with scroll decoration (Moore 1910:Figure 15), which he found in a burial mound on Murphy Island. European objects from the mound included iron tools and weapons, Nueva Cadiz Plain and Twisted beads, faceted Chevron beads, and other undescribed glass beads (Goggin 1960b).

Tortoise shell combs and comb fragments were found at Parrish Mounds 1 and 2, which produced a variety of European materials, some temporally diagnostic. Bee Branch 1 site (8GL1) yielded a tortoise shell comb and European artifacts including Florida Cut Crystal beads (Goggin 1949a, 1960b; Smith 1983). Since all the reported combs are quite similar in size, form, and design, it suggests that tortoise shell
combs most likely represent a sixteenth century component in Florida contact sites.

Mobley Scrub was probably a Safety Harbor cemetery site, though few such sites have been reported (Willey 1949:476). The presence of the tortoise shell comb suggests European contact in the sixteenth century. Though there has been uncertainty and divided opinion whether tortoise shell combs were made by Europeans or by Indians (Branstetter 1989; Goggin 1949a; Milanich and Fairbanks 1993:64; Smith 1956; Willey 1949:146,487), the recovery of tortoise shell combs and bulk tortoise shell from Spanish shipwrecks demonstrates a European connection (see discussion in following chapter). It is possible that the combs from Mobley Scrub, Parrish Mounds 1 and 2, Bee Branch 1 (8GL1), and an unnamed site in the Myakka area in Manatee County (Branstetter 1989:5), all originated from a single Spanish shipwreck.

Rye Bridge Mound (8MA715)

The Rye Bridge Mound was located west of Rye Bridge on the banks of the Manatee River. This mound has produced many European artifacts, a large collection of which was owned by Ralph W. Burnworth. Some of the objects in the Burnworth collection included glass beads (Mitchem 1989b:194). Glass and silver beads from the mound are also in a small collection at SFM. The glass beads include four Nueva Cadiz Plain beads, two complex oval beads, several
Coraline d'Aleppo beads, several heart-shaped beads, and many large seed beads of turquoise blue, white, and Coraline d'Aleppo. Silver beads in the collection include 31 small disc beads, two spheroid beads, a donut-shaped bead, an olive-shaped bead, and a drilled rod bead (Mitchem 1989b:Table 24).

Though no Indian artifacts have been reported from Rye Bridge Mound, the site is presumed to be a Safety Harbor burial mound. The presence of the Nueva Cadiz beads, dating to 1500-1550, suggests Spanish contact in the first half of the sixteenth century. The Coraline d'Aleppo beads (1575-1800) and seed beads (1575-1820) suggest contact in the late sixteenth century or afterward (Deagan 1987).

Sarasota County

True Site (8S05)

The True site was a sand burial mound located about six miles northeast of US 41. The mound was eight or more feet in height, and was excavated by local relic collectors. In 1934, David True wrote a brief excavation report, a copy of which is now in the FPS files at FMNH. Excavations revealed the scattered skeletal remains of about 50 individuals, some found at depths of only two feet, and a possible central burial area on the mound base. All of the burials were flexed, and each of them was encircled by an assortment of Busycon shells. Artifacts included Safety Harbor Incised vessels, a possible pair of metal shears, a copper cone-
shaped disc (1 1/2" diameter) with a central perforation, and glass beads (Willey 1949:344, Figure 63c). The beads included a Florida Cut Crystal bead (FMNH #A-19998), a large Chevron bead, and a Gooseberry bead (Goggin 1960b).

The True site is a Safety Harbor burial mound. The presence of the Florida Cut Crystal, and possibly the Chevron and Gooseberry beads, suggest Spanish contact in the sixteenth century. The Florida Cut Crystal bead dates to the last half of the sixteenth century, the Chevron bead (if faceted and seven-layered) dates to 1500-1600, and the Gooseberry bead has a date range of 1550-1750 (Deagan 1987; Smith 1983:148).

Charlotte County

Cayo Pelau (8CH1)

The Cayo Pelau site is a sand burial mound situated at the northwest tip of a small key in Gasparilla Sound. Originally the mound was 90 feet in diameter and about six to eight feet in height. Excavations by Montague Tallant produced Indian pottery fragments (NMNH #378302-378310) classified as Weeden Island types by Goggin and Willey (Willey 1949:344-345). In addition, the FMSF notes that in a 1953 survey of the site, Goggin found pottery fragments, a perforated Busycon cup, and a Florida Cut Crystal bead.

Allerton et al. (1984) have reported from the mound a large collection of European artifacts, which include cut silver beads, silver and gold coin beads, rolled sheet-
silver and gold beads, glass seed beads of white and blue, large and small Cornaline d'Aleppo beads, a fluted green mellon bead, an amber bead, a Nueva Cadiz bead, Ichtucknee beads, a pressed Seven Oaks Gilded bead, a cane bead, a Chevron bead, a red glass bead, a faceted crystal pendant, a pumpkin-shaped crystal bead, a higa crystal pendant, an "evil-eye ward-off" crystal pendant, and a Spanish man-in-the-moon silver pendant. Two ceremonial tablets also were reported from the mound, one of silver and the other of copper or brass. Silver shark tooth effigies, and a finely made sheet silver alligator, were found in association with the silver tablet (Allerton et al. 1984:36,38).

Though all the objects in this collection are of interest, the higa pendant merits special attention. The higa, as it was known in sixteenth century Spain, was a fist-shaped amulet directed against the "evil eye." It had the characteristic position of the thumb and index finger forming the mano cornuta, considered a potent gesture directed against evil. Higas most often were made of jet, coral, or crystal, and were worn frequently by commoners and royalty (British Museum 1976:225). Tait (1986:Figure 525) illustrates a sixteenth century higa which consists of an ivory hand, wearing gold rings set with an emerald and a garnet, mounted in filigree enamelled gold. Several portraits of Spanish Infantas also show higas and other types of amulets being worn (Muller 1972; Tait 1986).
Other European objects from Cayo Pelau include an amber bead, six Florida Cut Crystal beads, a Florida Cut Crystal pendant, three drawn opaque turquoise (Ichtucknee) blue beads, eight Cornaline d'Aleppo beads, a barrel-shaped colorless Gooseberry bead, many seed beads, four rolled sheet-silver beads, small silver disc-beads, silver coin beads, oblate silver beads, a silver bell, and a small oblate gold bead. A collection from the site at FMNH (#A-7987) includes a few sand tempered plain pottery sherds, a Busycon columella, and a spiral-faceted Florida Cut Crystal bead (Mitchem 1989b:233,235-237).

The Cayo Pelau site is a Weeden Island burial mound with a probable Safety Harbor component (Mitchem 1989b; Willey 1949:345). A number of the artifacts confirm Spanish contact in the sixteenth century. The Nueva Cadiz bead suggests contact in the first half of the sixteenth century, the amber bead dates to 1525-1600, and the Florida Cut Crystal beads date to 1550-1600 (Smith 1983). The Cornaline d'Aleppo (1575-1800), Gooseberry (1550-1750), drawn opaque turquoise (Ichtucknee) blue beads (1575-1720), and many of the other nondiagnostic artifacts also may represent a sixteenth century component.

Lee County

Mound Key (8LL2)

Mound Key is located in Estero Bay about seven miles southeast of Punta Rassa. Described in early accounts by
Douglass (1890b:106), Cushing (1896:347-348), and Moore (1900:366-367), the site is a small (about 130 acres), roughly circular island with huge artificial mounds built of earth and shell, and Indian-built canals which cut across it. Moore (1900:366-367) reported that the principal shell mound on the island to be 30 feet in height, and that it was located, together with other mound structures, along the banks of a large canal which nearly bisected the island. Excavations by Moore in some of the canals and courts on the island yielded little except for a few pottery fragments (NMAI #097631,170273-170274,171161) and a shell tool without a handle (NMNH #204798). Other artifacts from the site attributed to Moore include several objects of shell (NMAI #043434,117623-117625,127361,127372,136058,136060,170320,170868-170869,172080), a stone object (#136502), and an artifact of gold (#136059).

Successive excavations at the site have produced large amounts of Indian and European artifacts. A pottery collection at FMNH includes sand tempered plain, Belle Glade Plain, St. Johns Plain, Safety Harbor Incised, and some possible Pinellas Plain fragments. In a collection at the Wagner Free Institute there are two notched lip sherds, a Pinellas Plain sherd, and four Fort Walton Incised fragments. A collection at UPM includes Englewood Incised and Fort Walton Incised sherds (Mitchem 1989b:259-260).
Pottery listed from the site by Goggin (1949a:273-274) includes Glades Plain, Belle Glade Plain, Biscayne Plain, Biscayne Check Stamped, Jefferson Complicated Stamped, Fort Walton bird adornos, and miscellaneous incised ware. The two bird adornos (NMAI #17/273-274) are of an unusual paste not typical of the area, and together with the other Fort Walton ceramics, are probably trade items from the north. Nonceramic Indian objects include a Busycon celt, a strombus celt, shell tools, shell pendants, a galena pendant, and a stone pendant.

European artifacts in a collection at UPM include glass beads and pendants, lapidary beads, ceramics, and objects of metal. The glass beads and pendants include eight Chevron beads, "amber" beads, a teardrop-shaped melted green-blue pendant, two Punta Rassa teardrop-shaped pendants, a teardrop-shaped colorless pendant, and many seed beads. Lapidary beads include four strings of Florida Cut Crystal beads, a string of smooth-surface crystal beads, and a tubular, white coral bead (Mitchem 1989b:Table 37). Dating of the glass objects is uncertain since the Chevron beads lack detailed description, and the amber beads may be glass and not true amber. The Florida Cut Crystal beads date to 1550-1600 (Smith 1987).

European ceramics include fragments of majolica and Spanish Olive Jar. The majolica includes four fragments (one each) of Isabela Polychrome, Aucilla Polychrome, Melado
(FMNH #101670), and unclassified blue on white (Goggin 1968:72; Mitchem 1989b:259-260). Isabela Polychrome is an excellent sixteenth-century time marker, and Melado is found in New World contexts dating from 1492 to 1550. Aucilla Polychrome dates to the second half of the sixteenth century (Deagan 1987).

Though most of the Spanish Olive Jar fragments (FMNH #15019-15020,15023) are Middle Style, some Early Style fragments, including a rim sherd (#101670), have been found at the site (Goggin 1960a:11; Lewis 1978:40-41). Early Style Olive Jar dates to 1500-1580, and Middle Style dates to 1580-1780, or probably earlier (Goggin 1960a; James 1988). The Olive Jar fragments may be the debris from shipwrecks, or the trash left behind by Cuban fishermen (Covington 1959:117).

Metal artifacts include gold coin beads, a gold tablet, a thin gold bead (NMAI #13/6059), two silver coin beads, four rolled sheet-silver beads, two silver coin beads, an incised silver tablet, nine brass bells, a perforated lead disc (UPM #41235), an iron chisel, and a copper plummet pendant (Goggin 1949a:274; Lewis 1978:41; Mitchem 1989b). Milanich (1995:46) has illustrated several metal ornaments, including crosses, which have come from this site.

Luer reports that many metal artifacts from Mound Key have been attributed mistakenly to the Punta Rassa site (8LL7). Some of these items include two incised silver
tablets (NMAI #1/7964,1/7965, formerly UPM #8191,8192), silver coin beads (UPM #8193), a copper plummet, and a lead plummet (Goggin 1954b; Luer 1984:273-274; Mitchem 1989b).

Mound Key is of special interest as it almost certainly was the site of Calos, the principal town of the Calusa, and the residence of Carlos, the Calusa paramount chief (Lewis 1978:19; Widmer 1988:5). Pedro Menéndez visited Carlos on several occasions from 1566 to 1567. A short-lived Spanish blockhouse was built at Calos in 1567, simultaneous with the establishment of a Jesuit mission (Gannon 1965:32; Stahl 1986:144). Though most of the European materials from Mound Key probably came from shipwrecks, some of the objects may be associated with the Spanish activities at Calos in the sixteenth century. Artifacts diagnostic of the sixteenth century include the Melado, Isabella Polychrome, and Early Style Olive Jar fragments, and Florida Cut Crystal beads.

Mound Key Burial Mound (8LL3)

The burial mound on Mound Key was situated in the northeast part of the island. In a visit to Mound Key, Cushing (1896:348) wrote that many "Spanish relics" had been recovered from a burial mound or mounds in an area of mangroves near the eastern end of the island. These included glass beads, scraps of sheet copper, small ornaments of silver and gold, and a copper gilt locket containing a faded portrait and a letter written on parchment. Later Moore (1900:367-369) visited the island,
and observed that the burial mound was constructed of sand and loamy material with a certain admixture of shell. It was 65 feet in diameter at the base and about 11 feet in height. Moore failed to recover anything of interest from the mound, but it was reported to him that many artifacts, mostly European, had been found there.

In a 1953 site survey recorded by the FMSF, John Goggin found the burial mound in an area of mangrove swamp to the east of the shell middens or village area (8LL2). The mound was badly pitted, and measured four to five feet in height, less than half that reported by Moore. Indian ceramics collected in the survey included fragments of Glades Plain, Belle Glade Plain, Dunns Creek Red, and St. Johns Plain.

Many of the European artifacts reported from the Mound Key shell middens (8LL2), especially the beads and metal objects, undoubtedly came from the burial mound (Schell 1992). Cushing and Moore both affirm that large quantities of European materials were found in the burial mound. Abbott (1890:12-14) describes a number of metal objects from the mound, including six gold beads, two perforated gold discs, and a perforated silver disc. There is little doubt that the burial mound is associated and contemporaneous with the Calusa village area, and that both sites have European contact components dating to the sixteenth century.
Shell Creek Site (8LL8)

This site is located near the north bank of Shell Creek about two miles northeast of Punta Rassa. First described by Moore (1905:308-309), the mound was constructed of pure white sand, and was 90 feet in diameter at the base and about 14 1/2 feet in height. Numerous shell fields and causeways extended in all directions from the mound into the surrounding swamp.

Moore partially excavated the site, and recovered seven flexed burials from depths of one to five feet. A small number of pottery fragments were found, including check stamped and Safety Harbor Incised wares (Goggin 1949a:278-279). Though no artifacts were found associated with burials, it was reported to Moore that many glass beads had been recovered in previous excavations. Moore found a single glass bead in spoil dirt from the mound.

In 1972, excavations yielded European objects which included four sheet-silver incised tablets, 12 crystal beads, two crystal pendants, two incised rolled sheet-silver beads, black twisted-pressed beads, dark-blue cane beads, faceted diamond-shaped glass beads of red or yellow, faceted pressed clear-glass beads, faceted Florida Cut Crystal beads, Ichtucknee Blue beads, white and blue glass seed beads, and Cornaline d'Aleppo beads (Allerton et al. 1984:40). A crystal figa pendant also has been reported from the site (Mitchem 1989b:269).
Aboriginal pottery in a private collection from the mound includes Safety Harbor Incised, possible Englewood Incised, Sarasota Incised, Point Washington Incised, Lake Jackson Plain, cord marked, Carrabelle Incised, and a classic Safety Harbor incised collared-jar with four human head adornos. *Busycon* cups are also in this collection (Mitchem 1989b:269).

The Shell Creek site is a Calusa burial mound with a probable late Weeden Island component (Widmer 1988:3-5). Sixteenth-century Spanish contact at the site is suggested by the presence of the Florida Cut Crystal beads, which date to 1550-1600. The Cornaline d'Aleppo (1575-1800) and Ichtucknee Blue (1575-1720) beads also may represent a sixteenth-century contact component (Deagan 1987:172-173).

**Pineland Burial Mound (8LL36)**

The Pineland Burial Mound is located near the west shore of Pine Island about 300 yards southeast of the Pineland Shell Complex site (8LL33). A.E. Douglass (1885:282) observed that it is was one of the largest sand mounds in Florida, and estimated its dimensions to be 200 feet in diameter at the base and 35 feet in height. Frank Hamilton Cushing (1896:342) reported that the mound, which was built of alternating layers of shell and sand, stood in the middle of an artificial lake, and was encircled by a ramp that spiralled upward from the mound base to its
summit. Cushing recovered a number of artifacts including pottery fragments, perforated shell cups, and human bones.

R.D. Wainwright (1918:31) investigated the site in 1917, and observed that the western half of the mound had been removed for fill by local inhabitants. Wainwright was informed that several human burials had been removed from the mound summit, yet his excavations in the damaged western section yielded only a few fragments of undecorated pottery.

According to the FMSF, a 1952 survey of the site by John Goggin and William Plowden confirmed that the western half of the mound was destroyed. Human bones and pottery fragments were seen exposed on the mound surface. Pottery recovered from the mound included fragments of Glades Plain, Belle Glade Plain, Safety Harbor Incised, St. Johns Plain, St. Johns Check Stamped, and St. Johns Simple Stamped. At the time of the survey, the mound was 200 feet in diameter at the base, and 20 to 25 feet in height.

Mitchem (1989b:Table 40) has classified European artifacts from the site now in a private collection, which includes glass beads, lapidary beads, and metal objects. The glass beads include two Nueva Cadiz Plain beads, seven faceted Chevron beads, an olive-shaped blue and white spiral-striped bead, an olive-shaped white bead with wide blue spiral-stripes, and many seed beads. Lapidary beads consist of nine Florida Cut Crystal beads. Metal artifacts include a gold ceremonial tablet, a gold disc, probable gold
beads, a silver cross with incised decoration, probable silver coin beads, oblate silver beads, small silver disc beads, and probable copper or brass beads.

The Pineland Mound is a Calusa burial mound with strong material evidence of sixteenth-century Spanish contact. The Nueva Cadiz and olive-shaped striped beads are diagnostic of the first half of the sixteenth century, and the Florida Cut Crystal beads date to the second half of the sixteenth century. The faceted Chevron beads have a date range of 1500-1600 (Deagan 1987; Mitchem 1989b:275).

**Pine Island 8 Burial Mound (8LL40)**

The Pine Island 8 Burial Mound was located in a mangrove swamp near the east end of the aboriginal Pine Island Canal (8LL34). The mound was situated on a sandspit about 1,000 feet west of Matlacha Pass, and its dimensions were 60 feet in diameter at the base and over five feet in height. Moore completely excavated the mound during two seasons of work, and his field report remains one of the most detailed descriptions of a late burial site in the Glades area (Goggin 1949a:296).

The first season of excavation revealed that the mound was built of grey sand on top of a limestone foundation. The mound was unstratified except for a black sand layer at the base and below it. In the northeast side of the mound Moore reported a thick mass of pottery fragments with several *Busycon* shells and cups nearby. More than 38
burials were discovered, in addition to several masses of disarticulated bones (secondary burials) apparently disturbed by succeeding interments. Burials in the body of the mound were loosely flexed, and those discovered at the mound base or below it, with three exceptions, were tightly flexed (Moore 1900:362-363). Some of the pottery is in a collection at NMAI (#170103).

Burials were accompanied by artifacts including three iron celts, undescribed glass beads, two rolled sheet-silver beads with overlapping edges, a kite-shaped sheet silver pendant decorated with a repoussé cross, a lancehead of hornstone, one chert and two chalcedony projectile points, and a perforated, fossil shark tooth (Moore 1900:362-363, Figure 5). No artifacts were found associated with burials at the mound base or below it.

In his second season of work, Moore (1905:305-308) excavated the remainder of the mound. The remains of 219 individuals were encountered, yet the mixing of interments and poor bone preservation made it impossible in many cases to determine the precise form of burial. A number of burials, many flexed, lay in the black sand layer near the mound base. This black layer was 2" thick at the margin of the mound, and increased to about 18" at its center. At the mound base was a profusion of disarticulated bones, together with single flexed and secondary bundle burials with single and multiple crania. Two tightly flexed burials were found
below the mound base. In the body of the mound, but showing no signs of intrusion, were flexed and many secondary bundle burials (Moore 1905:305-306).

Pottery finds were scarce, and only one whole vessel was reported. This vessel, described as crude and undecorated, was not associated with an individual burial. Pottery fragments found scattered throughout the body of the mound included check stamped, loop handled, and notched rim types (Goggin 1949a:297). The loop handled pottery is probably a Fort Walton type, and a single sherd illustrated by Moore (1905:Figure 6) is Fort Walton Incised, var. Sneads (Scarry 1985). The presence of Fort Walton pottery suggests possible trade with northwest Florida. A number of shell and stone artifacts were recovered from the base of the mound, and a large hammerstone and sandstone hone were found with or near burials in the body of the mound (Moore 1905).

Though no European artifacts were found at the mound base, a slab of pine wood was discovered showing the type of clean-cut which could have been made by a metal ax. The body of the mound yielded a number of European materials found with or near burials. Glass and lapidary objects included an undescribed bead, many small beads (probably seed beads), a cross pendant (Moore 1905:Figure 7), and a Florida Cut Crystal pendant (1905:Figure 9). Iron artifacts found with burials included five "early type" axes, three scissors, two broad chisels, three knives, a pruning knife,
a chisel or "caulking-knife," and an unidentified implement. Silver artifacts included three rolled sheet-silver beads and a sheet silver pendant (concavo-convex) 5" in length (Moore 1905:Figure 10). A teardrop-shaped earthenware fragment (Moore 1905:Figure 8) also was found with or near burials in the body of the mound (1905:307-308).

A small collection of artifacts from both seasons of work are at NMAI. This collection includes two undescribed metal beads (NMAI #170079,170101), an undescribed glass bead (#170102), a metal ornament (#170078), a metal pendant (#170080), an animal tooth pendant (#170081), a glass pendant (#170104), a shell disc (#170846), and an animal tooth (#170100).

Except for perhaps the cross pendant and Florida Cut Crystal pendant, most of the European artifacts are not easy to date. Though the line-drawing of the cross pendant is more difficult to date than a photograph, Henry Hawley, Chief Curator of Later Western Art at the Cleveland Museum of Art, writes in a letter (dated February 13, 1995) that the cross pendant almost certainly dates to earlier than 1600. Moore describes the cross as glass, but according to Gary Baker, Curator of Glass at the Chrysler Museum, it probably is carved from rock crystal (Gary Baker, personal communication 1995), an art form which became popular in the sixteenth century. London Museum Catalogues, No. 2
(1928:34, Plate XV) illustrate what is probably the limb of a rock crystal cross dating to around 1600.

The shape of the cross pendant is somewhat unusual. In certain ways it resembles the Cross of the Order of the Knights of Malta (i.e., Maltese Cross), a type of cross worn by the Knights Hospitallers, or Knights of St. John of Jerusalem (Webber 1927:121-122), yet there are a few important stylistic differences. The pendant may be a variant of a Maltese Cross, or it may be associated with an entirely different religious order. A gold Maltese Cross was found on the site of the Girona, one of the Spanish armada ships which wrecked off the Irish coast in 1588 (Sténuit 1973). A silver Maltese Cross, illustrated by South et al. (1988:Figure 95D), was found in the excavation of the sixteenth-century colony of Santa Elena on Parris Island, South Carolina.

The other potentially diagnostic object, the Florida Cut Crystal pendant, is an item of jewelry known only from archaeological sites in Florida. Florida Cut Crystal pendants are clearly related to Florida Cut Crystal beads, especially since the same lapidary technique was used to make both types of jewelry. The dimensions of Florida Cut Crystal beads are often similar to Florida Cut Crystal pendants, which Goggin (1960b:29-30) has dated to around 1550-1650.
Since the mound yielded no metal ceremonial tablets, which were used by the Indians in a fairly widespread fashion from the early sixteenth- through the late seventeenth centuries, Luer (1989:98) has suggested that the site dates to early in the contact period. The kite-shaped silver pendant (Moore 1900:Figure 5) and rolled sheet-silver beads (see previous discussion of 8PI4), also may suggest an early dating.

Pine Island 8 is a Calusa burial mound with precontact and postcontact components (Mitchem 1989a; Widmer 1988:86-87). Most of the artifacts from the mound were of European origin, and contact undoubtedly dates to the sixteenth century. Moore (1900:363) maintains that the burials associated with European artifacts were not intrusive, but "belonged to the period when the part of the mound in which they were was made." Widmer (1988:86-87) dates European contact at the site to the last half of the sixteenth century (ca. 1560).

Galt Island Burial Mound (8LL81)

The Galt Island Burial Mound is located in a mangrove swamp near the north end of Galt Island on Pine Island Sound. The mound is built primarily of sand, and measures about 100 by 120 feet in diameter at the base, which is fork-shaped, and about 6 1/2 feet in height. At one time the mound was much higher, but disturbance by collectors has reduced its size (Marquardt and Beriault 1988:9).
In 1952, the burial mound was recorded in a site survey by William Plowden. The FMSF lists Glades Plain, Fort Drum Incised, Safety Harbor Incised, and Belle Glade Plain ceramics collected from the site. On the island nearby is a shell midden complex previously recorded as 8LL27.

The site was visited in 1987 by William Marquardt, who observed pottery fragments with human bones in disturbed context. The pottery was classified to the Weeden Island, Safety Harbor, Glades III, and Glades IV cultural periods, which indicated at least intermittent use of the burial mound from A.D. 500 to A.D. 1600 (Marquardt and Beriault 1988:9). European glass and lapidary beads from the mound in a private collection include a Nueva Cadiz Plain bead, two barrel-shaped Gooseberry beads, two large Florida Cut Crystal beads, and many seed beads of opaque white, opaque turquoise blue, Cornaline d'Aleppo, and several shades of blue (Mitchem 1989b:Table 43).

Galt Island Mound was a Calusa burial mound used over a period of many centuries. The presence of the Nueva Cadiz bead suggests Spanish contact dating to 1500-1550, and the Florida Cut Crystal bead suggests a date of 1550-1600. The Cornaline d'Aleppo beads date from the late sixteenth century through the eighteenth century, and the barrel-shaped Gooseberry beads are probably a seventeenth- or eighteenth century type (Deagan 1987).
Horrss Island 5 (8CR41)

Horrss Island 5 was one of two sand burial mounds located on the east side of Horrs Island in an area known as Blue Hill (Hrdlicka 1922:23). Moore (1900:376-377) wrote that the burial mound, which had been disturbed severely by relic collectors, was about six feet in height. Stirling (1931:167) reported that the mound was 300 yards east of a large shell deposit identified as an Indian village site (8CR40). According to Stirling, the burial mound was seven feet in height and 35 feet in diameter, suggesting it was in better condition than reported by Moore.

In 1930, about 1/3 of the mound was excavated by Matthew Stirling and Lee Parrish, who discovered seven secondary burials all within three feet of the surface. None of the burials were complete, and the few artifacts which accompanied them included Indian pottery, perforated Arca shells, Busycon cups, an unidentified iron object with crude repoussé designs, and undescribed glass beads (Goggin 1949a). This material is in a collection at NMNH (#351566-351572).

Indian pottery in the NMNH collection includes fragments of Surfside Incised, limestone tempered ware, Glades Plain, and a Glades Plain rim lug (NMNH #351572). The pottery types were later in time than those reported from the nearby village site (Goggin 1949a:239-240). Goggin
(1960b:27) also identified one of the beads from the mound as a Florida Cut Crystal bead (NMNH #351570).

Horr Island 5 is a Calusa burial mound, and the presence of the Florida Cut Crystal bead suggests Spanish contact in the last half of the sixteenth century (Smith 1983). European artifacts from the mound in a private collection include undescribed glass beads, silver coin beads, rolled sheet-gold beads, and a thin sheet-silver tablet. Many of the glass beads in this collection are reportedly similar to those recovered from Cayo Pelau (8CH1) and Shell Creek site (8LL8), both of which have produced a variety of sixteenth-century bead types including Nueva Cadiz, faceted Chevron, amber, and Florida Cut Crystal beads (Allerton et al. 1984; Mitchem 1989b).

Horr Island 6 (8CR42)

This site is the other burial mound on Horrs Island, and was located about two miles from the house of Captain J.H. Horr. Hrdlicka (1922:22-24) described the mound as 60 feet in diameter, 12 feet in height, and truncated due to digging by relic collectors. The excavators reportedly had encountered burial remains and objects of European origin.

In 1931, the site was excavated by Stirling, who noted two stages of mound construction. First, a clay layer had been built at a point six feet above the mound base. Since this layer of clay was surrounded by postholes, which in some cases still held the decayed remains of wooden posts,
it probably had served as the floor of a temple structure. At some point in time the wooden structure was destroyed, and the mound then was enlarged by adding six feet of sand to the original substructure (Stirling 1933:3-4).

More than 250 burials were encountered both above and below the clay layer or temple floor. Though Stirling discovered a number of artifacts (NMNH #362387-362414), he failed to specify whether any of them accompanied burials. Indian artifacts included perforated shark teeth, shell tools, stone knives and projectile points, a copper disc, and pottery (Stirling 1933:4). Some of the pottery fragments were identified by Goggin (1949a:241) as Glades Plain and Biscayne Check Stamped.

A few European artifacts were found in the upper portion of the mound, but none were found below the clay floor. This suggests that the older section of the mound dates to the precontact period. European objects included "Spanish type" iron axes, undescribed metal beads, and undescribed glass beads. Goggin (1949a:240) also observed that the mound is probably the same site from which A.E. Douglass recovered glass beads, metal beads, and a copper disc (AMNH #D196-197), which according to a catalogue page in the Douglass collection were found in a sand mound at the east end of Horrs Island. In a letter (dated September 16, 1995) Lorann S.A. Pendleton, Scientific Assistant at AMNH,
writes that it is not certain if these artifacts are still in the museum collection.

Horrs Island 5 and 6 together are part of the HIS 17 (8CR217) mound and village complex, which is one of the largest Calusa sites reported south of Mound Key (McMichael 1982:113). Somewhere within this complex Moore collected some artifacts of stone and shell (NMAI #170888-170890). Though the artifact descriptions by Stirling are ambiguous, the types of Indian and European materials from the mound are similar to those from Horrs Island 5 (see previous discussion of 8CR41). This suggests that the European contact component at Horrs Island 6 also dates to the sixteenth century.

Kirkland Mound (8CR227)

The Kirkland Mound is located east of Gordon Pass about 1/2 mile inland from the coast. The FMSF formerly recorded the site as Gordon Pass Sand Mound (8CR57), but it now is designated as Kirkland Mound (8CR227). Hrdlicka (1922:20) described the site as a large, oblong sand mound from which local residents had removed human burials. The mound was 3.0-3.7 m in height, and had at least two strata, which included a brownish, greasy layer 1.8-2.1 m below the surface (Mitchem 1989b:291).

Mitchem (1989b:Table 45-46) has listed some of the many European artifacts from the mound which are now in private collections. Metal objects include a silver disc, a silver
cup with script engraved on the exterior, 20-30 silver coin beads, two rolled sheet-silver beads, a thin sheet-silver pendant, two small silver disc beads, two or three gold coin beads, a coin bead of tumbaga, and two copper fragments. Beads include a small Nueva Cadiz Plain bead; a faceted Chevron bead; a spheroid, dark purple bead; three Florida Cut Crystal beads; a spherical, green glass bead; two drawn opaque, turquoise-blue beads; a transparent, ultramarine-blue glass bead; an eye bead; Cornaline d'Aleppo beads; and seed beads.

Many of the beads in these collections date to the sixteenth century and later. The Nueva Cadiz, faceted Chevron, and purple spheroid glass beads all are diagnostic sixteenth-century types (Smith 1983). The spherical green glass bead probably also dates to the sixteenth century, since similar beads were found at Tatham Mound (8CI203). The Florida Cut Crystal beads date to 1550-1600, and the eye bead dates to 1575-1630 (Smith 1983). The drawn opaque turquoise-blue, transparent ultramarine-blue, and Cornaline d'Aleppo beads are found at sites dating from the late sixteenth- through the eighteenth century (Mitchem 1989b).

Indian pottery recovered from the mound includes Glades Tooled, Point Washington Incised, burnished Englewood Incised, St. Johns Check Stamped, a sand-tempered human-face adorno, Safety Harbor Incised, and a Safety Harbor Incised bottle neck decorated with herringbone and scroll design
(Mitchem 1989b:291). The combined presence of Englewood Incised pottery, Safety Harbor Incised pottery, and European artifacts, suggests the burial mound was used by the Calusa for a relatively long period of time. The diagnostic European beads provide evidence of Spanish contact beginning in the sixteenth century.

Monroe County

**Upper Matecumbe Key (8M017)**

This midden site was located at the edge of a mangrove swamp near the southeast end of Matecumbe Key. Prior to excavations by Goggin in 1944, much of the eastern portion of the midden was destroyed by a yacht basin development, and an unpaved road had been cut across the midden summit. The midden was composed of a mixture of shell, bones, and artifacts in a black organic soil, and originally measured 300 feet in length, 150 feet in maximum width, and four feet in height (Goggin and Summer 1949:29).

Excavations revealed that the refuse complex was fairly homogenous, with no natural stratigraphy or clearly defined features such as signs of dwellings, pits, or fireplaces. A large quantity of Indian pottery was recovered, including Glades Plain, Key Largo Incised, Matecumbe Incised, Opa Locka Incised, Dade Incised, Surfside Incised, Glades Tooled, Glades Red, St. Johns Plain, St. Johns Check Stamped, Dunns Creek Red, and Belle Glade Plain (Goggin 1949a; Goggin and Summer 1949).
The material evidence suggested a basic uniformity of culture within the site, yet with clearly defined, temporal variations. The uniformity of the culture through time was expressed by certain artifacts found in all levels of the mound, including Strombus hand hammers, Busycon picks, perforated Codakia shells, Strombus celts and celt hammers, Busycon cups, Cyprae spoons, and bone projectile points. Occupation of the site was nearly continuous from Glades II (A.D. 800-1200) into historic times (Goggin 1949a:97-98). The discovery at the site of a single majolica fragment of early-style Columbia Plain escudilla with an I-lug (YPM #122501), suggests Spanish contact dating to the first half of the sixteenth century (Boone 1984; Goggin 1968; Goggin and Summer 1949:96-98, Plate 1E).

Bradley Key (8M0122)

Bradley Key is a large island located about 1000 yards southwest of the Flamingo Ranger Station. An Indian burial site on the island has produced European artifacts which include copper coin beads, an iron blade, a Florida Cut Crystal bead, a petaloid silver pendant, and a thin silver tablet decorated with repoussé parallel ridges (Allerton et al. 1984:32). Spanish contact in the latter half of the sixteenth century is suggested by the presence of the Florida Cut Crystal bead (Smith 1983).
In the previous chapter it was suggested that nearly all European artifacts found at sixteenth-century contact sites came from shipwrecks. Since Spanish sailing routes wound almost like an elastic band around the entire Florida coast, the opportunities for shipwreck are indisputable. Bad weather, unseen hazards, poor navigation, inexperienced crews, and unseaworthy ships all were factors which produced an abundance of Spanish shipwrecks, and the enthusiasm with which the Indians salvaged wrecked ships is well known (Bandelier 1922; Bushnell 1981; Dickinson 1945; Fontaneda 1945; Solís de Merás 1964).

In order to provide additional support for this theoretical perspective, four different lines of evidence will be presented. First, European artifacts from Indian sites will be compared with artifacts from Spanish shipwrecks. These comparisons will reveal that European contact materials are similar in type and manufacture to those goods commonly carried aboard Spanish ships sailing to Spain. Second, areas of high shipwreck incidence will be compared with spatial distributions of contact sites.
Third, a challenge will be presented to the commonly held notion that glass beads from contact sites are always trade beads. Detailed analysis will disclose nontrade contexts of glass beads aboard Spanish ships sailing from the Indies. And fourth, it will be shown that the trading activities of sixteenth-century Spanish expeditions in Florida probably generated relatively little of the contact material found in Gulf coastal Indian sites.

Unfortunately, few wrecksites of homeward-bound Spanish ships can be dated with confidence to the sixteenth century, and fewer still have a provenience that can be linked definitively to New Spain. Despite the scarcity in data, the following shipwrecks will be used for comparative purposes: A Spanish ship wrecked near Dry Tortugas in 1622, and ships of the New Spain flota which wrecked off the Texas coast in 1554. Although artifacts from the Dry Tortugas wrecksite and the 1554 flota shipwrecks are similar and are typical of the goods present on merchant ships sailing to Spain, more reliance is placed on the Dry Tortugas shipwreck since its great depth insured far better preservation.

Material Comparisons

The Dry Tortugas wrecksite is located in the Gulf of Mexico about 70 miles southwest of Key West. Resting at a depth of 400 m (1300 feet), the shipwreck was excavated by Seahawk Deep Ocean Technology in 1990-1991. Though its
identity is not absolutely certain, the wreck is possibly one of the small merchant ships lost in the Tierra Firme fleet disaster of 1622. The artifacts are similar to those recovered from the Nuestra Señora de Atocha, almiranta of the 1622 fleet, and the coins and other diagnostic metal artifacts date to 1622 or earlier. The ship also may have been sailing from New Spain, since some of the cargo is Mexican, and most of the silver coins were minted in Mexico City (Jenette Flow, personal communication 1995).

Although the Dry Tortugas shipwreck postdates the study period by a few decades, the site still has great value for purposes of comparison. The ship was definitely Spanish, as its similarity to the Atocha confirms, and it was heading from the Indies to Spain, probably in convoy with either the Tierra Firme or New Spain flotas. The location of the shipwreck and its type of cargo confirm these suppositions. The Dry Tortugas was an area of heavy traffic for Spanish ships returning from the Indies, but was nowhere near the route of Indies bound ships sailing from Spain (Horsfall 1948; Romans 1962). The vessel also was carrying bullion in the form of silver coins and gold bars, illegal for a ship to carry from Spain to America (Hamilton 1932; Haring 1964:64; Pares 1963:133-134).

The following description of shipwreck artifacts has been obtained primarily from the site report of the Dry Tortugas excavations (Seahawk Deep Ocean Technology 1993).
Excavation of the Dry Tortugas shipwreck produced an assortment of glass beads, some in fragments. These included seven faceted Chevron beads; a drawn, translucent pale-blue bead with red and white stripes; and 45 seed beads (many faceted) of dark blue, turquoise, brown, red, garnet, cobalt, and black. The faceted Chevrons are four-layered except for a very large (26 mm diameter) five-layered bead. Faceted Chevrons of the sixteenth century usually are seven-layered, those of the seventeenth century are often five-layered and tumbled, and Chevron beads of the eighteenth century generally are four-layered (Deagan 1987; Hudson and Smith 1990). The wrecksite of the Atocha also yielded two or three glass beads (Corey Malcom, personal communication 1995).

European glass beads have been recovered from many Indian sites in the study area; the present study records more than 70 of those sites. Diagnostic sixteenth-century glass beads include small and large Nueva Cadiz beads, olive-shaped beads with stripes, translucent purple beads, wire-wound seed beads, and faceted Chevron beads (Goggin 1960b; Mitchem 1989b; Smith 1983). Seed beads, the most common glass bead found at contact sites, also were present in the greatest numbers on the Dry Tortugas shipwreck. In the following section, more will be said about the presence of glass beads on Spanish shipwrecks, and the use of glass beads in objects of European jewelry.
Other items of jewelry from the Dry Tortugas shipwreck included 40 Florida Cut Crystal beads and seven bead fragments. Corey Malcom, Director of Archaeology at the Mel Fisher Maritime Heritage Society, writes in a letter (dated October 20, 1995) that the wrecksite of the Santa Margarita, one of the treasure galleons lost in the 1622 Tierra Firme fleet, produced six Florida Cut Crystal beads. These apparently were employed as buttons or decorative pendants, since a bronze wire ran through each of the beads, and half of them still retained a looped wire at one opening and a decorative cap at the other. In a collection at the Bermuda Maritime Museum, the present author also has seen two small, Florida Cut Crystal beads which were recovered from the San Antonio, a Spanish galleon that wrecked in Bermuda in 1621.

One of the best known types of lapidary bead, Florida Cut Crystal beads are made of crystalline quartz or rock crystal, and in the past have been reported almost exclusively from European contact sites in Florida (Bushnell 1937:34; Deagan 1987:180). Since the lapidary technique used to make Florida Cut Crystal beads was fairly expensive, Goggin (1960b:28) felt that these were not ordinary trade items, but rather may have been the personal possessions of Spaniards obtained by Indians as special trade objects or through shipwreck salvage. At least 15 contact sites in the study area have yielded this variety of lapidary bead. The Mound Key shell middens (8LL2) and burial mound (8LL3) have
produced four strings of Florida Cut Crystal beads as well as a string of smooth, rock crystal beads.

Mineral rock crystal was believed to have amuletic properties, among them protection against the evil eye, and commonly was used for paternóster beads, which developed out of the late 15th century into the modern rosary. Venice was one of the great centers of crystal working in the Middle Ages and Renaissance, and specialized in paternóster beads of glass and crystal (British Museum 1976:219; Lightbrown 1992:348). Though Florida Cut Crystal beads may have been manufactured in Venice, another possible origin is Mexico.

In pre-columbian Mexico, Mixtec craftsmen excelled in the use of rock crystal, especially in the manufacture of large, cylindrical ear discs (Stierlin 1982:Plate 103). A late Postclassic necklace found in Southwest Chiapas and illustrated by Winning (1968:Plate 357) includes 37 rock crystal beads, some similar in form (though unfaceted) to certain types of Florida Cut Crystal bead. Moreover, European lapidarists, who at a very early date came to Mexico after the Spanish conquest, were specialists in the cutting of rock crystal and precious stones (Toussaint 1967:67). Mexican Indians also became expert in the art of European craftsmanship, which included lapidary work (Diaz del Castillo 1938:546).

The tradition of rock crystal manufacture among the Mexican Indians, combined with the presence of European and
Indian lapidarists, suggests that Florida Cut Crystal beads probably were made in Mexico. Still another possible source is Peru (Gallo 1967). The large number of these beads (possibly a shipment) found on the Dry Tortugas wrecksite could support either a Mexican or Peruvian origin. Though Florida Cut Crystal beads have been dated to around 1550-1600 (Deagan 1987; Smith 1983), their recovery from the Dry Tortugas, Santa Margarita, and San Antonio wrecksites, which all date to 1621-1622, indicates a slightly revised date range of 1550-1625.

The Dry Tortugas wreck also produced 40 clay beads and bead fragments. About half the clay beads were undecorated and cylinder-shaped, and most of the others were decorated and barrel-shaped. The surface of a round decorated bead was covered with gold leaf, an artistic technique employed by the Indians of South and Central America (Davis and Pack 1963:32-33; Oved 1953:83). Bernal Diaz (1939) has written that gold-gilt clay beads were among the goods given to Cortés by Montezuma. This variety of bead, known as Seven Oaks Gilded, has been reported from several contact sites in Florida (Goggin 1960b:32; Mitchem 1989b).

Copper artifacts from the Dry Tortugas wrecksite included remnants of a large cauldron and a ladle fragment. Contact sites have yielded copper discs, gorgets, ornaments and pendants, cones, bells, beads, and coins. Though most of these objects were crafted by the Indians from European
sources of copper, some of the items made of true copper possibly were fashioned from native sources of metal. Many of the metal artifacts from Indian sites described as copper actually may be brass or bronze (Moore 1903b).

The Dry Tortugas wreck produced brass objects including three astrolabes, several straight pins, and a religious medallion. Brass artifacts from the 1554 flota wrecks included three astrolabes, two navigational divider fragments, 25 straight pins, a nesting cup weight, a set screw, a wire link, fittings, buckles, rings, cylinders, a chain mail fragment, and other unidentified fragments (Arnold and Weddle 1978). Contact sites have yielded brass artifacts including beads, discs, bells, buttons, buckles, ornaments and pendants, crucifixes, bracelets, nesting cup weights, plummets, chain mail fragments, ceremonial tablets, and unidentified fragments. Some of these objects are probably not brass but bronze.

Gold artifacts from the Dry Tortugas shipwreck included 27 bars, 12 bits, seven jewelry stems, two coins, a chain 12 m in length, and a finger ring set with a single emerald. The gold chain is similar to small gold-link chains found on the Atocha. Wrecksites of the 1554 flota produced a gold bar, a gold ingot, and a small gold crucifix (Arnold and Weddle 1978). Gold artifacts have been reported from more than 20 contact sites in the study area. These include gold
coins, beads, discs, rings, ornaments and pendants, buttons, ceremonial tablets, rolled cones, and figurines.

Silver artifacts from the Dry Tortugas wrecksite include a fork, a crude disc (8.9 cm in diameter), eight buttons, and more than 1400 coins. The silver disc had no markings and was found lodged between two pieces of wood, suggesting it may have been contraband (Lyon and Purdy 1982:93-94). The silver coins, known as "cob" coins due to their irregular outline (Kelemen 1969:319), had dates which ranged from around 1609 to 1622, with a single coin dated to around 1540. All the identifiable coins were minted in the Indies: 63% in Mexico City, 34% at Potosí in Peru, and the remainder at Bogotá or origin unknown. Silver objects from the 1554 flota wrecks included 90 discs (ingots), a probable thimble, and more than 2700 coins (Arnold and Weddle 1978).

More than 35 contact sites in the study area have produced silver artifacts, which include beads, discs, ornaments and pendants, ceremonial tablets, buttons, crosses and crucifixes, chains, bells, cups, Spanish amulets, and coins. A greater number of Indian sites have yielded silver artifacts than gold, and far more objects of silver than gold have been reported. This imbalance is probably due to the higher value ratio of silver to gold in post-1540 Spanish treasure shipments (Haring 1915:447).

Iron artifacts from the Dry Tortugas shipwreck included spikes, ship fittings, and cannonballs. Shipwrecks of the
1554 flota also produced iron objects including cannonballs, chains, ship fittings, barrel hoops, spikes, nails, pins, rings, anchor parts, straps, sword or knife blade fragments, and many varieties of tools (Arnold and Weddle 1978). More than 30 contact sites in the study area have yielded iron artifacts, which include beads, celts, chisels, spikes, nails, adzes, sword or knife fragments, axheads, barrel hoop fragments, keys, scissors, and various weapons and tools.

Several intact majolica vessels and many fragments were recovered from the Dry Tortugas wrecksite. Majolica types included Columbia Plain, Santo Domingo Blue on White, Santa Elena Mottled Blue on White, Andalusia Polychrome, Sevilla Blue on White, Sevilla Blue on Blue, and Ichtucknee Blue on White. The 1554 flota wrecksites also yielded fragments of majolica including Cologne ware, Sevilla Blue on White, and unidentified ware. Majolica has been reported from more than 15 contact sites in the study area.

Spanish Olive Jar (all Middle Style) from the Dry Tortugas shipwreck includes 76 complete vessels, ten complete vessels in fragments, 123 rims, and several thousand fragments. One of the 1554 flota wrecksites produced more than 100 Spanish Olive Jar sherds, many of them Early Style (Arnold and Weddle 1978). Hundreds of archaeological sites in the study area have yielded Spanish Olive Jar fragments. Most of the Spanish Olive Jar found at
coastal sites is the trash left behind by Cuban fishermen (Covington 1959; Romans 1962), or is shipwreck debris.

The Dry Tortugas shipwreck yielded 64 pieces of cut tortoise shell, a carved tortoise-shell comb and case, and several comb fragments. The comb, 12.4 cm in length and 6 cm in width, has on each side two grades of teeth and is carved to fit the case. The case was cut from a single piece of tortoise shell, and has a decorative line incised on both sides. According to Edward "Teddy" Tucker, an experienced shipwreck diver and expert on maritime history, tortoise shell combs and cut tortoise shell have been found on Spanish shipwreck sites in Bermuda. Both two-sided combs, such as those from the Dry Tortugas wrecksite, and one-sided combs, similar to those found at Parrish Mounds 1 (8MA1) and 2 (8MA2), have been recovered from shipwrecks in Bermuda (Teddy Tucker, personal communication 1995).

The Nuevo Constante, a New Spain flota ship which after sailing from Vera Cruz wrecked off the Louisiana coast in 1766, listed in its manifest four boxes of tortoise shell all consigned to a single merchant. Excavation of the wrecksite produced more than 11 pounds of cut tortoise shell, which in its raw state "would have been fashioned by European artisans into spectacles, combs, and other adornment items" (Pearson et al. 1981:34).

At least six Indian sites in Florida have produced tortoise shell combs or comb fragments. With the exception
of two sites outside the study area, all of the combs have been found in Manatee County (Goggin 1949a; Moore 1895, 1910; Tallant 1935; Willey 1949). The only known, decorated comb, which is illustrated by Moore (1910: Figure 15), has a spiral decoration probably of non-Florida native design (see discussion below) that possibly may be identified with the spiral making art of the South Sea Islands (Reichard 1933).

In the preceding chapter it was noted in the discussion of the Mobley Scrub site (8MA58) that researchers have been divided over whether tortoise shell combs were made by Europeans or Indians. In view of this uncertainty, and since they are a unique artifact type, tortoise shell combs will be examined briefly as the conclusion to this section.

One of the most widely distributed of all art materials, tortoise shell is made from the plates of the carapaces of three species of large marine turtle: The green turtle (*chelone mydas*), loggerhead (*thalassochelys caretta*), and hawksbill (*chelone imbricata*). Because of its color, the green turtle provides the least desirable shell, the loggerhead is slightly more favorable, but the most highly regarded shell comes from the hawksbill, which is the source of the handsomely mottled, commercial tortoise shell (Ritchie 1974; Schafer 1967:215).

The use of tortoise shell for making combs, always its principal use, was an importation from the East. The peoples of southeast Asia, the south Pacific, and Indian
Ocean manufactured a vast assortment of tortoise shell objects (Guiart 1963; Reichard 1933; Villegas 1983), which were among the exotic goods sent to the Philippines and transshipped to Mexico in the early years of the Manila trade. By the late seventeenth century, large quantities of tortoise shell combs and other tortoise shell products were being exported from Asia (Becker 1980:36-38; Crossman 1972; Ritchie 1974). A single galleon sailing from Manila often carried thousands of combs (Schurz 1939:33) and other exotic types of cargo, such as an inlaid tortoise-shell box that has been illustrated by Lyon (1990:13).

Although this demonstrates conclusively that tortoise shell combs came from Asia, another important source of tortoise shell, and perhaps a more likely origin of combs found in Florida Indian sites, was Mexico. Mexican tortoise shell comes from the Gulf of Mexico, particularly from Vera Cruz, Campeche, and the Yucatán peninsula. It is well known that the Maya, Toltec, and Aztec all used tortoise shell; for example, Bernal Diaz (1939:44) mentions that the Aztecs made shields and ornaments from this material. One of the early treasure shipments sent from Mexico by Cortés included objects of tortoise shell (Anderson 1941:47-48).

While there is very little, historical documentation of the art of tortoise shell carving in colonial Mexico, objects decorated with shell are abundant (Toussaint 1967:380). An example is a collection at the Chapultepec
Museo Nacional de Historia, which includes a number of carved tortoise-shell combs made in the eighteenth- and nineteenth centuries (Davis and Pack 1963:142). Though the historical record is uncertain, based on the use of tortoise shell in pre columbian Mexico, the master craftsmanship of the Mexican Indians, and the recoveries from Spanish shipwrecks, it is possible that the manufacture of tortoise shell combs began fairly early in postconquest Mexico.

**Interpretations**

Although most researchers customarily identify European contact materials with Spanish expeditions, an often-stated exception to this interpretation are objects of silver and gold. This follows from the assumption that the Spaniards had little desire to give or trade away to the Indians precious metals, since in their quest to possess gold and silver the Spaniards were risking their very lives. Possibly the only recorded occasion of the Spanish giving away precious metal was in present-day South Carolina, where de Soto gave an Indian chief a feather plume adorned with silver (Bourne 1904:90).

This predominating approach to Spanish-Indian contact presents some problems. First of all, the spatial distribution of sixteenth-century contact sites (Figure 5) does not so much reflect the route of Spanish explorers as it does areas of high shipwreck incidence identified by
Figure 5
Spatial Distribution of Sixteenth-Century Contact Sites
Table 1. Sixteenth-Century Contact Sites by County

**Baldwin County (Alabama)**
- Bear Point Mound (1BA1)

**Santa Rosa County**
- Navy Liveoak Reservation Cemetery Site (8SR36)

**Okaloosa County**
- Holly Branch Site (8OK35)

**Walton County**
- Hogtown Bayou Cemetery Site (8WL9)
- Point Washington Cemetery Site (8WL16)
- Bunker Cut-Off Mound (8WL21)
- Alaqua Bayou Site (8WL30)
- Four Mile Point 1 (8WL38)

**Gulf County**
- Chipola Cut-Off (8GU5)

**Wakulla County**
- Marsh Island (8WA1)
- St. Marks Wildlife Refuge Cemetery Site (8WA15)

**Citrus County**
- Ruth Smith Mound (8CI200)
- Tatham Mound (8CI203)

**Hernando County**
- Weeki Wachee Mound (8HE12)

**Pinellas County**
- Safety Harbor Site (8PI2)
- Johns Pass Mound (8PI4)
Table 1—continued

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<thead>
<tr>
<th>County</th>
<th>Site Name</th>
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<tr>
<td></td>
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<tr>
<td>Sarasota County</td>
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<tr>
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<td>Mound Key (8LL2)</td>
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</table>
Table 1--continued

| Collier County               |                        |                              |                                  |                                |
| Horrs Island 5 (8CR41)       |                        |                              |                                  |                                |
| Horrs Island 6 (8CR42)       |                        |                              |                                  |                                |
| Kirkland Mound (8CR227)      |                        |                              |                                  |                                |
| Monroe County                |                        |                              |                                  |                                |
| Upper Matecumbe Key (8MO17)  |                        |                              |                                  |                                |
| Bradley Key (8MO122)         |                        |                              |                                  |                                |

Pedro Menéndez (Connor 1925). Menéndez reported that many ships were lost on the Florida coast from Tocobaga (the Tampa Bay region) to Los Mártires (the Florida Keys), a region of high Indian population (Swanton 1946:12) and precisely the area where most contact sites are distributed along the Gulf coast. Though it is important to consider the biases presented by site locations near major population centers (Purdy 1973) and the existence of Indian trade networks, the fact that the spatial distributions of these sites are remarkably similar to areas of high shipwreck frequency can not be ignored.
A second difficulty with this interpretation is that the spatial distribution of sites yielding silver and gold (Figure 6), materials most would agree came from shipwrecks, resembles the spatial distribution of sites producing glass beads (Figure 7), an artifact type which nearly all assume came from Spanish expeditions. The major difference between the two is that more sites have yielded glass beads than those that have produced artifacts of silver and gold.

Since it is well known that glass beads frequently were given to the Indians as gifts or in trade, they almost always are referred to as trade items when found in archaeological contexts (Goggin 1960b; Griffin and Smith 1948; Karklins 1967; Milanich and Hudson 1993; Ramenofsky 1987; Smith 1987; Smith and Good 1982; Willey 1949). Yet this assumption, and its associated terminology, may obscure how beads and many other European goods often were obtained by Indians in sixteenth century Florida (see discussion below).

A third problem with this approach is that European contact materials often are divided into two different source-categories when such a division actually may not exist. Providing a clear example of this is Weeki Wachee Mound (8HE12), a Safety Harbor burial site that produced 127 glass beads, 151 silver beads, and an amber bead (see discussion in previous chapter). Mitchem (1989c:326-328) suggests that the glass beads came from one or more Spanish
Figure 6
Spatial Distribution of Sites Yielding Artifacts of Silver and Gold
Table 2. Sites Yielding Artifacts of Silver and Gold (By County)

**Baldwin County (Alabama)**
- Bear Point Mound (1BA1)

**Walton County**
- Alaqua Bayou (8WL30)

**Wakulla County**
- St. Marks Wildlife Refuge Cemetery Site (8WA15)

**Citrus County**
- Ruth Smith Mound (8CI200)
- Tatham Mound (8CI203)

**Hernando County**
- Weeki Wachee Mound (8HE12)
- Mound near Istachatta

**Pinellas County**
- Safety Harbor Site (8PI2)
- Johns Pass Mound (8PI4)
- Bayview/Seven Oaks Site (8PI7)
- Maximo Point Site (8PI19 and 8PI31)

**Hillsborough County**
- Thomas Mound (8HI1)
- Picnic Mound (8HI3)
- Buck Island (8HI6)

**Manatee County**
- Parrish Mound 1 (8MA1)
- Palma Sola 3 Site (8MA10)
Table 2—continued

<table>
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<td><strong>Charlotte County</strong></td>
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<td>Kissimmee Billy Site</td>
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expeditions, and that the material in the silver beads possibly came from shipwrecks. An underlying assumption is that glass beads probably did not come from ships that wrecked in Florida (Milanich and Hudson 1993:108-109; Mitchem 1989b, 1989c; Mitchem et al 1985).

In the same way Fairbanks (1968:14) links glass beads exclusively with Spanish expeditions when he writes that Florida Cut Crystal beads "are not found on the same sites with Nueva Cadiz Plain and Nueva Cadiz Twisted beads." This statement implies that Nueva Cadiz beads, which are believed to date to around 1500-1550, were introduced by different Spanish expeditions than the later Florida Cut Crystal beads, which date to around 1550-1600. It is important to note, however, that at least seven contact sites in the study area alone have produced both types of beads.

This interpretative view is exemplified by Mitchem (1989b:510) who, in arguing a connection between European artifacts from Tatham Mound (8CT203) and the de Soto expedition, states that "some of the Tatham material,
Figure 7
Spatial Distribution of Sites Yielding Glass Beads
Table 3. Sites Yielding Glass Beads (By County)

Baldwin County (Alabama)
Bear Point Mound (1BA1)

Santa Rosa County
Navy Liveoak Reservation Cemetery Site (8SR36)

Okaloosa County
Holly Branch Site (8OK35)

Walton County
Hogtown Bayou Cemetery Site (8WL9)
Point Washington Cemetery Site (8WL16)

Gulf County
Chipola Cut-Off (8GU5)

Wakulla County
Marsh Island Mound (8WA1)
St. Marks Wildlife Refuge Cemetery Site (8WA15)

Citrus County
Chassahowitzka Bay Mound (8CI16)
Ruth Smith Mound (8CI200)
Tatham Mound (8CI203)

Hernando County
Weeki Wachee Mound (8HE12)
Anderson's Mound (8HE14)

Pinellas County
Safety Harbor Site (8PI2)
Johns Pass Mound (8PI4)
Bayview/Seven Oaks Site (8PI7)
Table 3--continued

Maximo Point Site (8PI19 and 8PI31)
Narváez Midden (8PI54)
Pinellas Point Site (8PI61)

**Hillsborough County**

Thomas Mound (8HI1)
Picnic Mound (8HI3)
Jones Mound (8HI4)
Buck Island (8HI6)
Branch Mound (8HI10)
Grantham Mound (8HI14)
Mt. Enon Burial Mound (8HI24)
Sellner Shell Middens (8HI30)
Gardensville Mound (8HI37)
Site near Lake Thonotosassa

**Manatee County**

Parrish Mound 1 (8MA1)
Parrish Mound 2 (8MA2)
Parrish Mound 3 (8MA3)
Palma Sola 3 Site (8MA10)
Glazier Mound (8MA32)
Musgrave Mound (8MA34)
Myakka River #1 Mound (8MA57)
Mobley Scrub (8MA58)
Albritton Field Mound (8MA61)
Duette 1 Mound (8MA67)
Table 3--continued

Stanley Mound (8MA127)
Rye Bridge Mound (8MA715)
Cemetery East of Myakka
Rau's Mound
Site of Uncertain Location
Site(s) in the Myakka Area

Sarasota County

True Site (8S05)
Crowley Homestead Mound (8S072)
Deer Prairie Creek Mound/Blackburn Site (8S0403)

Charlotte County

Cayo Pelau (8CH1)
Cedar Point Shell Heap (8CH8)
Unnamed Shell Midden (8CH20)
A&W Burial Mound

Lee County

Mound Key (8LL2)
Mound Key Burial Mound (8LL3)
Punta Rassa (8LL7)
Shell Creek Site (8LL8)
Hooker Key (8LL30)
Pineland Burial Mound (8LL36)
Indian Field Site (8LL39)
Pine Island 8 Burial Mound (8LL40)
Galt Island Burial Mound (8LL81)
especially the silver and gold, may have been salvaged from ships transporting it from South America. However, a shipwreck origin for the glass beads seems unlikely, because these materials would probably not be carried in quantity aboard a ship traveling toward Spain." Griffin and Smith (1948:30) echo this opinion when they write that European artifacts from Goodnow Mound (8HG4) "suggest trade rather than salvage from shipwreck; this is particularly true of the quantities of small glass beads. The silver may, however, represent salvaged material."

All of these statements lead to an important question: Is it correct to assume that glass beads were not aboard Spanish ships sailing to Europe? The answer to this is critical since much emphasis is placed on glass beads for
dating and tracing the routes taken by Spanish expeditions. It is well-known that glass beads were shipped in volume from Spain and other European countries to the New World, yet what has received little attention is the possibility that glass beads were on ships heading in the opposite direction. If glass beads commonly were aboard Spanish ships sailing from the New World to Europe, then shipwreck materials salvaged by Florida Indians would have included glass beads.

The Dry Tortugas shipwreck examined in the previous section yielded glass beads and lapidary beads, yet was this ship an exceptional one? Are there other Spanish vessels which clearly were sailing to Spain and whose wrecksites have produced glass beads? The answer is the Dry Tortugas shipwreck was not an exceptional case, and nearly all Spanish ships heading to Europe were carrying glass beads. In support of this is a letter (dated January 4, 1995) from Robert Marx, who writes that glass beads almost always are found on the wrecksites of ships which were returning from the New World to Spain. Marx notes that one such ship, the Nuestra Señora de Maravillas, which wrecked on the Little Bahama Bank in 1656, yielded a number of blue and green glass beads.

Due to its treacherous coral reefs, the island of Bermuda was the final resting place of many Spanish sailing ships. Since Spanish ships that wrecked off Bermuda were
sailing from the Americas to Europe, their cargos would have been the same as that carried aboard Spanish ships that wrecked on the Florida coast. In Bermuda, glass beads have been found on all early Spanish shipwreck sites, several of which date to the sixteenth century. The *San Pedro*, a Spanish galleon that sank off Bermuda in 1595, yielded many blue, cylindrical-shaped glass beads, and also hollow gold beads, coral beads, and ivory beads (Teddy Tucker, personal communication 1995). An unidentified Spanish or Portuguese ship that wrecked off Bermuda in the 1580s has yielded many drawn, opaque (cylindrical-shaped) blue glass beads, some of which are in private collections seen by the present author.

Bermudian shipwrecks have produced an interesting variety of glass beads. Nueva Cadiz beads, one of the most important and widely recognized glass beads of the sixteenth century, have been recovered from a number of Spanish shipwrecks in Bermuda. Nearly 800 glass beads, including several varieties of Nueva Cadiz, were recovered from the wrecksite of the *San Antonio*, a Spanish galleon that sank off Bermuda in 1621 (Teddy Tucker, personal communication 1995). The recovery of Nueva Cadiz beads from the *San Antonio* and several other early- to mid-seventeenth century Spanish shipwrecks may revise slightly the strict sixteenth-century dating of these beads (Deagan 1987; Smith 1983) to include at least the early seventeenth century.
At the Bermuda Maritime Museum, there is a small collection of beads from the San Antonio. These include a large faceted (seven-layered) Chevron bead; six drawn, opaque turquoise (Ichtucknee) blue beads; three small, donut-shaped amber glass beads; a faceted, amber glass bead; five large, spherical true-amber beads; four faceted steatite (or soapstone) beads; five spherical wooden beads; four spherical beads of bone or ivory; nine tube beads of red coral; two small, Florida Cut Crystal beads; two long, translucent, colorless glass beads; three small, barrel-shaped colorless Gooseberry beads; eight olive-shaped, yellow glass beads; two spiral-fluted barrel-shaped beads of green glass; and 24 spherical opaque, blue glass beads.

Glass beads found on the wrecksites of returning Spanish ships most likely were not intended for trade, since the ships were sailing in the wrong direction for the beads to be used in the Indian or Asian markets. Probably a better explanation for the presence of glass beads aboard homeward-bound Spanish ships is that the beads were worn as jewelry by passengers or crew, or were stowed below decks as personal cargo. This helps to explain why glass beads (including a faceted Chevron) with an assortment of other jewelry items were recovered from the Spanish Armada ships Girona and La Trinidad Valencera which wrecked off the Irish coast in 1588 (Archaeology Ireland 1990; Sténuit 1973).
The use of glass beads as jewelry in the Middle Ages and Renaissance is a subject that has received little research attention, though it is widely known that through the centuries glass beads have been worn by many different peoples and cultures (British Museum 1976; Bury 1982; Dubin 1987; Tait 1991). In a letter (dated January 25, 1995) L.E. Lunn, a curator at the British Museum, Department of Medieval and Later Antiquities, writes that glass beads commonly were worn as part of personal jewelry in the Middle Ages and Renaissance. Jutta-Annette Bruhn, Associate Curator of European Collections at Corning Museum of Glass, also writes in a letter (dated February 22, 1995) that in the Renaissance glass beads were employed in a variety of jewelry forms, which included necklaces, rosaries, and elaborate beaded purses and head dresses.

In the late Middle Ages, jewelry was worn sparingly by both men and women. Then beginning in the fifteenth century and continuing throughout the Renaissance, the European use of jewelry became far more lavish and unrestrained, to the point where balance and good taste often were sacrificed (Oved 1953:95; Walters Art Gallery, Baltimore 1980). The "Spanish fashion," which prevailed from around 1540 to 1630, featured magnificent chains, necklaces, and pendants which combined the traditional Spanish taste towards rich use of color with jewelry forms from the Italian Renaissance.
In the sixteenth century, articles of glass jewelry, including chains, necklaces, beads, dress jewels, and earrings, were worn frequently by both commoners and royalty. Necklaces often consisted of glass beads or pearls, or were set by semi-precious stones (Steingräber 1957:83). In 1540, Katherine Howard was given a double string of beads which included glass beads (Debrett's Peerage Limited 1980:34). Wealthy women in Mexico wore as part of their elaborate attire strings of glass and coral beads (Benitez 1946:52).

Glass beads often were sewn onto clothing, and were one of the more common elements used for paternosters and rosaries (Coles and Budwig 1990; Dubin 1987:84; Lightbrown 1992). Ward et al. (1981:Plate 155) illustrate a fifteenth-century oil painting of a jeweler's shop which depicts a necklace of colored glass beads (Smith 1908:156). The production of glass chains was also a regular part of the glass-maker's craft, and several of a large collection of such chains, now in the Kunsthistorisches Museum, Vienna, are illustrated by Debrett's Peerage Limited (1980-1981:Cat. 57).

Gallo (1959:Plate CXVI-CXVIII) has illustrated the use of glass beads (Nueva Cadiz and faceted Chevron) and coral beads with gold and silver necklaces and bracelets, which date to the early Spanish-colonial period in the Andes.
region. Ross (1952) illustrates a sixteenth century necklace from Oaxaca in Mexico which incorporates glass beads with three silver crosses. In the Philippines, sixteenth-century Spanish explorers observed that wealthy Filipinos wore lavish jewelry which included necklaces of gold beads and glass beads, a combination employed by many different cultures for over two thousand years (Dubin 1987:239; Tait 1991; Villegas 1983:38).

In the Middle Ages and Renaissance, jewelry was worn not only for ornament and status, but also for what was believed to be its many 'virtues', which included the power to protect, improve health, and increase mental power. It was thought that celestial rays, which were classified according to relationships in color, penetrated gems and other objects of jewelry, which then transmuted through the air cosmic influences which benefitted the wearer. Since popular thought drew no sharp distinctions between religion, natural sciences, and magic, the belief in the magical virtues of gems, metals and other materials played a real part in everyday life (Debrett's Peerage Limited 1980-1981; Evans 1922; Gregorietti 1969; Kaske and Clark 1989; Oman 1930).

Emeralds probably were considered to have the best all-around amuletic properties, which included the power to correct bad eyesight, increase riches and fame, staunch bleeding, cure dysentery, repel demons, and strengthen the
memory. Sapphires, always a symbol of heavenly reward and good faith, were believed to dispel envy, detect fraud and witchcraft, cure diseases of the skin, prevent poverty and treachery, promote chastity, and make its wearer beloved of God and man. Since the significance of individual stones often changed, many had properties in common. For example, emerald, sapphire, topaz, and ruby all were considered potent against plague and poison (Bradford 1953; Bury 1982; Evans 1922; Kaske and Clark 1989; Lightbrown 1992; Walters Art Gallery, Baltimore 1980).

By virtue of its association with the planet Mercury, and since color was the primary element in talismanic power, glass was considered to have the same amuletic qualities as precious gems. In terms of amuletic strength, this meant that glass beads were just as valued as gems since the same cosmic transmutation took place in both materials. Glass beads which were green, a color symbolic of life and regenerative power, had the same talismanic properties associated with the emerald. Glass beads of blue, a color symbolic of the Virgin's robe, possessed those virtues connected with the sky-blue sapphire (Kaske and Clark 1989; Lightbrown 1992:20; Murdoch 1991; Villegas 1983).

To summarize what has been presented so far in this section: The theoretical position that associates most European contact materials with Spanish expeditions may fail to consider the spatial distributions of contact sites and
their relation to high-frequency shipwreck areas. A basic tenet in this theory is that glass beads from contact sites must have been acquired either through direct or indirect trade with Spanish explorers. Hopefully the present study has shown that there is an alternative explanation. Glass beads, valued for their appearance, display of status, and amuletic properties, commonly were worn by Europeans as part of jewelry, which during the Renaissance was worn to excess. This suggests that glass beads were among the many objects obtained from Spanish shipwrecks by Florida Indians.

The approach in this study to European contact, however, does not ignore the probability that certain Spanish expeditions were the source of at least some of the European artifacts found at sixteenth-century contact sites. Without question some of the Spanish expeditions left behind, voluntarily or not, objects or materials which ended up in the archaeological record. It also is recognized that occasional undocumented contacts with Spaniards resulted in the acquisition of some European goods by Florida Indians.

Yet what does the historical record reveal concerning the Spaniards trading goods to Florida Gulf coast Indians in the sixteenth century? The first recorded expedition to the Gulf coast was that of Juan Ponce in 1513. The expedition landed near San Carlos Bay, and though relations between Spaniard and Indian were mostly strained, it is possible a small amount of trade was conducted. The Indians gave the
Spaniards animal skins and 'guanin' (low-grade gold), but it is uncertain whether the Spaniards traded anything in return (Davis 1935:20; Peck 1992). Three years later, Diego Miruello sailed to an unknown point on the Florida coast where he obtained from the Indians "gold" in return for items of glass and iron (Barcia 1951:3; Weddle 1985:187).

Historical accounts of the next three expeditions reported no Spanish-Indian trade. The Córdova expedition of 1517 landed inside a bay, probably near Charlotte Harbor, yet Indian hostility prevented any trade (Diaz del Castillo 1938). In 1519, the Alvarez expedition sailed to the Northwest Florida coast, then headed to Cape Florida and doubled back along the coast. There is no surviving documentation of any trade by Alvarez (Lowery 1959a; Weddle 1985). The second expedition of Juan Ponce, which landed on the Florida coast in 1521, was unable to conduct any trade since swift Indian attacks forced the abandonment of the colonization attempt (Davis 1935; Gannon 1965).

In 1528, the Narváez expedition landed on the Florida coast near Tampa Bay. No trade is mentioned between the Spaniards and lone group of natives discovered in the area, hardly surprising considering the atrocities committed against the Indians by Narváez. From Tampa Bay Narváez marched north along the coast, encountering no Indians until reaching the Withlacoochee River. Here again relations with the Indians were hostile, though Narváez presented an Indian
chief with "beads and little bells and other trinkets" in exchange for a hide (Bandelier 1922:22). Proceeding further north, the Spaniards engaged in continual battles with the Indians until setting sail for Mexico. A second incident of trade was reported at Pensacola Bay where the fleeing Spaniards paused briefly to trade some "trinkets" with the Indians (Bandelier 1922; Weddle 1985).

The Hernando de Soto expedition landed in Tampa Bay in 1539. Warfare with the Indians began almost immediately, and rarely ceased until more than four years later when the surviving expedition members escaped to Mexico. In scouting operations, de Soto found Juan Ortiz, a Spaniard left behind by one of the ships looking for Narváez and at the time held captive by the Mocoso Indians. In gratitude for the release of Ortiz, de Soto presented the Mocoso chief with a shirt and some other articles of clothing. According to the four primary de Soto accounts, this was the only incident of trade between de Soto and the Florida Indians from the time the Spaniards came ashore at Tampa Bay, until departing from Florida the following year (Bourne 1904; Milanich 1990; Milanich and Hudson 1993; Smith 1866).

In his dealings with the Florida Indians de Soto used terror tactics, which engendered a poor atmosphere for trade. Relations between de Soto and the Indians were strictly tributary, and had very little to do with trade. The expedition was predatory by intent and conduct, and
wherever along the route Indians were encountered, de Soto extracted tribute from them in the form of food, blankets, hides, skins, clothing, and captives. What the Indians failed to volunteer, the Spaniards took by force. Indian men, women, and children served as slaves to perform forced labor, and as hostages to insure safe conduct of the expedition from one point to another.

The Gentleman of Elvas (in Smith 1866) records well over a hundred occasions of de Soto exacting tribute from the southeastern Indians, but only four occasions of the Spaniards giving gifts to the Indians and just a single incident of trade. The Biedma account (in Smith 1866) mentions more than 20 episodes of the Spaniards obtaining tribute, but none of gift-giving or trade. The Ranjel narrative (in Bourne 1904) reports 40 occasions of the Spaniards exacting tribute, and only four occasions of Spanish gift-giving or trade (all outside Florida). Though the Garcilaso de la Vega narrative (in Varner and Varner 1951) mentions some Spanish trade with Florida Indians, this secondary work is considered almost universally to be the most exaggerated and least reliable of all the de Soto accounts.

The Luna expedition of 1559 landed inside Pensacola Bay, and found no Indians living on the bay or some distance inland. The only reported, Spanish-Indian trade was at the Indian village of Nanipacana (southwest Alabama), where the
Spanish gave the Indians "presents," and at Coosa (northwest Georgia) where in desperation the Spanish traded practically all their clothing for food. The historical record is silent on any trade or gift-giving in Florida (Hudson et al. 1989; Priestley 1928).

The expedition of Pedro Menéndez landed at Charlotte Harbor in 1566. Menéndez gave the cacique Carlos many gifts including "a shirt, a pair of silk breeches, a doublet and a hat, and other things for his wives. The Adelantado also made gifts to his principal Indians, and gave them biscuit and honey..." (Solís de Merás 1964:141). Menéndez gave to other Calusa Indians clothing, beads, scissors, knives, bells, mirrors, and a few hatchets. The Spanish soldiers also traded to the Indians items such as playing cards and scissors for gold and silver (Solís de Merás 1964).

On his second visit to the village of Calas the following year, Menéndez gave the Calusa food, knives, scissors, mirrors, and bells. Other presents were given to Carlos, his family and principal men (Solís de Merás 1964). At the Indian village of Tocobaga, where Menéndez had established a blockhouse, the Spaniards gave the cacique and other chiefs "many clothes and other things" (Connor 1925:43). By 1570, however, Menéndez reluctantly was forced to abandon his enterprise on the Florida Gulf coast, and thereafter the Spanish virtually ignored the region until the late seventeenth century.
In piecing together the historical evidence, the following picture emerges: Prior to the Menéndez expedition of 1566, there was little documented Spanish-trade with Florida Gulf coast Indians. Narváez gave gifts to the Florida Indians on just two occasions, de Soto presented gifts on a single occasion, and the Luna account reports no trade at all in Florida. Moreover, the warlike atmosphere which surrounded the Narváez and de Soto expeditions acted as an effective barrier to Spanish-Indian trade. Though Menéndez gave many gifts to the Indians at Calos and Tocobaga, his venture on the Florida Gulf coast was fairly short-lived, lasting from 1566 until 1570. The most common Spanish gift to the Indians probably was clothing (Purdy 1977:262); other items given to the Calusa included food, linen, hatchets, knives, hoes, scissors, glass beads, bells and mirrors. None of the Spanish presents included items of silver or gold (Connor 1925; Solís de Merás 1964).

In summary, it is likely that Florida Gulf coast Indians acquired comparatively few European goods from sixteenth-century Spanish expeditions. Frequent shipwrecks along the Gulf and Atlantic coasts provided the Indians with large quantities of European goods, which then were traded to other Indian groups in Florida and throughout the southeast. The similarity of European contact materials to Spanish shipwreck artifacts serves to substantiate this theoretical position. As stated in the previous chapter,
this suggests that European contact with the Florida Indians was not punctuated over time with long intervals of little or no contact in between, but was constant. This has important implications which will be discussed below.

**Impact of European Diseases**

The present study has shown that sixteenth-century European contact materials are traceable for the most part to Spanish shipwrecks. However, a direct correlation always may not exist between shipwreck locations and contact site distributions. Not only were European goods obtained directly from shipwrecks, but elaborate trading systems also moved goods from one village or region to another. While little is known about these Indian trading networks, the relative abundance of European artifacts in certain areas of the Everglades and other inland regions confirms their existence.

A great deal of this aboriginal trade probably took the form of tribute, or at least some type of reciprocal trade (Rouse 1951). The Calusa were paid tribute by Indian groups living on Lake Okeechobee, the southeast Florida coast, and the Keys. When a ship wrecked in either of the two coastal areas, the Calusa paramount chief was given the greater share of the spoils and the remainder was divided with "the caciques of Ais, Jeaga, Guacata, Mayajuaco, and Mayaca" (Fontaneda 1945:34). The Tocobaga cacique in the same way
commanded allegiance from tributary chiefs and principal men who lived in outlying villages. When the Portuguese shipwreck survivor reported by Solís de Merás (1964) was captured by Gulf coastal Indians, they felt compelled to deliver the captive to Tocobaga rather than keep him as a slave. The chiefly control over salvaged shipwreck goods appears to have been a major factor in maintaining political authority (Milanich 1995:74).

Most believe that the tributary Indian societies living on the northwest Florida coast were generally unaffected by Spanish treasure routes and shipwrecks, and that precious metals found in northwest Florida Indian sites probably originated from shipwrecks in South Florida (Bullen 1952:69; Coastal Environments 1977a: Goggin 1947; Hann 1988a:9; Smith 1956,1971; Smith and Gottlob 1978:13-14). Though these assumptions may not be necessarily correct, it is true that relatively few contact sites have been reported on the northwest Florida coast. There is virtually no evidence for sixteenth-century European contact in Franklin County or, with the exception of Gulf County, in any of the other four Florida counties bordering the Apalachicola River (Nancy White, personal communication 1993). Escambia and Bay Counties have no recorded contact sites, nor are there any confirmed contact sites southward along the coast from Jefferson to Citrus County.
The comparatively few contact sites reported in these regions does not necessarily suggest that opportunities for contact were rare. The Florida Keys, for example, have more Spanish shipwrecks than any other region in the western hemisphere, and though it is believed the area was occupied fairly well by the Indians (Dobyns 1983; Hrdlicka 1922), very few contact sites have been reported here or elsewhere in Monroe County. While there probably was a considerable amount of Indian-European contact on the northwest Florida coast, the scarcity there of contact sites is due almost certainly to the devastating impact on the Indians of European-introduced diseases.

Prior to the invasion of the peoples of the New World by pathogens evolved among inhabitants of the Old World, native Americans lived in a fairly disease-free environment. But when the Indians became exposed to European diseases, the native populations succumbed in astonishing numbers to viruses and germs which scarcely afflicted the immune Europeans. The most spectacular period of mortality among the American Indians was in the sixteenth century, which has been called "the disease century." Smallpox, chicken pox, measles, influenza, scarlet fever, yellow fever, bubonic plague, pneumonic plague, dysentery, malaria, typhus, and diphtheria were among the pathogens against which the Indians had zero immunity (Crosby 1972:37; Dobyns 1983; Ramenofsky 1987).
The most lethal pathogen, smallpox, was introduced unwittingly into Mexico in 1520 by the military forces of Narváez, who was there to arrest Cortés (Steck 1951:87-88). Once established in Mexico, smallpox spread with "inconceivable rapidity," and though no accurate estimates are possible, it is likely that the Mexican Indians suffered a 75% mortality rate from smallpox and its ensuing complications, which included pneumonia and pleurisy (Crosby 1972; Dobyns 1983). A sixteenth century observer remarked that in most Mexican provinces "more than one half of the population died; in others the proportion was little less...They died in heaps, like bedbugs" (Crosby 1972:52).

Four years later measles, possibly the second largest killer of American Indians, was transmitted by the Spaniards into Mexico. Called the "small leprosy" by the Mexican Indians (smallpox was known as the "great leprosy"), measles spread rapidly throughout Mexico and the Americas. Indians who earlier had survived the smallpox epidemics died in the tens of thousands since they still had no immunity against measles. In their weakened state, the Indians frequently fell prey to pneumonia or microbial invasions from other parasites (Diaz del Castillo 1939; Dobyns 1983; Ramenofsky 1987; Steck 1951).

Bubonic plague, which probably vied with influenza as the third largest killer of American Indians, struck Mexico in 1545 or probably even earlier. Rats, which invariably
infested Spanish ships in often enormous numbers, acted as carriers of plague-vector fleas. When a ship wrecked close to shore, it is likely that some of the rats aboard ship survived and made it to land. These surviving rats, some of whom were possibly plague-carriers, may have sought food and shelter in Indian dwellings and storehouses (Dobyns 1983).

In the 1520s and 1530s, Mexico exported to the Antilles thousands of Indian slaves in exchange for horses, cattle and foodstuffs (Liss 1975:96-97; McAlister 1984:232-233). Ships transporting this miserable human cargo often used the same sailing route along the Gulf coast as the flotas of later years. A single shipwreck, or series of shipwrecks on the Florida coast with complements of infected Europeans and Mexican Indians, would have wreaked inestimable destruction among the coastal Indians. Proof that ships were wrecking on the Florida Gulf coast in these early decades is provided by Cabeza de Vaca (in Bandelier 1922:12-13), who records that a ship presumably from Mexico had wrecked at Tampa Bay in 1528 (or possibly even earlier).

Due to the impact of European-introduced diseases, some coastal regions may have fewer numbers of contact sites where shipwrecks were frequent. The Florida Keys and Northwest Florida coast are possible examples. In his discussion of the Calusa, Dobyns (1983:253-254) writes that ships which wrecked en route from Vera Cruz would not have been "at sea long enough for whatever contagious diseases
passengers might have been suffering to run their course before the shipwrecked survivors were rescued by the Calusa." Small pox runs its course in a month or less, at the end of which time the patient is either dead or immune, at least for a period of years (Crosby 1972:46).

The covetousness for European goods, and the practice of rescuing shipwreck survivors, even if only for later sacrifice, inevitably exposed the Calusa and other coastal Indian groups to European contagion. In addition to infected shipwreck survivors and plague-vector fleas, contaminated personal belongings such as food, blankets, clothing, jewelry, and weapons also posed a mortal danger. When the infected Indians carried germ-laden objects to neighboring villages, and as contaminated shipwreck goods were traded from one Indian group to another, disease was given an opportunity to spread rapidly (Ramenofsky 1987:67).

All this suggests that throughout the sixteenth century Florida Indians were assailed endlessly by catastrophic disease epidemics introduced primarily by shipwrecked Spaniards (Dobyns 1983:254). Though direct historical evidence is lacking, the archaeological record provides the necessary support for demographic collapse. Ramenofsky (1987:171) writes that 90% is a reasonable minimum estimate of Indian population loss from all introduced diseases. Such was the case that by the end of the sixteenth century, a Spaniard "who had been in Florida twenty-four years and
traversed it from Santa Elena to the Keys, said it was his impression that there were relatively few natives" (Bushnell 1981:13).

Some Indian groups seemed almost unaffected by European diseases, while others were wiped out. Native peoples with the largest or densest populations, typically those who were concentrated along river valleys, apparently disappeared the fastest (Ramenofsky 1987). This may explain why a region such as the Apalachicola delta country, "undoubtedly one of the most favorable and most densely populated areas for prehistoric peoples" (Willey 1949:279), has few reported contact sites. The Northwest Florida coast was thickly settled during the Fort Walton period, as to a lesser degree was the coastal zone north of Tampa Bay, but in historic times they both became nearly devoid of Indian population (Milanich and Fairbanks 1980:21,24; Swanton 1946:16). The archaeological evidence suggests great population shifts inland, including coastal Fort Walton and Pensacola groups (Brose 1984:168; Swanton 1946:21; Willey 1949:540), which suggests the impetus may have come from the sea.

Safety Harbor Indian groups and the Calusa appear to have fared better than the Fort Walton peoples to the north. Some Safety Harbor groups, such as the Tocobaga, survived until the early eighteenth century, yet how well they adapted until the end is uncertain. The Calusa endured for nearly 200 years after their initial contact with Ponce de
León, but by the mid eighteenth century their numbers had declined drastically, their way of life was gone, and they no longer lived in their traditional lands. Researchers have made various suggestions as to how the Calusa and certain other Indian groups managed to survive longer than many other peoples. But in the final analysis, there really are no satisfactory answers to why European diseases exacted such a differential toll on the Florida Indians (Milanich and Hudson 1993:120-121; Ramenofsky 1987,1990:32).
In 1522, a year following the final expedition of Ponce de León to the Florida coast, the first Spanish ships to transport treasure from Mexico left the port of Vera Cruz. This shipment from Cortés to Charles I foreshadowed the great consignments of treasure from Mexico which reached a peak in the early 1600s. Prior to the mid sixteenth century, the bulk of Mexican merchandise was carried aboard ships sailing alone or in occasional convoys. But from the mid 1560s on, when the Spanish crown officially instituted the New Spain flotas, nearly all Mexican goods were being shipped in organized annual convoys (Diaz del Castillo 1938; Haring 1964; Parry 1966:134; Phillips 1986:14).

Except for periodic disruptions in trade, the New Spain flotas lasted in one form or another until 1789, the year free trade was conceded to Mexico. Though Mexican gold exports in the period 1524-1531 exceeded by a substantial ratio exports of silver, by the early 1540s silver production greatly exceeded that of gold, with the trend continuing throughout the remaining years of the Spanish colonial trade (Haring 1915:447). Silver in the form of
bullion and coin was by far the most important Mexican export, which reached a peak output in the years 1575 to 1610. The last shipment of precious metal consigned to the Spanish crown left Vera Cruz in 1820, nearly 300 years after the first Mexican treasure shipment by Cortés (Horner 1990; Walker 1979:225).

The sailing route of the flotas from Vera Cruz to Havana followed the length of the Florida Gulf coast. After obtaining provisions in Havana, both the New Spain and Tierra Firme fleets departed for Spain. They sailed with great care past the Florida Keys, and then headed north on a course through the Bahama Channel which ran near the Florida Atlantic coast. Due to bad weather, unseaworthy ships, faulty navigation, inexperienced crews, improperly loaded cargo, and proximity of the sailing routes to dangerous coastal areas, many homeward-bound Spanish ships were wrecked on the Florida shore (Connor 1925; Haring 1964).

The earliest known shipwreck on the Florida Gulf coast was reported by Cabeza de Vaca in his account of the Narváez expedition. It is unclear from the Vaca narrative whether the ship, which wrecked near Tampa Bay, met its end in 1528 or even earlier. The account describes a number of salvaged goods, supposed by Vaca to be from New Spain, which included wooden boxes, linen, cloth, feather head dresses, pieces of canvas and shoes, pieces of iron, and objects of gold (Bandelier 1922:12-13). Although the ship wrecked at a time
when traffic between Vera Cruz and Havana was relatively light, it probably was not the first Spanish ship to wreck on the Florida Gulf coast nor the first to be salvaged by the Indians (Swanton 1946:59).

The Tocobaga, Calusa, Tequesta, Ais, and Keys Indians all lived near areas of high shipwreck frequency, and were notorious for salvaging wrecked Spanish ships (Connor 1925). The inland South Florida Indians held a unique trading advantage by virtue of their residency between these zones of high shipwreck incidence on the Gulf and Atlantic coasts. Several contact sites within these inland regions have produced comparatively large quantities of European goods, including precious metals, the presence of which can be traced to well-developed trade relationships with the coastal Indian communities.

Spanish sailing routes and shipwrecks also had an effect on Fort Walton and Pensacola groups who lived on the Northwest Florida coast, and on Indian groups who lived along the North Peninsular Florida Gulf coast. Material evidence of shipwrecks in or near these regions is suggested by the types of European artifacts recovered from a number of contact sites, which include Bear Point Mound (1BA1), St. Marks Wildlife Refuge Cemetery site (8WA15), Hogtown Bayou (8WL9), Navy Liveoak Reservation Cemetery site (8SR36), Ruth Smith Mound (8CI200), and Tatham Mound (8CI203).
Though it is likely that at least some of the European materials found at contact sites originated from Spanish expeditions, overemphasis on expeditions as a primary source of artifacts may present a skewed picture of Spanish-Indian contact in sixteenth century Florida. Shipwrecks occurred in such numbers along both the Gulf and Atlantic coasts that it becomes precarious tracing European artifacts to specific expeditions. Indeed, Hudson and Smith (1990:40) remark in a discussion of the de Soto expedition that "one cannot simply plot dots on a map where such artifacts have been found and then connect the dots to construct a De Soto route."

This study has shown conclusively that European artifacts from contact sites are identical in type and manufacture to those materials which commonly are found on Spanish shipwreck sites. Though some researchers have identified certain types of glass beads and other artifacts with specific Spanish expeditions (Hudson, DePratter et al. 1989; Mitchem 1989b,1989c; Smith 1987), the temporal placement of these European goods also may be explained by a shipwreck or series of shipwrecks taking place in the same time period as the Spanish expeditions.

A ship wrecking on the coast was an event which triggered wild celebrations among the Indians. European weapons, tools, and exotic goods were there for the taking, and unlike the situation associated with armed exploration parties, the Spaniards were usually helpless and at the
mercy of the Indians. Salvaged metals, which included copper, bronze, brass, gold, silver, and iron, often were crafted by the Indians into a variety of forms, and at other times were left in their original state. European jewelry, which included gold, silver, rock crystal, emeralds, and glass beads, was obtained from the cargo holds of wrecked ships, from shipwreck survivors, and from bodies as they washed ashore.

Early in the contact period it is possible that most shipwreck survivors were taken alive by the Indians and made captive. Later in the sixteenth century, however, there is reason to believe that the Indian policy was to kill all or nearly all survivors who made it ashore. The accounts by Menéndez (Connor 1925) and Solís de Merás (1964) tend to confirm this. Such a change in policy possibly is due to the toll of European disease upon the Indians. It is more than conceivable that the Indians made the connection between Spaniards arriving in ships and the deaths of their family and friends.

It was probably the case that Indian celebrations were often short-lived in the course of salvaging a shipwreck, for the ships that brought the Indians material goods and wealth also brought a deadly curse. Indian contact with infected passengers, cargo, and personal belongings caused widespread catastrophe. The survivors of one epidemic gained no immunity to the next disease, which gave each
pathogen the ability to achieve maximum mortality. Some Indian groups, such as the Calusa, apparently were able to withstand the deadly onslaught of European diseases comparatively well. Other groups, most notably those living on the North Peninsular and Northwest Florida Gulf coasts, appeared to have disappeared rapidly.
The following archaeological sites are listed in order to provide a more complete picture within the study area of possible, sixteenth-century European contact. Though many of these sites have sixteenth-century contact components, not enough is known about them to propose such a dating with confidence. Most of the sites have yielded European objects which for a variety of reasons are difficult to date reliably. Some of the sites have produced artifacts which are diagnostic of the sixteenth century, but on account of poor documentation, the exact site locations are uncertain. Although the following list is extensive, it is not intended to be a summary of all possible contact sites in the study area. No doubt many other sites have been discovered but never have been reported. In addition, hundreds of coastal sites have produced varying amounts of Spanish Olive Jar sherds, but only a small sample of these sites are listed.

**Santa Rosa County**

- **Tent Camp Site (8SR11)**
  References: Lazarus (1961), Tesar (1973)

- **La Casa Site (8SR12)**
  Reference: Lazarus (1961)

- **Big Heart Site (8SR22)**
  Reference: Lazarus (1961)

**Bay County**

- **Bear Point Burial Mound (8BY5)**
  References: Moore (1902), Willey (1949)

**Wakulla County**

- **Work Place Site (8WA11)**
  References: Marrinan et al. (1990), Willey (1949)
Dixie County

Smith Burial Mound
Reference: Willey (1949)

Citrus County

Duval Island Site (8CI5)
References: Milanich and Hudson (1993), Mitchem (1989b)

Chassahowitzka Bay Mound (8CI16)
References: Mitchem (1989b), Willey (1949)

Hernando County

Johns Island Site (8HE4)
References: Bullen and Bullen (1950), Mitchem (1989b), Willey (1949)

Weeki Wachee Site (8HE10)
Reference: Mitchem (1989b)

Anderson's Mound (8HE14)
Reference: Mitchem (1989b)

Mound near Istachatta
Reference: Mitchem (1989b)

Site of Uncertain Location

Pasco County

Pithlachasootie River Burial Mound (8PA2)
References: Moore (1903a), Walker (1880a), Willey (1949)

Sites of Uncertain Location
Reference: Neill (1978)

Pinellas County

Pinellas Point Site (8PI61)
Reference: Goodyear (1968)
Hillsborough County

Rocky Point Site (8HI7)
References: Neill (1968), Plowden (1955), Shepard (1886)

Mt. Enon Burial Mound (8HI24)
Reference: Mitchem (1989b)

Sellner Shell Middens (8HI30)
References: Bullen (1952), Mitchem (1989b)

Old Shell Point (8HI31)
Reference: Mitchem (1989b)

Gardensville Mound (8HI37)
References: Mitchem (1989b), Moore (1900), Walker (1880b)

Tolo Barker Site (8HI79)
References: Goggin (1968), Mitchem (1989b)

Henriquez Mound (8HI1077)
Reference: Mitchem (1989b)

Kunz's Mound(s)
Reference: Kunz (1887)

Walker's Sites
Reference: Bushnell (1937)

Shell Mound on East Shore of Tampa Bay
Reference: Mitchem (1989b)

Site near Lake Thonotosassa
Reference: Mitchem (1989b)

Manatee County

Shaw's Point Site (8MA7)
References: Mitchem (1989b), Walker (1880b), Willey (1949)

Harbor Key Burial Mound (8MA14)
Reference: Mitchem (1989b)

Snead Island 1 Site (8MA18)
Reference: Mitchem (1989b)

Glazier Mound (8MA32)
References: Branstetter (1989), Tallant (n.d.)
Albritton Field Mound (8MA61)
Reference: Tallant (n.d.)

Duette 1 Mound (8MA67)
Reference: Tallant (n.d.)

Ogleby Creek 1 Mound (8MA70)
Reference: Tallant (n.d.)

Palm View Site (8MA82)
References: Mitchem (1989b), Tallant (n.d.)

Boots Point Midden (8MA83d)
References: Mitchem (1989b)

Horton Site (8MA88)
Reference: Mitchem (1989b)

"B" Mound (8MA97)
Reference: Mitchem (1989b)

Stanley Mound (8MA127)
References: Allerton et al. (1984), Deming (1975), Mitchem (1989b)

Cemetery Site East of Myakka

Site(s) in the Myakka Area
Reference: Mitchem (1989b)

Rau's Mound
Reference: Rau (1878)

Site of Uncertain Location
Reference: Mitchem (1989b)

Sarasota County

Osprey Shell Middens (8S02)
References: Luer and Almy (1988), Mitchem (1989b), Willey (1949)

Midnight Pass Midden (8S07)
Reference: Mitchem (1989b)

Crowley Homestead Mound (8S072)
References: Almy (1976), FMSF

Wilson Mound B (8S077)
Reference: Luer (1993)
Deer Prairie Creek Mound/Blackburn Site (8SO403)

Charlotte County

Cedar Point Shell Heap (8CH8)
Reference: Mitchem (1989b)

Big Mound Key (8CH10)
References: Bullen and Bullen (1956), Marquardt (1992a), Mitchem (1989b)

Unnamed Shell Midden (8CH20)
Reference: Mitchem (1989b)

Fish Camp Site (8CH23)
Reference: Bullen and Bullen (1956)

John Quiet Mound (8CH45)
Reference: Bullen and Bullen (1956)

Cape Haze Site (8CH48)
References: Bullen and Bullen (1956), Mitchem (1989b)

A&W Burial Mound
Reference: Mitchem (1989b)

Site near Charlotte Harbor
Reference: Douglass (1890a)

Lee County

Punta Rassa Midden (8LL7)
References: Allerton et al. (1984), Goggin (1949a), Luer (1984), Mitchem (1989b)

Hickeys Creek 1 (8LL22)
Reference: Goggin (1949a)

Galt Island Shell Midden (8LL27)
References: Goggin (1949a), Marquardt and Beriault (1988), Mitchem (1989b)

Hooker Key (8LL30)
Reference: Goggin (1949a)

Demorey Key (8LL31)
References: Cushing (1896), Goggin (1949a), Mitchem (1989b), Moore (1900)
Josslyn Island (8LL32)
References: Cushing (1896), Goggin (1949a), Marquardt (1992a), Moore (1900)

Pineland Site (8LL33)
References: Cushing (1896), Goggin (1949a), Marquardt (1992a), Mitchem (1989b)

Indian Field Site (8LL39)
References: Goggin (1949a), Luer (1989), Mitchem (1989b), Moore (1900)

Useppa Island (8LL51)
References: Goggin (1949a), Griffin (1949), Marquardt (1992a), Milanich et al. (1984), Moore (1900)

Mysterious Island (8LL54)
Reference: Goggin (1949a)

Dr. Wilson's Sanctuary #3 (8LL111)
Reference: Mitchem (1989b)

Shell Point Burial Mound
Reference: Mitchem (1989b)

Collier County

Grocery Place (8CR34)
Reference: Goggin (1949a)

Goodland Point Midden (8CR45)
References: Goggin (1949a, 1949b), Moore (1900)

Bear Point Shell Mound (8CR47)
References: Cushing (1896), FMSF, Goggin (1949a)

Naples 3 Site (8CR62)
Reference: Goggin (1949a)

Fort Simon Drum Site (8CR78)
Reference: Goggin (1949a)

Lake Trafford Burial Mound (8CR80)
References: Branstetter (1989), Goggin (1949a), Mitchem (1989b)

Kissimmee Billy Site (8CR226)
Reference: Allerton et al. (1984)

Shell Heaps at Royal Palm Hammock
Reference: Hrdlicka (1922)
Monroe County

**Key West (8MO1)**
Reference: Goggin (1949a)

**Unidentified Key (8MO2)**
Reference: Goggin (1949a)

**Sugarloaf Key (8MO4)**
Reference: Goggin (1949a)

**Cudjoe Key (8MO5)**
Reference: Goggin (1949a)

**Lower Matecumbe 1 (8MO12)**
Reference: Goggin (1949a)

**Knights Key (8MO77)**
Reference: Goggin (1949a)

**Pavilion Key (8MO107)**
Reference: FMSF

**Unidentified Burial Mound(s) at Key West**
References: Goggin (1949a), Griffin (1988)
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Wolf, Eric R.  
Mark Thompson Allender was born on January 11, 1956, in St. Petersburg, Florida. After obtaining primary education in St. Petersburg, Allender moved with his family to Titusville, Pennsylvania, where he graduated from Titusville High School in 1974. After graduation, Allender attended Duquesne University where he majored in English, and Penn State University where he majored in English and drama. In 1978, Allender moved to St. Petersburg, where he enrolled at St. Petersburg Jr. College. In 1983 he graduated from St. Petersburg Jr. College with an Associate in Arts degree in business administration, and in October of the following year he married Hollie Shepherd.

In 1991, Allender entered the University of Florida as an undergraduate in the Department of Anthropology. At the end of 1991, he graduated from the University of Florida with a Bachelor of Arts degree. The following year Allender began graduate studies at the University of Florida in the Department of Anthropology. His graduate work is in historical archaeology with a history minor which focuses on Spanish colonial activities in Florida and the New World. Allender has worked in archaeological projects in Cedar Key and the Gulf Hammock area of Levy County.
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Arts.

Barbara A. Purdy, Chairman
Professor Emerita of Anthropology

Kathleen A. Deagan
Distinguished Research Curator of Anthropology

Michael V. Gannon
Distinguished Service Professor of History

Eugene Lyon
Associate Professor of History
This thesis was submitted to the Graduate Faculty of the Department of Anthropology in the College of Liberal Arts and Sciences and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Master of Arts.

December, 1995

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Dean, Graduate School