CULTURAL CONTRIBUTIONS TO THE ISLAND OF ST. JOHN,
UNITED STATES VIRGIN ISLANDS;
UNDERWATER HISTORICAL ARCHAEOLOGY AT CRUZ BAY

A Thesis
by
CARMEN M. MARQUEZ

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

May 1995

Major Subject: Anthropology
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Major Subject: Anthropology
ABSTRACT

Cultural Contributions to the Island of St. John,
United States Virgin Islands;
Underwater Historical Archaeology at Cruz Bay. (May 1995)
Carmen M. Marquez, B.A., University of Puerto Rico
Chair of Advisory Committee: Dr. Frederick H. Van Doorninck Jr.

The United States Virgin Islands, St. Thomas, St. Croix and St. John, in the Lesser Antilles, were discovered by Christopher Columbus in November, 1493, on his second voyage. The islands were not revisited by the Spanish for over 57 years.

During the seventeenth century, the French, English and Dutch contested the Virgin Islands, realizing their strategic and commercial importance, and Denmark attempted to settle St. Thomas in 1672. The first permanent Danish colony was established in 1717 at Coral Bay on the eastern side of St. John.

Coral Bay was the principal port of St. John until 1733, when a major slave insurrection occurred, and the population moved west toward Cruz Bay, a primary anchorage for interisland and transoceanic vessels during the 18th and 19th centuries. After St. John became a free port in 1764, ships of various nations periodically called at Cruz Bay to trade with the sugar and cotton plantations.

The area studied was the navigational channel of Cruz Bay, especially the shallower area, where the historical wharf structures were assumed to
be located. Permission to work underwater was granted for a period of not more than three weeks. The plan for archaeological data collection involved a reconnaissance, which consisted of a magnetometer survey and visual inspection, and a site examination phase, which consisted of subsurface probing and trenching excavations.

A systematic effort was made to find the remains of the historical wharf structure, but it could not be located. Two trenches were excavated. Glass bottles, ceramic pipes and plates were found in the bottom-most cultural stratum uncovered. The majority of the artifacts seem to be of English origin from the 18th and 19th centuries, which tends to indicate that Cruz Bay went through an economic transition during the 18th century from a practically abandoned bay to a small, principal port of St. John. Although the island was under the direct control of Denmark, it seems to be that the English controlled its commerce and everyday life.

The study demonstrated that in heavily used bays and harbors of the Caribbean, archaeological data can still be found.
ACKNOWLEDGMENTS

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Special recognition is directed to the members of my Graduate Committee at Texas A&M University. I wish to thank Dr. Frederick H. van Doorninck Jr., Mr. J. Richard Steffy, Dr. Henry C. Schmidt and Dr. Donny Hamilton for their academic guidance.
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INTRODUCTION

The United States Virgin Islands lie in the crescent chain formed by the Caribbean Islands, with the Atlantic Ocean and the Caribbean Sea washing their shores. The Virgin Islands, 18° North of the Equator, are about 1,000 miles from Miami and about 1,500 miles from New York. St. John is the smallest of the three major Virgin Islands, which also include St. Thomas and St. Croix.

The Virgin Islands were first inhabited by Arawak Indians, who were relatively peaceful. In about A.D. 1400, they were displaced by more a warlike, cannibalistic group known as Carib Indians. Christopher Columbus came upon the Virgin Islands in November, 1493, on his second voyage to the New World. He named the island St. John after St. John Chrysostom. The islands were not revisited by the Spanish for over fifty-seven years, and thereafter, only sporadically. They fought with the sole purpose of enslaving and eventually exterminating the belligerent Carib Indian population.

It wasn't until the late seventeenth century that Denmark joined the movement to colonize the Caribbean Islands. The Danish West Indies Company was chartered in 1671, and St. Thomas was settled in 1672. The first permanent Danish colony was established in St. John at Coral Bay in the year 1717. Although the colony was contested by the British, the Danes remained. The colonists of St. Thomas and St. John were a cosmopolitan

This thesis follows the format of the International Journal of Nautical Archaeology.
group. There were people of Danish, Dutch, English, German, French, Irish, Scotch, Flemish and Swedish origin.

The principal port of the island of St. John was originally Coral Bay, but after 1733, when a major slave insurrection occurred, the white population started moving slowly toward Cruz Bay in the west. The intention was to be in a position to receive rapid assistance from nearby St. Thomas in the event of more problems with the slaves. According to this plan, the fort at Coral Bay was eliminated and Cruz Bay was selected as the prime location for fortification.

Cruz Bay has been documented as a primary anchorage for both interisland and transoceanic sailing vessels during the eighteenth and nineteenth centuries. After St. John became a free port in 1764, ships of all nations periodically called there in order to trade with the sugar and cotton plantations.

The aim of the research presented here is to combine historical and archaeological sources and techniques. Background historical research was done, and an attempt was made to locate and study previous archaeological work that might have been performed in the area. During this phase, it was found that no systematic underwater archaeological research had been previously done in Cruz Bay. The preliminary historical data obtained indicated that Cruz Bay became the principal port of the island of St. John during the eighteenth century.

This background research facilitated the definition of the purpose of the research and contributed to the formulation of specific goals. The hypothesis derived from the historical evidence was that Cruz Bay went through a transformation during the eighteenth century from a practically
abandoned bay to a small but principal port of the island of St. John, U. S. Virgin Islands.

Once the hypothesis was established, the study area and the kinds of data to be sought were designated. The area to be studied was the navigational channel of the bay. Special importance was placed on its shallower area, where loading and unloading and commercial exchange took place and a historical wharf structure could have been located. We considered that ceramics and glass (for their diagnostic characteristics) were the kinds of data necessary to adequately test the hypothesis set forth.

The plan for archaeological data collection involved two basic procedures: reconnaissance, which consisted of a magnetometer survey and visual inspection, and a site examination phase, which consisted of subsurface probing and trenching excavations.
GEOGRAPHY OF THE VIRGIN ISLANDS

On his second voyage on September 25, 1493, Christopher Columbus set sail from the Canary Islands to the island of Santo Domingo. Following the prevailing winds, he reached a chain of islands, the last group of which he named the Virgin Islands (Abbad, 1866: 18).

Morison (1955) has commented on the islands' special location in relation to the prevailing winds. He also saw them as being in the path of the natural routes out of Europe, so it was almost impossible for Europeans going to the Americas, such as Sir Francis Drake, the Earl of Cumberland and others, to miss them. The islands were consequently the cause for much threatening and bickering among Europeans (Hatch, 1972: 15). They even became involved in the 1861-1865 United States Civil War, and there is a report that Germany wanted to outbid the United States for the islands during the early 1900's (Dookhan, 1974: 258).

The Virgin Islands are located at the center of the archipelago known as the West Indies, or the Caribbean Islands (Fig. 1). The islands' location in the West Indian chain, the archipelago's relation to the rest of the world, and the historically good fishing in the area are features that have made them popular. They are readily accessible to Europe, North, South and Central America, and the rest of the West Indies.

The United States Virgin Islands are composed of three major islands and a number of smaller islands and cays totaling about 50. The three of primary importance are St. Thomas, where the capital is located; St. Croix, the largest; and St. John, the smallest (Fig. 2). All the islands, except St.
Fig. 2. St. Thomas and St. John, United States Virgin Islands.
Croix, are summits of a submarine range that forms the backbone of Puerto Rico and the rest of the Greater Antilles. The submerged bank is about one hundred miles long and 30-38 miles wide (Dookhan, 1974: 2).

St. Croix has an area of 84 square miles; St. Thomas, an area of 28 square miles; and St. John, an area of about 20 square miles. The least populated of the three, St. John, lies between latitudes 18° 23' N and 18° 18' N and longitudes 64° 48' W and 64° 40' W and extends about 5 miles from its easternmost to its westernmost points (Calvesbert, 1970: 2).

St. Croix is separated from the other Virgin Islands by the Virgin Sound. Geologically, it is better classified than the others as a Lesser Antilles island. Historically and archaeologically, however, all the Virgin Islands are part of the Lesser Antilles, particularly the Leeward Islands (Hatch, 1972: 1). There are irregular lines of demarcation among the islands (Dookhan, 1974: 2). Thus, when Columbus visited in 1493, and during the wrangling among the English, Spanish, Dutch, French and Danes over the islands in the 1600's, 1700's and 1800's, several natural divisions served as dividing lines. They include the narrow channel that runs from Little Hans Lollick and Little Tobago toward St. John and passes between Peter and Norman Islands, Sir Francis Drake's Channel, and the Virgin Passage.

Annual temperatures average 79 degrees Fahrenheit, with an average winter low of 76 degrees Fahrenheit and an average summer high reaching 84 degrees Fahrenheit. Occasionally, maximum temperatures will drop below 70 degrees Fahrenheit (Calvesbert, 1970: 6).

The small size of the islands, their low average rainfall and the very steep terrain result in an absence of rivers and creeks, except on St. Croix, which has a few temporary rivers and one that is permanent (Dookhan,
1974: 4). This is known as Salt River, where Columbus' men encountered Carib Indians in November, 1493 (Morison, 1955: 100). The area has been granted National Park status, and its name is now Salt River Bay National Historical Park and Ecological Preserve (St. Thomas Daily News, October 11, 1993).

The average annual rainfall on St. John ranges between 40 and 45 inches, with an annual rainfall of 35 inches toward the eastern end of the island, to more than 50 inches in the area of Bordeaux Mountain. The Cruz Bay area receives an average of about 42 inches of rain per year. The rainfall usually occurs in brief, intense showers of less than a few tenths of an inch.

One of the principal causes of concern in the United States Virgin Islands is the short supply of water. Rainfall, while above 40 inches annually over most of the area, is insufficient. This is due partially to a high evaporation rate and the rapid runoff from the steep slopes on St. Thomas, St. John and, to a certain extent, on St. Croix. In an effort to utilize available water efficiently, most homes and businesses catch rainwater on the roofs and pipe it to cisterns. The runway at the airport at St. Thomas is also used as a catchment area. On St. Thomas and St. John, it is common to see the entire side of a hill cemented over to act as a catchment area. Generally, during the drier portion of the year, it is necessary to carry water by barge from Puerto Rico. Installation of a seawater distillation unit on St. Thomas and St. Croix has helped alleviate the water shortage, which remains, however, a significant factor in the development of the island's economy (Calvesbert, 1970: 3).
Generally, except for St. Croix and Anegada, the larger Virgin Islands are hilly, with rough, rugged terrain (Macpherson, 1990: 155-156). Their mountains are not very high, none being over 2,000 feet, but the islands have steep mountain ridges and a large number of bays (Dookhan, 1974: 4; Westergaard, 1917: 4). Like St. Thomas, St. John has an extremely irregular shoreline and very hilly topography. It has a number of peaks over 1,000 feet, topped by Bordeaux Mountain at 1,297 feet on the eastern end of the island. Slopes are quite steep over all of the island, and there are very few areas of flatland.

St. Thomas and St. John have good harbors that provide protection for ships against the hurricanes that frequent the area. Coral Bay on St. John has been often mentioned in Caribbean history as one of the best harbors in the area (Westergaard, 1917: 4).

The Virgin Islands lie in the "Easterlies" or "Trade Winds", which traverse the southern part of the "Bermuda High" pressure area. Thus, the predominant winds are usually from the east-northeast and east. These trade winds vary seasonally and are broadly divided into four seasonal modes.

There are numerous disturbances during the year, especially squalls and thunderstorms. These occur most frequently during the summer, lasting only a few hours and causing no pronounced change in the trade winds.

A tropical cyclone which exceeds 74 miles per hour is termed a hurricane. Such hurricanes significantly affect the area and occur most frequently between August and mid-October with their peak activity in September. The annual probability of a cyclone is one in sixteen years (Bowden, 1974: 1-4). The hurricanes that have affected the islands since
Fig. 3. Hurricane Paths since 1876 (Adapted from United States Army, 1975).
1876 are shown in Fig. 3. Of these, 24 hurricanes have passed within 50 miles of St. John. In view of the occurrence of hurricanes David and Frederick within a five-day period in 1979, it is obvious that hurricanes are difficult to predict.

Hurricanes, earthquakes and droughts have always been a part of the Virgin Islands' geography and social history. They are major natural drawbacks to progress on the islands. As recently as 1989, Hurricane Hugo gave a devastating reminder of this. In 1993, citizens on St. Croix, St. Thomas and St. John were still attempting to rebuild their houses and their lives.

Agriculture is not as important in the United States Virgin Islands as it is in Puerto Rico, where that segment of the economy has also declined in recent years. St. Croix is the only one of the United States Virgin Islands with any sizable expanse of flatland suitable for farming. Sugarcane, which was the principal crop, has been discontinued there. Subsistence crops are now a minor effort. Some cattle are raised for milk and meat.

On St. Croix, industrial growth has become a significant factor in the economy. With the downgrading of agriculture, industrial complexes are being expanded to include the petrochemical industry and the refinement of aluminum. Light-industry plants and the manufacture of rum are the other industrial activities on St. Croix and St. Thomas. St. John has no industrial development and remains primarily a National Park. Tourism is the biggest contributor to the United States Virgin Islands' economy, which has, over the past years, benefited from a vast increase in the number of cruise ships, especially to St. Thomas and St. Croix. Hotel facilities have increased on all three islands (Calvesbert, 1970: 3).
Vegetation on the islands has also changed dramatically, probably more so than on any of the other islands in the West Indies. Houses have been built in the mountains, on the beaches, and every place in between. Iguana, birds, deer, agouti and other animals indigenous to the area are becoming extinct as a result of human encroachment. Interestingly, the mongoose, which was brought from India to kill rats on the plantations, has managed to find an ecological niche and is thriving, particularly on St. Thomas. On any day, rain or shine, dozens of mongeese can be seen at Magens Bay, as if they were greeting the tourists or trying to hustle a meal. Donkeys also thrive on St. John, but increased population growth and more cultural diversity are threatening their freedom to roam free. Particularly people from North America are pressuring the authorities to destroy the animals.

Of the three species of sea turtles, the green and hawksbill are fairly common in local waters. After an absence of several years, the green turtles (*Chelonia mydas*) have been recently observed in Cruz Bay. There has been no known nesting of any turtles on the beach, however. None of the endangered whales are likely to come into Cruz Bay. Humpback whales annually migrate through Pillsbury Sound, but generally do not come close to the shore. Among birds, the pelican (*Pelecanus occidentalis*) is a common and regular visitor to this and all coastal areas of the United States Virgin Islands. They are opportunistic feeders and tend to congregate wherever schools of fish move. Individually or in small groups, they frequently pass through Cruz Bay on feeding forays or en route to other areas. Trees and rocks along the shore serve as temporary resting places. There are no nesting sites in the area, nesting being restricted to some small cays.
EUROPEANS COME TO THE VIRGIN ISLANDS

Columbus' Second Voyage

To undertake his second voyage to the New World, Christopher Columbus left for Seville, where a fleet of seventeen large and small ships, which the Spanish king and queen had ordered, was awaiting him. These ships were well stocked with artillery and munitions, and they carried Andalusian horses, mules and other animals, tools and instruments needed for the mining of gold, and seeds of such plants as wheat, rice, barley and vegetables and trees. Many people had volunteered for the voyage, but it had to be limited to 1,500. Among these were twenty horsemen, artisans, workers, farmers, priests and many noblemen moved by the interesting things found on the first voyage and by the expectation of finding gold (Fernández Méndez, 1981).

On this voyage went three future conquistadors: Pedro Margarit, Juan de Esquivel, and Diego Velázquez de Cuellar; Diego Colón, brother of the admiral; the physician Diego Alvarez Chanca; and the great mariner Juan de la Cosa. In the Chronicle of Michoacan, it is mentioned that Juan Ponce de León, who was to be the first governor of Puerto Rico and discoverer of Florida, was also a passenger on this second trip (Alegria, 1969: 6).

The expedition sailed from Cadiz in southern Spain on September 25, 1493, and on October 2, reached the Canary Islands, where the fleet took on further provisions of food and water. On October 7, 1493, they left Gomera, taking a more southern route than on the first voyage. Six days later, they reached an island which the admiral called Dominica. Later on, he discovered Marigalante and Guadalupe, part of a group of islands known as
the Lesser Antilles. The fleet cast anchor at Guadalupe and small vessels went ashore.

This island was inhabited by Carib Indians. Here, they found some women and young Indians who said they had been captured on an island called Bortquen (Puerto Rico). They asked to go with the Spaniards and were brought aboard, where they gave information on the location of other islands. Columbus proceeded with his voyage.

According to the testimony of Dr. Alvarez Chanca, on November 15, the coasts of numerous small islands were explored by means of flat-bottomed ships. These islands were named the Virgin Islands. On November 16, they saw the island of Puerto Rico, to which they had been directed by the Indians on board whom they had rescued. After spending two days on Puerto Rico, Columbus and his fleet left for the island of Hispaniola, since he was anxious to find out what had happened to Fort Navidad, where he had left part of his crew the year before. He found the Indians had destroyed it and had killed all his men. For a year, Columbus continued his explorations, discovering Cuba, Jamaica and countless other islands while searching for something that resembled Cipango or Cathay. He had yet to undertake two more voyages of discovery in his futile search for Asia before his death in 1506.

**The Early Inhabitants of the Virgin Islands and Puerto Rico**

Like the rest of North America, the Virgin Islands had existed for thousands of years without any human inhabitants. The first prehistoric settlers probably migrated from South America. Stoutamire (1980) described the prehistory of the Virgin Islands as beginning in the pre-
ceramic Archaic period (1700 B.C. to A.D. 150). The Archaic period was followed by the Solanoïd Horizon, characterized by the introduction of Coral Bay ceramics. This horizon continued until the Chicoid Horizon, in which Magens Bay ceramics were introduced about A.D. 1200. Magens Bay pottery continued until historic contact (Wild and Reaves, 1986: 5).

The Virgin Islands seem to have been the first islands inhabited by a relatively peaceful group known as Arawaks. The Arawaks probably lived on St. John for about 1,500 years (Hatch, 1972: 8). They are thought to have belonged to a branch of the Brazilian Guaraní group. According to Alegria (1969: 15), these Indians traveled in canoes from the coasts of Venezuela through the chain of islands that form the Lesser Antilles. They settled in Puerto Rico, the Virgin Islands, Hispaniola and parts of Cuba after conquering and assimilating the groups that lived on these islands into their group.

Archaeological studies in Puerto Rico have revealed that the Arawaks had organized agriculture and grew corn, tobacco, peanuts, cotton and other foods for their subsistence. Available to them were many kinds of fruits and medicinal plants. They fished and hunted, and baked clay vessels in which to keep their food and ferment their drinks.

The Arawaks in Puerto Rico (Tainos) seem to have had a socio-political organization of a hierarchical nature. There was a sector of the population that led war expeditions and influenced collective decisions. These were called nitainos. From this class came the cacique, the leader. The class of priests and healers was called bohiques. The third group, which did the heavy work, was called naborias.
The family comprised the basic unit in the Taíno society (Pico, 1986: 26). The Taínos tended to marry outside their immediate group, so it wasn't uncommon to find marriages between inhabitants of the western coast of Puerto Rico with those of the eastern coast of Hispaniola.

About the year A.D. 1400, the Arawaks had been displaced from the Virgin Islands by more warlike groups known as Caribs. There is evidence that suggests that the northernmost extension of permanent Carib occupation was on St. Croix. If they visited St. John, it was sporadically, because they did not establish a permanent presence there (Bullen, 1962: 62-63). However, ceramics representing Carib Indian occupancy were found at Old Oven Hill near Leinster Bay on St. John (Valls, 1989).

Columbus visited the Virgin Islands in 1493. One of the things that had attracted him to the island of St. Croix was the well-cultivated gardens that the Caribs kept, which reminded him of the elongated gardens in Europe (Hatch, 1972: 12). At Salt River on St. Croix, some of his men soon had an encounter with the Caribs.

The name Caribbean comes from the Caribs. They were a warlike group that, according to the Spaniards who came to the islands in 1492-93, ate the Arawaks they killed in battle or took as prisoners. This is a claim that has been denied by several historians. By the time Europeans came to the West Indies, the Caribs, who arrived about 100-150 years before, had become an aggressive, dominant force in the area, raiding and intimidating the Arawaks.

At the time of discovery, the island of Puerto Rico was a frontier on which the Caribs, who inhabited the Lesser Antilles, had encroached and continuously attacked the Arawaks. When the Spaniards arrived, the
Caribs had already established themselves in the eastern part of Puerto Rico.

Caribs traveled at will throughout the Caribbean area. They raided Arawaks as far north as Jamaica and Cuba (DeBooy & Paris, 1970: 36) and became so successful in harassing the Arawaks that they aroused the anger of King Charles V of Spain. Around 1550, he advised his conquistadors in the West Indies to attack and eliminate the warlike, man-eating Caribs (Oldendorp, 1987: 13; Knox, 1852). In 1596, when the Earl of Cumberland passed through the Virgin Islands, he found no one living there (Hatch, 1972: 12). Apparently King Charles' program to destroy the Caribs had been successful in the area. However, Earl P. Shaw (1940: 94-97) suggested that no one knows exactly why the Caribs disappeared from the Virgin Islands. The explanations that have been given are merely conjecture.

The cultural residuals of these early inhabitants of the Caribbean are varied and many. They include foods such as cassava, ginger and corn. Others are tobacco, the hammock, the mortar and certain styles of cooking. The gardens Columbus' men saw on St. Croix and the rock carvings at Reef Bay and Congo Cay on St. John are examples of the Indian culture. More than one hundred sites associated with Arawaks or Caribs have been found in the Virgin Islands (St. Thomas Daily News, Nov. 10, 1993). It appears that some were permanent residential areas while others were temporary and could have been used during fishing trips or for special ceremonies (Knox, 1852: 17). The earliest European settlers in the Virgin Islands gave very sketchy documentation about whether any of the Indians lived on the islands then.
Alegria (1969: 27) describes the Arawaks as good navigators. The boats the Indians used were called canoas (canoes). According to Margaret E. Leshikar (1988: 19), who has studied the earliest middle American watercraft, substantial archaeological material giving direct evidence is lacking at the present time. She tells of only three archaeological artifacts recovered: an Arawak paddle, carved from a single piece of cedar and found in a cave in Mores Island on the Little Bahama Bank; another paddle found in Cuba; and a petroglyph depicting a paddle found in a cave on Rum Cay in the Bahamas.

From early historical accounts, however, a description of the canoes and their construction and their use in trade and warfare can be obtained. In his biography of the Admiral, his son Hernando (Colón, 1947: 92-93) narrates how, on October 13, 1492, many Indians came to the ships in boats called canoas upon the first meeting with the Europeans. He continues:

"These boats were made of one piece carved from the trunk of a tree. The big ones could carry from thirty to forty-five people; and of the small ones there were many kinds, some so small that didn't carry more than one person. They rowed with a paddle similar to a baker's peel... The paddles were not attached to the sides as we do but they place them in the water and push back the water. These canoes are so light and built with such craftsmanship that if they capsize, the Indians jump immediately into the sea and turn them over while shaking them to get rid of most of the water. They emptied the remaining water by using gourds split in half, which they carried for that purpose."

Fernández de Oviedo in his General and Natural History of the Indies (1535) (Fernández Méndez, 1981: 96-98) narrates that in La Hispaniola and in all the other ports of the Indies visited at that time, there were canoes that the Indians used to travel on the rivers and seas and for war, commerce or fishing. He continues by saying that the Christians who lived in those
lands could not make use of products found on their coasts or near the rivers without such canoes.

Fernández de Oviedo (1535) also explains how the canoes were built. They were made of one tree, which the Indians hollowed out with stone axes, burning the wood slowly where they had cut it. They continued this process slowly until they produced a trough-like boat, as deep, wide and long as the trunk of the tree from which it was made. The boat's bottom was flat, without a keel.

According to Fernández de Oviedo (1535), some of these canoes, which were large and wide, were called *piraguas* by the Carib Indians, and they navigated them with cotton sails and with oars that they called *nahos*. Leshikar (1988: 20) mentions that, according to Columbus, their canoes had no sails. Since Fernández de Oviedo wrote about 42 years after Columbus, there is a possibility the Indians adapted the sail from the Spaniards. The Indians rowed their canoes standing, sitting or kneeling. These boats could not go too far from land because they were low, and if the sea was rough, they flooded but didn't sink (Fernández de Oviedo, 1535).

Columbus considered the Indian vessels to be swifter than the small Spanish boats. Leshikar (1988: 19) cites from a letter written by Columbus in 1493: "A *fusta* (small European vessel) does not catch them because their speed is something unbelievable. And with them they navigate all the innumerable islands, and trade their merchandise. I have seen one of these canoes with seventy or eighty men in her, each one with his paddle."

Leshikar (1988: 20) notes that perhaps the largest canoe described by Columbus during his voyages was found among the Arawaks in 1492. It was
described as being 63 ft. long (c. 19 m), carved from the trunk of a single tree, and capable of holding 150 people.

**Colonization and the Intense Struggle for Power**

According to Dookhan (1974: 31), once the Europeans made their way to the Caribbean area, it was almost impossible for them to miss the Virgin Islands. Columbus came upon the West Indies because they were in his westward path (Westegaard, 1917: 3). The islands he visited were given Christian names and conquered for Spain. After Columbus returned to Europe with documented evidence of his exploration, Spain made the initial European leap into the Caribbean area. For the next 96 years, until the defeat of the Spanish Armada by England (1588), Spain remained the wealthy, powerful and dominant nation in America. Other European nations were at first barred from sharing the wealth of the Spanish Main. As early as 1494, in the claims made through the Treaty of Tordesillas, Spain signaled the other European nations that they would not be welcome in the area and that Spain intended to keep things that way. It would enforce the terms of the 1494 treaty signed by a Spanish Pope, Alexander VI (Conlin, 1990: 12).

Other European countries, France, England, Holland and Denmark, became very jealous of the power and wealth Spain amassed from the Americas. They, too, wanted to invest or set up colonies in the area despite Spain's resentment and threats. Privateers (ships sponsored by French, Dutch or English private groups and by their governments) defied Spain's threats and ventured into the Americas. Later, these nations were joined by Sweden and Denmark. Privateering was followed by open piracy. Since
pirates preyed on everyone and respected no flag, every nation doing business in the Americas was in danger. A treaty was signed in 1670 banning piracy from the area (Larsen, 1950: 86).

Columbus' finds and the stories of the Indians whetted the Spaniards' appetite for gold and new empires. In time, other adventurers from Spain, such as Ponce de León, Fernando Cortes, and Francisco Pizarro (1513-1542), decided to follow in Columbus' footsteps and to investigate the stories of the Indians. The Spaniards found tons of gold in Mexico. However, Spain's colonial interests in the small, gold-barren West Indian islands virtually died. Colonies were maintained only on the larger islands, of Cuba, Puerto Rico, Hispaniola and Jamaica. There was little Spanish interest in smaller islands such as the Virgin Islands or the rest of the West Indies.

The wealth and power of Spain became inherently linked to the supply of gold and silver in its treasury. As that source of wealth dwindled, Spain's power and prestige as a nation began to decline, too. But long before Spain declined, other European nations became interested in the wealth and power they envisioned in the Americas. French, English and Dutch entrepreneurs became bolder and bolder in challenging Spain's right to own the wealth of the Americas. None of them, however, dared risk a direct confrontation with that mighty nation Spain. Only the vicious West Indian hurricanes and carefully planned attacks by privateers and pirates haunted the Spaniards' initial dream of everlasting wealth, power and influence in the Americas. At that time they did not envision how being a colonial empire would drain their ready-made resources.

The trickle of attacks on the Spanish by the other European nations soon became a flood. They were anxious to see the wealth flow into their
coffers instead of Spain's. Until 1588, however, Spain's might seemed barely tested by exploits such as Drake's daring attacks in South America and elsewhere between 1577 and 1580. The Spaniards managed quite well to prevent, or control, any real foreign penetration into their New World empire. The earliest attempts at colonization made by Spain's enemies in Europe, except for the case of Portugal in Brazil, were made in the area now known as North America (Berkin and Wood, 1986: 28-33). That, too, was an area virtually abandoned by Spain after it discovered the wealth of Mexico and Central and South America. This pattern of foreign colonization, however, was destined to change by the early 1600's.

In 1588, Spain acted on a plan to fight the English and stop the spread of Protestantism in Europe. A very costly attack was planned to be launched on England. Spain drained its treasury by putting together the supposedly Invincible Armada, a force of 130 ships and 30,000 men (Conlin, 1990: 27). They were to attack England, kidnap Queen Elizabeth I, and persecute Protestants in the area. The Spanish attack, however, was a dismal failure. England gained a decisive victory and much prestige throughout Europe as a result of Spain's lack of military success.

The defeat of the Spanish Armada did not end Spain's wealth or power immediately. Philip II continued to receive over $12 million each year from the Americas (Conlin, 1990: 27), but Spain had been severely weakened as a European empire. France, England and Holland (a former Spanish colony) became convinced that the idea of Spanish invincibility was a myth. After the failure of the Armada in 1588, the other European nations were ready to challenge Spain's empire in the Americas. Each nation was also committed to setting up its own American empire.
Even at that point, however, Denmark, which was destined to dominate one area in the Virgin Islands, was not part of the challenge to Spain. The Danes were struggling to solve their own national and international problems. It would be another seventy years or so before they, too, set out in earnest to lay claim to a part of the Spanish empire in the West Indies. By then Spain was even weaker, as the Spaniards were forced to admit in the Treaty of Madrid, on April 18, 1670 (Westergaard, 1917: 287).

Europeans visited the Virgin Islands fairly regularly after Columbus went there in 1493. Their sheltered harbors also hid privateers and pirates waiting for ships on which to prey (Hatch, 1972: 2). Like the Amerindians before them, the French, Spanish, Dutch and English made fishing trips to the area from time to time (Hatch, 1972: 15). Furthermore, the Earl of Cumberland wrote about the Virgin Islands after he passed through the area in 1596. There is still a sea passage between some of the British Virgin Islands, named Drake's Passage after Sir Francis Drake. "Drake's Seat", a very famous look-out on St. Thomas is part of a legend about the infamous English sailor and pirate, who supposedly once lived on the island.

Despite the frequent mention of the Virgin Islands during the seventeenth century, the French and English at first deemed the islands to be unattractive and inhospitable to settlement (Hatch, 1972: 15). After the desperate scramble for the West Indian islands began, negativity toward the islands came to an end. Suddenly they became attractive to colonize in the eyes of competing European nations wishing to expand their power. Every island was needed for investment in slaves and cotton, tobacco and sugarcane production. Unlike the Spaniards, who wanted ready gold and silver, the other Europeans who came to the West Indies were looking to
agriculture. There they saw long-term wealth and fewer limitations to power. Some of the earliest agricultural settlements in the Virgin Islands might have been made by shipwrecked sailors (Knox, 1852: 22).

The Dutch West India Company was established in 1621 to trade in the Americas. The Dutch probably made survey landings on St. Kitts and St. Croix before the English. By 1625, both nations might have had settlements on St. Croix (Knox, 1852: 23). Knox based his conclusions partly on the work of the French author Du Tertre, who suggested that the Dutch and the English were on St. Croix before 1645. Knox also suggested that some of the early inhabitants of St. Croix moved there directly from Europe. Others could have been Englishmen forced out of St. Kitts by the Spaniard Don Frederick de Toledo in 1629, or they could have been Dutchmen whom the Spanish and Portuguese pushed out of Brazil in 1626.

Europeans were squabbling for power on the continent, and they were greedy for wealth and colonies in the West Indies. These two situations frequently put the European nations at odds with one another. According to Westergaard (1917: 15), "the charter companies became instruments through which European states fought each other openly or by intrigue for the foreign trade of alien lands."

In 1645, there was conflict between the Dutch and the English on St. Croix. The Dutch killed one English governor. The English retaliated by killing two Dutch governors and then forced the Dutch to leave the island. They left for St. Martin and St. Eustatius. From 100 to 120 Frenchmen on the island left the same time as the Dutch and went to live on Guadeloupe (Knox, 1852: 23). The English remained as the sole colonizers of St. Croix.
The domination and free reign of the English would not last very long. A treaty in 1630 affected peace between Spain and England all over the world, but the Spaniards did not honor it (Knox, 1852: 26). On August 10, 1650, five Spanish vessels with 1,200 men were sent from Puerto Rico to attack the English colony on St. Croix, and English rule over the island was ended. The English were driven off the island, and it became a Spanish possession again. In 1655, Cromwell sent Penn and Venables to Puerto Rico to get revenge on the Spaniards. Repelled by forces on that well-defended island, they took Jamaica instead (Knox, 1852: 27). Apparently, sometime during 1650, the Dutch tried to re-establish themselves on St. Croix but were repulsed by the Spanish garrison left on the island (Knox, 1852: 29).

After the Dutch, it was France's turn to seek domination of St. Croix in 1650. The French Governor-General on St. Kitts, M. de Poincy, sent 160 hand-picked soldiers to St. Croix to take the island away from the Spaniards. M. de Vaugalan commanded the expedition. De Poincy, who dreamed of his own island empire, hoped to set up his "splendid new capitol" on St. Croix, being willing to forego the haunting vision of his own capitol on Guadeloupe (Lewisohn, 1970: 36).

The well-orchestrated French attack on St. Croix was too much for the defending Spaniards. The island passed to a new group of European colonizers—the French. From 1652-1653, St. Croix and parts of St. Christopher, St. Martin, and St. Barts were the sole possession of the showy, egotistical Phillippe de Lonvilliers de Poincy. Mainly for economic reasons, De Poincy turned St. Croix and his other possessions over to the Knights of Malta in 1653 (Lewisohn, 1970: 48).
In 1674, the colony went back to the French government. In spite of attempts to improve the economy, the island was plagued by illnesses and poor crops. French management did not bring prosperity to St. Croix, and the colonists were very disappointed. About 1695-96, they left the island and moved to the colony on St. Dominique (Haiti). The French retained their claim to St. Croix, but after 1696, there was no permanent settlement on the island until the 1730's. Englishmen visited occasionally to get lumber. However, for all those years, no group seemed excited about living there permanently (Dookhan, 1974: 44).

Europeans attempted to colonize St. Thomas and St. John before St. Croix. St. Thomas, in particular, holds a very prominent geographical position in the Virgin Islands. It has been sometimes called “the place on the way to every other place” (Dookhan, 1974: 1). It is believed that the Dutch were the first Europeans to have a settlement on St. Thomas, in 1647 (Knox, 1852: 44). As with St. Croix, the Dutch, the English and the French also competed for St. Thomas. According to De Booy and Faris (1970: 46), there were French settlers on St. Thomas by 1647. They came there from Crab Island (Vieques) after Spaniards from Puerto Rico drove them out. Those French settlers supposedly found groves of lemon and orange trees and bananas growing on St. Thomas.

De Booy and Faris date the earliest Dutch settlement on St. Thomas to about 1657. Eventually, both the Dutch and the English quarreled over ownership of St. Thomas. However, by the time the first Danes arrived in 1666, the Dutch had left the island to live on the Hudson River in New Amsterdam (De Booy and Faris, 1970: 47). The Danes would later seek a
special agreement with England (1670), when they planned a second attempt to colonize the island in 1671-1672 (Dookhan, 1974: 37).

In 1647, the French under Governor-General De Poincy tried to start a colony on St. John but were rejected by the Spaniards (Hatch, 1972: 16). In 1675 and again in 1684, the Danes made attempts to start settlements on St. John. Both the English on Tortola and the Spanish on Puerto Rico hated these moves and tried to stop any other nation from settling on the island. The Danes finally managed to start a colony on St. John on March 24, 1718.

Danish interest in owning St. Croix blossomed during the 1720's. St. Thomas and St. John were facing economic depression. Authorities thought the situation could change if St. Croix became available to them, along with St. Thomas and St. John, as part of the Danish West Indies (Dookhan, 1974: 44).

The Virgin Islands stimulated the vision of glory and power held by the French Governor-General, De Poincy, but did not contribute much to the treasuries of England, Spain, France and Holland. For years, however, the islands haunted the political and economic planning of those countries. Despite frequent claims that the islands were barren (Earl of Cumberland) or uninhabitable (De Poincy), the French, English, Spanish and Dutch went to war repeatedly to determine who should rule them (Hatch, 1972: 15).

It was only after the Danes brought their genius to the islands, beginning with St. Thomas in 1672, that they began to make political and economic progress. They also began to show some potential for commercial development. Even under Danish rule, however, the images of barrenness, unproductivity, disease and disaster never left the Virgin Islands. Eventually, even the Danes concluded it was best for them to leave.
Denmark and the Virgin Islands - The Economic Phase

The Danish East India Company was established in 1616. By 1618, Denmark was a colonial power in Asia (Westergaard, 1917: 12). Like other European nations of that time, the Danes were caught up in the drive for nationalism, development of capital, and the prestige and power that accompanied them. For about the next 50 years, however, both external and internal political conflicts limited the time and efforts the Danish government could give to colonization and external trade.

Under King Christian II, the Danes became a Renaissance nation. They were energized by the Lutheran Reformation. However, the Denmark-Norway Kingdom was busy putting down revolts of nobles and peasants (Westergaard, 1917: 15), so there was very little time for economic planning, trade or economic growth. During that period, the Dutch, English and French had more investors, money and men than Denmark-Norway.

The chartering of the Danish East India Company by King Christian IV did not really place his nation in the same position as Holland, England or France. Those nations were already challenging Spain in the Americas. Individual Danes did venture into the New World, sailing and working for Holland, England or France. In time, however, it was the Dutch, even more than the Danes, who influenced commercial developments in Denmark-Norway. A Dutchman, John de Willom, is credited with making the first business proposal to the Danish government. With economic decline as it was, he suggested that the Danes organize a Danish West India Company. The suggestion received the approval of King Christian IV, and a company was organized in January of 1625. It was to function for eight years trading in the West Indies, Brazil and Virginia, after which the endeavor failed
(Westergaard, 1917: 18-22). During 1625, Denmark became involved in the Thirty Years' War (Dookhan, 1974: 33). Twenty-nine years later (1654), King Frederik III gave permission to trade in the West Indies, and in 1668, a Board of Trade was set up as a part of the government. Dutchman Simon Petkum was named its first president.

By 1660, there was an absolute monarch in Denmark. Since attempts by the nobles to weaken the monarchy failed, government by King and Estates had come to an end. Luckily, the monarchs used their concentration of power and made a concerted effort to build up the Danish economy through a vibrant commercial sector (Westergaard, 1917: 22). Thus, a peculiar relationship evolved in Denmark-Norway between entrepreneurs and the monarchy. The goals of that alignment were power, prestige and wealth for the monarchy. Wealth and prestige also passed to the merchants and the nation, in turn. Now that he was absolute ruler, the king still needed certain forms of support from the merchants, traders and peasants. They, in turn, depended on the king to make laws that would improve industry and commerce in the country (Dookhan, 1974: 34).

In 1647, Gabriel Gómez organized a trade expedition to the West Indies. He had the permission of Prince Frederik, later King Frederik III (Dookhan, 1974: 34). The two De Casseres brothers, who led the venture, were given introductory letters from the government of Denmark-Norway to the governor of Barbados. It is believed that the Civil War in England between the Cavaliers and Roundheads undermined the success of the venture. The next Danish voyage to the West Indies took place in 1651. There are no details about how that second trip fared.
As time went by, however, more Danes, both wealthy and not so wealthy, became interested in the West Indian trade. According to Danish records, Erik Nielson Smit made a successful trade voyage to and from the West Indies in 1652. The king granted Smit special exemption from paying duty on the goods he brought back to Denmark. Smit made another trip to the West Indies in 1653. His return cargo consisted of: 4,000 bales of tobacco, 40,000 pounds of ginger, two hogsheads of sugar, and seven barrels each of sugar and indigo (Dookhan, 1974: 33). Soon there were new trade interests and new commitments of capital, ships and adventurers. A Danish document dated August 11, 1657, and studied by Westergaard, verifies that the Danes traded in the West Indies about that time. It also shows that the English and hurricanes were two scourges the Danes feared (Westergaard, 1917: 28). By 1663, Smit had made four trade expeditions to the West Indies (Dookhan, 1974: 35). So, trade with the West Indies continued, but risks were always present since the Spanish thought they owned the area, the English wanted to take it away, and the pirates did not care from whom they stole.

All Danish ventures beginning in 1647 were oriented toward normal trade and commerce in the West Indies, but by 1663, Danish thought about trade in the West Indies was changing. The idea of Denmark having its own colony on the island of St. Thomas in the West Indies had begun to evolve. In April, 1665, a plan for colonizing St. Thomas was presented to King Frederik III. Among the reasons for choosing St. Thomas were its safe-sheltered harbor and the harbor's ability to hold large ships. Early in the plans for the colony, it was also determined that nationals other than Danes would be included in the colony. This was to ensure that other
nations would not attack the colony, since it would be unlikely that the French, for example, attack a colony where there were French citizens.

The king had no problem with the proposal to start a colony on St. Thomas. In three weeks, a royal commission named Erik Nielsen Smit to be its governor. He was given royal authority to start the first Danish colony on St. Thomas, West Indies (Dookhan, 1974: 35).

In July, 1665, Smit left Denmark for St. Thomas aboard the ship Eendragt. The journey proved to be difficult. On two occasions, one off St. Barts and another in St. Thomas Harbor, the ship was almost overwhelmed by storms. On March 30, 1666, Governor Smit hoisted the Danish flag and began Denmark's first venture on St. Thomas. One of the first buildings erected by Governor Smit was Fort Frederik or Smidtsberg (today, Bluebeard's Castle). It was completed in 1689.

Nothing much came of the first attempt at settlement on St. Thomas. Illness and hardship haunted the colonists. Smit died on June 12, 1666. The Lutheran minister, Rev. Kjeld Jensen Slagelse, was chosen to replace Smit as governor.

Besides the hardship and the illness, the English kept provoking the Danes. They acted as if they owned St. Thomas, a claim they made to the Danes on numerous occasions. Within nineteen months, other problems along with the harassment from the English forced the Danes to abandon their first settlement on St. Thomas. Within five years, they would start another one.

King Christian V became the ruler of Denmark in 1670, and on March 11, 1671, he gave a charter to a new Danish West India Company. Later, in 1673-74, it became the Danish West India and Guinea Company
(Westergaard, 1917: 40). The charter was very broad. According to Larsen (1950: 13-14), eight of its major clauses provided for:

1. The occupation of St. Thomas and other islands thereabouts.
2. The building of forts and lodges and the taking of necessary measures for their defense.
3. The conversion of the Caribs to Christianity.
4. The administration of justice to all in its service.
5. The right to choose a governor.
6. The right to choose ministers.
7. The right to take prisoners to work on plantations.
8. The right to take women of ill repute to work on plantations.

After the preliminaries were over, George Jorgen Iversen, who had experienced plantation work on St. Kitts (Dookhan, 1974: 37), was chosen to be governor. He was to lead the new venture and succeed where Smit had failed. Slagelse was selected again to accompany the enterprise.

Nothing in the venture was left to chance. Unprecedented diplomacy also came into play. King Christian V was persuaded by the Danish West India Company to seek a special agreement from King Charles II of England. The Danes wanted to make sure that the second attempt to start a colony on St. Thomas would get off to a good start. They did not want trouble from the English government or privateers. Charles II is supposed to have sent orders to the leader of the English colony on St. Thomas, advising that the colony be given up to the Danes (Oldendorp, 1987: 23).

Despite these careful preparations, the Danish enterprise did not begin well. The ship Faero left Bergen in June, 1671. There was a crew of 12, and there were 178 participants in the endeavor (Dookhan, 1974: 38); among them were convicts, soldiers, serfs and clerks. Shortly after the ship left Denmark, it sprang a leak and had to return to port. Many of the convicts escaped while the ship was being repaired and had to be replaced; the convicts were to serve as the first Danish slaves on St. Thomas (Larsen,
1950: 15). More than 75 people, including Slagelse, died on the voyage to the island. The remaining adventurers arrived on May 25, 1672. According to Dookhan (1974), no one was there to welcome the colonists when they arrived, but Knox, who wrote in 1852, suggested that there were settlers on the island and they came out to welcome the new endeavor.

Governor Iversen's initial program involved a move to encourage unity among the settlers on the island (Larsen, 1950: 16). They were soon clearing the land, building houses, and setting up forts for protection. However, the quality of the people Denmark selected to set up the colony was not good. In those times, it was difficult for nations to get reliable people to do the hard work in their New World colonies. The Danish prisoners who were brought to St. Thomas as laborers did not do well. They were unreliable and they worked very poorly in the heat. In time, Governor Iversen described them as, "lazy, shiftless, louty, vagabonds and idlers" (Larsen, 1950: 18). According to Westergaard (1917: 39-40), the Danes tried to use the dregs of their society on the plantations; but that experiment failed.

Since Iversen had lived on St. Kitts before becoming governor of St. Thomas, he was familiar with the institution of African slavery on the plantations there. With the failure of the experiment with Danish prisoners and peasants, Governor Iversen decided on an alternative labor force--African slaves.

The first slaves on St. Thomas came from Africa via other Caribbean islands. As the demand for labor grew, slaves were brought directly from Africa by traders from other countries. This approach was first tried in 1673. There were 103 Africans in the first shipment. During that same
year, commerce began to develop between the French island of St. Croix and the Danish colony on St. Thomas.

In May, 1687, the first slaves shipped by the Danish West India and Guinea Company arrived in St. Thomas on a ship owned by the company. Eighty slaves survived that journey to St. Thomas (Westergaard, 1917: 70). Eventually, St. Thomas became one of the leading markets for slaves in the Americas. In July, 1683, there were 98 Europeans and 55 Africans on St. Thomas. By 1690, there were 156 Europeans and 175 Africans (Larsen, 1950: 21).

According to Larsen (1950: 22), St. Thomas was quick to gain the reputation in Denmark for being a horrible place of pirates, convicts, hunger, fevers and death. Diseases and death haunted everyone -- Europeans and Africans alike. Westergaard (1917: 72) states that malaria ravaged the Europeans, while smallpox took its toll of the Africans. Hookworms, too, played a role in the scourge of the population. The Lutheran, Reformed and Moravian churches all saw their preachers and members die on a regular basis -- some lasted less than three months in the West Indies. Larsen (1950: 75-76) writes:

"The Lutheran ministers died regularly on St. Thomas. The area became known as the Lutheran ministers' graveyard."

Governor Iversen, however, did not die on St. Thomas, but at sea, in 1683, while returning to the island from Denmark to take up a second term as governor after he had asked to be relieved of the post earlier. He was killed defending his wife and young child during a mutiny aboard the ship (Larsen, 1950: 23).
Governor Iversen had supervised the development program in the Danish West Indies for about eight years. His major accomplishments included the following:

1) He instituted an open-door policy on colonists, accepting all nationalities and all those willing to settle and help develop the island's economy. The Danish colonies prospered because of their open, lenient policies -- colonists came from Europe and from other Caribbean islands. Later, King Christian V boosted this policy (1687), when he made the Danish West Indies a free port, open to trade with all Denmark and with other nations (Oldendorp, 1987: 24).

In his *Notes on the Danish West Indies*, Keller (1903) pointed out that in 1688, the white families on St. Thomas consisted of 19 Danish, 63 Dutch, 30 English, 17 French, 3 Swedish, 2 German, and 1 Portuguese. Such a (white) population mix was maintained into the 1980's.

2) Iversen set the stage for the island's trade and commercial development. By 1691, there were 101 estates in St. Thomas. Cotton was grown on 87, sugar on 5, and 10 raised provisions such as maize, millet and cassava. Not much emphasis was placed on tobacco anymore. When a Frenchman, Jean Baptiste Labat, visited in 1701, he was sure the colony was on the verge of becoming a giant in the areas of trade and commerce (Hatch, 1972: 24). There was hardly a doubt that the neutralist policy being stressed on the island was contributing positively to its development.

As population, economic and other pressures increased on St. Thomas, the Danish government began to look seriously at expanding the colony to include St. John. No doubt, as they were to envision after 1776, the Danes saw such a venture as part of their "manifest destiny." Later, the target would become St. Croix.

3) By importing and enslaving Africans, Iversen planted the seeds for a persistent struggle on the islands. In 1733, slaves on St. John rebelled and took over the island for some eight months. In the process, they killed a number of whites and carried out a reign of terror and revenge. The revolt was ended in an inhumane way. The frightened whites increased the viciousness with which they kept the slaves in check. Later, it was St. Croix's turn. In 1848, Moses Buddhoe Gottlieb and other slaves there pressured a volatile situation on St. Croix and demanded their freedom. Governor-General Von Scholten was forced, without the advice of the government of Denmark, to abolish slavery in the colony.

4) Iversen made participation in religious worship an institution in his colony. If he could return, Iversen would be amazed at the low
status to which Lutheranism has sunk in the area. It has fallen from the lofty pedestal on which he placed it.

Times have changed, as is documented in what Governor Iversen had to say about attending the state-supported church on August 8, 1672, at Fort Christian:

1) "Every person who speaks Danish is expected to attend church every Sunday in Christian Fort or pay a fine of 25 pounds of tobacco."

2) "All other people are expected to attend every Sunday afternoon or pay the same fine."

3) "If servants are allowed to work on Sundays, then their masters should pay 50 pounds of tobacco. Fines are to be paid in three parts: a) The King b) The Lutheran Church c) The complainant" (Larsen, 1950: 18).

Two further notes on religion in the Danish West Indies under Iversen are that during the 1600's to early 1700's, only the Lutheran and Dutch Reformed churches could hold public services (Larsen, 1950: 25). No religious provision was made whatsoever for the slaves (Maynard, 1968: 6).

The Danes had started to develop their colony during the phase in the islands' history that Hatch labeled, "Phase 4: Settlement, development and sugar production - - 100 - 150 years." For the colonists, that period was punctuated with some successes, crises, crop failures, and varied demographic changes. Such features in St. Thomas' colonial history were all well depicted during the 1680's (Hatch, 1972: 23). According to Hatch, "a variety of peoples and types began to drift in, some to stay and some to move on. Slaves were secured from Africa and other islands."

Hurricanes also plagued the colonies. They were unpredictable, but regular. Major hurricane disasters were recorded during 1697, 1713, and 1738 (De Booy & Faris, 1970: 58).
Meanwhile, neither the Spanish on Puerto Rico nor the English governor on Nevis welcomed the development of a Danish colony in the Virgin Islands. However, the Spaniards did not bother much about it. Neither did the authorities in England support Stapleton's protests or occasional deliberate interference in the colony's affairs. The French on St. Croix did not seem to care about who else settled in the area.

By 1680, about fifty plantations had been started on St. Thomas. Of these, forty-six were occupied and working (Hatch, 1972: 23). In 1691, there were 101 plantations on the island. Twenty-four years later, in 1715, the number of plantations increased to 160. During the same period, the white population increased from 389 to 547. The African population rose from 555 to 3,042. There was also a change in the crop that dominated the economy from cotton to sugar (Hatch, 1972: 23-24). Tobacco had disappeared as a commercial crop much earlier. A capital had also been established on the island by 1691. At first, it was called Taphus. Later, it became Charlotte Amalie, for King Christian V's wife (DeBooy & Faris, 1970: 70).

Plans to take over St. John and incorporate it with St. Thomas became firmer as time went by. Although St. Thomas received the early attention, the original charter to develop a settlement had made reference to the colonization of St. John, when it stated that they were to occupy St. Thomas "and any other islands thereabouts" (Dookhan, 1974: 40). St. John is easily seen from St. Thomas.

Some of the early attempts to colonize St. John for Denmark were carried out by Esmit in 1683-84 and 1688. None of those attempts was successful (Dookhan, 1974: 40-41). Success finally came under Bredal
(1716-1718). In May, 1717, the Danish envoy to London wrote this letter to the English:

"The Danish West India Company has long been in possession of not only the island of St. Thomas, but also the neighboring little uninhabited islands, amongst which are the Island of Crabs (Krabben Island) and St. John. These islands were granted to the company by a decree of the King of Denmark, and it has always opposed their occupation by other nations. It now hopes to settle them, or at least St. John, but the threats of the English in these parts, not to leave anyone in peaceable possession of the Island, prevent those who wish to go from settling there. Pray that direction may be given to the English Governors not to annoy the company in this matter conformably to the order given in 1672 to Col. Stapleton" (Hatch, 1972: 25).

There was one very peculiar factor about the Danish colony on St. Thomas, which ultimately became a feature of the entire Danish West Indies: the language. Danish was barely ever the predominant language in the colony. Since the largest population on the island was Dutch, their language emerged as the one most frequently spoken. At the end of the 1700's and during the early 1800's, a Dutch-Creole language was popular particularly among the slaves. It combined Dutch, English and some aspects of African languages. Eventually, English became the dominant language in the Danish West Indies. This particularly became the case after the second British occupation of the islands (1807 - 1815). The situation has not changed since.

The Danish venture to the West Indies was to improve the wealth of the Danes and Denmark, (Dookhan, 1972: 32). Their open lenient trade policies made the Danish West Indies very prosperous at times. Almost anything from anywhere in the world could have been bought or sold on St. Thomas (Zabriskie, 1918: 9).
Under the leadership of the Esmit brothers in the Virgin Islands, pirates and piracy were condoned; the islands' neutrality made it common. An infamous pirate ship, *La Trameuse*, was found anchored in St. Thomas Harbor (1683) when it was being sought by the English (Westergaard, 1917: 59), and Governor Adolph Esmit, along with his wife, Charity, was later (1684) charged with collaboration with pirates (Dookhan, 1974: 112).

From the beginning, Jews were involved in the economic development of the West Indies, including the Danish West Indies. They were merchants, planters or had other businesses. However, they were concerned over their acceptance within the society. It was not normal, therefore, to find Jewish men growing the proverbial "Jewish beard" (Oldendorp, 1987: 152). Nor did they worship in public places. The area provided them some safe havens from the Spanish Inquisition. There is a Jewish cemetery on Nevis from the 1670's and a synagogue built in 1796 on St. Thomas.

At the earliest stages of trade on the islands, or when there was a shortage of cash, things were paid for with sugar, tobacco, cotton or slaves. This was clearly stated in Iversen's list of penalties for non-attendance at church. Even government taxes could be paid through the use of valuable items instead of money (Oldendorp, 1987: 24).

The Virgin Islands were totally dependent on trade with the outside world. If provisions and clothing were not provided through trade, the inhabitants would suffer severe shortages. Back then, just as today, those items necessary for comfort and everyday life had to be imported. They came from Europe or North America. Dyewood, ivory and slaves came to the Danish West Indies from Guinea, Africa (Oldendorp, 1987: 146).
Before banking became an institution in the Danish West Indies, it was not uncommon to see wheelbarrows filled with money being pushed through St. Thomas' streets. Eventually, one section of the fort was used as a bank. That was among the several purposes that the building served (Larsen, 1950: 16).

One of the high points in the attempt at economic development in the Danish West Indies happened in 1685. King Christian V invited the Brandenburgers (from the Duchy of Brandenburg) to establish themselves and do business on St. Thomas. The Brandenburgers set themselves up on the western end of Charlotte Amalie. That area is still known as Brandenburg Quarters.

Dutchmen were the principal shareholders in the Brandenburgers' enterprise. Many Huguenots also came from the French section of St. Kitts and joined the Brandenburgers after the Edict of Nantes was revoked (Knox, 1852: 54-55). The Brandenburgers flourished in St. Thomas as merchants and traders until 1715. It was during that era that sugar production increased over tobacco in the Danish West Indies. That change in the economy was to intensify the harshness of the slave trade from Africa. But while it spelled terror and social breakdown for West Africans, it brought large profits to the commercial sector of St. Thomas (Knox, 1852: 54-55).

Until 1754-55, the Danish West India and Guinea Company dominated and virtually monopolized the affairs of the Danish West Indies. For subtle national and obvious economic reasons, the colony grew to include St. John and St. Croix. The entrepreneurs in the West Indies repeatedly danced to the tunes of their capitalist backers in Europe. Whenever there was a demand for greater profit in the European countries, their colonies in the West
Indies pushed to meet the need. The goals of profit had to be met and, if possible, surpassed.

Admittedly, the Danes wanted to defy the British when they moved to colonize St. John, but there were profit pressures, too. Planters on St. Thomas thought they could increase their profits by starting new plantations on St. John. Governor Bredal, therefore, made what he envisioned was the best move toward economic and commercial success for the whole area. He visited St. John with a small group of men, there was a brief takeover ceremony, and the island was declared open for new settlement.

Both St. Thomas and St. John are, relatively, small islands. With the demands for more profits pouring in from Europe, the colonists needed new places to conquer in the name of capitalism. St. Croix was added to the Danish West Indies in 1733. Despite a previous history of economic failure, the Danes saw the island, larger than St. Thomas and St. John together, as an ideal place to add to their colonial commercial enterprise.

There had been no permanent French settlement on St. Croix since 1695-96, when they vacated the island for Santo Domingo (Hispaniola), but France still claimed the island as its own by right of its conquest in 1650 (Dookhan, 1974: 43-44). Denmark had no problem, however, in convincing the French to sell St. Croix in 1733. There was only one stipulation: any resale of the island must be sanctioned by France (Dookhan, 1974: 44). At that time, the French were certain they did not want an island they once owned falling into the hands of England. England was France's fiercest European rival. Once Denmark agreed to France's stipulation, the sale of the island was transacted. Thus, by 1733, the Danish West Indies had grown
from St. Thomas (1672) to include St. John (1717-1718) and St. Croix (1733). The new, expanded Danish West Indies was official by January 1735 (Dookhan, 1974: 45).

The government of Denmark assisted with financial and supervisory support in the Danish colonies. Three representatives of the government’s Board of Trade, established in 1668, were members of a six-man directorate of the Danish West India Company (Dookhan, 1974: 51). The Crown also had reserved powers stated in the charter. It could appoint the most important of the company’s colonial employees. Jens Juel, Peter Lerke, and Hans Hansen were the Crown’s first members of the directorate. For the first 103 years of the Danish West Indies, the day-to-day operations were virtually supervised by the Danish West India Company (Knox, 1852: 95-98).

That arrangement worked fine for a while. There were periods of prosperity, particularly during the high points of the slavery-dependent economy. There were low points, too. Such a situation occurred during the brief period before an invitation to invest was given to the Brandenburgers. Frequent hurricanes, diseases and droughts also placed severe economic pressures on the operations of the company. Eventually, the desire to expand the Danish West India Company and make it successful also saw the Company engaging in monopolistic manipulations that contributed to the Danish West India Company losing its overseership during 1754 - 55 (Knox, 1852: 98; Dookhan, 1974: 91).

In 1691-1694, the entire establishment of the Danes on St. Thomas, not including that of the Brandenburgers, was passed to a single owner, George Thermohen. He was the first person to place regular troops on St. Thomas, in 1692 (De Booy & Faris, 1970: 58). In 1754, the entire Danish West Indies
was bought by the Danish Crown. Colonists had become angry and upset with the monopolistic control exerted by the Danish West India Company (Dookhan, 1974: 61). After numerous complaints to King Frederik V, Count John Bernstorff suggested to the king that all the company's holdings be bought. These included forts, estates, stores, buildings, slaves and money (Zabriskie, 1918: 9-10).

Not much improvement occurred in the economy, however, even under direct Danish government control. Lack of rainfall was bad for the crops in the Virgin Islands. Governors often wrote to Europe explaining that the lack of rain for up to six months and more hurt the colony's production. Sugarcane often dried up in the fields (Dookhan, 1974: 79-80).

To check the declining economic trends on the islands, the Danish government declared them free ports to all Danes and to all other nations in 1764. This action slowed down the movement of merchants and other people from the Danish West Indies (Knox, 1852: 85), but nothing the government did checked the declining trends. Often, it was the favorable geographic position of the islands and the attraction some people had to St. Thomas that kept the Danish West Indies going. These special factors often stimulated island's economy more than the actions of the Danish government.

In 1801, and then again between 1807 and 1815, the British forced the Danes to give up control over the Danish West Indies. They never seemed to accept the right of the Danes to share the Virgin Islands with them.

Eventually, during the early twentieth century, it was both economics and international politics that determined the political direction that the Danish West Indies took. There is now little doubt, too, that the thoughts
behind the Monroe Doctrine and the aspirations of the Manifest Destiny, were important variables influencing the United States of America's decision to purchase the islands from Denmark (1916-17) (Dookhan, 1974: 243-251).

A plebiscite about the United States Virgin Islands' future political status on October 11, 1993, did not decide much. Less than the required 50 percent plus one of the citizens voted. So, there has been no definite decision about the direction the islands will take into the twenty-first century.

**Slaves in the Virgin Islands**

In 1518, Charles V, grandson of Ferdinand and Isabella and then the Spanish ruler, had authorized a Flemish nobleman to introduce up to 4,000 Negro slaves in the Antilles. Thus, the slave trade started in the Antilles, soon spreading to other parts of America and lasting for more than three centuries.

Much has been said about slavery in the colonization of America. Many have come to believe that slavery was invented by the Spaniards. The origins of slavery, however, go as far back as ancient times. Finally, during the Renaissance, in the fourteenth century, it was thought that slavery would disappear from Europe. But, on the contrary, economic forces stimulated it. During the fifteenth century, the maritime activities in the Mediterranean were extended to the Atlantic coasts mainly by the Portuguese, who started commercial enterprises in Africa. The slave trade was an important part of the enterprises. The African tribes were in constant warfare, and the victorious held thousand of prisoners whom they
were willing to sell. Both Portugal and Spain were active in this lucrative enterprise. During the colonization of the Antilles and America, the English, French and Dutch joined the Portuguese in the illegal commerce of black slaves. So this cruel, inhumane trade had two sources: the official license granted by the Portuguese Crown and the illegal commerce carried on by various European nations.

At first, there was only one purpose for enslaved Africans in the Danish West Indies. They were to work the plantations and provide large profits to make the planters and their sponsors in Europe rich and comfortable. Slaves were not allowed to attend church (Smith and Smith, 1988: 122). Africans were considered below humanity by the ethnocentric Europeans (Knox, 1852: 121-122).

Reflecting on the situation in the Danish West Indies at that time, G. Oliver Maynard (1968: 6) wrote:

"As on other islands, religious provision had been made for the planters, in this case by the Reformed Church, but nothing whatsoever was done for the slaves. Obeahism (a system of superstitious beliefs and rituals) was considered good enough for them; indeed, it was believed that the slave had no soul."

Slaves on St. Croix escaped regularly to Puerto Rico (De Booy & Faris, 1970: 121). They also escaped from St. John to Tortola before and after the British abolished slavery in the 1830's (Dookhan, 1974: 165).

During their sojourn under the Danish administration of the area called the Danish West Indies (1672-1917), with occasional short interruptions (1807-1815), the Africans depended on political action and the Christian religion to bring a sense of satisfaction to their lives.

Political action was manifested in revolts. There was one threat of a revolt on St. Thomas in 1691, and another in 1697, when a number of
maroons congregated at the west side of the island after a hurricane. But nothing really happened on either occasion (Hatch, 1972: 31). The fact that the seaport was busy and dependence on slavery on the plantations was limited possibly worked to deter any bloody revolt on that island. There were also well-organized area militias that could depend on the Free Negro Corps and the garrison at Fort Christian in Charlotte Amalie for support. They kept the slaves subdued (Dookhan, 1974: 166).

Slaves on St. Thomas did find ways to protest against their condition, however. According to the Royal Danish American Gazette, the island’s newspaper during the late 1700’s, slaves were constantly running away on the island. Often they sought refuge, men and women alike, in the forests or on the scores of ships anchored in the busy St. Thomas Harbor. The authorities threatened ship captains with fines if they hid runaway slaves.

Open slave revolts on St. Croix and St. John were more successful than on St. Thomas. There were revolts on St. Croix during 1746, 1759 and 1848 (Lewisohn, 1970). One of the most successful slave revolts in the Americas took place on St. John in 1733. That revolt, and another one in 1848, had profound political, economic and social implications for the entire Danish West Indies.

During November, 1733, a number of slaves on St. John successfully carried out a plan to take over the fort and the island. They disrupted the entire social and economic system there until August, 1734. At that, time 1087 African slaves were distributed among 103 plantations on St. John (Westergaard, 1917: 8). Once the fort was taken, the slaves traveled freely throughout the island. They attacked and killed whites or others who were perceived as enemies. Plantations, estates and sugar factories were also
pillaged and burned. Almost every estate on the island suffered some type of damage (DeBooy & Faris, 1970: 133). Reportedly, the revolt was related to a prolonged drought. No provision had been made to feed the slaves, who were neglected and starving.

The Danish West Indies Authority was not able to put down the 1733-1734 slave revolt. Military assistance was sought from Tortola, St. Kitts-Nevis, and finally Martinique. The soldiers from Tortola and St. Kitts-Nevis were beaten and forced from the island by the revolting slaves (Knox, 1852: 73-74).

Finally, the rebellion was put to an end by the French officer Longueville. He came from Martinique with 228 soldiers skilled in jungle warfare. Through systematic strategies, Longueville pressured the resisting slaves. Some were killed, others surrendered, and still others committed suicide. The French soldiers left at the end of May, 1734, but the final group of slaves was captured in August, 1734. None of the promises and assurances given to the rebellious slaves by the Danish authorities was kept.

There is uncertainty about how many Africans participated in the 1733 rebellion. Some estimates have suggested hundreds, but documents from February, 1734, indicate that only 146 slaves were really involved (Dookhan, 1974: 169). The other 941 slaves on the island did not participate in the rebellion for freedom.

During July, 1848, the slaves on St. Croix rose up against the constituted authority on the island. On July 28, 1847, a royal decree was signed by King Christian VIII, which promised immediate freedom to children born of slaves. The adults were told they would have to wait 12 years for their
freedom (Dookhan, 1974: 175). That plan was acceptable to King and planters, but no one thought to consult the African slaves. They disagreed with the 12-year wait, wanting immediate freedom.

As was the case with Haiti during the 1790's, news of political unrest in Europe (France, Italy, Germany and Denmark) stirred the longings of the slaves in the Danish West Indies for freedom. They had also learned about the freedom uprisings in Martinique (1822) and Guadeloupe (1802) (Williams, 1984: 325). They knew that in 1838, slavery had been abolished only a few miles away from them in the British Virgin Islands (Greenwood & Hamber, 1980: 73; Hall, 1985: 25).

The white population on St. Croix was caught off guard, because they had become sure of their dominance over the African population and did not anticipate a revolt at that time. On July 3, 1848, the slaves rose up throughout St. Croix and demanded their freedom (Williams, 1984: 326-327).

The uprising began in the rural west end of the island. Bells rang and conch shells were blown, making the white population aware of the uprising. Thousands of Africans poured into Frederiksted and stood in front of the fort demanding their freedom (Dookhan, 1974: 176). Despite the tensions and the excitement of the moment, both sides showed restraint. As the frightened, desperate whites fled to a ship in the harbor to seek refuge on land, General Moses Buddhoe, a leader of the slaves, calmly directed the actions of his followers. He was determined to force the hand of the authorities. The verdict had to be "freedom now", or he would take over the island.
Governor-General Von Scholten heard of the uprising about 2:00 a.m. on July 3, and by noon, he made a decision. He traveled as fast as he could to Frederiksted, looked at the situation, and then did what he had wanted to do since 1834. He proclaimed the freedom of all the slaves in the Danish West Indies (Dookhan, 1974: 176). The action Von Scholten took was without the authority of the king. Later, some of his enemies suggested that the Governor-General had allowed the uprising so that he could abolish slavery.

In time, the rebellion spread from Frederiksted to Christiansted. It continued a few more days before it was quelled by 580 Spanish soldiers from Puerto Rico. A number of Africans were wounded or killed. Buddhoe was banished to Trinidad. From there, he went to Curacao and then to the United States.

On September 22, 1848, a royal proclamation confirmed Von Scholten's action of July 3 (Williams, 1984: 327). Because Von Scholten had many enemies among the plantation owners, he was returned to Denmark and court martialed. He was found guilty of dereliction of duty on February 5, 1851. About one year later, through a unanimous decision, the ex-Governor-General was acquitted by the Danish Supreme Court (Dookhan, 1974: 178).

About the same time that the Africans in the Danish West Indies decided to start resisting through political action, another situation was emerging that would benefit them in the long run. By a chance meeting in Denmark in 1731, the slave Anthony Ulrich was able to relate to Count Zinzendorf of Germany the plight of the slaves on St. Thomas-St. John. Ulrich also pointed out that no one in the colony cared to teach the slaves about Christianity (Dookhan, 1974: 186).
Both Ulrich and Zinzendorf were in Denmark for the coronation of King Christian VI. The slave had accompanied his master to the function. This black man in Denmark caught the attention of Count Zinzendorf.

The count sympathized with the Moravian movement. He was also a wealthy philanthropist and had given shelter to the persecuted Moravian Brethren at Herrnhut in Germany. Zinzendorf told the Moravians about the plight of slaves in the Danish West Indies as he learned it from Ulrich. It was also arranged for the slave to visit Herrnhut and tell his story.

The Moravians felt that it was their duty to bring the Gospel of Jesus to the downtrodden and exploited people of the world (Lawetz, 1980: 2). Ulrich's story captured their attention. Unlike the other Europeans who went to the West Indies, the Moravians often did manual labor alongside the Africans (Larsen, 1950: 65; Dookhan, 1974: 190).

The first two Moravian Brethren to go to the Danish West Indies were Leonard Dober, a potter, and David Mitchmann, a carpenter. They arrived in St. Thomas on December 13, 1732. Fourteen other missionaries arrived in June, 1734. They were to continue the work that Dober had begun among the slaves on St. Thomas. Soon the missionary work with the slaves spread to St. Croix (1734) and eventually to St. John (1741). Later, Lutheran missionaries were to emulate the work of the Moravians in education and religion.

At first, neither the planters nor the Danish West India Company were happy about the Moravians teaching Christianity to the slaves. They concluded that the slaves would become rebellious and cause them great financial losses on the plantations (Dookhan, 1974: 191; DeBooy & Faris, 1970: 109; Larsen, 1950: 64).
Because of the slave revolt on St. John (1733), working among slaves was viewed with much suspicion on that island. That position on the part of the planters made missionary work difficult. Slaves were forbidden to speak with the missionaries. In October, 1737, a number of the Moravian missionaries were imprisoned. They were freed in 1739, when Count Zinzendorf visited St. Thomas and sought their release through the governor.

By 1759, the Danish authority had begun to commend the work of the Moravians among the slaves. Those who attended the Moravian evening services could ignore the 7:00 p.m. curfew, provided they produced a pass signed by a Moravian missionary (Dookhan, 1974: 191-192).

The West Indies proved a very difficult field for the missionaries. It did not matter what their religious faith was, Lutheran, Moravian, or Dutch Reformed, the European ministers died on a regular basis. It was the arrival of Friederich Martin on the Danish islands that gave stability, order and direction to the work of the Moravians. Martin’s ministry lasted from 1736 to 1750. By the time of his death, Martin had become known as the Apostle to the Negroes. He was buried on the plantation, La Grande Princesse, on St. Croix.

One of Martin’s innovations was for the Moravians to purchase and run their own plantations with slave labor (Dookhan, 1974: 190). That was a very controversial move, but it was how the missionaries could avoid the pressure of the planters. The slaves at New Herrnhut were taught the gospel and how to read and write (Maynard, 1968: 8).

The Moravians began to operate their first plantation at New Herrnhut in 1737. Two other plantations, Friedensthal in St. Croix and Bethany in St.
John, started operations later. The Moravian missionaries made a living, and having their own slaves made the work of religious conversion easier.

Martin was also interested in supervising the development of religious (moral) discipline among the slaves. He systematized the church organization and included the sacrament, class meetings, and church assistants. He adopted a system of personal interviews to meet slaves and invite them to meetings (Dookhan, 1974: 190-191).

Despite their innovations in dealing with the enslaved Africans, the Moravian Brethren, like the other Europeans, accepted slavery as an integral part of the social order. They taught the slaves that God expected them to be obedient and submissive. Moravian missionaries were careful to avoid conflict with the secular powers. They also disavowed any interest in the colony’s politics (Dookhan, 1974: 192).

After the cessation of the slave trade in the Danish West Indies (1792), the planters turned to missionaries to assist in convincing the slaves to be harder working and more passive. The missionaries were to encourage slaves to avoid conflicts while they worked more faithfully at all their tasks. In turn, the planters gave more financial assistance to the missionaries (Dookhan, 1974: 192).

The Moravians had the greatest impact on the slaves of all the religious movements on the islands, which included the Lutherans, the Dutch Reformed Church, and later the Anglicans and Roman Catholics. Moravian teachings affected the slaves’ social, economic and, eventually, political lives. On the other hand, in 1741, Pastor Stoud wrote from St. Croix that the white population was “an unruly and lawless people who care neither for the government nor for religion.” In 1777, the Lutheran missionary Kingo
referred to members of the St. Thomas council as: "unrighteous and all corrupt in their ways. They do not attend church regularly. They are the friends of pirates and smugglers, and keep black and colored women as concubines" (Dookhan, 1974: 192-193).

In time, some of the African slaves became stalwarts in the Moravian faith. They did itinerant preaching, too. Of these, Nathaniel, on St. Croix, and the preacher and stonemason, Cornelius, on St. Thomas, were the best known. Cornelius, in particular, went from island to island building churches and preaching the Gospel to everyone. Any money he made went toward the purchase of his freedom and that of his family. Cornelius was described as an eloquent speaker. He spoke Creole, German, English, Danish and Dutch (Dookhan, 1974: 197).

Europeans in the West Indian colonies used Christianity in two ways. For preachers such as Martin and Kingo, there was a sincere concern about souls, but others were more concerned about deculturizing the Africans and Europeanizing them in the process. Until today, the real impact and goal of Christianizing African slaves is being debated.

Some of the Africans who were exposed to Christianity did adopt a more serious approach to life. Because of their association with the church, men such as Cornelius also experienced some sense of social mobility. Overall, the contact with Christianity may well have given the Africans a sense of meaning to a life of drudgery.

The trades that the Moravians taught the slaves were very useful to them. Some used the extra earnings to purchase their freedom or that of their family. Furthermore, after the abolition of slavery, those who had learned trades were not tied to the new system of plantation labor that evolved.
Since they had specialized skills, such workers were able to earn more than the average field worker. Unlike the situation that existed in the British colonies, the Danish government did allow slaves in its colony to receive a formal education (Dookhan, 1974: 194). At that time, the education provided was largely religious, whether it was given by Moravians or Lutherans.

In 1773, the Lutherans took the lead in the Danish West Indies. They established the first public schools to give African children a secular education. Moravians began their effort at public education in 1798 on St. Croix. The heirs of the Schimmelman plantations gave the Moravians permission to have schools for African children on their plantations. A school also was opened on the Emmans Moravian Church plantation on St. John in 1782. By 1787, the Danish government was ready to sponsor public schools for slave children on the islands. However, funding those public schools was to prove problematic (Dookhan, 1974: 195).

Governor-General Peter Von Scholten attempted to introduce compulsory, free education on the islands through an ordinance on June 4, 1839. The schools were to be run by both Moravians and Lutherans. Children were to attend school from ages 6 to 13 (Dookhan 1974: 194). However, seventy years before the abolition of slavery in the Danish colony, slaves there were learning to read and write.

It is also quite possible that such Africans as Cornelius and Buddhoe used their access to education (Williams, 1984: 326) to become leaders and encourage political awareness among the slaves. They were at a point where they understood the meaning of freedom, so they demanded it. In the Danish West Indies, it was a growth in enlightened thinking that caused
Peter Von Scholten to respond to the anger of the slaves as he did on July 3, 1848.

The open, angry revolts on St. Croix and St. John, and the subtle revolts brought on by enlightenment through education, eventually worked toward the liberation of Africans in the Danish West Indies. One should not look at the history of Denmark in the West Indies without examining the roles of those two revolutions: the political revolution through force and the enlightenment revolution brought about by education. Ultimately, those two revolutions worked to undermine Danish authority in the West Indies. They also started the process of restructuring an African culture for the slaves, who remembered the world they had lost.

After the abolition of slavery in the Danish West Indies in 1848, the Danish commercial venture in the area was doomed. It took another 68 years, but Denmark was eventually forced to remove its colonial presence. In 1916, after about four attempts at a deal, the Danish West Indies were sold to the United States (Hatch, 1972: 75-76; Dookhan, 1974: 251-262). The official transfer and the lowering and raising of the flags took place March 31, 1917.

From The Danish West Indies to United States Virgin Islands

Once slavery in the Danish West Indies was abolished in 1848, the area became a drain on the treasury of Denmark. Besides the issue of labor, there were additional factors such as the exhausted soil, competition from beet sugar, and the development of larger economic and political units in Europe (Westergaard, 1917: 253). If it were not for a residue of pride in its past glory,
Denmark probably would have abandoned its West Indies possessions long before 1917 (Dookhan, 1974: 243-246).

Denmark began to decline in political and economic power as early as the 1800's. It lost Norway in 1814 and Schleswig-Holstein in 1864. By then, compared with the other European nations, Denmark had become a very small power, and the colonies in the West Indies were a burden. The last surplus in the Danish West Indies up to the year 1900 was in 1871 (Dookhan, 1974: 245). The amount of surplus money was $26,000. There was a major problem with recurrent budgetary deficits in the Danish West Indies. At that point in time, France, England or Holland, which were having economic problems in their colonies, would not have taken those islands even as a gift.

Thus, by the 1860's, only the United States showed any interest in the Danish West Indies. Its interest was declared to be strategic. The West Indies at that time were still the "cockpit" of sea power (Westergaard, 1917: 257-259), and the United States had tried for a number of years to take over St. Thomas Harbor.

In 1804 and 1806, fires had razed Charlotte Amalie. In the late 1860's, cholera broke out over the island, causing 860 deaths by 1867. At that time, St. Thomas had also earned a very poor reputation abroad. It was called a pest hole, Golgotha, and other such names. Every native seemed displeased with the island. Then, during 1867, there was a hurricane, a major earthquake and a tidal wave (Zabriskie, 1918: 16).

A formal United States commission visited the Danish West Indies in 1867 to discuss purchase of the islands of St. Thomas and St. John (Zabriskie, 1918: 23). The visit occurred at the same time as a natural
disaster. It was, therefore, termed traumatic. The ship *Monongahela*, on which the United States delegation traveled, was washed ashore on St. Croix (Hatch, 1972: 73).

In 1867, the United States did not want to purchase St. Croix, but only St. Thomas and St. John. The Danes were anxious to sell, but the United States' efforts were killed in the Senate. Senator Charles Sumner had a quarrel with President Andrew Johnson, and the purchase agreement fell through. In May, 1870, King Christian IX withdrew the offer to sell the islands to the United States (Hatch, 1972: 74).

Immediately, the citizens of the Danish West Indies signed a petition seeking self-government, but they remained in constant flux: one year, a sale of the islands was on, the next year, it was off.

During the 1890's, rumors of a sale of the Danish West Indies to the United States began again. The sugar interests on the island of St. Croix were very interested in seeing the island sold to the United States. A second purchase treaty was drawn up in 1902, and $5 million were agreed on for the sale. John Hans, then Secretary of State, signed the treaty on January 4, 1902, but there was a holdup in the United States Senate for one year. Eventually this sale agreement, too, was called off, since opposition had emerged in Denmark. The Germans, who also had become interested in the area, used their influence with the Danes to have the sale agreement with the United States called off. Like the United States, the Germans had military visions for the area (Hatch, 1972: 75).

A third attempt to sell the Danish West Indies occurred during 1911-1912. This time, the United States had real concerns about German U-boats operating in the area. There was no sympathy for such German action in
the Americas. The nation was prepared to stand behind the articles of the Monroe Doctrine (1823). The U.S. Admiral Dewey disagreed with the idea that the United States should purchase the Danish West Indies because there was a threat from German ships operating in the area. To Dewey, those facilities the United States already possessed in Puerto Rico were more than adequate to deter Germany from the West Indies (Hatch, 1972: 75-76).

However, the United States persisted in its efforts to purchase the Danish islands, and success came in 1916. The treaty was signed in New York by then Secretary of State Lansing for the United States and Minister Brun for Denmark. The Danes had voted 283,694 for the sale, 157,596 against it (Dookhan, 1974: 260).

The United States offered $20,000,000 for the three islands, St. Thomas, St. Croix and St. John. Denmark asked for $27,000,000. They agreed on $25,000,000. Danish private property rights on the islands were to continue (Dookhan, 1974: 259). The most significant Danish private property at that time was probably the West Indies Dock Company. Since 1912, the company had been managing and developing the main port on St. Thomas. In time, that situation became a major area for political and economic contention (1970's). In April, 1993, the government of the United States Virgin Islands under Governor Alexander Farelly purchased the dock area from the company. The area cost the government $54,000,000 (St. Thomas Daily News, April, 9, 1993). Despite the cost, this was generally considered a major political and economic victory for the people of the islands.

As part of the Virgin Islands sale agreement, the United States Congress maintained reserve powers in matters of civil rights and political status of the islands' inhabitants. In 1927, all people living on the islands were given
the option of becoming United States citizens. In 1994, the political status issue was still being debated. The island’s political relationship with the United States had not been finalized as of that year by the citizens on the islands.

After the treaty for the sale and purchase of the islands was signed, the next step was the final sale agreement. The document was agreed on by Congress September 7, 1916. President Woodrow Wilson signed it January 16, 1917. The Danish king had signed the document December 22, 1916. Exchanges of ratification took place January 17, 1917 (Dookhan, 1974: 260).

Generally, the mood in the Danish West Indies favored the sale to the United States. Twenty-one planters sent a cable to Denmark expressing support for the deal. The colonial councils on the islands requested speedy action on the treaty. It is now thought that the support for the sale on the islands influenced the Danish acceptance of the treaty (Dookhan, 1974: 260).

The official transfer ceremonies were held simultaneously on St. Thomas and St. Croix at 4:00 p.m., March 31, 1917. Thousands of people witnessed the ceremony. The Danish Danneborg was lowered while the United States Stars and Stripes was raised. Some people were sad to be losing the Danish brand of colonialism; others hoped for a more prosperous life under United States ownership. The transfer ceremony marked the end of about 245 years of Danish rule. An unknown future was beginning (Dookhan, 1974: 262).

There was one glaring weakness in the sale and transfer of the Danish West Indies to the United States. The African people who formed the
majority of the islands' population barely had a role in the process. Throughout the negotiation and sale, they remained on the peripheries. Neither Denmark nor the United States considered them a critical dimension in the future development of the islands. Within a few years, however, they were to view African participation in society from a much different perspective. Men such as D. Hamilton Jackson, Rothschild Francis, and George Moorehead would see to that. They challenged the United States and forced the nation to re-examine its creed of "Liberty and justice for all."

In 1936 and 1954, the Organic Acts were passed giving all citizens of the United States Virgin Islands (21 years and over) the right to participate in the islands' political process. In 1970, the islands started to vote for their Governors; until that time, Governors were appointed by the U.S. President. In 1994, serious consideration was being given to the citizens' determination of the islands' future political relationship (status) with the United States.

**St. John Then and Now (1718 - 1994)**

According to Sleight (1962: 30), St. John was probably inhabited as early as 200 A.D. About 20 different sites were found indicating some form of habitation (settled, occupied or utilized). In pre-Columbian times, the inhabitants seemed to have shifted their settlements from the east to west side of the island (Hatch, 1972: 6). That was how they coped with the struggle for survival, and this pattern of demographic shifting occurred again in the island's history during the latter part of the 1700's. Although there was no evidence found by Bullen (1962) that Carib Indians lived on St. John, they
probably arrived in the area about 100-150 years before Columbus. Evidence of Caribs on St. John is indeed meager, but both St. Thomas and St. John were probably controlled by Caribs when Columbus visited in 1493 (Hatch, 1972: 8-11).

There is no record of Columbus’ men landing on St. John in November, 1493, and the islands were not revisited by the Spanish for 57 years. During 1647, General De Poincy, the French governor of the island of St. Kitts (St. Christopher) sent 60 men who were opposed to him from St. Kitts to start a colony on St. John (Hatch, 1972: 16). He hoped they would die in the attempt. However, Captain Jean Pinart, who had visited the island before, knew that some English were living there and that he and his followers could probably survive. Pinart had seen sweet potatoes growing on St. John. For the settlers, the greatest danger would come from the Spaniards in Puerto Rico, who apparently paid St. John regular visits. Whenever the Spaniards visited the island and found French settlers, they drove them out.

In the late seventeenth century, Denmark joined the movement to colonize the Caribbean Islands. The Danish West Indies Company was chartered in 1671, and St. Thomas Island was settled in 1672. In 1717, Governor Erik Bredal, along with six soldiers, 10 planters, and 16 slaves, began the first permanent Danish colony on St. John at Coral Bay (Wild and Reaves, 1986: 5; Low and Valls, 1991: 6).

Although the colony was contested by the British, the Danes remained. By 1720-21, there were 39 planters on St. John. The colonists on St. Thomas and St. John were a cosmopolitan group. There were people of Danish, Dutch, English, German, French, Irish, Scotch, Flemish and Swedish origin (Westergaard, 1917: 38, 121). While Danish was the official
language, more than half of the population was Dutch and, thus, everyday language on the islands was Dutch (Wild and Reaves, 1986: 7).

Tobacco, indigo and cotton were grown on the plantations, but sugar was the main cash crop. Fortunes were made from sugarcane, and its production affected the politics of most European countries during the eighteenth and much of the nineteenth centuries. Some sugar and the waste from its manufacture was made into rum on the island, but most of the sugar was exported to Europe and North America (Low And Valls, 1991).

African slaves performed the hard labor in the cane fields, mills and refineries. The thriving plantation economy demanded a rise in the importation of slaves. In 1733, a prolonged drought through spring and summer was followed by a severe hurricane that in July destroyed the few remaining crops and crippled shipping. This combination of factors resulted in a slave revolt on November 23, 1733. The insurrection only curtailed the economy a short while, and relative prosperity returned to the island within a few years. By 1739, there were 2,434 inhabitants and 69 plantations on St. John (Wild and Reaves, 1986: 8).

The greatest prosperity came to the sugar economy on St. John in the last quarter of the eighteenth century, with the largest production on the island occurring in 1796. Trade particularly increased when the Danish islands became free ports in 1764. The fact that Denmark remained neutral during the constant disputes and wars of the eighteenth century aided its colonies in becoming flourishing international trade centers.

When Governor Bredal moved to colonize St. John from St. Thomas in 1717-1718, he made Coral Bay in the east the economic and population center. That first settlement consisted of 20 white settlers and 16 African
slaves (Low and Valls, 1991: 6). St. John was an extension of the plantations on St. Thomas. Because of the pressure in Europe for profits, the planters on St. Thomas were constantly asked to produce greater profits to fuel the greed of emerging capitalism in Denmark. It was not surprising to find that the plantation economy of St. John virtually disintegrated after slavery and its cheap labor were abolished. As he contemplated the economic and social situation in St. John, Clarence L. Johnson (1950) referred to the island as having had a feudal aristocracy that depended on the institution of slavery. "When the slaves were freed, it collapsed, never recovered, and the island largely reverted to wilderness" (Hatch, 1972: 3).

But the island seemed to have great potential in the 1700's. The early settlers envisioned a colony with a harbor (Coral Bay) that would rival St. Thomas. They expected either Coral Bay or Cruz Bay to become a great commercial center.

In 1765, Christian Martfeldt, a Danish economist, visited the Danish West Indies. While there, he counted about 31 bays on St. John. He also proposed that Coral Bay on St. John and not the harbor of St. Thomas should be the center of commerce for the colony. Waldemar Westergaard (1917; 4) pointed out that the harbor at Coral Bay was always superior to that of St. Thomas. British Leeward Islands Governor Matthew (1734) also agreed that St. John had the best harbor in the area "leewards of Antigua." No wonder the British tried repeatedly to prevent the Danes from colonizing the island. Coral Bay harbor is twice as large, much deeper, and has natural advantages not present in St. Thomas. The attraction of the harbor, however, was not enough to make St. John an economic success. Its size, lofty hills, and other natural drawbacks, such as a tendency to drought,
limited the island’s agricultural potential. Governor Bredal gave tax incentives and other enticements to encourage entrepreneurs to St. John (Creque, 1968: 16). Initially, there was some success, but that was not to last very long.

According to Creque (1968), those early settlers were ambitious and hopeful. They anticipated much growth and great commercial success for the island, but there was prosperity only for a brief period during the middle of the eighteenth century. Ironically, part of that period of prosperity occurred right after the slaves revolted and took over the island (1733-1734). By 1739, there were 1,414 African slaves on the island. In 1733, the number had been 1,087. The production levels of 1733 were surpassed in 1739, and the plantations were operating at normalcy again (Hatch, 1972: 43).

St. John and St. Croix did not suffer as severely as St. Thomas when the colony passed from the Danish West India Company to the Crown in 1755. To counter the resulting economic decline in the colony, King Frederick V and King Christian VII declared the Danish West Indies, in 1764 and 1766 respectively, to be a free port. That declaration was to make the area accessible to ships from Denmark and all other European nations.

By 1773, the number of plantations on St. John decreased from its high point of 109 to 69, but some of this decline was due to consolidations or multiple operations, not abandonment. There were 42 estates producing cotton and 27 producing sugar (Hatch, 1972: 43).

During the period of prosperity on St. John, the inhabitants began to plan a town and commercial center. The harbor at the east end, Coral Bay, was expected to be its center. Land at Coral Bay area was surveyed and
divided into lots (1760), but as the short economic boom fizzled out, so did the dreams for a town in the area (Jarvis, 1938: 40).

Some of the reasons given to explain the lack of greater development at Coral Bay include: 1) Cannons from Tortola could easily be trained on Coral Bay, 2) long passages into the harbor were difficult when the trade winds were harsh, and 3) St. Thomas was already established as a harbor in the area (Hatch, 1972: 45-46). It may well be, however, that another factor, rather than direct economics, was critical to that eighteenth-century shift of population and interest from Coral Bay to Cruz Bay.

After the slave revolt of 1733, much interest was placed on preventing such an incident from taking place a second time. White planters were always deathly afraid of slave uprisings. After 1733-34, no one doubted that the white planters needed greater protection from their slaves. The fort at Coral Bay was not built with a slave attack in mind, and during such circumstances, Cruz Bay offered a much easier passage to St. Thomas than Coral Bay did. Thus, a gradual shifting away from Coral Bay probably began during the 1730’s-1780’s (Hatch, 1972: 52; Low and Valls, 1991: 14).

In 1787, the construction of a fort and dock began at Cruz Bay. Vessels went to Cruz Bay to exchange goods for wood, especially guayacan. The Battery in Cruz Bay was constructed in the late eighteenth century to provide protection for the growing village. The fort’s original name was Christian’s Fort. It was expanded in 1825 (Valls and Edwards, 1989).

The Enighed Estate, a sugar plantation, was established in Cruz Bay prior to 1755. By 1803, the estate had 110 acres of active sugarcane production. It continued to operate until 1848, when the abolition of slavery made it no longer profitable. During the eighteenth century, several
upland plantations, such as Hammer Farm, Rustenburg-Adventure, Adrian and Beverhoudstberg, established warehouses in Cruz Bay Village.

Cruz Bay has been documented as a primary anchorage for both inter-island and transoceanic sailing vessels during the eighteenth and nineteenth centuries. After St. John became a free port in 1764, ships of all nations periodically called at Cruz Bay to trade with the sugar and cotton plantations. The town that grew up along the edge of the harbor enjoyed some degree of prosperity during its heyday between 1780 and 1850, although the overall number of ships entering Cruz Bay Harbor in the eighteenth and nineteenth centuries was relatively small compared to St. Thomas Harbor, or even Christiansted and Frederiksted (Hylton, 1989).

An 1896 photograph that was taken during a visit there of the Danish ship *Fyen* shows a dock at Cruz Bay (Fig. 4). According to Low and Valls, the scene in the photograph would still have looked the same when Dr. Knud-Hansen visited the port in 1910. In 1910, Dr. Knud-Hansen, one of the few Danish doctors that stayed to work under the Americans, describes one of his trips to St. John:

"Whenever I got informed by the police master that somebody was sick over there and that a boat would come for me in the morning ... I climbed into a little St. Jan sailing boat, curled myself on the ballast of large stones, tacked for some three or four hours, and landed in Cruz Bay." (Low and Valls, 1991: 46).

One of the people who observed the shift of population from the east to the west side of the island and actually mapped it during a 20-year interval was Lieutenant P.L. Oxholm (Fig. 5). He was an expert on Danish military fortifications. Oxholm visited St. John in 1780 and again in 1800 and mapped both the Coral Bay and Cruz Bay areas. Apparently, Oxholm suggested in 1780 that the fort at Coral Bay should not have been destroyed
Fig. 5. St. John in America (Oxholm Map, 1800).
nor should one be built at Cruz Bay, as had probably been advised by the
German, Von Rohr. The location for the fort between Durloes Bay and
Hawksnest (Low and Valls, 1991: 14) was criticized by Oxholm. He said that
the fort did not offer the kind of protection sought.

Oxholm's mapping of St. John in 1780 showed five definite
administrative districts. They were Maho Bay, Reef Bay, Cruz Bay, East End
and Coral Bay. At that time, the western half of the island was more
intensely utilized. Some general development was also noted on the north
cost. A second survey and mapping was done in 1800. The five districts
noted in 1780 remained, but the population and production centers had
definitely shifted from Coral Bay in the east to Cruz Bay in the west. On the
map of 1800, a fort was shown at Cruz Bay, not at Coral Bay. A burial
ground and new work on the hill were also shown at Cruz Bay. More open
ground was shown at Cruz Bay on the 1780 map than on the 1800 map.
These two maps of Coral Bay showed a total of about 25 structures. In the
Cruz Bay area, over 50 structures were shown (Hatch, 1972: 52-57). The five
districts could be clearly observed on St. John as late as 1958. Andre-Pierre
Ledru visited St. John in 1796-1797. He noted that the chief populated area
was on the south-west side of the island, "at the entrance of a deep gulf that
forms a very sure road." As a result of the westward shift of population
center and economic dominance from Coral Bay to Cruz Bay, developments
and production activities were growing in Cruz Bay, but declining in Coral
Bay.

Hatch (1972: 23-25) suggested that there were specific phases of
development in the economic rise and decline of the Danish West Indies. He
called the fifth of these six phases "Economic Collapse and Reversion to
Subsistence Farming.” St. John was caught up in that fifth phase viciously. Its poor soil and lack of water undermined all attempts at prosperity in agriculture on the island.

Between 1775 and 1797, both the African and European populations decreased. In 1775, the total population was 2,434; there were 2,324 blacks, 110 whites. In 1789, the population totaled 2,383, consisting of 167 whites and 2,215 blacks. Sixteen of the blacks were free. The total population in 1797 was 2,110, consisting of 2,007 blacks and 103 whites. Fifteen of the blacks were free (Hatch, 1972: 57).

The decline of population on St. John was attributed to the movement of the capital and people from that island to St. Croix and St. Thomas. Whatever was the cause, the decline went on and on for years before it stopped, and as the capital and population declined, so did the variety and vitality of the island’s economy. A time came when even cotton and sugar lost their place in the economy of St. John. Sugar production between 1800 and 1847 had dropped rapidly. Shipping in the area had also declined greatly (Westergaard, 1917: 253-254).

For a brief period, bay leaves were manufactured into bay rum, but that also experienced a decline in the 1930’s. Other means of employment for the African population, who remained the chief occupants of the island, included raising cattle, picking bay leaves, fishing, some subsistence farming, and basketry (Low and Valls, 1991). There was much misery on the island, particularly for the African population (Hatch, 1972: 90).

Shaw (1940) wrote about the dismal economic future for St. John. He also suggested that an influx of tourists to the island could upset the social and cultural norms there. Shaw’s prediction was based on what he saw
happening on the island then. For him, there had to come a time when the Africans eventually developed "economic desires" which would be difficult to satisfy.

Some of those "economic desires" Shaw wrote about were eventually critical to the overall shift and decline in St. John's population over the years. Planters desperate to leave the island sold land to the Africans for whatever they could get. Others gave it away as "gift land" to squatters (Low and Valls, 1991: 36). They wanted to move from St. John and establish themselves elsewhere.

Shortly before emancipation in 1848, St. John had a population of 2,450. By 1880, it dropped to 944. In 1911, the population was 941. That was one-third of the population in 1835. In the year when the Danish West Indies was transferred to the United States (1917), the population of St. John was 929. That was to become 765 in 1930. There were 9 whites and 750 Africans on the island in 1935. In 1939, only 4 of the 722 people on the island were white. Those who left St. John went chiefly to California, Denmark, Sweden, New York, St. Croix, and St. Thomas (Low and Valls, 1991: 78-92).

One person who observed and commented on the dramatic population decline on St. John wrote: "...the people have never been given the feeling of equality. Their sun of hope has always been hidden by the storm clouds of disappointment. Yet they look forward to a better day" (Low and Valls, 1991: 78).

Tourism started to stimulate some movement toward economic development on St. John during the 1930's. It improved after World War II and picked up further after the airport on St. Thomas had its initial
improvement. The largest flow of visitors to the island, however, started after the National Park was opened in 1956.

About 55,000 people visited St. John in 1962. The number of visitors in 1972 was 281,000; and in 1982, 970,000. There were about 1,000,000 visitors to the island in 1992. A resurgence in the island's residential population has also become noticeable. The 1983 population was 2,572; 75% were black. In 1993, the population of the island was 3,504. By percentage, the population is 65% African and 35% white (Virgin Islands Census Bureau, 1980 and 1990).

A declining population in St. John is no longer a threat to the economy of the island or to the autonomous survival of a society there. Much more commercial and migratory activity occurs on the island today than at any time since its post-1750's boom.

The National Park's two major resort areas, Caneel Bay and Hyatt Regency St. John, and the well-known camp grounds at Cinnamon Bay and Maho Bay have brought back some of the long-lost vitality to the social and economic life on St. John. A viable business sector now thrives on the islands, particularly in Cruz Bay. This includes craft and souvenir shops, car rentals, taxi service, restaurants, banking facilities, the park services, and a tourism center.

Water is imported to St. John. For this reason, all new houses are expected to be built with cisterns. Other than the local craft souvenirs, very little is being produced on St. John today. In terms of the location of the economic center of the island, there is now no doubt left that it is Cruz Bay. The hotels, the shops, and the banks are all largely located in the general area of Cruz Bay, or close to it.
This directional shift for economic and social survival (east to west) first occurred with the Amerindians hundreds of years ago when they inhabited the island. It was repeated after the 1730's and has been highlighted on Oxholm's famous maps of 1780 and 1800.
UNDERWATER ARCHAEOLOGICAL RESEARCH AT CRUZ BAY

Documented wrecks at St. John

The Register of the Virgin Islands Shipwrecks (1523-1912) revealed that a total of 31 wrecks have been reported at St. John island. Of those, 19 list the specific surroundings or bay in which they sank. None of those listed ships wrecked in Cruz Bay, but there remains the possibility that one or several of the unspecified wrecks occurred in Cruz Bay (Table 1; Towle, 1976).

Table 1. Shipwrecks that have occurred at St. John Island

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1647</td>
<td>The Bark</td>
<td>Commanded by Jean Pinart, carried French settlers from St. Christopher and was burned by Spaniards most likely in one of St. John’s harbors.</td>
<td>Unidentified</td>
</tr>
<tr>
<td>1728</td>
<td>Unnamed</td>
<td>British barque from Rhode Island, smashed at St. John during a hurricane.</td>
<td>RIGSARKIVET. Vestindisk-Øg-guinsk Kompagni, Breve og dokumenter fra Vestindien # 97, Gov. Suhm the Company 8 Oct. 1728.</td>
</tr>
<tr>
<td>Year</td>
<td>Name</td>
<td>Description</td>
<td>Source</td>
</tr>
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</tr>
<tr>
<td>1774</td>
<td>Unnamed</td>
<td>Danish sloop owned by Peter Wood, Captain DeNully, lost off the east end of St. John.</td>
<td>ROYAL DANISH AMERICAN GAZETTE, 24 Aug., 1774.</td>
</tr>
<tr>
<td>1782</td>
<td>H.M.S. Santa Mónica</td>
<td>British warship, Captain John Linzee, sunk at Round Bay, St. John, after striking sunken rock.</td>
<td>MARX/TOWLE, p.9.</td>
</tr>
<tr>
<td>1787</td>
<td>Mary Island</td>
<td>Sloop of St. Croix, Captain Colin Manson, from St. Thomas to St. John with cargo of lumber, sunk near Cabritte Point, St. John.</td>
<td>ST. THOMAS NP. (1782-1788).</td>
</tr>
<tr>
<td>1789</td>
<td>Neptune</td>
<td>British ship, Captain Casey, of London, wrecked at St. John.</td>
<td>MARX/TOWLE, p. 10.</td>
</tr>
<tr>
<td>1818</td>
<td>Unnamed</td>
<td>Three masted ship stranded at Leinster Bay, St. John.</td>
<td>RIGSARKIVET, Vestindiske Lokaleriver, St. Jan Landføgted #89</td>
</tr>
<tr>
<td>1825</td>
<td>Anne</td>
<td>Drogher of Tortola, with cargo of sugar, wrecked off St. John during a hurricane.</td>
<td>LLOYD'S LIST, 13 Sept. 1825.</td>
</tr>
<tr>
<td>Year</td>
<td>Name</td>
<td>Description</td>
<td>Source</td>
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</tr>
<tr>
<td>1826</td>
<td>Unnamed</td>
<td>Brig wrecked at Privateer Bay, St. John, with cargo of rum.</td>
<td>RIGSARKIVET. St. Jan Landfoged Arkiv #58 Robert Richardson to the Judge, 9 March, 1826.</td>
</tr>
<tr>
<td>1826</td>
<td>Eugenia</td>
<td>Schooner, Captain Andrew Wright, from St. Thomas to Surinam, sunk in bay of St. John.</td>
<td>ST. THOMAS TIDENDE, 18 March, 1826.</td>
</tr>
<tr>
<td>1828</td>
<td>Industry</td>
<td>British sloop of Nevis, John Lawson, Master, wrecked on reef at east end of St. John, on voyage from St. Thomas to Anguilla.</td>
<td>RIGSARKIVET. St. Jan Landfoged Arkiv 58, Roger Isaacs to Lopez DuBe..., 21 July, 1828.</td>
</tr>
<tr>
<td>1830</td>
<td>Unnamed</td>
<td>British sloop, wrecked off Smith Bay (Leinster Bay) Estate, St. John.</td>
<td>ST. THOMAS TIDENDE, 4 June, 1831.</td>
</tr>
<tr>
<td>1836</td>
<td>Unnamed</td>
<td>Sloop of Tortola, with cargo of floor and lumber, wrecked on a reef opposite Richardson’s plantation (Mount Pleasant) on the northside of St. John.</td>
<td>RIGSARKIVET. St. Jan Landfoged Arkiv #59 H. Edward to Judge Magens, 15 March, 1836.</td>
</tr>
<tr>
<td>1839</td>
<td>Unnamed</td>
<td>Shalloped sunk off west end of Mary’s Point, St. John.</td>
<td>RIGSARKIVET.. Vestindiske Lokalarkiver, St. Jan Landfoged #89, John Moons to Kieruff, 8 Jan., 1939.</td>
</tr>
<tr>
<td>Year</td>
<td>Name</td>
<td>Description</td>
<td>Source</td>
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<tr>
<td>1847</td>
<td>Unnamed</td>
<td>Captain Thomas George, overturned and wrecked at Mary's Point, St. John, during a storm. Carrying cargo of supplies for Annaberg and Leinster Bay plantations.</td>
<td>RIGSARKIVET. Vestindiske Lokalarkiver, St. Jan Landfoged Arkv, #29, Michael to Judge Hanschell, 10 January, 1847.</td>
</tr>
<tr>
<td>1861</td>
<td>Wingold</td>
<td>American brig of Boston, 211 tons, Captain Robert Kallock, from St. Martin to Boston with cargo of salt and coconuts, sunk at Moore's Creek, St. John.</td>
<td>ST. THOMAS TIDENDE. 19 Oct., 1961.</td>
</tr>
<tr>
<td>1870</td>
<td>Concordia</td>
<td>Dutch brig, 152 tons, Captain J.R. Buft, on voyage from Demerara to Liverpool with cargo of rum and sugar, foundered off Ram's Head, St. John, while being towed to St. Thomas by salvors.</td>
<td>ST. THOMAS TIDENDE. 9 Feb. &amp; 16 March, 1870.</td>
</tr>
<tr>
<td>1884</td>
<td>Eden</td>
<td>Sloop of St. John, sunk off Ram's Head, St. John during a storm.</td>
<td>ST. CROIX AVIS. 6 Dec., 1884.</td>
</tr>
<tr>
<td>1888</td>
<td>Mary L. Dunn</td>
<td>British schooner wrecked at Turner Bay, St. John.</td>
<td>NARS. RG #55, F.A. Thomas to Sheriff, March 31, 1888, Box 1917.</td>
</tr>
<tr>
<td>Year</td>
<td>Name</td>
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<tr>
<td>1899</td>
<td><em>Pearl</em></td>
<td>Ship sunk on northside of St. John during a storm.</td>
<td>ST. THOMAS TIDENDE, 12 Aug., 1899.</td>
</tr>
<tr>
<td>1907</td>
<td><em>Diana</em></td>
<td>Sloop belonging to the Danish West India Plantation Company, wrecked off St. John during a storm.</td>
<td>KAI LARSEN. “Diana”.</td>
</tr>
<tr>
<td>1912</td>
<td><em>Syria</em></td>
<td>Ship bound from St. Thomas to Tortola foundered off St. John.</td>
<td>ST. THOMAS TIDENDE, 20 Nov., 1912.</td>
</tr>
</tbody>
</table>

In 1970, remains of a ship were discovered in about 25 feet of water in Round Bay, a part of Coral Bay in St. John, United States Virgin Islands. The shipwreck proved to be that of the *H.M.S. Santa Mónica*, a 28-gun frigate of Spain captured by the English Navy and taken into the Royal Navy under its own name. In 1781, the *H.M.S. Santa Mónica* was sent to the West Indies in support of Royal Navy operations in that area. Because of a reported imminent attack by French and American ships on the island of
Tortola, British Virgin Islands, the government of the island appealed to the British West Indies commander for protection. As a result, four frigates were sent to patrol the waters off the British Virgin Islands. Among them was the flagship *H.M.S. Santa Mónica*, which after a few weeks on station wrecked on St. John.

Alan Albright, a marine archaeologist for the Caribbean Research Institute, directed the excavations on the site between 1971 and 1973 (Albright, 1974). Albright also conducted a proton magnetometer survey on the entire northern and western coastlines including the entire coastlines of Coral Bay between 1971 and 1973. This magnetometer survey did not include Cruz Bay. According to Albright (1975: 8), two interesting sites were discovered off the north side of the island of St. John. An anomaly on the southeast corner of Haulover Bay revealed iron pieces and several bottles of the second quarter of the nineteenth century and an intact bowl of a slightly earlier date.

**Cruz Bay**

After studying previous archaeological work performed on St. John, it was found that no systematic underwater archaeological research had been previously done in Cruz Bay. Our underwater archaeological research project began in May, 1992. Background research facilitated the definition of the problem to be investigated and contributed to the formulation of specific goals. Our hypothesis, derived from the previously compiled historical evidence, was that Cruz Bay was transformed during the eighteenth century from a practically abandoned bay to a small principal port of the island of St. John.
Once the hypothesis was established, the study area was defined and the kinds of data needed was determined. The area to be studied was the navigational channel of the bay. We placed special importance on its shallower area, assuming that the historical wharf structure, where loading and unloading and commercial exchange took place, could have been located here. Ceramics and glass (for their diagnostic characteristics) were the kinds of artifacts considered necessary to adequately test the hypothesis set forth. The remains of a historical wharf structure were also expected to be found. Historical research about a wharf building in the colonial period suggested the possibility of finding buried remains of a wharf made of stone-filled timber cribs enclosing areas filled with mud, sand and dirt.

The first phase of the research project consisted of writing the plan of action and obtaining the necessary permits, financing, equipment and supplies for conducting field research. The Virgin Islands Port Authority granted us permission to work underwater in the area for no more than three weeks.

The plan for archaeological data collection involved two basic procedures: reconnaissance, which consisted of a magnetometer survey and visual inspection, and a site examination phase, which consisted of subsurface probing and trenching excavations.

**Project Location**

The designated study area is located in Cruz Bay, the principal port of the island of St. John since the eighteenth century (Fig. 6). The survey area consisted of a rectangle measuring approximately 600 feet long and 150
wide that comprised the last part of the navigation channel of Cruz Bay including the Port Authority ferry dock (Fig. 7).

The NOAA chart for Pillsbury Sound, including Cruz Bay, indicates that the maximum depth at the mouth of the bay is about 12 feet. However, a 1975 fathometer survey of the bay for the Virgin Islands Port Authority indicates that the mouth of the bay is about 14 feet deep and that a 12 foot channel extends into the bay to the ferry dock (NOAA, 1979).

Current direction between Steven Cay and Cruz Bay sometimes changes with the tides and may run either to the north/northwest or to the south/southeast, but the prevailing condition seems to be the former. Water enters Cruz Bay over the reef off Gallows Point, aided by the refraction of waves around the point. Wave-driven flow depends on the height of the tide. Southward-flowing currents or unusual winds from western quadrants would enhance flow into the bay. Generally, however, flow into Cruz Bay is opposed and limited by the prevailing current and wind, which move toward the west/northeast (Sigma Environmental Sciences, 1978).

Currents inside Cruz Bay have been measured from less than 0.02 ft./sec. to 0.15 ft./sec. These velocities are sufficient to carry only fine silt that is put into suspension by other forces. This low, prevailing energy level accounts for the high percentage of fine particles in the bay sediments and the mud bottom in the creek. The circulation pattern and energy levels in the outer bay appear to flush out adequately suspended and dissolved pollutants. This is indicated by long-term water-quality monitoring (Sigma Environmental Sciences, 1978).
Although Cruz Bay is now used almost exclusively for harbor and anchorage, it is not designated as class "C" as are other harbor areas of the territory under the Water Pollution Control Act. Cruz Bay is class "B" water, for which the "best usage" is listed as "propagation of desirable species of marine life and primary contact recreation (swimming, water skiing, etc.). The Virgin Islands Department of Planning and Natural Resources frequently measures several of the water quality criteria that are legally limited in the Water Pollution Control Act. Measurements are made just north and south of the ferry dock, and the record since 1973 gives an excellent long-term picture of the water quality.

While the water of Cruz Bay is sheltered and calm, with the normal trade winds blowing from the northeast, it is exposed to winds approaching from the north and northwest. Occasional short squalls with winds from the northwest create moderate waves that stir up the sediments on the bottom even at a depth of 10 feet. The ferries also influence the instability of the bottom sediments, particularly in the shallow near-shore areas.

The initial visual inspection of the study area revealed mostly a bare sandy bottom with scattered algae growth. The algae growth is limited to the near shore area where it is shallower and better light conditions exist. The sediments showed a large number of burrows, which undoubtedly are from many crustaceans, mollusks and other organisms that live under the sediments. The area that showed a more complex marine community was that within the pilings of the existing pier. Numerous sponges and a number of large fish were seen.

The shoreline is characterized by consolidated sand or beach rock. The underlying bedrock is the Louisenhøj Formation, locally known as "Blue
Bitch," a submarine volcanic extrusion. The sandy ocean floor is loose, and in some areas a layer of silt is found between 4 and 6 feet down with loose sand below.

**Archaeological Survey**

The archaeological survey began during the preliminary background-investigation phase. Records, maps, previous reports, and local informants were utilized to learn as much as possible about the area before going into the field. The field survey was conducted from May 27 to May 31, 1992. This survey was carried out with the objective of discovering, locating and identifying potential archaeological sites that exist within the defined project area and that should be protected.

The project consisted of:

1. A survey of the designated area using a Proton Precession magnetometer.
2. The analysis of the data and creation of a contour map of the survey area showing the anomalies encountered.
3. Visual inspection of the anomalies using metal detectors, a water dredge and water probe with the objective of determining whether there were archaeological sites or artifacts among the anomalies.
4. A visual inspection of the area that was inaccessible to the research vessel and, therefore, to the magnetometer.

Once in the field, we performed a magnetometer survey of the area under study. Although the oldest and most common reconnaissance method is to search the study area by visual inspection at ground level, not all buried sites are detectable by visual inspection. Furthermore, sites that are
Identified on the surface by visual inspection may have unknown subsurface components. Due to this combination of factors, visual inspection was only done where it was impossible to use the magnetometer.

Magnetometers are employed when it is likely that a submerged site will have some form of iron remains belonging to structures, hardware, armaments, other artifacts or ballast. However, magnetometers are unable to detect non-ferrous materials.

Several types of magnetometers have been developed, but the one most frequently used in marine archaeology is the compact and portable Proton Precession magnetometer. Its components include a marine sensor, a chart recorder, a digital read-out, an interconnecting cable, and a power supply.

The marine magnetometer survey was conducted from a 20-foot fiberglass vessel utilizing a Proton Precession magnetometer. Because the survey area was relatively small and near shore, the desired positioning control, whose purpose was to enable accurate mapping of the data gained from the magnetometer survey, was done by using a transit, shore ranges, and two-way radio communication. A baseline was first established along the length of the existing pier. A point perpendicular to the baseline was then selected and located with the transit station. The rectangular area designated for the survey was divided into eight tracks running perpendicular to the shore. Spacing between tracks was 15 to 20 feet depending on an ability to see onshore ranges, which sometimes were out of sight due to the continued entrance of ferry boats. From the transit onshore station, a series of angles was established with the objective of following the research vessel along the track lines. Hand-held radios were used
throughout the project to sustain continuous communication between the onshore transit station and the survey vessel.

As the research vessel towing the magnetometer arrived at a pre-established angle along the track line, the transit operator would signal to the magnetometer operator. The angle, track line, and magnetic background were recorded at each event/position signal. Meanwhile, the magnetometer maintained a continuous graphic record of localized magnetic variations.

The encountered anomalies, whose locations had been previously marked by buoys, were inspected by a method commonly called _ground truthing_. This method provides visual inspection, through the use of scuba diving equipment, a metal detector, a water probe, and/or a water dredge. The revision of the anomalies, made in order to determine whether or not they are caused by archaeological artifacts, is the most critical aspect of the survey (Arnold, 1980).

The section of the survey area that was inaccessible to the research vessel, where there were reinforced iron and ferry boats, _masked_ the magnetometer readings and caused them to be erratic. This area was searched by divers employing visual underwater survey methods. This technique involves careful examination of the seabed with the purpose of locating shipwrecks or archaeological artifacts. The results of the visual search were enhanced by establishing a search pattern. We used what is known as a swim-line search, which consists of a line of divers swimming side by side and looking at the seabed being passed over while maintaining a constant distance apart from each other. The search line is started at right angles to the beach (Wilkes, 1971: 101). This visual search turned out to be
extremely complex and dangerous due to the fact that the ferry transportation services could not be discontinued. Divers had to swim underneath the ferry boats, which were constantly arriving and leaving as well as changing positions along the dock.

**Data Analysis and Description of Findings**

Discovery is only half the task of reconnaissance. The other half is recording the location of the anomalies encountered. The central objective of recording is to relate the findings to their spatial setting. Along with recording its location, the archaeologists must give each artifact or feature a label.

In this case, the magnetic data was analyzed in the field. Anomalies were identified individually by their intensity, duration and graphic signature.

By means of positioning data and a computer program called AutoCAD, a magnetic contour map of the remote sensing survey area was produced showing contour intervals of 10 gammas.

From the contour map, it was concluded that the magnetic background within the survey area began at an even 40,000 gamma signature at approximately 360 feet from the pier and decreased steadily moving toward it. Within 100 feet of the pier, where several ferry boats were tied, the background began to decrease sharply until the proximity of the ferry boats and the reinforced iron dock caused the magnetometer readings to become completely erratic. The area labeled on the contour map as CB-3, masked by the ferry boats and the pier, was visually inspected (Fig. 7).
Only two magnetic anomalies were identified within the area of the remote sensing survey:

**CB-1** - Target CB-1 had a dipolar magnetic signature of 31 gammas maximum intensity with a duration of 4 two-second sample intervals.

**CB-2** - Target CB-2 had a dipolar magnetic signature of 32 gammas with a duration of 4 two-second sample intervals.

Another anomaly was identified as CB-3. This covers the area surrounding the dock, and its magnetic evidence was completely masked by the modern steel reinforced concrete pier and the ferry boats tied to it.

The two anomalies that were identified within the area of the remote sensing survey were inspected by divers and turned out to be insignificant modern debris. The object producing the magnetic signature labeled as Target CB-1 was identified through diver investigation as a twisted piece of sheet metal. Lying near the sheet metal, although not associated with the magnetic signature, was a small fiberglass dinghy 6 feet by 12 feet in size. The object producing the anomaly labeled as CB-2 was identified through diver inspection as a 55-gallon oil drum.

**Site Examination**

The magnetic evidence of target CB-3, which corresponds to the area surrounding the dock (Fig. 7), was completely masked by the modern steel-reinforced concrete pier and several interisland ferry boats that were constantly coming up to the pier at Cruz Bay. Therefore, the area labeled CB-3 was visually inspected by divers following a swim-line search pattern. Through diver inspection of the bottom surface around the pier, a diversity of cultural debris was found. Artifacts ranging in date from early
eighteenth century to the present time were removed from the site to be photographed and later were transferred to the Virgin Islands Department of Planning and Natural Resources. Also found beneath and around the pier structure was a large amount of fill or ballast including brick, indigenous rock, and ballast stones. In addition, several disarticulated oak timbers were found scattered beneath and around the pier. Historical as well as artifactual evidence suggests that the site of CB-3 may have been utilized as the primary landing at Cruz Bay for approximately 200 years. It was concluded that there existed a possibility of encountering the remains of a historical wharf structure in the area or other significant archaeological remains. Background research on the subject of colonial wharf structures was therefore undertaken.

Colonial Wharf Structures

A wharf is a substantial structure that lies alongside of, or projects into, navigable waters for the purpose of loading and unloading vessels. The term wharf was commonly used in the eighteenth and nineteenth centuries with the plural form varying from wharfs in England to wharves in the United States (Norman, 1987: 6).

Landing places for immigrants grew into harbors and ports when they occupied strategic locations close to existing and developing commercial trade networks. Wharves were built to accommodate the increased volume of traffic of goods and people as coastal towns prospered (Heintzelman, 1984: 12).

Wharves appear to have been regarded as commonplace by our predecessors and their construction as an ordinary occurrence. Therefore,
it is much more difficult to obtain information about them. Yet wharves were essential to the use of ships. Today, their ruins are a physical indication of past maritime activity. Here and there along the waterfront, the remains of old wharves survive as witness to the heyday of sailing-ship commerce (Small, 1941: 1).

Each year, new construction in urban areas threatens to destroy for all time the remains of the earliest American wharves. They can only be learned about through early paintings, drawings or records left by colonial builders, or studied and documented as they are discovered, before they are completely eradicated by the bulldozer (Heintzelman, 1984: 124).

Engineers' blueprints and plans for period wharves are rare. The absence of this information from historical records has made it exceedingly difficult for archeologists to recognize their features when encountered in the field. According to Heintzelman (1984), what small amount of data is available is scattered through the United States in the form of field notes, site files, project reports, and some photographs, all of which are usually located in little-known labs, offices of contracting agencies, the private files of local historians, or historical societies, museums and libraries.

Wharf design and composition was related to the port's pursuit of commercial trade in certain goods, availability of raw materials, and the environment at the time the wharf was built. Colonial wharves can be generally classified as either stone or timber structures (Heintzelman, 1984: 124).

The first detailed reference to wharf building in the United States appeared in 1840 in the Merchants' Magazine and Commercial Review, edited by Freeman Hunt. It is an article describing the manner of
constructing wharves along the New York waterfront. Briefly, the type described is a pile bulkhead formed by rows of wooden piles driven close to each other, backfilled with earth and covered with planking. Wood appears to have been used to the exclusion of other building materials, the explanation being offered that "wood is so plentiful in America that to repair, or even construct, works in which timber is the only material employed is generally regarded as a very light matter...." The same type of pile-lined wharf, with "more attention... by the builders to the durability of the work" is said to have been started in Boston. But Boston also had wharves constructed of timber cribs, timber bulkheads, and walls of stone. In fact, wharves using these structural devices may have been the rule rather than the exception. A paper published in the *Transaction of the American Society of Civil Engineers* in 1923, about the early wharves of Boston, includes descriptions of timber cribs, timber bulkheads, and granite walls, but makes no mention of close-set pilings as a prevailing type of bulkhead or wall construction.

The type of wharf made of timber cribs, or more specifically described in the above-cited technical paper as built of stone-filled timber cribs enclosing areas filled with earth, was thought to be a great improvement over other cobb wharves built of wood and sunken by rocks. How the name cobb came to define a wharf of timber cribs held down by rocks cannot be explained readily, unless it was derived from the use of cob or cobblestones to sink the timber cribs. Although stone wharves were being built at Salem, Massachusetts, by 1819, they most likely were constructed of beach or cobblestone and not quarry-cut stone.
Timber, being cheap and readily available in the United States, was more widely used for early wharf construction than stone. However, this was not the case in Europe, where wood was scarce and wharves were predominantly built of stone. Therefore, the greatest advances in the technology of timber wharf construction have been attributed principally to North America (Norman, 1987: 6).

Stone Wharves

Three types of stone wharf construction are known to have been used in colonial times.

A wharf type of mixed construction had facing walls of stone laid on a timber raft. Once the structure was floated into position, it was sunk with various fill materials. Probably the earliest, and the one requiring the least skillful stonework, had a containment wall of undressed stone with wooden caplog and piles; transverse fenders and bolted drifts were often used for stability.

Somewhat more complex was a stone containment wall with caplog and fender piles; with fewer timber supports than the previous structure, this wall required careful stonework to make it nearly self-supporting.

The purest stone wharf type was built entirely of stone. It had no timber reinforcement and required expert stonemasonry and a ready supply of stone.

A portion of Derby Wharf in Salem, Massachusetts, from the mid to late eighteenth century was built with undressed stone. In New London, the undressed stone walls of a wharf dating from the mid-1700's were later used as foundations for Samuel and Carlos Barry's mid-nineteenth-century sail
loft. In both instances, the stones were drylaid with remaining chinks and cracks filled in with smaller rocks (Heintzelman, 1984: 125).

There are three basic stone wharf designs described and illustrated in detail in a monograph entitled *Industrial, Commercial and Maritime Introduction to New Bedford, Massachusetts* (Heintzelman, 1983); in Fig. 8, the illustrations of these designs are redrawn from originals appearing in Weinraub (1975).

Example "A" is an earth-surface wharf built of dressed or semi-dressed plain stone. "Wharves with walls of quarry-cut stone were not built much before 1830. Up to that time, the stone used appears to have been worked only from rock which lay on the surface of the ground" (Small, 1970: 3). Actual examples of wharf type "A" are to be found in New London, Connecticut, and Salem, Massachusetts (Heintzelman, 1983: 23-30).

Fig. 8. Three Basic Stone Wharf Designs (After Weinraub, 1975).
Example "B" is a similar wharf, but built of dressed or semidressed stone with oak cap and fender piles.

Example "C" is a further modification of the first design built of undressed stone with cap and piles. It also had transverse fenders and bolted oak/spruce drifts for stability.

Timber Wharves

In colonial times, where economical and technical factors did not permit sophisticated construction of wharves, it was not uncommon to use old, worn-out ships filled with rubble as cribbage to expand the waterfront or to reinforce and stabilize wharves. One such ship used as a crib hulk was the eighteenth century Ronson Ship found in New York City.

However, when crib hulls such as the Ronson Ship were unavailable or impractical, colonial wharf cribs were built. The principle of the crib is many centuries old. Steffy (1988: 128) describes the basic form of wharf cribs:

"In their most basic form, wharf cribs were built somewhat like the sides of log cabins; logs or hewn timbers were stacked at overlapping right angles, their joints notched and fastened to provide a close-fitting box. The structure was then floated into position and sunk with rocks or other solid fill. In some cases, the logs were simply overlapped without notching, leaving large gaps between timbers. Such assemblies, called cobs, had to be filled with rocks large enough to remain within the gaps."

An example of a crib wharf was found at Strawberry Banke, the original name for Portsmouth, New Hampshire. A colonial seaport founded in 1630, Strawberry Banke served as a redistribution center for commercial goods and immigrants from other American colonies and Europe. Commercial activities gradually intensified and wharves contributed to the maritime
and commercial development. This development was exemplified in artifacts and remains of buildings found at Strawberry Banke.

The wharf found at this site was probably built with hand tools during the second half of the seventeenth century. It was built in shallow water. The area was never more than two to three meters deep at high tide, and at low tide mudflats were exposed (Harrington 1983: 52-59). As described by Steffy (1988: 128), "made of a small crib of rough timbers resting atop a larger foundation cribwork, the wharf is 60 to 80 ft. (18.3 to 24.4 m) long and 40 ft. (12.2 m) wide. Some of the fill material in the upper crib consists of flint nodules, which probably served first as ballast in a European ship." The Strawberry Wharf at Portsmouth may be the closest parallel to what might be expected at Cruz Bay.

**Surface survey**

The proposed Site Examination Project was conducted from October 30 to November 9, 1992. CB-3, the designated study area, consisted of a rectangle measuring 200 feet long by approximately 100 feet wide (Fig. 9). The Site Examination project consisted of a surface survey, subsurface probing, and trenching excavations.

The surface survey encompassed techniques of direct observation used to gather archaeological data present on the surface of the seabed. It was designed to yield representative data from the archaeological site without resorting to excavation. In this project, the acquisition of data through the surface survey was a prelude to the next stage of the research, the trenching excavation.
Data was acquired through the surface survey by mapping the characteristic surface of the site. Features that could be detected by direct observation were recorded by mapping. Preparation of the site map was the first field priority, for the map served as the basic spatial control in all records of provenience.

This first stage of the project started with the relocation of the ferry boats that were stationed in the study area. Then a series of security buoys and diving flags were established to set boundaries of the survey area. The grid used in the Marine Archaeological Reconnaissance (Phase I) was re-established, a baseline being fixed along the length of the pier.

The site under investigation was carefully examined by divers employing visual underwater survey methods to detect and record whatever surface artifacts or features might be present. Diagnostic artifacts encountered on the surface within the survey area were collected and their locations plotted. Finally, a site map of area CB-3 was created (Fig. 9).

Half of a brown decorated bowl was encountered at 20 South/105 West and an olive jar fragment at 138 West/23 South. The oak timbers found in Phase I were carefully examined underwater and were identified as being part of the existing pier. Several piles of mixed indigenous rock, ballast stones, and modern debris, were encountered in the area. Large pieces of cement from the pier structure, as well as a wide variety of modern debris, were found lying underneath the pier. A depth contour map of CB-3 was also developed to illustrate the depth and the underwater topography of the area. Toward this end, systematic measurements of depths were taken on a grid pattern at 10 foot intervals over the site (Fig. 10).
Fig. 11. Site Map of Area CB-3 Showing Rock Ledge and Trenches.
The rock shelf and/or consolidated rock was encountered 6 inches to 2.5 feet below the sebed surface at probe locations out to approximately 45W (Fig. 11). At the edge of the rock shelf, the probe sank to its full length of 10 feet. After probing was completed on the north side, the water pump and the probe were moved to the south side of the pier where probing was carried out in a similar fashion. Only three transects were done and a similar rock ledge was found. At the edge of the rock ledge, the probe again penetrated 10 feet. At the shore, the rock shelf was found at a depth of 6 inches below the existing sebed surface. Moving away from the shore, the depth kept increasing until it reached a maximum of 2 feet at the edge of the ledge.

Trenching Excavations

Two water dredges were used at this stage to excavate two trenches.

Trench A

The location for test trench A was selected after initial probes indicated the existence of consolidated rock at 2 to 2.5 feet below the bottom surface, at 60W and 13 to 33N. At more westerly probe locations, no consolidated rock was encountered and probe depths exceeded 6 feet. The test trench was excavated 5 feet wide by 20 feet in length between 33N/60W and 33N/65W (Fig. 11).

Natural stratigraphy was followed and on completion of the trench, four natural stratigraphic layers of materials had been encountered (Fig. 12):

**Stratum 1**

The uppermost layer of material consisted of unconsolidated rock,
coral sand and silt, and a mixture of post-1950 debris, most of which dated from the past 15 to 20 years.

**Stratum 2**

The second level of material consisted of a layer of what appears to be a medium-sized, quarried rock dark gray in color, possibly granite. The stones were fairly even-sized, varying in weight between 4 and 8 pounds. No cultural material was positively identified from this level.

**Stratum 3**

The third level consisted of a silty sand layer that varied in thickness between 0 and 2 feet. The silty nature of the stratum suggested it was deposited rapidly as a result of erosion (natural deposition).

**Stratum 4**

The fourth level was a distinctive layer of coral hash and sediment. In the upper portions of the level, well-winnowed coral fragments were found lying on top of finer sediments. Cultural material from this stratum consisted entirely of what seems to be pre-1850 artifacts, including ceramic and glass fragments. The earliest diagnostic material appeared to date from the mid-eighteenth century. The artifactual evidence and distinctively "clean" nature of the level suggests that the upper limit of the level was the historic or natural seabed surface. Artifactual material was only evident in the top 2.5 feet of the level. Below this, the level was historically sterile and no further positively identifiable cultural material was evident. However, there were numerous conch shells that had been "holed," possibly to remove the animals. This fact possibly suggests a pre-historic level, although it is not distinguishable from the historic bottom.
Fig. 12. Sectional Profile and Cross Section of Trench A.
Trench B

Trench B was located on the south side of the pier next to the rock ledge. It was placed on the edge of the rock ledge at its juncture with the ferry dock. Because of its location, the stratigraphic characteristics of Trench B were entirely different from those found in Trench A. The trench was located from 33S/47W to 33S/53W and was 6 feet wide at the base (Fig. 11).

On this side, ferry boats are able to dock very close to the rock ledge. Due to the conditions created by the sheet pile of the pier structure and the ledge, the ferry boats' propeller wash seems to have destroyed almost all stratification that may have been present. The only unaffected area was a zone of culturally sterile coral hash lying diagonally on the western side of the rock ledge. This zone of coral hash began immediately below the border of the rock ledge and was apparently protected to some extent by both naturally deposited "ledge rock" and other stones probably related to previous wharf or pier construction. The stratification of Trench B was as follows (Fig. 13):

*Stratum 1*

The upper level consisted of approximately 2 to 3 feet of rock mixed with sand and modern debris.

*Stratum 2*

The second level, which was only distinguishable from Stratum 1 by the continuing decrease in the amount of rock in the coral sand, continued with little change except for this ever-decreasing quantity of rock and stones and an absence of modern debris to a depth of approximately 6 feet below the original seabed surface.
Fig. 13. Sectional Profile and Cross Section of Trench B.
Stratum 3

The third level was distinguishable from Stratum 2 only by the occurrence of historic cultural materials including eighteenth and nineteenth-century glass, ceramics and bricks. The cultural evidence was lightly scattered throughout Stratum 3, which was excavated down to 7 to 8 feet below the original seabed surface.

Archaeological Findings

Ceramics and glass were found in those areas in which the historic seabed surface was protected by a covering of fill stones that probably belonged to the wharf structure. All significant artifacts recovered at Cruz Bay were inventoried, documented and photographed. Stabilization of recovered ceramics and glass bottles was started immediately. They were kept immersed at all times in fresh water to inhibit further deterioration.

Ceramics recovered from archaeological sites usually requires only minimal treatment. Pottery excavated from marine sites are saturated with soluble salts such as sodium chloride and encrusted with insoluble salts such as calcium carbonate and calcium sulfate. The soluble salts were removed to stabilize the pottery. This process was initiated by repeatedly rinsing the artifacts in fresh water. The insoluble salts were removed from the surface of the pottery by hand with a soft brush and dental tools.

Glass, on the other hand, is usually the most stable of archaeological materials, but it undergoes some complex disintegration when attacked by moisture. The pieces recovered were washed thoroughly in running tap water.
The archeological data were collected and preliminarily processed in the field. The ceramics and glass were cleaned, numbered, classified and photographed while in St. John and were later transferred to the Archaeological Office of the government of the Virgin Islands in St. Thomas.

A numerical catalogue of the artifacts was prepared. The numbers range from ACB-1 to ACB-70. For the purpose of this thesis, only the most important glass, ceramic and prehistoric artifacts are discussed.

Glass

ACB-11, found in the upper part of Stratum 4 in Trench A, is an octagonal, amber-color bottle with a small break and the cork still in place (Plate. 1). The front of the bottle has a relief representation of a woman with a flag, and the Spanish words SOCIEDAD VINICOLA (Wine Society) appear on one side of the bottle.

ACB-12, found in Stratum 4 in Trench A, is a green-glass bottle made in a 3-piece mold; the neck was slightly twisted during application of the rim. This bottle also bears Spanish lettering on the bottom: DR. Stegert CD Bolivar (Plate. 2).

Bottles and vials constitute the major portion of most archaeological glass collections from Spanish colonial sites. Much of this glassware, including that which was imported from Spain, is not of Spanish origin. For example, millions of bottles from Bristol, England and Bayonne, France, arrived in Santander to be reshipped to the New World.

Utilitarian glassware was also produced throughout Spain during the colonial period, however, although few pieces have survived or been
reported. Most of this glassware was probably made in southern Spain, particularly in Andalusia, where a glass industry thrived from the sixteenth through eighteenth centuries. Given the difficulty and expense of overland transport of fragile glass, it is likely that much of the less expensive utilitarian glass made in Spain and exported to the colonies was from Andalusia. It should also be noted that at least some utilitarian glassware on circum-Caribbean sites was probably made in Mexico. Glassblowers arrived in Puebla in 1535 and were exporting glass products throughout the Spanish New World by 1542. The Puebla factory continued to produce glassware through the nineteenth century (Deagan, 1987: 129-30).

Plate 1. ACB-11
Little is presently known about Spanish spirit bottles of the eighteenth century. We do know, however, that octagonal bottles were popular in the Andalusian glass industry of the eighteenth century (Frothingham, 1963: 59) and therefore tentatively assign to ACB-11 an eighteenth-century Andalusian origin. Perhaps ACB-12 also has an eighteenth-century Spanish origin. These two bottles are of particular interest, since Deagan, (1987: 136) states that no examples of eighteenth-century spirit bottles that do not conform to English, Dutch or French styles have yet been reported from circum-Caribbean colonial sites.

Plate. 2. ACB-12
ACB-49, found in the upper part of stratum 4 in Trench A, is part of a square, green bottle base with no tong or seam marks visible. The bottle tapered from the bottom up (Plate 3).

Plate 3. ACB-49

In the first half of the seventeenth century, the common bottle was blown into a square-sided mold. It had a nearly flat base and a short neck with an everted lip, the latter feature frequently concealed beneath a threaded pewter collar cap. Such bottles varied considerably in size and represented a large part of the English bottle output of this period (Noël-Hume, 1991: 62). Square-sectioned green bottles are found also in contexts dating through the eighteenth century on Spanish colonial sites, and threaded pewter caps for such bottles have been found on wrecks of the
Spanish plate fleets of 1715 and 1733. According to Deagan (1987), many of the bottles, particularly those with string rims, are undoubtedly of English or Dutch origin. Square-sectioned green bottles with straight, non-tapering bodies and rims carelessly threaded to receive a cap were recovered from the Quicksilver wrecks of 1724. The origin of these bottles is uncertain, since English, Dutch and French glass were also recovered (Deagan, 1987: 132). The origin of ACB-49, although difficult to ascertain, is most likely English from the late seventeenth or eighteenth century.

Plate. 4. ACB-44

ACB-44, one of several fragments of fairly modern French bottles found in Stratum 4 in Trench A, preserves the rim, neck and shoulder of a large
green-glass demijohn bottle with a sloping shoulder and long, narrow, conical neck ending in a "strap" string rim (Plate. 4).

French spirit bottles differ from English examples in their shapes, tending to have sloping shoulders that are wider than their bases, longer necks than have English bottles, carelessly applied strap string rims, a conical kickup, and a conical shape to the neck (Noël-Hume, 1991: 69). ACB-44 probably dates to the late eighteenth or nineteenth century.

Plate. 5. ACB-5

ACB-5, found in Stratum 4 in Trench A is a complete, square-sectioned amber bottle made in a two-piece mold. On the front of the bottle, FERROL EMULSION can be read; on one side, COD LIVER OIL; on the opposite side,
IRON & PHOSPHORUS; and on the bottom, TRADE MARK REGISTERED
(Plate. 5). Pharmaceutical glassware was manufactured in England from
the late sixteenth century onward, and small glass phials are commonly
encountered on archaeological sites throughout the colonial centuries.
Square-sectioned bottles bearing molded inscriptions describing the
contents became fairly common in the latter years of the eighteenth
century.

Ceramics

Ceramic vessels and utensils, made by primitive as well as civilized
peoples, have always been an important source of information for
archaeologists. In our case, it has been exciting to find ceramic pieces in
Cruz Bay similar to ones that have been dug up in French, Spanish, and
particularly English sites in the Caribbean. These ceramics include both
utility wares and more refined wares. Decorated earthenware includes both
slipware and delftware. Slipwares are decorated with different-colored clay
slips and usually finished with a transparent lead glaze (Cooper, 1981: 215).
Delftware is a tin-enameled ware.

Metropolitan Slipware

A red-bodied bowl fragment equal to a little more than half the vessel
was found during visual inspection of CB-3, its provenience is 20 South/105
West (Fig. 11). The piece, ACB-1, is decorated on the inside with six
concentric circles of white slip covering the lower half of the sides and
another circle underlining the rim. A flower-like motif, in white slip but
with some overpainting in a green slip, occupies most of the bottom of the
bowl, while between the six concentric circles and the circle underlining the
rim, there were originally four short, equally spaced wavy-line patterns in white slip overpainted by two horizontal strokes in green slip. A clear lead glaze gives the white slip a yellow color (Plate. 6).

Plate. 6. ACB-1

The bowl is very similar to the late "Metropolitan" slipwares of Essex, which are red-bodied and coated with a clear glaze which gave them a bright ginger-brown surface, which is decorated with white slip that appears yellow under the glaze. These wares have been classified by Hamilton (1989: 4) as belonging to the period of 1630-1660.
Staffordshire Slipware

ACB-63, a rim fragment from a dish found in Stratum 3 in Trench B, is an example of Staffordshire Slipware (Plate. 7).

Plate. 7. ACB-63

This ware was first produced in the last quarter of the seventeenth century at both Staffordshire and Bristol. There seems to be as yet no evidence that Staffordshire Slipware dishes were made at Bristol in the eighteenth century (Noël-Hume, 1991: 135). Rather, they appear to have been a Staffordshire specialty, the most common varieties being made from a buff to yellow clay thinly mixed with pink, with a dark-slip decoration sweepingly combed over a white slip to create a wasp-like effect of yellow
and dark stripes. Other variations occur with light-trailed stripes over a dark slip, or with a skillfully marbleized blend of white and dark and light-brown slips. These dishes are difficult to date with accuracy, but they do not seem to have been imported after the American Revolution (Noël-Hume, 1991: 134-135). The combed and marbleized Staffordshire dishes are common on American eighteenth-century sites.

_Delftware_

The most important development in England in the seventeenth century was the successful growth of the so-called delftware industry, which had been started in Norwich by immigrant potters from Antwerp in about 1567; at least one of these potters moved to London some three years later. Tin enameling was not a new technique. It had been used in Spain and Italy from the fourteenth century on pottery known as majolica ware. Majolica ware described the products of Italian potters who moved to Antwerp in the sixteenth century, and thence to England.

In France, similar tin enameled ware was known as Faience, but in England, the term delftware, actually not used there before the eighteenth century, became the generic term for the ware. This term was introduced from Holland, where the town of Delft, previously renowned as a brewing center, did not develop its tin-enameled earthenware industry until the mid seventeenth century. Thus, when writing of the English counterpart, delftware should always be written with a small _d_ to avoid confusion with the products of Delft itself. Before the eighteenth century, delftware in England was known as Galley ware, a term dating back to at least 1465, when it probably referred to majolica ware brought from the Mediterranean.
aboard galleys (Noël-Hume, 1991: 105-106). Due to the fact that delftware was also manufactured in Scotland, any delftware that cannot be positively linked to a known English factory should be described as British rather than English delftware.

Plate. 8. ACB- 66

Generally, earlier English delftware was elaborately ornamented with Italianate or chinoiserie designs, and it was not until the 1640's that potters in need of mass production methods began to produce plain, white vessels entirely without decoration (Noël-Hume, 1991: 108). Creamware became the typical English tableware during the third quarter of the eighteenth century and caused a severe decline in the production of delftware.
A fragment of British delftware, ACB-66, was found in Stratum 3 in Trench B. It looks like an example of late, plain delftware and therefore probably dates to between the mid seventeenth and mid eighteenth centuries (Plate. 8).

The fragment appears to represent the lower part of an apothecary ointment jar. An illustration in Noël-Hume's *Artifacts of Colonial America* shows what such a jar looked like (Noël-Hume, 1991: 207).

**Creamware**

A very important development in ceramics during the eighteenth century was the gradual perfection of a thin, well-fired, pale-yellow or cream-colored earthenware which, after a preliminary firing, could be dipped in a clear glaze (Noël-Hume, 1991: 123). The new cream body was used in virtually every manner that the current state of ceramic technology permitted.

Creamware, a refined earthenware developed by Josiah Wedgewood in 1762, became extremely popular and eventually replaced tin-glazed earthenware throughout Europe (Cooper, 1981: 126). It dominated the ceramic tastes of the Western World during the third quarter of the eighteenth century. Creamware is of considerable archaeological importance, for it turns up on most American sites of the late eighteenth and early nineteenth centuries (Noël-Hume, 1991: 125).

In the early 1770's, Wedgewood produced creamware plates with a cockle-edged rim painted under the glaze in blue, green, red or, very occasionally, wine-purple; less frequently, the cockle-edged pattern was painted on the shoulder of creamware bowls. An example of this pattern in blue appears on
the shoulder of a fragment of a creamware bowl, ACB-68, found in Stratum 3 in Trench B (Plate. 9).

Plate. 9. ACB-68

Pearlware

From 1765 to the early 1770's, Wedgewood was experimenting with the production of a whiter ware than creamware. In 1779, he gave to the new ware the name "Pearl White". The body had an increased flint content, and the glaze contained a small quantity of cobalt to negate its natural yellow tint. Wedgewood himself did not then think it was in his best interest to produce the ware in quantity, but other potters who were not so committed to creamware produced the new ware in quantity. Pearlware is undoubtedly
the most common ceramic item found on sites of the early nineteenth century. It can be distinguished from late creamware by a concentration of cobalt blue in the glaze in crevices of footrings and around handles.

ACB-15, found in Stratum 4 in Trench A, is a small fragment of a pearlware dish with hand-painted decoration in under-glaze blue. The design includes simple, Chinese-house patterns. This motif occurs on creamware before 1775 and continues on pearlware to about 1805 or 1810 (Plate. 10).

Plate. 10. ACB- 15
ACB-10, found in Stratum 4 in Trench A, is a pearlware dish sherd decorated with a soft pinkish-red floral transfer-printed pattern. The pattern resembles vine leaves (Plate. 11).

Transfer printing, which is thought to have been invented by John Brooks (c. 1720-60), enabled detailed designs to be mass produced for the first time. Color was applied to a glued paper and transferred to the raw glaze. Messrs Sadler and Green of Liverpool, further developed the process in Liverpool where many pots were taken from Staffordshire to be decorated (Cooper, 1981: 129).

Plate. 11. ACB-10

According to Hume, (1991: 128) transfer printing on pearlware had begun by 1787. From about 1795, pearlware was also decorated in under-glaze
polychrome colors usually in floral or geometrics patterns. Examples of 1795-1815 are generally in soft pastels' hues, but thereafter and continuing to about 1835, directly stenciled floral patterns in bright blue, orange, green, and a pinkish red became the vogue among the poorer classes.

ACB-2, found in Stratum 4 in Trench A, represents over one-quarter of a pearlware dish decorated with a blue transfer-painted "willow pattern" (Plate. 12).

![Image of ACB-2 dish]

Plate. 12. ACB-2

The earliest transfer-printed "willow pattern" and related chinoiseries occur on pearlware. The "willow pattern" is thought to have been conceived by Thomas Minton at Caughley. It was printed on tissue and shipped to
China for use on export porcelain. The first Chinese porcelain with the "willow pattern" arrived back in England just after 1792 (Noël-Hume, 1991: 130). The first employment of the pattern on pearlware seems to have occurred around the same time.

By 1820, pearlware was on the way out, being superseded by various kinds of hard white wares and semi-porcelain that are extremely difficult to date with accuracy unless factory marks are present.

Plate. 13. ACB- 9

Pearlware is most commonly found on early nineteenth-century sites in the shape of mugs, jugs and bowls, decorated in horizontal bands of color--
black, green, light brown, pale blue, etc.—that were sometimes used to fill in broad, machine-turned grooves.

Plate 14. ACB-62

Collectively known as "annular wares", which were popular in the period between 1795 and 1815. The technique, however, may go back as far as c. 1785. At the other end of the chronological scale, a thicker and drab-yellow ware decorated with bands of light blue and with raised ridges in white continued to be made in both England and America into the present century. ACB-9, a rim sherd of what seems to be a chamber pot, was found in Stratum 4 in Trench A (Plate 13). ACB-62, a sherd that seems to be part of
the same vessel as ACB-9, was found in Stratum 3 in Trench B. Both are examples of “annular ware” (Plate. 14).

**Stoneware**

In the eighteenth century the most common pottery bottles were stoneware, the English descendant of the Bellarmine jug. Seven sherds and one whole stoneware bottle were found in Cruz Bay. The complete bottle was an intact, cylindrical buff stoneware gin bottle which was found in CB-3 during visual inspection (Plate. 15).

Plate. 15. Artifacts Found during Reconnaissance and Magnetometer Survey
ACB-54 is a fragment that represents the top of another cylindrical buff stoneware gin bottle found during trenching excavations in Stratum 4 in Trench A; it still has the cork and lead seal in place (Plate. 16). Also three small fragments of a cylindrical buff stoneware gin bottle were found in Stratum 4 in Trench A.

Plate. 16. ACB- 54

ACB-24 is a buff rim sherd from a jug or bottle with a larger diameter mouth than a gin bottle; it was found in Stratum 4 in Trench A (Plate. 17). ACB-67 a white stoneware fragment of a mug or bottle was found in Stratum 3 in Trench B.
ACB-70 represents a half of a cylindrical white stoneware bottle found in Stratum 3 in Trench B (Plate. 18). Cylindrical stoneware bottles were made in England in enormous quantities throughout the Victorian era and many of them found their way to America. Some were brown and some omitted the iron oxide slip and were buff or even white surfaced. English brown and white stoneware mugs of half-gallon and pints capacities were a type made in London, Bristol and elsewhere through most of the eighteenth century.

In America the production of stoneware started around 1720, introduced by potters from Europe. After 1789 when a tariff was imposed with duty by the Federal Government to all imported goods, ordinary stoneware vessels
were too expensive to be imported from England and the demand for locally-produced pots increased (Cooper, 1981: 160-161).

Plate. 18. ACB- 70

*Olive Jar*

Spain's principal contribution to the ceramic assemblages of the colonial Caribbean seems to have been bulbous or carrot-shaped earthenware jars with a small round neck and rim and no foot. The body ranges from a buff to yellow body and sometimes has a thin pale-green glaze on the interior. They were all-purpose containers but often were used as containers for olives or olive oil. Although the shapes of such jars found on
British colonial sites seem to be fairly standard, many variations of size and ornament are to be seen in the West Indies. These jars range in date from the sixteenth to well into the eighteenth century; most examples recovered in the survey seem to date to the period 1745-1780.

An olive-jar base fragment was found during the Reconnaissance and Magnetometer Survey at CB-3 that belongs to a Late Style, Shape D jar in the chronological classification of Goggin (1960; Fig. 14). Goggin dates the Late Style to the period 1780-1800 (Plate. 19).

Plate. 19. Olive Jar Found during Reconnaissance
Fig. 14. Form of Olive Jars (After Goggin, 1960).

Pipes

The Indian habit of smoking tobacco by means of a device formed "like a little ladell" became fashionable in England in the 1570's, and by the early seventeenth century, the clay pipe had become commonplace. Pipes were extremely cheap, thus making them available to all economic levels of colonial society. Consequently, pipe bowls and many sections of broken pipestem are normally found at colonial period sites. Cruz Bay is no exception; we recovered 12 pipestem fragments and a pipe bowl. Six of the pipestem fragments, ACB-38, as well as the others were found in Stratum 4 in Trench A (Plate. 20). The bowl, ACB-56, was also found in Stratum 4 in Trench A (Plate.21).

A passage written by the French traveler M. Jorevin de Rochefort, who was sharing an evening in the Worcester Inn with an English friend c. 1666, reveals the smoking practices of those times:

"Supper being finished they (landlady and daughters) set on the table half a dozen pipes and a packet of tobacco for smoking, which is a general custom, as well among the women as men, who think that without tobacco, one cannot live in England, because they say it dissipates the evil humors of the brain.....
Whilst we were walking about the town, he (my friend) asked me if it was the custom in France, as in England, that when the children went to school, they carried in their satchels, with their books, a pipe of tobacco, which their mothers took care to fill early in the morning, it serving them instead of breakfast, and that at the accustomed hour every one laid aside his book to light his pipe, the master smoking with them, and teaching them how to hold their pipes and draw in the tobacco; thus accustoming them to it from their youth, believing it absolutely necessary for a man's health......

I have known several who, not content with smoking in the day, went to bed with their pipes in their mouths, others who have risen in the night to light their pipes, to take tobacco with as much pleasure as they would have received in drinking either Alicant or Greek wine." (Mackenzie, 1958: 157-158)

Plate. 20. ACB- 38
The internal diameter of pipe stems became progressively smaller through the seventeenth and eighteenth centuries. The internal diameter of the Cruz Bay stems ranges from 4/64" to 7/64", suggesting a mean date of 1740-55 (Noël-Hume 1991: 299).

The pipe bowl has a narrow heel spur, and the stem at its juncture with the bowl had also been narrow, its internal diameter at this point being 5/64". The narrowness of the heel spur and stem suggests a date of around 1820-1860 (Noël-Hume, 1991: 303).

Plate. 21. ACB-56

There is a maker's mark that looks like a shield on either side of the heel spur and what appears to be a number "3" stamped on the bottom of the heel.
(Fig. 15). The shield is bisected by two vertical rays with three stars in a vertical row to either side; the number of points on each star seems to vary.

![Diagram of shield with stars]

**Fig. 15. Drawings of Maker's Mark on ACB-56.**

Bricks and tiles

Bricks of unglazed coarse earthenware occur abundantly in Spanish colonial sites. They were among the first items produced in the New world but were also imported in large numbers during the first decades of colonization. Unfortunately, bricks have not been systematically studied, and their classification and dating are difficult to establish.

A number of brick fragments were found in Stratum 4 in Trench A. ACB-39 consists of two brick bats that are representative of these finds. The one fragment, measuring 2.87'' wide, 3.93'' long and 2.0'' thick, is red in color: the other, measuring 3.31'' wide, 1.80'' long and 1.20'' thick, beige or blond in color (Plate. 22).

The beige brick might be an example of what is commonly called a Dutch brick (Noël-Hume, 1991: 83). Similar bricks can be seen on the island in the old buildings, which are constructed with an odd combination of brick and
stone. As we have already noted, some of the stone is similar to that which we found underwater.

Plate. 22. ACB-39

According to Wild and Reaves (1986), the most common masonry construction method employed on St. John was rubble masonry. It was characterized by the use of locally available field stone set in a lime mortar, with a liberal use of imported bricks for framing doors, window openings, arches, quoins, and in decorative features such as cornices, banding and staircases (Brown Bay). Brick, clay tile and Gotland limestone flagging were used widely in masonry floors in both the eighteenth- and nineteenth-century buildings.
We also recovered two fragments of unglazed, low-fired terracotta tile, ACB-55, from Stratum 4 in Trench A (Plate. 23). Ceramic roof tiles were found widely in colonial America from the sixteenth through the nineteenth centuries.

Wild and Reaves (1986) in their study state that ceramic tile was widely used in masonry floors in both the eighteenth- and nineteenth-century buildings on St. John.

Plate. 23. ACB-55

Prehistoric

As already mentioned, artifactual material was only evident in the upper part of Stratum 4 in Trench A and in Stratum 3 in Trench B.
Underneath these strata it was historically sterile, and no further positively identifiable cultural material was evident. However, two conch shells with holes possibly made to remove the animal were found during excavation. One of the shells, ACB-59, has what appears to be a wooden peg driven into its side, it was found in Trench A (Plate. 24). Perhaps the peg was used to detach the animal at this location to further facilitate its removal. The other conch shell, ACB-60, was found in Trench B.

Plate. 24. ACB-59

An earthenware body sherd without glaze or decoration, ACB-61, was also found in the same area (Plate. 25). Although it is hard to ascertain its origin because it is not a rim sherd, it seems to be prehistoric, because it is
hand coiled and has an uneven, coarse surface with pock marks. African-colonial ceramics on the other hand are more smooth and consistent. The conch shells and prehistoric sherd are evidence of the use of this bay by natives before the arrival of Europeans.

Plate. 25. ACB-61

In summary, we can say that a majority of the artifacts discussed above seem to belong to the second half of the eighteenth and the early part of the nineteenth century. Only a few artifacts, such as ACB-1, an example of Metropolitan Slipware (1630-1660), and possibly ACB-63, an example of Staffordshire Slipware (1670-1770), appear to be earlier in date. These findings tend to demonstrate that an increased use of Cruz Bay took place in
the eighteenth century, thus confirming our hypothesis and the historical information. It can be concluded that during the early years of the island's colonization, Cruz Bay was not a principal port of St. John and did not become so until the second half of the eighteenth century, the period to which a majority of the artifacts belong.

Some ceramic fragments were too small to make any determinations concerning origin. Although the colonists of St. John, as well as those of St. Thomas, were a cosmopolitan group of Danish, Dutch, English, German, French, Irish, Scotch, Flemish and Swedish origin, it can be concluded that the majority of cultural artifacts recovered from Cruz Bay is probably of English (British) origin. However, some Hispanic specimens were also found.

A passage by Erik Bredal provides a clue to clarify why most artifacts seem to be English rather than Danish:

"The English nation is the one that does us the most good, and from which we have the most fear, for truth to say, they hold our very lives in their hands; and if they, (who dispute our right to St. Thomas and threaten St. John) should adopt the expedient of forbidding the sending of provisions to this place for half a year, the inhabitants would be obliged to leave the island, for their livestock (now that the land is laid out in cotton and sugar works) would not suffice without food during that time, the less so, since a butchered ox cannot be preserved here more than a couple of days on account of the heat" (Westergaard, 1917: 315-316).
CONCLUSIONS

The results of the field investigations were analyzed together with the information obtained from the artifactual assemblage, the historical research and interviews of local people.

Structural remains of the colonial wharf at Cruz Bay could not be located, although a systematic effort was made at finding them. The continuous development of the area, the construction and reconstruction of modern piers, the daily back-and-forth movement of the ferry boats and the constant economic and cultural use of the bay must have destroyed the principal structure of the colonial wharf. Although no timber reinforcements for a wharf were located, a considerable amount of indigenous stone was found. These stones were probably used as a fill for the wharf structure.

Some of the stones found were similar to those used in the construction of old buildings on the island, structures made of an odd combination of brick and stone. This led us to believe that the stone piles were not ballast heaps but part of a wharf structure whose stonework was like other contemporaneous stonework on the island.

On the other hand, the location of a natural rock ledge in the maritime terrestrial zone allowed for a theoretical reconstruction of the bay area. According to local informants, the rock ledge was visible and fully exposed within 20 feet of the existing shoreline until the past 10 to 20 years when ferry activity increased substantially. Results of probing and trenching confirmed that the historic seabed surface near the existing ferry dock has
become deeply buried. The evidence of historic artifacts in the lower levels of Trench A and B and the absence of intrusive modern debris helps to confirm the local informants' data that the historical depth was approximately seven feet immediately after passing the rock ledge.

From the information obtained, a sequence of development of the wharf at Cruz Bay could be inferred. It has been mentioned by Steffy (1988) that in the West Indies most seagoing ships were not docked but rode at anchor and were unloaded by lighters. However, the geographical peculiarities of each anchorage would have necessarily influenced the behavior and maritime procedures of sailors and merchants. As we have stated, in the early years of colonization, Cruz Bay was not a principal port of the island of St. John. Since the water was from ten to fifteen feet deep at the shore, the rock ledge could have served as a landing platform for some ships that could have docked at the waterfront. Others remained anchored in the harbor where lighters or shallops may have been used to transport goods back and forth. Fig. 16 shows a hypothetical reconstruction of the historical seabed surface.

As Cruz Bay became a principal port of St. John, the deep water so close to shore and the shallow rock ledge would have facilitated the construction of a simple wharf or landing platform whereby the increasing number of vessels with a loaded draft of less than eight feet could have easily loaded or unloaded cargo. These docking facilities for loading and unloading trade vessels would have been simple and very similar to the Strawberry wharf found at Portsmouth, a wooden structure filled with stones, sand and mud. Evidence of only the fill of stones and mud from this structure was found.

In the late nineteenth century, a fairly modern structure existed in the area, as can be seen from a photograph of Cruz Bay from 1896 (Fig. 4).
Fig. 16. Hypothetical Reconstruction of the Historical Seabed Surface at CB-3.
Similar although more modern structures have been built in the area up to this day.

From the artifactual assemblage, we can say that the majority of the ceramics and glass found in those areas in which the historic seabed surface was protected by a covering of ballast or fill stones seem to belong to the second half of the eighteenth and the early part of the nineteenth century. Only a few artifacts which seemed to belong to the seventeenth century were encountered. It can be concluded that during the early years of the colonization of St. John, Cruz Bay was not a principal port on the island and did not become so until the second half of the eighteenth century.

Our modest archaeological findings when considered in the light of what is known about St. John's history suggests that although the island was under Danish rule, commerce and everyday reality was mostly under the control of the English, who formally disputed the island. These conclusions are confirmed by the fact that Wild and Reaves discovered on land in 1986 similar cultural material during archaeological investigations conducted along the North Shore Road on St. John. Analysis of their ceramics indicated that they were mostly English and have a mean date of 1803 (Wild and Reaves, 1986), conclusions that are in harmony with our own.

Our findings also demonstrate that even in the heavily used bays and harbors of the Caribbean, useful archaeological data can still be found. This type of research project should be promoted as a means of obtaining new information about economic and cultural history and as a source of education and enjoyment for the inhabitants of the islands. This research represents one of the few scientific underwater archaeological studies to
have been conducted in the Island of St. John and the first to be performed in Cruz Bay. We would like to think that it sets the basis for further studies.
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APPENDIX I

Letter of Permission

RUTH LOW
Box 525, Cruz Bay
St John VI 00830
10 March 1995

Dear Carmen Marquez,

I am happy to grant permission for use of illustrations on pages 12-13, the Oxbowl Map; and page 47, Cruz Bay Harbor, from St. John Backtime, for use in your thesis.

All best wishes,

Ruth Hull Low

Ruth Hull Low, editor of St. John Backtime
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The typist for this thesis was Ms. Eva López-Reyes