

ST. GEORGE VILLAGE BOTANICAL GARDEN OF ST. CROIX
ST. GEORGE VILLAGE BOTANICAL GARDEN PROJECT
PREHISTORIC COMPONENT

PREPARED BY BARBARA COX O'CONNOR

PREPARED FOR
THE ST. GEORGE VILLAGE BOTANICAL GARDEN OF ST. CROIX

MARCH 1995

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THE ST. GEORGE VILLAGE BOTANICAL GARDEN PROJECT

BARBARA COX O'CONNOR

THE ST. GEORGE SITE: PREFACE

In researching the St. George Archaeological Site, I was able to obtain a great deal of information pertaining to the time period during which the site was settled. However, information on the actual site itself is limited.

A comparable site on the west end of St. Croix was excavated by professional archaeologists during the late 1970's, providing accurate and reliable data on the shellfish used for food and other purposes by the prehistoric population. Since floral material recently found at the prehistoric Aklis site on St. Croix has yet to be analyzed, I consulted material derived from Spanish ethnographic records from the early 1500's regarding the botanicals. The most prominent recorders of this material, such as Fr. Ramon Pane, Gonzala Fernandez de Oviedo and Bartolome de Las Casas, are those who ventured on Spanish voyages. These records have been interpreted and published and are most illuminating in their detail.

Pottery left behind on St. Croix is well documented in the stratigraphy (levels) excavated at the west end site. One can examine the St. George Site using information from many sources in order to understand how the prehistoric people made their living for about 800 years. This is the approximate length of time the St. George Site was occupied by the prehistoric population.

The overview presented in this paper is, by necessity, broad in scope. It encompasses the 800-year period the St. George site was occupied. Also covered is the period succeeding cultures inhabited other areas of St. Croix up to the time of contact with the Spaniards (November of 1493). In order to put so much information and technical data into perspective, a brief discussion of the migration through the Americas from Siberia is provided. These Paleoindians are the ancestors of the people who eventually came to inhabit the St. George Site.

It is a great adventure to discover something much heard about but rarely understood. Thus, a cursory survey of the various methods in which the prehistoric peoples utilized their surroundings may stimulate a comparison to our own strategies for living on the same island today. With understanding comes a respect for the prehistoric people and their ability to cope under some extreme conditions: especially droughts, warfare, hurricanes and earthquakes. Other reasons for resettling might be simple curiosity and a desire to explore and make a new home elsewhere.

ACKNOWLEDGEMENTS AND PROCEDURES

At the request of Ray York, then President of The St. George Village Botanical Garden, and on the recommendation of George Tyson, historian, I formulated a proposal for this report in May of 1993. A letter of confirmation to proceed with the project is dated August 1993. Elaine York and Pauline Price of the St. George Village Botanical Garden have assisted in providing reference material and financial resources.

Archaeology is considered a soft science: one in which theories change, sometimes radically, as a result of new archaeological finds and information. Presented in this report are research data available at the time of this writing.

There is scant information exclusively pertaining to St. Croix and even less to the St. George Site. Although there has been much digging at the site, there is little information that is complete or reliable. Consequently, many site forms and reports, historic maps and accounts, archaeologists and historians had to be consulted.

Fortunately, those professionals who reside on St. Croix and archaeologists with an interest in this region were kind enough to share their time and expertise with me for the benefit of this project. A substantial amount of time was spent gathering pertinent information with the assistance of Carol Wakefield at the Whim Museum Library, perusing the artifacts and discussing their relevance with curator Bruce E. Tilden at the Fort Frederik Museum, visiting Yale's Anthropology Lab where archaeologist Dr. Irving Rouse showed me the Caribbean collection, undertaking translation of French ethnographic botanical material with Barbara G. O'Connor, Esq., requesting Danish translation and knowledge about the Nordby and Hatt Collections at the Danish National Museum from Birgit Morse, requesting information from James B. Petersen on Caribbean ceramics, reviewing the mass of field notes from the Prosperity Site, understanding the migration routes, deciding what theories currently are accepted and backed by factual information, photographing, with the assistance of Leigh Ann Reedy, the Anderson Collection at the National Park Service under Chief William F. Cissel's direction, and assembling all the research material in a coherent form to be disseminated to a general audience.

In addition to the individuals mentioned above, many others, among them Thomas P. O'Connor, Dr. Erika Waters, Dr. Arnold Highfield, Dr. Betsy Gladfelter, Dr. Michele Hayward, Dr. Michael Cinquino, Nancy Rayot and Alfredo Figuredo have given generously of their time and shared their diverse perspectives and constructive comments regarding this paper. I am grateful for various introductions into the realm of science and academia here on St. Croix that were facilitated by Margery Resnick, Dorothy Bronstein, George Tyson and Amy Dempsey.

INTRODUCTION

Many events in the Earth's geological and climatic sequence conspire to force people throughout the world either to rebuild or move on. Other factors, including population stress and cultural or political differences, have had and continue to have the same effect.

The rather extensive 23-acre St. George Site was a prehistoric village. A portion of this site is located on the property of the St. George Village Botanical Garden (Figure #1) on the island of St. Croix, U.S. Virgin Islands (Figure #2).

Migration to St. Croix occurred when large numbers of people, whose ancestors had lived on the mainland of South America for several thousand years, began to island-hop (Figure #2). They traveled northward from Trinidad along the chain of the Lesser Antilles about 2,200 years ago (Figueredo and Glazier 1982). People of the same culture, whom archaeologists now call the Saladoid, named for their distinctive white on red pottery style and derived from the site of Saladero in the lower Orinoco River drainage of Venezuela (Wilson 1990), arrived at the St. George Site, and several other prehistoric sites on St. Croix, about 100 A.D. (Figure #3). Before the arrival of the Saladoid culture, the island of St. Croix appears to have been uninhabited (Vescecius 1952, Morse 1989).

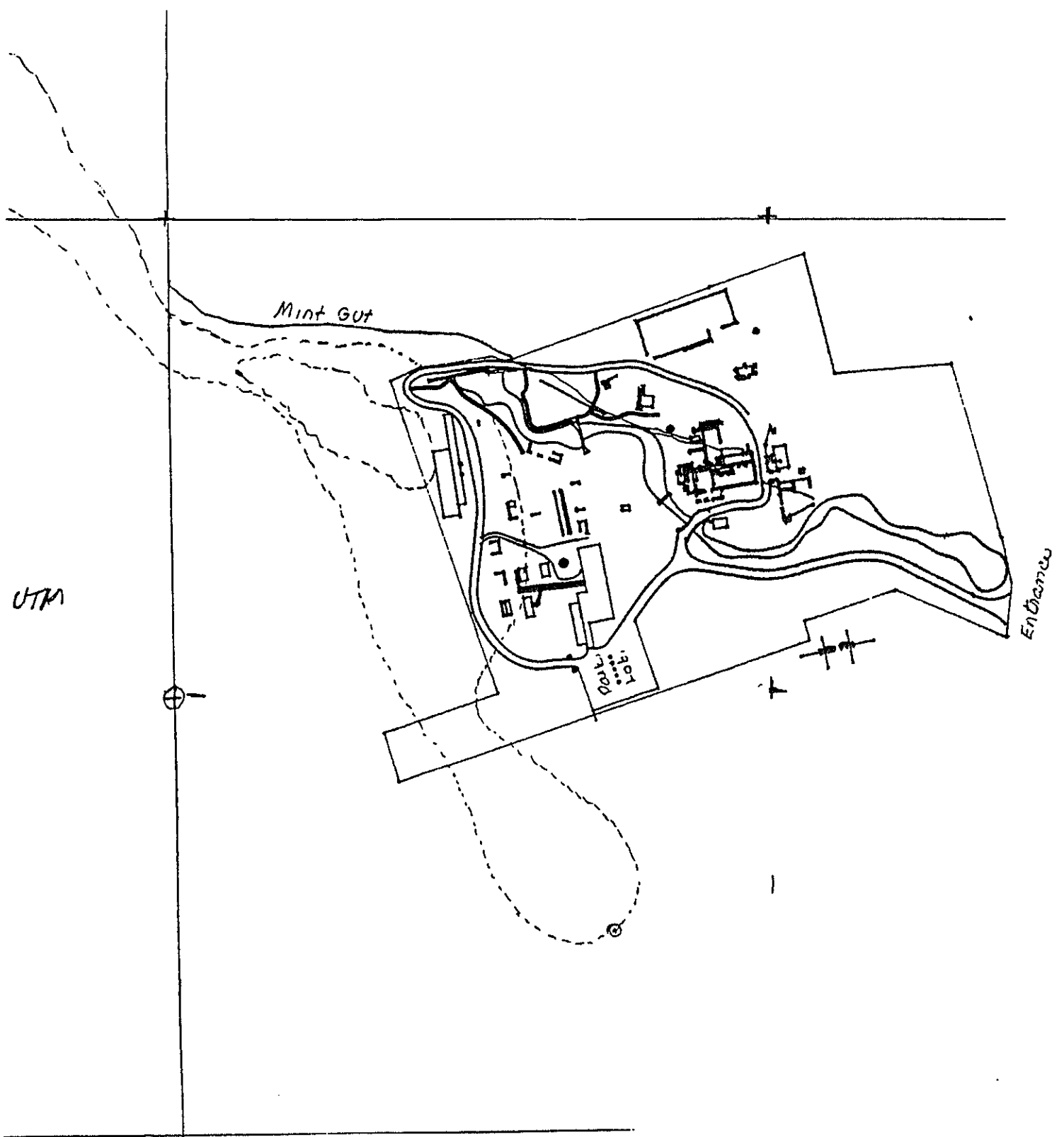


FIGURE #1 ST. GEORGE VILLAGE BOTANICAL GARDEN BOUNDARY AND
 ST. GEORGE PREHISTORIC SITE (dotted line)
 Provided by Ray York

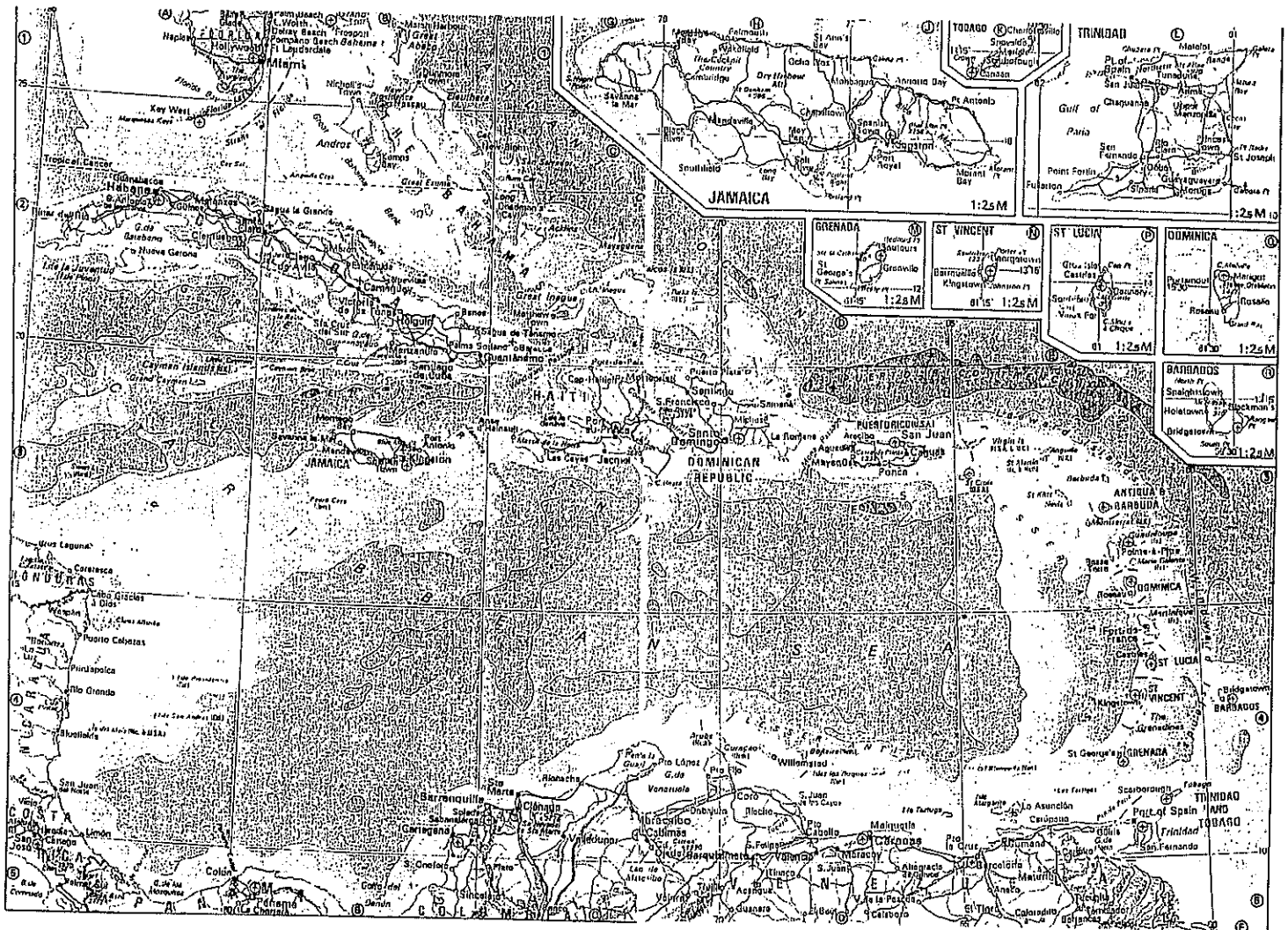


FIGURE #2 ST. CROIX WITHIN THE CARIBBEAN ISLANDS ARC FROM S. AMERICA
Compact World Atlas 1991

ARCHAEOLOGICAL SURVEYS AND EXCAVATIONS AT THE ST. GEORGE SITE

The prevailing philosophy in archaeology today is to preserve a site and to gather information in order to assess the origin of its inhabitants and their cultural life style. This includes hunting and gathering, farming, and fishing habits or any combination thereof. The archaeologists' task involves understanding the entire pattern of daily life, rather than merely unearthing pots.

The reported surveys and excavations at the St. George Site began in 1903 with those of Mr. Gustav Nordby, a Danish planter who wrote an article on prehistoric sites on St. Croix. Unfortunately, Mr. Nordby's article contains nothing specific regarding the St. George Site. The site is circled on his map without explanation. The few artifacts, which were extracted by Nordby from the prehistoric sites on St. Croix are presently located at the Danish National Museum in Copenhagen, Denmark (Morse 1994 Personal Communication). However, Nordby did guide the Danish archaeologist, Gudmund Hatt, to the St. George Site where Hatt conducted a survey. It was Hatt who, in the 1920's, first realized the influence of various ceramic cultures on St. Croix. He believed the earlier Saladoid culture migrated from South America along the Lesser Antilles route. He also thought the later Tainan culture developed on Hispanola in the western Caribbean/Greater Antilles and migrated east from there. This theory prevails today (Morse 1995 Personal Communication).

The greatest amount of material obtained from the St. George Site was excavated solely for the purpose of obtaining pots. Folmer Andersen, an overseer of the Bethlehem Works on St. Croix during the early part of this century, worked at the St. George Site primarily as a pastime from 1916 to 1931. Due to regular sugar cane plantings, excavations could be conducted only every three or four years when the land was lying fallow. The sparse information in Andersen's "Notes on St. Croix" reveals that, in Andersen's opinion, the St. George Site is more interesting than the Salt River Site on St. Croix; however, he does not elaborate (Andersen 1954).

Andersen observes that the St. George Site was used to grow sugar cane and asserts that the majority of the St. George Site was disturbed by plowing, since the deep-furrow plow zone for sugar cane is 18 inches (essentially the depth of the prehistoric deposits). Nevertheless, Andersen is able to locate approximately six productive areas where the midden (trash mound) deposit reached 5 feet in depth. In addition to the artifacts found at the St. George Site, Andersen reports there are many burials, but does not specify their location.

The Andersen Collection is quite extensive; and the task of assembling sherds (fragments) into whole pots, sketching, photographing, and cleaning each artifact assuredly was labor intensive. A portion of

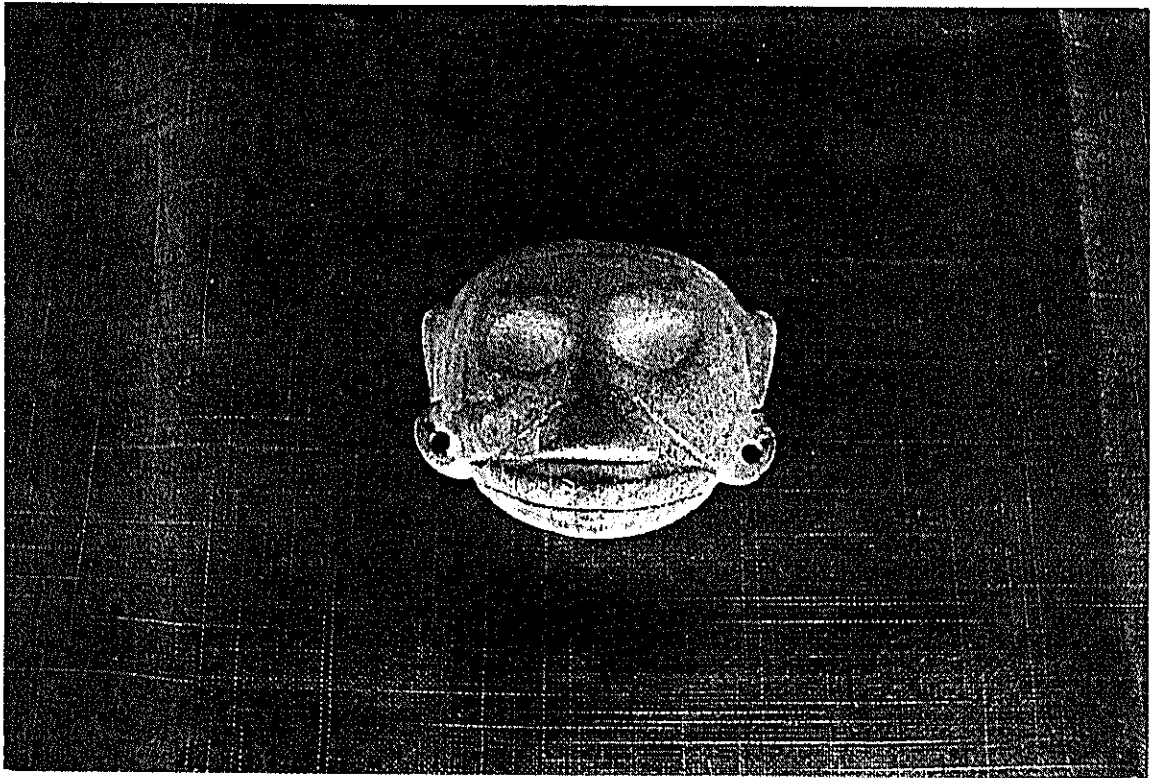


FIGURE #1 CARVED SHELL AND CERAMIC POT FROM THE ANDERSEN COLLECTION
Photos by Barbara Cox O'Connor (not to scale)
Courtesy of the Christiansted NIS Collection

the collection can be viewed at the Steeple Building, part of the National Park Service complex in Christiansted, St. Croix (Figure #4).

Despite so much past effort, archaeologists still have very little information about the St. George Site. However, they have determined that the pottery obtained from the site is mostly from the Saladoid period, 100-600 A.D., and some from the Ostionoid period, 600-900 A.D.

Although Andersen found a variety of artifacts at the St. George Site, he was interested primarily in the pottery. The only knowledge of provenance is that the pottery comes from the 23-acre St. George Site. In Figure 5, the documented method of excavating in measured levels has the benefit of allowing the archaeologist to comprehend which pottery and artifacts are deeper in the ground and, therefore, are presumed older. This method also assists one in visualizing where the kitchen, work space or fire hearth might have been. Having no formal archaeological training, Andersen left behind virtually no field records regarding his observations.

As Andersen states in his "Notes on St. Croix:"

"Judging from the wealth of material found, it appears that the island had been populated for a very long time before Columbus arrived, at times probably even densely. The aborigines who inhabited St. Croix lived in an absolute stone age. Stone, shell, pottery and bone are the materials of which the least perishable objects were made. Never the tiniest bit of gold or any other metal have I come across in all my ten years of digging and sifting, nor are any such finds by others known to me." (Andersen 1954)

In 1951, Gary Vescelius, then a student at Yale University, conducted an island-wide survey of the sites previously documented on maps by the Danish archaeologist Gudmund Hatt, Captain H.U. Ramsing, Gustav Nordby, and others. Vescelius did examine the St. George Site on his rounds, but only in the form of a surface survey; that is, he collected artifacts exposed on the ground rather than excavated them. Examining the sherds he collected, the pottery in the Andersen Collection, and ceramic material found in other locations on the island of St. Croix, Vescelius was able to make a comprehensive comparison study.

In his unpublished senior honors thesis, "The Cultural Chronology of St. Croix," Vescelius expressed his belief that the St. George Site contains one of the earliest and most sophisticated pottery styles, the Saladoid. Also found at this site is pottery from the Ostionoid period: a time when the culture began diversifying and living in smaller, more dispersed settlements. The Ostionoid culture utilized more marine resources, instead of engaging in intensive agricultural farming (Vescelius 1952).

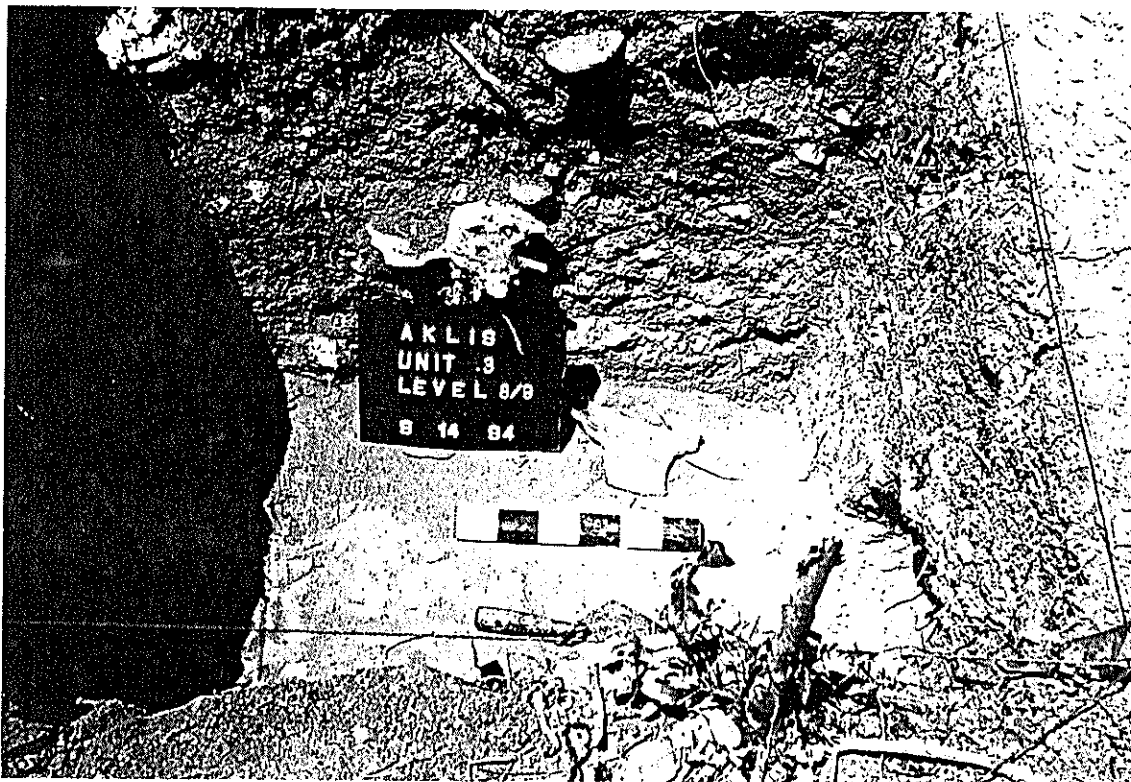


Photo by Martha Hyatt Mill 1994

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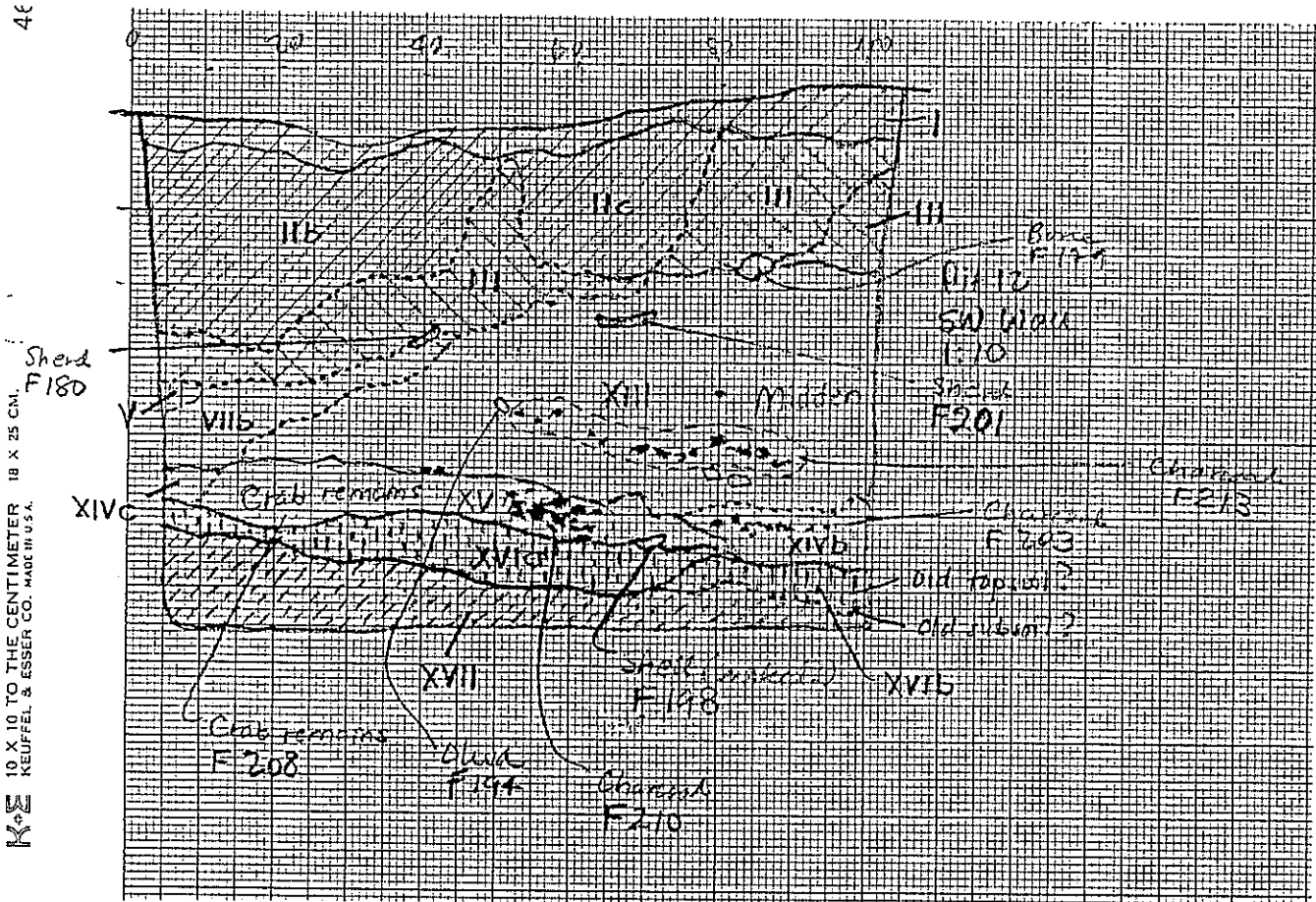


FIGURE #5

EXCAVATING IN LEVELS
Profile after Vescelius 1952

A nomination for inclusion of the St. George Site in the National Register of Historic Places was proposed in another island-wide survey. This was initiated in 1976 by archaeologist Bruce E. Tilden and Territorial Archaeologist Gary Vescelius who were assisted by a youth corps team from the Virgin Islands Department of Conservation and Cultural Affairs. They excavated two or three 1-meter squares to a depth of 18-24 inches along the northern edge of the St. George Village Botanical Garden property (Vescelius 1976).

Their excavation demonstrated that prehistoric material does exist on the St. George Site. Since the area excavated had been so disturbed by plowing and pot-hunting activity, Tilden and Vescelius reached the following conclusion after studying the Andersen collection and other collections: the St. George Site appears to have been settled in Saladoid times (100-400 A.D.) and abandoned during the Ostionoid stage of the local sequence (600-900 A.D.) (Vescelius 1976).

In September of 1982, another island-wide survey, the "Virgin Islands Inventory of Historical Places," was conducted and included prehistoric archaeological sites. The purpose of this survey was to document existing sites and not necessarily to test the site. Information on the survey site form reflects similar information from the previous 1976 form and indicates that the site spreads onto Estates St. George, Hope, and Mint but does not mention Estate Mountain. Other information on the soil type (clay loam) and current and historical land use accompanies comments on the integrity of the site. The report considers the site's condition "poor," due to 200 years of plowing and 60 years of pot-hunting (Johnson 1982).

ORIGINS

Prehistory in the Virgin Islands is accepted by scholars as being a continuing enigma. However, much can be teased out in order to present a coherent landscape of life during the period beginning around 100 A.D. and ending approximately 1,100 years ago at the St. George Site.

Those who settled at the site, part of what has become the St. George Village Botanical Garden, are descendants of the same people who, at least 12,000 years ago, crossed the area between Siberia and Alaska known as the land bridge of Berengia. These nomadic people trekked as far east as Nova Scotia, Canada, and as far south as Tierra del Fuego at the tip of South America--15,000 miles in 150 generations (Turner 1992). Their journey also took them toward the Caribbean Islands. The question archaeologists are still pondering is: did these people who migrated to the islands come from the western region of South America (the Andes Mountains) or the south via the Amazon Valley? Thus far, the current data favor the tropical route (Rouse 1992).

The Lesser Antilles and the eastern portion of the Greater Antilles, including the St. George Village Botanical Garden Site, were one of the last frontiers the prehistoric peoples were to inhabit.

Today, archeologists have determined that the physical characteristics of the prehistoric inhabitants of the St. George Site are similar to those of Native Americans today. In general, the characteristics conform to those ancestors of the same people who populated North and South America and parts of Siberia.

Analyzing dentition (teeth), blood factors, and linguistics, Turner has concluded that the information he has obtained from skeletal material and living descendants provides definitive proof that the Paleoindians were endowed with straight black hair, wide cheekbones, slanted eyes, brown eye color, some red cell antigens (a substance which stimulates production of antibodies in the blood) and definite dental traits, such as: shovel-shaped incisors and three-rooted lower first molars.

In North and South America, the evidence Turner found could be dated back as far as 11,000 years ago (Turner 1992). This does not rule out the existence of earlier prehistoric sites based on stone tool technology.

Linguistic studies indicate that the root language of the Paleoindians is Amerind (Greenberg 1994). Consequently, the prehistoric inhabitants of the St. George Site spoke a version of this language. Those who inhabited St. Croix from 100 A.D. onward are Arawakan speakers. Thus far, this language has been traced to the Arawakan speakers from the Orinoco River Valley region of South America (Rouse 1992).

The term "Contact" is used to describe the time when the people inhabiting the Caribbean Islands encountered the European explorers. Priests and others who could observe, sketch, and write recorded first hand the manner in which the people carried out their daily activities as well as their ceremonial practices. Oviedo's ethnographic accounts have been invaluable in reconstructing the archaeological record in the Caribbean. Oviedo's records have been especially useful in defining the methods of food procurement and preparation and the collection and processing of plants and trees for a variety of applications: methods most likely used at the St. George Site.

Approximately 2,300 years ago, a large group of settlers, the Saladoid, moved away from the Orinoco River Valley and the coastal plain of Guyana, where they had lived and developed agriculture. They still collected wild plants and ate small rodents such as opossums, guinea pigs and the agouti (a rodent about the size of a rabbit) and brought domesticated dogs with them. These people also brought along many of the plants used in South America and propagated them wherever they settled (Wilson 1990), including, presumably, the St. George Site.

PREHISTORIC CERAMIC PERIODS ON ST. CROIX, 100 A.D. TO 1493 A.D.

Archaeology sites of the Caribbean have more ceramic material than any other artifacts. Therefore, pottery is used as a time line in understanding the differences in the cultural periods (Rouse 1992).

People with a ceramic culture landed on St. Croix and settled first at the west end site of Prosperity (approximately 100-400 A.D.--Rouse 1982) and, slightly later, at St. George and other sites, including the north coastal site of Salt River on St. Croix (Figure #3). These people, the Saladoid, en route from South America, brought their pottery and way of life with them. They settled and continued to thrive on the St. George Site for several hundred years.

People, such as those at the St. George Site, who made this distinctive white on red pottery (Figure #7), lived in large nucleated village settlements and possessed a high level of craftsmanship and artistic talent. Some artifacts (Figure #6) include carved shell frogs, petaloid celts, small axes, spindle whorls, ground stone mortars and pestles, and small three pointed stones called zemis. They were also involved with trade in precious stones (amethyst, carnelian, garnet, quartz crystal, lapis lazuli and greenstones) with Vieques and Puerto Rico and maintained ties with South America (Morse 1989, Hayward 1994).

Late Saladoid people (400 to 600 A.D.; termed Coral Bay-Longford for the Virgin Islands sequence) began to make more extensive use of their marine environment (Rouse 1982). The late Saladoid is best represented by the Aklis Site at Sandy Point on St. Croix; however, some of the pottery found at the St. George Site also falls within the late Saladoid time frame. The settlement patterns are more widespread during these centuries and in smaller isolated groups.

It is likely that the people at the St. George Site extended their foraging boundaries to include the Enfield Green Site at the south end of Diamond Gut to obtain marine food resources. This likelihood stems from the types of shells found at other inland Saladoid sites and the fact that Saladoid style pottery has been found at the Enfield Green Site (Righter 1992).

From approximately 600 to 900 A.D. (Rouse 1982), the first phase is called early Ostionoid. The pottery is monochromatic (one color), having a rosy tinge and includes vessels of different shapes. A portion of the pottery found at the St. George Site dates to the early Ostionoid period. Ostionoid sites are recognized as inland and in close proximity to rivers. These are village sites where use was made of manioc, shellfish, fish and birds for subsistence (Hayward 1994)

The period from 900 to 1200 A.D. is the Elenoid pottery phase (Rouse 1982) and is identified by plain pottery and settlements that are smaller and more widely dispersed with a less discernible pattern. This type of site is located in almost every available ecological niche -- with a marked preference for beaches on lee shores and hilltops adjacent to bottomlands (Rouse 1952 and 1976). This phase is not evident at the St. George Site.

In addition, the Chicoid ceramic phase (1200 to 1500 A.D.) is identified with the presence of the Taino at Salt River (not at the St. George Site). The pottery is sophisticated. The Chicoid period is marked by single dwelling houses (25-50 people per house), each usually inhabited by a large or extended family, making a village population of 1,000 to 2,000 residents. These villages are located along the shore with access to good farmland (Rouse 1964). The eastern-most ball court is located at the Salt River Site and is considered an outpost of the Classical Taino from the Greater Antilles (Morse 1993).



FIGURE #6 SALADOID PERIOD ARTIFACTS-STONE AXE AND CELT, BONE AWL,
 STONE BEADS AND POTTERY SHERDS FROM PUERTO RICO
 Photos by Barbara Cox O'Connor
 Courtesy of Yale Peabody Museum



FIGURE #7

SALADOID PERIOD RECONSTRUCTED POTS
Photo by Birgit Faber Morse
Courtesy of Yale Peabody Museum

ST. GEORGE PREHISTORIC SITE

Among the many archaeological sites on St. Croix, the St. George Site is perhaps the most intriguing. It is one of the larger agricultural sites. Situated on parts of Estates St. George, Hope, Mint and Mountain, the site runs diagonally for approximately 23 acres and ranges from about 75 to 450 feet in width. It is located at the base of the northwest highlands, occupying a river terrace within an inland valley where the alluvium (deposited soil) is moist, due to a riverine forest and pasture. On Oxholm's circa 1799 map of St. Croix, there is a stream which runs from north of the St. George Site then south toward the sea at Estate Enfield Green. The soil types are San Anton Loam and Glynn Clay Loam; and the site is well drained (Vescelius 1976).

Since the only available data specific to the St. George Site are limited to the datable pottery excavated by Andersen and his reference to many burials at the site, present observations regarding the site are very limited. Consulting field notes of Vescelius, Robinson, and Tilden on a site named Prosperity (occupied during the Saladoid period) and reviewing the ethnographic documents of the Spanish during the time of "Contact" may afford one a better understanding of the peoples who inhabited the St. George Site between 100 A.D. and 900 A.D. An exploration of the botanicals (and their uses) and the shellfish, wild game and birds offers one insight into how prehistoric people came to occupy a segment of the St. George Village Botanical Garden nearly 2,000 years ago.

THE BOTANICALS

It is impossible to determine exactly what the original vegetation looked like on St. Croix when the first people settled there approximately 2,000 years ago. Many plants, which were brought to the island with the original inhabitants, now have a pan tropical distribution. The Orinoco River Basin is home to about 40,000 species of plants and trees (Line and Sutton 1981). Plants belonging only to a specific island would be difficult to ascertain, since the islands of the Caribbean are similar in climate and geography. In 1918, N.L. Britton, using 890 native plant species, discovered 27 of them to be endemic to the Virgin Islands and only 4 species specific to St. Croix--among which were the: Ginger Thomas (*Tecoma stans*), Buttonwood (*Conocarpus erecta*) and Fish Poison Tree (*Piscidia piscipula*) (Fosberg 1980).

The fruits and common plants one would expect the prehistoric people who inhabited the St. George Site to make use of--breadfruit, mango, coffee, coconut, maylay apple (*Pometia pmarosa*), guava, jackfruit, carambola (star fruit) and black pepper--were introduced by Captain Bligh, brought from the Society Islands of the Pacific, on his second voyage to the Caribbean, initially stopping at St. Vincent on January 22, 1793 (Ramcharan No Date, Line and Sutton 1981).

The ethnography of the Taino describes which plants and trees the people made use of and how they were processed. These include many varieties of plant life used for their food, building materials, transportation, medicines, clothing, utensils, toys and ornaments. The plants and trees listed herein are a mere sampling of the botanicals most likely utilized by the original people on St. Croix at the St. George Site. They support a variety of uses necessary for daily living in a tropical climate.

The learning process must have required much trial and error, since many of these plants and trees (including the mainstay of the diet, manioc, which contains tannin) are toxic in part or in whole unless modified. Realizing the magnitude of plants and trees used, we come to respect the intelligence and diligence of these early people.

The information in this report is derived from a publication by Jacques Roumain, then Director of the Bureau of Ethnology in Haiti, written in Haiti in 1942. Roumain has obtained much of his material from Oviedo's "General History and Natural History of the Indians," compiled in 1851 and Bartolome de Las Casas "History of the Indians," compiled between 1875 and 1876 in Madrid, detailing their observations on various voyages with Columbus during the 1490's.

A description of a few of the botanicals and a list (in alphabetical format) with a brief description of their use and scientific names follows.

BOTANICALS

BIHAO (*Heliconia Bihai* L.) The range of uses for the fibers of this tree are varied indeed, due to their being waterproof. In a container made of bihao fibers, the prehistoric people could transport water and any other liquid on ocean voyages. Other uses include hanging a basket-strainer to extract the toxic tannin from the manioc root. Others have employed this fiber for fishing nets and fish weirs.

CALABASH TREE (*Crescentia Cujete* L.) The trees have a giant fruit or berry with a thin shell. The pulp is whitish in color. The fruit is poisonous, but has been used medicinally. The shell of the fruit has many uses: food dishes, cups, bowls and containers, musical instruments and ornaments. The wood from the tree is moderately hard and heavy, but strong and flexible and can be used for handles and fine implements.

CEDAR (*Cedrela odorata* L.) This tree is an aromatic cedar and was used by the prehistoric people for constructing dug-out canoes. The properties attributed to this wood include being seaworthy and resistant to salt water for prolonged periods of time. The quality of the wood was soft enough to fire and gouge out to shape canoes. Some of these canoes held up to 150 passengers. Another tree named the Mari-a (*Calphyllum calaba* Jacq.) was also used in canoe construction.

COTTON (*Gossypium hirsutum* L.) Archaeological evidence has brought to light the fact that cotton has been finely woven and used by prehistoric people in the Southwestern part of North America, Mexico, Central America and Peru. In the West Indies, the ethnography tells of cotton used in the making of hammocks, minimal clothing, belts, head bands, and tump lines (worn across the forehead and attached to backpacking baskets).

MANIOC (*Manihot utilissima* Pohl.) The manioc has been a staple crop for many centuries in South America and the Caribbean. Although the tannin must be removed from the root before processing and cooking into cassava bread, the root has the capability, in the tropics, of long-term storage. Nutritionally, the cassava contains carbohydrates, a small amount of protein, calcium and iron (Navarro 1981).

The process of planting entails making mounds to conserve water and then inserting a cutting at an angle into the top of the mound. Zemís were placed in the fields to encourage fertility.

The method of extracting the toxic tannin from the root after harvest is very precise. A tubular-shaped strainer made from woven fibers of the Bihao plant is suspended from a tree branch and weighted with a stone to extract the tannin. The purged root is then ready to dry and be ground into a flour. The mixture of flour and water is then shaped and placed on a heavy clay griddle over a fire hearth to bake into cassava bread.

PLANTS FOR CEREMONIAL AND MEDICINAL USE

ALOE (*Aloe vera*) Its juice is applied topically to heal burns and other skin ailments.

COCOA (*Theobroma cacao*) Its pods are the source for chocolate and cocoa butter.

GUAYACAN (*Guajacum officinale* L.) This plant was used as a cure for syphilis, a disease that existed in the Caribbean prior to the arrival of the Spaniards.

MANZANILLA (*Hippomane mancinella* L.) Ceremonial purging is its sole use.

COJOBA (*Piptadenia peregrina* (L) Benth) A narcotic, used like snuff.

TABAC (*Nicotiana tabacum* L.) This plant is a smoking tobacco.

PLANTS AND TREES FOR BUILDING AND TOOLS

ANNOA (*Annona muricata* L.) The wood is used for hunting bows.

BAMBOO (*Bambusa vulgaris*) This is one of 500 to 1000 species, all related to wheat and corn. The cane is used in an upright fashion to form the walls of huts.

CAOBA (*Swietenia mahogani* (L) Jacq.) This tree is of black, shiny ebony wood and used for fine carving.

GUACIMA (*Guazuma tomentosa* H.B.K.) Its wood makes a mortice and tennon used to twirl a stick on a plate to create heat to start a fire.

YAGUA (*Oreodoxa regia* H.B.K.) The palm fronds are very large-leafed and used as broad cover.

PLANTS AND TREES FOR CORDAGE AND FIBER

ALOE (*Aloe vera*) The leaves of this plant are beaten and used as cordage.

BEJUCO (*Entada scandens* (L) Benth) Its fibers are used as a flexible binding cordage to attach cane poles together.

BIHOA (*Heliconia bihai* L.) The waterproof fiber is used in making baskets, fishing nets, weirs, and to cover houses as a thatch.

CENTURY PLANT--Very strong cords are made with this fiber. Oviedo tells of cutting a piece of iron bar with the thread and sand as an abrasive.

PLANTS FOR DYES

BIJA (*Bija orellana* L.) The flowers are used to make a red dye and the seeds are used to make a black dye.

JAGUA (*Genipa americana* L.) Warriors used black dye from this plant as body paint.

PLANTS FOR FOOD

AJI (Three species: *Capsicum frutescens* L., *baccatum* L., *annuum* L.) This plant is like the pimento.

BATATA (*Ipomoea batatas* Lam.) There are five known varieties of this potato.

HARICOTS (*Phaseolus Vulgaris* L.) This is one of many types of beans.

HOBO (*Spondias mombin* L.) This is a prune-like fruit.

LIREN (*Maranta arundinacea* L.) This is the starch arrowroot.

MAMEE (*Mammea Americana* L.) This tree is an evergreen. The fruit is similar, in flavor, to an apricot. The bark of this tree (which grows to a height of 60 feet) contains latex.

MANI (*Arachis hypogaea* L.) This resembles a chickpea.

PURPLE PLUM (*Spondias purpurea* L.) This tree is of the cashew family and has a yellow fruit which is like a plum in flavor. The fruit may be eaten raw or cooked. The sour, young shoots can be used to make soap. The leaves are also eaten raw or cooked.

SEA GRAPE (*Coccoloba uvifera*) These grapes are edible when the color is purple.

PLANTS FOR POISON

GUAO (*Camocladia glabra* Spreng) Its poisonous milky sap was used to coat arrows.

MANCHANEEL Its poison was used to coat tips of arrows.

THE USE OF ANIMALS AND SEA LIFE

A wide variety of animals, sea creatures, birds and reptiles served as a source of food; and the shell or bones of these creatures were fashioned into usable tools by the prehistoric people. The following information is taken from an unpublished report on an excavation at the Prosperity Site on the west end of St. Croix during the late 1970's accomplished primarily by Gary Vescelius, Linda Robinson and Bruce Tilden.

The archaeological site was occupied during the same approximate era as the St. George Site. The pottery styles range from Saladoid to Ostionoid and into the Elenoid period -- over more than 1,000 years of continuous occupation. Using the faunal information as a parallel, one can, perhaps, draw a more complete picture of the St. George Site.

Figure #9 illustrates how the remains found at the west end site are appropriated to various time periods. The earliest graph depicted is 100 A.D. and reveals that at least half the amount of material collected is comprised of gastropods (snails). One quarter of the material is comprised of vertebrates (mainly fish) and mollusks (unidentified); and the remaining quarter is comprised of corals (mainly anthozoans). A mere 50 years later, the distribution changes as the amount of gastropods diminishes and the amount of vertebrates and mollusks increases. At 250 A.D., crustaceans (mainly crabs) comprise one third of the remains found and are accompanied by gastropods comprising another third. Vertebrates comprise a quarter of the remains and mollusks and corals comprise the remainder. The area of Estate Mint, adjacent to the St. George Site, is portrayed, by comparison, to contain remains comprised of one-half gastropods,

The analysis of Mollusk shell from an inland site of the Saladoid period indicates conch (*Strombus gigas*), clams (*Anomalocardia brasiliana*), oysters (*Crassostrea rhizophorae*) and whelk (*Cittarium pica*) to comprise a good part of the data recovered. (Robinson, 1976). The conch are used both as food and as tools. Many prehistoric digging tools and scrapers are made from conch. Clams, oysters and whelk are considered food. The blue land crab is also found in abundance at various Saladoid Period sites on St. Croix (Morse 1989)

The *Olivella* shells have been found in archaeological sites in the Southwestern United States and in sites on St. Croix. These shells appear as a type of jewelry. The shell is generally perforated at one end, presumably to wear singly or in succession.

Other bones found in the archaeological record on St. Croix are turtle, bird and mammal. However, these bones, excavated at the Aklis Site in 1994, as well as the bones found at the Prosperity Site, have yet to be analyzed. The Aklis Site did have large and small boned fish (Hayward Personal Communication 1994).

Resources varied as changes in cultural preferences occurred throughout the centuries. However, based upon the current evidence on St. Croix, it is clear that the prehistoric people made extensive use of marine life as a food source and material for tools and ornaments.

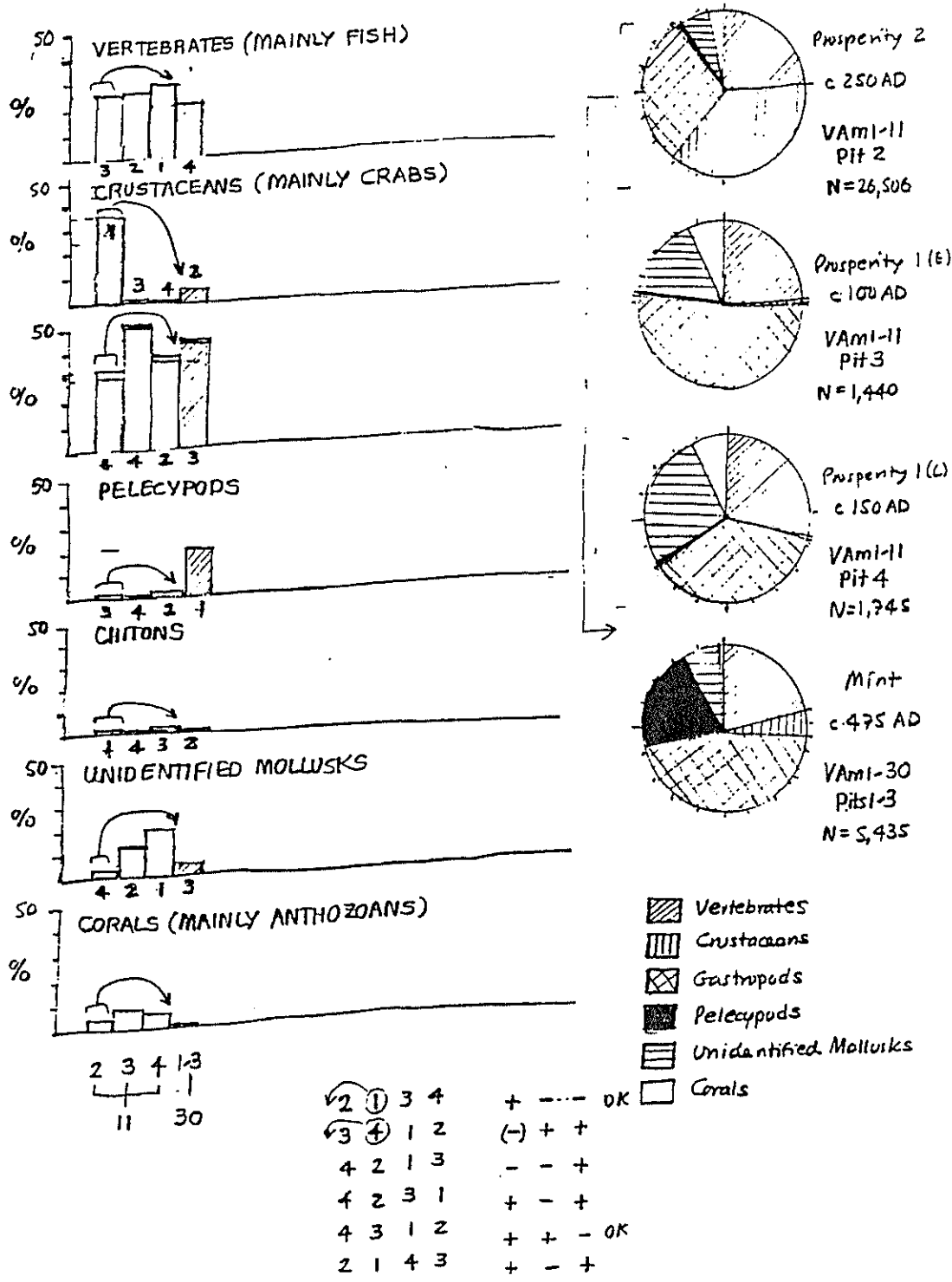


FIGURE #8 GRAPH DEPICTING THE USE OF MARINE RESOURCES After Vescelius 1976

CONCLUSION

The prehistoric people who lived at what is now known as the St. George Village Botanical Garden area of St. Croix managed to sustain themselves for a continuous period of about 900 years. They did this by employing a combination of farming, foraging and fishing methods. These people had the ability to recognize and make use of a wide variety of plants, trees and marine life and enjoyed a viable life on St. Croix.

In addition to their proficiency in obtaining and utilizing resources on land, these people who lived during the Saladoid ceramic time period were accomplished seafarers. They made optimal use of trade networks with other islands as well as the mainland of South America.

The remnants of what must have been a relatively sophisticated lifestyle can be seen in their pottery. We can only imagine the decorations they made of wood, feathers, and other perishable materials which have not survived for the archaeological record.

The Caribbean islands still are a prime research area. Much data remains to be analyzed and findings published. This is currently one of the most exciting geographical areas for archaeological research. As noted in this report, there has been much exploratory activity at the St. George Archaeological Site but very little actual scientific research. This report addresses and illustrates what is known about the site and what can be extrapolated from research accomplished elsewhere.

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