

AN INVENTORY OF PREHISTORIC RESOURCES ON ST. EUSTATIUS, NETHERLANDS ANTILLES

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INTRODUCTION

During the summers of 1981 and 1982, an archaeological survey was conducted on St. Eustatius, Netherlands Antilles. In 1981 this survey was by invitation of the Netherlands Antilles government, and financed through a grant from the University of South Florida. In 1982, the survey was carried out by the Institute of Archaeology and Anthropology of the Netherlands Antilles government with assistance from the staff and crew of the College of William and Mary Fieldschool in Archaeology, on St. Eustatius at the time.

As indicated by the title, the general goal of this paper is to inventory the research and evidence of prehistoric resources on St. Eustatius. This inventory consists of a review of the previous prehistoric work done on the island and the introduction of new prehistoric resources discovered during the 1981/1982 surveys. What follows are that inventory, and certain assimilations of the data to better develop an understanding of the temporal and spatial characteristics of the St. Eustatius prehistory.

St. Eustatius (Statia) is a small volcanic island which has 21 sq. km. of surface area, the length is oriented roughly NW/SE for 8 km. and the breadth at the widest point is almost 4 km. (Stoffers 1956). The island is located between 17°28' - 17°32' N. and 62°56' - 63°0', which is a position between the islands of St. Kitts and Saba, in the Lesser Antilles. Statia has political associations with Saba as a part of the Dutch Windward Islands whereas Statia has a geological sisterhood with St. Kitts via a submarine land platform which was dry during part of the Pleistocene, joining the two islands (Nicholson 1976).

Statia is basically divided into three physiographic areas with the southern third of the island being an ash volcano of very regular shape known as the "Quill", this volcano rises to a maximum height of about 600m.. The lowest slopes of the

Quill and the central portion of the island are a moderately rolling plain at about the 50m. elevation, the northern portion of this plain is quite suitable for agriculture and has acquired the name "Cultuurvlakte" or cultivation plain. On the northern most third of the island are the remains of a much older volcano, which exploded so thoroughly that only a range of steep hilly terrain exist today, this hilly region is called the "Little Mountains" and has a maximum height of about 300m. (Westermann and Kiel 1961).

Although there are a few bay openings in the Little Mountains the only major beach strands are located on the lee and windward side of the central low plain. These beach lines are narrow and long, with both being backed by steep cliffs for the majority of their length. The coastline around the northern hills is generally steep with cliffs and rocky coves, while the coastline on the southern face of the Quill is a sheer rocky cliff with constant prevailing winds and forboding to most any human settlement.

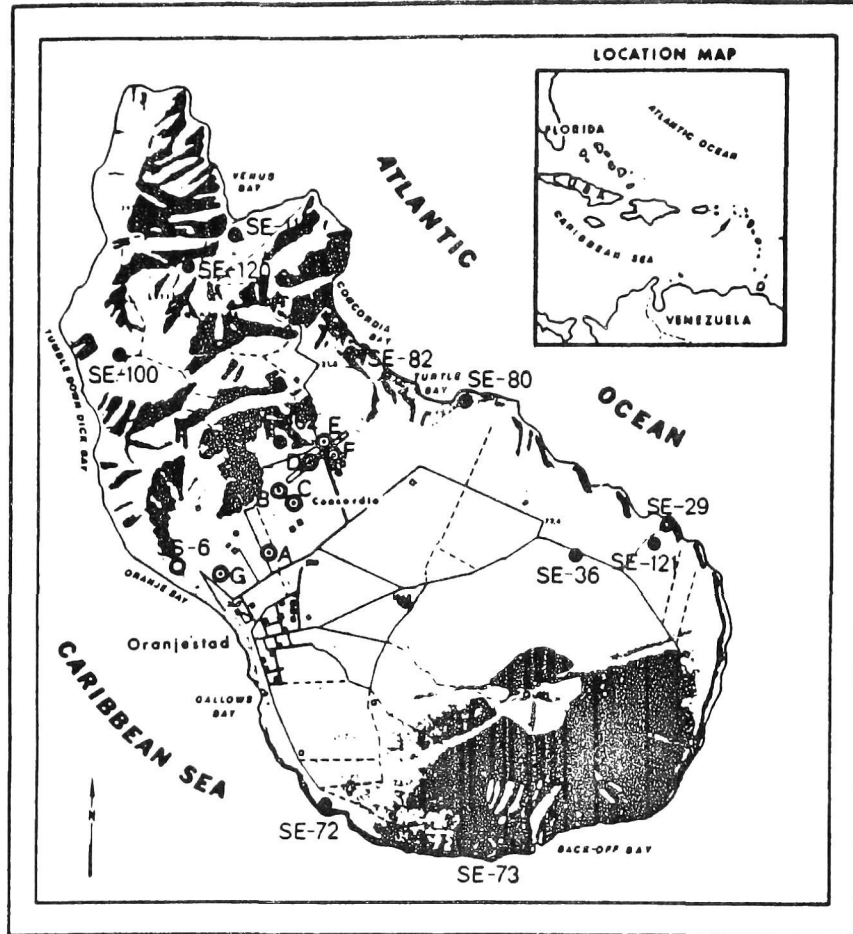
The prehistoric environmental conditions of Statia are unknown at this time, but present conditions are basically wet/dry season oriented. The wet season is between July and November, while the droughts usually occur between December and June, some years the islands lacks a true dry season while droughts of over a year are not uncommon (Keur and Keur 1960). There are no fresh water rivers or lakes on Statia, but during the rainy season wash outs, called "guts", are filled with water and pools gather at the base of some cliffs.

The vegetation generally reflects the dryer weather conditions of Statia, with primarily Thorny Woodland in the central plain and Evergreen Seasonal Forests on the upper slopes of the Quill. Deforestation has left nearly half the island cleared for agriculture, mostly in the Cultuurvlakte. (Stoffers 1956).

The historical occupation of St. Eustatius began toward the early part of the 17th century. at that time no aboriginal inhabitants were noted on the island. The island has fluctuated in population size and political control numerous times since then, remaining under Dutch rule since 1816 (Hartog 1976). The present population size of Statia is about 1500, whereas the population in 1790 was over 8000 (Ibid.). The majority

SAINT EUSTATIUS

Netherlands Antilles



LOCATION MAP



SCALE



- | | | | |
|-------------------------|--|---------------|--|
| Settlement | | ROADS | |
| Spot elevation (meters) | | Hard surfaced | |
| beach | | Unimproved | |
| | | Trail | |
- ⊙ Archeological sites (1923)
 - ⊙ Godet site (1975)
 - Archeological sites (1981/82)
- Compiled by Bruce Kinzale, February 1980.
- Compiled by Jay Havisser 1982

of the present population lives in the vicinity of the town of Oranjestad on the leeward side of the central plain. The map with this report will be of assistance to the reader as reference for the geographic features of the island.

PREVIOUS PREHISTORIC RESEARCH

The first prehistoric investigation of Statia was in 1923 by J.P.B. de Josselin de Jong, the report was finally published in 1947. His prehistory paper of St. Eustatius and Saba is the foundation and cornerstone of prehistoric research on St. Eustatius. De Jongs' report was well presented with precise proveniences and numerous photographs of the artifacts he recovered. He did not associate any of his artifacts with cultural groups, most probably because very few cultural comparisons were available from the other islands at that time. He made no inferences as to the temporal position of the artifacts he recovered, yet via his photographs and descriptions, more recent archaeologists of the Lesser Antilles, have determined the St. Eustatius material to be of the Saladoid period, from early to late during the Saladoid migrations (Rouse 1953, 1964; Rouse and Allaire 1978). The ceramics found by de Jong on Statia were called the "Golden Rock Style" because of the excavations near the site of Golden Rock. The Golden Rock style was first included as a part of the Saladoid series by Rouse in 1964.

De Jongs' survey of Statia resulted in the location of seven areas of prehistoric deposits (see map). All but one of these areas were in close proximity to each other in the central cultivation plain, Cultuurvlakte, near Golden Rock and Concordia. The greatest concentration he noted was at area B/C (SE-88&89 on map), northeast of Golden Rock. There were less dense concentrations around Concordia with areas D, E, F (SE-87) and a pottery/coral artifact deposit to the west of Golden Rock, area A.

He also located a small scatter of artifacts near the southwest boundary of the Schotsenhoek Estate, area G. This area G was not on the coast but well into the cultivation plain, areas A and G have been destroyed by housing construction.

Apparently de Jong surveyed the entire island, including the hilly region to the north where he found no traces of indian settlement at Venus Bay, Tumble Down Dick Bay, or any of the other bays, but he did locate a few sherds on the highground at Pisga (SE-100). De Jong was careful to point out how unlikely it was for there to have been an indian settlement at Pisga because of the lack of coastal or agriculturally suitable land. During the course of his survey he also found no evidence of indian settlement around the base of the Quill, to the southern end of this island.

In that de Jong did not describe his survey technique, we have no way of knowing how thorough his survey was, yet apparently he did check the northwest hills and did locate the major Cultuurvlakte settlement area. De Jong was writing at a time when, in Archaeology, the descriptive aspect of artifacts and sites was of primary concern.

His excavation techniques were more explicit as to procedure, but not to soil descriptions. In the area B/C, he dug eight adjoining tests each two meters square. As seen in these excavations he found that agricultural activities has altered the upper 25 cm. of the site, therefore he established an arbitrary level of 0-25 cm. below surface. He indicated that undisturbed midden deposits continued only about 10 cm. below the altered level, but because artifacts did continue to a maximum depth of 60 cm. he established an arbitrary 25-60 cm. below surface level.

Along with surface collections, these two arbitrary levels were the only collection proveniences on St. Eustatius.

Of the artifacts recovered by de Jong were numerous zoned-incised-crosshatched sherds, a diagnostic of the earliest Saladoid migrations. Also uncovered by de Jong were white-on-red painting, inverted bell-shaped vessels, annular bases, Zemis and tools of shell, bone, coral and stone. This occupation at Golden Rock is of the early to middle period of the Golden Rock style (Rouse 1964) and is indicative of the earliest ceramic period occupation of the Lesser Antilles.

In 1975, there were two archaeological investigations of the prehistory of Statia. Both of these investigations included excavation and neither has become a published report,

although an unpublished manuscript was written by Alfredo Figueredo (1975).

Figueredo took a more scientific, albeit limited, approach to the survey of prehistoric resources on Statia. His work was of the problem-oriented approach characteristic of archaeological scientists today rather than de Jongs' period of artifactual description only. The other 1975 excavation was by E.H.J. Boerstra, who has not yet produced a manuscript describing the excavation.

The manuscript by Figueredo (1975) is primarily concerned with Saladoid settlement patterns as exhibited on Statia. Using Statia as one of their examples, Caribbean archaeologists have often stated that the early Saladoid spatial behavior was root horticulture subsistence based, and settlement patterns were only inland around agriculturally suitable land.

Figueredo decided to survey the beachlines on the northeast and southwest coast of Statia to find a coastal Saladoid site, thereby establishing that the early Saladoid spatial behavior also allowed for the exploitation of marine resources.

To the northern end of the southwestern coast, where the Godet plantation is, Figueredo located a large Saladoid midden site on the beachline. He called this the Godet Site (SS-6) after the plantation where it was located (see map). Figueredo then dug a 1.5 X 1.5 m. excavation at the Godet Site. The arbitrary levels were 25 cm., interrupted with the appearance of each new soil stratum, thereby strata were never cross-cut. He excavated to a maximum depth of 120 cm. below surface, encountered four different soil strata and the Saladoid cultural zone at 60 cm. below surface in Stratum III. He felt that the artifactual assemblage from stratum III was clearly Saladoid and probably toward the middle of the early Saladoid sequence. Some of the more diagnostic artifacts were inverted bell-shaped vessels, zonal painting, polychrome painting and incisions filled with white paint (which is a diagnostic of the Golden Rock Style). He placed the occupation of the Godet Site within the middle to late period of the Golden Rock Style (Rouse 1964), which is prior to the middle to late Indian Creek Complex of Antigua (Rouse 1976).

It was the results of the Golden Rock excavations by de Jong, that Rouse (1964) later used as reference to establish a relative chronological position of the Statia occupation around the first century A.D.. A more thorough chronological chart for the Caribbean has recently been developed by Rouse and Allaire (1978), unfortunately they had little more data on St. Eustatius than Rouse had had in 1964, so the evaluation of Statias' prehistory is still based primarily on de Jongs' 1923 excavations.

1981/1982 SURVEY OF ST. EUSTATIUS

The land survey of St. Eustatius was originally designed to cover only the central cultivation plain over the mid-portion of the island. To carry this out, a regionalized parallel aligned transect scheme with representative non-random sampling was employed. The cultivation plain was broken into numerous tracts of land which were covered by a crew of 6-8- people, walking in parallel transects. The transects were kept as true as possible through the thick vegetation with the use of machetés. The distance between each transect was generally five meters, the length of the transects varied with the size of the tract being covered at that time. A representative sample of artifacts were collected from the surface at areas of site designation only. limited subsurface samples were taken. A copy of the fieldnotes and maps, as well as the artifacts are on file at the St. Eustatius Historical Foundation, Oranjestad, St. Eustatius and at the Institute of Archaeology and Anthropology, Willemstad, Curacao.

There were certain limitations encountered during the transect survey of Statia, these were primarily field problems. Of the more prominent limitations were outdated maps which portray features either no longer existant or existant but not on the map, this made orientation quite difficult. Thick vegetation often caused ground surface visability to be limited and also made it difficult to find reference points on the map. A benefit of the vegetation was that often historic ruins were associated with taller trees because cultivation avoidance allowed the trees to grow. A problem which generally effects survey fieldwork, the weather, was quite favorable during the majority of this survey period.

As stated above, the original intention was to only survey the cultivation plain, but as we began to realize how rapid the survey was moving it became apparent that the majority of the island could be surveyed in the time allotted. Having begun with the parallel transects technique, it was decided to continue with the same system over the lower slope of the Quill and into specific areas of the Little Mountains region. The areas of St. Eustatius not surveyed were the denser forest above the 150 m. elevation on the Quill and heavily developed housing areas, particularly the new development of Jeems and within the city of Oranjestad.

There were ten unrecorded prehistoric sites encountered during the 1981/1982 survey of Statia. The sites at Golden Rock, Concordia, Pisga and Godet were reinvestigated and evaluated as to present condition and size. Although Golden Rock and Godet are still the largest midden deposits on Statia, these new sites give a more detailed insight into the complexities of Saladoid settlement patterns, via the presence of other site types on the island.

This paper is an introduction of the existence of these prehistoric sites to the archaeological community, so what follows is a description of each new site in brief detail. A more thorough investigation of each site with completed excavation and analysis will follow with another report at some date in the future. All the prehistoric sites for St. Eustatius, to date, are on the map included with this report.

SE - 80

Located on the cliff top directly east, across Schildpadden Bay from Ft. Amsterdam (SE-81), to the south 30 m. of Lynch well (SE-79), this site is an area of about 25 m. diameter.

Strombus (Sp.) and West Indian Top Shell (Cittarium pica) fragments and prehistoric pottery were all found, in situ, eroding from the ground and cliff edge, to a depth of about 25 cm. below surface. There were ceramics of plainware and red painted body sherds which all appear to be of the Saladoid period.

Histroic sherds were also found in this area, but not in the same, in situ context, only on the surface.

SE-82

Located on the cliff top to the south side of the large gut about 800 m. southeast of the Zeelandia drainage basin, and about 250 m. northwest of Ft. Amsterdam (SE-81). This is an area of about 10 m. diameter, with West Indian Top Shell fragments eroding from the ground and from the cliff edge to a depth of about 20 cm. below surface. A Strombus shell fragment was noted and appeared to have been ground to an edged celt. There was no prehistoric pottery noted at this site.

SE-72

Located on the top of a cliff, to the north side of a gut about 250 m. north of Ft. Nassau (SE-66). This cliff is at the mouth of the gut overlooking the Caribbean Sea. Noted at the site were West Indian Top Shell fragments and prehistoric pottery, in about a 5 m. diameter area, eroding from the ground. The pottery was all plainware, thus an identification was not attempted.

SE-73

Located on both sides of the top of the cliff at the mouth of a gut between Kay Bay and Ft. de Windt (SS-8), about 750 m. west of Ft. de Windt. Noted at this site were Strombus and West Indian Top Shell fragments, also prehistoric plainware ceramics, all eroding from the ground and cliff edge. Again, because of the pottery being plainware an identification was not made, although the tempering was similar to that from the Golden Rock Site.

SE-102

Located on the west-central face of Ossies' Hill in association with several shallow rock shelters. Ossies' Hill is directly north of the Golden Rock Site, at the edge of the Little Mountain region, the site overlooks the western third of the cultivation plain and the Golden Rock Site (SE-88).

Noted below the rock shelters were sherds of plain pre-historic pottery, again similar to the plainware at the Golden Rock Site. No other cultural material was noted at this site.

SE-36

This site was located about 15 m. west of the intersection of the paved road and the dirt road which leads to the Steward ruins complex (SE-35). Noted at this site were eight shell celts eroding from the ground, in an apparently in situ position, but no other prehistoric artifacts were associated.

There was no midden, no pottery and no other shell fragments, only the entrance road to Steward. The possibility of these artifacts having been redeposited here at a historic date is present, although the celts were definitely eroding from a subsurface provenience when noted on this survey. All the celts were of Strombus shell.

SE-29

This site is located on the point to the north of Corre Corre Bay, on the northern side of the cliff top overlooking a gut which flows out the middle of the point. There is an old well (SE-28) located in the mouth of the gut just below the site. The site is about 250 m. north of the Corre Corre Battery (SE-27). This site is about 35 m. in diameter on and back from the cliff edge.

The site is strictly a lithic (chert) scatter, with no pottery or historic artifacts noted and only three West Indian Top Shell fragments noted. There were numerous chert debitage flakes over the entire area, much fire cracked rock and two small hammerstones. Several of the flakes show evidence of thermal alteration and over half of the flakes have patination (one artifact shows thermal alteration prior to patination). One flake of a non-chert stone was noted, it was similar to red jasper but positive identification was not made. The chert colors at this site were primarily black (before patination) and several examples of brown and tan cherts. There were both early reduction stage thinning flakes and secondary retouch flakes found at this site.

Of particular interest about this site location is that Corre Corre Bay is the closest point in the direction of Antigua, which is the closest island with chert outcrops.

SE-121

During a research, in 1982 of the SE-29 area, we surveyed into the thick brush located approx. 200 m. west of SE-29, further away from the coastline. Recent wash-outs, as well as older drainage cuts revealed an area of artifacts about 20 m. in diameter. The primary shells were Strombus (Sp.) and West Indian Top Shells, other shells noted were mostly univalves including Cypraea zebra, Epitonium lamellosum, Turbo canaliculatus, Nerita peloronta, Fissurella nodosa, Amphinevra Sp., Purpura patula, Arca zebra, coral fragments, fish bone, basalt, andesite, chert, red ochre, charcoal proveniences, to a depth of 25 cm. as seen in the washouts.

No prehistoric pottery was encountered anywhere at this midden deposit, although the chert artifacts noted matched the color and density of the chert from SE-29. The lack of pottery from this site and from SE-29 remain a nagging curiosity, yet the presence of subsistence artifacts and midden here, explain to some extent the lack of such evidence at SE-29. Although no subsurface tests were dug, the surface evidence at this site suggest a equally large deposition content as at the Golden Rock Site (SE-88), although many fewer bone fragments were noted at SE-121.

The abundance of chert artifacts here at SE-29 may be an indication of the reason for a longer settlement here, than explained in the site SE-29 identification. The frequency of fire-cracked rock certainly suggests more than ephemeral camp use.

SE-113

Along with numerous historic artifacts and a stone/mortar well, what appeared to be prehistoric pottery sherds were encountered in the low, flat basin of the Venus Bay area. A very few fragments of Strombus (Sp.) shell fragments were also noted, but the age of these fragments cannot be suggested with certainty.

There may be a similar deposition here, as at Pisga, of possible historic-course earthenwares but this cannot be

positively stated. The sherds that were noted and believed to be prehistoric, were all plain ware, with no identification attempted.

SE-120

This site is suggestive of prehistoric occupation by its' geographic position and existence, as a large cave overlooking Venus Bay. This cave is located on the north side of Berge mtn., and is approximately 21 m. wide, 12 m. high and 8 m. deep. The view from the cave mouth is all encompassing of the Venus Bay basin and shoreline. The cave is also visible from the shoreline, being located high up on the mountainside.

With only a small front opening ledge, the ground surface is rocky and steep just outside the cave entrance. After a thorough survey of the cave and surroundings we encountered only a single artifact, a prehistoric chert flake. This flake was modified and created by non-natural methods (as seen by the bulb of percussion and battering scars), is brown in color and was located just inside the cave entrance. As just stated, no other artifacts, prehistoric or historic were noted at this site, but due to the presence of this one artifact and the topographic nature of the location, a site designation was assigned.

REINVESTIGATED SITES

SE-87

This site is all that remains of de Jongs' areas D, E and F, all located in close proximity to the Concordia ruins complex (SE-86). Development of this area with the construction of the Roosevelt Airstrip and the Government Botanical Experimentation Center have destroyed almost all there was of the prehistoric midden here when de Jong reported the site in 1923. During the 1981/1982 survey, only one sherd of white-on-red painted pottery was noted and no associated midden. This single prehistoric artifact was located in the area E reported by de Jong.

SE-88&89

This site is the area B/C excavated by de Jong in 1923 and still is present covering a large area of about 60 m. diameter at the southwest end of the airport runway. Located in the lower

cultivation plain about 300 m. north northeast of the Golden Rock ruins complex (SE-91), this is the Golden Rock Site referenced by Rouse in 1964.

Noted at this site were midden deposits partially exposed by cultivation practices. There were *Strombus* celts, West Indian Top Shell fragments, coral fragments, Anadara Notabilis, Amphineura (Sp.), Fissurella nimbose, Arca zebra, Oliva (Sp.), Echinochama arcinella, Purpura patula, charonia (Sp.), Cyphoma gibbosum, Epitonium lamellosum, Turbo canaliculatus, Nerita peloronta, a coral plummet; bones of fish, small mammals and crab; a chert biface tool, basalt and chert debitage flakes; and ceramics of the Saladoid period. with white-on-red painting, zoned-incised-crosshatching and plainware. The quantity of cultural material at this site is greater than any other of the prehistoric sites on Stacia, except possibly for the Godet Site (SS-6). Modern cultivation and construction have destroyed or removed great portions of this site, which is the probable cause of the separate distribution of the cultural material in two areas, nonetheless two site numbers were designated for this site.

This site is the site excavated by Figueredo in 1975; it is located to the northern end of Oranje Bay and covers an area of about 25 m. inland from the beach and runs along the beachline for about 80 m., connecting two other guts with the mouth of Billys' Gut. This site is deeper than SE 88 & 89 and equally prolific a midden deposit, with a general depth of 1.2. to 1.5 m. below surface. Noted at this site were mostly *Strombus* fragments with some West Indian Top Shell (few other shell types were noted), there were faunal remains of primarily fish and crab, as well as a great quantity of prehistoric ceramics. There were numerous basalt boulders located in situ with the midden layers and a flake of chert debitage was noted. The pottery was Saladoid with white-on-red painting, annular bases and inverted bellshaped vessels. Because of thick vegetation most artifacts were noted eroding from the wash out banks, therefore the actual horizontal extent of the site is not completely known. There is severe erosion occurring in the areas of the wash outs, rapidly washing the site into the sea. Historic artifacts are associated with the upper subsurface levels of this site as well as on the surface.

SE-100

In that de Jong had recorded a possible site at the Pisga area of the Little Mountains, that location was thoroughly investigated. An historic ruins complex was noted at the site with much surface scatter of historic artifacts, including sherds of what looked more like Colono-Indianware, plain coarse earthenware. Although the distinction between prehistoric pottery and historic plain coarse earthenwares is still not well understood, the surface association with historic artifacts and lack of midden area suggested that there was little probability of a prehistoric site at Pisga.

SUMMARY

This general summary of the prehistoric resources of St. Eustatius covers both the temporal and intra-island spatial characteristics of those resources. What follows is a relative temporal classification of the artifactual assemblages known to date for Statia and the distributional aspects of those assemblages over the island.

The temporal position of the prehistoric resources of Statia has been defined by the presence of diagnostic artifacts dated on other islands through Carbon-14 dating, no Carbon-14 dates are available from St. Eustatius. The earliest diagnostic artifacts known from Statia are the zoned-incised-crosshatched (Z-I-C) sherds of pottery from the Golden Rock Site (SE-88&89). This Z-I-C motif has very early roots in the history of New World pottery altogether, as shown with the following Carbon-14 dated examples. Z-I-C sherds have been dated as far back as 2500 B.C. with the Valdivia Style in Equador and 1500 B.C. with the Machalilla Style also from Equador. It is of interest that the Z-I-C motif is not present at the Saladoid type site of Saladero, Venezuela at 1010 B.C. but does appear in a Saladoid site at Cedros, Trinidad at 190 B.C. (Olsen 1974). Apparently the Z-I-C motif was adopted by the Saladoid peoples after they had left the Saladero region and migrated out the Orinoco River into the Trinidad area. Olsen places the date of Z-I-C at between 190 B.C. and 100 A.D. at the Cedros Site on Trinidad (Ibid.). The spread of this motif into the Lesser Antilles was quite rapid, reaching Puerto Rico and the Virgin Islands by about 300 A.D.

(Rouse 1974; Haviser 1978). It was during this earliest wave of migrations into the Antilles that the Golden Rock Site on St. Eustatius was first settled.

These first ceramic period peoples were a root horticulture (manioc) subsistence based culture, with maritime adaptations having been gained during the most recent few hundred years prior to their migrations into the Antilles (Allaire 1973). The maritime adaptations were manifest via subsistence and transportation technology and most probably also in socio-political structure, all the while the basic cultural pattern of manioc horticulture was a major aspect of these Arawak Indians. The early Arawak migrations into the Antilles were the first introduction of ceramics, including diagnostic attributes of Z-I-C, white-on-red painting, and structural characteristics of annular bases and inverted bell-shaped vessels (Rouse 1974).

There was a secondary wave of peoples and stylistic influence overlapping the first early on during the migrations into the Antilles. At about 350 A.D. the material culture display of this new influence is most apparent in the ceramic styles of the Antilles. After about 350 A.D. the addition of polychrome painting, incense burners and modeled-incised decoration have been traced to the Barrancas region of Venezuela near Saladero (Rouse 1974). This Barrancoid influence on the Arawak potters ends at about 500 A.D., which is generally considered the end of the Saladoid migrations into the Antilles.

The archaeological remains found on St. Eustatius are primarily of this migration period from about 0 A.D. to 500 A.D., called Saladoid. The remains at the Golden Rock Site (SE-88&89) exhibit evidence of the earliest migrations, the remains at the Godet Site (SS-6) exhibit evidence of the Barrancoid influenced ceramic styles (Figueredo 1975), as do all the other prehistoric sites on the cultivation plain (de Jongs' sites). Therefore, all of these sites are of a relatively contemporaneous period of occupation during the Saladoid period. In view of the fact that rapid population growth generally follows settlement on an island (Vayda and Rappaport 1963) the major exploitation of both marine and horticultural resources would be required and also would produce the two major site concentrations at the relative locations of Godet and Golden Rock/ coastal and horticultural. These sites appear to be core of the ceramic producing period prehistoric spatial pattern on Statia. It should be noted, there appears to have been the earlier Saladoid

occupation on the cultivation plain interior and the later Saladoid occupation spreading to include the seashore environment. The unique non-ceramic midden at SE-121 with a large chert knapping activity area, is a possible indication of the pre-ceramic habitation core at the SE-121 location on St. Eustatius. Further data must be collected from this non-ceramic site in order to most accurately describe its' position in St. Eustatius prehistory. Nevertheless, it is important to note that the core of the nonceramic site locations is in relation to different natural resources than the core of the ceramic sites on St. Eustatius.

The presence of the largest coral reef adjoining St. Eustatius at Corre Corre Bay, clearly displays the difference in subsistence strategies associated with the non-ceramic and ceramic habitation centers. In 1983, a small excavation was conducted at SE-121 to collect radio-carbon (C14) samples. During the excavation of the 1x1m. test unit (dug in 10cm. levels), the midden was discovered to be about 25 cm. thick with the shells listed earlier for the surface, as well as an abundance of faunal material. A more complete analysis is in process but a preliminary inventory of the faunal material consists of six different genera of reef fishes, avifauna bones, small retile bones but no mammal bones. It is the distribution of the smaller prehistoric sites which fills out the complex nature of the ceramic period Saladoid settlement patterns. These smaller sites are more like satellites around the core subsistence sites. The satellite sites are more specific function or resource exploitation oriented on a smaller scale than horticulture or major marine resources.

The sites along the cliff tops on the leeward side of the island (SE-72&73) appear to be minimal significance in terms of resource exploitation but serve as excellent observation stations for views south to St. Kitts and back north toward the base settlement. The use of this same portion of the St. Eustatius coast was relied upon and heavily fortified by the historic period military for its' strategic position at the southern end of Oranje Bay to intercept ships sailing with the winds from the south. Possibly the Arawak were watching for other boats coming from the south toward the leeward side of the island and their base settlement. There were also two similar, observation stations, located on the main beach portion of the windward side of the island (SE-80&82). Another more prominent observation station is the small site (SE-102) associated with the rock shelters overlooking Golden Rock and the plain toward Godet. This site commands a view of the majority of the base

settlement region of Statia, as well as a view of the southern two-thirds of Oranje Bay.

The above five sites have been called observation stations and classified as satellite sites in relation to the base settlement of Godet and Golden Rock. These observation stations are of a specific functional orientation, whereas the two remaining satellite sites are of a specific resource exploitation orientation. This identification of site types is similar in theory to the base camp/work camp classifications established by Binford and Binford in 1966. More precisely, on an island as small as St. Eustatius we could theoretically see the entire island as one "site" with the various activity areas being the observation stations and core settlement centers.

Site SE-36 is a collection of exhausted shell celts concentrated in a specific area. The inference of wood exploitation is brought to mind because of the isolated upper elevation location of the site and by way of ethnographic analogy. Although the association may seem strained, the Aborigines of Australia have a well defined pattern of wood procurement whereby once the wood has been procured the tools (particularly exhausted tools) are simply dropped at the base of the tree, this behavior has been observed on numerous occasions (Hayden 1978; Gould, Koster and Sontz 1971). Of course, no direct connection between Australians and Arawaks is being suggested here, only the pattern of refuse tool deposition in relationship to wood exploitation. (ie. Why carry exhausted tools away with you, when you need to carry the wood procured?). The geographic position of this celt scatter is also in a fairly direct line between the SE-29 site and the base settlement at Golden Rock and Godet. It may well have been that this site (SE-36) was along a route taken by the indians between the base and satellite camps, although there are no documented reports of such a trail during the historic period.

The final prehistoric site to be covered is the lithic debitage scatter at site SE-29. This site is extremely interesting in that it is obviously a chert knapping station, but the unusual nature of the site is in its' potential temporal classification. The presence of an exclusively chipped stone assemblage falls within Rouse and Allaires' (1978) "Lithic age" chronological position which is several thousand years earlier than the Saladoid migrations into the Antilles. The only other

site of "Lithic age" position in the Lesser Antilles is on Long Island off Antigua (Olsen 1971), but no Carbon-14 dates are available for that site so the date is relative rather than absolute. The presence of patination on chert artifacts from an "Archaic age" site (1800 B.C.), at Jolly Beach, Antigua (Davis 1974), is suggestive of a greater antiquity of the SE-29 chert artifacts which also have patination (after thermal alteration). The very presence of thermal alteration and fire cracked rock are indicative of at least two days occupation at that location.

The position of the site on the Corre Corre Point, which is the closest point to Antigua, is curious, particularly since Antigua is the closest chert outcrop source to Statia. Black and brown cherts are found on Antigua and those are the colors of the cherts found at SE-29. The chert colors at SE-29 were primarily black with some brown, whereas the chert colors at SE-88&89 are primarily brown with some black.

Whether the chert was brought over at a very early date or during the Saladoid times, the position of the site (closest observation station to the Antigua route) and the colors of the chert, are suggestive of Antigua as the source. It was proposed in 1981 that site SE-29 was a chert knapping and observation station of the early Saladoid period. With the dependence on manioc horticulture by the early Saladoid, an awl of chert for peeling the manioc tuber would be a similar tool used by the Arawak of Surinam (Olsen 1974). Any degree of frequency of travel to Antigua to acquire a limited resource, chert, would warrant an ephemeral camp at the location of site SE-29. With the subsequent location of a non-ceramic midden (SE-121) in close proximity to SE-29, it is now proposed that indeed the area of sites SE-29 and SE-121 constitute at least a limited pre-ceramic occupation on St. Eustatius. The radio-carbon samples taken in 1983 should verify the chronological position of SE-121.

So in brief summary, it appears that St. Eustatius is indeed an ideal island for the study of intra-island behavior patterns of the prehistoric period. Whereas, the pre-ceramic occupation was localized around a specific natural resource, based on different subsistence exploitation methods than the ceramic period occupation. The Saladoid pattern being one of

core/satellite activities distributed over the island at a contemporaneous point in time. There were various activities occurring at the satellite sites, away from the base settlement, all these activities were intricately involved with each other and organically tied into the functioning of the Saladoid way of life.

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