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Diag. cnt. No 905

Form 501

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Topographic*  
Field No. *3769* Office No. *3770*

LOCALITY

State *Virgin Islands*  
General locality *St. Thomas*  
Locality *Western Part*

1949

CHIEF OF PARTY

*O. W. Swainson*

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Form 504  
DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

State: *Virgin Islands.*

11-6013

DESCRIPTIVE REPORT.

Topo. Sheet No. *3769*  
*3770*

LOCALITY:

*St. Thomas.*

*Western Part and Offlying*  
*Is.*

*West Central Part.*

1919

CHIEF OF PARTY:

*Swainson, O. W.*

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

The finished Topographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 3769 (Field Sheet "A")

State . . . VIRGIN ISLANDS . . . . .

General locality . . . St. Thomas Is. . . . .

Locality . . . *Western Part + Offlying Islands.*  
~~Western half of island and offlying cays.~~ . . . . .

Chief of party *O.W. Swainson Jr. H. & G. Engr.* . . . . .

Surveyed by . . . A.L. Shalowitz . Aid . . . . .

Date of survey . . . May - August 1918 . . . . .

Scale . . . 1:10000 . . . . .

Heights in feet above Mean sea level . . . . .

Contour interval .20 . . feet.

Inked by A.L. Shalowitz . Lettered by A.F. Gleason. . . . .

Records accompanying sheet (check those forwarded): Photographs,

✓ Descriptive report, Horizontal angle books, Field computations,

Data from other sources affecting sheet . . . . .

Remarks:

DESCRIPTIVE REPORT

to

Accompany Topographic Sheets Nos.\_\_\_\_

Field Sheets "A" & "B". Virgin Islands.

By

A.L.Shalowitz, Aid. C.& G.Survey.

O.W.Swainson, Chief of Party

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

The finished Topographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 3770 Field Sheet "B"

State . . . VIRGIN ISLANDS . . . . .  
General locality . . . St. Thomas Is . . . . .  
Locality . . . ~~North half of island and Lagoon Cays~~ <sup>West Central Part</sup> . . . . .  
Chief of party . O.W. Swainson . Jr. H. & G. Engr . . . . .  
Surveyed by . A.L. Shalowitz . Aid . . . . .  
Date of survey . . . <sup>June</sup> ~~May~~ - August . 1918 . . . . .  
Scale . . 1:10000 . . . . .  
Heights in feet above Mean sea level . . . . .  
Contour interval . 20 . . feet.  
Inked by . A.F. Gleason  
Inked by . A.L. Shalowitz . Lettered by . A.F. Gleason . . . . .  
Records accompanying sheet (check those forwarded): Photographs,  
Descriptive report, Horizontal angle books, Field computations,  
Data from other sources affecting sheet . . . . .

Remarks:

The shoreline and roads were inked by A.L. Shalowitz;  
The contours and vegetation by A.F. Gleason.

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### Appended.

Lists of Plane Table Positions
Geographic Names
Photographs.

PLANE TABLE SURVEY OF THE WESTERN PART OF ST. THOMAS ISLAND.

Sheets "A" & "B".      Virgin Islands of the U.S.

Shore Party.    May-June-July-August. 1918.    O.W. Swainson, Chief of Party.

Survey by A.L. Shalowitz, Aid.

INTRODUCTORY NOTES.

This survey made on a 1-10000 scale in accordance with instructions dated January 24, 1918, was done principally between the months of May and August 1918. The north shore of both Salt and West Cays and the whole of Cockroach Is. were completed in February 1919 after the completion of sheet "D". This was because the constantly threatening weather during the hurricane period made it inadvisable to remain in camp and wait for a possible calm.

LIMITS OF SHEETS.

Sheet "A" includes both shores of the western end of St. Thomas Is., the interior topography and all offlying islands, Cays and rocks to the westward included in the Virgin Islands of the U.S. It joins sheet "B" on a line from  $\Delta$  FORTUNA to  $\Delta$  BAD. All the contours along this line were adjusted where necessary to agree with sheet "B".

Sheet "B" takes in both shores of the island of St. Thomas, the intervening topography and all islands, cays, rocks and reefs to the north and south of the island. It joins sheet "C" on the east on a line from  $\Delta$  TOP to  $\Delta$  LIT. All the contours and roads along this line on the two sheets were adjusted to agree with each other.

CONTROL AND METHOD OF SURVEY.

A tertiary scheme of triangulation along all the salient points of the shoreline furnished the main control for both the north and south shores. With this as a basis, numerous plane table stations were established by prosection, resection and three point fixes, on the intermediate points, in bays and on all the outlying cays and rocks. This furnished a strong system of control, besides facilitating and expediting the execution of the plane table work. Owing to the inexperience of the hands, it was necessary to make a topographic reconnaissance of the entire field for the purpose of establishing permanent stations, traverse stations etc. Very little traversing had to be resorted to. The most extensive traverses were the entire eastern side of the Outer Brass and the western shore of Savana Is. In all cases, however, the traverse closed within the required degree of accuracy.

In the survey of the interior, particularly the area north of the main ridge on sheet "B", the interior control was found inadequate, as only two of the hills, Crown and Botany, were located by triangulation, most of the signals on the north shore not being visible owing to the abruptness of the shore. A plane table triangulation was therefore run over the more prominent hills and from these, flags erected on the other hills were cut in, so that there is a definite location of most of the hills shown. This furnished ample control for the mapping of the roads, trails and for the contouring. This also made it possible to establish numerous permanent station marks with a fair degree of accuracy along the roads and over some of the hills for the control of any future boundary surveys that will be made by the local government.



The plan adopted was to survey the shoreline first wherever possible and then the roads. This furnished the network of the map and from this the interior topography was filled in. In the execution of the interior topography it was found expedient to use at times three rodmen. This was particularly true in places where there was a heavy undergrowth and where it took the rodmen some little time ~~then~~ to get through. A rod 12 feet long was constructed and used for long distances, and particularly to get the elevations of the tops and bottoms of important ravines, gullies, valleys etc. The advantage was at once apparent.

As most of the roads are lined on either side with tall trees and brush, it was frequently necessary to clear lines of sight in order to see important signals. The nature of the ground was such that almost every reading had to be corrected both for inclined sight and for elevation.

Nearly all the roads were run in by traverse, with frequent three point fixes as checks. Where there was no detail to be mapped and short shots had to be taken the declinoire method of orientation was used with set ups at every other reading. An occasional check showed no appreciable error.

All the work was executed with the plane table except the trail leading from Hope to Fortuna and the trail leading from Bordeaux Bay to Botany Bay. The first was sketched in from a rough road map made by the marines. The trail itself not being very important it was hardly worth running, moreover it was tied in with three points located by topography. The second was sketched in from a paced traverse. Red Point shoal was located with the sextant, the position being checked by two cuts with the plane table.

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All outlying rocks were visited where possible and located. The Porpoise Rocks and Dry Rocks were located by Plane table cuts.

CONTOURS.

The contours shown are at 20 foot intervals. The usual practice was adopted of setting up the table at one of the triangulation stations where the H.I. could have been accurately determined. Elevations of the other triangulation stations were then determined as well as flags erected on many of the hills cut in. In this way a number of points were established for the control of the contours. In the more level sections where the work was not hampered by the thick bush and heavy undergrowth, the method employed was to occupy successive stations from which a commanding view of the surrounding country could be had and then locating in plan and elevation by direct readings the characteristic points of the terrene and with these as guides sketching in the contours. This was particularly true of the area back of Mosquito Bay.

On the north side of the island from the eastern limit of the sheet to  $\Delta$  STUMP, and north of the main road on that side of the island, it was found necessary to establish numerous flags on the small hills, on tops of ridges and along slopes, as they did not stand out sufficiently to be cut in from offshore and being impossible to locate them from along the road which was at a much higher level. By occupying a few such stations, oftentimes having to cut a path through overgrown cattle trails and up the sides of hills covered with a heavy growth of ping-wing, catch-and-keep and prickly trees, ~~from there~~ readings were taken to additional hills, valleys and ravines and then the contours sketched in. In many instances 100 foot contours

were run and the 20 foot contours interpolated.

Although almost the entire area within the limits of this sheet is covered with heavy brush (except for patches of cultivated land here and there) the climax seems to be reached in the area west of Perseverance Bay, particularly in the vicinity of Bordeaux Bay and Fortuna Bay. No attempt at accurate contouring was made there as the region is a veritable wilderness. To cut a line of sight would have meant the labour of days and perhaps weeks. The hills along the main ridge were located by cuts from plane table stations. While traversing along the roads prominent trees, rocks, etc. were cut in and from these the contours were sketched in, the object being more to delineate the general appearance of the country rather than the accuracy of the contours. In Bordeaux Bay the area within the 100 foot contour is well developed.

In contouring the smaller islands the usual method, of cutting in the hills and saddles and all breaks in grade was adopted.

Elevations were carried along all the roads, so that the contours along these are accurate. All elevations determined in the field are not shown on the original sheet. Only the more important ones were inked in.

#### NATURE OF SHORELINE.

Beginning on the north shore from <sup>Botany</sup>Target Point and running eastward to Bordeaux Point, the shore-line is smooth and rocky, with cliffs rising 20 to 30 feet high. About 150 meters east of <sup>Botany</sup>Target Point and extending for about 100 meters along the shore, the sloping cliffs rise from 70 to 80 feet high. From Bordeaux Point to Bordeaux Bay the shore consists of slippery bedrock that slopes

up from the shore at about an angle of 45 degrees making it very difficult to pass. The shore in Bordeaux Bay is low and marked by coarse gravel. From here to about 300 meters east of ~~the~~ SLOPE the rocky shore is intersected by narrow fissures. Continuing eastward to Stumpy Point the shore is rocky at points with sand and gravel in the bays. A coral reef that shows coral heads at low water lines the upper end of Stumpy Bay. The shore from Stumpy Bay for about 800 meters into Santa Maria Bay is bold and rocky with sharp V shaped bights, the sides of which rise abruptly from the water's edge. From here continuing around the bay to the southeast there is a small gravelly bay, then a rocky point and Santa Maria Bay proper with its coarse gravel beach. A small wharf about 50 feet long and 5 feet wide is located at the head of the bay. Continuing eastward the shore is composed of a sharp rocky point that separates Santa Maria Bay from what is sometimes known as Sorgenfri Bay. The shoreline in Sorgenfri Bay is low and flat, with a good stretch of sand-beach that affords excellent surf-bathing. Back of the shoreline there are a number of cocoa-nut palms. From here to Vluck's Point, the shore is rocky and irregular, with numerous small points and bights. From Vluck's Point to Dorothea Point, the eastern limit of the sheet, the shore is comparatively straight, with no prominent points or bays, the points for the most part being rocky and rounding while the bays are shallow and sandy, with the exception of the small bay to the west of <sup>Kasteel</sup> ~~Round~~ Point which is of coarse gravel. Almost the entire stretch is lined with coral reef that bare in spots at low water.

From <sup>Botany</sup> ~~Target~~ point running southeastward for about 200 meters the shore is formed by small rocks and boulders many of

which extend beyond the high water line. Then follows Botany Bay with a good stretch of sand beach. A coral reef that makes out from the shore makes this a very undesirable bay even from the standpoint of the pleasure seeker. However, Sand Bay which is separated from Botany Bay by a low rocky point, is the reward of the persistent tourist, who would see the extreme western end of St. Thomas. A beautiful sand beach and deep water afford excellent surf bathing. From Sand Bay to the small sandy bight that connects the mainland of St. Thomas with Little St. Thomas, the shore is rocky and precipitous with deep gashes in the cliffs. The shore of Little St. Thomas is generally low with gravel and broken coral rocks in the bights and rock and sandstone bluffs at the points. A rocky ledge that bares at low water extends out for about 50 meters from  $\Delta$  BLUFF. The small gravel bay to the east of  $\Delta$  BLUFF is used as a landing place by persons going to Botany Bay, when it is impossible to land in either Sand Bay or Botany Bay.

The south shore of St. Thomas from Little St. Thomas to David's Point is bold and rocky, with bare cliffs rising precipitously from 50 to 200 feet. Fortuna Bay consists of two small gravelly bays separated from each other by a broad rocky point. The cliffs along this point are bare and rocky. About halfway along this point is a small bight in the shoreline and the cliffs in this bight rise to a height of nearly 200 feet terminating as they approach the top of the knoll in a sandstone formation. The shoreline from  $\circ$  LUCAS to  $\Delta$  HIGH is generally rocky and abrupt with cliffs rising to 60 and 70 feet. About 100 meters northeast of  $\Delta$  HIGH there is a small gravelly bight and just beyond is a broad rocky point. From here continuing around

Perseverance Bay until the hillside rises abruptly from the water, the shore is low with coral rocks and gravel along the entire length. At the southwestern end of Perseverance Bay, and at its eastern end, coral reefs make out for a short distance from the shore. They are partially bare at low water. There is a small channel between the reefs, through which a landing on the bay can be effected. Just back of the shore and running about the entire length of the bay, there is a salt marsh, sometimes known locally as Flamingo Pond, which is covered with dried trees, bush and mangroves. In very heavy rains the water settles here and forms a pond which becomes the breeding place of the pestering mosquito and the troublesome sand-fly. The shore continues rocky to Black Point, being occasionally intersected by small sand bights. The cliffs around Black Point are weather beaten and disintegrating, and rise to 40 and 50 feet. From here continuing around ~~John~~ Brewer's Bay, the shore is low and sandy, the stretch of beach from the end of the coral reef to where the bay bends to the south being one of the finest in this end of the island. The shore to Range Cay is composed of sand and small rocks. Then follows a stretch of shore composed of sand and numerous broken pieces of coral that have been washed up from the sea. A large salt pond that never dries is located just back of the shore. Continuing southward to Red Point the shore is rocky and rugged, the cliffs around Red point being of a reddish colour, possibly a ferrous composition, with cliffs varying from 40 to 80 feet. From Red point running into Mosquito Bay the shore continues rocky and irregular for about 200 meters, whence it gives way to gravel and small rocks and continues so for about 400 meters, where it meets the beautiful

Mosquito Bay beach with its fine white sand and rockless shore. For its delightful sea bathing, Mosquito Bay can compete with any other bay on the island, and on account of its accessibility overland and close proximity to town, it would be the camping ground of many a happy picnicker, but owing to its private ownership only the chosen few may indulge in its delights. From the eastern end of Mosquito Bay, the shore becomes rocky for about 250 meters, then follows a small bight with sand and small rocks. The shore then becomes rocky, except for a small stretch of sand and small rocks, and continues so around Mosquito Point and into Great Krum Bay until about 100 meters from the West India and Panama cable-ship landing place. The shore is ordinary earth at this point. From here around the head of Krum Bay and until we reach the eastern side of the bay just opposite the cable station, the shore is lined with a narrow fringe of mangroves. An old wrecking station is located here and along the shore can still be seen the remains of old masts, rigging etc. The shore then becomes rocky with no prominent cliffs and continues so until the limit of the sheet.

#### ISLANDS AND CAYS.

The entire northwest shore of Savana Island is bold and precipitous with rock cliffs rising abruptly from the water's edge and in some places attaining a height of 120 feet. Just south of North Point on the western side of the island, the shore is formed by massive boulders that have probably been torn away from the cliffs by some volcanic action. Water plays in between these boulders and sometimes in heavy weather the noise of the seas washing in between the crevices is terrific and deafening.

The southeastern shore of the island is generally rocky with short stretches of gravel beach in the bights. Just north of Virgin Point the cliffs are of a crushed rock and sandstone formation and from offshore appear as red cliffs.

TURKEY CAY. The entire shore of Turkey Cay is bold and rocky with cliffs ranging from 40 to 60 feet.

WEST CAY. All of the shore of West Cay except, for the two symmetrically placed bights on the north and south and a small bight on the eastern end of the cay, is rocky with cliffs ranging from 20 to 100 feet. The bight on the north side is low and sandy while that on the south side is sand and gravel. The small stretch on the eastern side of the cay is gravel.

SALT CAY. With the single exception of the eastern side which is coral rocks and gravel, the entire shore of Salt Cay is rocky and rugged, particularly on the north side to the west of  $\Delta$  SALT where the cliffs rise precipitously to a height of 100 and 150 feet. On the south side near the west end cliffs of a rock and sand formation rise to about 100 and 150 feet. There are many rocks awash close to shore on the south, west and east sides of the cay.

DUTCHMAN'S CAP. The whole of the shore of Dutchman's Cap is bold and rocky. The cliffs on the north side rise abruptly to a height of 100 feet. The south shore of the island is more irregular being intersected by numerous small bights and crevices.

COCKROACH IS. The south shore of Cockroach Island is bold and precipitous with white rocky cliffs rising vertically and abruptly from the water's edge to a height of 100 and 120 feet. The north shore of the island is rocky with the cliffs back of the shore rising to 70 and 80 ft.



SULA

BOOBY CAY.

The shores of Booby Cay are rocky, low on the eastern side and high on the western, where it is separated from Cockroach Island by a very narrow passage.

CRICKET ROCK.

The shores of Cricket Rock (sometimes known as Little Cockroach Is.) are rocky and irregular.

OUTER BRASS IS.

The eastern shore of the Outer Brass is bold and precipitous with rock cliffs rising vertically from the water's edge. From Rough Point to Cave Point the shore is rocky and irregular with numerous small bights and points. The cliffs along here vary from 40 to 100 feet. From about 100 meters south of Cave Point and continuing for about 250 meters the shore is formed by large fallen boulders. From here to Gras Point the shore is rocky and slopes up uniformly from the water's edge to the top of the hill.

INNER BRASS IS.

From  $\Delta$  IN on the north side of the Inner Brass running eastward for about 300 meters the shore is rocky with cliffs rising 40 and 50 feet. A large rock 29 feet high is located close to shore and is connected with the shore by several rocks awash. The eastern side of the Inner Brass to within 200 meters of Boulder Point, is low and generally rocky except for two bights that contain sand and gravel. Boulder Point is low and consists of numerous large boulders inside and outside the high water line. From Boulder Point running northwest for about 400 meters is a fine stretch of white sand beach. Landing is difficult on this beach on account of the shoal water, but there are channels in the reef that a small boat can get into. The balance of the western shore is rocky except for a small stretch or two of gravel.

LITTLE FLAT CAY is a bare rock 11 feet high.

BIG FLAT CAY. The eastern shore of Big Flat Cay is a coral rock and gravel beach. The remainder of the shore is rocky.

TURTLE DOVE CAY. The entire shore of Turtle Dove Cay is rocky. Its steepest part is the southeastern end.

SABA ISLAND. The northern shore of Saba Island, or more commonly known as Little Saba on account of its resemblance to the Dutch island of Saba, is low and sandy, with gravel and coral rock towards its eastern end, while the south shore is bold and precipitous with red rugged crumbling cliffs rising to nearly the top of the island. There are numerous rocks ~~awash~~ near its southeastern and southwestern ends.

GENERAL APPEARANCE OF COUNTRY.

The western half of St. Thomas presents the appearance of a steep ridge precipitously sloping to the north and south and intersected by numerous ravines, which during heavy rains are the beds of small torrents, but which are generally without running water, and which at their lower end widens into small level tracts on the sea coast. Between these level tracts the coast is usually bold and rocky forming abrupt promontories of considerable height, the hills and ridges being more rounded and of a softer outline. The principal hills, Crown, Hawk and Fortuna are flat topped and plateau like, while the minor hills are for the most part domeshaped. The country is almost entirely wooded, the region west of Perseverance Bay presenting a forest like appearance and is covered with a thick growth of trees, shrubs and vines. Only here and there <sup>are</sup> patches of grass and cultivated land, the most extensive being the large flat back of Mosquito Bay and the top of the ridge from Hawk to the eastern limit of the sheet.

During the dry season these grass covered hills usually present a withered aspect, differing in this respect from the evergreen hills to the westward and the beautiful flora of trees, shrubs and minor plants along the sandy shores.

#### COAST PILOT.

##### ISLANDS.

SAVANA ISLAND, the largest of the Virgin Islands to the westward of St. Thomas is perhaps the most treacherous of the entire group. It is about 2 miles West south west of the western end of St. Thomas, and is one mile long in a northeast and southwest direction with a greatest width of 700 meters. Its highest point 269 feet is near its southern end, but its northern end is only 25 feet lower so that the island appears generally flat topped. The island is covered with a dense growth of vines (commonly known as catch and keep), small trees and underbrush. On the western side of the island are many Teyer Palms. The shores for the most part are bold and rocky with a few short stretches of beach, the western shore being more precipitous than the eastern. There are no landing places to speak of. In exceptionally calm weather small boat landings can be made on the rocks or in some of the bights.

Virgin Point is a rocky point with cliffs about 80 feet high. A large high rock that appears detached from a short distance away marks the outermost end of Virgin Point. A reef over which the sea usually breaks is located about 100 meters off the point.

North Point is a bold dark point with cliffs 80 to 100 feet high. About 300 meters to the east of Savana Island is a rocky reef consisting of two rocks that are bare and numerous rocks awash.

The currents in the vicinity of the reef are exceptionally strong and small boats should give them a wide berth.

The island is uninhabited. It is of no importance commercially on account of its distance from town and the difficulty of access.

At present it is used for raising goats. There has been a talk in recent years of building a lighthouse on the island, since it is the turning point in the steamer lane for vessels from the United States, but from the latest information that could be gathered this idea has been abandoned in favour of a gas light on top of Sail Rock. Owing to the exposed location of the island, the seas sweep in on its shores unmercifully and relentlessly with a terrific force. Fishermen have come to dread the very name of Savana.

TURKEY CAY is a small island 73 feet high lying about midway between St. Thomas and Savana Islands. Two sharp bights on opposite sides almost divide the island in two. Its shores are rocky and the top is covered with grass and light underbrush.

WEST CAY is a low wooded island separated from the mainland by a narrow passage. The island is of irregular outline and is almost divided in two parts, these parts being connected by a narrow neck of sand with a small bight on each side of it. The highest point of the island, 121 feet, is on its western half. The island is flat topped and covered with thick bush, brush and light trees. There is one shack on the island where a fisherman lives. Landings can be made on the gravel bay on the south side of the Cay.

SALT CAY, running in the same direction as West Cay, is a small partially wooded islet of irregular shape and bold rocky shores. The highest part of the Cay is near its western end, where the shores rise

abruptly to a knoll 242 feet high. To the eastward it gradually slopes to the edge of a salt pond that is fringed with a mangrove growth. The western half of the Cay is fringed with light bush and brush while the eastern half is covered with guinea grass. The island is connected to West Cay by a reef which is usually breaking. The cay is used for raising goats but is otherwise uninhabited.

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DUTCHMAN'S CAP, is a small wooded island lying about one mile to the northwest of Salt Cay. Its shores are bold and rocky and rise to a height of 287 feet in about the center of the island. There are two rocks about 100 meters to the southwest of the cap. One is awash while the other is bare 2 feet at high water. The cay is covered with light brush and scattered trees. It can be seen a long distance off and appears domeshaped. It is uninhabited.

COCKROACH ISLAND with its bold white cliffs on the south is about 1 1/2 miles due north of Dutchman's Cap. It is irregular in shape and of small extent. Its highest point, 151 feet, is in about the center of the island. The island is bare but for a little grass and some bush on the top. <sup>Sula</sup> BOOBY CAY at its southeastern end is separated from it by a very narrow opening. It is 57 feet high and its shores on the eastern end slopes up to the top where the rock shears off like a wall at its western end.

CRICKET ROCK, sometimes known as Little Cockroach Is is a bare rock lying about half a mile to the northeast of Cockroach Island, and is 46 feet high. The top of the rock is jagged and is composed of many pinnacle rocks that have become white with bird droppings.

INNER BRASS ISLAND off the north shore of St. Thomas runs in a general

northwest and southeast direction. It is about a mile in length with a greatest width of 800 meters in its central part.

Its hills are low, flat topped and wooded, the highest at its northern end being 256 feet. A submerged coral reef that seldom breaks fringes its southern and southwestern end. About 100 meters off Reef Point there is a cluster of rocks consisting of three rocks that are bare at high water and numerous rocks surken and awash. The island is uninhabited. There are a few mountain goats running wild. Fishing is very good in the vicinity of Fish Point and many fishermen from the north shore come here to fish from the rocks or from boats.

OUTER BRASS ISLAND running in the same general direction as the Inner Brass is about 1/2 mile north of it. It is rounding at its southern end and tapers to a point at its northern. The eastern shore of the island is bold and precipitous, and on account of its exposed location is usually rough. The highest point of the island is near its southern end and is 412 feet high. A fair sized cave just inside of Cave Point extends for about 100 feet back from the shore. In old Buccaneer days it was perhaps the seat of some hidden treasures. There are no landing places on the island. It is uninhabited. The island is covered with numerous Teyer palms and bush. Neither of the Brasses have any commercial importance, and about the only thing they can be used for is to raise goats.

SABA ISLAND, or better known as Little Saba, is a small island triangular in shape and situated about 2 1/2 miles south of the mainland of St. Thomas and about the same distance west of Water Island.

The northern half of the island is low and slopes up gradually to the highest part of the island. The southern half of the island is bold

and precipitous with rugged disintegrating red cliffs rising vertically to a height of 100 and 150 feet. The highest part of the island is near its southern and western end where it rises to almost a point and is 202 feet. South of the ridge line the island is bare but the north side is covered with grass. Two small lagoons surrounded by mangrove growth are located near its northern end. After heavy rains these ponds afford good bird shooting. A landing can be made on the sand beach near its northwestern end.

About 150 meters east of the island is a reef consisting of a bare rock 5 feet high and numerous rocks awash. The sea always breaks over these rocks. 100 meters south of the southwestern end of the island is a reef that is awash at all tides.

TURTLE DOVE CAY 50 feet high is located about 50 meters north of Saba Island. It is connected with the island by a reef that usually shows breakers. At extreme low tides it is possible to walk across. The Cay is covered with tall Guinea grass. About 200 meters west of the Cay there is a cluster of rocks awash at all tides. Note Hyd. Office chart 3903 which shows a bare rock among them. There is a small boat channel between the rocks and the cay.

THE FLAT CAYS, two in number, are 32 and 11 feet high respectively. The larger is partly covered with underbrush while the smaller is bare. About 300 meters east of Big Flat Cay is a rock that is awash at all tides. It is part of a submerged reef, the red lines on the sheet showing the limits of the breakers to the east and west of the rock.

CURRENT HOLE which separates the mainland of St Thomas from West Cay is a dangerous passage and should not be attempted in rough weather.

There is a tremendous current running through it and with the tide in opposite direction to the wind it is a boiling pot. It is often times referred to as the graveyard of St. Thomas. Small boats passing through from the south usually head from outside for the rock shown on the sheet as bare 2 feet and pass only a short distance from it. The currents in the hole tend to have an easterly set.

#### OUTLYING DANGERS.

SALT WATER MONEY ROCK, 8 feet high, of a dark colour, lies about 3/4 mile southwest of the west end of St. Thomas. It is small and oval shaped with its highest part in the center and ~~xxx~~<sup>to</sup> the south. A sunken rock is located close to its eastern end. In moderately rough weather the seas have been seen to wash clean over it. There is good water all around it and small craft can pass close to.

DRY ROCK, lying about 1/2 mile southwest of Saba Island, is a cluster of rocks bare and awash, with the largest rock bare 2 feet. Breakers were observed about 100 meters to the northeast of Dry Rock .

From the top of Turtle Dove Cay these breakers appear in line with Dry Rock. A light breaker was also observed from the top of the same cay, about 150 meters to the north of Dry Rock. They are all perhaps a submarine continuation of the same reef.

THE PORPOISE ROCKS several in number are located about 1 mile west of the south end of Water Island, and about 1 1/2 miles due south of Red Point. On the surface the Porpoise Rocks are two distinct reefs, there being two distinct limits of breakers. The easternmost is the largest and is about 200 meters wide between breakers. The largest rock of the reef bares 3 feet. There are several smaller rocks that are bare and awash. The smaller or westernmost reef is about 30 meters



wide between breakers. A pinnacle rock bares 2 feet. No breakers were observed between the two reefs but there is probably a subsurface connection between the two.

RED POINT SHOAL, with 4 feet of water over it (at 10.00 A.M. February 6th. 1919) is located 550 meters southwest of Red Point and 1100 meters west of Mosquito Point. It appears to be a pinnacle rock and drops off into deep water very rapidly. It shows breakers in heavy weather. Small boats can pass between it and the mainland.

THE LIZARD ROCKS, several in number are located about 1400 meters off the north shore of St. Thomas and about one mile west of Inner Brass. There are six rocks that are bare at high tide, the largest being 14 feet high, and three rocks awash the furthest being about 50 meters west of the largest bare rock. During heavy ground sea season the entire group has been observed to be awash.

#### ANCHORAGES.

The                      The only anchorage on the north side of the island within the limits of these sheets is Santa Maria Bay, and this only during certain months of the year. With a ground sea running this becomes a very dangerous place to lie as the seas generally break a considerable distance out from shore and the waves come in as heavy rollers. A landing in the bay can be effected by means of a small wharf at its head, and a trail from here leads out to the main King's Road.

Mosquito Bay affords good protection to small craft when the wind is from the north or east. There is a small landing wharf at its northwestern corner.

Great Krum Bay is a good anchorage in almost any weather, its entrance being well protected by Water Island. Many vessels of moderate size have put in here during heavy gales with perfect safety. The West India and Panama Cableship "Henry Holmes" has its station here. A mooring buoy is located opposite the landing dock.

GREGGIE CHANNEL is a good anchorage for larger vessels. It is seldom rough here.

#### OBJECTS PROMINENT FROM SEAWARD.

Crown Hill or West Mountain, the highest hill on the island, being 1550 feet high. It is flat topped and grass covered.

The saddle in the hills back of Perseverance Bay, being 292 feet high.

Old Sugar Mill just below Fortuna Hill. The top is 823 feet.

On the north side the large white house on Dorothea Estate, with its galvanised iron roof is quite prominent.

#### GENERAL RESOURCES.

##### WATER SUPPLY.

This is perhaps the most disconcerting feature about the island, and until the practicability of constructing an extensive water supply and irrigation system is established the fate of the island will still be in the balance. It is a pitiful sight to see the condition of the cattle during the dry season, and many perish for want of fodder. Rain water for drinking purposes is caught in cisterns or barrels, drained from the roofs of houses. When this gives out as in periods of exceptional draught, the natives resort to well water. A number of these wells are located all over the island and are chiefly used for the cattle and horses. In the vicinity of John Oley and also near Carot Bay Estate there are two springs that have never been known

to be dry. The water from these springs is piped down to the estate house and many of the less fortunate country people come here for their water. The water is of a good quality and lacks the heaviness that spring water usually possesses. There are no permanent flowing streams on the island. The few intermittent streams shown on the sheet in a broken blue line contain running water after heavy rains, but during the dry season they have only small pools here and there. They are used to a great extent by the natives for clothes washing purposes.

#### ROADS.

The only stretch of road worth while within the limits of these sheets is the Mosquito Bay Road as far as John Brewers Bay. The rest are little better than mountain trails, particularly the portion of the road to the west of Bordeaux Bay. They are all shown in full as they are all public roads and will in time be improved. Most of the roads with the exception of a short stretch here and there are of easy grade so that with suitable diversions and detours could, if conditions warranted, be transformed into good wagon and automobile roads.

#### TRANSPORTATION.

The popular beasts of burden for the natives are the donkey and the mule, while those that can afford it use the horse. During the progress of the survey work a horse was used to good advantage by the officer in charge, particularly for reconnaissance work. Water and supplies had to be brought to camp at times by means of donkeys.

FLORA AND FAUNA.

While most of the trees and shrubs on the island are of the evergreen type yet there are few with deciduous foliage. The cocoa-nut palms are very common in the bays along the shore. On the north side of the island and on the Brasses the Teyer Palm grows very abundantly. The blades of the tree are used by the natives for making brooms. Among the common types of trees seen scattered through the island are the Mampoo (Black Mampoo used as fodder for cattle in dry weather), Gregory, Turpentine and Manjack trees. Along the flat sand shores seaside grapes and other shrubs are quite common; while along the swampy shores we find a variety of mangrove growth. Of the fruit bearing trees and plants we find the Mango, Tamarind, Cocoa-nut, Alligator pear, Sour-sop and Banana as the common ones. Mango trees are usually found in guts. There are a few orange trees, the only ones on the island, around Crown House. The two largest banana plantations on the island are in Bordeaux Bay and Botany Bay.

Vegetables are raised on a small scale in various parts of the island. They are brought to town on market days and disposed of. For a more extensive treatise on the Flora of St. Thomas reference should be made to Bulletin No. 13 of the United States National Museum entitled "The Flora of St. Croix and the Virgin Islands."

There are no game whatever on this end of the island. There was a rumour that the extreme west end of St. Thomas in the vicinity of Botany Bay was infested with wild boars, but no evidence whatever was seen during the progress of the work.

Fishing, mostly indulged in by the Cha Chas (descendants of the Huguenots) is rather plentiful in the bays and around the

various ways. Fish pots made of the fibre of certain plants are commonly used for this purpose. The wood of most of the trees with the exception of the Turpentine tree is used for burning charcoal. The Turpentine tree is used as fodder for goats.

#### FUTURE POSSIBILITIES.

While the country is too steep and mountainous to permit of any extensive agriculture yet with a systematic clearing of the brush and bush land and forcible planting enough could be grown on the island to make it independent of outside aid in times of stress. From a commercial standpoint the only tract of land worth while appears to be in the vicinity of Mosquito Bay. The soil here seems to be of a richer quality being almost entirely devoid of the numerous rocks that are present on the hillsides. Its easy approach and proximity to town make it a desirable place for a modern tourist hotel.

#### CLIMATIC CONDITIONS.

The climate is practically the same throughout the year, it being slightly cooler during the winter months. From the 25th. of July to the 25th. of October is known as the Hurricane Period. The prevailing winds are from the east and south-east, known as the Trade Winds. They blow almost without interruption the whole year round and go a long way towards modulating the excessive heat of the tropical sun. The rainy period is during the spring and fall months. There seems to be an impression that the west end of the island receives more rainfall than any other part. No records being available it is difficult to substantiate this. From September to March is the ground sea season. It is mostly in evidence on the north side of the island and with no wind and an

apparently calm sea, these swells roll in and break with a terrific force on the rocky shore, the spray oftentimes reaching a height of 20 and 30 feet. During a heavy ground sea the north shore is one mass of foam.

#### RELATION OF SURVEY TO NAVY NEEDS.

This survey having been made at the instance of the Navy Department, it was endeavored as much as possible to co-operate with them and meet their needs. To this end numerous topographic stations were established along the roads and on hills, so that in their future boundary adjustments they can tie in with them. An attempt was made to locate estate boundary lines, but this led to such a confusion, owing to the different claims of estate owners and the poor definition of most of the boundaries, to say nothing of those that run through inaccessible bush and guts, ~~so~~ that the idea was soon abandoned. Boundary posts were located wherever they were accessible. These are so marked on the original sheets.

#### CONCLUSION.

In conclusion it might be said that it is hoped that this survey will adequately meet the needs of the Navy. Were the country not so heavily wooded, more accurate contouring would have been possible but under the circumstances accuracy had to be confined to the roads and a few level tracts only.

The photographs attached were taken during the progress of the work and form a part of this report. A list of recoverable planetable stations is also attached as well as a reference list of Geographic names.

NOTE.

The contours on sheet "B" were inked by Mr. Gleason,  
Field draftsman, a man new to the work and without previous  
topographic experience.

Respectfully submitted,

*Aaron L. Shalowitz*

To    The Superintendent  
         Coast and Geodetic Survey.  
August 26th. 1919.

Aaron L. Shalowitz.  
Aid, C. & G. Survey.

PLANE TABLE POSITIONS Sheet "A"

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Object & Description	Latitude		D.M. Meters	Longitude		D.P. Meters	Height		Remarks & how marked.
	°	'		°	'		Feet		
✓ ROCK	18	22	1465	65	03	1525	2		Reg. Disc
✓ SHELF	18	21	1236	65	03	120	12		" "
✓ TURKEY	18	21	300	65	03	879	73		" "
✓ NOT	18	20	1751	65	04	933			File of rocks
✓ REEF	18	20	1089	65	04	567	6		Reg. Disc
✓ TIP	18	20	357	65	05	315			" "
✓ BOT	18	21	776	65	02	181			" "
✓ SALT WATER MONEY ROCK	18	20	1473	65	02	1744	8		Top of rock



Object & Description	Latitude		D.M. Meters	Longitude		D.P. Meters	Height		Remarks & how marked.
	°	'		°	'		Feet		
✓ END	18	23	1273	64	58	100	40		Reg. Disc
OFF	18	23	322	64	57	1701			" "
COB	18	22	1287	64	57	1722			" "
LIZ	18	23	460	64	59	831	14		" "
SLOPE	18	21	1533	65	00	1683			" "
ROCK	18	22	889	64	58	1685	5		" "
LOW	18	22	780	64	57	1475			" "
HOPE	18	21	1701	65	00	320	383		" "
SAD	18	21	1076	64	59	1347	292		" "
MARIA	18	21	1294	64	59	482	639		" "
SERGE	18	21	1710	64	58	1500	796		" "
DOR	18	21	1022	64	57	1117	861		" "
BON	18	21	789	64	59	747	778		" "
SAG	18	21	449	64	59	322	503		" "
RAN	18	20	1833	64	59	92	227		" "
BROM	18	20	1313	64	58	303	145		" "
FLAGSTAFF Marine Bar, Mosquito Bay.	18	20	587	64	58	424			Flagstaff
BAT	18	20	187	64	58	528	202		Reg. Disc
MOS	18	19	1085	64	57	1478			" "
RED	18	19	1504	64	58	677	7		" "
MID	18	20	890	64	58	1210	21		" "
LUCAS	18	20	1201	65	00	1258			Triang. Mark
FLAT	18	19	152	64	59	724	26		Reg. Disc
SUGAR MILL Fortuna Hill	18	21	270	65	00	811	823		Top of Mill

### GEOGRAPHIC NAMES.

Following are Geographic Names that are known locally but which do not appear on the published charts:

Salt Cay Passage,	John Oley <sup>2</sup> ,	Dorothea <sup>✓</sup> Bay,
Dorothea <sup>✓</sup> Point	Hawk	Bromner Hill
Nanpa Hill	Sarap <sup>✓</sup> Hill	Hay <sup>✓</sup> Piece Hill
GramboCola Hill.		

The following names were taken from an old Danish chart of 1834.

No extra copies of this chart are available.

Big Current Hole,	Little Current Hole,	Little St. Thomas,
<del>Savanna</del> Regis Bay	Bordeaux Hill	Neltiberg Bay

Pull-and-Be-Damn, also known locally as Coffee Point. This is the same as David's<sup>✓</sup> Point on the published chart.

Names assigned by Field Officer and recommended for adoption are:

North Point and Virgin<sup>✓</sup> Point on Savana Island, the former being the northernmost point of the island and a prominent one, while the latter is the first point of the Virgin Islands coming from the west.

~~Sula~~  
Booby Cay, on account of the many booby birds that inhabit this small islet.

~~Botany~~  
Target Point, - there being a rock called Target Rock close by, which at one time was used as a target for a rifle range.

<sup>✓</sup>  
Bordeaux Point.

Rough Point on Outer Brass. It being usually rough here.

Cave Point - on account of the large cave close by.

Gras Point.

Fish Point - owing to the good fishing in the vicinity.

Reef Point - from the reef close by.

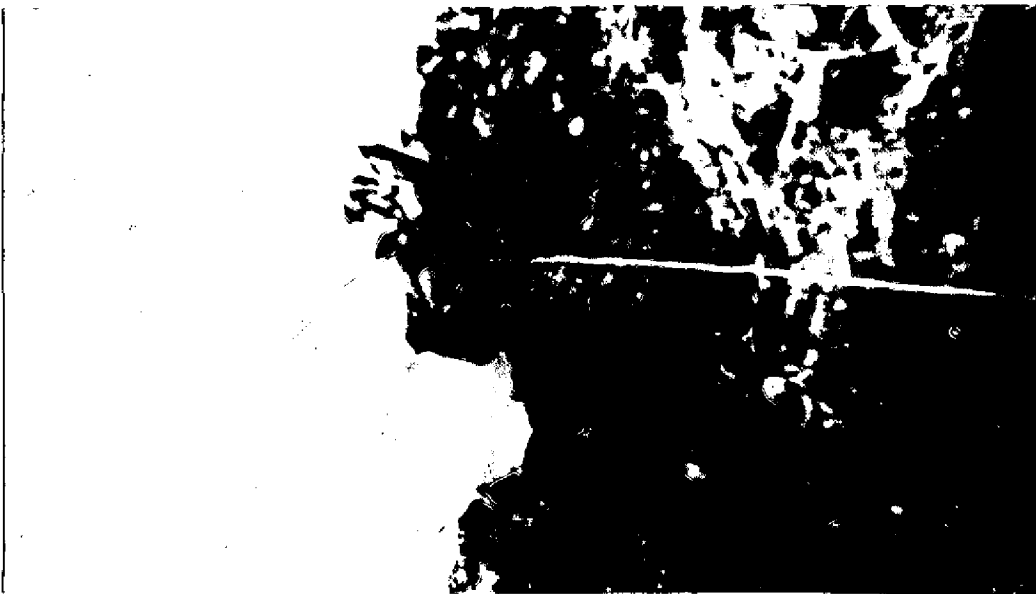
Boulder Point - on account of the boulder beach.

Round Point. = "Castelpoint" on *Hor. facti naq.* = Kasteel Pt (Vancouver)

Range Cay - this being on end of a range for a submarine trial course.



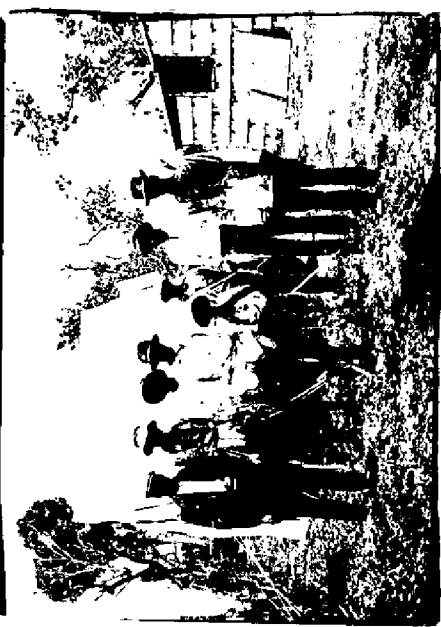
High rock at end of Virgin Pt.  
Savana Island. Landing lumber  
for signal on rocks from small  
launch.



Scaling the side of Savana Is.  
and hauling up lumber with line.



One means of transportation in  
topographic work.



Natives employed in Survey work.



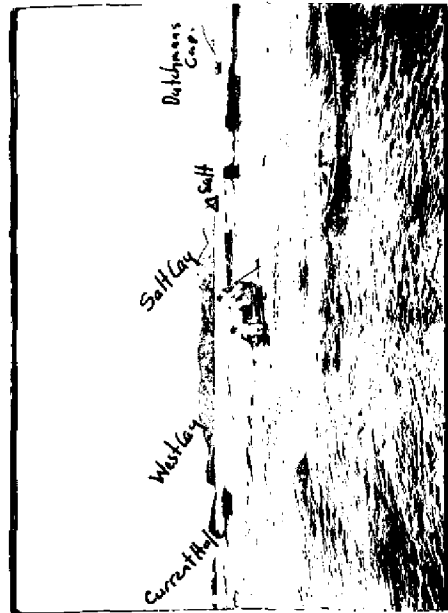
Showing Great Hum Bay and Mosquito Bay from  $\Delta$  Crown.  
Saba Island and Flat Cays in the distance.



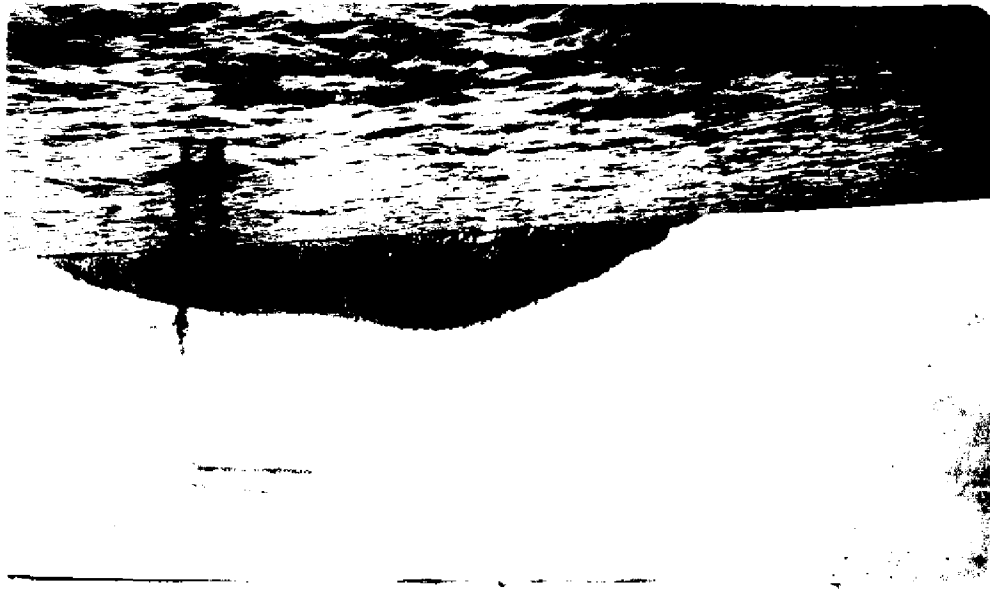
Mosquito Bay and Marine Barracks with big salt  
pond from  $\Delta$  Crown.



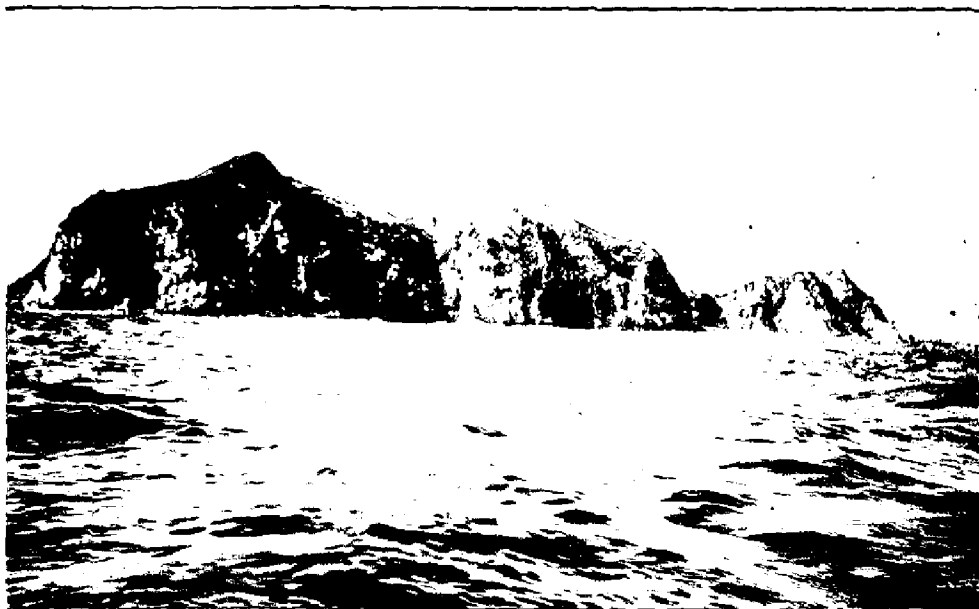
Geckroach Is. - looking north showing  
whitish cliffs on south side.



Leaving Botany Bay in a rough sea.  
Note the coral heads inshore.  
Covey bunch in background.



Dutchman's Cap - looking north.



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Showing bold cliffs along the south  
shore of Saba Island. Looking North