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| Form 504 | U. S. COAST AND GEODETIC SURVEY L. & A. OCT 11 1920 ADD. NO. |
| DEPARTMENT OF COMMERCE | |
| U. S. COAST AND GEODETIC SURVEY | |
| State: <i>Virgin Islands</i> | |
| 11-5613 | |
| DESCRIPTIVE REPORT. | |
| Topo. Sheet No. <i>3799</i> | |
| LOCALITY: | |
| <i>St. Croix Island</i> | |
| <i>Middle Eastern Part</i> | |
| 1919 | |
| CHIEF OF PARTY: | |
| <i>C. W. Swainson</i> | |

DESCRIPTIVE REPORT TO ACCOMPANY TOPOGRAPHIC SHEET B J".

ST. CROIX, VIRGIN ISLANDS.

General Features of the Coast.

Owing to the fact that this part of the Island is only three miles wide on the eastern part and five miles wide on the western part of this sheet a description of the appearance of the coast includes practically the whole area represented by this sheet.

On the western part of the sheet the hills are practically all near the north side. The lower ones which are for the most part covered with grass extend almost to the water, but behind these are much higher ones, several of which reach the height of 500 feet. These higher ones are part of the range of hills which, running a little south of East meets the large group of hills back of Christiansted, of which Recovery Hill, rising to a height of 845 feet, is the principal one. East of this group the hills extend from shore to shore, those toward the center rising to heights of between 600 and 700 feet. The hills to the West have been partially cleared and planted with cane, giving the appearance from the water, of a patchwork of several different shades of green. The hills around Recovery are sparsely covered with trees and bushes, and the more easterly hills are covered with trees or grass. East of Christiansted there are no cane fields whatever, this part of the Island being given over to cattle raising. From the South the general appearance is similar to that from the North except that there is very little cane visible and the hills to the West are much further removed from the shore. The general appearance is that of a flat plain along the shore with hills rising abruptly between one and two miles behind. On the eastern side, however, the hills extend almost down to the shore. Practically the whole coast, north and south, has its coral reef a few hundred meters from the shore with its everpresent breakers.

Outlying Dangers and Islands.

As far as known there are no outlying dangers either north or south of this part of the Island. There are no outlying Islands.

Pilots.

There is a pilot whose station is on Protestant Cay, a small island in Christiansted Harbor, and who is paid by the Government of the Virgin Islands. He will go out to any vessel desiring a pilot, on signal. Pilots charges, which revert to the Government, are \$1.00 per ft. of draft for American and Danish ships, and \$1.28 per ft. of draft for any others. There are no tugs available at this harbor. The channel is very difficult for sailing vessels to negotiate, even with the help of the channel buoys which have been placed here.

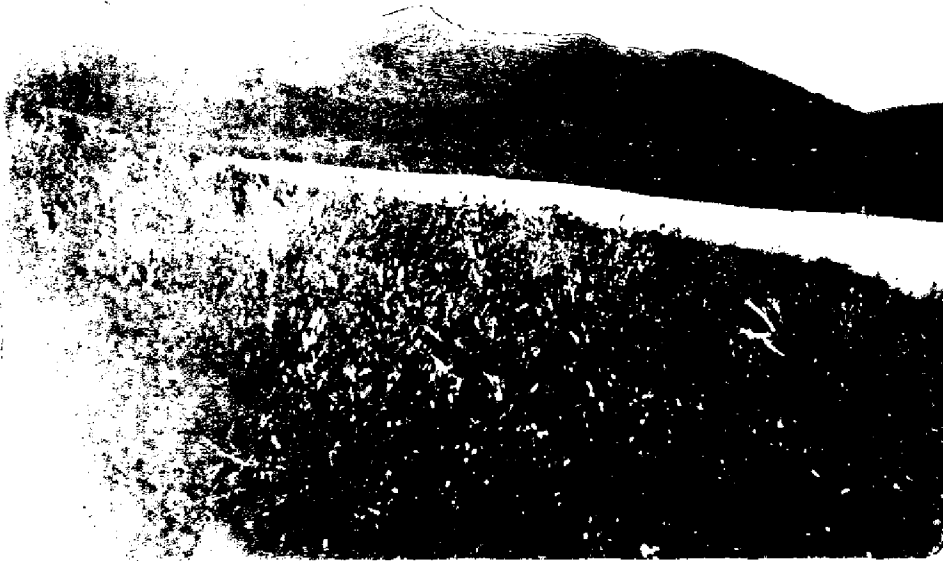
No 1.



No 2.



No. 3.



No. 4



No. 5.



Refuge.

Christiansted Harbor is the only place of refuge from stress of weather on the part of the Island covered by this sheet. It is well protected by the hills which partly surround it, and by Long Reef which lies to seaward, almost closing it up completely. That might be termed the inner harbor is also protected by Protestant Cay.

Currents.

There are practically no currents on the area covered by this sheet. There is only about one foot of tide.

Description of the shore.

North Shore: Beginning on the western side of the sheet, the shore is rocky from the hill at Barron's Bluff to the west bank of Salt River, with cliffs about 15 ft. high. The banks of that part of Salt River which is in the form of a lagoon have the hills rising right from the water's edge, but up further, on the river proper, there is a swamp about 100 meters wide which follows the river for about 500 meters. All the hills near this part of the shore are covered with grass or low green bushes. On the eastern bank of Salt River are the same kind of hills, the last one of which is that on which stands triangulation station Salt. From here to station Judith the shore is low and flat with a thin fringe of sand. The average distance to the hills is about 300 meters. The low part is grassy while the hills are covered with cane and grass patches. Just north of Signal Judith is a small promontory with 80 ft. perpendicular cliffs. Around Signal Judith the cliffs rise to about 15 or 20 ft.

From Signal Judith the shore is low and grassy with a narrow fringe of sand beach, until Christiansted is reached. On most of this stretch the hills are back about one half mile from the shore, the area between being mostly planted in cane, but with numerous grass fields scattered over it. Prominent points along here are: Little Princess Chimney, Great Princess Chimney, Judith Fancy Chimney, and the Central Sugar Factory which has a large stack which can be seen for many miles. At this latter point there is also a wharf which is used for unloading coal from barges, there being only a few feet of water. Just west of Little Princess Chimney there is a coconut grove extending along the shore for about 600 or 700 meters.

The shore continues low right through the town of Christiansted, and a little beyond. In Christiansted from back of the Custom House to the Fort there is a sea wall part of which is used as a loading pier for small vessels. There is about 12 ft. of water here.

About 400 meters east of the town the hills approach the shore again. Here is a hill known as Mt. Welcome on which can be seen a stone tower or the ruins of an old sugar mill. This hill is heavily wooded. Just east of this hill the sea makes an indentation which is almost a lake, but which is known as "The Lagoon". It has a considerable depth but the entrance is almost blocked up, only about two feet of water remaining.

Description of the shore(continued).

On the inner shore of the Lagoon there is a narrow fringe of Mangrove with steep banks rising from the water, while the outer shore which is formed by a neck running down from the point at Fort Louisa Augusta Light House, is low and swampy, with patches of Mangrove and grass.

The shore becomes rocky again about 100 meters before the Light House point is reached and continues so about 200 meters beyond to a second smaller point. The cliffs here range from 15 ft. at the beginning and end to 30 ft. just under the Light House. The light itself is 44 ft. above the water. From the second small point mentioned above the shore is low and sandy, forming a good bathing beach called Shoy's Beach. This Beach continues beyond the limits of this sheet.

South Shore: Beginning at the western limits of the sheet the southern shore presents a rocky aspect with ten to fifteen ft. cliffs capped by heavy bush and gradually increases in height towards the interior. This continues to a place called Watch Hole which is a high projecting point rising abruptly about 60 or 70 ft. and covered with grass. Just to the east of this is a flat, low, sandy beach which is sometimes used as a bathing beach. The ground behind this is low and continues so for almost a mile back from the shore. Just to the east of this is Triangulation Signal Cane which is on a knoll and surrounded with ruins of old estate buildings. A little to the west of this signal is Cane Garden Mill and a little to the east is Little Diamond Mill, both of which are typical stone towers about 25 ft. high with flat tops, and with the fan wheels removed.

The shore continues low and flat, with grassy hills behind, for several miles, but the hills gradually draw nearer to it until just east of Longford they approach to within about 500 meters of it. Nothing but grass fields are seen on this part of the Island.

About one mile east of the Longford Estate Buildings the shore becomes high again, a 15 ft. wall having been worn by the action of the waves. However, there is little rock noticeable on this part. Further along near Fairham Mill the shore becomes rocky and the grassy hills extend almost down to it.

There are no cane fields on the area covered by the southeastern part of this sheet.

Landmarks.

The eastern end of the ridge on which is located the ruins of the Bulows Minde Estate Buildings is very prominent. It is in line with Orange Grove house when viewed from Christiansted Harbor and is about a mile back from the shore as viewed from Central Factory. The hill is in the shape of a flat ridge about 400 meters long with a peak at either end rising about 50 ft. above the ridge. Both peaks are wooded, but the ridge between is covered with grass and cane patches. The eastern hill or peak is nearly 600 ft. high although the trees on it make it appear about 40 or 50 ft. higher.

No 6.



No 7



No 8



Recovery Ridge of Hill is the name applied to a group of hills immediately behind Christiansted, the highest peak of which, rises to a height of 845 ft. These peaks are mostly covered with grass with scattered bushes.

Lainga Peak on the eastern part of the sheet and about midway between the North and South shores is a steep, pointed peak covered with trees. It is 765 ft. high and covered with trees except at the very top which is grassy. This is the highest peak in the vicinity. — see Recovery Hill above

* Many of the old stone mills on the Island serve as very prominent landmarks and have been appropriately described in the list of descriptions of stations.

Ranges used by pilots for bringing ships through the Main Channel are as follows:

In coming into the Harbor, place the flagstaff at the SE corner of the large house on Protestant Cay on a range with Peter's Farm Hospital Ruins. Run until the ruins of the Boutsberg Estate House are on range with the saddle at the left of Laing's Peak; follow this until Ft. Louisa L.H. is on range with the high peak at the left of the Spring Gut Saddle; follow this until a red buoy about 600 yards off the Light House is reached; swing around red buoy and steer for Bellevue House; turn at black buoy and head towards the Christiansted Port. This channel is good for boats of 19 feet draft or under.

The Peter's Farm Hospital Ruins is a yellowish pile of masonry just SW of Christiansted, but located up on the side of the hill so as to be very prominent looking from the water.

Boutsberg Estate House ruins are located on the Boutsberg Estate about one mile and a half to the east of Christiansted and will be described in the report for sheet "K".

The Spring Gut Saddle is the first saddle of any size to the left of Recovery Ridge as viewed from the Harbor of Christiansted.

Inshore Dangers and Islands.

On the North there are coral reefs almost the entire length of the sheet. At the entrance to Salt River there are several reefs which almost close the entrance to the River entirely. However, there is still a narrow channel with about ten feet of water.

Just north of signal Salt is a rock or "white horse" which is just below the surface and which is always breaking.

Beginning near the shore at signal Judith and running toward the East is a reef which is unbroken until opposite Christiansted, where there are several passages into Christiansted Harbor. Inside the reef, which is called Long Reef, the water is shallow. The Reef is always breaking and at low water part of it is exposed.

In Christiansted Harbor and only 140 meters from the sea wall is a small Island called Protestant Cay. This is rocky on the outer end but low and flat on the inner part. The Island is only 235 meters long and about 80 meters wide. It is covered with trees and has one large house which sits on top of a 38 ft. hill near the northern part.

On the South Shore there is an almost continuous reef which lies about 400 or 500 meters off shore. The water is always breaking on this reef. Several breaks in the reef allow the passage of small boats, but the water inside is shallow.

Channels.

The most important channel is that into Christiansted, and although rather winding it can be negotiated without much difficulty at any stage of the tide, on account of the absence of any appreciable amount of current. The channel is marked by can buoys and cannot be followed at night. Near the entrance to the channel are several six foot shoals which can be avoided by following the ranges mentioned under the heading "Landmarks".

Anchorage.

Christiansted Harbor affords about the only safe anchorage, and it can be used only by boats of 19 feet draft or less. There isn't any harbor or anchorage on the south side of the part of the Island covered by this sheet.

Rivers and Streams.

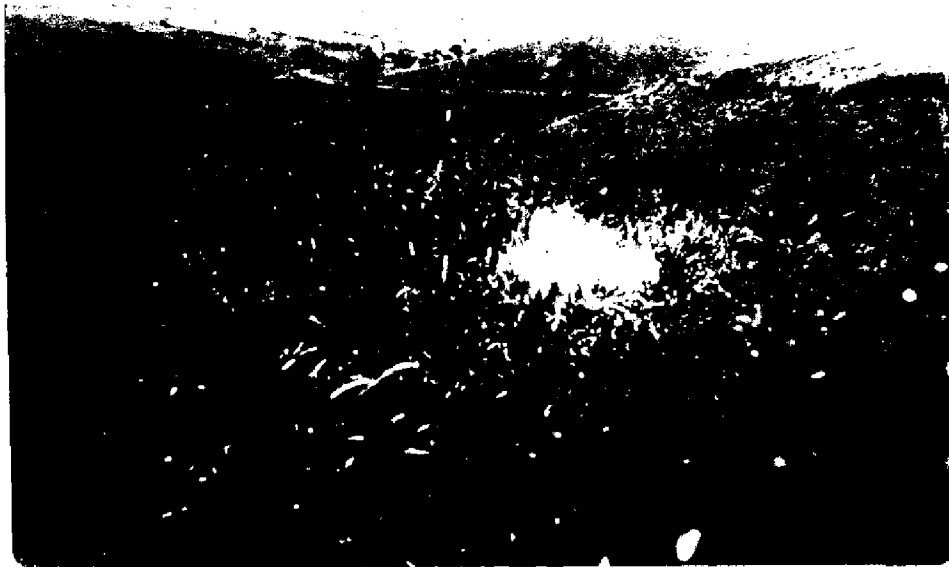
The only river on this part of the Island is that known as Salt River. Its lower part is in the form of a lagoon, as it is more an arm of the sea than a part of the stream which flows into it. This part of the River is about 800 meters wide near the reef which separates it from the sea and narrows down in the main branch to about 200 meters about 3/4 of a mile up stream where it divides into three branches. About 1/2 mile further up stream these branches unite into one stream about six meters across. The River has its source on the part of the Island covered by sheet "I" and will be described in the report accompanying that sheet. The channel over the reef at the entrance to Salt River is very narrow and not over ten feet deep. As there is little tide here the River is of little use as a Harbor although once inside it is said to be quite deep. The banks are covered with dense Mangrove through which there are several openings used for landing places.

On the SW part of the sheet is a stream of considerable length which has its source at the foot of Recovery Ridge on the Hermon Hill Estate and flows south for a short distance and then west through Estates Grange, Anna's Hope, Peters Rest, Pearl, Cassava Garden, and Jerusalem, and continues on to the area covered by sheet "I". This stream does not have much flow at any time although there is always a small amount of water, even in the dry weather. Through Grange and Anna's Hope Estates it flows through what seems to be an artificial canal whose banks are about twelve feet high.

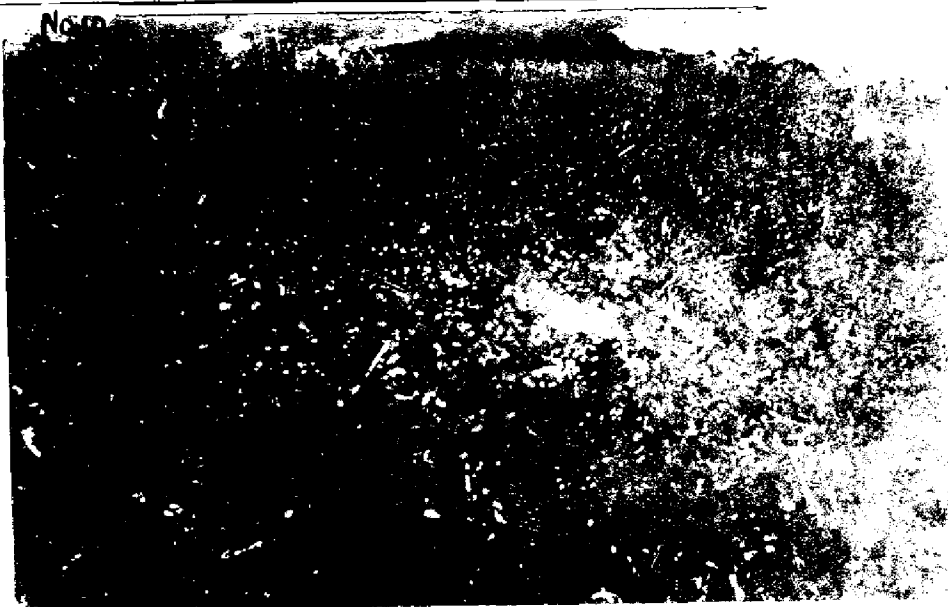
There is a small intermittent stream beginning near the source of the one mentioned above and flowing south empties into the sea not far from Little Diamond Hill.

East of Christiansted there is a long intermittent stream, beginning near the top of the main ridge or highest part of this part

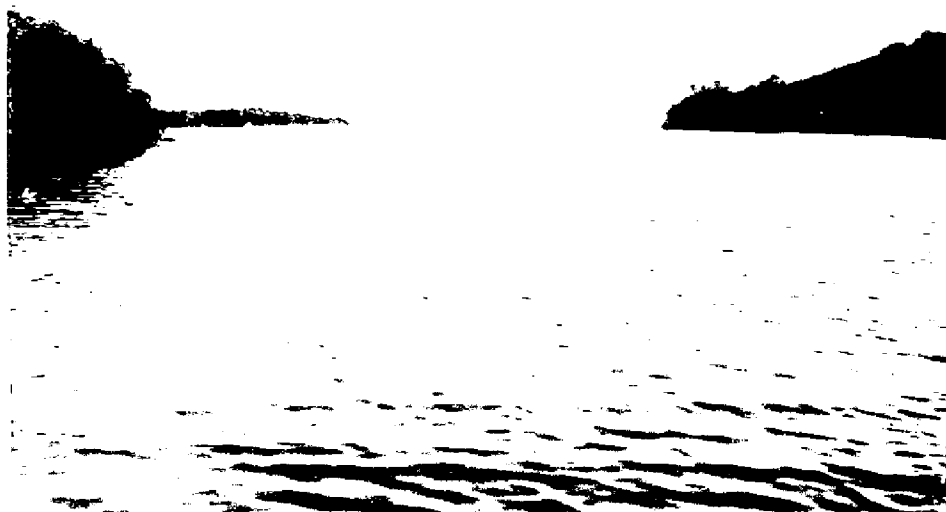
No.9



No.10



No.11.



Rivers and Streams(continued).

of the Island along the Spring Gut Road and flowing north empties into The Lagoon.

To the west of Christiansted is another intermittent stream which begins near the Hermon Hill House, along the Center Line Road, crosses this road just out of the town and empties into an artificial sewer in the NW section of the town which carries it into the sea.

Near the SE corner of the sheet is an intermittent stream which flows through the Longford and Spring Estates. A little further eastward is another shorter one. Both these streams flow southward into the sea.

Light Houses and Buoys.

Fort Louisa Augusta Light House is the only light house on the part of the Island covered by this sheet. It is located on a point of rock just east of The Lagoon on the eastern part of the sheet. It shows a steady red light which is 44 feet above the water.

The channel into Christiansted is buoyed by red and black can buoys. On account of the several sharp bends it is rather a difficult channel for sailing vessels, especially if the wind is not just right. There are no beacons or life saving stations. On the south shore there are no aids to navigation except the natural ones.

Towns and Villages.

Christiansted is the only town and port on the part of the Island covered by this sheet. It has a population of about 4,500 people. Most of the people earn a livelihood by working on the surrounding estates. It is of small importance commercially although each year several cargoes of sugar are loaded here for the United States, several hundred cattle for Porto Rico, and a small amount of the famous Sea Island Cotton. The Central Factory Sugar Mill handles all the sugar cane on this part of the Island, and reduces the cane juice to unrefined brown sugar. This takes the place of the numerous fan mills which at one time did this work and of which only the stone towers now remain. The Central Factory Mill is situated about 1/2 mile west of the town.

The only imports are coal for use at the Central Factory and food supplies brought from St. Thomas. Most of the imported articles are hauled across the Island from Fredericksted where they have been left by passing ships.

Although nominally a city, Christiansted is little more than a country village as compared with most places of the same population in the United States. There are dozens of stores of all kinds

Towns and Villages(continued).

but most of them are very limited in their wares. There is only one Apothecary(a monopoly concession from the Danish Government), one Moving Picture House, one photographer, one ice plant, one hotel, one ice cream parlor, and one bank(also a monopoly concession from the Danish Government).

The automobile is the principal means of transportation.

Industry.

Sugar cane is the principal crop raised on this part of the Island. The western and northwestern areas covered by this sheet are practically given over to this crop. On the Southern and eastern parts, however, the estates are given over to the raising of cattle. Granard Estate is partially devoted to raising of Sea Island Cotton, which commands a high price in the market. There are large areas including the Estates of Bellevue, Thomas, part of Recovery, Bugby Hole, Eliza's Retreat, St. Peters, Spring Gut, and Lapree Valley which have not been cultivated for years and are now grown up with thick bush and trees.

Ownership.

The land here is divided into estates, which are large farms, each with a separate name which has been handed down from former years. The old boundary lines are usually recoverable although frequently one man owns several estates and farms them as one. The Central Factory Sugar Company owns many of the best sugar producing estates and places overseers in charge of them.

Windmills.

On account of the almost constant trade winds, wind-mills or fan mills as they are sometimes called are considerably used for pumping water for cattle. In former times this power was used for grinding sugar cane and the country is dotted with these old stone ruins. They were built so solidly of stone that this part is intact in most of them although the fan wheels and the machinery is rusted or rotted away. They are built in the form of the frustum of a cone and are usually about 25 ft. in height. Some of them have been converted into water reservoirs, the water being pumped into them by steel wind mills.

Roads.

This part of the Island is provided with plenty of roads most of which are kept in a fair state of repair. However, the kind of roads built here are not suited to automobile traffic which tears up the surface very quickly. The most important road is that leading through the center of the Island called the Great Center Line Road. It is the main highway between Christiansted and Fredricksted and is lined throughout on both sides by palm trees.

The North Side Road which runs from the junction of Shoy's Road and the Lowry Hill Road about 1 1/2 miles east of Christiansted

No. 12.



No. 13.



Roads. (continued).

through the town and then northwestward parallelling the northern shore and running across Salt River to the western limit of the sheet is fairly well kept up, but is not as important as the Center Line.

On the southern side there is another road called the South Side Road which runs parallel to the southern shore. This road is well kept up and is a fairly good automobile road as are both the others mentioned above.

The three main roads are connected by three cross roads of importance, one of which branches off the Center Line at Peter's Rest Station on the western part of the sheet, commonly called the Pearl Road, one which runs from the North Side Road through the Estate of Orange Grove, crosses the Center Line at Hermon Hill, and meets the South Side Road at Estate Granard. This one does not seem to have any particular name. The third cross road is that known as the Spring Gut Road and crosses the Island a little east of Christiansted, joining the North and the South Side Roads. This last is in poor condition and crosses the mountain at a very steep grade. Most of the roads shown on the sheet as dotted are little more than cart roads, or those leading to individual estates.

Experiment Station.

The Government has set apart an Estate known as Anna's Hope as an experimental station where investigations for the benefit of the planters are carried on.

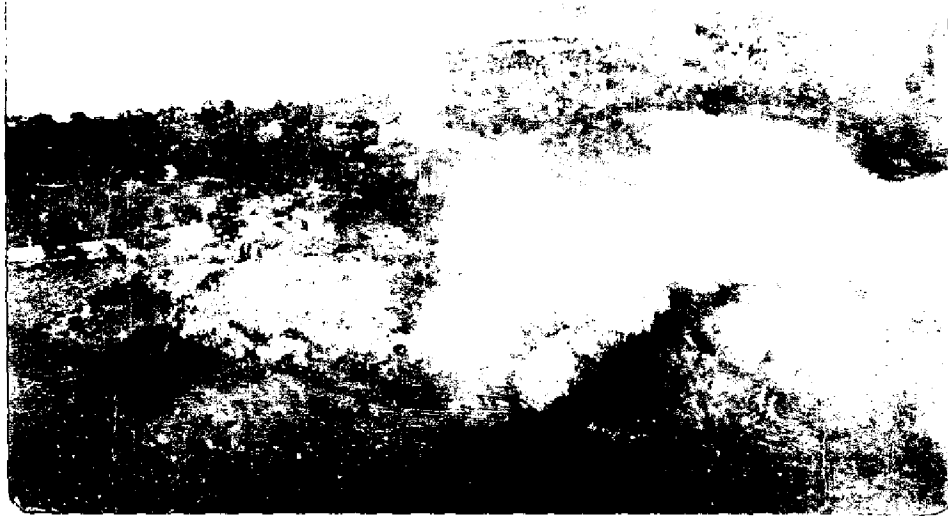
Flora.

The principal trees on this part of the Island are the Wild Tamarind, the Gnupe Tree, Coconut, Mahogany, Mangrove, and a small bush known as the Muron which quickly covers the uncultivated areas. Practically all the tropical fruits grow readily but there is little cultivation of them.

Fauna.

There are few wild animals. Deer may be found in the wooded portions although they are not very plentiful. The Mongoose, a small animal a little larger than a rat, is found everywhere. It was imported to exterminate rats but in turn has become as great if not a greater pest. The domestic animals besides cattle are goats, donkeys, and a few horses.

No 14.



No 15.



Survey Methods.

At the time the main scheme triangulation stations were occupied every artificial object was cut in and vertical angles taken to determine its height, especially did this include all the old stone towers of former sugar mills, chimneys, stacks, and numerous flags set on top of all the important hills. This greatly assisted in the topographic work that followed as it furnished a large number of control points both for position and elevation, as the height of the flags above the ground was measured at the time they were set. This almost entirely obviated the necessity of running traverses up the narrow valleys or through the areas covered with bush, in order to carry along the elevations. Besides this, numerous other flags were set ahead of the plane table survey under the direction of the topographer and were located by cuts from the plane table and their elevations calculated. This method saved many plane table "set ups" and expedited the work without decreasing the accuracy. The "Topog" party consisted of the topographer, two rodmen, an umbrella man, and a computer. The latter computed the elevations and assisted in cleaning away small bushes near the plane table which happened to be in the way.

All the field work was done by A.C. Witherspoon except the area directly south of Estates Work and Rest, and Catharine's Rest, and extending over to Grange Stock Estate on the East. This part was surveyed by Mr. O.W. Swainson on a scale of 1/7500, for a special survey, and was reduced and transferred to this sheet by Mr. Swainson.

Photographs.

The following explanation of photographs for official purposes is given. These have been numbered on their face in the upper left hand corner;

No.1. was taken from the North Side Road near Dolby Hill. The old sugar mill and chimney are on the Morning Star Estate. Mount Eagle, the highest hill on the Island is in the background.

No.2. is a picture showing most of The Lagoon looking toward the sea. Ft. Louisa L.H. and the entrance to the Lagoon are just to the left of the picture.

No.3. shows a small part of The Lagoon looking toward the hills in the center of the Island.

No.4. was taken from the North Side Road east of Christiansted and shows the middle of The Lagoon looking toward Shoy's Estate buildings. A typical sugar mill tower may be seen at the right of the other buildings.

No.5. is a close up picture of the ruins of an old building on Shoy's Estate. The low masonry wall shows that of a typical cattle pen.

Photographs(continued).

No.6. was taken from the highest part of the Spring Gut Road where it crosses the ridge on the eastern part of the sheet and shows the saddle which can be seen so prominently from the water just outside of Christiansted Harbor. This picture, however, is looking North. This picture also shows what a small amount of cultivation there is on the hills.

No.7. was taken from near the same place as No.6 but closer to the house in the valley and looking more to the left. This hill is the eastern part of Recovery Ridge.

No.8. was taken from the Dolby Hill Road at the same place as No.1. but further to the right. The valley of Salt River lies between the two ridges.

No.9. was taken from the same place as Nos. 6 and 7, but looking south instead of north. It shows the flats on the southern side of the Island near the Longford Estate.

No.10. shows part of The Lagoon east of Christiansted.

No.11. was taken looking toward the mouth of Salt River from one of the openings in the Mangrove along the banks. About 100 meters further up stream from where this picture was taken the River narrows down to three small streams about 6 or 7 meters wide.

No. 12. shows the old sugar mill and the Estate House on the Fairham Estate. This stone tower is typical of the old sugar mills which are on almost every one of the estates.

No.13. was taken from the hill back of the Orange Grove House. It is looking toward the north and shows the plant of the Central Sugar Co. and the St. Croix Jail, the jail being the long white building. The darker building in front with the masonry wall around it is the Insane Asylum for the Virgin Islands.

No.14. was taken from the same position as No.13 and shows the town of Christiansted and the Harbor. The Island nearest the Town is Protestant Cay. Back of that is The Lagoon, with Light House Point and Fort Louisa Augusta L.H. a little to the left. Next behind that is Shoy's Point, then Green Cay and Buck Island, the last three being on sheet "K". The Light House tender Lilac can be seen just over the left end of Protestant Cay. The house in the foreground is on the Richmond Estate.

No.15. is the same as No.14 but does not show as much of the town.

A.C. Witherspoon,
Jr. H. & G. Engineer,
Coast & Geodetic Survey.

COMMENTS ON FIELD SHEET J BY CHIEF OF PARTY.

After the topographer had resigned and left the party one of the men called my attention to several inaccuracies in the sheet. Consequently I took the sheet to the field and tested it. Numerous glaring inaccuracies were discovered around the estate houses and improvements. These errors were plainly visible to the casual observer. Time was not available to give the sheet a thorough check. None of the contours or elevations were checked.

The following estates were checked and important changes made at each.

1. Longford.
2. Little Princess.
3. Great Princess
4. St. John
5. Bulows Minde

The character of most of the shore line was not indicated. I found that most of it was sand or gravel and by inspection located the general limits and corrected the sheet accordingly.

I recommend that the sheet be further checked by the party that finishes the survey of the island.

O.W. Swainson

O.W. Swainson,
H. & G. Engineer, Chief of Party.

ST. CROIX ISLAND, VIRGIN ISLANDS, U.S.A.

Copy of Notes on Field Topographic Sheet J. 7, 3797

O. W. Swainson, Chief of Party.

Check Beason^t Hill houses. Errors so trivial unable to alter.

~~House north of Recovery House.~~

Omitted Ruins between Catherine's Rest and Granard also well. Added

Omitted Locomotive track from Peters Rest Station up to Peters

Rest Estate houses. This track abandoned account mill torn down.

Several houses left out at Hermon hill. Placed.

Left out large house at Orange Grove. "

Several houses omitted at Altoner and along road to Christiansted: ^{Not found} Not found

Several houses omitted at Samwell hill. Not found

Several houses omitted at Road by Blacksmith's house. unimportant shacks

Several houses omitted at Road to Orange Grove on north side of road. "

Leper asylum to be marked. Marked, and buildings added

Pumping station by Concordia omitted. Placed

Herman hill boundary wrong. Unable to change

Catherine's rest houses omitted and ^{ruins} point east of them ~~on small~~
placed houses, but ruins unimportant.

~~grass hill, also houses inside of road to Bubby hole.~~

Notes in black added by Eoline R. Hand, May, 1921.

See his transmitting letter of May 24, 1921.

✓ A.L.S.

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. 3799

State Virgin Islands

General locality St. Croix

Locality Middle eastern part

Chief of party O. W. Swanson

Surveyed by A. C. Witherspoon

Date of survey

Scale 1-10,000

Heights in feet above Mean Sea Level

Contour interval 20 feet.

Inked by A. F. Gleason
A. C. Sholemite Lettered by

Records accompanying sheet (check those forwarded): Photographs,

Descriptive report, Horizontal angle books, Field computations,

Data from other sources affecting sheet

Remarks: