



2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429

2419
2420 2421 2422
2423 2424

U. S. COAST AND GEODETIC SURVEY.

H. S. Pritchett, Superintendent.

State: *Porto Rico*

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 2419
~~*2420, 2421, 2422, 2423, 2424*~~

LOCALITY:

Ponce Harbor and South
coast of Porto Rico to
Point Figuras.

1899.

CHIEF OF PARTY:

W. C. Hodgkins.

2420

Diag. Ch. #402

U. S. COAST AND GEODETIC SURVEY.

H. S. Pritchett , Superintendent.

State: *Porto Rico*

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 2420

LOCALITY:

Ratones Id. to Berberia Id.

(South Coast)

See No. 2421

also
~~*See No. 2419*~~

1899.

CHIEF OF PARTY:

W. C. Hodgkins

2420

H02421

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey ... Hydrographic

Field No.

Registry No. ... H02421

LOCALITY

State ... Porto Rico

General Locality

Sublocality ... Ponce Harbor & South Coast of

..... Porto Rico to Point Figuras

191899

CHIEF OF PARTY

..... W.C. Hodgkins

LIBRARY & ARCHIVES

DATE

2422

Diag. Chart No. 902

U. S. COAST AND GEODETIC SURVEY.

H. S. Pritchett, Superintendent.

State: *Porto Rico*

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 2422

LOCALITY:

Jobos Harbor
(Western part)

See No. 2421
~~See No. 2419~~

1899.

CHIEF OF PARTY:

W. C. Hodgkins

2422

2423

Diag. Ct. No. 902

U. S. COAST AND GEODETIC SURVEY.

H. S. Pritchett , Superintendent.

State: *Porto Rico*

DESCRIPTIVE REPORT.

Hydrographic Sheet No. *2423*

LOCALITY:

Jobos Harbor
(Eastern part)

See No. 2421
See No. 2419

1899.

CHIEF OF PARTY:

W. C. Hodgkins

2423

2424

Diag. Cht. No. 902

U. S. COAST AND GEODETIC SURVEY.

H. S. Pritchett, Superintendent.

State: *Porto Rico*

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 2424

LOCALITY:

*Pozuelo Pt to Figuras Pt.
including Harbor of
Arroyo.*

~~*See No. 2419*~~
~~*See No. 2421*~~

1899.

CHIEF OF PARTY:

W. C. Hodgkins.

2424

Descriptive Report

to accompany Hydrographic Sheets No 2419, of Ponce Harbor, and Nos 2420, 2421, 2422, 2423 and 2424 of the south coast of Porto Rico as far as, and including, Arroyo Harbor, 1899.

These six sheets cover the work done on the south coast of Porto^{Rico} in the spring of 1899, extending from Point Buchara, at the west end of Ponce Harbor to Point Figuraa (or Figuera) at the east end of Arroyo Harbor, and including Joboa Harbor.

At the time of this survey, just at the close of the Spanish war there were few aids to navigation and the charts were so inaccurate as to be almost worse than useless, so that a pilot was necessary for a vessel drawing much water.

With accurate charts, however, and with a few buoys judiciously placed, this portion of the coast would be very simple and perfectly safe for any careful navigator; as with few exceptions the dangers are visible, by daylight. Ponce and Arroyo are the only commercial ports upon this stretch of coast, but both are poor harbors, being only shallow indentations of the coast line, partly protected by reefs from the prevailing wind and sea but both exposed in great measure to the southeast swell. There are United States Custom Houses at each of these ports. At Ponce there is a life saving station, badly situated and ill cared for.

In the spring of 1899 there were, apparently, no regular quarantine inspections though it was understood that some arrangements were to be instituted at Ponce.

Although there is an ample depth of water in the entrance to Ponce Harbor, the shoal water extends out from the shore for nearly half a mile, so that vessels of deep draft have to lie a long way from the landing. At Arroyo the conditions are even worse than at Ponce, as there is less water in the entrance and the anchorage is more exposed. At both of these ports, all freight between ship and shore, or vice-versa, is transferred by small lighters propelled by long poles in the hands of the boatmen, who plant their poles securely in the sand or mud and often with great difficulty push the heavy boats through a rough sea.

This crude method is a serious tax on the commerce of these ports, but seems to satisfy the natives.

It takes long enough to reach deep water at either of these places would probably not be profitable on account of the great length that would be necessary and the difficulty of maintaining them but a more efficient lightering system would be beneficial.

There are also much better harbors on this coast than those now in use and bulky goods might be better handled at such points if there were the

proper transportation facilities between the various points on shore. West of Ponce the harbors of Guánica and Guayanilla and between Ponce and Arroyo, those of Salinas and Jobos are examples.

Jobos (or Aguirre) in particular seems to offer many advantages and it is understood that an attempt is to be made by American capitalists to develop the capabilities of this haven.

It has a deep and easy entrance and an outer harbor with deep anchorage ground, good bottom and excellent protection from the sea.

A narrow channel between a coral reef and a sand shoal leads from this anchorage to an inner basin with a general depth of about 23 feet, lying in front of Aguirre landing. It would also be possible by building a causeway across the mangrove swamp and bridging a small inlet, to make a landing on the deep water of the outer harbor.

The greatest menace to the future prosperity of Aguirre is the great sand shoal which has so nearly cut off the inner basin and which in a few years more is very likely to complete its work. But even so, the course just suggested will be available.

This barrier shoal is caused by sand drifting in from the coral reefs before the S.E. wind and sea.

The general character of this part of the coast is that of a low alluvial plain bounded on the north by the foothills of the mountain chain which rises abruptly from the low lands, bordered along the shore in many places by mangrove swamps and fringed by numerous coral reefs, upon which in some cases islands of considerable size have been formed.

The island called Iaja de Alcantos lying about 8 miles S.E. of Ponce and crowned by the principal sea coast light of this region is an exception to the general formation being a rugged mass of volcanic rock over two hundred feet high and covered with a dense growth of tangled scrub.

The water is usually bold up to the coral reefs on the outer coast but in the coves it is apt to be very flat. Where the shore is not formed by mangroves it is usually sandy but fringing coral reefs are frequent. There are also dangerous submerged shoals off the entrances to Ponce and Arroyo. The principal danger off Ponce is the bank called the Tasmanian Shoal (after the vessel of that name lost upon it) with a number of more or less detached lumps near it which were first developed by this survey, which also showed a deep channel to the N.E. of the shoal.

There was a large bell buoy on Tasmanian Shoal but owing to a disarrangement of the apparatus the bell was silent. The U. S. Army Transport "Meade", formerly the "City of Berlin" struck on the western edge of this reef while leaving the harbor at midnight in May, 1899. She was considerably damaged but was able to get into the harbor again and was beached until temporary repairs could be made, when she proceeded to New York.

In the entrance to Salinas bay near the eastern point there is a rocky shoal, which however is easily avoided when known and its correct position is now shown on the chart.

Off Arroyo there are extensive reefs and shoals but the entrance is simple enough now that we have a chart in proper proportion. A very dangerous little reef was discovered in the Arroyo roadstead on the western edge of the anchorage. This is shown on Sheet 2424.

The characteristic bottom along this coast is hard coral sand, but rock is sometimes found and in the harbors the bottom is usually muddy. No harbor improvements were in progress or contemplated at the time of this survey.

The rise and fall of the tide is very small and

irregular and the tidal currents are not very noticeable. There is in general a westerly set along the coast due to the prevailing wind and this is more noticeable as the distance from shore increases.

There is a large amount of commercial business at Ponce, both imports and exports being heavy. This trade is carried both in steamers and sailing vessels, a good many of which latter are brigantine from Nova Scotia or New Brunswick.

The local trade is done partly by steamers but small schooners belonging to the various ports of the island do a large part of this trade.

Vessels usually come to this part of the coast from the east or the west, so that they have already made their landfall and are coasting, but in approaching from the southward, the mountains would be seen a good many miles away and would give the effect of a bold coast.

The coastal plain does not come into view until quite near and at night it is quite invisible. Under such circumstances caution is advisable as the edge of soundings is in many places very close to the rocks and the lead is therefore of little use to locate oneself. There are comparatively few definite landmarks, especially at night,

but the approach to Ponce is readily made out by the coast light on the summit of Caja de Muertos and the harbor light on Cardona Island.

There is another light on Pt. Figueras (or Figuera), the eastern point of Arroyo Harbor but there is none between this and Caja de Muertos.

It would seem desirable to have another light on the southern bend of the coast near the Boca del Infierno, the eastern, and shallow, entrance to Jobos Harbor and if this port should in the future be materially developed, a light at its main entrance may be necessary.

In the day time, the churches at Santa Isabel and at Guayama are sometimes conspicuous.

There are also two hills near Aguirre landing, which from some directions are quite characteristic.

The high range of mountains which at Ponce is several miles back from the sea, further east gradually approaches the shore until at Cape Mala Pascua, the southeastern point of Porto Rico, the mountain mass pushes boldly into the sea.

The mountain summits are frequently so wrapped in clouds that from a distance the island looks like a fog bank or cloud.

There were no beacons or day marks on any of the reefs.

Pilots go out in small boats and meet vessels just outside the harbors. Ordinarily they are not of much use, but pilotage is compulsory.

There were no tow boats except a small one at Ponce which belonged to the U.S. Quartermaster's department. General ships' supplies and water of fair quality can be obtained at Ponce. All prices are rather high. There are machine shops at Ponce and Guayama and small repairs to machinery or ironwork can be made, with a good deal of delay.

There are no facilities for repairs to vessels.

St. Thomas is the nearest place at which such work can be done and everything there is very expensive.

There is a military hospital at Ponce.

There are no docks or marine railways.

The only wharves were those of the U.S. Dept at Ponce and only lighters could go alongside of them.

The new western timber wharf had already suffered a good deal from the sea before I left Porto Rico and was probably totally destroyed by the hurricane of August 8th, 1899.

The steamers of the "Red D" Line ply between New York and Venezuela, usually touching at Ponce; those of the Porto Rico S.S. Co. run from

New York to Porto Rico and touch at various ports of the island; and those of the Hamburg-American company and of the French Compagnie Générale Transatlantique also frequently call.

The only railroad runs from Ponce to Yauco, in the south western part of the island and is not a very efficient institution.

The Post Offices, on or near this stretch of coast are Playa de Ponce, Ponce, Santa Isabel, Salinas, Guayama, Arroyo, and Patillas. The telegraph lines of the U.S. Signal Service covers the island pretty thoroughly. There is also cable communication. The post offices named are also the names of the principal towns. There is also the small village of Jobos at the head of the harbor of that name. The prevailing winds are the easterly trades, which vary from N. E. to S. E. Perhaps the most common direction is E. S. E.

The heaviest gales are to be looked for in the summer or fall, southerly winds doing the most damage. Wrecks are most likely to occur on coral reefs near the entrances to harbors. Ordinarily, a strong vessel should last out a storm but much would depend on the circumstances of the wreck and the violence of the storm.

On this coast there would be little prospect of any help from shore during a storm and in a severe hurricane a boat could hardly hope to reach the shore. The best chance would be a stout raft, if the ship should break up.

I have already touched on the approaches to land. In addition to dangers already mentioned there are shown on sheet 2419 the coral reefs on each side of Ponce entrance, the shoals called Bayito and Las Hojas and an 11 foot reef $1\frac{1}{4}$ mile west of the Ponce Life Saving Station.

On sheet 2420 are developed a $17\frac{1}{2}$ ft shoal, half a mile N.E. of Tacmanian Shoal, a $16\frac{1}{2}$ foot lump half a mile S.E. of the last and other shoal spots in the vicinity. 15 foot soundings were found about $1\frac{1}{4}$ mile S.S.E. of Berberia Island.

On sheet 2421 is shown the 11 foot reef half a mile N.W. of "Salinas" trigonometric station.

On sheet 2424 are shown the reefs off Arroyo and the $5\frac{3}{4}$ foot reef in the harbor, $1\frac{1}{2}$ mile west of Pt. Figueras Lighthouse.

W. C. Hodges
Chief of Party.