

the above-named islands is Prieta Point, which is a sharp, bluff point of dark color, descending in several steps from the hills behind it. Between this point and the next one to the south-east is a bay of considerable extent, but with very shoal water except in its outer portion. It is known as San Gabriel Bay; vessels anchoring there should be careful to keep outside of the 5-fathom curve.

Dispensa Point. Dispensa Point is the south-western extremity of Espiritu Santo Island and is a rocky bluff of moderate elevation; one third of a mile to the northward of it is a conspicuous red mound 213 feet high, composed of lumps of lava.

Shoal. Between Dispensa and Lupon Points a shoal makes off a short distance from the land, less than 3 fathoms being found at three-quarters of a mile distant from it.

Winds in La Paz Bay. From May to November north-westerly winds prevail during the day, succeeded during the night by light airs from the south-eastward. During the remainder of the year winds from SE. to SW. prevail day and night.

San Josef Channel. San Josef Channel, which lies between the islands of San Josef and San Francisco on the east and the main-land of the peninsula of Lower California on the west, is 20 miles long with an average width of about 4 miles. It is $2\frac{1}{2}$ miles wide in its narrowest part, near the northern entrance. It is much used by sailing vessels when beating up the gulf, as by working through it they avoid the heavy sea found outside, and are able to take advantage of the strong tides which set through the channel. In case of bad weather they can anchor in some one of the numerous bights and coves that are found on both sides of it and find shelter. In using this channel at night or in thick weather, it is recommended to keep well over toward the western shore, as there are no outlying dangers on that side. The tides set strongly through the channel, varying from 1 to 3 knots.

Western shore of San Josef Channel. The coast for a short distance north of Mechudo Head retains its character of high, perpendicular cliffs. About $1\frac{1}{2}$ miles north of the headland the cliffs are replaced by a sand beach which, with the exception of one short bluff, extends northward a distance of $4\frac{1}{2}$ miles, or to within $1\frac{1}{2}$ miles of San Evaristo Point.

Anchorage. Two miles to the southward of San Evaristo Point, a low, sandy point makes out a short distance, immediately south of which is good anchorage in 5 or 6 fathoms, half a mile from the beach. There is another anchorage immediately

south of San Evaristo Point, where a sudden change in the direction of the coast line forms a cove about three-quarters of a mile deep with a sandy beach at its head. Between this sand beach and the long stretch ($4\frac{1}{2}$ miles) before mentioned, there is a mile of rocky bluffs from 20 to 50 feet high.

San Evaristo Point is a rocky headland 130 feet high projecting three-quarters of a mile from the general coast line. There is a ranch near the beach of the bight on the northern side of the headland.

From San Evaristo Point to Nopolo Point, a distance of $6\frac{7}{10}$ miles N. 28 W. (NW. $\frac{2}{3}$ N.), the land is high and precipitous, with occasional short stretches of sand beach. The soundings show deep water close to the shore. One and a quarter miles to the southward of Nopolo Point there is a slight indentation in the coast line and an estero, where it is said fresh water may be procured.

Nopolo Point is a rocky cliff with a rugged peak, 1,578 feet high, immediately back of it. A succession of rocky bluffs from 400 to 500 feet high extends about $3\frac{1}{4}$ miles north-westward from the point.

San Francisco Island lies on the east side of the southern entrance to San Josef Channel, its nearest point to Mechudo Head bearing N. 65° E. (NE. $\frac{2}{3}$ E. mag.) from it, distant $4\frac{4}{10}$ miles. The island is of an irregular shape, having an area of about $1\frac{1}{2}$ square miles. Its shores consist for the most part of rocky bluffs varying in height from 20 to 150 feet, with intervening sand beaches. The south-east end of the island is a rocky head 300 feet high, connected with the main body by a low, sandy neck. Off the northern and southern points there are numerous outlying rocks, and in a bight on its eastern side there is a rock 4 feet high a cable distant from the shore.

Anchorage may be found in from 5 to 10 fathoms off a sand beach that lies just west of the south-eastern head.

Soundings around the island show from 3 to 9 fathoms close to, except on the NW. side, where it is shoal, $2\frac{1}{2}$ fathoms being found at a quarter of a mile from the shore. (View opposite page 82.)

Between the islands of San Josef and San Francisco there is a channel $1\frac{3}{10}$ miles wide, with from 4 to 6 fathoms water, but a group of rocks in the centre, called Coyote Rocks, and another group just beyond its western limit, called Seal

Rocks, make it very dangerous, and its passage should never be attempted unless in an emergency.

Coyote Rocks. The Coyote Rocks, the highest of which is 40 feet high, lie three quarters of a mile NW. of the northern point of San Francisco Island, the channel between having from 3 to 5 fathoms water. The channel between the rocks and San Josef is less than half a mile wide, with from 6 to 7 fathoms water. There are some outlying sunken rocks to the north of the main group. If obliged to pass between San Josef and San Francisco Islands, it is safest to keep the shore of San Josef close aboard.

Seal Rocks. The Seal Rocks lie $1\frac{3}{4}$ miles west of the north point of San Francisco Island, and consist of two flat rocks about 5 feet above the surface of the water, with several outlying ones below the surface. The soundings between them and the point, as well as between them and the Coyote Rocks, show a depth of 11 fathoms.

San Josef Island. San Josef Island, which bounds San Josef Channel on the east, is of volcanic origin, $16\frac{1}{2}$ miles long and from 2 to 6 miles wide, being narrowest at its northern end, which terminates in a sharp point. It is rather higher than Espiritu Santo, some of its peaks having an altitude of over 2,000 feet. It is covered in most parts with vegetation, especially on the high land and in the numerous deep arroyos of its north-eastern portion. Large numbers of deer are found on it, which are hunted in many instances only for their skins.

From the south-eastern point of the island, the south coast, which is for the most part a sandy beach, with hills from 100 to 500 feet high back of it, trends about W. by S. for $3\frac{6}{10}$ miles to the south-western extremity, which is a low sand spit making out $1\frac{1}{4}$ miles from the body of the island. A lagoon of considerable size extends to within half a mile of the point, having an opening to the sea on the northern side of the sand spit.

From the south-western point, which may be approached close to, there being 20 fathoms water within a cable's length of it, the coast turns sharply to the north-eastward, trending in that direction for about $1\frac{1}{2}$ miles, where the Rio San José empties its waters; thence it assumes a north-westerly direction.

Amortajada Bay. Amortajada Bay, which is formed by the receding of the coast line between the south-western point of the island and

Salinas Point, is about 4 miles in extent between the two points and $1\frac{1}{2}$ miles deep from a line drawn between them. In its southern part there is good anchorage in 7 or 8 fathoms water, protected from every wind, especially from the dreaded *cordonzos* or south-easterly gales.

Fresh water may be obtained here.

Cayo Island is a small islet lying 8 cables N. 50° W. (NW. by W. $\frac{3}{4}$ W. mag.) from the south-western extremity of San Josef, and protects to a considerable extent the anchorage in Amortajada Bay from the north-westerly winds. It is about a quarter of a mile long and 100 yards wide. It is 40 feet high at its southern end and from 10 to 15 feet at the northern, with a break near the centre, over which the sea washes at high water. A reef extends off from the northern end about a quarter of a mile. (View opposite page 82.)

Salinas Point is sandy, with a steep sand hill 50 feet high immediately back of it. It lies nearly due east from San Evaristo Head, the channel between them being 3 miles wide. Near the point are two lagoons, which produce large quantities of salt, the land back of them rising in broken ridges to a height of 1,830 feet. For a distance of $3\frac{1}{4}$ miles northward of the point the coast is a low sand beach, at the northern end of which is a ranch. Nearly east of this ranch the island attains its greatest elevation in a conspicuous knob of the main ridge that is 2,078 feet high. For 2 miles north of the ranch, steep hills rise immediately from the water. Winding between them, its mouth about a mile north of the ranch, is a deep arroyo which extends half way across the island. At the end of 2 miles the coast again becomes a low sand beach, which, with the exception of one bluff, extends to a point opposite Nopolo Point. This is the narrowest part of the channel, it being only $2\frac{1}{2}$ miles wide between the points.

Southward of the above-mentioned point is a bight, formed by the sudden change in the direction of the coast line, where good anchorage may be found in from 5 to 10 fathoms 200 to 300 yards from the shore. The land back of the coast, which for 3 or 4 miles to the southward has been lower, commences here to rise again.

Just north of the point is a lagoon which has a shallow opening to the sea. Thence to the north point of the island, a distance of about 4 miles, the coast trends nearly north,

and is an unbroken line of steep, rocky bluffs of dark color. A reef of rocks, some of which are above water, extends off from the northern end of the island about a quarter of a mile. A mile and three-quarters from the northern extremity is a sharp peak 1,382 feet high, whose sides descend steeply to both shores.

Eastern side of San Josef. No detailed examination of the eastern side of San Josef Island has been made. It is in general a succession of high rocky bluffs, with some intervening sand beaches.

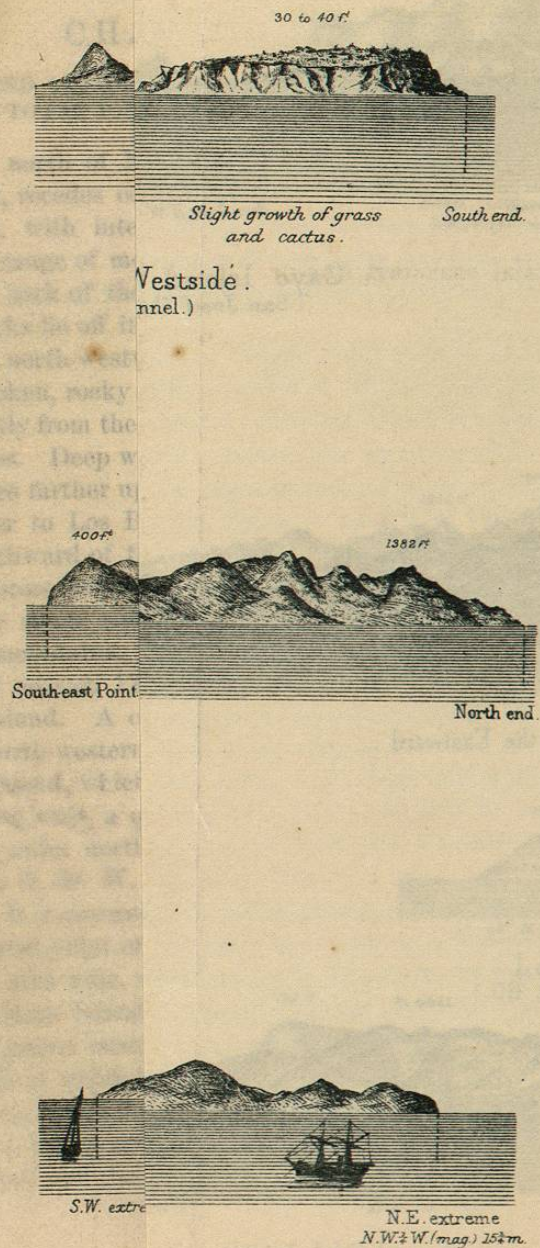
Red Point. Red Point, which is $8\frac{9}{10}$ miles S. 57° E. (ESE. mag.) from the northern extremity of the island, is the first prominent point from that extremity, the intermediate coast receding somewhat.

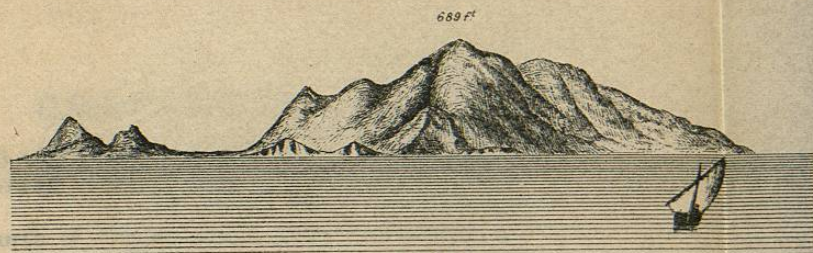
South-east Point. From Red Point to the south-eastern extremity of the island, a distance of 9 miles, the general trend of the coast is S. by E. $\frac{1}{4}$ E. There are several outlying rocks off the south-eastern point, and a hill 400 feet high rises abruptly just back of it. For a distance of 5 miles northward from the point the coast is a series of inaccessible bluffs from 50 to 500 feet high. (View on opposite page.)

Soundings. The soundings along the eastern side of the island show a depth of over 50 fathoms a short distance from the shore.

Las Animas. Las Animas are a group of rocky islets not over a quarter of a mile in extent, including the several outlying rocks; the largest and highest is about 90 feet high. They lie $10\frac{1}{2}$ miles N. 87° E. (ESE. $\frac{3}{4}$ E. mag.) from the north point of San Josef, and between them and the island there is a deep clear channel. (View on opposite page.)

Plate X





Peak, (highest)
S.W. (mag) 5 m.

San Francisco Island.



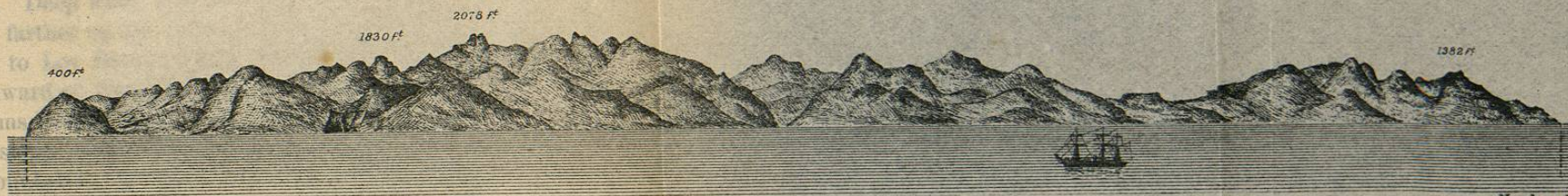
North end.

Awash at H.W.

Slight growth of grass
and cactus.

South end.

Cayo Island, Westside.
(San Josef Channel.)



South-east Point.

Highest peak.

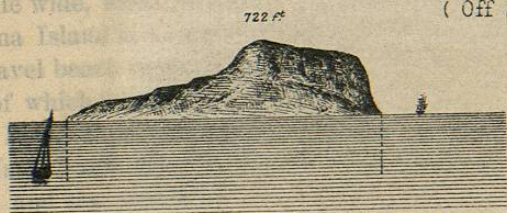
North end.

San Josef Island, from the Eastward.



ab: N.E. by N. (mag.)

Las Animas.
(Off San Josef Island)



S.W. extreme

N.E. extreme

San Diego Island.



S.W. extreme
N.W. by W. (mag) 14 1/2 m.

N.E. extreme
N.W. by W. (mag) 15 1/2 m.

Santa Cruz Island.