

MEXICO.

COAST OF LOWER CALIFORNIA.

CORTES SHOAL.

Off the western coast of Lower California, and somewhat parallel therewith, there appears to be a range of submarine mountains whose summits, rising at irregular intervals above the water, form islands, and, clearing the surface at other points, form dangerous and extensive banks.

One of these reported dangers is a bank laid down with great similarity to the Cortes Bank,* and even designated the "Banco Cortes" on the French chart No. 1997. The shoalest part of this reported bank has ten fathoms upon it in three spots, situated between the latitudes $31^{\circ} 33'$ and $31^{\circ} 43'$, and longitudes $118^{\circ} 41'$ and $118^{\circ} 52'$, being nearly southeast by south a quarter south (SE. by S. $\frac{1}{4}$ S.), fifty miles from the Bishop Rock on Cortes Bank. It is laid down on the Spanish chart of 1863.

The chart of the California Coast, published in 1790 by Dalrymple, has a sign to indicate the Cortes Shoal reasonably close to its proper position.

The position assigned to this shoal is in the direct route of the steam-ships running between San Francisco and Mexican ports and Panama. Moreover, the area is very extensive, being three thousand square miles within the twenty-fathom curve and about one thousand five hundred square miles within the fifteen-fathom curve. The thirty-fathom line extends nearly ten miles outside the twenty-fathom line. The deepest soundings between the bank and the Bay of Todos Santos are only forty fathoms.

It was not found on any Admiralty chart, and in the 1867 edition of the French chart it is not shown. In 1867, through the good offices of the Pacific Mail Steam-ship Company, we were enabled to run a line of soundings thirty miles in length across the given locality; no bottom was found with two hundred fathoms of line. Unfortunately the weather was cloudy and no observations could be obtained after leaving San Francisco, but the departure of the vessel was approximately taken from the western point of the island of San Miguel, and a course laid across the assigned position of the ten-fathom soundings. The sea was so smooth that we readily detected the groundswell on the edge of the Cortes Bank, and when abreast of the "Banco Cortes" a groundswell was also felt for a short time, but we found no bottom, as stated. Subsequently we had no observations for position for several days, and therefore we may not have crossed the exact locality.

Although the existence of this shoal may be considered doubtful from available facts, yet the deep sea soundings of the U. S. ship *Tuscarora* in 1871 in that locality exhibit some remarkable irregularities of the bottom of the sea. On the two lines run to the westward from San Diego we find one thousand and fifty three fathoms, green mud, twenty eight miles south thirty-six degrees west (S. 36° W.) from Point Loma, and the next sounding is two hundred and three fathoms, rocky, at fifty three miles south forty one degrees west (S. 41° W.) from the light, and forty one miles northeast from the assigned position of this shoal. Then the depth increases to five hundred and sixty-six fathoms, gray sand, twenty two miles north by east (N. by E.) from the shoal, and nine hundred and eighty fathoms at sixteen miles northwest by west (NW. by W.) from the same point. A depth of one thousand nine hundred and fifteen fathoms, over yellow brown mud, is reached at thirty-two miles west from the shoal; and this may be considered the eastern edge of the Pacific sub-ocean plateau, for we have two thousand one hundred and seventy-seven fathoms, brown mud, and two thousand one hundred and seventy-eight fathoms, brown mud, sixty-five miles and one hundred and five miles, respectively, to the south and west of the supposed shoal. All the indications point to very great irregularities in depth, and it may not be impossible that some shoal spot should exist.

* For description of the Cortes Bank, see page 69.