

the whole of its course by our land party, until it joined the Sacramento: the latter is thought by some to pass through the mountains and join Pitt's river. Pitt's river is said to take its rise to the northeast of the Shaste Mountain, and from the information that I received, extends as far as Pitt's Lake, under the forty-second parallel. I have reason to doubt whether the length of its course is so great, and believe that the Sacramento has its source in the eastern spurs of the Shaste Mountain. I have, however, indicated by a dotted line on the map, the course Pitt's river is thought to pursue before it joins the Sacramento. This, if correct, would give the Sacramento, with its branches, a course of two hundred miles from the ocean.

The first branch of any size in descending the Sacramento is that called Feather river, which joins it below the Prairie Butes, coming from the northeast. This branch takes its rise in the California Mountains, near their northern end, and has a course of about forty miles. The American river is a small branch that joins the Sacramento at New Helvetia. After receiving this stream, the Sacramento is joined by the San Joachim, which courses from the south, and below their confluence enters the bay of San Pablo through the Straits of Kaquines, thence passing into the bay of San Francisco.

It is navigable for boats to the distance of one hundred and fifty miles, and for vessels as far as New Helvetia. The upper portion of it, near the Prairie Butes, overflows its banks, and submerges the whole of the Sacramento Valley as far down as the San Joachim. This inundation is probably caused by the united effects of the Sacramento and the Feather rivers, as there is not in its bed sufficient room to discharge so large a quantity of water. This valley will be presently spoken of in connexion with its survey.

The San Joachim does not pass through the Tula Lake, as laid down by Coulter; its sources are in the Californian Range. The Tula Lake is called by the Indians, Chintache Lake; it is for the most part separated from the channel of the river, but when full joins it.

There are many small streams that flow through the different valleys, and afford partial opportunities for irrigating the land; but there are none of them navigable, except the Sacramento.

Upper California may boast of one of the finest, if not the very best harbour in the world,—that of San Francisco, as before described. Few are more extensive or could be as readily defended as it; while the combined fleets of all the naval powers of Europe might moor in it. This is, however, the only really good harbour which this country possesses; for the others so called may be frequented only during the