died and awakened in the happy hunting grounds. It was a lovely camp for the animals; the range consisted of excellent grasses, wild oats in fields, red and other varieties of clover, some of which were now in mature seed and others beginning to flower. Oats were already drying in level places where exposed to the full influence of the sun, remaining green in moister places and on the hill-slopes.

At this point I established the last main point for longitude, making observations of moon culminations on the 4th and 5th of June. These gave for the longitude 121° 38′ 04″. The latitude was 39° 12′ 03″.

During our stay at the Buttes, camp was moved to a small run or spring at the northeastern base in longitude 121° 33′ 36″, latitude 39° 14′ 41″. I give the position of both these points because they were the last astronomical observations made during this journey.

Here terminated the geographical work of the expedition. We remained at the Buttes until the 8th of June, during which time the mean temperature was 64° at sunrise, 79° at 9 in the morning, 86° at noon, 90° at 2 P.M., 91° at 4, and 80° at sunset; ranging from 50° to 79° at sunrise, from 85° to 98° at 4 P.M., and from 73° to 89° at sunset.

The longitudes established on the line of this journey are based on a series of astronomical observations resting on the four positions, determined by lunar culminations. The position established here was the last of the four. This line of astronomical observations, thus carried across the continent, reaches the Pacific Ocean on the northern shore of the Bay of Monterey.

The first of these main positions is at the mouth of the *Fontaine qui Bouit* River, on the upper Arkansas; the second is on the eastern shore of the Great Salt Lake; and two in the valley of the Sacramento. Later, on my return to Washington when these observations were calculated, it was found that they carried the coast valleys of the Sacramento and San Joaquin about twenty miles east, and the line of the coast about fourteen miles west of their positions on the maps and charts in general use; giving an increase of more than thirty miles in the breadth of the country below the Sierra Nevada. Upon examination it was found that my positions agreed, nearly, with the observations of Captain Beechey at Monterey. The corrections required by the new positions were then accordingly made; the basin of the Sacramento and the San Joaquin valleys was moved to the eastward, and the line of the coast was placed farther west, conformable to my observations, retaining the configurations given to it by the surveys of Vancouver.

When the United States sloop of war *Portsmouth*, Commander Montgomery, reached Boston in February of 1848, on her return from the Pacific Ocean, she brought the information that an American whale-ship had been recently lost on the coast of California in consequence of errors in the charts

then in general use, locating the coast and islands, from Monterey south, too far east.*

The observations made by me across the continent in this expedition were calculated by Prof. Hubbard, then of the National Observatory in Washington City, during the winter of 1847–48; and a note from him on the subject of these observations will be added in the concluding chapter of this volume.

While interested in examining into the true position of the coast of California I found it worthy of notice that the position given to it on the charts of the old Spanish navigators agrees nearly with that which would be assigned to it by the observations of the most eminent naval surveyors of our time. The position which I have adopted for Monterey and the adjacent coast agrees nearly with that in which it had been placed by Malespina, in 1791.

Of this skilful, intrepid, and unfortunate navigator, Humboldt in his essay on "New Spain" says: "The peculiar merit of his expedition consists not only in the number of astronomical observations, but principally in the judicious method which was employed to arrive at certain results. The latitude and longitude of four points on the coast, Cape San Lucas, Monterey, Nootka, and Fort Mulgrave, were fixed in an absolute manner."

In closing up the geographical work which was proposed by this exploration I think it well to give a condensed view of the leading features of California as I saw it at the time of which I am writing; and for the reason that an examination of the face of the country and the connection of the interior with the coast country through the barriers of its mountains was one of the chief objects of the expedition.

BAY OF SAN FRANCISCO AND DEPENDENT COUNTRY.

The Bay of San Francisco has been celebrated, from the time of its first discovery, as one of the finest in the world, and is justly entitled to that character even under the seamen's view of a mere harbor. But when all the accessory advantages which belong to it—fertile and picturesque dependent country; mildness and salubrity of climate; connection with the great interior valley of the Sacramento and San Joaquin; its vast resources for ship timber, grain and cattle—when these advantages are taken into the account,

* "NAVAL.—The United States sloop of war *Portsmouth*, Commander John B. Montgomery, arrived at Boston on Friday, from the Pacific Ocean, last from Valparaiso, February 23d. Commander Montgomery states that the British frigate *Herald*, and the brig *Pandora*, are engaged in making a new survey of the gulf and coast of California.

"The whale-ship *Hope*, of Providence, was recently lost on the coast, in consequence of an error in the charts now in general use, which locate the coast and islands from Monterey to Cape St. Lucas from fifteen to forty miles too far to the eastward."—*National Intelligencer*.

with its geographical position on the line with Asia, it rises into an importance far above that of a mere harbor, and deserves a particular notice in any account of maritime California. Its latitudinal position is that of Lisbon; its climate is that of southern Italy; settlements upon it for more than half a century attest its healthfulness; bold shores and mountains give it grandeur; the extent and fertility of its dependent country give it great resources for agriculture, commerce, and population.

The Bay of San Francisco is separated by the sea by low mountain ranges. Looking from the peaks of the Sierra Nevada, the coast mountains present an apparently continuous line, with only a single gap, resembling a mountain pass. This is the entrance to the great bay, and is the only water communication from the coast to the interior country. Approaching from the sea, the coast presents a bold outline. On the south, the bordering mountains come down in a narrow ridge of broken hills, terminating in a precipitous point, against which the sea breaks heavily. On the northern side, the mountain presents a bold promontory, rising in a few miles to a height of two or three thousand feet. Between these points is the strait —about one mile broad in the narrowest part, and five miles long from the sea to the bay. To this Gate I gave the name of *Chrysopylæ*, or GOLDEN GATE; for the same reasons that the harbor of Byzantium (Constantinople afterwards), was called *Chrysoceras*, or GOLDEN HORN.* Passing through this gate, the bay opens to the right and left, extending in each direction about thirty-five miles, having a total length of more than seventy, and a coast of about two hundred and seventy-five miles. It is divided, by straits and projecting points, into three separate bays, of which the northern two are called San Pablo and Suisoon Bays. Within, the view presented is of a mountainous country, the bay resembling an interior lake of deep water, lying between parallel ranges of mountains. Islands, which have the bold character of the shores—some mere masses of rock, and others grass-covered, rising to the height of three and eight hundred feet—break its surface, and add to its picturesque appearance. Directly fronting the entrance, mountains a few miles from the shore rise about two thousand feet above the water, crowned by a forest of lofty cypress, which is visible from the sea, and makes a conspicuous landmark for vessels entering the bay. Behind, the rugged peak of Mount Diavolo, nearly four thousand feet high (three thousand seven hundred and seventy), overlooks the surrounding country of the bay and San Joaquin. The immediate shore of the bay derives, from its proximate and opposite relation to the sea, the name of *Contra-costa* (counter-coast, or opposite coast). It presents a varied character of rugged and broken hills, rolling and undulating land, and rich alluvial shores backed by fertile and wooded ranges, suitable for towns, villages, and farms, with which it is beginning to be dotted. A low alluvial-bottom land, several miles in breadth, with occasional open woods of oak, borders the foot of the mountains around the southern arm of the bay, terminating on a breadth of twenty miles in the fertile valley of San José, a narrow plain of rich soil, lying between ranges from two to three thousand feet high. The valley is openly wooded with groves of oak, free from underbrush, and after the spring rains covered with grass. Taken in connection with the valley of San Juan, with which it forms a continuous plain, it is fifty-five miles long and one to twenty broad, opening into smaller valleys among the hills. At the head of the bay it is twenty miles broad; and about the same at the southern end, where the soil is beautifully fertile, covered in summer with four or five varieties of wild clover, several feet high. In many places it is overgrown with wild mustard, growing ten or twelve feet high, in almost impenetrable fields, through which roads are made like lanes. On both sides the mountains are fertile, wooded, or covered with grasses and scattered trees. On the west it is protected from the chilling influence of the northwest winds by the *Cuesta de los Gatos* (wild-cat ridge) which separates it from the coast. This is a grassy and timbered mountain, watered with small streams, and wooded on both sides with many varieties of trees and shrubbery, the heaviest forests of pine and cypress occupying the western slope. Timber and shingles are now obtained from this mountain; and one of the recently discovered quicksilver mines is on the eastern side of the mountain, near the Pueblo of San José. This range terminates on the south in the *Anno Nuevo* point of Monterey Bay, and on the north declines into a ridge of broken hills about five miles wide, between the bay and the sea, and having the town of San Francisco on the bay shore, near its northern extremity.

Sheltered from the cold winds and fogs of the sea, and having a soil of remarkable fertility, the valley of San José is capable of producing in great perfection many fruits and grains which do not thrive on the coast in its immediate vicinity. Without taking into consideration the extraordinary yields which have sometimes occurred, the fair average product of wheat is estimated at fifty fold, or fifty for one sown. The mission establishments of Santa Clara and San José, in the north end of the valley, were formerly, in the prosperous days of the missions, distinguished for the superiority of their wheat crops.

The slope of alluvial land continues entirely around the eastern shore of

* NOTE.—The form of the harbor and its advantages for commerce, and that before it became an entrepot of Eastern commerce, suggested the name to the Greek founders of Byzantium. The form of the entrance into the Bay of San Francisco and its advantages for commerce, Asiatic inclusive, suggested to me the name which I gave to this entrance and which I put upon the map that accompanied a geographical Memoir addressed to the Senate of the United States in June, 1848.

the bay, intersected by small streams, and offering some points which good landing and deep water, with advantageous positions between the sea and interior country, indicate for future settlement.

The strait of *Carquines*, about one mile wide and eight or ten fathoms deep, connects the San Pablo and Suisoon Bays. Around these bays smaller valleys open into the bordering country, and some of the streams have a short launch navigation, which serves to convey produce to the bay. Missions and large farms were established at the head of navigation on these streams, which are favorable sites for towns or villages. The country around the Suisoon Bay presents smooth, low ridges and rounded hills, clothed with wild oats, and more or less openly wooded on their summits. Approaching its northern shores from *Sonoma* it assumes, though in a state of nature, a cultivated appearance. Wild oats cover it in continuous fields, and herds of cattle and bands of horses are scattered over low hills and partly isolated ridges, where blue mists and openings among the abruptly terminating hills indicate the neighborhood of the bay.

The Suisoon is connected with an expansion of the river formed by the junction of the Sacramento and the San Joaquin, which enter San Francisco Bay in the same latitude, nearly, as the mouth of the Tagus at Lisbon. A delta of twenty-five miles in length, divided into islands by deep channels, connects the bay with the valley of the San Joaquin and Sacramento, into the mouths of which the tide flows, and which enter the bay together as one river.

Such is the bay, and the proximate country and shores of the bay of San Francisco. It is not a mere indentation of the coast, but a little sea to itself, connected with the ocean by a defensible gate, opening out between seventy and eighty miles to the right and left, upon a breadth of ten to fifteen, deep enough for the largest ships, with bold shores suitable for towns and settlements, and fertile adjacent country for cultivation. The head of the bay is about forty miles from the sea, and there commences its connection with the noble valleys of San Joaquin and Sacramento.

WESTERN SLOPE OF THE SIERRA NEVADA.

The western flank of this Sierra belongs to the maritime region of California, and is capable of adding greatly to its value. It is a long, wide slope, timbered and grassy, with intervals of arable land, copiously watered with numerous and bold streams, and without the cold which its name and altitude might imply. In length it is the whole extent of the long valley at its base, five hundred miles. In breadth, if is from forty to seventy miles from the summit of the mountain to the termination of the foot-hills in the edge of the valleys below, and almost the whole of it available for some useful purpose—timber, pasturage, some arable land, mills, quarries—and so

situated as to be convenient for use, the wide slope of the mountain being of easy descent. Timber holds the first place in the advantages of this slope, the whole being heavily wooded, first with oaks, which predominate to about half the elevation of the mountain; and then with pines, cypress, and cedars, the pines predominating; and hence, called the pine region, as that below is called the oak region, though mixed with other trees. The highest summits of the Sierra are naked, massive granite rock, covered with snow, in sheltered places, all the year round. The oaks are several varieties of white and black oak, and evergreens, some of them resembling live oak. Of the white oak there are some new species, attaining a handsome elevation, upon a stem six feet in diameter. Acorns of uncommon size, and not bad taste, used regularly for food by the Indians, abound on these trees, and will be of great value for stock. The cypress, pine, and cedar are betweeu one hundred and two hundred and fifty feet high, and five to twelve feet in diameter, with clean solid stems. Grass abounds on almost all parts of the slope; except towards the highest summits, and is fresh and green all the year round, being neither killed by cold in the winter, nor dried by want of rain in the summer. The foot-hills of the slope are sufficiently fertile and gentle to admit of good settlements; while coves, benches, and meadows of arable land are found throughout. Many of the mountain streams, some of them amounting to considerable rivers, which flow down the mountain-side, make handsome, fertile valleys. All these streams furnish good water-power. The climate in the lower part of the slope is that of constant spring, while above, the cold is not in proportion to the elevation. Such is the general view of the western slope of the great Sierra.

COAST COUNTRY NORTH OF THE BAY OF SAN FRANCISCO.

Between the Sacramento valley and the coast, north of the bay of San Francisco, the country is broken into mountain ridges and rolling hills, with many very fertile valleys, made by lakes and small streams. In the interior it is wooded, generally with oak, and immediately along the coast presents open prairie lands, among heavily-timbered forests, having a greater variety of trees, and occasionally a larger growth than the timbered region of the Sierra Nevada. In some parts it is entirely covered, in areas of many miles, with a close growth of wild oats, to the exclusion of almost every other plant. In the latter part of June and beginning of July, we found here a climate sensibly different from that of the Sacramento valley, a few miles east, being much cooler and moister. In clear weather, the mornings were like those of the Rocky Mountains in August, pleasant and cool, following cold, clear nights. In that part lying nearer the coast, we found the mornings sometimes cold, accompanied with chilling winds; and fogs frequently came rolling up over the ridges from the sea. These sometimes rose at

evening, and continued until noon of the next day. They are not dry, but wet mists, leaving the face of the country covered as by a drizzling rain. This sometimes causes rust in wheat grown within its influence, but vegetables flourish and attain extraordinary size.

I learned from Captain Smith, a resident at Bodega, that the winter months make a delightful season—rainy days (generally of warm showers) alternating with mild and calm, pleasant weather, and pure, bright skies—much preferable to the summer, when the fogs and strong northwest winds, which prevail during the greater part of the year, make the morning part of the day disagreeably cold.

Owing probably to the fogs, spring is earlier along the coast than in the interior, where, during the interval between the rains, the ground becomes very dry. Flowers bloom in December, and by the beginning of February grass acquires a strong and luxuriant growth, and fruit trees, peach, pear, apple, etc., are covered with blossoms. In situations immediately open to the sea the fruit ripens late, generally at the end of August, being retarded by the chilling influence of the northwest winds; a short distance inland, where intervening ridges obstruct these winds and shelter the face of the country, there is a different climate and a remarkable difference in the time of ripening fruits; the heat of the sun has full influence on the soil, and vegetation goes rapidly to perfection.

The country in July began to present the dry appearance common to all California as the summer advances, except along the northern coast within the influence of the fogs, or where the land is sheltered by forests, and in the moist valleys of streams and coves of the hills. In some of these was an uncommonly luxuriant growth of oats, still partially green, while elsewhere they were dried up; the face of the country presenting generally a mellowed and ripened appearance, and the small streams beginning to lose their volume, and draw up into the hills.

This northern part of the coast country is heavily timbered, more so as it goes north to the Oregon boundary (42°), with many bold streams falling directly into the sea.

My camp at the Buttes became a rendezvous for the settlers, and a centre of information for me and of confidence for them. It was evident from movements of the Indians that the rumored attack on the settlers was certainly intended, and all signs indicated that the time for it was at hand. The wheat throughout the valley was now dry and ready for the harvest or the torch.

Keeping in mind my promise to the settlers, and being now about to move towards Sutter's Fort, where I intended to occupy a more central position, I thought that the time for me too had come. I resolved to anticipate the Indians and strike them a blow which would make them recognize

that Castro was far and that I was near. And I judged it expedient to take such precautionary measures as in my forward movement would leave no enemy behind to destroy the strength of my position by cutting off my supply in cattle and break communication with the incoming emigrants.

Accordingly, early in the morning I moved quietly out of camp with the greater number of men, taking the right or western bank of the Sacramento.

In describing the lower division of this river I have already mentioned the many *rancherias* towards the head of its valley. Some of the largest were scattered along the right bank of the river, where fish and the abundant acorn-bearing trees made a preferred ground. These numbered more men than the smaller *rancherias* which lay farther out in the valley and among the hills.

My movement was unexpected, and riding rapidly up the river we reached without discovery the first rancheria among the hostiles. The scouts who had been sent forward reported the Indians with feathers on their heads, and faces painted black, their war color; and in the midst of their war ceremonies.

Intending to surprise and scatter them we rode directly upon them, and at this place several Indians were killed in the dispersion. In the panic made by our sudden charge the Indians jumped into and swam the river, a few escaping into shelter on our side of the river.

With scarcely a halt we rode on towards the other *rancherias*, but the news of our attack apparently reached these as soon as ourselves, for the Indians were escaping from their villages as we rode in among them. Before the close of the day nearly all the *rancherias* had been visited and the Indians dispersed; as we rode down the hill which commanded a view of the river-plain, on which stood the farthest village that we reached, we could see the Indians in commotion, some running off from the river and others jumping into it. When we reached the rancheria the water was dotted with the heads of the Indians swimming across. We had surprised them assembled in the height of their war ceremonies.

This put an end to the intended attack upon the whites. The Indians of the California Valley had their fixed places of habitation where they lived. The tribes on one river were rarely friendly to those on another. They knew that I came from the mountains, so that they could not take refuge there. That if I should drive them into the upper valley they would encounter hostile tribes, who would destroy them. So that with the return to their villages the dread of another visitation would keep them on their good behavior.

This was a rude but necessary measure to prevent injury to the whites. And it had the effect which I intended.