Frémont and members of his party explored the Great Salt Lake on an inflatable rubber boat.

The cliffs and masses of rock along the shore were whitened by an incrustation of salt, where the waves dashed up against them; and the evaporating water, which had been left in holes and hollows on the surface of the rocks, was covered with a crust of salt about one-eighth of an inch in thickness. It appeared strange that, in the midst of this grand reservoir, one of our greatest wants lately had been salt. Exposed to be more perfectly dried in the sun, this became very white and fine, having the usual flavor of very excellent common salt, without any foreign taste; but only a little was collected for present use, as there was in it a number of small black insects.

Carrying with us the barometer and other instruments, in the afternoon we ascended to the highest point of the island—a bare rocky peak, 800 feet above the lake. Standing on the summit, we enjoyed an extended view of the lake, enclosed in a basin of rugged mountains, which sometimes left marshy flats and extensive bottoms between them and the shore, and in other places came directly down into the water with bold and precipitous bluffs. Following with our glasses the irregular shores, we searched for some indications of a communication with other bodies of water, or the entrance of other rivers; but the distance was so great that we could make out nothing with certainty. To the southward, several peninsular mountains, 3,000 or 4,000 feet high, entered the lake, appearing, so far as the distance and our position enabled us to determine, to be connected by flats and low ridges with the mountains in the rear. Although these are probably the islands usually indicated on maps of this region as entirely detached from the shore, we have preferred to represent them, in the small map on the preceding page, precisely as we were enabled to sketch them on the ground, leaving their more complete delineation for a future survey. The sketch, of which the scale is nearly sixteen miles to an inch, is introduced only to show clearly the extent of our operations, which, it will be remembered, were made when the waters were at their lowest stage. At the season of high waters in the spring, it is probable that all the marshes and low grounds are overflowed, and the surface of the lake considerably greater. In several places, which will be indicated to you in the sketch, by the absence of the bordering mountains the view was of unlimited extent—here and there a rocky islet appearing above the water at a great distance; and beyond, every thing was vague and undefined. As we looked over the vast expanse of water spread out beneath us, and strained our eyes along the silent shores over which hung so much doubt and uncertainty, and which were so full of interest to us, I could hardly repress the almost irresistible desire to continue our exploration; but the lengthening snow on the mountains was a plain indication of the advancing season, and our frail linen boat appeared so insecure that I was unwilling to trust our lives to the uncertainties of the lake. I therefore unwillingly resolved to terminate our survey here, and remain satisfied for the present with what we had been able to add to the unknown geography of the region. We felt pleasure also in remembering that we were the first who, in the traditional annals of the country, had visited the islands, and broken, with the cheerful sound of human voices, the long solitude of the place. From the point where we were standing, the ground fell off on every side to the water, giving us a perfect view of the island, which is twelve or thirteen miles in circumference, being simply a rocky
The GREAT SALT-LAKE.

SCALE 1 (1000000).

4200 Feet above the Sea.
hill, on which there is neither water nor trees of any kind; although the *Fremontia vermicularis*, which was in great abundance, might easily be mistaken for timber at a distance. The plant seemed here to delight in a congenial air, growing in extraordinary luxuriance seven to eight feet high, and was very abundant on the upper parts of the island, where it was almost the only plant. This is eminently a saline shrub; its leaves have a very salt taste; and it luxuriates in saline soils, where it is usually a characteristic. It is widely diffused over all this country. A chenopodiaceous shrub, which is a new species of *Eriogonum* (O. rigida, Torr. & Frem.), was equally characteristic of the lower parts of the island. These two are the striking plants on the island, and belong to a class of plants which form a prominent feature in the vegetation of this country. On the lower parts of the island, also, a prickly pear of very large size was frequent. On the shore, near the water, was a woolly species of *Phacelia*; and a new species of umbelliferous plant (*Leptotemia*) was scattered about in very considerable abundance. These constituted all the vegetation that now appeared upon the island.

I accidentally left on the summit the brass cover to the object end of my spy glass; and as it will probably remain there undisturbed by Indians, it will furnish matter of speculation to some future traveller. In our excursions about the island, we did not meet with any kind of animal; a magpie, and another larger bird, probably attracted by the smoke of our fire, paid us a visit from the shore, and were the only living things seen during our stay. The rock constituting the cliffs along the shore where we were encamped, is a talcose rock, or steatite, with brown spar.

At sunset, the temperature was 70°. We had arrived just in time to obtain a meridian altitude of the sun, and other observations were obtained this evening, which place our camp in latitude 41° 10' 42", and longitude 112° 21' 05" from Greenwich. From a discussion of the barometrical observations made during our stay on the shores of the lake, we have adopted 4,200 feet for its elevation above the gulf of Mexico. In the first disappointment we felt from the dissipation of our dream of the fertile islands, I called this *Disappointment island*.

Out of the drift wood, we made ourselves pleasant little lodges, open to the water, and, after having kindled large fires to excite the wonder of any straggling savage on the lake shores, lay down, for the first time in a long journey, in perfect security; no one thinking about his arms. The evening was extremely bright and pleasant; but the wind rose during the night, and the waves began to break heavily on the shore, making our island tremble. I had not expected in our inland journey to hear the roar of an ocean surf; and the strangeness of our situation, and the excitement we felt in the associated interests of the place, made this one of the most interesting nights I remember during our long expedition.

In the morning, the surf was breaking heavily on the shore, and we were up early. The lake was dark and agitated, and we hurried through our scanty breakfast, and embarked—having first filled one of the buckets with water from the lake, of which it was intended to make salt. The sun had risen by the time we were ready to start; and it was blowing a strong gale of wind, almost directly off the shore, and raising a considerable sea, in which our boat strained very much. It roughened as we put away from the island, and it required all the efforts of the men to bear any head against the wind and sea; the gale rising with the sun, and there
was danger of being blown into one of the open reaches beyond the island. At the distance of half a mile from the beach, the depth of water was 16 feet, with a clay bottom; but, as the working of the boat was very severe labor, and during the operation of rounding it was necessary to cease paddling, during which the boat lost considerable way, I was unwilling to discourage the men, and reluctantly gave up my intention of ascertaining the depth, and the character of the bed. There was a general shout in the boat when we found ourselves in one fathom, and we soon afterwards found a low point of mud, immediately under the butte of the peninsula, where we unloaded the boat, and carried the baggage about a quarter of a mile to inner-ground. We arrived just in time for meridian observation, and carried the barometer to the summit of the butte, which is 500 feet above the lake. Mr. Preuss set off on foot for the camp, which was about nine miles distant; Basil accompanying him, to bring back horses for the boat and baggage.

The rude-looking shelter we raised on the shore, our scattered baggage and boat lying on the beach, made quite a picture; and we called this the Fisherman’s camp. *Limonitis graveolens*, and another new species of oaste (O. complutifolia—Torr. & Frem.,) were growing on the low grounds, with interspersed spots of an unwholesome salt grass, on a saline clay soil, with a few other plants.

The horses arrived late in the afternoon, by which time the gale had increased to such a height that a man could scarcely stand before it; and we were obliged to pack our baggage hastily, as the rising water of the lake had already reached the point where we were halted. Looking back as we rode off, we found the place of recent encampment entirely covered. The low plain through which we rode to the camp was covered with a compact growth of shrubs of extraordinary size and luxuriance. The soil was sandy and saline; flat places, resembling the beds of ponds, that were bare of vegetation, and covered with a powdery white salts, being interspersed among the shrubs. *Artemisia tridentata* was very abundant, but the plants were principally saline; a large and vigorous chenopodiaceous shrub, five to eight feet high, being characteristic, with *Fremontia vermicularis*, and a shrubby plant which seems to be a new *salicornia*. We reached the camp in time to escape a thunder storm which blackened the sky, and were received with a discharge of the howitzer by the people, who, having been unable to see anything of us on the lake, had begun to feel some uneasiness.

September 11.—To-day we remained at this camp, in order to obtain some further observations, and to boil down the water which had been brought from the lake, for a supply of salt. Roughly evaporated over the fire, the five gallons of water yielded fourteen pints of very fine-grained and very white salt, of which the whole lake may be regarded as a saturated solution. A portion of the salt thus obtained has been subjected to analysis—giving, in 100 parts, the following proportions:

*Analysis of the salt.*

| Chloride of sodium, (common salt) | 97.30 |
| Chloride of calcium | 0.61 |
| Chloride of magnesium | 0.24 |
Glancing your eye along the map, you will see a small stream entering the Utah lake, south of the Spanish fork, and the first waters of that lake which our road of 1844 crosses in coming up from the southward. When I was on this stream with Mr. Walker in that year, he informed me that on the upper part of the river are immense beds of rock salt of very great thickness, which he had frequently visited. Farther to the southward, the rivers which are affluent to the Colorado, such as the Rio Virgen, and Gila river, near their mouths, are impregnated with salt by the cliffs of rock salt between which they pass. These mines occur in the same ridge in which, about 120 miles to the northward, and subsequently in their more immediate neighborhood, we discovered the fossils belonging to the oolitic period, and they are probably connected with that formation, and are the deposit from which the Great Lake obtains its salt. Had we remained longer, we should have found them in its bed, and in the mountains around its shores.

By observation, the latitude of this camp is 41° 15' 50", and longitude 112° 06' 43".

The observations made during our stay give for the rate of the chronometer 31°.72, corresponding almost exactly with the rate obtained at St. Vrain's fort. Barometrical observations were made hourly during the day. This morning we breakfasted on yampa, and had only kamas for supper; but a cup of good coffee still distinguished us from our Digger acquaintances.