immediately beyond them rose snowy mountains on either side, timbered principally with the nut pine. On the lower grounds, the general height of this tree is twelve to twenty feet, and eight inches the greatest diameter; it is rather branching, and has a peculiar and singular but pleasant odor. We followed the river for only a short distance along a rocky trail, and crossed it at a dam which the Indians made us comprehend had been built to catch salmon trout. The snow and ice were heaped up against it three or four feet deep entirely across the stream.

Leaving here the stream, which runs through impassable cañons, we continued our road over a very broken country, passing through a low gap between the snowy mountains. The rock which occurs immediately in the pass has the appearance of impure sandstone, containing scales of black mica. This may be only a stratified lava; on issuing from the gap, the compact lava, and other volcanic products usual in the country, again occurred.

We descended from the gap into a wide valley, or rather basin, and encamped on a small tributary to the last stream, on which there was very good grass. It was covered with such thick ice, that it required some labor with pick-axes to make holes for the animals to drink. The banks are lightly wooded with willow, and on the upper bottoms are sage and Fremontia, with *Ephedra occidentalis*, which begins to occur more frequently.

The day has been a summer one, warm and pleasant; no snow on the trail, which, as we are all on foot, makes travelling more agreeable. The hunters went into the neighboring mountains, but found no game. We have five Indians in camp to-night.

January 25th.—The morning was cold and bright, and as the sun rose the day became beautiful. A party of twelve Indians came down from the mountains to trade pine-nuts, of which each one carried a little bag. These seemed now to be the staple of the country; and whenever we met an Indian, his friendly salutation consisted in offering a few nuts to eat and to trade; their only arms were bows and flint-pointed arrows.

It appeared that in almost all the valleys the neighboring bands were at war with each other; and we had some difficulty in prevailing on our guides to accompany us on this day's journey, being at war with the people on the other side of a large snowy mountain which lay before us.

The general level of the country appeared to be getting higher, and we were gradually entering the heart of the mountains. Accompanied by all the Indians, we ascended a long ridge and reached a pure spring at the edge of the timber, where the Indians had waylaid and killed an antelope, and where the greater part of them left us. Our pacific conduct had quieted their alarms, and though at war among each other yet all confided in us, thanks to the combined effects of power and kindness—for our arms inspired respect, and our little presents and good treatment conciliated their confidence. Here we suddenly entered snow six inches deep, and the ground was a little rocky with volcanic fragments, the mountain appearing to be composed of such rock. The timber consists principally of nut-pines (*Pinus monophyllus*), which here are of a larger size—twelve to fifteen inches in diameter; heaps of cones lying on the ground where the Indians had gathered the seeds.

The snow deepened gradually as we advanced. Our guides wore out their moccasons, and putting one of them on a horse, we enjoyed the unusual sight of an Indian who could not ride. He could not even guide the animal, and appeared to have no knowledge of horses. The snow was three or four feet deep on the summit of the pass; and from this point the guide pointed out our future road, declining to go any farther.

Below us was a little valley, and beyond this the mountains rose higher still, one ridge above another, presenting a rude and rocky outline. We descended rapidly to the valley; the snow impeded us but little; yet it was dark when we reached the foot of the mountain.

The day had been so warm that our moccasons were wet with melting snow; but here, as soon as the sun begins to decline, the air gets suddenly cold, and we had great difficulty to keep our feet from freezing—our moccasons being frozen perfectly stiff.

After a hard day's march of twenty-seven miles we reached the river, some time after dark, and found the snow about a foot deep on the bottom—the river being entirely frozen over. We found a comfortable camp where there were dry willows abundant, and we soon had blazing fires.

A little brandy, which I husbanded with great care, remained; and I do not know any medicine more salutary, or any drink (except coffee) more agreeable, than this in a cold night after a hard day's march. Mr. Preuss questioned whether the famed nectar even possessed so exquisite a flavor. All felt it to be a reviving cordial.

The next morning, when the sun had not yet risen over the mountains, the thermometer was two degrees below zero; but the sky was bright and pure, and the weather changed rapidly into a pleasant day of summer. I remained encamped, in order to examine the country and allow the animals a day of rest, the grass being good and abundant under the snow.

The river is fifty to eighty feet wide, with a lively current and very clear water. It forked a little above our camp, one of its branches coming directly from the south. At its head appeared to be a handsome pass; and from the neighboring heights we could see, beyond, a comparatively low and open country, which was supposed to form the valley of the Buenaventura. The other branch issued from a nearer pass, in a direction S.

75° W., forking at the foot of the mountain, and receiving part of its waters from a little lake.

I was in advance of the camp when our last guides had left us; but, so far as could be understood, this was the pass which they had indicated, and, in company with Carson, to-day I set out to explore it. Entering the range we continued in a northwesterly direction up the valley, which here bent to the right. It was a pretty, open bottom, locked between lofty mountains, which supplied frequent streams as we advanced. On the lower part they were covered with nut-pine trees, and above with masses of pine, which we easily recognized from the darker color of the foliage. From the fresh trails which occurred frequently during the morning, deer appeared to be remarkably numerous in the mountain.

We had now entirely left the desert country, and were on the verge of a region which, extending westward to the shores of the Pacific, abounds in large game, and is covered with a singular luxuriance of vegetable life.

The little stream grew rapidly smaller, and in about twelve miles we had reached its head, the last water coming immediately out of the mountain on the right; and this spot was selected for our next encampment. The grass showed well in sunny places; but in colder situations the snow was deep, and began to occur in banks, through which the horses found some difficulty in breaking a way.

To the left the open valley continued in a southwesterly direction, with a scarcely perceptible ascent, forming a beautiful pass; the exploration of which we deferred until the next day, and returned to the camp.

To-day an Indian passed through the valley on his way into the mountains, where he showed us was his lodge. We comprehended nothing of his language; and, though he appeared to have no fear, passing along in full view of the camp, he was indisposed to hold any communication with us, but showed the way he was going, and pointed for us to go on our road.

By observation, the latitude of this encampment was 38° 18′ 01″, and the elevation above the sea six thousand three hundred and ten feet.

January 27th.—Leaving the camp to follow slowly, with directions to Carson to encamp at the place agreed on, Mr. Fitzpatrick and myself continued the reconnoissance. Arriving at the head of the stream, we began to enter the pass—passing occasionally through open groves of large pine-trees, on the warm side of the defile, where the snow had melted away, occasionally exposing a large Indian trail. Continuing along a narrow meadow, we reached in a few miles the gate of the pass, where there was a narrow strip of prairie, about fifty yards wide, between walls of granite rock. On either side rose the mountains, forming on the left a rugged mass, or nucleus, wholly covered with deep snow, presenting a glittering

and icy surface. At the time, we supposed this to be the point into which they were gathered between the two great rivers, and from which the waters flowed off to the bay. This was the icy and cold side of the pass, and the rays of the sun hardly touched the snow. On the left, the mountains rose into peaks; but they were lower and secondary, and the country had a somewhat more open and lighter character. On the right were several hot springs, which appeared remarkable in such a place. In going through, we felt impressed by the majesty of the mountain, along the huge wall of which we were riding. Here there was no snow; but immediately beyond was a deep bank, through which we dragged our horses with considerable effort.

We then immediately struck upon a stream, which gathered itself rapidly, and descended quickly; and the valley did not preserve the open character of the other side, appearing below to form a cañon. We therefore climbed one of the peaks on the right, leaving our horses below; but we were so much shut up, that we did not obtain an extensive view, and what we saw was not very satisfactory, and awakened considerable doubt. The valley of the stream pursued a northwesterly direction, appearing below to turn sharply to the right, beyond which further view was cut off.

It was, nevertheless, resolved to continue our road the next day down this valley, which we trusted still would prove that of the middle stream between the two great rivers. Toward the summit of this peak the fields of snow were four or five feet deep on the northern side; and we saw several large hares, which had on their winter color, being white as the snow around them.

The winter day is short in the mountains, the sun having but a small space of sky to travel over in the visible part above our horizon; and the moment his rays are gone the air is keenly cold. The interest of our work had detained us long, and it was after nightfall when we reached the camp.