

houses, and building stone walls. Dr. Judd, the sergeant, and Brooks, descended into the crater: they made the descent on the east bank among large blocks of lava, and reached the bottom in about an hour. There they were surrounded by huge clinkers, and ridges running generally north and south in lines across the crater; between these was the pahoehoi, or smooth lava. They passed over these obstructions to the southwest, and found in places many salts, among which were sulphate of soda, and sulphate of lime. Four-fifths of the way across was a hill, two hundred feet high, composed of scoria and pumice, with fissures emitting sulphurous acid gas. To the west was a plain full of cracks and fissures, all emitting more or less steam and gas.

They found the west wall perpendicular: its lower strata were composed of a gray basalt. For three-fourths of the distance up, it had a dingy yellow colour. Above this, there are a number of thin layers, apparently dipping to the southwest, with the slope of the mountain.

They also visited many steam-cracks on the northeast side, from which fumes of sulphurous acid gas were emitted; no hydrogen was found in the gas, which extinguished flame without producing explosion.

Specimens of sulphate of lime, carbonate of magnesia, sulphate of ammonia, and carbonate of lime, were found in beautiful crystals by Dr. Judd, but it was found difficult to preserve any of them in a separate form, as they were all intermingled in their formation.

Half-past two o'clock having arrived, Dr. Judd began his return to the bank where he had descended, and reached it after walking an hour and a half; it required another hour to ascend. When they returned, they appeared exhausted with their day's trip: overloaded as they were with specimens, the ascent was more arduous.

This evening, at sunset, we had a beautiful appearance of the shadow of the mountain, dome-shaped, projected on the eastern sky: the colour of a light amethyst at the edges, increasing in intensity to a dark purple in the centre; it was as distinct as possible, and the vast dome seemed to rest on the distant horizon. The night was clear, with moonlight, the effect of which on the scene was beautiful: the clouds floating below us, with the horizon above them, reminded us of the icebergs and ice-fields of the Antarctic: the temperature lent its aid to the deception.

Lieutenant Budd, with a party, joined me this day, bringing with him the transit-level, from the ship. Towards evening I had another attack of mountain-sickness, with much tendency of blood to the head. My