

Other pieces had the form of coal, and on ignition burned quite freely, showing the presence of bitumen and sulphur. The last was always found in small lumps, resembling the siftings of coal, and was embedded in a friable earth, containing saltpetre. No coal was found *in situ*; their time did not admit of any extended examination. Coal would indeed be a most valuable discovery for the Chilian mines, where wood is so scarce that they are prevented from reducing the ore, and in consequence, as I have before remarked, they are obliged to send it to Valparaiso for shipment. The principal ores which the mine of Mr. Newman affords, are the vitreous, gray, and variegated copper. Copper pyrites and the red oxide of copper, also occur, and the silicious carbonate (chrysocola) is abundantly disseminated through the rocks. These ores are generally massive, or exhibit only imperfect traces of crystallization. Native copper is rarely found at this mine. Its occurrence is not welcomed by the miners, as they consider it a sure sign that the vein will soon run out. It is usually found with large quantities of red oxide of copper. According to Mr. Dana, this would seem to indicate that the native copper and red oxide have originated from the reduction of other ores by heat, and this would account for the above fact, which seems to be well established among miners.

Copper ores occur sparingly at other localities in this part of Chili; the valuable mines are chiefly confined to the northern provinces.

After again returning to Jaquel, they mounted their horses, and reached San Felipe, in about two hours' hard gallop. The temperature during the day varied from 44° at six o'clock in the morning, at Jaquel, to 58° at noon, on the hill at the mines; and at 10 P. M., at San Felipe, it was at 47°.

On the 22d, they set out on their return, after a good deal of delay, owing to the stupidity of their peon, who had indulged too much in his favourite chicha. Nothing could exceed the kindness and attention shown them by Mr. Newman, his lady, and Mr. Chase. Mr. Alderson, the agent, devoted himself to them for two days, during which time he left nothing undone that could promote and forward the object of their visit. It affords me great pleasure to bear testimony also to the numerous fine specimens of copper, &c., from other mines, which Mr. Newman presented to the Expedition, and to return him our thanks for them and the kind attention of his lady. Our gentlemen returned to the rancho of Evangelisto Celidono, where they passed the night, and were furnished with a like casuela as before. All the farmers they met were a simple, good-hearted set, caring for little beyond their own immediate neighbourhood, and knowing little but to supply their own