

deep exploitation of the lode would have been insuperable. The country has thus become honey-combed to a depth of 3,000 feet. The total length of the galleries driven exceeds 150 miles.

Heat and water have presented obstacles most formidable. The high temperature of the rock and of the water escaping from it is very extraordinary. In the Clifford mine in Wales, water heated to 125° has been encountered. But on the 3,000 foot level of the Comstock, floods of water have entered the mines at 170° . Water at this temperature will cook food, and will destroy the human epidermis. A partial immersion in it is therefore fatal. The atmosphere, as a consequence, is not only intolerably hot, but is saturated with vapor. From prolonged exposure to these unnatural conditions, many miners have lost their lives. In the Savage mine, in 1879, the miners struck a hot spring having a temperature of 157° , and the incline was filled with scalding vapor; picks could only be handled with gloves, and rags soaked in ice-water were wrapped about the iron drills. Occasionally, perspiration would cease, the miner would begin to talk in a rambling fashion, and his death would soon ensue, unless removed by his comrades to a place of relief. The conditions of mining are greatly ameliorated by most efficient ventilation through the 150 miles of galleries and the shafts. Still, the air leaves the mines nearly saturated with aqueous vapor, and at an average temperature of 92° .

The increase of downward temperature here greatly exceeds the general average. In one shaft at 100 feet, the temperature was 50° ; at 200 feet, 55° ; at 500 feet, 68° ; at 800 feet, 76° ; at 845 feet, 80° ; at 1,100 feet, 92° . In another shaft, at 1,500 feet the temperature was 105° ; at 1,600 feet, 107° ; at 1,700 feet, 108° ; at 1,800 feet, 111° ; at 1,900 feet, 112° ; at 2,000 feet, 113° ; at 2,230 feet, 121° . Mr. Church, who investigated this subject very carefully, estimated the mean temperature on the 2,000 foot level, at 130° . The water at 170° , with which the Gold Hill mines were flooded in the winter of 1880-1, entered on the 3,000 foot level, and