

glaciers once nestled in these mountains might have been readily anticipated, but it was important to be able to demonstrate their former existence, and to show that they attained such a magnitude.

The glaciers, however, were after all an unexpected or incidental kind of game. We were really on the trail of volcanic productions, and devoted most of our time to the hunt after them. The valley of the Yellowstone is of high antiquity. It has been excavated partly out of ancient crystalline rocks, partly out of later stratified formations, and partly out of masses of lava that have been erupted during a long succession of ages. Here and there it has been invaded by streams of basalt, which have subsequently been laboriously cut through by the river. In the whole course of our journey through the volcanic region we found that the oldest lavas were trachytes and their allies, while the youngest were as invariably basalts, the interval between the eruption of the two kinds having sometimes been long enough to permit the older rocks to be excavated into gorges before the emission of the more recent. Even the youngest, however, must have been poured out a long while ago, for they too have been deeply trenched by the slow erosive power of running water. But the volcanic fires are not yet wholly extinguished in the region. No lava, indeed, is now emitted, but there are plentiful proofs of the great heat that still exists but a short way below the surface.

Quitting the moraine mounds of the Yellowstone Valley, which above the second cañon become still more abundant and perfect, we ascended the tributary known as Gardiner's River, and camped in view of the hot springs. The first glimpse of this singular scene, caught from the crest of a dividing ridge, recalls the termination of a glacier. A