

feet, the whole eruption not occupying more than about five or six minutes. The other geysers of the same district are more capricious in their movements, and some of them more stupendous in the volume of their discharge. The eruptions of the Castle, Giant, and Beehive vents are marvellously impressive.⁹⁴

In examining the Yellowstone Geyser region in 1879, the author was specially struck by the evident independence of the vents. This was shown by their very different levels, as well as by their capricious and unsympathetic eruptions. On the same hill-slope, dozens of quiet pools, as well as some true geysers, were noticed at different levels, from the edge of the Fire Hole River up to a height of at least 80 feet above it. Yet the lower pools, from which, of course, had there been underground connection between the different vents, the drainage should have principally discharged itself, were often found to be quiet steaming pools without outlet, while those at higher points were occasionally in active eruption. It seemed also to make no difference in the height or tranquillity of one of the quietly boiling caldrons, when an active projection of steam and water was going on from a neighboring vent on the same gentle slope.

Bunsen and Descloiseaux spent some days experimenting at the Icelandic geysers, and ascertained that in the Great Geyser, while the surface temperature is about 212° Fahr., that of lower portions of the tube is much higher—a thermometer giving as high a reading as 266° Fahr. The water

⁹⁴ See Hayden's Reports for 1870 and for 1878, in the latter of which will be found a voluminous monograph on the Hot Springs by A. C. Peale; Comstock's Report in Jones's Reconnoissance of N. W. Wyoming, etc., 1874. The deposits of hot springs are further referred to on pp. 267, 809.