at a little depth must consequently be 54° above the normal boiling-point, but it is kept in the fluid state by the pressure of the overlying column. At the basin, however, the water cools quickly. After an explosion it accumulates there, and eventually begins to boil. The pressure on the column below being thus relieved, a portion of the superheated water flashes into steam, and as the change passes down the pipe, the whole column of water and steam rushes out with great violence. The water thereafter gradually collects again in the pipe, and after an interval of some hours the operation is renewed. The experiments made by Bunsen proved the source of the eruptive action to lie in the hot part of the pipe. He hung stones by strings to different depths in the funnel of the geyser, and found that only those in the higher part were cast out by the rush of water, sometimes to a height of 100 feet, while, at the same time, the water at the bottom was hardly disturbed at all. These observations give much interest and importance to the phenomena of geysers in relation to volcanic action. They show that the eruptive force in geysers is steam; that the water column, even at a comparatively small depth, may have a temperature considerably above 212°; that this high temperature is local; and that the eruptions of steam and water take place periodically, and with such vigor as to eject large stones to a height of 100 feet.[95]

The hot water comes up with a considerable percentage of mineral matter in solution. According to the analysis of Sandberger, water from the Great Geyser of Iceland

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[95] Comptes Rendus, xxiii. (1846), p. 934; Pogg. Annal. lxxii. (1847), p. 159; lxxxiii. (1851), p. 197. Ann. Chimie, xxxviii. (1853), pp. 215, 385. The explanation proposed for the phenomena observed at the Great Geyser is probably not applicable in those cases where the mere local accumulation of steam in suitable reservoirs may be sufficient.