

others have a basis of rich ochre, with the projections of umber brown. In places, the reds are nearly of a dark scarlet. Here the rocks are of a lovely French gray; there, of a delicate fawn tint, rising above to saffron, and melting to snow-white below; while in places, patches of vivid green, orange or black mark the masses of moss and lichen fed by the abundant spray, and forced into luxury of growth by the warm streams from the numberless springs issuing from the walls of the cañon."—*Lippincott's Magazine*, June, 1880, p. 699.

It is not for the scenery—not even for the geology of the Park, that I have led you hither. What I have noted will serve to illustrate principles to be stated hereafter. I wish your imaginations to be impressed by the wonderful groups of geysers and hot springs scattered through the Park. I wish you to make the acquaintance of some facts from which we may derive important inferences bearing on internal heat. Mr. A. C. Peale, one of the United States geologists, has described in the Park 2,195 warm springs, and expresses the belief that three thousand exist. He has also named and described seventy-one geysers. A *geyser* is a spring which periodically throws up hot water to some distance above the level of the ground.

Let us take a particular geyser and note its situation and the phenomena connected with its eruptions. "Old Faithful" geyser is one of a group in the upper part of the valley of Firehole river. The external formation is a mound or table of *geyserite* or *silicious sinter*—a whitish mineral composed chiefly of silica and water, and deposited from the waters of the geysers. The mound is one hundred and forty-five feet by two hundred and fifteen at base, and twenty by fifty-four feet at top. It rises about twelve feet above the surrounding level, and is composed of layers of deposit arranged in a succession of steps that are made up of small basins. Near the top these basins are beautiful, broad, shallow pools, with pink, cream, white, brown and gray bottoms, in which the deep azure-tinted water stands after the eruptions. The "chimney" or "crater" is the top of a "basin" five feet deep, at the bot-