

GEYSERS OF YELLOWSTONE PARK.

Of the many wonders of the National Park of the Yellowstone, the numerous geysers are the most marvelous and interesting. These queer manifestations of nature's forces resident in the bowels of the earth are to be found in low valleys, or basins, between the mountain ridges that traverse the park. The greater number, in fact, all of the large and fine ones, are found in the valley of Firehole river, a tributary of the Madison, which, in turn, becomes a portion of the mighty Missouri. There are three basins along the Firehole, the lower, the middle—often called "Hell's Half Acre"—and the upper, separated by a distance of five miles. A geyser is a column of water projected into the air from a pool which is connected by a crevice, or geyser tube, in the rock with the internal heat of the earth. Gradually the water in the tube becomes heated to such an extent that its expansive force overcomes the weight of the water above, which is forced out and thrown in a column high into the air, the release permitting steam to generate rapidly, thus adding to the force and sustaining the column of water often many minutes in the air. A geyser differs from a fountain in appearance, both in the great volume of water it contains and in the irregularity of its appearance. Every instant the column is changing in height and shape, and is always surrounded with clouds of steam, blown about by the wind and forming innumerable rainbows, while the constantly falling mass of water strikes the mound at the base of the column like the roar of a cataract. Standing on the brink of a geyser crater, and gazing down into the clear depths of the water, beholding a fairy palace sparkling with colors, one sees not the faintest indication of the mighty force slumbering beneath. Suddenly he hears and feels heavy thuds beneath his feet, like a succession of explosions, and the ground trembles as though a mighty giant were struggling for liberty. He hastens away to a safe distance, and turns to behold his once quiet pool the base of a column of water and steam shooting with mighty and pulsating force far into the air.

Geysers are very irregular in their actions, some playing often and at regular intervals, others at long but regular intervals, and still others so irregularly that their activity can not be anticipated. This is due to the variation in the conformation of geyser tubes and internal chambers. The Fountain, in lower geyser basin, plays steadily for an hour, and then is quiet for five hours, its column being sixty feet high. In Hell's Half Acre is the Sheridan, which holds a column of water seventy feet in diameter at a height of 300 feet for several seconds, but it is very seldom in action. In this basin are the largest hot springs in the world, fully 250 feet in diameter, in which the water is always boiling like a cauldron, with a cloud of steam hanging about it.

There are 10,000 geysers and hot springs in the park, 2,000 of which are along the Firehole, the upper basin containing the greatest number of large and active ones, thus being the center of attraction for all visitors. Here are to be found the Castle, which sends up little jets twenty feet every few minutes, but once a day shoots a column 100 feet high and holds it there for half an hour. The mound that has accumulated around this geyser is forty feet high. The Bee Hive daily projects a column 219 feet for eight minutes. Notice of approaching eruption is given a few minutes in advance by a little jet of steam that issues from a small vent near by. The Giantess acts about once in fourteen days, and without the least warning shoots a body of boiling water 250 feet high, which soon drops to eighty feet and continues for more than half a day. The Lion, Lioness and Two Cubs form a group, the first

one acting independently and the others in unison, but irregularly. The Grand acts generally twice a day. Its action is so peculiar and varied that it well deserves its name. The Splendid acts every three hours, and for ten minutes sustains a column 200 feet high. The Giant plays for two hours every four days. There are numerous others, but the most noted of all is Old Faithful, which spouts from an orifice seventy feet long by two feet wide, every sixty-five minutes, its eruptions lasting from four to six minutes. It is the only large geyser known in the world which spouts so frequently and with such unflinching regularity.

Somewhat similar are the mud geysers, located six miles below the lake. These geysers are very irregular in their action, the large one at this point remaining inactive for several years at a time. It is surrounded by numerous hot springs, and when in action throws up large masses of mud to a great height. At times the



GEYSERS AND FALLS OF THE NATIONAL PARK OF THE YELLOWSTONE.

force must be terrific, for the trees for a distance of seventy-five yards in all directions are covered with mud. The greatest object of curiosity is a mud volcano on the hill side. Looking down into its crater, glimpses can be had of the boiling mud as it belches, mingled with steam, from the mountain, striking against the side of the crater and rolling back again out of sight. Another smaller one near by emits only jets of steam. In the lower geyser basin are mud springs, or paint pots, covering an area of forty by seventy feet, one end having a pink hue while the other is snowy white. These are constantly agitated and throw up little jets of mud that fall in beautiful rings, only to be broken in another instant by a second eruption.

These are but a few of the attractions of that wonderful region, a free tour of which is offered by THE WEST SHORE to the person sending in the largest list of words made from the phrase "Yellowstone Park." Rules governing the contest will be found on page 148.