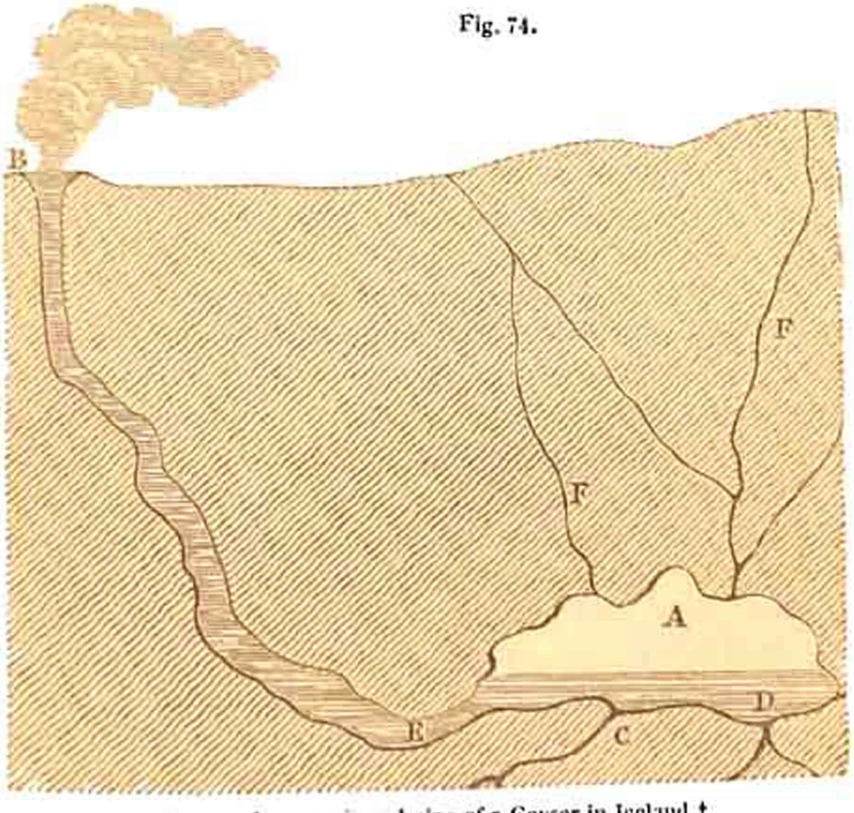
of the water, a portion is driven back, accompanied with steam, into the bowl. The intervals between the explosions depend on the heat, length, and inclination of the pipe ; their continuance, on its thickness and conducting power.* The application of this experiment to the Geysers merely requires that a subterranean stream, flowing through the pores and crevices of lava, should suddenly reach a fissure, in which the rock is red hot, or nearly so. Steam would immediately be formed, which, rushing up the fissure, might force up water along with it to the surface, while, at the same time, part of the steam might drive back the water of the supply for a certain distance towards its source. And when, after the space of some minutes, the steam was all condensed, the water would return, and a repetition of the phenomena take place.

There is, however, another mode of explaining the action of the Geyser, perhaps more probable than that above described. Suppose water percolating from the surface of the earth to penetrate into the subterranean cavity A D (fig. 74.) by the fissures F F, while, at the

Fig. 74.



Supposed reservoir and pipe of a Geyser in Iceland.†

same time, steam at an extremely high temperature, such as is commonly given out from the rents of lava currents during congelation, emanates from the fissures C. A portion of the steam is at first condensed into water, while the temperature of the water is raised by the latent heat thus evolved, till, at last, the lower part of the cavity is filled with boiling water and the upper with steam under high pressure. The expansive force of the steam becomes, at length, so great, that the water is forced up the fissure or pipe E B, and runs

* MS. read to Geol. Soc. of London, Feb. 29. 1832.

† From Sir George Mackenzie's Iceland.