The quantity of water which issues from these springs is very considerable; and the thawing of the bottom of the glaciers during intense frost may, I believe be attributed to the action of thermal waters. On the Italian side of the same range of Alps, particularly at St. Didier, near the steep southern escarpment of Mont Blanc, there are several thermal waters; and further west than the hot springs at Aix, in Savoy, other hot springs have been recently discovered near Grenoble. It thus seems probable that there still exists, under this range of the Alps, one common source of heat, to the agency of which in remote ages, the mountains originally owed their elevation; for we can scarcely doubt, that the hot springs in the Alps, like those in Auvergne, in Italy, or Iceland, derive their great temperature from subterranean fire. This inference is farther supported by the well authenticated fact, that the districts in which the hot springs are situated have been subject to great and frequent convulsions. In the year 1755, the ground in the vicinity of the hot springs of Leuk and Naters, in the Upper Valois, was agitated with earthquakes, every day from the 1st of November to the 27th of February. Churches were thrown down, the springs were dried up, and the waters of the Rhone were observed to boil, in several places. The mountain above the warm spring at Naters is said to have opened and discharged a quantity of hot water.

The hot springs at the feet of the Pyrenees probably derive their temperature from the same source as those of the Pennine Alps. Hot springs also occur in Dauphiny and Provence, which have probably a similar source of heat.

What has been here advanced may be sufficient to show the high probability that the elevation of the vertical beds in the Alps has been effected by subterranean heat,—an agent which we have direct proof has, in our own times, elevated considerable portions of the crust of the globe; and it were contrary to the rules of sound philosophy to seek for other causes than those which are now existing, when such causes are adequate to the production of the phænomena we observe.

Two cases are mentioned by M. Elie de Beaumont, in the "Mémoires de la Société d'Histoire Naturelle," tom. v., of granite cutting through and covering secondary rocks; such cases, however, demand the strictest scrutiny before the fact can be regarded as well established. In the "Bulletin de la Société Géologique de France," tom. ii., a section is given of the Jungfrau Mountain, in the canton of Berne, representing two cone-shaped masses of limestone penetrating the granite near the summit. I spent some weeks almost close to the mountain, and studied its structure with particular attention, and I have no hesitation in expressing a decided opinion that the section is fallacious. The part represented as penetrated by the limestone is concealed by a covering of eternal snow. The granite, which the author improperly calls gneiss, is small