it. If we date the age of granite from the period of the elevation of granite mountains, we must admit that some granite mountains are comparatively recent, for they have been elevated since the deposition of the secondary strata. In my Travels in the Tarentaise, &c. published in 1823, I have shown this to be the case with the granite of the Bernese and Savoy Alps. In the third edition of the present work in 1828, I have also shown, by a description and sections, that the elevation of the granite of Savoy is more recent than that of the central part of England. M. Elie de Beaumont has, since, adopted the same views, and has extended them to other mountain ranges. Prof. Sedgwick and Mr. Murchison have further proved, that a great part of the Tyrolean and Bavarian Alps was elevated since the deposition of tertiary strata; for these strata are lifted up with them to the height of several thousand feet.

Here, however, we must also admit that the material which formed granite is more ancient than the strata that rest upon it.

Whether granite ever formed at one time the stony pavement of the whole globe, or whether it was elevated in a solid state *bodily*, or whether different parts of the surface were fused at different epochs are legitimate objects of geological enquiry, and may perhaps admit of a satisfactory solution by extended series of observations. In whatever state granite forms, or has formed, the ancient crust of the globe, it has been, since, pierced through, by ancient and recent igneous rocks. Thus, porphyry cuts through, and in some parts covers granite, on the west side of Scotland from Inverary to Ben Nevis. Volcanic rocks, and streams of lava, of a recent geological epoch, pierce through and have poured over the granite of Auvergne, and a large part of central France.

Some of the currents of lava appear as fresh as the recent currents from Etna or Vesuvius. In other parts of Auvergne, the granite appears to have been acted upon by subterranean fire *in situ*, and in some mountains, as in the Puy de Chopine near Riom, granite and volcanic rocks are intermixed, one part being true granite and the other volcanic porphyry (trachyte.)*

These volcanoes have long been dormant; and the only remaining proofs of the existence of subterranean fires under that district, are the hot springs that rise in the vicinity of the ancient volcanoes. According to Humboldt, in the Canary Islands, as well as in the Andes of Quito, in Greece, and various parts of the world, subterranean fires have pierced through the primary rocks; and he adduces the great number of warm springs which he has seen issuing from granite, gneiss and mica-slate, as a proof of this opinion. Indeed, in the Andes, numerous volcanoes are in present activity, from Cape Horn, to Mexico, and it is probable that those mountains owe their

* See "Travels in the Tarentaise and Auvergne," vol. ii. p. 367.