of the earth, as Ætna and other mountains near Naples may teach you. The subterranean waters rise as if through siphons. The cause of hot springs is this: waters which are more remote from the subterranean fire are colder, while those which rise nearer the fire are heated by it, and bring with them to the surface which we inhabit an insupportable degree of heat."

As earthquakes are often accompanied by eruptions of water and vapors, we recognize in the *Salses*,* or small mud volcanoes, a transition from the changing phenomena presented by these eruptions of vapor and thermal springs to the more powerful and awful activity of the streams of lava that flow from volcanic mountains. If we consider these mountains as springs of molten earths producing volcanic rocks, we must remember that thermal waters, when impregnated with carbonic acid and sulphurous gases, are continually forming horizontally ranged strata of limestone (travertine) or conical elevations, as in Northern Africa (in Algeria), and in the Baños of Caxamarca, on the western declivity of the Peruvian Cordilleras. The travertine of Van Diemen's Land (near Hobart Town) contains, according to Charles Darwin, remains of a vegetation that no longer exists. Lava and travertine, which are constantly forming before our eyes, present us with the two extremes of geognostic relations.

Salses deserve more attention than they have hitherto received from geognosists. Their grandeur has been overlooked because of the two conditions to which they are subject; it is only the more peaceful state, in which they may continue for centuries, which has generally been described: their origin is, however, accompanied by earthquakes, subterranean thunder, the elevation of a whole district, and lofty emissions of flame of short duration. When the mud volcano of Jokmali began to form on the 27th of November, 1827, in the peninsula of Abscheron, on the Caspian Sea, east of Baku, the flames flashed up to an extraordinary height for three hours, while during the next twenty hours they scarcely rose three feet above the crater, from which mud was ejected. Near the village of Baklichli, west of Baku, the flames rose so high that

* [True volcanoes, as we have seen, generate sulphureted hydrogen and muriatic acid, upheave tracts of land, and emit streams of melted feldspathic materials; salses, on the contrary, disengage little else but carbureted hydrogen, together with bitumen and other products of the distillation of coal, and pour forth no other torrents except of mud, or argillaceous materials mixed up with water. Daubeney, op cit., p 540.]—*Tr.*