

with snow. It was early in May : but the snow was gone, and grass was growing in some parts ; others were covered with loose masses of scoriæ. Owing to the great porosity of the soil, the crater of Pariou seems doomed to perpetual sterility,—there is no tree or shrub within it ; while that of Vesuvius, after a cessation of eruptions for only four centuries, was covered with large chestnut trees.”—Vol. ii. page 307.

In the Puy de Pariou, and many other volcanic mountains of this district, there is nothing particularly remarkable, except, that the lavas which have flowed from them at a remote period, should preserve all the freshness of recent lavas, and that volcanoes so well characterised, both by their forms and mineral products, should have remained unnoticed until the middle of the last century. The round topped or dome shaped hill on the left of the Puy de Pariou is called Sarcoui ; it belongs to that class of volcanoes that have no craters, which will subsequently be noticed. The more ancient volcanoes, that have poured out the thick beds of basalt that cap many of the valleys round Clermont, cannot always be traced, as the openings from whence it issued may be covered by the lava of more recent eruptions. In order to obtain a more distinct idea of the position of these caps of basalt, it will be necessary to remark, that the granitic plain above Clermont, and the hollows or valleys in its sides, received their present form, prior to the most ancient volcanic eruptions ; these hollows or ancient valleys, were probably basins or lakes, in which were deposited a vast thickness of calcareous strata, containing fresh water shells, and the bones of land quadrupeds. Into these lakes, there has flowed a vast mass of volcanic tufa, covering the limestone, and sometimes intermixed with it. The volcanic tufa, and the fresh water strata, appear to have filled up the ancient valleys or lakes ; and on this tufa, the basalt was deposited by a subsequent eruption. At a later period, diluvial currents have furrowed excavations or new valleys in the basalt, in the subjacent tufa, and in the fresh water limestone, leaving detached portions or hills composed of basalt, tufa and limestone, which once were parts of continuous beds. Into these new valleys, the lava of the most recent volcanoes has flowed. The most remarkable circumstance attending these more ancient eruptions, is the bituminous nature of the tufa, which forms the lowest bed, and covers the fresh water limestone of Gergovia, Canturges and the neighboring hills. This tufa is, in some parts, more than three hundred feet thick ; it consists of earthy basalt or wacke, intermixed with lumps of scoriæ and basalt, and in some places, with limestone : it is every where impregnated with bitumen. The tufa of Auvergne bears evident marks of being the product of an aqueous or muddy eruption, intermixed with lava and scoriæ, which increase in quantity in the upper part of the mass, and at length cover it with compact lava or basalt. That the tufa was ejected in an aqueous or muddy state is proved, by the quantity