

form of hillocks, like many of the porphyries in Auvergne, in the Euganean mountains, and in the Cordilleras of the Andes.

The objections against the volcanic origin of obsidians, founded on their speedy loss of colour, and their swelling by a slow fire, have been shaken by the ingenious experiments of Sir James Hall. These experiments prove, that a stone which is fusible only at thirty-eight degrees of Wedgwood's pyrometer, yields a glass that softens at fourteen degrees; and that this glass, melted again and unvitified (glastenized), is fusible again only at thirty-five degree of the same pyrometer. I applied the blowpipe to some black pumice-stone from the volcano of the isle of Bourbon, which, on the slightest contact with the flame, whitened and melted into an enamel.

But whether obsidians be primitive rocks which have undergone the action of volcanic fire, or lavas repeatedly melted within the crater, the origin of the pumice-stones contained in the obsidian of the Peak of Teneriffe is not less problematic. This subject is the more worthy of being investigated, since it is generally interesting to the geology of volcanoes; and since that excellent mineralogist, M. Fleuriau de Bellevue, after having examined Italy and the adjacent islands with great attention, affirms, that it is highly improbable that pumice-stone owes its origin to the swelling of obsidian.

The experiments of M. da Camara, and those I made in 1802, tend to support the opinion, that the pumice stones adherent to the obsidians of the Peak of Teneriffe do not unite to them accidentally, but are produced by the expansion of an elastic fluid, which is disengaged from the compact vitreous matter. This idea had for a long time occupied the mind of a person highly distinguished for his talents and reputation at Quito, who, unacquainted with the labours of the mineralogists of Europe, had devoted himself to researches on the volcanoes of his country. Don Juan de Larea, one of those men lately sacrificed to the fury of faction, had been struck with the phenomena exhibited by obsidians exposed to a white heat. He had thought, that, wherever volcanoes act in the centre of a country covered with porphyry with base of obsidian, the elastic fluids must cause a swelling of the liquified mass, and perform an important part in