

and night. The mountain did not, like that of Mont Grenier, fall at once, for it is composed of a succession of beds of limestone resting on sandstone, and extremely fragile schist, which are even now yielding to the constant action of rain. A deep excavation, which I observed under a precipice of limestone, near the summit, appeared in 1821 to threaten a renewal of the catastrophe of 1751.*

In the Swiss Alps, the great *éboulements*† which have destroyed whole villages, have been caused by the sliding down of highly inclined beds of loose conglomerates, which have been undermined at their bases. This will be better understood by a reference to Plate II. fig. 2., representing the section of a mountain on the Alps: the beds *a a b a b* are highly inclined; and should the outer bed *a* be a soft sandstone or conglomerate, the action of water-courses or heavy rains upon its foot or base tends to destroy and undermine it, and the whole bed, perhaps several hundred feet in thickness, is suddenly precipitated into the valley. In 1806, a part of the mountain of Rosberg, between the lakes of Zug and Laworts, fell down from the cause here mentioned, and buried a considerable part of the valley, and several of the inhabitants.

Where the soil is favorable to vegetation, the *débris*, or ruins from the fall of mountains, become covered with vineyards and chestnut-trees; of which we have an example in the soil that covers the former town of Pleurs, near Chavennes, and all its noble palaces, belonging to opulent citizens of Milan. On the 26th of August, 1618, "an inhabitant entered the town, and said that he saw the mountains cleaving: he was laughed at for his pains; but in the evening the mountain fell, and buried the town and all its inhabitants. The number destroyed is stated to be 2430, of whom not one escaped, except the person who warned them of their danger."

Where the soil is unfavourable to vegetation, the ruins remain exposed to the action of rains, and of torrents from the sudden melting of snow, which furrow channels through them, and leave detached monticules, as in the *Abymes de Myans*; but it is evident, that by these causes they could not be transported to distant countries, except in the comminuted form of sand or mud.

There are, however, other causes in present activity, which tear down large masses of rock, and carry them many miles from their

* In an *Essay sur les Caractères Zoologiques*, by M. Brongniart, published in 1822, he has given a section of this mountain; and from the fossils in the upper bed, and the green sand intermixed, he has, with much probability, classed it with the chalk formation. The lower beds of the mountain, containing ammonites, he still classes with transition rocks; but I am persuaded that these lower beds are not more ancient than the English lias, or the blue beds of the magnesian limestone: and in this mountain, (Montagne de Fis,) we have all the upper secondary strata of this part of Savoy in one group.

† The fall of parts of mountains is so common an occurrence in the Alps, that it is expressively called an *éboulement*, from the verb *ébouler*. In Devonshire and Dorsetshire, the fall of the cliffs is called a *rougement*.