

sometimes a solitary shrub or tree. Examples, Bennevis, Paps of Jura, and Morven Hills. Of all rocks, vitreous volcanic productions are the least capable of contributing to the formation of productive soil. Their dark coloured tracts descend from volcanic mountains to the valleys in frightful sterility, the chinks of their rugged masses scarcely affording sufficient water for the roots of mosses*.

To the second class we refer *compact limestone*, a rock which contributes extensively to the formation of the solid crust of the globe. In so far as regards its principal constituent parts, it is not affected by atmospheric water or air; but, as its parts have but comparatively little cohesion, and are usually separated in a considerable degree by minute fissures, they are more liable to be broken down and crumbled by mechanical powers, than those of the rocks belonging to the first class. In districts where the fundamental rock is limestone, the layers of loose original soil or subsoil are thin, and filled with numerous fragments. As the soil arising from the disintegration of limestone contains a great proportion of calcareous matter, it is neither favourable to the growth of plants in general, nor to that of the greater number of vegetables which are the object of cultivation. Soil of this kind is too hot, dry and stony; hence the reason why districts, in which pure limestone rocks predominate, are often sterile. The case is different, however, where a portion of clay enters as an ingredient into the composition of calcareous rocks, for here the soil is usually very

* The Streams of Obsidian in Iceland, Lipari, Peak of Teneriffe, Ascension, and Mexico, afford striking examples of the fact stated above.