

and therefore stiff and cold. The *variegated sandstone*, with a marly cement, not unfrequently affords a pretty fertile soil; the *quadersandstein*, on the contrary, commonly presents a sandy and arid soil.

Lastly, in the eighth class we shall place those rocks, whether simple or intimately compounded, whose nature is so loose, or whose parts are so separated, that they fall with great facility into an earthy mass, and are also in part mechanically reduced by water. To this class belong the different varieties of *marl*, *slate-clay*, *basaltic* and *volcanic tuffa*. These rocks, many of which are extensively diffused, are of much importance in the formation of productive soil, although the quality of the earth produced by them varies much, according to their different natures. Slate-clay affords an argillaceous soil; in earth produced by the decomposition of marl, the clay is diminished in proportion to the greater abundance of the calcareous or sandy parts; while a mixed and very fertile soil is usually generated from basaltic and volcanic tufas.

The various relations which exist in the stratification and position of rocks, have much influence in producing a diversity in the soil formed immediately from their decomposition. This diversity cannot be so great when different rocks of various ages occur in a determinate order in horizontal strata; in which case, the uppermost bed may exhibit a great extent of surface of the same nature. When, on the other hand, strata of rocks of different natures, forms, and dimensions, placed at different angles of inclination, and in different directions, appear at the surface, it will easily be understood how it may