

down and mingled together. To these operations are to be attributed the various terminations of different soils at horizontal distances, as well as the different alternations of their strata at vertical ones. The power of water in the formation of transported soil varies, not only according to the different inclinations of its channel, but also in regard to the form, size, and weight of the parts carried off by it; for which reason, in the formation of such soils, the same phenomena take place on a large scale, that we see on a smaller, in performing the operations of breaking and washing the ores of metals. For the same reason that, in these processes, the larger particles subside, while the smaller are propelled, from which again the heavier particles of ore are sooner deposited than the lighter; in plains in the vicinity of a mountain, covered with transported soil, stones and debris are usually seen first, then earth, clay, and sand mixed together, and farther on, finer sand, with strata of clay.

Transported or secondary soil, produced by water, according to the mode of its formation, is divided into four classes, viz.—1. Soil of Valleys; 2. River Soil; 3. Lake Soil; 4. Marine Soil.

1. *Soil of Valleys*.—It is washed down by rain and snow water, and partly also produced by rivulets, which carry off the loose parts from the declivities of mountains to the plains. The nature of this soil in general clearly shews the nearness of its origin. Its depth is always greatest in the bottom of the valley, and gradually diminishes toward the declivities of the mountains. The curvature of the different strata is usually accommodated to the irregularity of its external form, so that when a