

limestone, siliceous nodules, segregations of oxide of iron, &c.

These recent deposits sometimes are laminated like the old rocks. De Luc notices, near Groningen and Enckhuysen, the division of the silt deposit into layers, by the annual growths of grassy turf buried in sediments. At Enckhuysen, he also observed between the layers ("couches") of sediment, *sand and shells*, and very justly calls attention to the value of this example of the different effects which may be occasioned by currents in the modern ocean, comparable to the appearances in the solid crust of the globe. (*Lettres sur l'Histoire de la Terre et de l'Homme*, vol. v. p. 289.)

The general result of atmospheric and fluviatile action is to equalise the levels of the land, to smooth and mask the original inequalities of the surface, partly to deepen, but principally to elevate the valleys. The sediments which remain on the course of rivers, are all more or less inclined, and thus, from their sources down to the sea, and into the sea, a series of inclined deposits, pebbly, sandy, argillaceous, and calcareous, may be always observed. These deposits are subject to much irregular wasting, by inundations and change of the river channels, while unconfined by art; when embanked, a new order of phenomena arises.

In rivers whose mouths are carried farther and farther continually into the sea, the moving force of the stream would be lost, did not the level of the water rise between the sea and the upland. In a state of nature, this may be sometimes accomplished by successive depositions of sediment over all the parts of a large surface; but there are many cases in which it is evident that rivers tend to embank themselves, by depositing along the sides of their channels a greater proportion of sediment than falls elsewhere. This effect is most striking along streams which bear gravel and coarse sand, as near Kirkby Lonsdale, and in all mountainous countries. Rivers which are forced by artificial barriers to flow in one channel, across a flat alluvial tract, to the sea, ever