

the less exposed points of the coast; in part also forming new banks and shoals in the adjoining channel of the sea. The agency of rivers is of a similar description; these, when their higher branches assume the force of wintry torrents, carry away sometimes in considerable quantity the looser materials of the soil through which they rush, but they deposit these materials again in the formation of alluvial flats and deltas near their mouths. The action of atmospheric causes, the frost by rifting and detaching portions of the outer surface of rocks, and the rain by washing the finer parts away, either contribute to the agency of the torrents, or accumulate the fragments detached in a slope or talus of debris, at the foot of the hills whence they are derived.*

These actions, however, appear to be circumscribed within very narrow limits; over a great part of the earth's surface the influence of these wasting causes is absolutely null, the mantle of green-sward that invests it being an effectual protection. The barrows of the aboriginal Britons, after a lapse of certainly little less, and in many instances probably more, than two decads of centuries, retain very generally all the pristine sharpness of their outline; nor is the slight fosse that sometimes surrounds them in any degree filled up. Causes, then, which in two thousand years have not affected in any perceptible manner these small tumuli, so often scattered in very exposed situations over the crests of our hills, can have exerted no very great influence on the mass of those hills themselves in any assignable portion of time, which even the imagination of a theorist can allow itself to conceive; and where circumstances are favourable to a greater degree of waste, still there is often a tendency to approach a maximum at which

* The results of these causes, that is to say the alluvial deltas formed at the mouth of rivers, and the talus of debris accumulated at the foot of precipices, may, from observations of their known increase within certain periods, be submitted to a species of retrograde calculation, by which we may reason as to the length of the total period during which these causes have operated under their present conditions; or (in other words) the period which has elapsed since the last great convulsion which has given to our continents their present general form. For instance, the alluvial tract at the mouth of the Po has been ascertained by observation to have a regular rate of increase in a century, and the line where this tract begins, against what must have been the original coast, is capable of being determined: these data afford, it is obvious, sufficient grounds for calculating the length of time requisite to produce the whole of this alluvial tract, and it is satisfactory to observe that the period thus deduced, agrees with that assignable to the deluge recorded by the inspired historian. These and similar phænomena have been designated by De Luc as geological chronometers. M. Cuvier has a very interesting chapter on this subject.