

furnish the speculative geologist with more accurate and applicable data than are commonly relied on. Among others, the aspect of the surface of the sand — its ripple marks, varying in an exact proportion to the depth of water and the direction of the wind — the numerous little valleys and rills which modify the slopes — the countless *prints* and seeming prints of the feet of birds — the trails of mollusca and annulosa, may suggest to the reasoning geologist *proofs* of the important truth, that all our laminated sandstones and flagstones were *littoral deposits*, — a point of departure for accurate inferences concerning the rising and falling of the level of the land, as compared with that of the sea.

It is hardly necessary to observe, that the *nature* of these deposits varies with that of the supply : near pebbly cliffs, the shore is a shingly beach ; low sandy cliffs, or a rough river, cause expanded breadths of sands sloping gently to the sea ; on an argillaceous coast, the bay may be full of sand, drifted by littoral currents, which very much modify all the ordinary results, and are the principal agents in first wasting the high ground, then filling up the low parts of the shore, and thus depositing new land, which subsists either by a natural defence of blown sand, gathered pebbles, or the prudent skill of the engineer, till some unheard-of storm returns to reclaim again the gradual gift of generous nature, or the bold theft of craving man.

The distance to which currents can transport solid matter in the ocean may be well illustrated by the action of the gulf stream which sweeps from the Guinea coast by the Gulf of Mexico, and then traverses so great a portion of the North Atlantic ; for it carries timber and tropical fruits within the influence of the littoral indraughts of Iceland, Norway, and Ireland. Captain Sabine's observations on the sea current of the Maranon show, that, at a distance of 300 miles from its mouth, the fresh water of that mighty river floats on the heavier water of the sea, and retains its earthy discoloration.