

shore, we shall find that it is formed of innumerable grains of quartz, and these grains are generally not angular, but more or less rounded: their edges having been worn off by the action of waves and tides moving them backwards and forwards upon each other, till they became grains, like water-worn pebbles in shape, only much smaller. Such material when consolidated forms sandstone.

Finer-grained and more muddy deposits, in like manner, are generally formed of the minutest grains of sand, mixed with aluminous substances originally derived from the waste perhaps of felspathic rocks. Such material, when soft, forms clay; when consolidated, marl shale and slate.

In this manner very large amounts of mechanical sediments are forming and have been formed. The daily sifting action of breakers, intensified during long-continued heavy gales, the forcible ejection of muddy waters, sometimes hundreds of miles out to sea, from the mouths of great rivers like the Amazons, the power of tidal and great ocean currents such as the Gulf Stream, all contribute to scatter sediments abroad, and by their rapid or more gradual subsidence, the bottoms of vast submarine areas are being covered by *mechanical sediments*, which must of necessity often be of great thickness, and in which various kinds of strata may alternate with each other.

With sufficient time all land would, by these processes of waste, be eventually degraded beneath the sea (as was suggested by the naturalist Ray), were it not that the loss is compensated by disturbance and elevation of land, always slowly taking place over portions of the continents and islands of the world. Large areas are also slowly depressed beneath the sea; but to