

ticity out into space, far above the tops of the highest mountains; yet, in virtue of its compressibility, so condensed (comparatively) in its lower strata as that one-third of its total ponderable mass lies within a mile of altitude above the sea-level—nearly one-half within two, and nearly two-thirds within five miles; within which latter limit the whole would be contained, were it everywhere of the same density as on the surface: so that only about one-third of its total mass is free to range, unimpeded by the crests of the highest Himalaya; and not much more than two-fifths can entirely clear the range of the Andes without pressure *à tergo*. In consequence, when driven in the state of WIND over these or other mountain ranges, it is thrown up into vast ripples or waves, which are propagated thenceforward onwards over indefinite areas of land or sea, and become no doubt the origin of a great part of those casual fluctuations of the barometer which give so much trouble to meteorologists.

(14.) This aërial ocean is not of the same temperature throughout, even in the same climate and over the same tract of country. It is everywhere warmer near the ground, colder aloft: and at very great heights a most intense cold always prevails; more intense than that of our severest winters. Hence the snow which covers the summits of lofty mountains even in the hottest climates. This relation between the temperatures existing below and aloft is not subverted by any amount of mutual admixture of the strata, such as internal movements or ascending currents would produce. On the contrary,