

which, under various forms, may generate ague and typhus fever (not by any means exclusively on wet, marshy ground, or on coasts covered by putrescent mollusca, and low bushes of *Rhizophora mangle* and *Avicennia*). Fogs, which have a peculiar smell at some seasons of the year, remind us of these accidental admixtures in the lower strata of the atmosphere. Winds and currents of air caused by the heating of the ground even carry up to a considerable elevation solid substances reduced to a fine powder. The dust which darkens the air for an extended area, and falls on the Cape Verd Islands, to which Darwin has drawn attention, contains, according to Ehrenberg's discovery, a host of silicious-shelled infusoria.

As principal features of a general descriptive picture of the atmosphere, we may enumerate :

1. *Variations of atmospheric pressure*: to which belong the horary oscillations, occurring with such regularity in the tropics, where they produce a kind of ebb and flow in the atmosphere, which can not be ascribed to the attraction of the moon,\* and which differs so considerably according to geographical latitude, the seasons of the year, and the elevation above the level of the sea.

2. *Climatic distribution of heat*, which depends on the relative position of the transparent and opaque masses (the fluid and solid parts of the surface of the earth), and on the hypsometrical configuration of continents; relations which determine the geographical position and curvature of the isothermal lines (or curves of equal mean annual temperature) both in a horizontal and vertical direction, or on a uniform plane, or in different superposed strata of air.

3. *The distribution of the humidity of the atmosphere*. The quantitative relations of the humidity depend on the differences in the solid and oceanic surfaces; on the distance from the equator and the level of the sea; on the form in which the

*la Composition Chimique des Végétaux*, p. 36, 42; Liebig, *Org. Chemie*, s. 229-345; Boussingault, *Econ. Rurale*, t. i., p. 142-153.

\* Bouvard, by the application of the formulæ, in 1827, which Laplace had deposited with the Board of Longitude shortly before his death, found that the portion of the horary oscillations of the pressure of the atmosphere, which depends on the attraction of the moon, can not raise the mercury in the barometer at Paris more than the 0.018 of a millimeter, while eleven years' observations at the same place show the mean barometric oscillation, from 9 A.M. to 3 P.M., to be 0.756 millim., and from 3 P.M. to 9 P.M., 0.373 millim. See *Mémoires de l'Acad. des Sciences*, t. vii., 1827, p. 267.