

condition of moisture of the atmosphere, by means of the difference of the *dew point* and of the temperature of the air. Temperature, atmospheric pressure, and the direction of the wind, are all intimately connected with the vivifying action of atmospheric moisture. This influence is not, however, so much a consequence of the quantity of moisture held in solution in different zones, as of the nature and frequency of the precipitation which moistens the ground, whether in the form of dew, mist, rain, or snow. According to the exposition made by Dove of the law of rotation, and to the general views of this distinguished physicist,* it would appear that, in our northern zone, "the elastic force of the vapor is greatest with a southwest, and least with a northeast wind. On the western side of the windrose this elasticity diminishes, while it increases on the eastern side; on the former side, for instance, the cold, dense, and dry current of air repels the warmer, lighter current containing an abundance of aqueous vapor, while on the eastern side it is the former current which is repulsed by the latter. The southwest is the equatorial current, while the northeast is the sole prevailing polar current."

The agreeable and fresh verdure which is observed in many trees in districts within the tropics, where, for five or seven months of the year, not a cloud is seen on the vault of heaven, and where no perceptible dew or rain falls, proves that the leaves are capable of extracting water from the atmosphere by a peculiar vital process of their own, which perhaps is not alone that of producing cold by radiation. The absence of rain in the arid plains of Cumana, Coro, and Ceara in North Brazil, forms a striking contrast to the quantity of rain which falls in some tropical regions, as, for instance, in the Havana, where it would appear, from the average of six years' observation by Ramon de la Sagra, the mean annual quantity of rain is 109 inches, equal to four or five times that which falls at Paris or at Geneva.† On the declivity of the Cordilleras,

* See Dove, *Meteorologische Vergleichung von Nordamerika und Europa*, in Schumacher's *Jahrbuch für 1841*, s. 311; and his *Meteorologische Untersuchungen*, s. 140.

† The mean annual quantity of rain that fell in Paris between 1805 and 1822 was found by Arago to be 20 inches; in London, between 1812 and 1827, it was determined by Howard at 25 inches; while at Geneva the mean of thirty-two years' observation was 30.5 inches. In Hindostan, near the coast, the quantity of rain is from 115 to 128 inches; and in the island of Cuba, fully 142 inches fell in the year 1821. With regard to the distribution of the quantity of rain in Central Europe, at different periods of the year, see the admirable researches of Gasparin, Schouw, and Bravais, in the *Bibliothèque Universelle*, t. xxxviii., p. 54