

We have here considered the cessation of the breezes as the principal cause of the equatorial rains. These rains in each hemisphere last only as long as the sun has its declination in that hemisphere. It is necessary to observe, that the absence of the breeze is not always succeeded by a dead calm; but that the calm is often interrupted, particularly along the western coast of America, by *bendavales*, or south-west and south-east winds. This phenomenon seems to demonstrate that the columns of humid air which rise in the northern equatorial zone, sometimes flow off toward the south pole. In fact, the countries situated in the torrid zone, both north and south of the equator, furnish, during their summer, while the sun is passing through their zenith, the maximum of difference of temperature with the air of the opposite pole. The southern temperate zone has its winter, while it rains on the north of the equator; and while a mean heat prevails from  $5^{\circ}$  to  $6^{\circ}$  greater than in the time of drought, when the sun is lower.\* The continuation of the rains, while the *bendavales* blow, proves that the currents from the remoter pole do not act in the northern equinoctial zone like the currents of the nearer pole, on account of the greater humidity of the southern polar current. The air, wafted by this current, comes from a hemisphere consisting almost entirely of water. It traverses all the southern equatorial zone to reach the parallel of  $8^{\circ}$  north latitude; and is consequently less dry, less cold, less adapted to act as a counter-current to renew the equinoctial air and prevent its saturation, than the northern polar current, or the breeze from the north-east.† We may suppose that the *bendavales* are impetuous winds which, on some coasts, for instance on that of Guatemala, (because they are not the effect of a regular and progressive descent of the air of the tropics towards the south pole, but they alternate with calms), are accompanied by electrical explosions, and are in fact squalls,

\* From the equator to  $10^{\circ}$  of north lat. the mean temperatures of the summer and winter months scarcely differ  $2^{\circ}$  or  $3^{\circ}$ ; but at the limits of the torrid zone, toward the tropic of Cancer, the difference amounts to  $8^{\circ}$  or  $9^{\circ}$ .

† In the two temperate zones the air loses its transparency every time that the wind blows from the opposite pole, that is to say, from the pole that has not the same denomination as the hemisphere in which the wind blows.