

nomenon much more complicated than most persons admit. In the Atlantic Ocean, the longitude, as well as the declination of the sun, influences the direction and limits of the trade-winds. In the direction of the New Continent, in both hemispheres, these limits extend beyond the tropics eight or nine degrees; while in the vicinity of Africa, the variable winds prevail far beyond the parallel of 28 or 27 degrees. It is to be regretted, on account of the progress of meteorology and navigation, that the changes of the currents of the equinoctial atmosphere in the Pacific are much less known than the variation of these same currents in a sea that is narrower, and influenced by the proximity of the coasts of Guinea and Brazil. The difference with which the strata of air flow back from the two poles towards the equator cannot be the same in every degree of longitude, that is to say, on points of the globe where the continents are of very different breadths, and where they stretch away more or less towards the poles.

It is known, that in the passage from Santa Cruz to Cumana, as in that from Acapulco to the Philippine Islands, seamen are scarcely ever under the necessity of working their sails. We pass those latitudes as if we were descending a river, and we might deem it no hazardous undertaking if we made the voyage in an open boat. Farther west, on the coast of St. Martha and in the Gulf of Mexico, the trade-wind blows impetuously, and renders the sea very stormy.*

The wind fell gradually the farther we receded from the African coast: it was sometimes smooth water for several hours, and these short calms were regularly interrupted by electrical phenomena. Black thick clouds, marked by strong outlines, rose on the east, and it seemed as if a squall would have forced us to hand our topsails; but the breeze fresh-

(adds he) that several phenomena, which are presented by the atmosphere and the ocean, especially the winds, may be explained by the polar currents."—Hooke's Posthumous Works, p. 364.

* The Spanish sailors call the rough trade-winds at Carthagena in the West Indies *los brisotes de Santa Martha*; and in the Gulf of Mexico, *las brizas pardas*. These latter winds are accompanied with a gray and cloudy sky.