

swept from west to east being almost null at the Poles, but very great at the Equator, it follows that the cold air, in proportion as it advances Tropic-wards, ought, at each step, to remain a little more in the rear at the west, or, which amounts to the same thing, ought to incline in that direction.

The cold Polar current, then, bends westward; and it is this circumstance which gives birth to the *North-east Trade Wind*, the prevailing wind of the northern hemisphere, and the *South-east Trade Wind*, the autocrat of the southern hemisphere. Even so the upper currents, which flow back to the Poles with equatorial speed, must

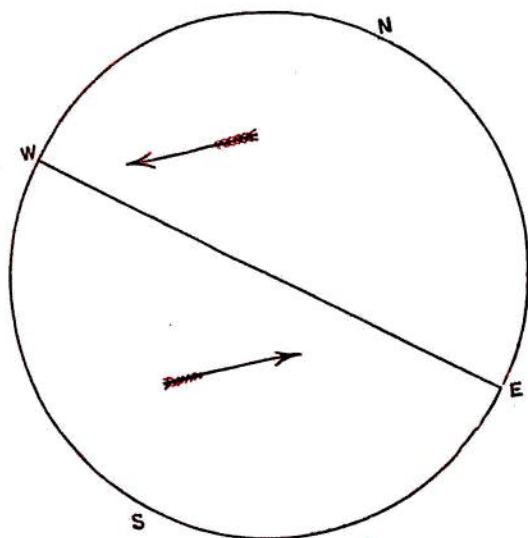


FIG. 213.—DIRECTION OF THE TRADE WINDS.

more and more outstrip those atmospheric strata, endowed with an inferior swiftness of rotation, which they encounter in the polar regions, and, consequently, must incline eastward: thus arise the counter south-west and north-west Trade Winds, which reign *above* the north-east and south-east Trades, and frequently weigh them down to the surface of the sea in the latitudes of the temperate zones.

The two Trades are separated from one another by a belt of unequal width, where their collision with the surface of the ocean eventually neutralizes their westerly impulse; in general, the aerial current is there directed only from *below* to *above*. This belt, which does not coincide exactly with the Equator, is called the *Zone of Calms*; but the navigator frequently encounters therein those aerial tempests and rotatory winds which are known as *cyclones* or *tornadoes*.

The Trade Winds, whose westward movement is retarded by the frictional resistance of the ocean waves, communicates to the latter, by re-action, a tendency which impels *them* towards the west, or,