

follow the directions of meridians, but are converted by its rotation on its axis and the gradual diminution of the rotatory velocity in advancing from the equator to the poles, into relatively oblique currents. The upper or outward follow precisely the reverse direction to the lower or inward, and being drawn downwards, and are ultimately brought down to the sea level, in their approach towards the poles to supply the void which would otherwise be left by the withdrawal of air below.* They thus become surface winds, prevalent in the regions beyond the tropics from about 30° of latitude either way.

(19.) In the view thus taken of the great and permanent system of winds known as the "trades" and "anti-trades," it will be observed that we have been careful to regard them as resulting not so much from the immediate (and diurnally intermittent) action of the sun, as in a certain established gradation of climatic temperature, the result of its action on the whole earth's surface continued through successive ages. Were the sun extinguished, the system of the trade winds would continue to subsist, though with diminishing intensity, so long as the equator continued in any degree warmer than the poles.

(20.) By the action of the trade winds which occupy

* Those of our readers who are not already familiar with the nature of this transformation, and who would wish to follow it out more closely, are referred (as well as for every other matter of detail in similar cases, precluded by our limits) to the article *Meteorology*, in the "*Encyclopædia Britannica*," or to the same article published separately by (A. & C. Black, Edinburgh) the editors of that work.