

occupies one of the *foci*. Now, it has been so arranged, that in the middle of our winter, the earth is in that part of its orbit, which is nearest to the sun. The earth, therefore, is, at Christmas, actually about three millions of miles nearer to the sun, than at Midsummer. Hence it might be inferred, that the temperature of the southern hemisphere, which during our winter is directly exposed to the sun, would be affected by this greater proximity. Such, however, is not the case; for this greater proximity to the sun, is almost exactly counterbalanced, by the swifter motion of the earth along this part of its orbit. The eccentricity of the earth's orbit, therefore, has little or no influence on its temperature, as at first sight might be supposed.*

The third great natural cause affecting the distribution of heat and light over the earth,

* Or, to quote the more precise explanation of Sir J. Herschel, "The momentary supply of heat received by the earth from the sun, varies in the exact proportion of the angular velocity, that is of the momentary increase of longitude. Hence the greater proximity of the sun in the winter, is exactly compensated for, by the earth's more rapid motion; and thus an equilibrium of heat is, as it were, maintained. Were it not for this, the eccentricity of the orbit would materially influence the transition of the seasons; and the effect would be, to exaggerate the difference of summer and winter in the southern hemisphere, and to moderate it in the northern; thus producing a more violent alternation of climate in the one hemisphere, and an approach to perpetual spring in the other. As it is, however, no such inequality subsists; but an equal and impartial distribution of heat and light is accorded to both." *Treatise on Astronomy*, p. 198, (Lardner's Cyclopædia).