

from the sun than when eccentricity is at a minimum, or about $8\frac{1}{2}$ millions further than its greatest distance now. The earth, therefore, in aphelion would be more than 14 millions of miles farther from the sun than when in perihelion, and if, in accordance with the precession of the equinoxes, it so happened that winter in the northern hemisphere took place when the earth is furthest from the sun, then by calculation it has been shown that 'the direct heat of the sun in winter would be one-fifth less during that season than at present, and in summer one-fifth greater.' But this extra amount of heat in summer would even less have sufficed to remove the snow and ice then, than it suffices to remove it from Victoria Land at the present day; for just as that region is all summer apt to be involved in clouds and fogs by vapours, due to partial evaporation of melting snow, even so on a greater scale the same effect must have been produced in old epochs, when greater glacial epochs took place alternately in the northern and southern hemispheres.

It was during part, or in parts of one of these periods, that great part of what is now the British Islands, was last almost entirely covered with ice, for, as I have already shown, similar phenomena are periodical, and have occurred in several old geological epochs. I do not say that our area consisted of islands during the whole of the last Glacial epoch, and probably during part of it they were united with the Continent, and the average level of the land may then have been somewhat higher than at present, by elevation of the whole, and also because since the first appearance of British glaciers it has suffered much degradation; but whether this was so or not, the mountains and much of the lowlands were long covered with a universal coating of ice, pro-