

September; at which epochs the plane of the terrestrial equator, if prolonged, would pass precisely through the centre of the Sun. [The two poles of the planet are then symmetrically placed with regard to the radiant body, and the circle of separation of the illuminated hemisphere and the dark hemisphere lies in a meridian. It results from this particular position that each part of the Earth, whatever its latitude, describes half the daily journey imposed on it by the Earth's rotation in shade, and half in sunshine. Thus, at the time of the equinoxes, as these two epochs are called, the length of the day is equal to that of the night all over the world. The Sun remains twelve hours above and twelve hours below the horizon.]

The great circle separating day and night, the illuminated from the darkened hemisphere, is called the "circle of illumination."

Figure 19, which represents the Ecliptic in a "front view," will illustrate the preceding observations.

On the 21st of December the north pole is in shade, and so continues throughout the period of one rotation of the Earth; the Sun does not appear on its horizon. On the 21st of June, it is the south pole which remains

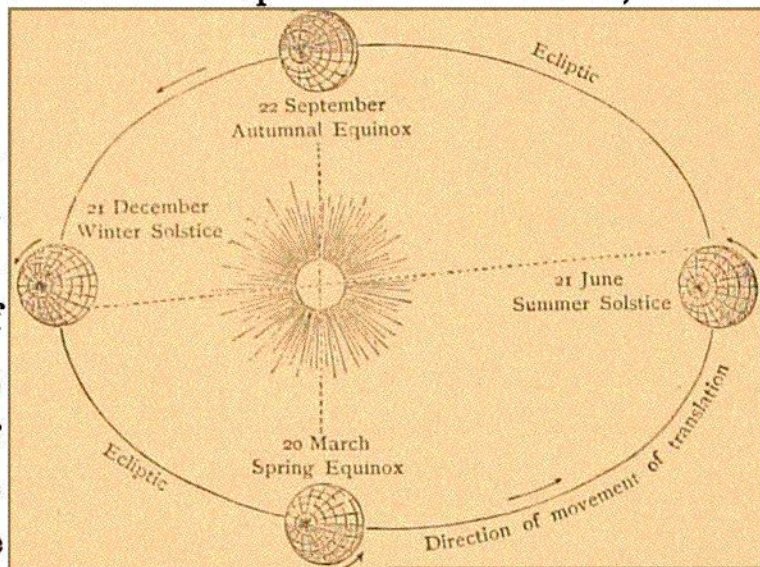


FIG. 19.—THE ECLIPTIC; SHOWING THE TERRESTRIAL SEASONS.

in obscurity, while the north pole continues illuminated throughout one rotation of the globe.* The north side of the Earth is then inclined towards the Sun, and the entire northern hemisphere continues longer exposed to the "darts of Apollo" than plunged in shadows; our days are, therefore, longer than our nights, and we bask in the genial influences of summer. The contrary is the case

* [Mr. Whympers, in his "Travels and Adventures in the Territory of Alaska," remarks that on the 21st of June the sun set at a few minutes after eleven, and rose at a quarter to twelve. "How near we were to the Arctic Circle," he says, "I leave to those who understand the subject; suffice it to say, the sun was absent from our gaze not over 45 minutes."]