STATE OF THE POLES.

spherical form of the globe, they exhibit great differences in the length of day and night. The sun, S, being placed at an assumed distance, it may be seen, that the ray A, proceeding from the sun to the Pole, P, from which the sun appears at an angle of 23° 28' above the horizon, cannot, by the diurnal motion of the earth, be either raised or depressed, as there is nothing in that situation to intercept it. But, in the latitude of 80°, and at the point B, at midnight, when the sun is under the Pole, the segment of the earth that lies between that latitude and the Pole will, by its convexity, reduce the altitude to 13°. At the Arctic Circle, C, at midnight, the segment contained between it and the Pole being equal to the altitude of the sun at that point, he will, of course, appear in the horizon. An observer, at the point D, on the Arctic Circle, will perceive the sun on the meridian, at an angle of 46° 56', with the horizon. But, when the observer is carried half round that circle, by the diurnal motion of the earth, which brings midnight, as at C, the sun will appear in the horizon; his depression being equal to the segment C P D (46° 56'). Hence it appears evident, that the altitude of the sun at midnight will increase as this segment becomes shortened, or, in other words, as you approach the Pole; and there, at the summer solstice, the segment

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