

its diurnal revolution, the stars will return to the relative places they before occupied ; and as the velocity of the earth's rotation is uniform, this will occur in equal times.

But let us suppose our observer to pursue his investigations a little more closely. He has already discovered that the stars apparently move in the arc of a circle, rising in the east and setting in the west. Towards the south there are some that just rise above the horizon, take a short arc, and disappear ; while towards the north there are some that never set, but revolve in very small circles around a point, which is called the north pole ; but this point is not marked by any star, although there is one so near to it, that the unassisted eye cannot discover its motion. As soon as the observer has ascertained these facts, he becomes conscious that there is one section of the celestial sphere that is hidden from his view ; for as there is a segment containing stars which never set, so there must be one in which stars revolve without rising, and these are called the south polar stars. To obtain a view of these, he must travel southward. As he proceeds on his journey, the north polar stars will approach the horizon, and the stars of the southern hemisphere will be proportionally raised. When he has reached that line on the surface of the earth called the equator, that is, an imaginary line dividing it into hemispheres, the poles will be in his horizon, and every star will appear to perform half its revolution above and half below his horizon, and no part of the heavens will be hidden from his view. And here we may suppose the inquiring traveller to be struck with the fact, that although the paths of the stars are so different in extent, those which rise exactly in the east having much the longest arcs, and those at the poles the shortest, yet every star is above the horizon for the same period of time. But if the observer still travel southward, the south pole of the heavens will be raised above his horizon, and the north pole will be depressed below it ; and when he is as near to the south pole of the earth as he was to the north pole at the commencement of his journey, the phenomena will be entirely reversed ; the south polar stars will never set, the north polar will never rise ; and if he could still travel southward and reach the pole itself, the stars would appear to revolve in circles parallel to the plane of his horizon, and to one another.

These results cannot fail to confirm the conviction, that