

February.) As the hours pass it will be noticed that while the stars hold the fixed positions stated in regard to each other, the position of the group as a whole changes with reference to the horizon. Three hours after the handle was pointed eastwards, it will be found directed upwards, and three hours later will point westwards. If, at the times of noting the position of the Dipper, a more or less general observation of the brighter and more remarkable of the other star groups has been made, it will be an easy matter to convince oneself that every star in the sky has been describing a circle, larger or smaller westwards, the circles described being smaller and smaller towards the north—until the eye is compelled to notice one particular star, which alone, of all the bright stars in the sky, maintains a fixed position no matter how long the vigil be kept up. This star will be found in the very same place night after night throughout the year, as well as hour after hour for any particular night. It marks one of the polar points of an axis, about which the celestial sphere revolves, and it is the *pole star*. It may be easily seen that a line joining the stars in the *front* of the Dipper, if produced, will pass nearly through the position of the pole star, and hence these stars are often called the *pointers*.

It is necessary to any intelligent conception of the stellar movements, that the phenomena just described be fully apprehended; but it is to another set of star groups that I wish to-night to ask your attention. Thus far we are supposed to have been directing our eyes northward. Let us turn our backs as exactly as we can to the position of the pole star, and so placed, look upwards and forwards. We are looking in the plane of our meridian, and if we look directly up to the zenith, we locate in the line of vision, a point on the celestial meridian just as far from the pole star (in circular degrees) as our angular distance from the pole of the earth—which for Ottawa is practically the same as our latitude, about 45° .

Measure off as well as you can towards the South, and in the line of the meridian, a second distance equal to this, and you are looking at a point in the equinoctial or celestial equator. The stars at this point are seen to describe the largest circle in their movement from the eastern to the western horizon. A particular interest attaches to the making