

diffracted. The sun itself appeared above the horizon about twenty minutes later. I can imagine a primitive people, seeing a flaming sword like this rising out of the horizon, would think that the last day had come. In fact, many myths have had their origin in such appearances, and nature myths have now come to be studied with more profit than formerly. An interesting paper on this subject alone could be written.

Conclusions. It may have already become evident to those who have followed closely the explanations of the different forms of halos thus far, that there are two positions in which the longer axes of the snow crystals commonly lie. We have found:—

1. Some with the prisms vertical.
2. Others with the prisms horizontal.

These two directions may even exist simultaneously, and it is in this way the cross-bars are formed in halos of reflexion, and the "mock-suns" and tangents in halos of refraction. It will be recalled that auroras adopt the same two directions, viz., the vertical streamers and the horizontal bands. We thus find a close parallel between the two classes of phenomena,—auroras and halos. The halos show us the electro-magnetic condition of the higher parts of the air at times when the light of the sun or the moon makes it impossible to see any aurora if it should be present. In other words, we are getting the same information, whether the sun or the moon is shining, or whether it is absent, and the two periods are the complements of each other and make the record almost continuous if we could always see the clear sky.*

*On the view that auroras and halos are indexes of atmospheric electrification, there should be a maximum of the solar halos between 9 and 10 a.m., corresponding with the maximum of the auroras about 9 or 10 p.m., the two coming simultaneously with the two maxima of daily electrification of the atmosphere occurring about those times of the day (12 hours apart) which latter so many investigators have shown. The solar halos I have noted, during a period of thirty years, have the ratio of 4 forenoon, to 3 afternoon, halos; but as I recorded only rarer forms, and did not make a complete census, the proof of a maximum of halos in the forenoon would not necessarily lie in this data. The trend, however, toward a forenoon maximum, is evident from the casual record I have made of the rarer forms, and in accordance with the maxima of atmospheric electrification.