as a quadrant of an ellipse (Fig. 5). The latter, at the time when it became possible for me to measure it, and when it was only a quadrant, had a distance of 30 degrees from the sun at the nearest part, but at the earlier time I had seen it almost entirely around

FIG. 5

Halo with quadrant of ellipse.

the sun, though just then I was unable to take its measurements. This ellipse was unusual in having the fluorescence on the inside, not on the outside as the primary circle has, the outside here being dark, and it was this circumstance that first called my attention to it as not being the first or primary circle itself. All signs of the ellipse disappeared by 2.15 p.m., and the circle with color remained for a short time afterward. Cirrus haze was abundant, and then clouds.

Prof. Cherriman mentioned a halo seen at the Toronto Observatory on March 9, 1841, having a radius of 30 degrees, which agrees as to its angle with the observation I made on June 9, 1917. (See "On the Atmospheric Phenomena of Light," *Canadian Journal* (First series), Vol. 1, p. 27.)

But Dr. Besson mentions several halos of abnormal radius