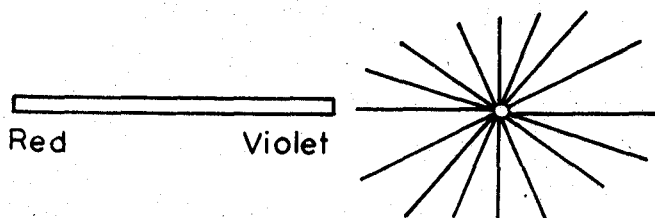


## The "radiant" spectrum

The title refers to an interesting optical effect observed and described many years ago by Sir David Brewster (*Philos. Mag.*, September, 1867), which appears, however, never to have been satisfactorily explained. When a small brilliant source of light is viewed through a prism held in front of the eye, a remarkable appearance is noticed, represented roughly in the accompanying diagram (figure 1). In the continuation of the spectrum of the source, but considerably



beyond its violet end, is seen a patch of light consisting of streamers radiating from a centre, as shown. A brief statement on the cause of this effect, as determined in an investigation made by me, may be of interest to readers of *Nature (London)*.

The phenomenon is due to the diffraction of light in its passage through the eye by the corneal corpuscles. Were there no prior dispersion of the light by the prism, the diffraction-halo would appear to consist of streamers surrounding the source and radiating from it directly. The effect of the dispersion on the diffraction-halo is to shift its achromatic centre towards the side of the shorter wavelengths—in fact, to a point lying considerably beyond the violet of the spectrum of the source, exactly as observed. The streamers in the halo really consist of elongated diffraction-spectra, and the effect of the prism is to reorient them, so that they now appear to diverge from the altered position of the achromatic centre. This explanation of Brewster's phenomenon is strikingly confirmed by the fact that very similar effects may be observed in the diffraction-halo due to a glass plate dusted with lycopodium, when held in front of the eye along with a 60° glass prism.

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12 August