

pleasing appearances will be witnessed. To see them to the greatest advantage, a magnifying glass should be used, *placing the eye in the place of the screen, and looking through the glass at the fringes and images of the holes as if they were real objects in its focus.*

(109.) When the system of apertures examined consists of a great multitude of exceedingly narrow parallel slits, precisely equal and equidistant, they constitute what is called a "diffractive grating," and present very curious, and in some cases brilliant, phænomena, which are best viewed by placing the eye close behind the grating. The luminous point (which appears colourless) is then seen accompanied laterally and on either side by a succession of highly coloured spectra, arranged in a line passing through it, and with their lengths directed along that line; their colours, unlike those of the fringes (which are composite) are the pure unmingled hues of the prismatic spectrum: even more vivid (if the grating be delicately executed) than the best spectrum which can be formed by refracting a sunbeam through a prism; and exceedingly remarkable in another respect, viz., that the proportional lengths of the coloured spaces in each, instead of depending, as in the case of the spectrum formed by a prism, on the nature of the particular medium of which the prism consists, is independent of any such consideration, and determined solely by the proportion between the wave-lengths corresponding to the colours of the rays. They are, therefore, what may be called *normal spectra*. So pure and undiluted indeed are their tints, that by the aid of a magnifying telescope