

nary sensibility, for the purpose of observing very faint celestial objects. It often happened to him, when, in a fine winter's night, and in the absence of the moon, he was occupied during four, five, or six hours in taking sweeps of the heavens with his telescope, that, by excluding from the eye the light of surrounding objects, by means of a black hood, the sensibility of the retina was so much increased, that when a star of the third magnitude approached the field of view, he found it necessary immediately to withdraw his eye, in order to preserve its powers. He relates that on one occasion the appearance of Sirius announced itself in the field of the telescope like the dawn of the morning, increasing by degrees in brightness, till the star at last presented itself with all the splendour of the rising sun, obliging him quickly to retreat from the beautiful but overpowering spectacle.

The peculiar construction of the organ of vision allows of our distinguishing the effects of impressions made on particular parts of the retina from those made on the rest, and from their general effect on the whole surface. These partial variations of sensibility in the retina give rise to the phenomena of *ocular spectra*, as they are called, which were first noticed by Buffon, and afterwards more fully investigated by Dr. Robert Darwin. A white object on a dark ground, after being viewed steadfastly till the eye has become fatigued, produces, when the eye is immediately directed to another field of view, a spectrum of a darker colour than the surrounding space, in consequence of the exhaustion of that portion of the retina on which its image had been impressed. The converse takes place, when the eye, after having been steadfastly directed to a black object on a light ground, is transferred to another part of the same field; and in this case a bright spectrum of the object is seen.

It is a still more curious fact that the sensibility of the retina to any particular kind of light, may, in like manner, be increased or diminished, without any change taking place in its sensibility to other kinds of light. Hence the spectrum