

have this effect for its main object. And this mechanism necessarily supposes certain corresponding properties in light itself, by means of which such an effect becomes possible.

The main properties of light which are concerned in this arrangement, are *reflexion* and *refraction*: reflexion by which light is reflected and scattered by all objects, and thus comes to the eye from all: and refraction, by which its course is bent, when it passes obliquely out of one transparent medium into another; and by which, consequently, convex transparent substances, such as the cornea and humours of the eye, possess the power of making the light converge to a *focus* or point; an assemblage of such points forming the images on the retina, which we have mentioned.

Reflexion and refraction are therefore the essential and indispensable properties of light; and so far as we can understand, it appears that it was necessary that light should possess such properties, in order that it might form a medium of communication between man and the external world. We may consider its power of passing through transparent media (as air) to be given in order that it may enlighten the earth; its affection of reflexion, for the purpose of making colours visible; and its refraction to be bestowed, that it may enable us to discriminate figure and position, by means of the lenses of the eye.

In this manner light may be considered as constituted with a peculiar reference to the eyes of animals, and its leading properties may be looked upon as contrivances or adaptations to fit it for its visual office. And in such a point of view the perfection of the contrivance or adaptation must be allowed to be very remarkable.

3. But besides the properties of reflexion and refraction, the most obvious laws of light, an extraordinary variety of phenomena have lately been discovered, regulated by other laws of the most curious kind, uniting great complexity with great symmetry. We refer to the phenomena of diffraction, polarisa-