

their bodies has come into contact with the atmosphere.\* But, in all these instances a doubt may arise whether the observed actions may not be prompted by the mere sensation of warmth excited by the calorific rays which accompany those of light; in which case they would be evidence only of the operation of a finer kind of touch.

The first unequivocal appearance of visual organs is met with in the class of Annelida; although the researches of Ehrenberg would induce us to believe that they may be traced among animals yet lower in the scale; for he has noticed them in several of the more highly organized Infusoria, belonging to the order Rotifera, and particularly in the *Hydatina senta*, where he has found the small black points observable in other species, united into a single spot of larger size. Nitsch, also, states that the *Cercaria viridis* possesses three organs of this kind. *Planariæ* present two or three spots, which have been regarded as visual organs; and these have been found by Baer to be composed, in the *Planaria torva*, of clusters of black grains, situated underneath the white or transparent integument.† The eyes of the *Nais proboscidea* are composed, according to Gruithuisen, simply of a small mass of black pigment, attached to the extremity of the optic nerve;‡ and organs apparently similar to these are met with in many of the inferior tribes of Annelida. In all these cases it is a matter of considerable doubt whether the visual organs are constructed with any other intention than merely to convey general sensations of light, without exciting distinct perceptions of the objects themselves from which the light proceeds; this latter purpose requiring, as we have seen, a special optical apparatus of some degree of complexity. An approach to the formation of a crystalline lens takes place in the genus *Eunice* of Cuvier, (*Lycoris*, Sav.) which, from the

\* Grant; Edin. Journal of Science: No. 20.

† Nov. Act. Acad. Nat. Cur. of Bonn, xiii. 712. See also the Memoir of Dugès, entitled "Recherches sur l'Organisation et les Mœurs des Planaires," in the Annales des Sc. Nat. xv. 148.

‡ Nov. Act. Acad. Nat. Cur. of Bonn, xi. 242.