

hem, and even the choroid, which presents itself in the form of a black ring around the crystalline lens. Many insects, in their caterpillar state, also have simple eyes.

85. Rudiments of eyes have been observed in very many of the worms. They generally appear as small black spots on the head; such as are seen on the head of the Leech, the Planaria and the Nereis. In these latter animals there are four spots. According to Müller, they are small bodies, rounded behind, and flattened in front, composed of a black, cup-shaped membrane, containing a small white, opaque body, which seems to be a continuation of the optic nerve. It cannot be doubted, therefore, that these are eyes; but as they lack the optical apparatus which produces images, we must suppose that they can only receive a general impression of light, without the power of discerning objects.

86. Eye-spots, very similar to those of the Nereis, are found at the extremity of the rays of some of the star-fishes, in the sea-urchins, at the margin of many Medusæ, and in some Polypi. Ehrenberg has shown that similar spots also exist in a large number of the Infusoria.

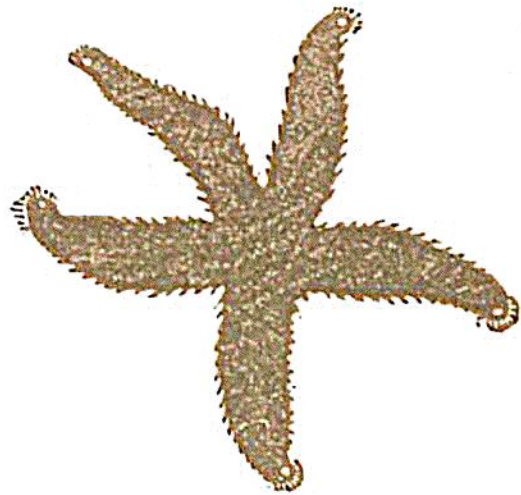


Fig. 17.

87. In all the above-mentioned animals, the eyes, whatever their number, are apart from each other. But there is still another type of simple eyes, known as *aggregate eyes*. In some of the millipedes, the pill-bugs, for instance, the eyes are collected into groups, like those of spiders; each eye inclosing a crystalline lens and a vitreous body, surrounded by a retina and choroid. Such eyes consequently form a