The ocelli vary greatly both as regards number and complexity of structure. In some genera they are absent, as, for instance, in *Pelagia, Cyαnea* and *Rhizostoma.* In *Aurelia,* there are two on each rhopalium, a simple ocellus on the exumbral side, and a cupped ocellus on the subumbral side (not present in young individuals). In *Charybdaea* there are no less than six ocelli on each of the four rhopalia (fig. 7) ;

on the exumbral aspect there are two median ocelli (*oc*1, *oc*2), a distal and a proximal, each of them a vesiculate ocellus with a lens, and on the sides of the rhopalium are two

Îîairs of ocelli without enses (*oc. l*) ; sometimes also an additional seventh ocellus occurs, a pit-like structure without a lens, either between the two median ocelli, or placed asymmetrically near the median proximal ocellus.

The ocelli consist, as in Hydromedusae, of two kinds of elements:

(1) visual cells, sensory

ectodermal cells, which may develop terminal visual cones; (2) pigment-cells, usually ectodermal, but in one known instance endodermal. The simplest type of ocellus is exemplified by the exumbral ocellus of *Aurelia,* a simple patch of pigment-cells interspersed with visual cells, the whole on a level with the remaining ectodermal epithelium. In the next stage of complication, seen in the supernumerary (seventh) ocellus of *Charybdaea,* the patch of pigmented and sensory epithelium is pushed in to form a little pit, in the

interior of which the pigment-cells secrete a gelatinous substance forming a rudimentary vitreous body. As a further advance, the pit becomes widened out into a cup, as in the lateral ocelli of *Charybdaea.* The culminating stage of evolution is seen in the median ocelli of *Charybdaea* (fig. 8); the primitively open cup has now closed over to form a vesicle lying beneath the ectoderm ; the outer wall of the vesicle becomes thickened to form a cellular lens (Z), while the proximal wall consists of sensory and pigmented cells and forms a retina. In this way the ocellus becomes a true eye, very similar in plan to the eyes of Gastropods and other molluscs. The ectoderm continued over the optic vesicle forms a transparent cornea (fig. 8, *c*) (better perhaps termed a conjunctiva), below which the spherical lens projects into the optic vesicle, imbedded in the vitreous humour (*v.b*) which fills it; the retina (r) consists of visual cells with long cones (fig. 9) alternating with pigment-cells. The high development of the eyes of *Charybdaea* is very remarkable, and so is their close resemblance to the eyes found in other groups of the animal kingdom, with which they can have no genetic relation. Highly developed

eyes, with ectodermal pigment and lens, are found also on the rhopalia of *Paraphyllina* (Maas [8]).

The subumbral ocellus of *Aurelia* is found to be of the inverted type, with the visual cones turned away from the light, as in *Tiaropsis* amongst Hydromedusae, and here also the pigment is furnished by the endoderm, forming a cup into

which the ectodermal visual

cells project (Schewiakoff

[13]).

In the Stauromedusae tentaculocysts are either absent altogether, as in *Lucernaria,* or represented by peculiar structures termed “ colletocystophores ” or “marginal anchors” (fig. l,

IV.). Each such body has a basal hollow portion *(en)* surmounted by a glandular cushion (*kl*), from the centre of which projects a small, solid, club-shaped process or tentacle (*t'*). The basal por- tion bears an ocellus *(oc)* of simple structure. The distal club corresponds to the crystal-sac of an ordinary rhopalium, but bears a battery of nematocysts in place of the otoliths. These organs are said to be used for purposes of adherence rather than to have the function of sense- organs.

The histological structure of the Scyphomedusae is in the main similar to that of the Hydromedusae *(q.v.),* but the mesogloea is more abundantly developed in the free-swimming forms, and contains special mesogloeal corpuscles, derived by immigration from the ectoderm, and generally occurring in the form of stellate or bipolar cells.

*Development of the Scyphomedusae.—*No adult Scyphomedusae are known to reproduce themselves by budding or by any method other than the sexual one. The course of the development in this group is best made clear by taking as a type *Aurelia,* which, together with certain other common genera, such as *Chrysaora* and *Cotylorhiζa,* has been studied in detail. Unfortunately the statements concerning some points are very contradictory.

The ova pass out of the mouth and are fertilized externally. In some cases the ova, after leaving the mouth, are lodged in the oral arms, and undergo the earliest phases of their development in this situation, accumulating in the grooves that continue the angles of the mouth, and bulging the wall of the groove into sacs or pockets.