

(Pl. XXI. fig. 3). When the same (tangential) section passes through the lateral part of the eye another structure is observed (Pl. XXI. fig. 2), viz., a mass of reticular tissue, with numerous ganglion cells in its meshes, not unlike but a little smaller than those between the rods of the retina. Empty cavities, from which, perhaps, ganglion cells have dropped, are observed in it. A horizontal section of one of the eyes of *Nymphon strömii* (Pl. XXI. fig. 1) shows the arrangement of these parts in the interior of the eye. The middle part is that occupied by the retinal rods, which here have large ganglion cells at their extremities, and a distinct mass of reticular tissue, separated from the retinal rods by a thin membrane (?), is observed laterally. The dimensions of the ganglion cells placed in the meshes of this reticular tissue in *Nymphon brachyrhynchus* are almost the same as those observed between the retinal rods; but in *Nymphon strömii* the ganglion cells which are found at the extremities of the retinal rods are much larger. In regard to the minute structure of these ganglion cells I have hardly any observations worthy of being mentioned. The cells are always furnished with a distinct nucleus, and their contents, as a rule, are granular. Those I observed between the rods of *Nymphon brachyrhynchus* are furnished with one filament directed towards the lens.

The conclusions I have arrived at with regard to the anatomy of the organs of vision in the Challenger Pycnogonids may be summarised as follows:—

- (1.) A vitreous body, developed out of the cuticular epithelium (hypodermis), does not exist.
- (2.) The epithelium cells are present under the lens of the eyes in the same condition as under the cuticula in general.
- (3.) The retina consists of distinct rods and ganglion cells. Numerous ganglion cells, placed in the meshes of a reticular tissue, form a mass, which encloses the interior of the eye occupied by the rods.
- (4.) The ends of the retinal rods reach the cuticular lens. A præretinal interlamella seems not to exist.
- (5.) The retinal rods can not be considered as having resulted from transformed hypodermic cells.
- (6.) The retinal rods have two parts—an innermost thicker part and a filamentary appendage.
- (7.) The eye is surrounded by a chitinous cuticula.

4. *Alimentary Canal and its Appendages*.—I only occasionally got preparations of the alimentary canal; therefore what I have observed in regard to this organ is far from exhaustive.

Physiologically, this is perhaps the most interesting organ of all, and, morphologically, its signification is by no means small, as its structure has, along with the number