

One peculiarity, finally, deserving special mention is the presence in the majority of well-preserved specimens of Hoplonemertea of a medio-dorsal longitudinal nerve homologous to the medullary nerve described above (*cf.* p. 81, and Pl. XI. fig. 8). Its connection with the rest of the nervous system could not be satisfactorily made out, although traces of a connection with the dorsal brain commissure were not wanting in many specimens. Its presence is, however, significant, and its retention in the Hoplonemertea, where the arrangement of the nerve-system has so considerably deviated from the primitive Palæonemertea and Schizonemertea, must prevent us from underrating its morphological significance. This will be more fully entered into in the chapter of General Considerations at the end of this Report.

SENSE-ORGANS, ACCESSORY GLANDULAR STRUCTURES, AND ORGANS OF UNKNOWN SIGNIFICANCE.

The most conspicuous sense-organs of the Nemertea are without doubt the eyes. Although eyes are absent in very many genera and species, and although in some species pigment spots at the tip of the snout are regarded as such, other genera have very well-marked and numerous eyes, with a hyaline hemispherical refractive body, a layer of visual rods, and an optic nerve connecting the eye with the brain-lobes. These more highly-developed eyes were previously known to occur in the Hoplonemertea, and the Challenger material has confirmed these general conclusions. The most primitive of the Palæonemertea, *Carinina*, is not provided with eyes. Nor do I find traces of eyes in those species of *Eupolia* which were contained in the collection, and of which the head was studied in sections. *Eupolia giardii* is among these. However, it is known from other researches (VII) that different species of *Eupolia* have often very numerous eyes, increasing in number with the growth and the age of the animal, and, moreover, that these eyes resemble those of the Hoplonemertea in many respects. Nor were the Schizonemertea of the Challenger provided with eyes that revealed their presence in the microscopic sections, although I would not venture to affirm the total absence of eye-like structures or pigment spots. In this respect the fresh animal often shows at a glance what is very difficult to demonstrate in the series of sections, *e.g.*, the number and disposition of the eyes or pigment spots. As, moreover, these data can hardly be of any taxonomic value for the determination of the Schizonemertea, I think I may pass on to the discussion of the eyes of the Challenger Hoplonemertea.

They have the characteristic histological arrangement already described and figured by myself in a former publication on the subject (IX, fig. 42). A posterior layer of rod-like elements, which is in direct connection with the optic nerve, is enclosed by pigment,