

antennal somite, which in the *Brachyura* and *Macrura* is generally closely fused with the two succeeding.

The ophthalmopoda undergo various modifications of form throughout the order, but the most common condition is that of a pair of pyriform or subcylindrical appendages, the peduncles, each of which generally slightly enlarges towards the distal extremity, where it supports a reniform or hemispherical pigmented organ of vision, the ophthalmus; at the base the peduncle abruptly narrows and is supported on a slender pedicle, which varies in length, as may be observed by comparing that in the genus *Eretmocarid* (Pl. CXLV.) with that in *Palæmon* or *Astacus*, where the pedicle almost disappears. In *Alpheus* and its congeners, *Athanas* and *Cheirothrix* (Pl. XCVI. fig. 2a), the peduncle also undergoes diminution.

This pair of appendages is thus shown to be liable to undergo various changes in each of its parts, and these changes have a tendency to be associated more or less exclusively with the several divisions of the order.

Among the Trichobranchiata the ophthalmopoda are generally short and supported on a pedicle that is only sufficiently long to admit of the free motion of the peduncle, whereas the ophthalmus is generally hemispherical or reniform, the most normal condition being seen in *Homarus*, *Nephrops*, *Astacus*, and *Palinurus*, and the greatest departure may be found in the young of the last and in the aborted condition seen in *Willemæsia* and its congeners.

In the *Phyllosoma* shown on Pl. XIIA., whether it be the young of some one of the Palinuridæ or of the Scyllaridæ, the ophthalmopod, a short period after hatching, is projected on an extremely long pedicle, which is the more remarkable inasmuch as both in the brephalos condition (Pl. XIIA. fig. 1) as well as in the adult stage the organ is short and the pedicle reduced to the smallest condition consistent with free movement.

In *Phoberus* the ophthalmopoda are reduced to two small slightly movable processes, with a small globular ophthalmus, as they are also in *Nephropsis*, while in the aberrant genus *Thaumastocheles* they are absent altogether, or only represented by two small fixed calcified points.

During the expedition of the "Travailleur" A. Milne-Edwards took a species that he named *Richardina spinicincta*, in which the ophthalmopod is reduced to a sightless globe, surmounted by three strong teeth, and in a specimen of *Palinurus* he found that from the middle of the eye a multiarticulate appendage was produced.¹ According to Leydig² the eyes of *Cambarus pellucidus* (Tellkamp) have neither pigment, rods (bacilli), nor cones, and that while they differ in the adult condition from those in the more normal species, they are comparatively larger in the young than in the adult

¹ *Comptes rendus*, tom. lix. p. 710, 1864.

² *Untersuchungen zur Anat. und Histologie der Thiere*, 1883.