

still stronger support to this view. Kröyer has figured the young of several species in his *Tidsskrift*, vol. iii., and has given other figures in the *Crustacea of the Scandinavian Voyage*. The early young have three pairs of appendages, like those of *Caligus* and the *Cyclopoidea*; and as in those groups, the first pair is evidently second-antennary. The figures show that it is plainly anterior or superior to the trunk or mouth. Moreover, the organs have the chelate form found in adults, so that there is no doubt as to their being the same organs in the two.

The common idea that these organs are mandibular is unsustained by any observations. Before admitting this as their character, it would be necessary to discover that the base or a process from it contributes to the mandibular function within the trunk. But of this there is no proof, and more than this, there is no reason to suspect it. There is no instance of a mandible becoming so completely a leg, as to lose wholly the mandibular function, even of its basal portion; this would be a violation of analogy. Even in *Limulus*, where the transformation of the mandible is most complete, the basal joint retains the mandibular character. Neither have we better evidence that the organs are maxillary.

The *second pair of appendages* arises from alongside of the first, and so closely upon the same base, that one has been called the palpus to the other. In some cases the cephalic segment projects either side, like the thoracic segments, and upon this projection or common base stands the chelate organ and its so-called palpus; and Goodsir figures a species, which he calls *Pepredo capillata*, with the palpus arising from the side of the first joint of the chelate branch.* There is reason, therefore, for considering the second organ as a part of the first, and so we deem it. It appears to be the accessory branch, similar to what occurs in many *Cyclopoidea* and other *Entomostraca*. In *Argulus*, there are the two branches similarly related; the anterior is prehensile and like the second antenna in *Caligus*, while the posterior is palpiform.

We therefore conclude, that both organs are parts of a pair of antennæ, and normally the second antennæ, those of the first pair, as in *Argulus*, being wanting.

The *third pair of appendages* of the same segment, are evidently

* Jameson's Jour., xxxii. pl. 3, fig. 9.