

The mandibles in some genera are two-jointed (*Nymphon*, *Pallene*, &c.), in others three-jointed (*Phoxichilidium*). As a rule the second or third joint terminates in a pair of pincers, with a movable and an immovable claw. Now there are genera, some species of which show the mandibles small, yet furnished with true pincers, whereas other species of the same genus show the mandibles in a much more rudimentary state, as if, for instance, represented only by a single joint terminating abruptly (*Ascorhynchus glaber*, Hoek, and *A. minutus*, Hoek). In other genera the mandibles are in the adult animal always rudimentary, represented only by short stumps (*Lecithorhynchus*, Böhm, *Oorhynchus*, Hoek, &c.); whereas in a fourth category the mandibles have totally disappeared (*Colossendeis*, *Phoxichilus*, *Pycnogonum*, &c.). Among the specimens of a species of one of these genera (*Colossendeis gracilis*, Hoek), dredged during the cruise of H.M.S. Challenger, I have, however, found one specimen furnished with a pair of distinctly three-jointed mandibles, terminating in a pair of pincers; and this specimen was the largest of the three obtained.

The palpi when present show very different numbers of joints. Thus there are only three in *Pepredo*, five in *Nymphon* and *Discoarachne*, eight in *Achelia*, nine in *Ammothea* and *Corniger*, ten in *Ascorhynchus*, *Colossendeis*, &c. The palpi have disappeared in the genera *Pallene*, *Phoxichilidium*, *Phoxichilus*, *Pycnogonum*, &c. In *Phoxichilidium* they are as a rule still represented by rounded lateral processes placed at both sides of the front part of the cephalothorax, whereas Böhm has observed a specimen of *Pallene* furnished with rudimentary, yet distinct two-jointed palpi.

The third pair of appendages, viz., the ovigerous legs, are never wanting in any species of Pycnogonids. Among the Pycnogonids of the Challenger, there is not even a single specimen without ovigerous legs! As a rule they are ten-jointed; the first three joints are extremely small, the two following are the longest of all, the sixth joint is a great deal shorter, the last four joints are much shorter still, the tenth joint as a rule is furnished with a claw. In some genera (*Colossendeis*, e.g.) the fifth joint is small, the sixth as long as the fourth joint. In those genera, where a certain tendency is observed to drop their cephalic appendages, the ovigerous legs share this fate only to a small extent. As the functions of the ovigerous legs are twofold, one being to bear the eggs, a function only accomplished by the male,¹ the other to serve as an organ of feeling, also, in all probability, of seizing the food, and as the latter of these functions is almost identical with that of the other cephalic appendages, it is quite natural, I believe, that, whereas the males are never seen without these appendages, they are wanting in the females only of those genera which have also lost their other cephalic appendages. Finally, it is evident, that the males of those latter genera ought to show the ovigerous legs in such a rudimentary state, as to be fit only for the ovigerous function.

Dorsally the front part of the cephalothorax bears the oculiferous tubercle; although

¹ Hereafter I will show that this rule admits of an exception. See under *Nymphon brevicaudatum*, Miers.