tion being due to the coalescence of the meros and ischium into one, and the absence of the dactylos.

In *Glyphocrangon* (Pl. XCII. fig. *i*), *Spirontocaris* (Pl. CVII. fig. *i*), and *Nauticaris* (Pl. CVIII. fig. *i*) there appear to be only four joints, a fact that is due to the fusion of the basis with the ischium and meros.

The coxa of this appendage I believe invariably supports a small and rudimentary mastigobranchia, but it only in certain forms carries a podobranchial plume which is attached to this pair of gnathopoda in all the Trichobranchiata, excepting the family Eryonidæ.

In the Dendrobranchiata it is absent in *Penæus* and its nearer congeners, but it is present in the deep-sea forms, such as *Aristeus*, *Benthesicymus*, and its near allies; and it is rudimentary in *Haliporus*.

In the Phyllobranchiata there never is a branchial plume attached to this pair of appendages, excepting in the fresh-water genus *Atya*.

This same appendage has an ecphysis almost universally attached to the basis, although in some instances, as in *Spongicola*, it is reduced to a rudimentary condition (Pl. XXVIII. fig. *i*), and sometimes it is wanting altogether as in *Nauticaris marionis* (Pl. CVIII. fig. *i*).

In this division the apical termination is generally truncate and armed with spines; in some genera, as in *Pontonia*, *Acanthephyra*, *Palæmon*, and *Paralpheus*, it tapers to a point; in *Notostomus* it is obliquely truncate and pointed, while in *Nematocarcinus* it is spatuliform.

The First Pereiopoda.—The first pair of pereiopoda varies very considerably in form, power, and function. In all the genera of the Trichobranchiata it is the largest and most powerful of the pereiopoda, and excepting in the Synaxidea, and their parallel representatives the Haplopodea among the Phyllobranchiata, it is always chelate, and in these tribes it is frequently subchelate. It is often of too great a length to be of use as an organ for carrying food to the mouth; I believe it is generally only capable of being used for the purpose of holding food while the smaller hands are tearing it off, and carrying it to the mouth. In this way the Prawns and Lobsters feed. I also believe that the great weight adds to the power of the first pair of pereiopoda, and is of further value in assisting to retain or steady the animal, when, by its seizing some fixed body, it is thus prevented from being easily floated away.

It is, I think, by observing the habits of animals in ordinary conditions, that we are enabled to appreciate the value of extraordinary forms in exceptional circumstances. Thus in *Thaumastocheles zaleuca* the first pair of pereiopoda, with its long comb-like fingers, is perfectly useless for conveying food to the mouth, and can only aid the animal in the way that the Prawn uses its long second pair of feet, and the Soldier Crab