or in its absence altogether, even in the adult stage; in every case where it is present it is reduced in size or rudimentary.

In *Palæmon*, *Pandalus*, *Nauticaris*, and *Heterocarpus* it is three-jointed; in *Paralpheus* it is one-jointed; in *Alpheus*, *Synalpheus*, and *Spirontocaris* it is two-jointed; in *Hippolyte* it is wanting, as it is also in *Crangon*, *Nika*, *Gnathoptylus*, *Lysmata*, *Pontonia*, *Atya*, *Caridina*, *Ephyra?* (de Haan *not* Roux), and *Pasiphæa*.

The psalistoma is very variable in form in different species or genera. In its most characteristic form it appears as a large concavo-convex blade, with a more or less serrate margin which is generally rounded. In some genera the shape of this part is modified; in others it is diminished more or less conspicuously in size; while in others it disappears altogether. The greatest variation exists perhaps in the Phyllobranchiata, and it is rarely present when the synaphipod is absent. The molar process, on the other hand, exists, I believe, universally throughout the higher Crustacea, as a well-developed organ, and it may be seen in the genus *Crangon* and some near allies without connection with the psalistoma or synaphipod, which generally form parts of the normal mandibles of the Macrura (Pl. LXXXVI. fig. 1*d*).

In *Crangon* and most of the Phyllobranchiata the mandibles are deeply inserted within the oral aperture, whereas in the Trichobranchiata, more especially in the Palinuridæ, they are placed at the entrance of the oral tract so superficially that the outer surface of the apophysis is exposed and frequently matted with short hairs.

Fig. XII.—First Siagnopod.

The First Siagnopoda.—The first pair of siagnopoda, frequently known as the first pair of maxillæ, is perhaps amongst the most unchanging of the appendages. It consists generally of three branches, which are always small and of great tenuity; two of the branches, are directed inwards, these are broad and spoon-shaped, and have the inner margins fringed with hairs, more or less densely packed, these hairs often increase in strength without gaining in length, assuming a smooth and spine-like condition. The third branch is very thin, and is the one which varies most in form, but only within narrow limits; sometimes it is two-jointed, never more; it is always directed outwards, and is seldom furnished with more than one or two hairs, which, however, are frequently long.

Among the Scyllaridæ the first siagnopod has never more than two branches, and these correspond to one another and are directed inwards, both being tipped with short spines or hairs.

This pair of appendages lies close against the mandibles, hugging them on the outer side of the metastomata; and they appear to be useful in preventing the escape of food from the lateral angles of the mouth, and to be of little use for any other purpose.