

of the Dendrobranchiata does not appear to take place in this pair, but rather in the penultimate pair, as in *Pasiphæa* (Pl. CXL. fig. 1*n*).

The First Pleopoda.—The first pair of pleopoda is an important pair of organs, deviating from the normal form seen in those posterior to it, and being utilised to assist the male to a greater or less extent in the act of copulation.

It frequently varies very considerably in form in the two sexes, but it is most pronounced in the males, in which, however, it shows considerable differences in form in different genera and families, but more decidedly in the several divisions into which the Macrura are divided.

The normal condition of the appendage is that of two foliaceous branches attached to the extremity of a basal joint, which is articulated to the inner wall of the plates that project on each side of the pleonic somites; these, so far as I know, have never received a special name, but are generally considered to be the lateral projections of the several somites. A similar condition of structure exists in the Edriophthalma, and since in these there is no carapace covering the pereion and shielding the branchiæ from accident, the first joint of the legs is produced in a similarly squamose manner, overlapping and protecting the branchiæ, situated pendent on the inner side.

I believe that this is precisely the condition of the great lateral plates on the pleon in the Macrura; an idea that I have long entertained, and which, I believe, is capable of demonstration by well-grounded arguments.

That the two rami are homotypical of the exopodite and the endopodite of the pereionic limb, as described by Milne-Edwards—or, as I have preferred to call them, of the pereiopod and its basephysis (or in plain English the leg with the branch of its second joint) is, I believe, universally accepted as theoretically true; but the large overlapping lateral plate is figured and described as part of the somite by Milne-Edwards in his great work *Histoire naturelle des Crustacés*, while it is omitted in his later memoir on the morphology of the Decapod Crustacea.¹

In the different genera the second or basal joint of the appendage is seen to creep (as it were) down the side of the large scale often nearly as far as its lower margin; this is apparent in several species of *Alpheus* where it is largely developed, especially in the females as a protection for the ova. In some specimens of an undescribed genus recently taken in the "Talisman" by M. A. Milne-Edwards these lateral plates are so largely developed in the females that they wrap over and cover the ova as in a marsupial pouch. In other genera, as *Sergestes* and *Lucifer*, they are reduced to a minimum, having the pleopoda articulating at the extreme margin of the lateral wall. This we might suppose to be liable to occur in such genera as these, in neither of which are ova ever

¹ Observations sur le squelette tégumentaire des Crustacés décapodes et sur la morphologie de ces animaux, *Ann. d. Sci. Nat.*, sér. 3, t. xvi. pp. 221–291, pls. 8–11, 1851.