

them to be pediform, cylindrical, biramose, terminating in a strong and sharp dactylos, and furnished at the base with two subcylindrical vesicular branchiæ: the seventh or terminal pair of pereiopoda is considerably shorter than the others, it is five-jointed and furnished neither with branchia nor ecephysis.

Anteriorly the pleon corresponds in width with the posterior portion of the pereion and tapers a little towards the caudal extremity. The external angle of each somite is posteriorly rounded, and the telson approaches the form of that in the permanent or adult stage,—being rounded and membranous at the extremity, and armed on each side with a small sharp tooth. The pleopoda as yet are in an immature condition, consisting of a stout peduncle and two slender subcylindrical rami, except the posterior, which has the peduncle short and the branches broad and foliaceous, making with the telson a well-formed rhipidura.

In neither of the specimens that belong to the Palinuridæ have I seen any trace of a branchial organ, but in those of the Scyllaridæ I find them attached to all the legs from the first pair of gnathopoda to the penultimate pair of pereiopoda, the ultimate, as in the adult stage, being without any. Not only are they attached to the legs but some are attached to the walls of the pereion also. Examination with a higher power shows that those attached to the coxæ of the legs are double-branched, while all the others are single, but in pairs. Examination of the structure demonstrates that within these sacs the future branchiæ exist in the form of trichobranchiate plumes, excepting in those attached to the coxæ of the legs. These consist of two sacs attached at the base to one stalk; one of these sacs contains a branchial plume, the other a branchial lash; the one becomes the podobranchia, the other the mastigobranchia. The other sacs are evidently the arthrobranchiate and pleurobranchiate plumes in an incipient state.

Turning now to a very different stage of the young *Palinurus*, there will be found in this Report one or two specimens that have reached the permanent form, and are 27 mm. or scarcely more than one inch in length.

Sir Walter Elliot captured at Waltair, on the coast of Coromandel, a specimen of *Palinurus* that was only 18·25 mm. in length. It was smooth and opaline, with antennæ three times its own length. All its appendages were well-developed, and there is little doubt that it was the young of some probably known species.

If we compare this with the length of the large *Phyllosoma* of *Palinurus*, we find that the smallest adult form is nearly half an inch shorter than the largest immature form, and that the largest immature form has not yet sufficiently advanced in development to possess branchiæ; that the pleon, which in the adult condition is more than half the length of the animal, is still in a rudimentary condition, the pleopoda as well as the rhipidura being only in the early stage of gemmation (Pl. XIIc. fig. 1).

Judging, however, by the analogy of what we do see in the *Phyllosoma* of the closely allied form of *Scyllarus*, we may safely infer that, corresponding with the development of