

form of chelæ, of which the third pair is the longest as it is also the largest. There is no other external anatomical detail or feature of importance that supports this view, whereas there are some very decided ones that bring them both into the same group with the normal division of the Trichobranchiate Macrura, as for instance the trichobranchiate character of the gills.

Professor Huxley, in his Memoir on the Classification of the Crayfishes,¹ was the first to point out that "by the structure of its branchiæ *Stenopus* is sharply separated from *Penæus*, with which it has hitherto been associated, although it approaches *Penæus* in the almost complete abortion of the branchial element of the podobranchiæ."

This may be the case in comparison with some species, but the branchial arrangement in several genera of the Penæidæ varies from what has hitherto been considered characteristic of the family.

The anterior three pairs of pereopoda characteristic of *Penæus* is common to all the Astacidæ, the only variation being that in *Astacus* the first pair is the largest, whereas in *Penæus*, *Stenopus* and *Spongicola* it is the smallest; in the Astacidea all the legs, especially in the females, have a tendency to form chelæ, whereas in the Penæidea this character never appears posterior to the third pair, and in the Phyllobranchiata never beyond the second. In all the Astacidea the brephalos is in the Megalopa stage, as probably is the case in *Stenopus*,² while that of *Spongicola* is in the Zoea form.

If we take the typical forms of the Astacidæ, and compare their several parts analytically with those of the genera in the family Stenopidæ, we shall find that the variations are of little more than generic importance:—

The animals generally are subcylindrical. In *Astacus* the rostrum is flattened horizontally, in *Spongicola* and *Stenopus* it is vertically compressed as it is in *Phoberus*.

The ophthalmopoda are short in both.

The first pair of antennæ supports two flagella in both.

The second pair supports a scaphocerite which is short in *Astacus*, not long in *Spongicola*, but long in *Stenopus*.

The mandible has a two-jointed synnhipod in *Astacus*, and a three-jointed one in *Stenopus* and *Spongicola*. The first pair of siagnopoda in *Stenopus* has the outer branch single-jointed and reduced, a condition seen in *Astacus fluviatilis* and *Astacoides madagascarensis*.

The second pair of siagnopoda is almost identical with the same appendage in *Astacus fluviatilis* in having the inner lower plates broader than the upper, the reverse of what exists in *Astacopsis*.

¹ *Proc. Zool. Soc. Lond.*, 1878, p. 780.

² Observations of an incomplete character induce me to believe that the brephalos of *Stenopus* is in the Megalopa stage.