

The teeth also that are placed upon the frontal margin of the carapace are probably less offensive than protective, since they generally are situated at points where muscular attachment is required, and the strength of the integumental tissue is by their presence increased.

Although the carapace has the capacity of being elevated posteriorly at the will of the animal, it is nevertheless generally kept in position by strong points of resistance, and these vary in form, position, and character in different families and perhaps in genera also. In *Palinurus* they exist as large, flat, button-shaped tubercles on each side of the pereion and are inserted into hollow cavities on the under surface of the carapace, and the power of retention is very great. To such a tubercle I have applied the name *pericleis*, since it bolts the carapace to the pereion (Pl. XII. fig. 1, *Palinosytus*¹; fig. 2, *Panulirus*).

In other genera, such as *Thaumastocheles* (Pl. VI.), *Ibaccus* (Pl. VIII.), and *Pentacheles* (Pl. XVI. fig. 4), there is a process or tubercle on the pleon that overlaps the carapace, and keeps it in position. This I have named the *pleocleis*. In some few instances, as in *Willemæsia*, the tubercle originates from the posterior margin of the carapace and lodges in a groove or hollow in the surface of the first somite of the pleon; this I have named the *peltoleis*. But in many genera the carapace is produced posteriorly on each side to a considerable extent, and while overlapping the first somite of the pleon is itself overlaid by the anteriorly projecting wings of the second somite.

The Branchiæ.—The great value of this power of securing the carapace is that it gives protection to the branchiæ which are placed beneath it.

Where the carapace does not exist, the branchiæ are of a more simple character and are generally pendent from the leg, as in the Amphipoda, or attached to other parts of the animal, as in the Squillidæ and Isopoda, or are absent altogether as in *Lucifer*. But in the well-developed forms of Macrura the branchiæ assume a higher character than mere appendages of the legs.

It is true that one pair (the podobranchiæ) belong to the first or coxal joint of the legs, and these are developed largely and most constantly in the normal group of the Trichobranchiate division, being absent only in two genera, and in some of the normal forms of the Dendrobranchiata, as in the genera *Benthesicymus*, *Aristeus*, and their near congeners; but they are absent in *Penæus*, *Sicyonia*, and *Sergestes*, and rudimentary in *Haliporus*.

In the Phyllobranchiate division the podobranchial plume is invariably absent from all the pereiopoda, but it is present—except in only a few genera, such as *Nika*, *Crangon*, and *Glyphocrangon*—on the first pair of gnathopoda, and in the fresh-water genus *Atya*

¹ A. Milne-Edwards having employed *Palinustus* for the name of a new Scyllarid, I have changed the name of my genus from *Palmostus* to *Palinosytus*.