

the parts which exist in those genera where the calcification has more or less obliterated the means of identifying the several joints. There is no scaphocerite. The phymacerite is produced to a large lobe, but the closing membrane is rather small, and is situated in the first or coxal joint. The third joint supports a fasciculus of finely ciliated hairs, and the flagellum is formed of short articuli, each of which supports a few stiff hairs of the same length as the articulus.

The siagon or mandible is a tolerably strong, powerful organ, the psalisiform margin of which is denticulated, and produced in a continuous curve until it unites with the molar prominence, which is only a more strongly pronounced denticulation. The apophysis is long, and the synaphipod is two-jointed; both joints are short, robust, subequal, hairy, the second articulating with the first at a right angle and terminating in an obtuse point, and resting generally in the cavity between the incisive and molar denticulations.

The first pair of siagnopoda has three branches. The outer is cylindrical, curved at the extremity, and clean and smooth except for a few hairs on the anterior margin, which closely press upon the mandible. The central lobe is foliaceous and expanded at the extremity, bat-shaped, fringed with short spinous hairs on the inner margin, and with long ones on the extremity and distal portion of the posterior margin. The inner lobe is also foliaceous, very wide, short, and fringed at the inner margin with numerous closely packed hairs.

The second pair of siagnopoda consists of five foliaceous plates of great tenuity, and a long mastigobranchial appendage. Generally it resembles that of *Astacus* except in the form of the mastigobranchia, which in this genus is very narrow and produced to a considerable length, and fringed at the extremity with very long hairs, furnished with a series of minute, short, stiff cilia, spirally arranged; for some distance from the base these small cilia point posteriorly, or towards the base of the hair, and for the rest, which is more than half the length of the hair, they point anteriorly, or towards the apex or distal extremity, which terminates in a slightly curved blunt point—the cilia gradually dying out as they advance. The foliaceous plates are broad, short, thickly ciliated at the margins, and the mastigobranchia extends to a considerable distance within, so that the hairs on the extremity reach to quite half the length of the chamber, and are the only appendages that are capable of action on the branchiæ.

The third pair of siagnopoda is derived from the type seen in *Astacus*. It consists of an equally long and broad basal joint, fringed on the inner margin with a fur of cilia, and at the extremity with three foliaceous branches, of which the inner is broad and furred all over, while the other two are slender and fringed with rather long hairs towards the extremity only.

The first pair of gnathopoda appears to be only six-jointed, and a comparison of the several joints homotypically with those of the second pair suggests that the meros and ischium are united together to form one long straight joint, the carpos