duty of a tongue in passing and keeping the food between the grinding tubercules of the mandibles, and the portion which covers the apparatus anteriorly aids the double metastoma posterior to the mandible in enclosing the organs of mastication within a membranous orifice, whose margins undoubtedly fulfil the duties of lips. The mandibles carry an appendage which differs in form and size in several genera, but is never more than two-jointed in any genus of the tribe; generally they are larger and longer, and apparently of more importance and use, than in the Trichobranchiata or the Phyllobranchiata. In those species of Penæidea where it is large, broad and foliaceous, it suggests that the habit of the animal is, while swimming, to feed on small creatures, that are by means of these large, spreading plates directed within its mouth. I have proposed to use the term synaphipod for this appendage rather than any other suggested, because it can, I think, be readily demonstrated to be the continuation or representative of the joints of the true appendage, and not a branch of it.

The next pair of appendages is the first pair of siagnopoda, which bears a resemblance to the type of the same pair of organs as seen in the young and undeveloped forms of the Astacidea and the Brachyura. It consists of three joints, two of which are broad and foliaceous, having their inner margins fringed with hairs, while the third or outer is narrow, and in some species single-jointed and terminating in a point, in others two-jointed, the second joint tapering and tipped with a few hairs.

The second and third pairs of siagnopoda, although varying specifically in form, are yet modifications of the same general type as in other groups.

The second pair consists of three branches, two of which are flat and foliaceous, generally longitudinally divided, and having their inner free margins fringed with hairs; the third is subcylindrical, varies in length specifically, and sometimes consists of three or four joints, and on the outer margin is a broad mastigobranchial plate that varies in form in different species. The third pair perhaps undergoes more change than the second, but still retains the same fundamental plan of arrangement, consisting of one large foliaceous branch furnished on the inner free margin with hairs, a subcylindrical one formed of several articulations, and on the outer side at the base a long and broad mastigobranchial plate that is transversely divided into an anterior and a posterior portion.

The two pairs of gnathopoda are the anterior appendages belonging to the pereion, and assume a greater or less pediform character all through the tribe.

The first pair is generally broader and has the fourth joint or meros long and the ischium short; the second joint, or basis, carries a long multiarticulate branch, and the coxa supports a long mastigobranchial plate, to which a podobranchial plume is in some genera attached. The three terminal joints lie reflexed against the inner side of the preceding ones, and the inner or antagonising margin is invariably furnished with a mat of strong hairs, among which stiff spines are occasionally intermingled. The entire organ bears a close resemblance to the same appendage as it exists in the higher Brachyura.