

*mastis suhmi* it is altogether wanting, and the podobranchia is reduced to an almost rudimentary condition.

The second pair of pereiopoda is much shorter, and assumes more the form usual in a chelate appendage, the fingers being slender and apparently more perfectly adapted for secure prehension. It is probably with this pair of appendages that the animal usually feeds itself.

The two succeeding pairs (Pl. XX. *m*) are also always chelate, but the fingers are long and tapering; and are generally both curved in the same parallel direction posteriorly, a circumstance that gives them a very feeble appearance.

The fifth pair is shorter than the rest, and varies from the simple styliform condition to that of a small and perfect chela, varying sometimes with the sex and sometimes existing as a specific character.

In *Polycheles* the male has this pair of appendages simple, but in the female it has not been determined in any species except *Polycheles baccata*, where it is chelate, but stunted and imperfect in form. The female of *Polycheles crucifera* is not known; while that of *Polycheles helleri* is unfortunately injured, so that the termination of the appendage cannot be made out. Professor Camil Heller says that he only knew of a male specimen of *Polycheles typhlops*, and the specimens taken during the cruise of the "Porcupine" have not yet been determined in their specific relation to each other.<sup>1</sup>

In the genus *Pentacheles* the posterior pair of pereiopoda is chelate in both sexes, and in most species the fingers are of unequal length. They are more nearly equal in *Pentacheles euthrix* than in any other; but in those species in which both sexes have been determined, as *Stereomastis auriculata* and *Stereomastis suhmi*, the female has the fingers as unequally developed, or nearly so, as the male; and it is because of this feature that I have arranged the species *gracilis* and *obscura* under the genus *Pentacheles* rather than under *Polycheles*.

The branchial arrangement (Pl. XX. fig. 1) is based on the same type throughout, and consists of sixteen branchial plumes on each side, with or without mastigobranchial plates of more or less importance, being large in *Willemæsia* and wanting in *Stereomastis suhmi* and *Stereomastis auriculata* in all the pereiopoda, and reduced to a small or rudimentary condition on the second gnathopoda, and absent from the first in all excepting *Pentacheles euthrix*, where it is only imperfectly represented; while it is developed into large plates on the two posterior siagnopoda.

The podobranchial plumes are generally large and well developed, except in the first

<sup>1</sup> In his Remarks on the Recent Eryontidæ, the Rev. Dr. Norman (*Ann. and Mag. Nat. Hist.*, ser. 5, vol. iv. p. 176, 1879) states that of the two specimens taken by H. M. S. "Porcupine" the female differs from the male in having "on front margin a pair of central spines (instead of a single spine)," besides indicating other differences that appear to be more than sexual characters.

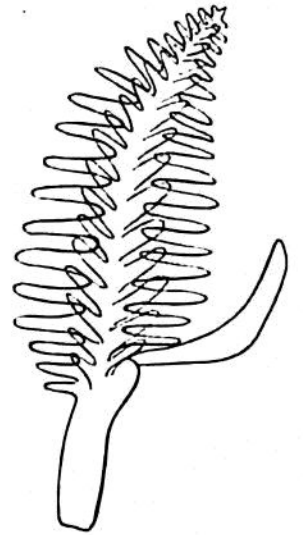


FIG. 24.—The lower and larger branchial plume of the first pair of pereiopoda, with flagelliform appendage of *Pentacheles euthrix*. From note and drawing by Willemoes-Suhm.