

it is short and sickle-shaped, and sometimes biunguiculate, as in some species of the Alpheidæ and Hippolytidæ.

*The Fourth Pereiopoda.*—The fourth pair of pereiopoda undergoes little change throughout the entire order of the Macrura except in a few of the aberrant Anomura, and in the family of the Eryonidæ, in which they are chelate in several of the genera, as in *Polycheles*, *Pentacheles*, *Eryoneicus*, and *Willemasia*. It is among the most constant in form and simple in character; it is absent only in the depreciated forms of *Acetes* and *Lucifer*, and even here it is the last to disappear. In the genus *Stenopus* the propodus is reduced to a multiarticulate condition, but is not enfeebled as in *Benthæcetes*, Smith, and the dactylos terminates in a biunguiculate extremity.

*The Fifth Pereiopoda.*—The fifth pereiopoda is a characteristic pair of appendages in many genera. It is, moreover, functionally an important pair, since it contains the termination of the internal portions of the male organs of generation, the extremity of the vas deferens passing through an orifice in the coxal joints (Pl. XV. fig. 30 and Pl. XIX. fig. o). In *Pentacheles* and *Willemasia* it is chelate in both males and females. In the Scyllaridæ and Palinuridæ, Homaridæ and Astacidæ, it is chelate in the females only; and appears to be functionally so formed to assist in rupturing the ovisac and liberating the brephalos from the ova.

In the Trichobranchiata it is frequently simple in the male and chelate in the female.

In the Dendrobranchiata it is always simple in form, but has a tendency to become long, slender, and enfeebled; in some genera it is multiarticulate and filamentous, as in *Benthæcetes*; in *Sergestes* it becomes rudimentary in character, and in *Acetes* and *Lucifer* disappears altogether.

Throughout the Phyllobranchiata it is formed on the same general plan as that of the fourth pair, but varies in some genera in having the dactylos short; it is generally simple, but there are many genera in which the dactylos is reduced to a minute condition and attenuated in form.

In some genera, as in *Diaphoropus*, the fifth pair is developed to a very great length, far exceeding that of the preceding pairs. Unfortunately we only know the species of this genus in their young condition, so that although in the specimens of *Diaphoropus versipellis* (Pl. CXVII. fig. 3) it has a form approximating to that of the adult, yet it evidently has to undergo one more change before it reaches the permanent stage. This great size, which is chiefly due to the length of the limb and the diameter of the coxal and basal joints, appears to belong to other genera, such as *Anebocaris* and *Eretmocaris*; but in the specimens of these genera the appendage is unfortunately wanting, the only part preserved being the large coxal joint (Pl. CXLV.).

In the Phyllobranchiata the great degree of degradation which is seen in some genera