

prehensile organ like the preceding limb, but smaller. In the female it is similar to the succeeding appendages.

The *remaining thoracic appendages* are similar to each other, and are always furnished with tufts of hairs and spines. The first joint, which is always the longest, is generally smooth, or provided on the inner surface with fine plumose hairs like the single sensory hair commonly found upon the terminal point of the filament of the first antennæ. The four following joints are smaller, and generally furnished on the inner and outer side with tufts of sword-like and of serrated spines. In many species (*Serolis antarctica*) these are to a great extent replaced by fine hairs, and in *Serolis neæra* all the thoracic appendages are clothed with fine plumose hairs similar to those which in other species are only to be found upon the abdominal appendages. A more detailed description of the varieties of these hairs and spines will be found under the description of the several species.<sup>1</sup>

The last pair of thoracic appendages (see p. 17) are usually smaller, and very often in the males (*Serolis gracilis*) furnished on the inner side with tufts of delicate sensory hairs like those upon the second thoracic appendage in the males of *Serolis convexa*.

The *abdominal appendages* (see Pl. I. figs. 12-14) are much specialised; the three anterior pairs form "swimming feet"; each of these consists of a proximal joint, the protopodite, which is generally triangular in form and attached to the segment which bears it for about a quarter of the length of the base; the projecting angle bears *three* plumose hairs in the first of these appendages and *two* in each of the two following. In some species (viz., *Serolis schythei*, *Serolis paradoxa*, and in all the Australian species), the protopodite is narrower, less triangular in form, and has *no* hairs. The inner margin is usually clothed with a dense covering of fine delicate hairs, which are also found, though to a less extent, upon the outer border. About half-way between the summit and the base the endopodite is attached, and the exopodite at the summit of the protopodite; both the exopodite and endopodite are delicate semicircular lamellæ, the former being larger than the latter; the outer convex margin of both is provided with numerous plumose hairs which, as shown on Pl. I. figs. 15, 16, consist of a central hollow stem gradually decreasing in diameter towards the extremity, and giving off on either side a series of extremely fine lamellæ; in the interior of the stem I was able to observe, in several cases (Pl. I. fig. 16), a fine thread occasionally looped upon itself and possibly a nerve fibre; the function of these hairs may perhaps be to test the quality of the water coming to the gills.

The lower border of the endopodite in the second of these appendages is prolonged in the male into a penial filament (Pl. VII. fig. 2', *b*). The next two pairs of appendages consist of a short basal joint laterally elongated, with which are articulated two broad lamellæ, an endopodite and exopodite, which are the gills; the exopodite of the first appendage is

<sup>1</sup> I make an arbitrary distinction here and elsewhere between the finer "hairs" and stouter "spines" in order to express more easily the differences between the ambulatory appendages of different species.