

furnished with a median spine. On Pl. I. are figures of a female (fig. 2), a fully developed male (fig. 1), and a young male (fig. 3) of *Serolis cornuta*, which are drawn exactly of the natural size; and judging from the very slight difference in length between the immature and the fully developed male, it would appear that the male does not acquire all its secondary sexual characters until the last moult, though the comparatively greater breadth of the body, which also distinguishes the males of this species from the females, is recognisable somewhat earlier.

The comparatively small number of specimens (seven) of *Serolis neæra* makes it impossible to state with any accuracy the time at which the males assume their proper sexual characters; the facts are as follows—of the four male species two are completely adult, measuring 42 mm. in length, the remaining two are immature, the largest measuring 25 mm. in length; this specimen has the general appearance of a female in its comparatively short epimera, absence of modification in the third thoracic appendage, and in all the other secondary characters by which the males of this species differ from the female, with the exception of the frontal "sense organ," which resembles that found in the adult males, and is not greatly developed as in the females; from this it appears that those secondary sexual characters in which the males of this in common with other species differ from the female appear comparatively late, while the one sexual character peculiar to the species is developed early.

In *Serolis schythei* the males reach maturity much sooner than in *Serolis cornuta*; the largest male specimen in the Challenger collection measures 30 mm. in length by 38 mm. in breadth; the smallest male specimen, with fully developed secondary sexual characters, is 16 mm. long by 19 mm. broad; another male specimen, in which the sex could only be detected by the position of the generative apertures and by the short penial filament, measures 15 mm. in length by 17 mm. in breadth; in this species, therefore, the secondary sexual characters which distinguish the male appear comparatively early, and in immature males, which in other respects are outwardly like the females, the greater proportionate breadth is recognisable; this character is the first to appear, as also apparently in *Serolis cornuta*.

*Serolis bromleyana*.—In this species the males differ from the females in the third thoracic and second abdominal appendages, and also in the epimera, which are shorter in the female and slope downwards at a less angle with the longitudinal axis of the body. The young males, as in other species, are closely similar to the females, but acquire the secondary sexual characters peculiar to the males at a comparatively early period; the largest male specimen of *Serolis bromleyana* measures 54 mm. in length, the smallest male, which shows all the secondary characters peculiar to its sex, measures 25 mm. in length; the largest male specimen, which has not yet acquired its proper secondary sexual characters, is 21 mm. in length; another specimen 22 mm. in length is nearly adult; the penultimate joint of the third thoracic appendage is swollen