

## 2. POST-BROOD-POUCH ANIMALS

The three stages described above seem to be the only ones which remain in the brood-pouch; although animals with four and five podomeres are found in the same sample as post-ovigerous females they are seldom in the pouch itself.

*(a) The Fourth and Fifth Stage Juveniles*

Not many animals at these stages were found; they range in total length from 2.2mm to 3.6mm (Fig. 4) and have four or five podomeres on the exopodite.

*(b) The Sixth to Ninth Stage Juveniles*

Animals at these stages range in total length from 3.0mm to 7.0mm (Fig. 4) and podomeres develop on the exopodite according to the stage reached.

## RESULTS AND DISCUSSION

Nine possible stages in the development of the young *P. gaudichaudii* may be summarised as follows:—

Stage	Average Length	Exopodite Podomere Number
1	1.4mm	1
2	1.4mm	2
3	2.0mm	3
Release From Pouch		
4	2.8mm	4
5	3.0mm	5
6	3.6mm	6
7	4.0mm	7
8	4.6mm	8
9	5.1mm	9

This table was compiled from Fig. 4. The constancy of the increase in size between each of these stages suggests that the change from one stage to the next is accomplished in only one moult, during which a podomere is added to the exopodite. However, since the number of podomeres on the two rami is not always the same and the endopodite may have one or two fewer, it seems likely that there are moults during which this ramus fails to develop podomeres. This could mean that during a following moult one podomere is added to the exopodite and two to the endopodite, so that once again both rami have the same number of podomeres. Alternatively it could indicate that there are moults between the stages I have described above, and during these the exopodite remains unchanged, but the endopodite develops new podomeres. If these intermediate stages do exist they will not become apparent until endopodite data have been examined.

As the average body lengths of the first two stages are the same there is not obviously a moult between them; however, if the pleopods and antennae of the two stages are compared it is clear that the difference between the two exoskeletons can only be accounted for by moulting. Also the average lengths of the fourth and fifth stages are very similar; these animals have just escaped from the brood-pouch and are beginning to use their pleopods for swimming. Thus an increase in podomere number would probably be advantageous, and if this were so moulting from the fourth to fifth stage may take place so rapidly that an increase in total length is almost negligible.