

(Table I). Drawings were made with a camera lucida. In order to distinguish clearly the various developmental stages the animals were stained with lignin pink and permanent whole mounts made.

TABLE I.—STATION LIST.

Station No. N.Z.O.I.	Latitude	Longitude
A 313	46° 46' S	164° 35' E
B 30	59° 58' S	169° 07' E
B 33	52° 00' S	167° 30' E
B 35	48° 28' S	167° 23' E
B 113	60° 22' S	170° 54' E
B 114	59° 39' S	171° 02' E
B 118	55° 34.5' S	170° 27' E
B 120	53° 26.3' S	170° 15' E
"Discovery"		
960	58° 31.4' S	150° 02.9' W
2205	60° 49.1' S	164° 07.6' E
2449	51° 34.7' S	20° 16.4' E
2522	45° 38.9' S	20° 15.2' E
2623	47° 26.8' S	19° 37.4' E
2768	63° 00' S	175° 05' E
2873	54° 40' S	56° 56' E
2874	56° 50' S	66° 12' E

A. THE DEVELOPMENT OF BROOD-POUCH AND POST-BROOD-POUCH STAGES

The juvenile animals examined include those from brood-pouches of ovigerous females in the N.Z.O.I. material and several from the "Discovery" Collections, and 860 post-brood-pouch stages up to 7mm in length. Data were obtained for total body lengths, the number of podomeres or segments on the outer ramus of the first pleopod, and the number of sensory filaments on the first antenna.

Measurements of the total length include the head (excluding the antennae) the pereon and pleon segments and the urosome (including the uropods). Diameters are given for many of the brood-pouch animals because being circular in shape they are difficult to measure in any other way. There are three pairs of pleopods, each with an exopodite and an endopodite, which become segmented into what are here termed podomeres. (As the number of podomeres formed on the exopodite is usually one or two more than that on the endopodite only the former number is recorded here.) Sensory filaments develop on the ventral surface of the first antenna. In the early stages the number developed can be easily seen, but in post-brood-pouch stages counting becomes increasingly difficult and these data are not recorded here.

The data are recorded graphically in Fig. 4. This figure shows the increase in number of podomeres with increase in total body length, as well as the number of specimens and average total body length (marked by O) in each podomere group.

1. BROOD-POUCH ANIMALS

(a) Development Within the Egg-membrane

Thirty fertilised eggs were examined, ranging in diameter from 0.39mm to 0.5mm. These eggs are still contained within a tough egg-membrane and contain a large amount of yolk material, which seems to consist mainly of oil globules of varying sizes (Fig. 1a and 1c). There is an extensive development of peripheral cells and the formation of cephalic and posterior body rudiments (Fig. 1a). At a later stage these peripheral cells become arranged to form outlines of the