

Thoracic Appendages: Third maxillipeds (Fig. 3, K) very strongly developed, with endopodite clearly segmented, but exopodite still unsegmented and without setae.

Pereiopods massively developed giving the thoracic region a "heavy" appearance. First four pairs incompletely segmented, but fifth pair unsegmented with a rudimentary chela at tip.

Abdomen: Abdomen more massive than in stage 2b with pleopod buds large and two-segmented. Lateral spines on fourth and fifth segments much reduced.

VARIATIONS IN THE ZOEAL LARVAE

Morphological variations in the zoeal larvae of this species in the Wellington area are slight. There is little or no variation in the characters separating stage one larvae from stage two larvae. However, variation in the length of the rostrum, posterior carapace spines, and antennal endopodite, together with occasional irregularities in the setation of the thoracic appendages, may cause some difficulty in separating the sub-stages.

No larvae of this species have been examined from elsewhere in New Zealand to compare with those of the Wellington area.

THE MEGALOPA LARVA

Megalopa larvae (Fig. 4, A) were obtained by moult from zoeal larval stages 2b and 2c in the laboratory, but were not found in the Wellington Harbour plankton.

DESCRIPTION. *Cephalothorax:* Carapace (Fig. 4, A) measures 1.7mm to 1.8mm in length, and 1.4mm to 1.5mm wide. Front produced into two broad lateral lobes separated by a median depression. Depression anteriorly produced into a very small rostrum bearing about four anterior spines which are variable. Anterior margins of lateral lobes denticulate. Orbital notch very shallow. Post-ocular spines prominent. Strong pair of lateral carapace spines at level of second pereiopods, but sides of carapace otherwise finely denticulate or granular and fringed with fine hairs. Posterior margin smooth. Dorsal surface hairy, but without spines. Lateral ventral lobes (Fig. 4, F) setose with serrations and a strong spine anteriorly.

Eye-stalks with small anterior distal spine, short, and not protruding beyond margin of carapace.

Cephalic Appendages: First antenna (Fig. 4, D) consists of a three-segmented peduncle with distal segment bearing both inner and outer ramus. Basal segment swollen dorsally enclosing statocyst, with swelling produced anteriorly into six large spines and a number of short, stout spinules. Statocyst opening fringed with plumose setae. Second segment of peduncle without spines or setae, but third (distal) segment with two or three distal setae. Inner ramus of three segments, with a short hair arising from inner and outer margins of each of the first and second segments. Third segment with five fine hairs at tip. Outer ramus of ten segments. Eight basal segments short, compressed with many long aesthaetes arising from inner margins. Ninth segment long, slender, with two fine distal hairs. Terminal segment short with two fine hairs and a very long aesthaete at tip.

Protopodite of second antenna (Fig. 4, E. Prot.) is of two segments (coxopodite and basipodite). Basal segment short, partially concealed in the orbital cavity, and does not protrude beyond superior margin of carapace. Endopodite (Fig. 4, A; E) long, slender, consisting of about 25 segments. Basal segment with two small spines on inner margin. Remainder each with four short setae on distal margins. Antennal scale (Fig. 4, E) rudimentary and without teeth or setae.

Mandible (Fig. 5, A) strongly calcified, with prominently ridged molar surface separated from toothed incisor process by a narrow cleft. Palp of three segments, but two basal segments usually incompletely separated. Terminal segment with a number of short setae.

First maxilla (Fig. 5, B) is similar to that of the zoeal larvae. Proximal and distal endites each fringed with many short setae curved towards the mouth. Palp of two segments, with one or two setae on terminal segment only. Exite thin, flattened, and without setae.