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ON THE EARLY LARVAL STAGES OF TWO LEUCOSIID CRABS, *PHILYRA CORALLICOLA* ALCOCK AND *ARCANIA SEPTEMSPINOSA* (FABRICIUS)

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In the family Leucosiidae, studies have been made on the larval stages of *Philyra pisum* (Aikawa, 1929), *P. scabriuscula* (Menon, 1937 ; Raja Bai, 1960), *P. globosa* (Chhapgar, 1958) and *Ixa cylindrus* (Raja Bai, 1960) but so far no work has been done on the larval stages of *P. corallicola* and *Arcania septemspinosa.*

A live berried specimen of *P. corallicola* was collected from the Mirya sandy beach and that of *A. septemspinosa* was obtained from the trawl-catches at a depth of 22 fathoms, both off Ratnagiri. Laboratory hatchings of the eggs were obtained by keeping each species separately in aquarium tanks with sea water. The larvae survived in the laboratory for about 48 hours only.

Philyra corallicola Alcock

First zoaea (Text Fig. 1).

Measurements : Body length = 1.95 mm.
Eye width = 0.20 mm.
Body width = 0.41 mm.
Dorsal spine = 0.68 mm.
Rostral spine = 0.79 mm.

The carapace is rounded and is without any trace of lateral spines. The rostral spine is slightly longer than the dorsal spine and both are slightly curved. Melanophores are present on the basal segment of the maxillipeds, and on the abdominal segments where they are arranged in transverse bands. The rostral and dorsal spines have a tinge of light orange on the inner margin and there is a melanophore near the middle of the carapace just below the cardiac region. Except for these chromatophores, the body is more or less colourless.

The antennular peduncle is unsegmented with three aesthetes, of which one is about half the length of the remaining two (Fig. 1, b).

The antenna is represented by a rudimentary stump tapering distally to a point (Fig. 1, c.). The distal end bears a few minute spine-like processes which are discernible only under high magnification.

The mandible is roughly bilobed with the cutting edge minutely serrated (Fig. 1, d). There is no palp.

The maxilla consists of an unsegmented endopodite with three terminal setae of almost equal length and two endites, each bearing five hirsute setae (Fig. 1, e).

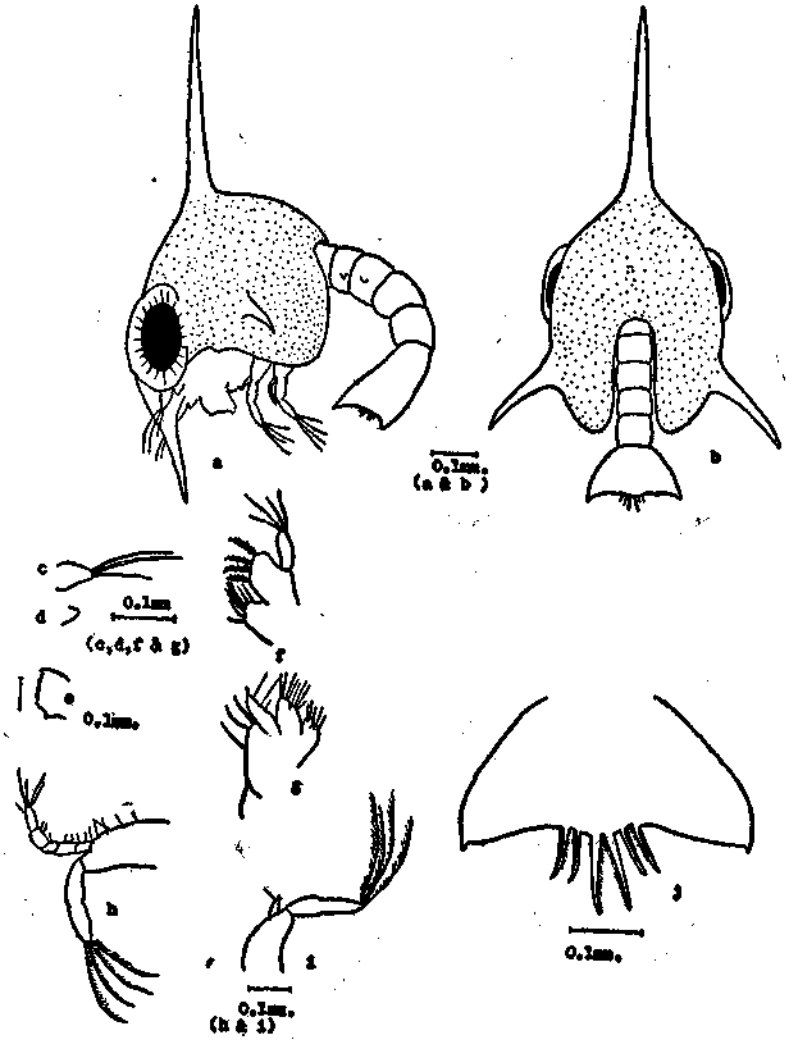

FIG. 1. *Philyra corallicola* Alcock, First Zoaea. (*a*) Lateral view of zoaea. (*b*) Antennule. (*c*) Antenna. (*d*) Mandible. (*e*) First maxilla. (*f*) Second maxilla. (*g*) First maxilliped. (*h*) Second maxilliped. (*i*) Telson.

The coxopodite of the second maxilla has five setae and the basipodite has eight. The endopodite is unsegmented and has a marginal notch from where the proximal seta arises. Distally it has two setae. The scaphognathite tapers to a point and has three plumose marginal setae (Fig. 1, f.)

The base of the first maxilliped is stout and broad and the two-segmented exopodite bears four plumose setae. The endopodite is five-segmented. The distal

segment bears four rather short setae and each of the four remaining segments bears a pair of setae (Fig. 1, g).

In the second maxilliped the endopodite is small and unsegmented, bearing two small setae terminally and one relatively long seta on the inner side. Apart from this, there is no other marked difference between the first and second maxillipeds (Fig. 1, h).

The first two pairs of pereiopods are represented by biramous rudimentary buds.

The abdomen consists of five free segments, followed by a fused telson and sixth segment. The second and third segments each bears a pair of hook-like lateral projections.

The telson is flat and roughly triangular in shape with six setae in the middle and a lateral spine on either side of the posterior margin. The central seta is plumose almost to the tip. More than the basal three-fourths of the remaining two setae is plumose. On each postero-lateral corner, there are two minute spine-like swellings, of which the posterior is rather more pronounced (Fig. 1, i).

In the first zoaea of the four species, *scabriuscula*, *pisum*, *globosa* and *corallicola* of the genus *Philyra* so far described, the rostrum is short in *pisum* and is long in the remaining three species ; only in *globosa* the antenna is a rudimentary stump without any aesthetes or spines ; all the four species have three pairs of median setae on the posterior margin of the telson, but in *globosa* and *corallicola* the median setae are provided with prickles and these are restricted to basal half in *globosa*, whereas in *corallicola* they extend nearly to tip.

Arcania septemspinosa (Fabricius)

First zoaea (Text fig. 2).

Measurements : Body length = 1.39 mm.
Eye width = 0.17 mm.
Body width = 0.38 mm.
Dorsal spine = 0.35 mm.
Rostral spine = 0.29 mm.

The carapace is minutely punctate and is more or less rounded. The dorsal spine is longer than the rostral spine and the lateral spines are situated far below the middle of the carapace. There is a narrow longitudinal slit in the posterior part of the carapace from which the abdomen emerges.

The larva is almost colourless except for the mandibles which are violet-red and for a slight yellow colouration in the vicinity of maxillipeds.

The antennule is represented by a small unsegmented peduncle with three non-plumose aesthetes (Fig. 2, c).

The antenna is a minute unsegmented stump without any aesthetes (Fig. 2, d).

The mandible is feebly developed and the cutting edge is minutely serrated. There is no palp (Fig. 2. e).

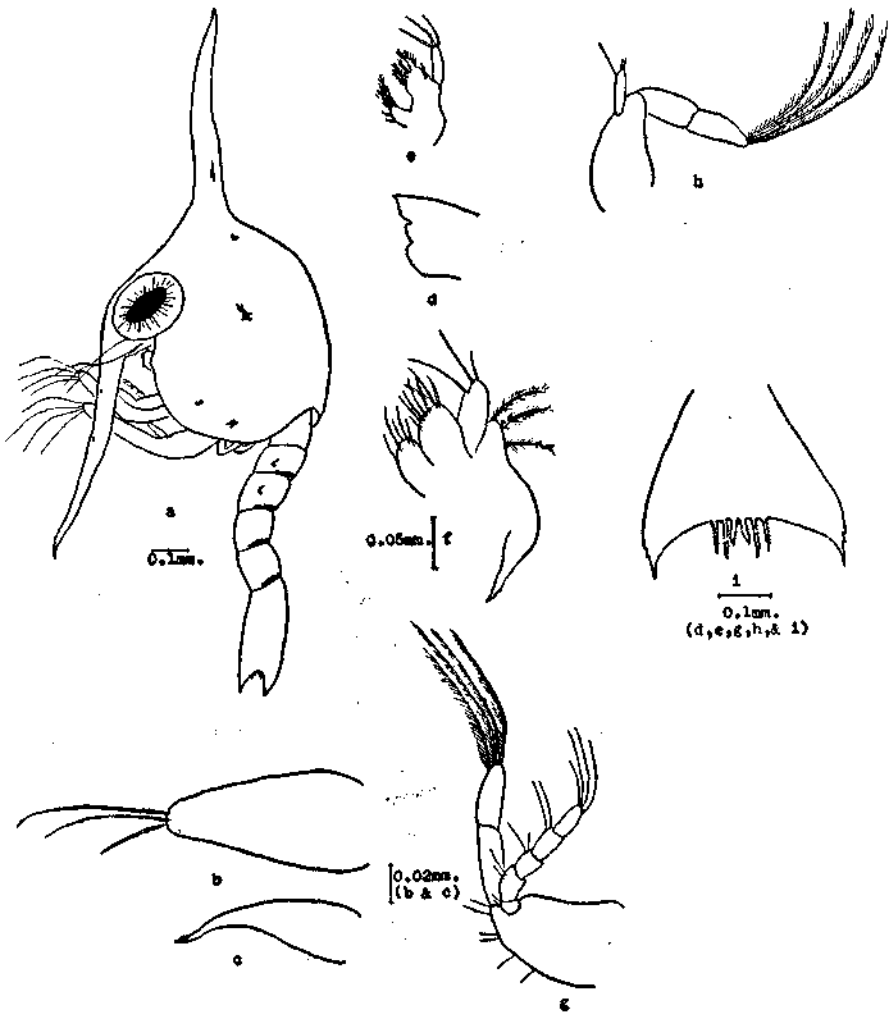

FIG. 2. *Arcania septemspinosa* (Fabricius), First Zoaea. (*a*) Lateral view of zoaea. (*b*) Posterior view of zoaea. (*c*) Antennule. (*d*) Antenna. (*e*) Mandible. (*f*) First maxilla. (*g*) Second maxilla. (*h*) First maxilliped. (*i*) Second maxilliped. (*j*) Telson.

In the first maxilla the coxopodite bears six setae of which the middle two are plumose. The basipodite bears four plumose setae and the non-segmented endopodite bears four terminal setae (Fig. 2, f).

In the second maxilla both the basipodite and coxopodite are partially bilobed bearing 5 setae on basi- and 8 setae on coxopodites respectively. The endopodite is unsegmented with one terminal and three marginal setae. The scaphognathite has four setae on its outer margin (Fig. 2, g).

In the first maxilliped the exopodite is imperfectly two-segmented bearing four terminal plumose setae. The five-segmented endopodite bears on the last segment four short terminal setae and a small delicate hair on the outer margin, one seta on the third segment and two setae on each of the remaining segments. There are about six setae on the basipodite (Fig. 2, h).

The second maxilliped does not differ much from the first except that the endopodite is minute, unsegmented, with one fairly long terminal seta on the inner side and two relatively small setae on the outer side (Fig. 2, i).

The abdomen consists of five segments and the telson is fused with the sixth segment. There is a more or less hook-like knob on each side of the second abdominal segment and a round knob on the third segment.

The telson is much broader than long and the posterior margin at the mid-region bears three pairs of setae. The middle pair has its inner margin plumose and outer margin naked. In the second pair the outer margin is minutely pectinate in the basal three-fourths and the inner margin bears no setae. The third pair is plumose on the inner side and is minutely pectinate on the outer margin, the remaining distal one-fourth bearing no setae on either side. The lateral spine on each side is very small. (Fig. 2, j).

Summary

Early larval stages of *Philyra corallicola* Alcock and *Arcania septemspinosa* (Fabricius), as obtained from laboratory hatchings have been described.

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