ON THE EGG AND PREZOEA STAGE OF *HETEROCARPUS WOOD-MASONI* ALCOCK (CRUSTACEA, DECAPODA, PANDALIDAE)

Heterocarpus wood-masoni Alcock is a deep water caridean prawn recorded from the Arabian sea by George and Rao (1965). During a recent exploratory fishing cruise off the south-west coast of India, several berried specimens of this species were collected on 7th and 8th November, 1967, from the sea off Quilon (Lat. 8° 50-57'N. and Long. 75° 37-57'E.) from the trawl catches made at depths of 290-330 metres. Attempts to get them spawned in aquarium tanks were not successful as the prawns were hardly alive when they were taken to the surface from such depths. However, several eggs carefully removed from the pleopods were transferred to glass troughs containing fresh sea water collected from the same area. Although no larvae hatched out from these detached eggs kept under observation, a few eggs survived for two days and showed advanced stage of development. Some were found emerged out in the prezoea stage, probably due to the pressure variation between the depths from which the prawns were caught and the surface. Since there is no published account on the eggs and early developmental stages of species belonging to this genus, it was felt that a description of the egg and prezoea stage would be useful.

Eggs (Fig. 1, A & B)

The eggs are carried by pleopods 1 to 4 and are attached to the ovigerous setae found on the inner edge of the protopods of the pleopods. The endopods and exopods do not carry eggs and project freely from the egg mass. Less developed eggs are light orange in colour and as the development advances the colour turns to grey with an yellowish yolk mass. Eggs are elliptical and measure 0.80 to 0.90 mm. long and 0.62 to 0.67 mm. broad. de Man (1920) records females of the species bearing eggs measuring 0.6 to 0.65 mm. long and 0.6 mm. broad. The difference in size of the eggs may be due to the fact that the eggs in de Man's specimens were in early stages of development. Each egg is covered by an egg membrane and the developing embryo occupies almost all the space inside, the transparent perivitelline space at the periphery being very narrow. As in other decapods, the larva in the egg lies curled up so that the tail extends upto the head. The eye spot, the carapace, the abdomen, the telson and the appendages are clearly visible in the advanced egg.

Prezoea (Fig. 1, C)

Prezoea is a stage just prior to the hatching of the eggs in zoea stage I. The description of this is based on the larvae which emerged from the eggs as mentioned earlier and also some specimens obtained by dissecting out from the egg.

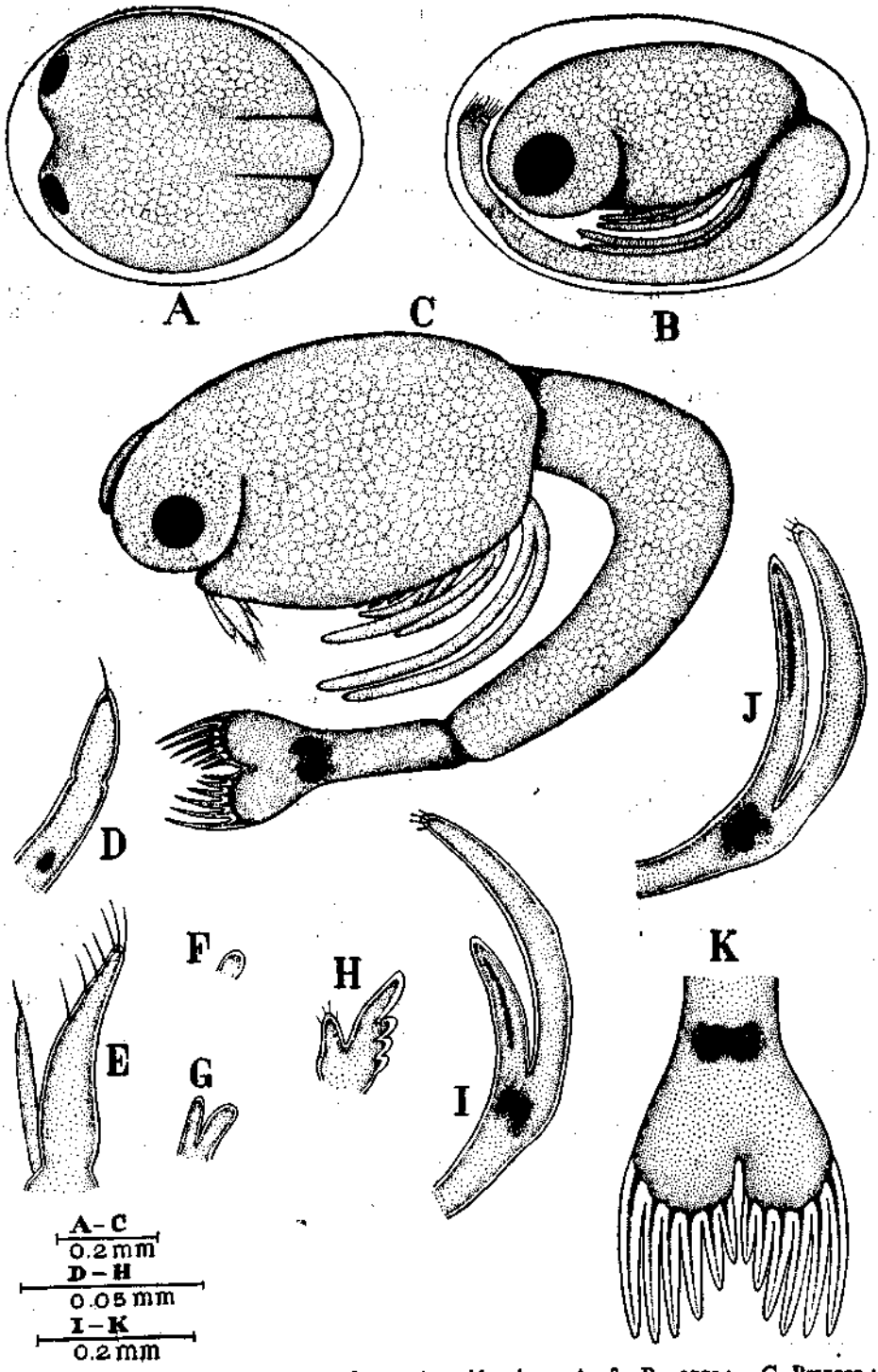

FIG. 1. *Heterocarpus wood-masoni* Alcock. A & B. eggs; C. Prezoea; D. Antennule; E. Antenna; F. Mandible; G. Maxillule; H. Maxilla; I. 1st Maxilliped; J. 3rd Maxilliped; K. Telson.

The larvae measure 1.75 to 1.80 mm. in length. The body is divisible into three regions viz., anterior cephalothorax, unsegmented abdomen and telson. The cephalothoracic region is demarcated from the abdomen by the posterior raised portion of the carapace. At the anterior border of the carapace eyes are clearly visible; they are sessile and occupy the entire front portion. There is no sign of any rostrum at this stage.

Antennule is short and faintly two-segmented; carries a short seta at the tip, which is covered by embryonic cuticle. Near the proximal portion there are a few minute brownish red chromatophores (Fig. 1, D).

Antenna is unsegmented and the scale bears 7 setae along the outer border. The unsegmented flagellum which carries a short seta at the tip is about half the length of the scale (Fig. 1, E).

Mandible is represented by a small bud-like prominence (Fig. 1, F). The exopod and endopod of the maxillule are seen as short finger-like processes (Fig. 1, G).

Maxilla is with a small exopod which carries 4 minute setae; endopod unsegmented and with traces of 4-5 lobes (Fig. 1, H).

Maxillipeds are fairly well developed and their sizes increase posteriorly. Each maxilliped consists of a basal protopod and an elongated exopod and endopod. The exopods of the first two maxillipeds (Fig. 1, I) are twice as long as the endopods, while in the third maxilliped (Fig. 1, J) the exopod and endopod are almost equal in length. The setae at the tip of the exopods are covered by the embryonic cuticle. The distal portion of the protopod and the endopod are with a few minute reddish brown chromatophores. All the maxillipeds are directed forward beneath the carapace.

No traces of pereiopods or abdominal appendages are visible. In this respect the larva resembles stage I larva of *Pandalina brevirostris* (Rathke) (Pike and Williamson, 1964).

Telson has a broad and deep median indentation and bears 6 pairs of marginal spines, the length of which decreases towards the middle, the innermost spines being shortest. In the middle of the telson plate there are a few brownish red chromatophores (Fig. 1, K).

Characters like sessile nature of eye, antennal flagellum a simple rod ending in a seta, telson deeply indented in middle line and presence of red and orange chromatophores in the developing endopodites, the present larva resembles the zoea stage I of pandalids described by Webb (1921), Lebour (1940) and Gurney (1942). The differences which seem to be of specific importance are the complete absence of rostrum, absence of even traces of thoracic appendages and lack of segmentation of the abdomen.

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