NEWLY HATCHED LARVA OF THE LOBSTER *METANEPHROPS JAPONICUS*

(TAPPARONE CANEFRI) (DECAPODA, ASTACIDEA, NEPHROPIDAE)

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Three species of the genus *Metanephrops* have been reported from Japanese waters. Among them, *M. japonicus* (Tapparone Canefri) is distributed from central to southern Japan, *M. thomsoni* (Bate) to the East China Sea from southern Japan and *M. sagamiensis* (Parisi) mainly to southern Japan.

In April 1984, two berried females identified as *M. japonicus* were caught with gill net at the fishing ground of sandy mud bottom about 200 meters deep off the Boso Peninsula, Central Japan. The specimens were reared in the aquarium and one female hatched larvae. The mother lobster is 61 and 166 mm in carapace and body length, respectively, being deposited in the National Science Museum, Tokyo.

The larval development of *M. thomsoni* has been studied by Uchida and Dotsu (1973), but the larva of *M. japonicus* has not been studied. It is, therefore, valuable to present the following short notes on newly hatched larva of this species.

Eggs – Eggs are elliptical in contour and vary in size considerably depending upon stage of development. Eggs measured 2.5 mm in longer axis during the stages in which the eyes are pigmented, but the abdomen is not yet free from the head; some estimated to be one or two hours prior to hatching were 3.2 mm.

Prezoea (figs. 1-20) – Five specimens measured from 2.0 to 2.4 mm in carapace length and from 7.2 to 7.9 mm in body length. Carapace has a pointed rostrum which is not yet distinctly carinate. Larva has relatively large amounts of yolk in dorsal part. Postero-lateral margins smooth, without spines. Eyes immobile. Suborbital spines not present. Abdominal somites smooth. Sixth abdominal somite fused with telson, which is armed with 17+1+17 processes (fig. 3): the outermost is a fixed spine, the second is a plumose seta, and the third to the last are articulated spines, shorter than the outermost spine; there is a longer median spine in place of median notch.

Antennule (fig. 4) – Antennule uniramous and exceeds end of rostrum, being as long as scaphocerite; there are three simple setae terminally.

Antenna (fig. 5) – Antennal scale fringed with 19 to 20 plumose setae; endopod composed of three segments, the distal of which is about three times as long as scaphocerite; endopod armed with a tooth at second segment, having no seta terminally.

Mandible (fig. 6) – There are a molar process without tooth and an incisor process with several small teeth. Mandibular palp uniramous, still rudimentary.

Maxillule (fig. 7) – Unsegmented endopodite has two short setae on its terminal end. Basal and coxal endites have no tooth and seta.

Maxilla (fig. 8) – Proximal lobe of coxal endite bears no seta; distal lobe bears six small teeth. Basal endite has four teeth on proximal lobe but unarmed on distal lobe. Endopod has no tooth and seta. Scaphognathite bears about 30 plumose setae.

First maxilliped (fig. 9) -Exopodite bears four long terminal plumose setae, while endopodite is unsegmented and still rudimentary.

Second maxilliped (fig. 10) – Exopodite bears four plumose setae on terminal end. Two-segmented endopod still rudimentary.

Third maxilliped (fig. 11) – Exopod consists of two segments, terminal end being smooth. Endopod consists of five segments.

Pereiopods (figs. 12-16) – Endopods of first three pairs almost equal in length and each has a chela. Forth and fifth pairs simple and each endopod consist of five segments. Exopods in all pairs similar and consist of one segment.

Pleopods (figs. 17-20) – First pleopod not still appeared; other pleopods biramous, but still rudimentary and probably not functional.

In comparison of larvae of *M. japonicus* with *M. thomsoni*, some differences were noted in the following aspects. Egg size and body size of *M. japonicus* are much larger than those of *M. thomsoni*. In *M. thomsoni* each of the first five abdominal somites is armed with a spine at the median part of the posterior border, while in *M. japonicus* the posterior border of the abdominal somites are unarmed.

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LITERATURE CITED

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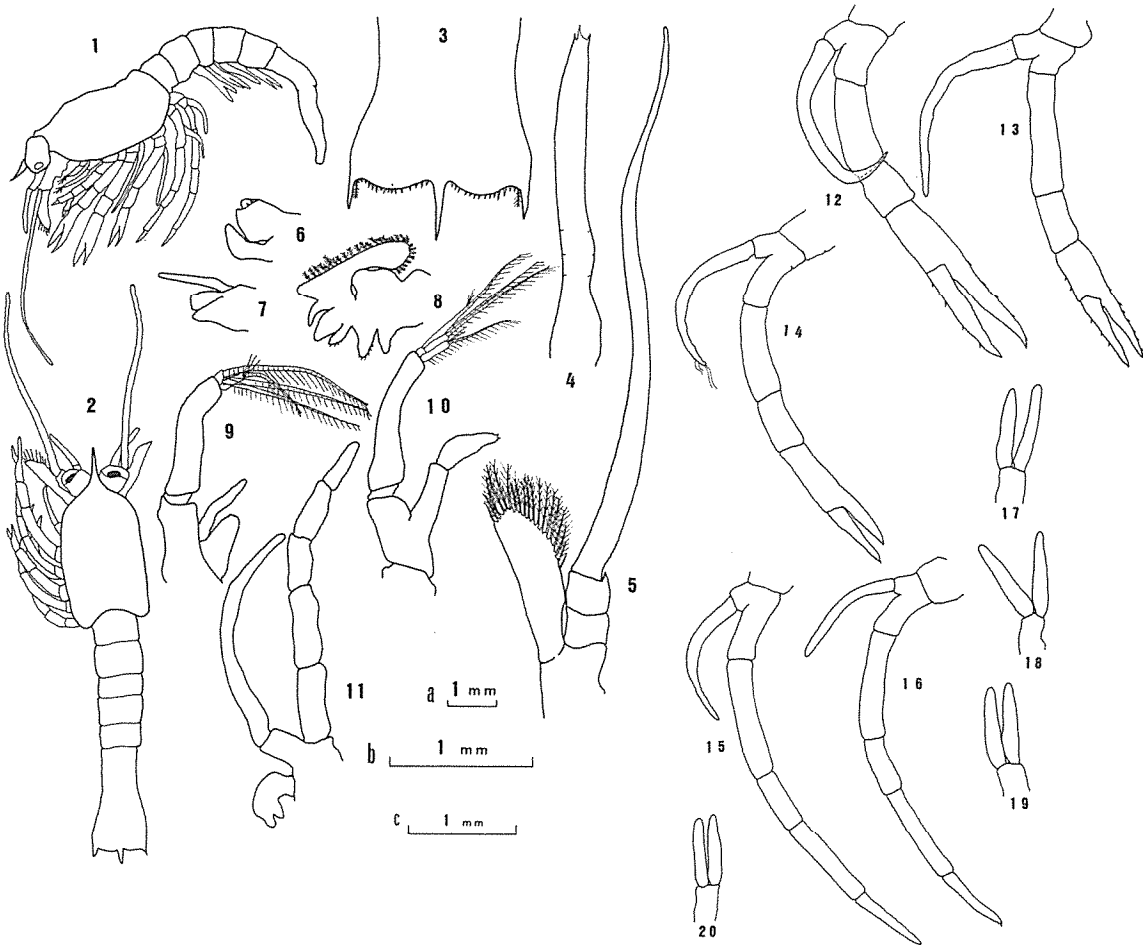

Fig. 1-20. The newly hatched larva(prezoea) of *Metanephrops japonicus* (Tapparone Canefri).
1. dorsal; 2. lateral; 3. tail fan (dorsal view); 4. antennule; 5. antenna; 6. mandible; 7. maxillule; 8. maxilla; 9. 1st maxilliped; 10. 2nd maxilliped; 11. 3rd maxilliped; 12-16. 1st-5th pereiopods; 17-20. 2nd-5th pleopods.
Scale a: corresponds to figures 1 and 2, Scale b: figures 3-11, Scale c: figures 12-20.