

LARVAL DEVELOPMENT OF *MICIPPA PLATIPES* RÜPPELL, 1830, REARED UNDER LABORATORY CONDITIONS (CRUSTACEA, DECAPODA, MAJIDAE)

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ABSTRACT: The ovigerous female of *Micippa platipes* Rüppell, 1830, captured from Buleji (Karachi, Pakistan) on February 7, 1993 and was kept under the laboratory conditions. On February 27, 1993 larvae were hatched in prezoal stage. The prezoal stage of *M. platipes* passed through two zoeal stages within three to five days at room temperature (17-20°C). The larvae are described, illustrated and compared with the larval account of *Micippa thalia* (Herbst, 1803) given by Kurata, 1969.

KEY WORDS: Decapod, Majidae, Larval development of *Micippa platipes*.

INTRODUCTION

The present paper is based on the larval development of a majid crab, *Micippa platipes* Rüppell, 1830, under laboratory conditions.

The genus *Micippa* contains ten species, all reported from Indo-West Pacific Ocean (Griffin & Tranter, 1986). This genus is represented in Pakistan waters by two species: *M. thalia* and *M. platipes*; "...*M. philyra* and *M. platipes* have been often confused and cited under various names" (Tirmizi & Kazmi, 1988: 185).

Two zoeal stages of *M. platipes* are described and illustrated herein for the first time and compared with the first zoeal stage of *M. thalia*, reared in Japan (Kurata, 1969).

MATERIAL AND METHODS

Recently (February 7, 1993) an ovigerous female of *M. platipes* was collected from Buleji (long. 66°49'E, lat.24°56'N). The ovigerous female was kept in the laboratory in unfiltered seawater at 35-36‰ salinity. The newly hatched larvae were segregated and transferred into four beakers with filtered seawater kept at room temperature (17-20°C). The newly hatched *Artemia* nauplii were given as food to the larvae. Exuviae, dead specimens and some live specimens were preserved in 5% buffered formalin for study, temporary slides were prepared in glycerin and formalin (3:1).

Measurements of larvae were made with an ocular micrometer. Setal formulas were given from the proximal to distal part of the appendage unless stated otherwise. Roman numeral denoting dorsolateral setae. The abbreviation 'TL' was used for total length. The specimens were dissected and illustrated under a binocular microscope of high magnification (20x4.5). The spent female and the remaining larvae were deposited in the Marine Reference Collection & Resource Centre (MRC) Cat No.BRAC.561.

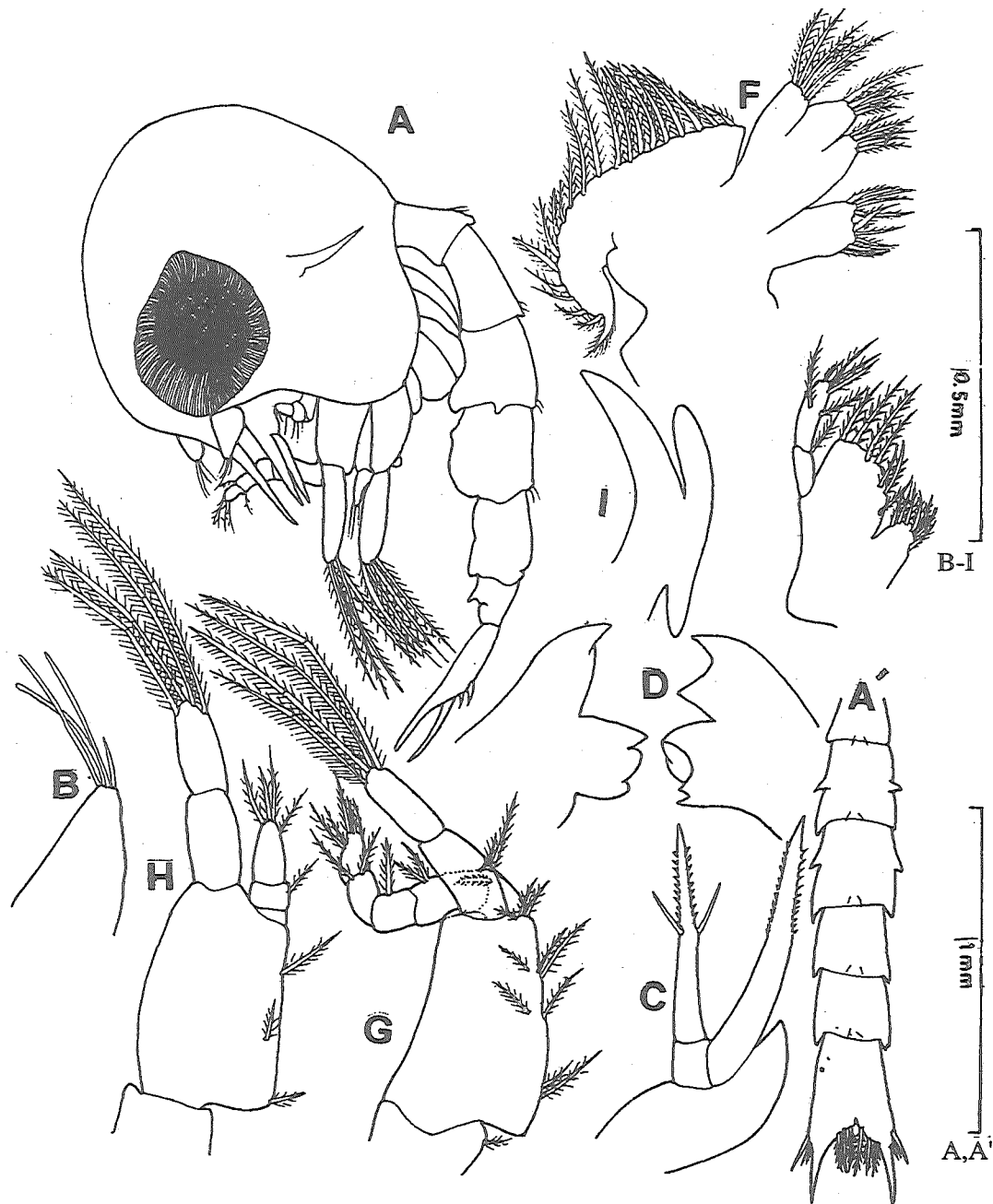


Fig.1. *Micippa platipes* Ruppell, 1830. A, first zoea, lateral view; A', abdomen with telson, dorsal view; B, antennule; C, antenna; D, mandibles; E, maxillule; F, maxilla; G, first maxilliped; H, second maxilliped; I, third maxilliped.

RESULTS

Zoea I

Size: TL = 1.5-1.8mm. (10 specimens examined). Duration : 3-5 days.

Carapace (Fig.1A).- Globular, dorsal spine absent, carapace length greater than rostral spine, posterior dorsal setae absent; lateral spines straight and developed; eyes sessile.

Abdomen (Fig.1A').- With 5 somites, each somite with a pair of fine setae on its dorsal surface; abdominal somites 2-5, each with a pair of spines on posterolateral angles; a pair of lateral spines also present on somites 2 and 3 each.

Telson (Fig.1A').- Inner posterior margin of telson with 3 pairs of setae and a distinct narrow cleft; each furca with 3 lateral spines (2 large and 1 small).

Antennule (Fig.1B).- Uniramous, with 3 aesthetascs and a single seta terminally.

Antenna (Fig.1C).- Protopod and exopod equal in length protopod 2-segmented, with 2 spines on distal segment; endopod about one-fourth length of exopod.

Mandibles (Fig.1D).- Asymmetrical, with developed incisor and molar processes; palp absent.

Maxillule (Fig.1E).- Coxal and basal endites each with 7 barbed setae; endopod 2-segmented setal formula progressing distally 1,2+4.

Maxilla (Fig.1F).- Coxal and basal endites bilobed each with 5 and 4 setae on proximal and distal lobes respectively; endopod indistinctly bilobed, with 6 setae; scaphognathite with 16-21 marginal plumose setae.

Maxilliped I (Fig. 1G).- Coxa with 1 seta; basis with 2,2,3,3 plumose setae on mesial margin in ascending order; endopod 5-segmented, with setal formula progressing distally 3,2,1,2,4+I; exopod with 4 long terminal natatory setae.

Maxilliped II (Fig.1H).- No coxal setae; basis with 3 plumose setae on mesial margin; endopod 3-segmented, with setal formula progressing distally 0,1,3+I; exopod with 4 long terminal natatory setae.

Maxilliped III (Fig.1I).- Biramous but rudimentary.

Pereiopods (Fig.3A-D).- Unsegmented rudimentary buds.

Zoea II

Size: TL = 1.8-2 mm. (5 specimens examined).

Carapace (Fig.2A,A').- Slight increase in size without change in armature; eyes stalked.

Abdomen (Fig.2A").- Sixth abdominal somite distinct; pleopod buds developed; dorsal setae present as in zoea I.

Telson (Fig.2A").- No change otherwise median cleft somewhat wider.

Antennule (Fig.2B).- With 4 terminal, 1 subterminal aesthetascs and a single seta; endopod rudimentary.

Antenna (Fig.2C).- No change except increase in size of endopod.

Mandible (Fig.2D).- Incisor and molar processes increase in size; a small mandibular palp present.

Maxillule (Fig.2E).- Coxal endite with 6 plumose setae on mesial margin and 1 plumose seta on lateral margin; basal endite with 9 barbed setae; endopod unchanged.

Maxilla (Fig.2F).- Coxal and basal endites unchanged; endopod with 3 setae on each proximal and distal lobe; scaphognathite with 28-30 marginal plumose setae.

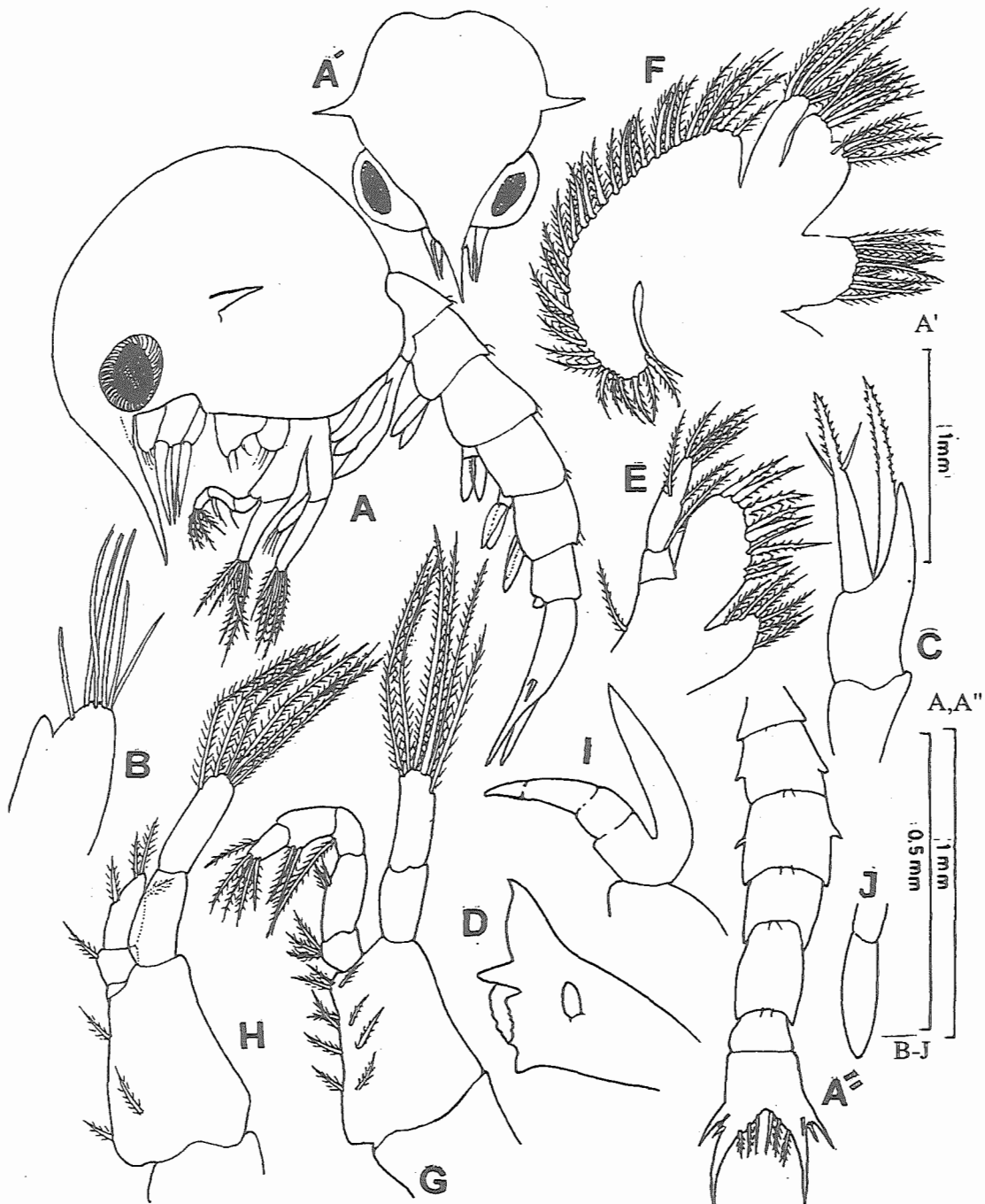


Fig.2. *Micippa platipes* Rüppell, 1830. A, second zoea, lateral view; A', carapace, frontal view; A'', abdomen with telson, dorsal view; B, antennule; C, antenna; D, mandible; E, maxillule; F, maxilla; G, first maxilliped; H, second maxilliped; I, third maxilliped; J, first pleopodal bud.

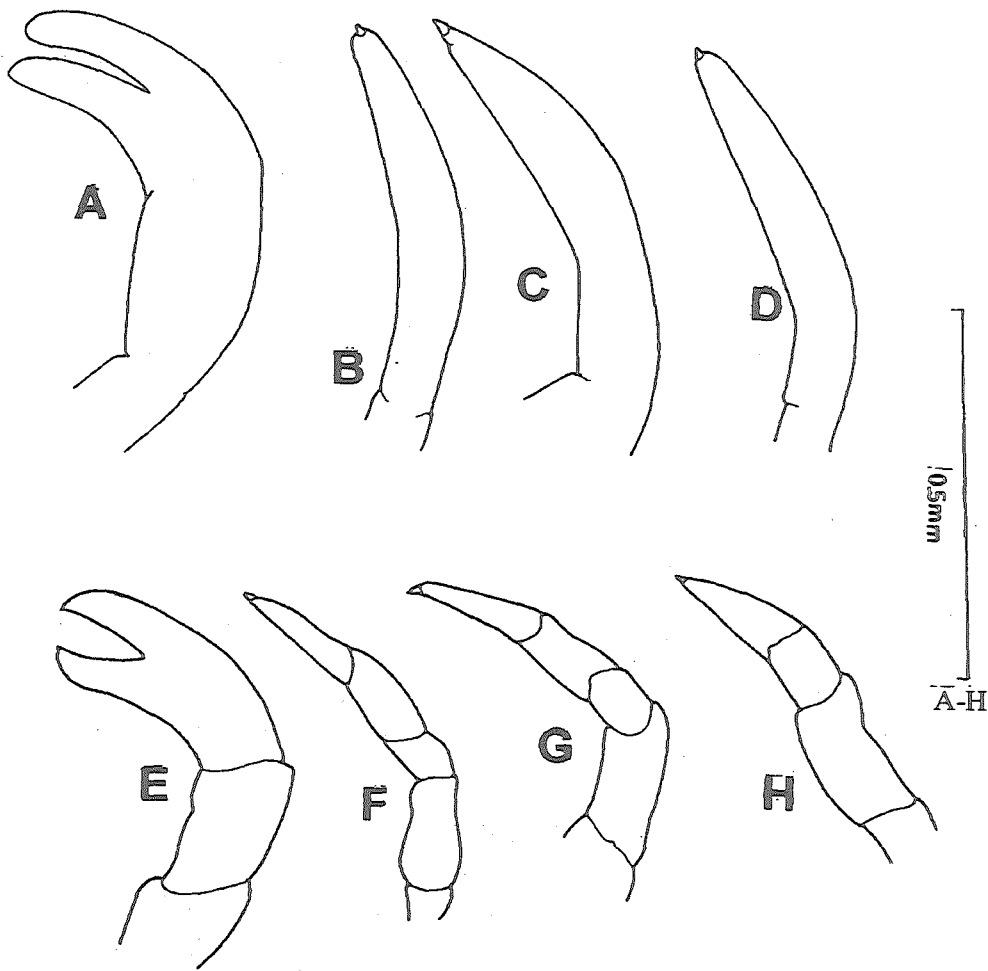


Fig.3. *Micippa platipes* Rüppell, 1830. Pereiopodal buds, A-D, first zoea; E-H, second zoea.

Maxilliped I (Fig.2G).- Unchanged except exopod with 6 long natatory terminal setae.

Maxilliped II (Fig.2H).- Unchanged except exopod with 6 long natatory terminal setae.

Maxilliped III (Fig.2I).- Rudimentary bud; but endopod partially 3-segmented.

Pereopods (Fig.3E-H).- Rudimentary buds, but segmented.

DISCUSSION

M. thalia is the only other species of the genus *Micippa*, was reared in Japan (Kurata, 1969) through all the larval stages: two zoeal and a megalopal stage. Kurata has

illustrated zoea I and the megalopa. The English translation of the Japanese text is available for magalopa only, as such comparison between zoea I of *M. platipes* and with the illustrations fo *M. thalia* is given in a tabulated form:

Table: Comparison of characters in zoea I.

Characters	Present study <i>Micippa platipes</i>	Kurata, 1969 (Fig.24 c,d) <i>Micippa thalia</i>
Abdomen:		
posterolateral angles	prominent	not prominent
Antenna:		
protopod	equal to exopod	longer to exopod
protopod	2-segmented	unsegmented

The present study on *M. platipes* though incomplete, is hoped to be useful in sorting the taxonomic status of the two species *M. platipes* and *M. philyra* which have been often confused and cited under various names (Buitendijk, 1939). Tirmizi and Kazmi, 1988: 185 mentioned that.....the specimen at hand are close to *M. platipes*, as such they are doubtfully referred to *M. platipes*.

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