

**A NEW SPECIES OF *CYPHOCARCINUS* AND A NEW RECORD
OF *MACROPODIA FORMOSA* RATHBUN (CRUSTACEA,
DECAPODA, MAJIDAE) FROM PAKISTAN**

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ABSTRACT: The present paper includes a new species and a new record of majid crabs. The new species is referable to the genus *Cyphocarcinus*, subfamily Mithracinae of which only the the genus *Micippa* was known from the region. *Macropodia formosa* Rathbun is being recorded for the first time from Karachi and belongs to the subfamily Inachinae. Both the species are described and illustrated. The new species is compared with its allied species.

KEY WORDS: Majid crabs - Pakistan - new species - mithracine *Cyphocarcinus* - new record - inachine *Macropodia formosa*.

INTRODUCTION

Sixteen species of majid crabs were reported from Pakistan by Tirmizi and Kazmi (1988). As a result of the present study three more species belonging to the genera *Cyphocarcinus* and *Macropodia* are added to the majid crab fauna of Pakistan. *Cyphocarcinus* is being reported for the first time from Pakistan waters. Uptill now one mithracine genus *Micippa* was representing this subfamily from the area under study. Recently a female belonging to *Cyphocarcinus* was obtained and initially keyed out as *C. minutus* A. Milne-Edwards. A careful study revealed several differences which could only be confirmed when one slightly smaller male and one juvenile was collected. The material of *Cyphocarcinus* is being described here as new to science.

The specimens of the inachine, *Macropodia* are incomplete, some essential parts are missing, they are therefore, for the time being assigned to *M. formosa* Rathbun. It can be pointed out here that the previous record of *Macropodia* from Pakistan, *M. falcifera* Stimpson, was also an uncertain identification (Tirmizi and Kazmi, 1988) and its position is still not absolutely clear in view of the insufficient material.

The abbreviations used are cl for carapace length, cb for carapace breadth and rl for rostral length. The material will be housed in the Marine Reference Collection and Resource Centre (MRC), Karachi.

SYSTEMATIC ACCOUNT

Subfamily Mithracinae

***Cyphocarcinus sargassumi* sp. nov.**

(Fig.1)

MATERIAL

Holotype: female, cl+rl 8.5 mm, rl 1.5 mm, cb 3.5 mm, 26 September, 1992, Bulleji (24°50'N, 66°53'E), MRC Cat No. BRAC.547.

Allotype: male, cl+rl 5.5 mm, rl 1 mm, cb 2.5 mm from *Sargassum* sp., 29 April, 1994, Bulleji, MRC Cat. No. BRAC.548.

Paratype: 1 male (juvenile) cl+rl 3 mm, rl 1 mm, cb 1.5 mm from *Sargassum swartzii*, 31 March 1994, Sonari (24°53'N, 66°40'E), MRC Cat. No. BRAC.549.

DESCRIPTION

The carapace is oblong, twice as long as the maximum width, the dorsal surface of the carapace was with firm encrustation, concealing the structure. The regions of carapace (Fig.1A) appear to be poorly delimited, furthermore the entire surface is uneven. The setae, mostly removed with encrustation are stiff and hooked. The front is vertically deflexed. The rostral spines are very short, 1/5 of the postrostral length, measured at the level of the upper limit of orbit, they are separated by oval keyhole-shaped gap at the base, and divergent beyond the accessory spines (Fig.1B). The accessory spines are more upwardly directed in the allotype. The rostrum and its accessory spines are also setose.

At upper end of the orbit a small preorbital lobe is present, it is directed laterally; the supraorbital eave is straight and unarmed, a small postorbital lobe is present which is almost obsolete on the left side of the holotype (Fig.1B').

The hepatic region has one median tubercle, the gastric region is very highly elevated, the greatest height is found above the orbit, the anterior slope of the elevation is rough, in the allotype it is comparatively smooth. A pair of weak tubercles can be seen between the hepatic and gastric regions. The hepatic region is not visible from the dorsal aspect; the cardiac region is also elevated, and with two submedian tubercles. The lateral border is armed with 2 to 3 bulgings on either side, largest being on the branchial region, the carapace is widest here. The intestinal region is slightly raised. The posterior margin has a broad truncated medial lobe.

The basal antennal article (Fig.1C) is broad and with a blunt serrated lobe. The serrations are more defined in the allotype. The first moveable segment is somewhat rectangular.

The third maxilliped (Fig.1D) has serrations on the medial edges of its ischium and merus.

The cheliped (Fig.1E) has tubercles on the dorsal and the ventral margins of the merus. In the female the distal most tubercle on the merus is strongly developed, ventrally. The fingers have a small toothless gape (Fig.1E'), the cutting edges are brownish in the males.

The meri of the ambulatory legs (Fig.1A) are each flattened and with a row of thick hairs on both margins. The dactylus of the fourth leg (Fig.1F) is armed with one pair of large subterminal spines and five small equidistant teeth on the inner margin.

The second somite of the male abdomen (Fig.1G) has a setose tubercle; the sixth somite is broader than long with convex lateral margins; the seventh somite is longer than broad. The female abdomen (Fig.1H) is simple and not markedly broader than that of the adult male.

The male gonopod (Fig.1I) is L-shaped, tapering apically and with the extreme tip bifid, a few plumose setae are present on the basal region, minute spines are seen subapically, as illustrated.

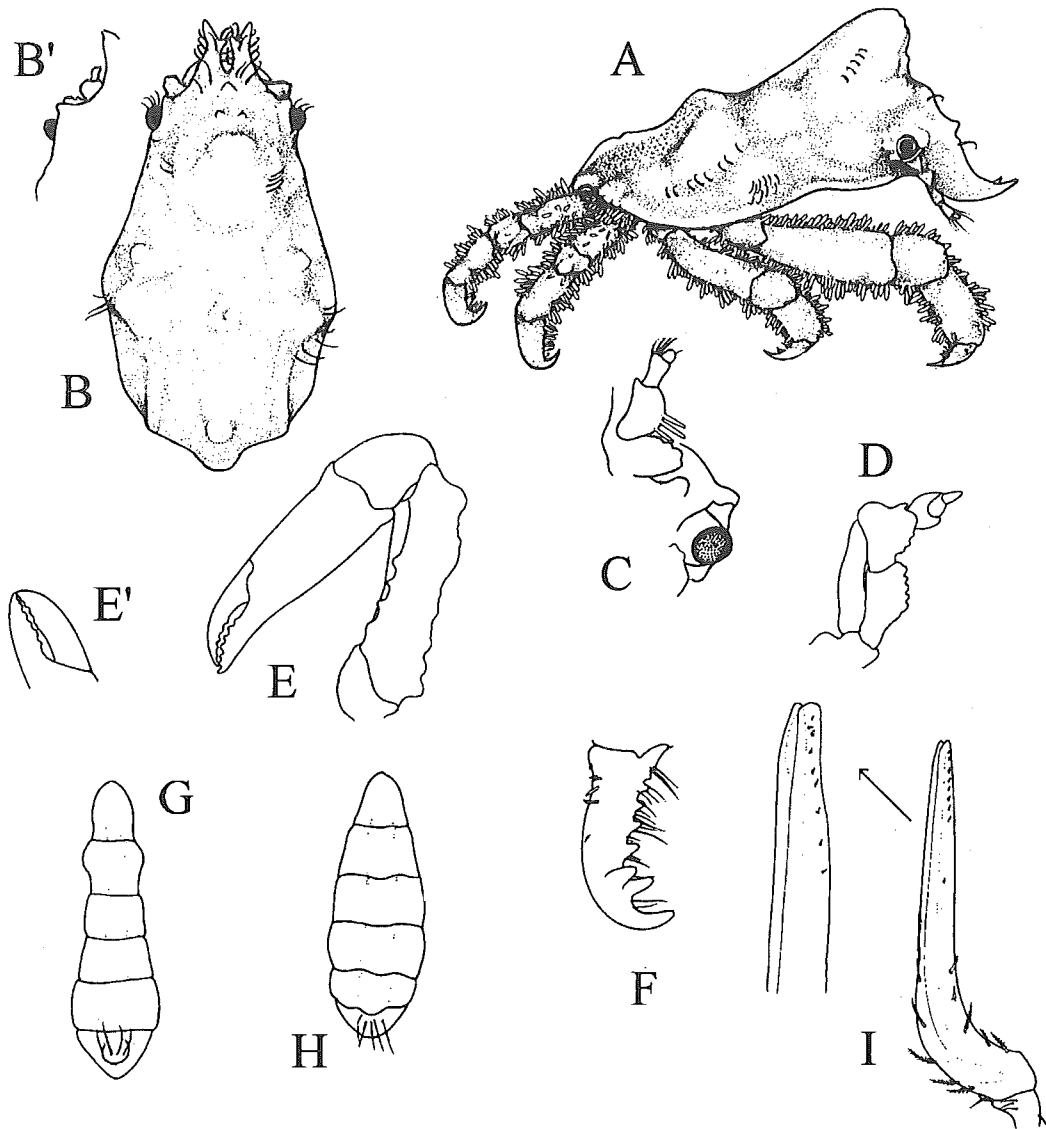


Fig. 1. *Cyphocarcinus sargassumi* sp. nov. All figures are from female holotype (cl.8.5 mm) except E,E',G and I which are from male allotype (cl.5.5 mm). A, carapace and limbs from right side; B, carapace in dorsal view; B', left orbit and basal segments of antennal peduncle; C, left eye and antennal peduncle, ventral view; D, right maxilliped, ventral view; E, cheliped; E', same, cutting edges; F, dactylus of fourth leg; G and H, abdomen; I, first gonopod.

REMARKS

This species is distinguished from all other known species of *Cyphocarcinus* by the combination of characters such as a short rostrum, strongly elevated hepatic region and the first two movable segments of antenna rectangular, the strongly elevated hepatic region is similar to that of *C. minutus* and in respect of rectangular first movable antennal segment, it does not agree with any known species. In *C. rathbunae* Griffin and Tranter (1986) the same segment is subtriangular and in *C. alcocki* Griffin and Tranter (1986) it is produced as a blunt lobe while in the other three species [*C. minutus*, *C. suspensus* (Gravier), *C. capreolus* (Paulson)] it is cylindrical.

COLOUR

The carapace is reticulate dorsally, with blotches of red on hepatic, cardiac and intestinal regions, a red band is present on the merus of cheliped.

ETYMOLOGY

The species is named after its habitat, the *Sargassum* weeds which harbour these crabs.

Subfamily Inachinae***Macropodia formosa* Rathbun, 1911**

(Fig.2)

Macropodia formosa Rathbun, 1911: 242, fig.1; Barnard, 1950: 17, fig.2g-i [part]; Griffin, 1974: 19, fig.4c,d; Griffin and Tranter, 1986: 33.

MATERIAL

1 male (incomplete) cl 11 mm, rl 3 mm; 1 female (incomplete), cl. 10 mm; 29 March, 1992, Karachi Fish Harbour, MRC Cat. No.BRAC.550.

DESCRIPTIVE REMARKS

Macropodia formosa is a small species. The present material differs in various ways from the earlier descriptions.

The carapace is dismantled and disfigured in both the specimens and also broken in the male (Fig.2A), however the rostrum, which intact only in the male, is short reaching beyond the intact basal antennal segment (Fig.2B), the rest of the antenna is missing; the rostrum is composed of a basal undivided portion and two narrow, acute and contiguous spines. The 'neck' is more obvious in the male. The armature of the carapace, somewhat variable in the two sexes, is more developed than described by earlier authors. In our specimens there are prominent cardiac and mesogastric spines; one or may be two pairs of epigastric tubercles on each side; an acute hepatic tubercle on either side; two tubercles on each branchial region, one tubercle in the female, (Fig.2C), and two tubercles in the male on anterolateral margin of branchial region; two low tubercles on the posterolateral angles, in male. Rathbun mentions of only one tubercle on either branchial region "in line with the cardiac tubercle" and one on anterolateral margin of each of the branchial region.

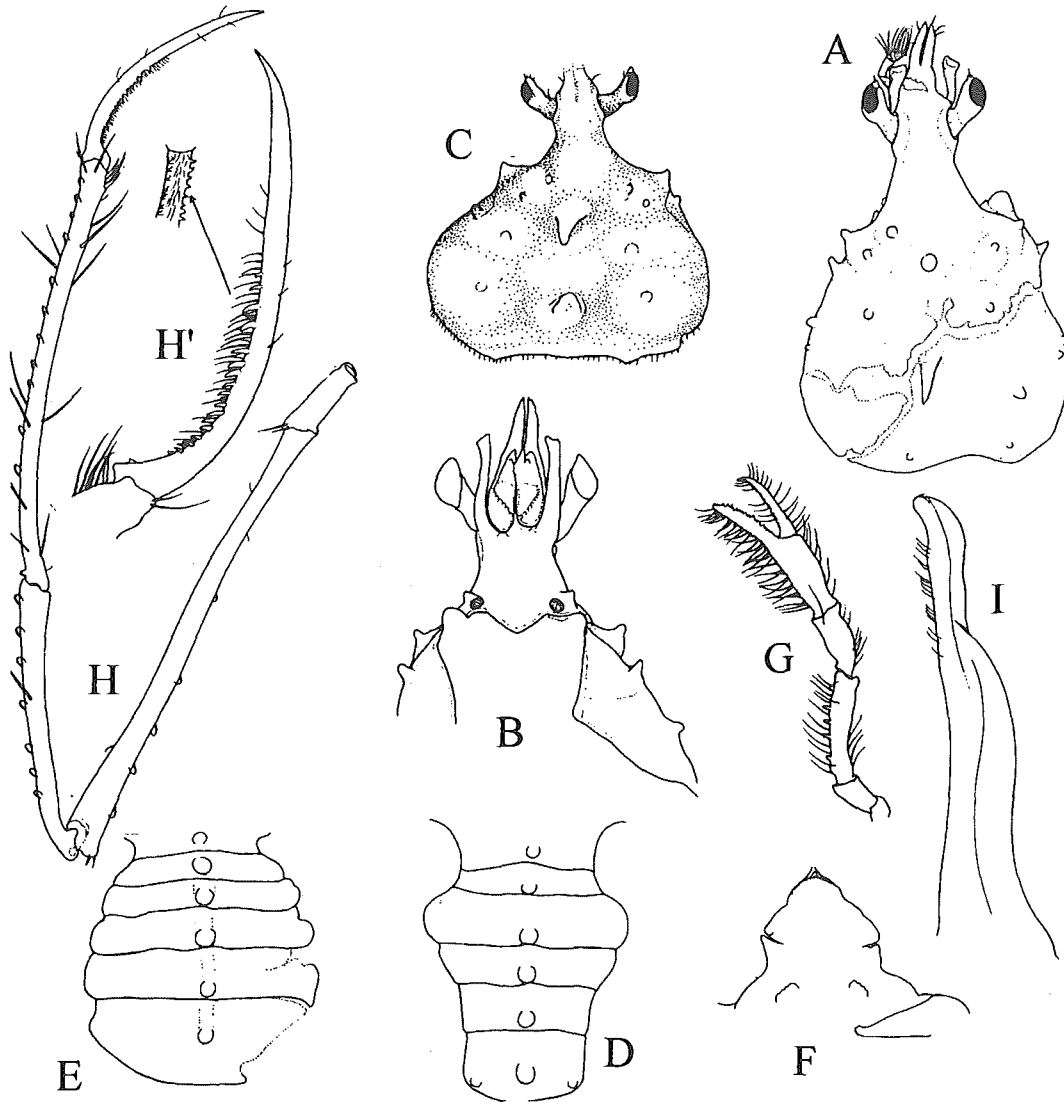


Fig.2. *Macropodia formosa* Rathbun. Figs.A,B,F and I are from male (cl.11 mm); C and E from female (cl.10 mm). A, carapace, eyes and antenna; B, same anterior portion, ventral view; C, carapace and eyes; D and E, abdomen; F, sternum; G, detached cheliped; H, detached leg; H', same, dactylus enlarged.

Abdominal somites are each with one tubercles in both the sexes (Fig.2D,E), only on the "first three" somites in the *Anton Bruun* material (Griffin, 1974).

The male sternum has one pair of serrated teeth as illustrated (Fig.2F).

The third maxillipeds are missing.

The specimens are now without cheliped. There is only one cheliped which was detached while preserving and is illustrated in figure 2G. The spines on the inner surface of the carpus of the cheliped are hardly visible, those on the propodus are obvious only on the lower margin. In the type both these segments bear spinules on "both margins of the inner surface". The "slightly enlarged truncate tooth near base of [the] dactylus" of the cheliped of the type described by Rathbun is not seen here. Further, in the *Anton Bruun* material both the fixed finger and the dactylus, bear enlarged teeth. The absence of any enlarged tooth on the cutting edges of the fingers may suggest that the cheliped belongs to the female.

Only one complete leg, now detached (Fig.2H) is present, the ischium is larger than other segments, other segments are normal except that there is a 'spur' on the proximal part of the propodus and the dactylus (Fig.2H') is more than half of the propodus, is slightly falcate and armed with two rows of backwardly curved prominent spines, the double row of dactylar teeth is only mentioned in *M. deflexa* by Forest (1978) and Noort and Adema (1985), or in *M. rostrata* by Ingle (1983). The spines are present only on the proximal half of the dactylus, a characteristic feature of female (Barnard, 1950).

The first male gonopod (Fig.2I) is slender, the basal part of the shaft has a slightly swollen basal part, torsion at near the distal third is visible, the latter with few setae internally as illustrated. The apex has a small fingerlike projection.

REMARKS ON NOMENCLATURE

The taxonomy of species belonging to *Macropodia* is complicated. (Noort and Adema, 1985). The nomenclature of *Macropodia formosa* has been given by Griffin (1974) and Griffin and Tranter (1986). According to these authors *Macropodia formosa* has been confused with *Achaeus tenuicollis* by Stephenson, 1945 (not *Achaeus tenuicollis* Miers, 1886) and according to them Barnard (1950) while describing *M. formosa* was dealing with two different species. However, Mier's *A. tenuicollis* and *A. tenuicollis* given by Stephenson (1945) were synonymized with *Achaeus fissifrons* (Haswell) by Campbell and Stephenson (1970) and then Mier's *tenuicollis* under *Achaeus curvirostris* (A. Milne-Edwards) by Griffin and Tranter (1986) leaving Stephenson's *tenuicollis*. Neither Campbell and Stephenson (1970) nor Griffin and Tranter (1986) mention of *A. tenuicollis* given by Alcock (1895). Since all the reference literature, and reference material of *Macropodia formosa* is not available to us, we have followed Griffin and Tranter, 1986.

DISTRIBUTION

Western Indian Ocean: Off South Africa, south of Gulf of Aden, Persian Gulf and Cargados Carajos (type locality), between Mauritius and Seychelles and now from Pakistan coast of Arabian Sea.

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