

A first record of *Gomezia bicornis* Gray 1831 (Decapod: Corystidae) in India, from seagrass habitat of Andaman Islands

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Gomezia bicornis is recorded for the first time from Andaman Islands at three different locations by core sample, during seagrass survey. It belongs to the family Corystidae which has 3 genera and 9 species, dwell in sandy substratum and burrows in seagrass habitat.

[**Keywords:** *Gomezia bicornis*, Brachyura, Corystidae, Andaman Islands, masked crab, seagrass habitat]

Introduction

Brachyuran crabs which are characterized by presence of a long respiratory tube of modified ciliated antennae¹ belong to family Corystidae and commonly known as masked burrowing crab. Species of this family lack a locking mechanism in abdomen². Total eight genera are known from this family among which three genera are extant³. Corystidae has a distinct extended cephalothorax as observed in the primitive crabs such as Homolodromiidae or Poupinidae. The body shape is due to their back burying mode of life, but their body organization is very much derived from the primitive ancestors⁴. This family is considered to be from the time of the Jurassic period⁵. In 1831 Gray described a new genus *Gomezia* under this family⁶.

Present study was associated dealing with *Gomezia bicornis* (two-horned Gomezia) which was first described by Gray⁶, the exact type locality is unknown, but inhabitant of the Indian Ocean. From Indian waters three species belonging to Corystidae family have been recorded. Among these three species, two new species were described from Indian waters. In 1935 Chopra described *Gomezia indica* from the mouth of Hoogly River which was later on shifted to *Jonas indicus*⁷. Manokaran et al. (2008) recorded another species *Jonas choprai* Serène, 1971 from Parangipettai coast⁸. Barathkumar et al. (2016) described a new species *Jonas kalpakkamensis* from coastal waters of Kalpakkam⁹. Present observation of *G. bicornis* the first record in India particularly from Andaman Islands. Ng et al. recorded 6,995 valid

species of brachyuran crabs from the world² and Kathirvel reported that 990 species were recorded from Indian waters¹⁰. Whereas from Andaman and Nicobar Islands 521 species has been recorded¹¹. Necessary measurements were taken and specimens were deposited to the Zoological Survey of India, Andaman & Nicobar Regional Centre, Port Blair.

Materials and Methods

Taxonomy

Order -Decapoda Latreille, 1802

Infraorder -Brachyura Linnaeus, 1758

Superfamily- Corystoidea Samouelle, 1819

Family – Corystidae Samouelle, 1819

Gomezia bicornis Gray, 1831

The taxonomic identity of the species was confirmed by using Ng et al.¹², Gray⁶ and Peter K. L. Ng (personal communication). The carapace length (cl) measured from rostrum to posterior end of carapace and carapace width (cw) measured between lateral side excluding teeth, middle of carapace where maximum wide area occur. Total of three specimens were collected during seagrass sampling at different locations of Andaman Islands, India (Fig. 1). In Havelock one immature male (Reg. No. ZSI/ANRC-15884 Date: 18.10.2016) (Fig. 2L) cl– 12.09 mm, cw– 7.54 mm, and two female one from Little Andaman (Reg. No. ZSI/ANRC-15885 Date: 18.10.2016) (Fig. 2M) cl–14.81 mm, cw– 10.4 mm another one from Neil, cl– 12.33 mm, cw – 8.24 mm which is kept at the Department of Ocean Studies and Marine Biology, Pondicherry University.

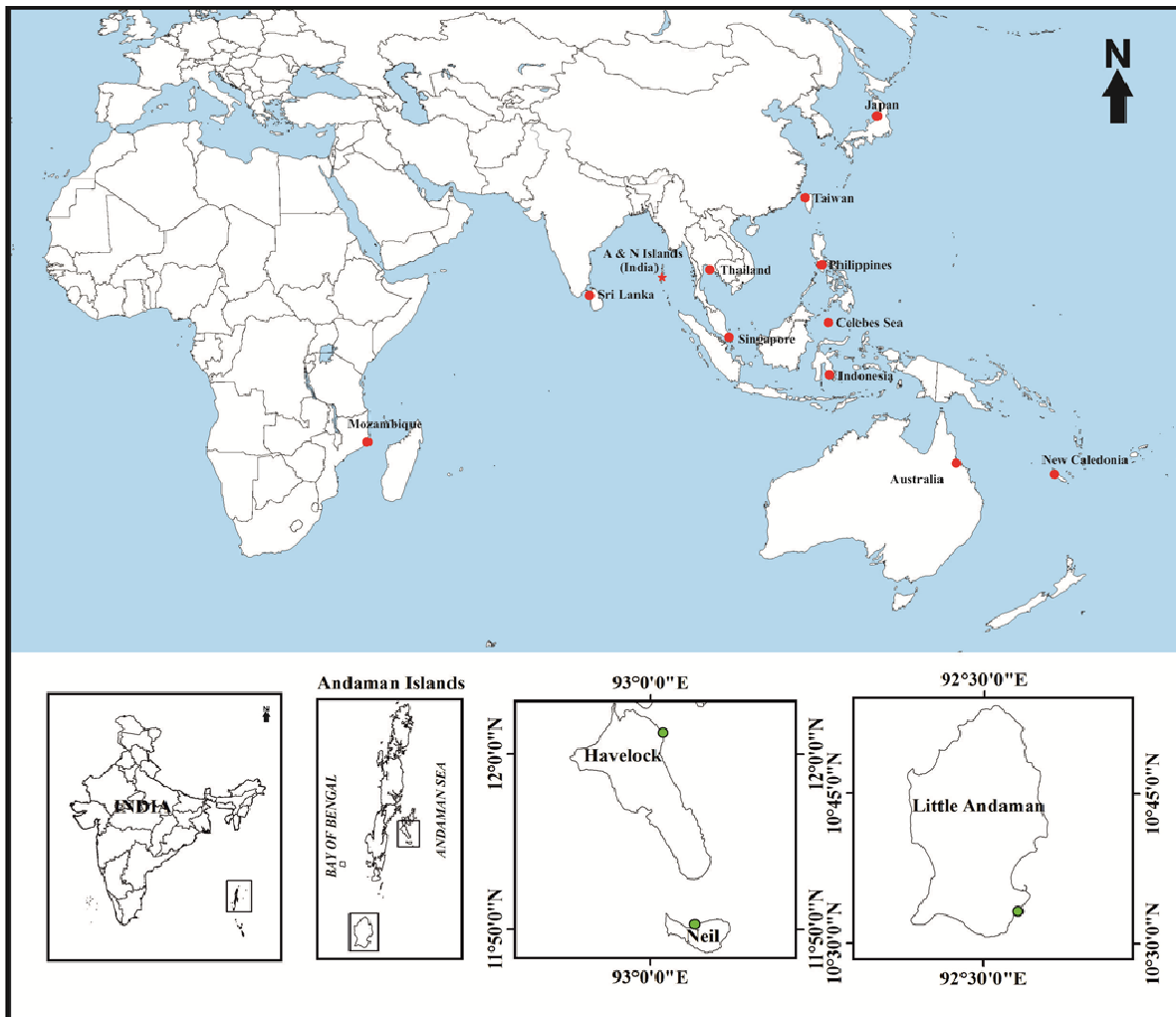


Fig. 1 — Distribution of *Gomeza bicornis* Gray, 1831 in the Indo-Pacific region, the new distribution is marked as star (above) and three distributional locations of Andaman Islands (below).

Results and Discussion

Carapace is oval shape, surface with numerous hairs arranged in transverse rows. Carapace is covered with small granules which are similar in size and shape throughout. Female carapace is more convex than male especially in the anterior region. No distinct differentiation was noticed between antero and posterolateral region. Nine lateral teeth projections are present directed straightly outwards, bearing a cluster of hairs around the tip, second teeth is the largest and then the size gradually decreases into small tubercle toward the last teeth, few granules at lateral side of teeth. One supraorbital spine is present at both lateral side of rostrum. The rostrum weakly bifurcated. Granules are observed on the rostrum, supraorbital teeth longer than infraorbital teeth. Orbit is complete,

serrated with smooth granules. Each antennule are well packed in separate cavity present on ventral side of rostrum; length of antenna almost equal with carapace length. Chelipeds are subequal, outer surface cover with hair and have 2-3 lines of very small granules without any spine. Merus shorter and broader than ischium, outer angle of merus with round shaped flip like structure. The ambulatory legs are covered with hairs at its border and presence of one spine on the merus of the last walking leg (Fig. 2D, 3F).

There is always a long standing off difficulty in differentiating between *Gomeza* and *Jonas*. The shape of carapace noted broader, oval shaped and prominently convex in *Gomeza* relative to *Jonas* where the carapace is elongated, slender and gradually convex in nature. Present specimen clearly

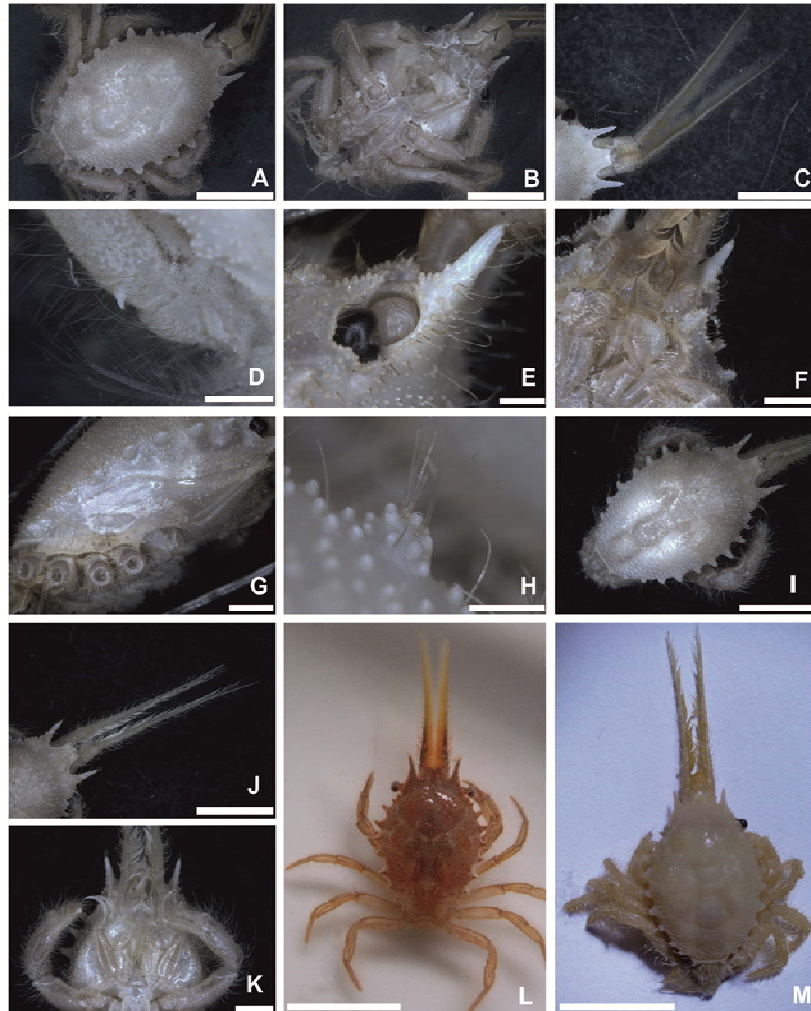


Fig. 2 — *Gomeza bicornis*. Gray, 1831A-H, female; A, dorsal view; B, ventral view; C, antenna; D, spine on merus of fifth leg; E, orbital region; F, mouth portion shows carpus-merus; G, ventrolateral view with ridges; H, lateral teeth with cluster of hairs; I-K, male; I, dorsal view; J, antenna; K, anterior portion of ventral view; L-M, full view; L, male; M, female. Scale bar: A-C, I-J: 5 mm; D-E: 1 mm; F-G, K: 2 mm; H: 0.5 mm; L-M: 1 cm.

showed prominent convex carapace. Specimen showed variation in the three anterolateral teeth which were small and blunt which differs from the *Jonas* where the anterolateral teeth are larger and predominantly stout. As the anterolateral teeth does vary in sizes among the *Gomeza*, a range of size is difficult to set as distinct taxonomic character. The dactylus of the fourth walking leg is not found to be spatuliform as seen in *Jonas*. *Jonas choprai* quietly resembles *G. bicornis*, accordingly to Ng et al.¹². All the *G. bicornis* were collected from the intertidal region of seagrass habitat (*Thalassia hemprichii*, *Cymodocea rotundata*, *Halodule pinifolia*) which would provide shelter. The two specimen were collected from intertidal sandy substrata near sub-

littoral zone (very fine sand to fine sand) at Havelock and Little Andaman islands, which easily help them to maintain their back burrowing habit. One specimen was surprisingly collected from the seagrass habitat (*Thalassia hemprichii*) with sand and coral rubbles as substrata at Neil Island. *Gomeza bicornis* inhabits in sandy substratum and burrows, leaving their antenna at the surface. Members of the order Decapoda are mostly gonochorioc. Mating behavior: Precopulatory courtship ritual is common (through olfactory and tactile cues); usually indirect sperm transfer¹³. The distribution is seen as a wide distribution in the Indo-Pacific region. The presence of this species as infauna, has stalled its wide spread records in the Indo-Pacific regions.

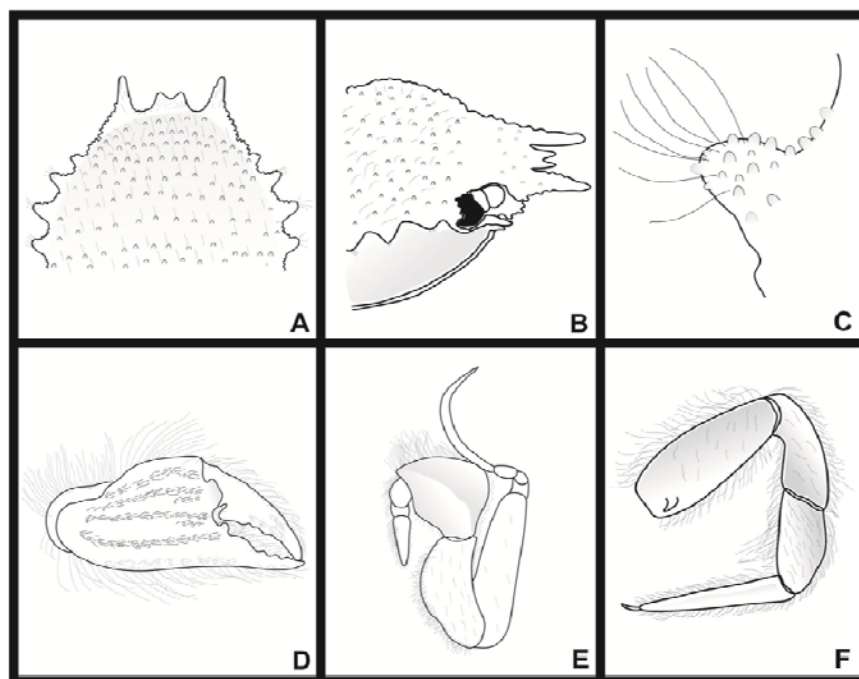


Fig. 3 — *Gomeza bicornis* Gray 1831: A, dorsal view; B, orbital region; C, lateral teeth with cluster of hairs; D, cheliped; E, external maxilliped; F, 5th leg (spine on merus).

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