



Short Communication

First record of *Jonas kalpakkamensis* Barathkumar, Das & Satpathy, 2016 (Decapoda: Brachyura) and *Ozius tuberculosus* H. Milne Edwards, 1834 from the northern part of the east coast of India

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Two brachyuran crabs, *Jonas kalpakkamensis* Barathkumar, Das & Satpathy, 2016 (Decapoda: Brachyura), and *Ozius tuberculosus* H. Milne Edwards, 1834, were documented for the first time from the Northern part of the east coast of India. The former species was collected from Chandanipal fish landing centre, Dhamara, and the latter was collected from Aryapalli fish landing centre, Chatrapur, Odisha. The species *J. kalpakkamensis* differs from its congeners by the distribution of tubercles on the carapace, spines on the fourth leg and the curvature of G2. *Ozius tuberculosus* differs from its congeners by the presence of tubercles on its dorsal side and the absence of spot marks on the ventral side. The documentation of these two species will be a valuable addition to the carcinological fauna of Odisha, India.

[Keywords: Bay of Bengal, Brachyuran crab, Morphology, New record, Odisha]

Introduction

One of the earliest families of brachyuran crabs is the Corystidae¹. They are also known as sand crabs because of their natural habitat. These crabs are often found buried in sand and are quite uncommon. Due to their diminutive size, they have little commercial value². Corystid crabs can be identified by their long respiratory tube, which is formed by modified antennae³. Indian crabs of the genus *Ozius* are rocky habitat-dwellers that reside in rock crevices close to high water levels and are non-edible. They camouflage with the rocks readily due to the colour of their carapace⁴. The genus *Jonas* is characterised mostly by the presence of supraorbital spines which are distinctly shorter or at most, just reach the rostrum⁵. Altogether 7 species in this genus have been

reported. Three species belonging to the family Corystidae have so far been reported from the Indian waters, namely, *Jonas indicus* (Chopra, 1935) from the mouth of the Hooghly River and later from the Chennai coast; *Jonas choprai* Serène, 1971, from the Parangipettai coast, south of Chennai; and *Jonas kalpakkamensis* Barathkumar, Das & Satpathy, 2016 from Kalpakkam, southeastern coast of India⁵. The species of the genus *Jonas* are also distributed in the Persian Gulf, South and Southeast Asian countries². *Ozius* is characterised by a broad and transversely oval-shaped, deeply defined carapace. A total of 19 species have been reported under this genus so far. From the Indian waters, 03 species viz., *Ozius guttatus* H. Milne Edwards, 1834; *Ozius rugulosus* Stimpson, 1858; and *Ozius tuberculosus* H. Milne Edwards, 1834 were reported⁴.

This paper documents the occurrence of two non-edible brachyuran crabs from the Odisha coast. The occurrence of *J. kalpakkamensis* and *O. tuberculosus* is reported for the first time from the northern part of the east coast of India.

Materials and Methods

The crab specimen of *J. kalpakkamensis* was collected in November 2024 from the Chandanipal fish landing centre, Dhamara, and *O. tuberculosus* was collected by handpicking near the rocky regions of the Aryapalli fish landing centre in Ganjam district, Odisha, in June 2024. The collected specimens were photographed using a Nikon D7500 camera in the field. The microscopic photographs were captured with a camera microscope, Rescholar RI-90-08. The specimens were preserved in formalin solution. The specimens were examined using hand lenses and a stereo zoom binocular microscope, Leica S9i. The identifications were carried out using standard keys and descriptions provided by Alcock⁷, Barathkumar *et al.*², and Banerjee & Sreeraj⁴. The measurements expressed in millimetres are for carapace width and carapace length. The specimens were registered and then deposited in the National Repository of Estuarine Biology Regional Centre, Zoological Survey of India, Gopalpur-on-Sea, Odisha, India.

Results

Superfamily: Corystoidea Samouelle, 1819

Family: Corystidae Samouelle, 1819

Genus: *Jonas* Hombron & Jacquinot, 1846

Jonas kalpakkamensis Barathkumar, Das and Satpathy, 2016

Material examined: 01 Male; Carapace Length (CL): 15.1 mm; Carapace Width (CW): 24.56 mm; Regd. No: EBRC/ZSI/Cr-16760; Location: 19°18'23" N; 84°57'51" E, Coll. Dr. Anil Mohapatra & Party; Collection date: 24 November 2024.

Diagnosis: Carapace oval longitudinally and covered with velvety soft setae. Regions demarcated by well-formed grooves. Carapace with clusters of pearly form granules on frontal, gastric, cardiac, intestinal regions (Fig. 1a). Front with a bifid rostrum (Fig. 2a). Supraorbital spine longer than rostrum; orbital spine larger than first anterolateral spine (Fig. 2b); eyes stalked and fill the orbital space. Third maxilleped elongated, bearing a granular surface, merus being quadrate. Length of antennae sub-equal to carapace length. Anterolateral region of carapace with 10 spines. Size of anterolateral spines decreasing from first to ninth; tenth larger than ninth, situated at posterolateral corner, pointing obliquely backwards (Fig. 1a). Arm and palm of chelipeds covered by setae. Borders of ambulatory legs densely setose (Fig. 2d); ventral region of merus of fourth ambulatory leg with 3 spines (Fig. 2e). Dactyli of last leg is spatula-like (Fig. 2a, b). G2 short with apex spoon-like (Fig. 2f), and G1 hooked with elongated filamentous distal part (Fig. 2g).

Colour: Pinkish crimson red in fresh condition.

Habitat: Found in sandy bottom at a depth of 20 – 30 meters⁸.

Distribution: India - Tamil Nadu⁵, Gujarat⁸ and Odisha (current study). *Elsewhere* - Not reported

Superfamily: Eriphioidea MacLeay, 1838

Family: Oziidae Dana, 1851

Genus: *Ozius* H. Milne Edwards, 1834

Ozius tuberculosus H. Milne Edwards, 1834

Materials examined: 01 Male; Carapace Length (CL): 21.30 mm; Carapace Width (CW): 30.12 mm; Regd. No: EBRC/ZSI/Cr-16760; Location: 19°18'23" N; 84°57'51" E, Coll. Sandeep Kumar Mohapatra and Sk. Sahid Afridi; Collection date: 12 June 2024.

Diagnosis: Carapace transversely oval (Fig. 3a), width 1.4 times the length. The anterolateral border of carapace divided into five lobes, each lobe having several small tubercles. Eye stalks small. Maxilleped merus 1.9 times of carpus. Front with four tuberculated teeth (Fig. 3d). Regions on the carapace clearly defined. The branchial region has two crescentic furrows. The urogastric and mesogastric regions have yellow patches. Chelipeds covered with small tubercles. Fingers of the cheliped blackish (Fig. 3c). Propodus and carpus swollen. Merus has a tooth-like spine at the ventral region. Movable finger is with a big whitish tooth. Ambulacral legs have very fine tubercles. G1 curly at the distal region and whip-like.

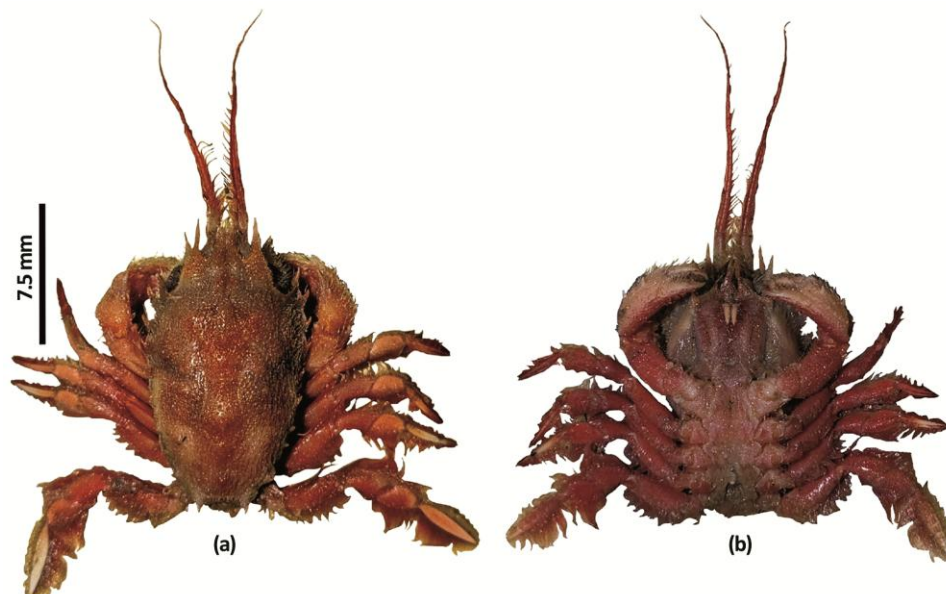


Fig. 1 — *Jonas kalpakkamensis*: (a) Dorsal view; and (b) Ventral view

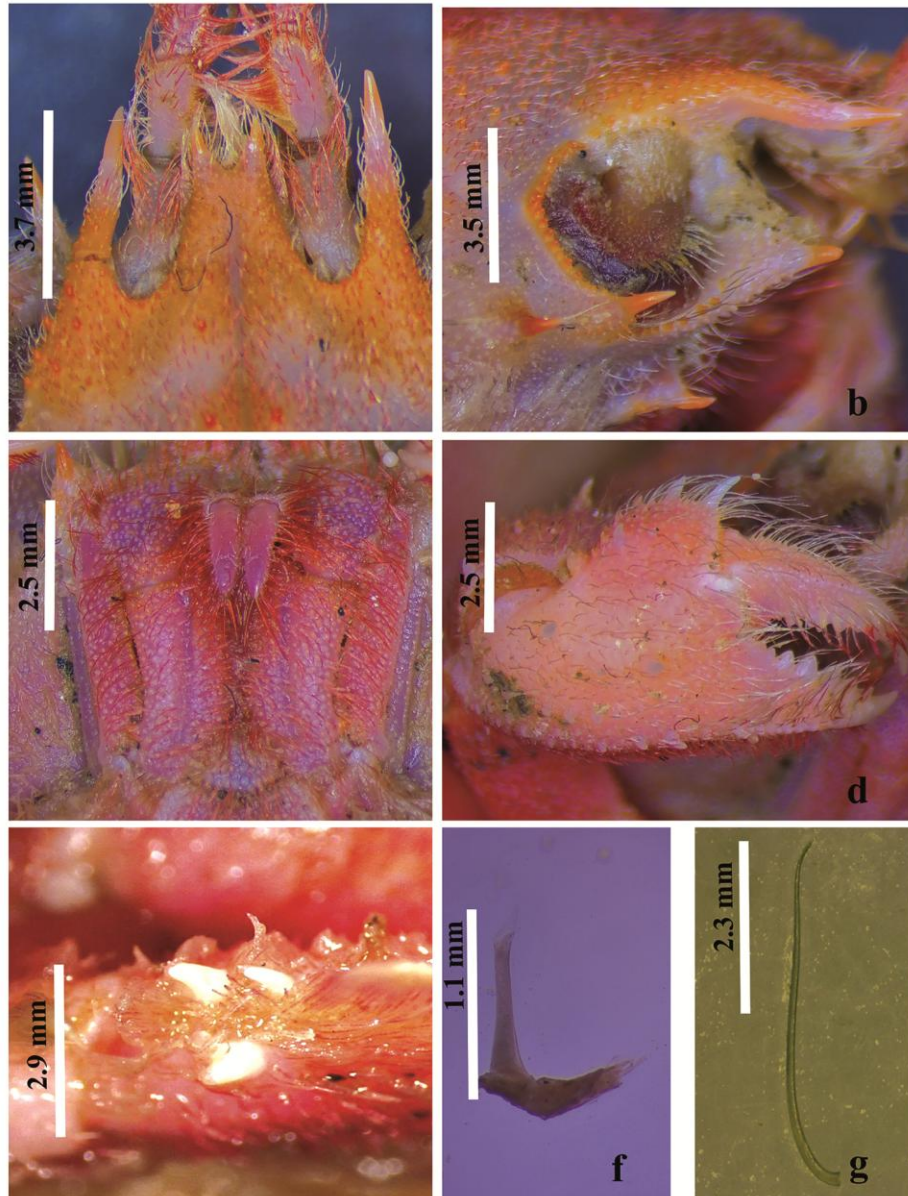


Fig. 2 — *Jonas kalpakkamensis*: (a) Front along with bifid rostrum; (b) Supra orbital spine and eye; (c) Mandibles; (d) Right cheliped; (e) Spine on the ventral region of merus; (f) Gonopode 1 (G1); and (g) Gonopode 2 (G2)

Its tip pin-like and devoid of any aesthetes (Fig. 3e). G2 stout and has hairs on both sides (Fig. 3f)

Colour: Brownish umber body. The tubercles are white and yellowish. Abdomen is pinkish.

Habitat: Found in crevices of rocks near the high tidal wave zone.

Distribution: India - Andhra Pradesh, Maharashtra, Karnataka, Lakshadweep Islands, Andaman and Nicobar Islands⁵ and currently in Odisha. *Elsewhere* - Mauritius, China, Japan, New Caledonia, French Polynesia, Cocos-Keeling Islands, Malaysia, Mergui islands, Marquesas, and Sri Lanka⁴.

Discussion

The species *J. kalpakkamensis* morphologically resembles *J. formosae* (Balss, 1922), which is distributed in South and Southeast Asian regions. Barathkumar *et al.*² have separated *J. kalpakkamensis* from *J. formosae* by having more pearly-shaped granules in the higher carapace areas. *Jonas kalpakkamensis* has three spines (*vs. J. formosae* having one spine); basal part of G2 is softly curved in *J. kalpakkamensis* (*vs. sharply projected in J. formosae*).

The other Indian species of the genus *Jonas* are *Jonas choprai* Serène, 1971 and *Jonas indicus*

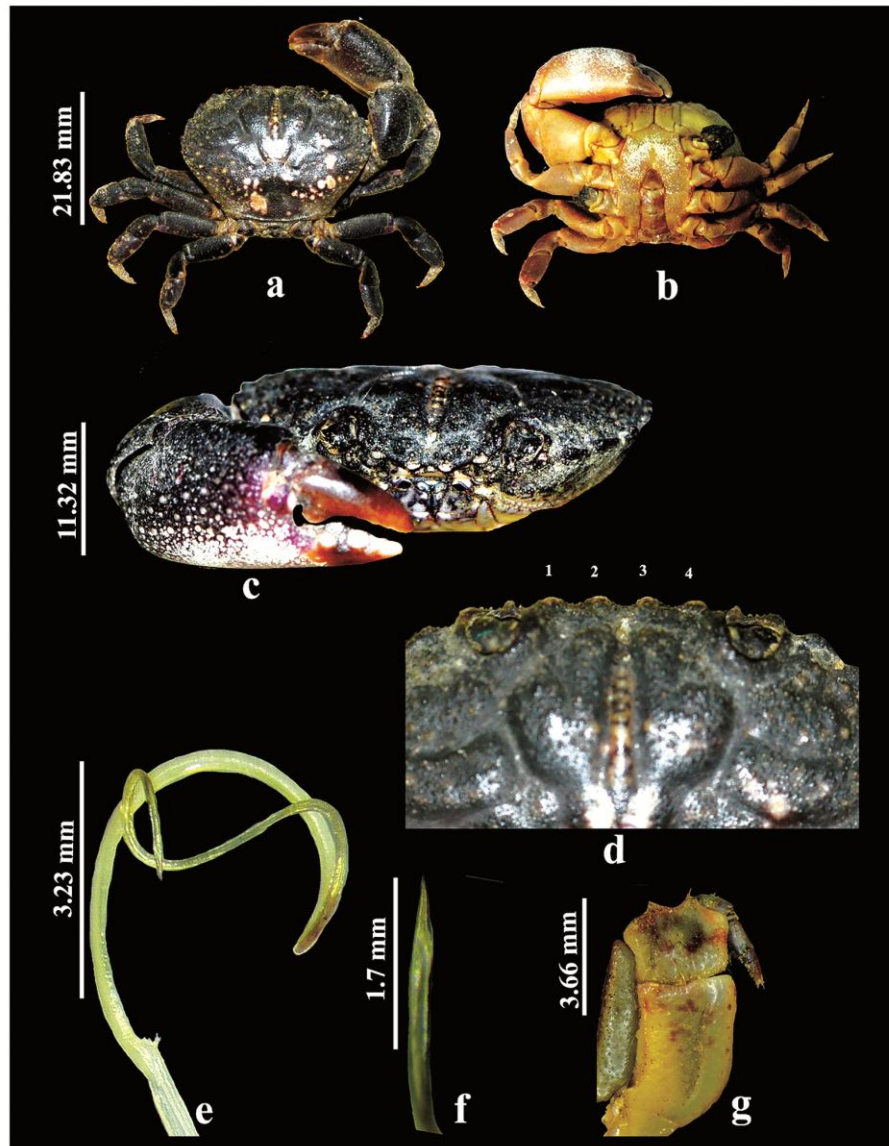


Fig. 3 — *Ozius tuberculatus*: (a) Dorsal view; (b) Ventral view; (c) Right cheliped; (d) Frontal region; (e) Gonopode 1 (G1); (f) Gonopode 2 (G2); and (g) Maxilliped

(Chopra, 1935). In *J. kalpakkamensis*, the granules on the carapace vary in size (vs. uniform in *J. choprai*). The section of the basal antenna is sparsely granular in *J. kalpakkamensis* (vs. strongly granular in *J. choprai*). In *J. kalpakkamensis* the supraorbital spine is shorter than the rostral and frontal process (vs. rostral spine is longer in *J. choprai*)².

The carapace of *J. indicus* is significantly developed as compared to *J. kalpakkamensis*. The spines are curved, and the posterolateral teeth are relatively larger in the former species than in the latter. The abdomen of *J. indicus* is narrower as compared to *J. kalpakkamensis*².

Ozius tuberculatus can be separated from *O. guttatus* by having a rough carapace (vs. carapace smooth in *O. guttatus*); the ventral portion of *O. tuberculatus* is spotless (vs. ventral part is spotted in *O. guttatus*); in *O. tuberculatus* margins of the carapace with tubercles, whereas in *O. guttatus*, the carapace edge is smooth^{9,10}.

Ozius tuberculatus can be separated from *O. rugulosus* by having a rough and pitted carapace (vs. smooth and pitted carapace in *O. rugulosus*); carapace two-thirds as long as wide in *O. tuberculatus* (vs. carapace more than two-thirds as long as broad in *O. rugulosus*). Chelipeds have tubercles in *O. tuberculatus* (vs. chelipeds rugulose in *O. rugulosus*)⁷.

Earlier reports by Roy & Rath¹¹ and Arunachalam & Mohapatra¹² have documented 164 brachyuran crab species from the Odisha coast. The documentation of these two species from the Odisha coast will be another value addition to the carcinological fauna of the Odisha coast.

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Conflict of Interest

The authors declare no conflict of Interest.

Ethical Statement

This study did not require ethical approval.

Author Contributions

Conceptualization: SKM; Data acquisition: SKM & SSA; Writing- original draft: SKM & CD; Writing-review & editing: AM

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