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NOTE

REPORT OF *BRADINOPYGA KONKANENSIS* JOSHI & SAWANT, 2020 (INSECTA: ODONATA) FROM KERALA, INDIA

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Report of *Bradinopyga konkanensis* Joshi & Sawant, 2020 (Insecta: Odonata) from Kerala, India

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Bradinopyga konkanensis Joshi & Sawant, 2020 is a newly described species of dragonfly in the family Libellulidae reported from the western region of Peninsular India. It is the fourth species described in the genus *Bradinopyga* Kirby, 1893 (Schorr & Paulson 2020) and is believed to be a Western Ghats endemic associated with lateritic coastal habitats. It was described based on specimens from three localities in Sindhudurg, Ratnagiri, and Thane districts of Maharashtra, India. All additional records are from coastal areas of Maharashtra. The authors had predicted its occurrence in other coastal areas of the Western Ghats, especially in the Konkan region of Goa and Karnataka (Joshi & Sawant 2020). We report this species from Kidoor village, Kasaragod district, Kerala, India.

Kidoor is a village under Kumbla grama panchayat, Kasaragod district in northern Kerala, southern India (Figure 1). It has lateritic formations near the coast, paddy fields and patches of forest adjoining human habitations. The lateritic region has many natural ponds which attract odonates (Image 1). The common species encountered here are *Brachydiplax sobrina*, *Crocothemis servilia*, *Indothemis carnatica*, *Orthetrum sabina*, *Agriocnemis pygmaea*, *Ceriagrion rubiae*, and

Ischnura rubilio. On 18 July 2020, BRSC photographed a dragonfly that resembled *Bradinopyga geminata*, but with distinct brown colouration at the bases of hindwings (Image 2). On 20 July 2020, additional field photographs were taken from Kidoor and a specimen was collected. The specimen was studied under a stereo microscope (Olympus SZ61 with MAGCAM DC-5 CMOS 5 MP camera) and deposited in the collections of the Department of Zoology, Government Brennen College, Thalassery. All field photographs were taken using a Canon 600 D camera with 55–250 lens. Taxonomic terminology follows Garrison et al. (2006).

Material examined: GBCT.ENT.O23, 1 male, Kidoor (12.633°N, 74.981°E, 32m), 20.v.2020, coll. Muhammed Haneef.

Description: Abdomen: 27 mm, hindwing: 33 mm. Face mostly black, eyes dark greyish-brown, median ocellus dark brown, vertex elevated, ending in a pair of pointed tubercles (Image 3). Prothorax and thorax dark blue and pruinosed, covered with fine brown hair. Wings hyaline with the bases tinted brown as follows: In the forewings, small portion of costal space, half of first cell of subcostal space, 1/10th of median space, half of cubito-anal space and 1/4th of first cell of anal anterior

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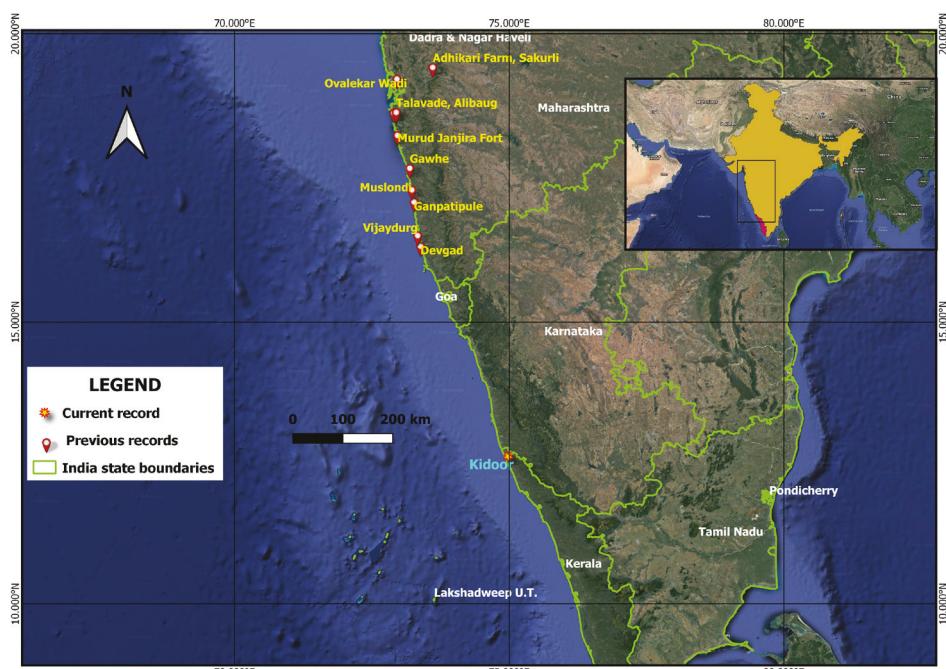


Figure 1. Observations of *Bradinopyga konkanensis*.

space. In the hindwings, small portion of costal space, 3/4th of subcostal space, first cell of cubito-anal space extending just slightly into the second cell, and triangular marking encompassing 7–8 cells of anal anterior space, extending into neighbouring cells. Medially, two rows of cells present between: i) IRP2 & R_{Spl}, ii) RP3+4 & MA, and iii) MP & CuA. Pterostigma bicoloured, central region black with dark brown on both sides (Image 4). Abdomen black, pruinosed bluish (Image 5). Secondary genitalia: Anterior hamuli with a base, a posteriorly facing lobe ending with sharply curved, hook-like, pointed end. Posterior hamuli with margins straight, rounded at apices, covered with thick brown hair (Image 6). Cerci pale brown with darker brown apices, conical, broader at base and pointed apically, covered with whitish hair. Epiproct dark brown, black at base and apices, curved slightly upwards (Images 7, 8, 9).

There are three other species of odonates—*Bradinopyga geminata* (Rambur, 1842), *Indothemis carnatica* (Fabricius, 1798) and *Indothemis limbata* (Selys, 1891)—which co-occur in the region and look similar to *B. konkanensis*, but they can be separated by clear distinguishing features (Fraser 1936; Joshi & Sawant 2020). We have tabulated the differences to aid precise identification of these species during field surveys (Table 1). We report *Bradinopyga konkanensis* from Kidoor village in Kerala, 450 km away from its nearest record (Devgad, Maharashtra). Kidoor is at a distance of 6 km from the sea and falls within the range



Image 1. A natural pond in the lateritic region of Kidoor Village. © B. Raju Stiven Crasta.



Image 2. *Bradinopyga konkanensis* in its lateritic habitat. © B. Raju Stiven Crasta.

Table 1. Differences between *Bradinopyga konkanensis* and closely similar species (males).

Species Feature	<i>Bradinopyga konkanensis</i>	<i>Bradinopyga geminata</i>	<i>Indothemis carnatica</i>	<i>Indothemis limbata</i>
No. of cell rows (medially) between: IRP ₂ & R ₅ RP3+4 & MA MP & CuA	Two	Two	One	One
Basal wing colouration	Brown tint up to anal anterior space in forewings and extending to neighbouring cells of anal anterior space in hindwings	Hyaline (no colour)	Small point of amber yellow in hindwings	Dark mahogany brown, reaching the first antenodal nervure in forewings and second antenodal & arc in hindwings
Pterostigma	Bicolorous, black at the centre & brown at the sides	Bicolorous, black at the centre & white at the sides	Bright ochreous between thick black nervures	Ochreous, paler along posterior border, bordered with a thick black nervure anteriorly & a thin one posteriorly
Thorax	Dark blue	Dirty pale yellow, marbled and peppered with black irregularly (like granite)	Blackish-brown	Black
Abdomen	Black, pruinosed bluish	Black marbled with yellow	Blackish-brown with yellow markings obscurely showing through	Black with yellow markings forming a broken lateral stripe

Image 3. Head of *Bradinopyga konkanensis*. © Muhammed Haneef.Image 4. Wings of *Bradinopyga konkanensis*. © Muhammed Haneef.Image 6. *Bradinopyga konkanensis*: lateral view of secondary genitalia. © Muhammed Haneef.Image 5. *Bradinopyga konkanensis* habitus showing black abdomen with blue pruinescence. © Muhammed Haneef.

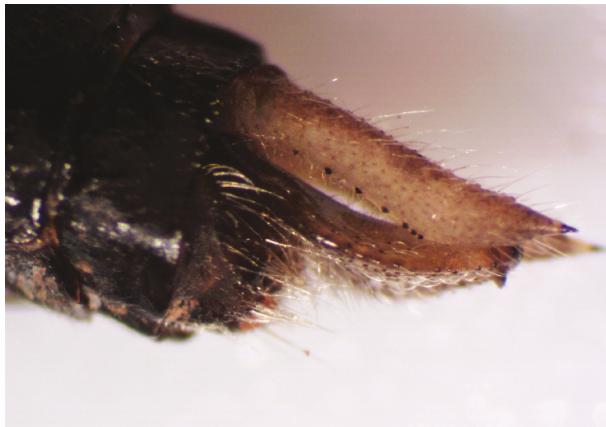


Image 7. *Bradinopyga konkanensis*: lateral view of caudal appendages. © Muhammed Haneef.

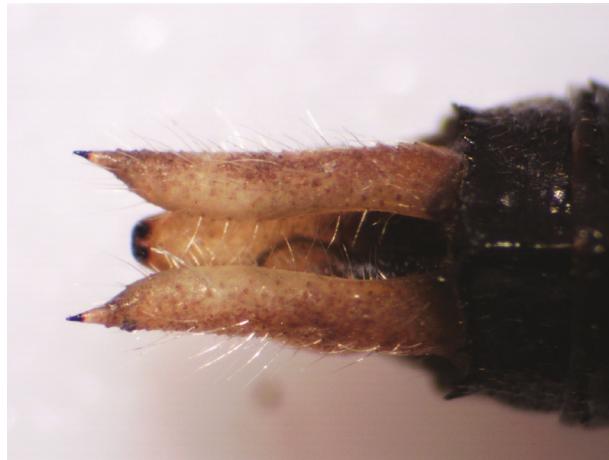


Image 8. *Bradinopyga konkanensis*: dorsal view of caudal appendages. © Muhammed Haneef.



Image 9. *Bradinopyga konkanensis*: ventral view of caudal appendages. © Muhammed Haneef.

of distances from sea recorded earlier for the species (0–89 km). The observation adds credence to the opinion of the authors of the species that it could be found in lateritic coastal habitats in Goa and Karnataka. A survey of similar habitats in the coastal region of Kerala could also yield additional records.

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