Note

Notes on the occurrence of *Mortonagrion aborense* Laidlaw, 1914 (Odonata: Coenagrionidae) from lower West Bengal, India

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The order Odonata (dragonflies and damselflies) comprising three suborders Anisoptera, Anisozygoptera and Zygoptera is one of the fascinating groups of insects. These conspicuous and brightly colored insects have a long, slender abdomen and are known as aerial predators, hunting by sight. These prominent freshwater insects (larvae and adults) are predaceous in nature and as well as good indicators of water quality and ecosystem health (Andrew et al. 2008; Tiple et al. 2013).

Globally 5,952 species in 652 genera of odonates have been reported, of which 475 species, 50 subspecies in 142 genera and 18 families are known from India (Subramanian 2014; Nair & Subramanian 2015). The genus Mortonagrion Fraser, 1920 consists of 13 species (van Tol 2005), most of which are mainly found in Asia. One species Mortonagrion stygia (Fraser, 1954), Belgian Congo is known from Africa and another from the New Guinea region. Out of 11 Asian species of Mortonagrion, Seven are known from Sundaland. However, India harbours two species Mortonagrion aborense (Laidlaw, 1914) and M. varralli Fraser, 1920. Hämäläinen (1989) transferred Argiocnemis aborense to the genus Mortonagrion. He also described that Agriocnemis binocellata Fraser, 1922, Indagrion gautama Fraser, 1922 and Mortonagrion simile Ris, 1930, Agriocnemis aboresis Fraser, 1933, are all conspecific with Mortonagrion aborense, however this publication appears to have been widely overlooked and the name Mortonagrion aborense has had priority. The present findings of Mortonagrion aborense (Images 1–5) add an additional record for lower West Bengal from Purba Medinipur District with photographic details of male anal appendages. Specimens were deposited in Department of Zoology, Vidyabharti College, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

Materials and Methods: Material examined: VBCS,DZ/27, 18.i.2015, 2 males and 1 female specimens of Mortonagrion aborense Laidlaw, 1914 were collected from Purba Medinipur District, lower West Bengal, 87°34’33.18”E & 21°40’25.3”N, coll. Arajush Payra. The surveys were undertaken from December 2013 to February 2015 during the monsoon and post monsoon period. GPS (Garmin) was used for location record. The specimens were identified with the help of identification keys provided by Fraser (1933). The photographs were taken by the Digital camera (Nikon D3200) and Carl Zeiss Stereozoom Microscope (for male anal appendages).

Result and Discussions: Mortonagrion aborense Laidlaw, 1914

Measurements: Male: Hindwing: 14mm; Abdomen: 23mm.

Description: Male: Head (Image 6): Labium is pale yellow. Greater part of labrum black; anteclypeus, bases of mandibles, genae and postclypeus greenish-yellow,
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forms also greenish-yellow outwardly, vertex and occiput black, the latter with rounded postocular spots; eyes black above and pale green at the sides and below. **Legs:** Legs look like pruinose, extensor surface of femur and flexor of tibiae is blackish, 3–4 black spine on hind tibiae. **Wing** (Images 8 & 9): Wings are hyaline. Pterostigma is dark brown and framed in pale yellow and thick black nervures and covering about one cell. Nine postnodal nervures in fore wing and six postnodal nervures in hind wing. Two antenodal nervures on both wings. **Prothorax and Thorax:** (Image 6) except the anterior lobe, prothorax is black on the dorsum. Thorax black on the dorsum, marked with a narrow pale blue or greenish-yellow antehumeral stripe on each side; laterally azure blue, with black stripe on the postero-lateral structure. **Abdomen** (Images 10 & 11): The dorsum of the S1 is black; S2 with a pair of small oval spots on the dorsum; S3-6 is black; S7 with a pair of basal dorsal spots only; S8 pale bluish ventrolaterally; S9 entirely blue save for an apical row of black spines; S10 is azure blue, with its apical border and the mid-dorsal line narrowly black. **Anal appendages** (Images 10 & 11): Black, superior anal appendages longer than the S10, from the side view appendages looks like curved a little downwards, the apex of the superiors hooked inwards as seen from the above view; inferiors are shorter than the superiors and with two pair of spines as seen from above.

Description: Female (Image 5): Morphologically female is also similar to the male, but the markings on the abdomen are slightly different. We also observed that, the antehumeral stripe is light yellow in female while it is pale blue or greenish-yellow in male. Abdomen is greenish-yellow; S1 with a dorsal sub-triangular spot, which is separated from the apical border by a narrow yellowish apical ring; S2 with a broad thistle shaped marking on the dorsum; S3–S7 with broad black mark on dorsum; S8–S10 also black on dorsum and pale blue at the lateral side, a narrow blue apical ring present on the S8. Anal appendages are small, conical and black.

Distribution and habitats: **Mortonagrion aborense** occurs from eastern India to Thailand and Lao PDR, and south to Borneo and Sumatra (Subramanian 2010). It may occur in Myanmar, but has not yet been recorded there. In India **M. aborense** is found in several locations of northeastern India, from Mizoram and western Assam. It is also reported from Intaki National park of Nagaland (Subramanian 2010; Joshi & Kunte 2014).

In West Bengal **M. aborense** has been previously reported from Hasimara, Duars (89°14′26.61″E & 26°37′50.51″N) and Huldbari Tea Estate (89°1′42.1″E & 28°45′9.65″N), Duars, (Fraser 1933) (Fig. 1). But,
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recently it has been recorded from Ramnagar Village (87°34'33.18"E & 21°40'25.3"N) of Purba Medinipur District on 18 January 2014, afterwards continuous sighting occurred from this region. Purba Medinipur is one of the southernmost districts of West Bengal at its north-west border situated at Paschim Medinipur, the Hoogly River and South 24 Parganas to the east and Howrah to the north-east. The state Odisha is at the southwest border whereas the Bay of Bengal lies to the south. It comprises 60km of the coastal tract of Purba Medinipur District, representing 27% coastal environment of West Bengal (87°5'–88°5'E & 21°30'–22°2'N) (Chakraborty 2010).

A small population was observed from a small pond of Ramnagar Village. This pond is mainly situated in a...
dark area, shaded by surrounding trees. Adults were found on the edges of pond with aquatic vegetation; and their flying is generally close to the ground. Males are easy to spot due to their bright blue markings, but females are cryptic in colour and difficult to spot. Some of the adults were seen in tandem and mating (Images 3 & 4).

Studies on the odonate fauna of lower West Bengal were mainly carried out by Selys (1891), Laidlaw (1914), Fraser (1933, 1934, 1936), Ram et al. (1982), Srivastava & Das (1987), Mitra (1976, 1983, 2002), Srivastava & Sinha (1993), Gupta et al. (1995), Dawn (2014). The above-mentioned literature shows that M. aborensensis has not been reported from southern West Bengal. Previous reports of M. aborensensis in India shows that it is mainly restricted to northeastern India. It also indicates that M. aborensensis may be found in other eastern Indian regions in the future. Hence detailed field studies are required to document biology, ecology and distribution of this species.

Odonata vary in their sensitivity to environmental change, and while some individual species can indicate change; it is recommended that changes in odonate assemblages as a whole be considered as indicators of environmental disturbance. Hence, surveys of Odonata diversity, particularly within ecologically important areas such as Purba Medinipur is important aesthetically because, its presence makes the urban site beautiful. Therefore, the protective environmental management aspects for the restoration and conservation of lake or pond are important. This species is placed in Least Concern category of the IUCN Red List (Subramanian 2010).

References


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