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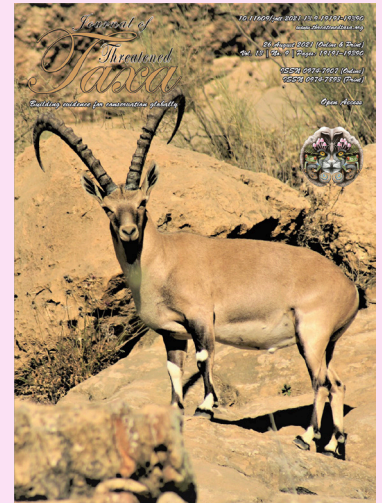
NOTE

A NEW DISTRIBUTION RECORD OF THE WESTERN GHATS ENDEMIC DAMSEFLY *MELANONEURA BILINEATA* FRASER, 1922 (INSECTA: ODONATA) FROM MAHARASHTRA, INDIA

Yogesh Koli & Akshay Dalvi

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NOTE

A new distribution record of the Western Ghats endemic damselfly *Melanoneura bilineata* Fraser, 1922 (Insecta: Odonata) from Maharashtra, India

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In India, the genus *Melanoneura* Fraser, 1922 is represented by only one species, i.e., *M. bilineata* Fraser, 1922. It is categorised as 'NearThreatened' on the IUCN Red List of Threatened Species (Subramanian 2011). The very first time, Fraser (1924) described the type series collected from Coorg (Kodagu) and Malabar hills at an altitude of 900–1,300 m. Subsequently, more observations were made from Kozhikode, Kannur, Peravoor, and Thiruvananthapuram (Subramanian 2011; Subramanian et al. 2018). In this note, we report *M. bilineata* for the first time from Maharashtra, based on one male and one female specimen.

The work was started in September 2020 at Myristica swamp (15.809°N 74.121°E, 73m), Hevale village, Dodamarg taluka of Sindhudurg district (Image 3). Yogesh Koli (YK) and Akshay Dalvi (AD) first observed *Melanoneura bilineata* on 8.x.2020. To confirm this genus, it was needed to check its wing venation and shape of caudal appendages (Image 1c,f). Therefore, one male and one female specimen (Image 1a) were collected from this locality. While sampling (8 October 2020), this region was not under legal protection, which was later in the exercise of the power conferred by sub-section

(1) of section 37 of the biological diversity act 2002, the Government of Maharashtra, declared it as a world heritage site on 28 January 2021. The specimens were preserved in 70% alcohol and deposited at Zoological Survey of India (ZSI), Pune (male: ZSI, WRC, Ent.4/2825; Female: ZSI, WRC, Ent.4/2826). Photographs were taken using a Canon 760D with a 100mm macro lens. Species identification was carried out with the help of a standard field guide (Fraser 1924, 1933). Morphological terms refer to Garrison et al. (2010). The map used in Image 3 is created using a QGIS v3.10.2. Copula of *M. bilineata* (Image 1a) was found perching on vegetation along the water flow in myristica swamp. This locality is spread up to 11,000m² (2.70 acres), bordered by paddy fields on one side and on the other side there's a road across which there is a rubber plantation. This region is locally termed as 'Kanhachi Rai'. The water flow in this swamp is from the northern to the southern side and the stream is partly diverted to paddy fields by local people for irrigation purposes.

Melanoneura Fraser, 1922 is a monotypic genus closely similar to *Caconeura* (Fraser 1922), *Phylloneura* (Selys 1860), and *Esme* (Fraser 1922). The male

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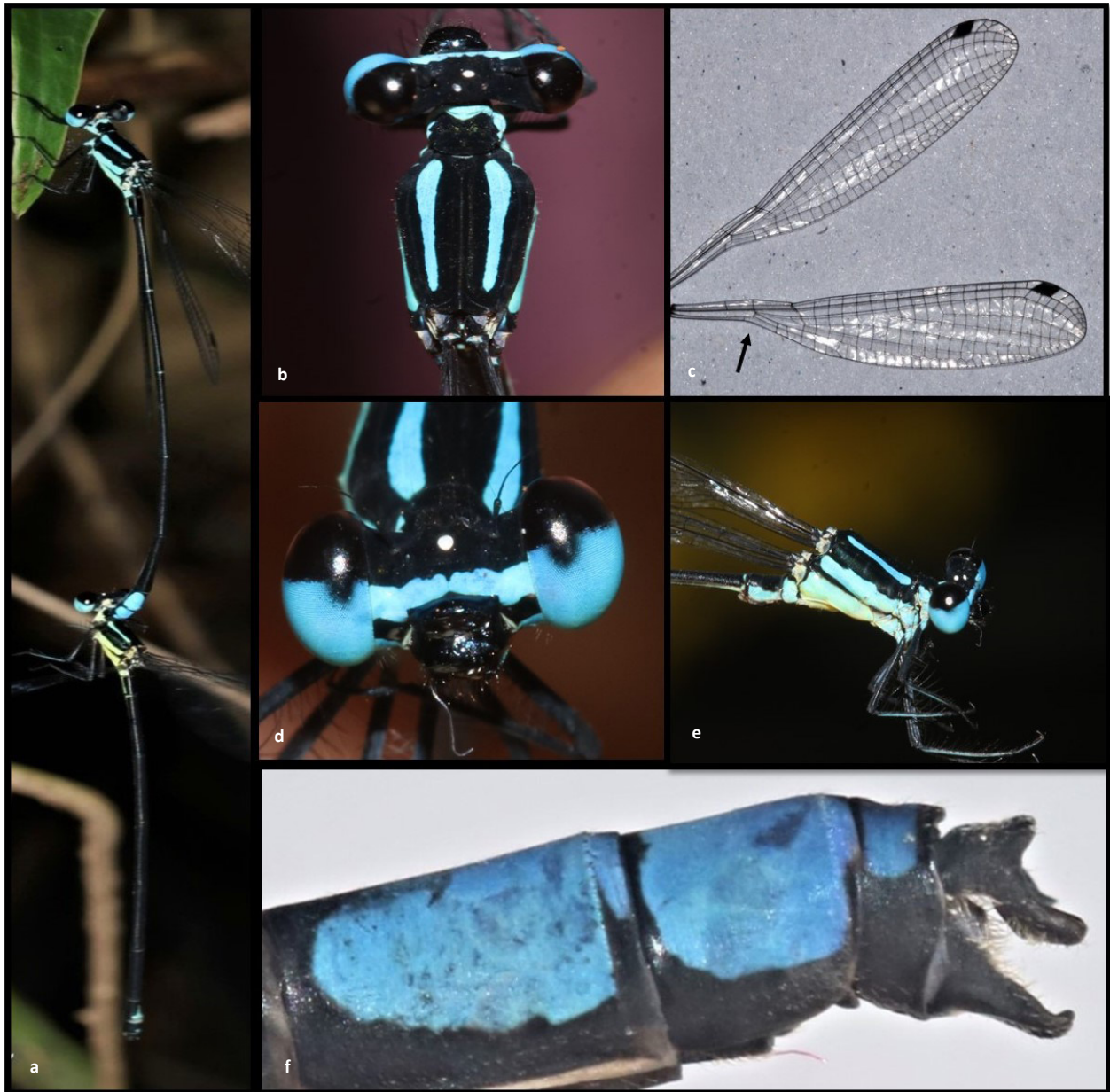


Image 1. *Melanoneura bilineata* male: a—copula | b—thorax, dorsal view | c—right FW & HW | d—face | e—thorax, lateral | f—caudal appendages, lateral view. © Yogesh Koli.

individual shows the following characteristics (Image 1a–f): vertex and occiput black, shows a broad blue band across the base of the postclypeus. Synthorax black with blue antehumeral stripe on each side of the mid dorsal carina. Wings hyaline, Pt brownish-black and anal bridge is absent. Abdomen marked with azure blue, S3–S6 have basal lunules over dorsum, S7 unmarked, S8–S10 blue with black stripe on lower half of lateral side. Caudal appendages black, cerci directed straight back and then down, paraprocts broad at base and slightly curved at the tip. Female (Image 1a): labium, labrum,

and anteclypeus similar to the male in colour. Synthorax black dorsally with yellowish-blue antehumeral stripes. S3–S7 unmarked; S8 having azure blue vertical stripe on tergite. This species can be easily distinguished by absence of anal bridge in its wing venation (Image 1c) (Fraser 1924, 1933). The genus *Caconeura* and *Phylloneura* have incomplete anal bridge whereas genus *Esme* shows a complete anal bridge. Apart from wing venation, the genus *Melanoneura* also differs by the absence of blue marking on S7 and with a slight variation in lateral blue marking on S2. Caudal appendages of all



Image 2. Habitat in the locality: a & b—Myristica swamp, Dodamarg. © Yogesh Koli.

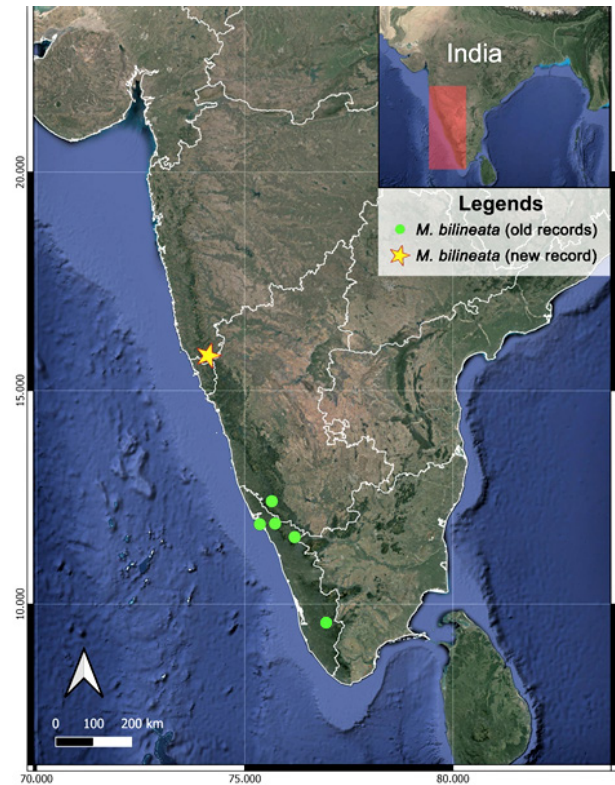


Image 3. The known distribution of *Melanoneura bilineata*.

the above genera are quite similar in colouration, almost longer than S10 but distinguished by a slight variation in their shape. Rather in *Melanoeneura*, the shape of the cerci is more like a ‘wrist and hand held in the attitude of clasping a ball’ (Fraser 1933).

The first record of *M. bilineata* from Maharashtra indicates that multiple observations are needed to study its distribution patterns in the entire Western Ghats. Myristica swamp of Dodamarg (Shredharan & Indulkar 2018) is poorly known in terms of biodiversity aspects. The presence of such infrequent species in this region signifies that the present locality still remains with many unreported species. Therefore, more surveys are required to document faunal diversity of this region, in order to make various conservation action plans.

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