

## First report of *Libellago lineata* (Burmeister, 1839) from South West Bengal, India

Saurav Dwari<sup>1</sup>, Anirban Patra<sup>2</sup>, Amal Kumar Mondal<sup>3</sup>

<sup>1,3</sup> Plant Taxonomy, Biosystematics and Molecular Taxonomy Laboratory UGC-DRS-SAP Department, Department of Botany & Forestry Vidyasagar University, Midnapore, West Bengal, India

<sup>2</sup> Green Plateau, Bankura, West Bengal, India

### Abstract

The first record of *Libellago lineata* (Burmeister, 1839) from South West Bengal, India is presented in this paper. During the biodiversity survey of Chotonagpur Plateau regions of West Bengal this species photographed and identified first time for the Southern part of West Bengal. Previously its distribution was restricted only in North West Bengal. *Libellago lineata* (Burmeister, 1839) commonly known as River Heliodor recorded in September, 2017. Small sized damselfly documented from stream of Duarsini forest area, Bundwan and Turga dam, Baghmundi of Purulia District West Bengal, India.

**Keywords:** first record, river heliodor, Bundwan, Baghmundi, south West Bengal

### Introduction

Insect is the biggest group of animal kingdom consists of more than half of the total faunal species of the world [1]. Among the insects order odonata, the dragonflies and damselflies are a broadly distributed and attractive group [2]. They are amphibious in life; adults are terrestrial and the larvae aquatic. Majority of them are very much specific to their habitats and are highly responsive to modification in habitat quality [3, 4]. In the world approximately 600 genera and 6000 species of 29 families have been recorded [5]. From British India about 536 species of odonates were reported by [6, 7, 8]. Later Mitra reported 499 species and Subramanian 463 species from present India [9, 10]. The observations on odonates in West Bengal were experienced by Selys who recorded approximately 22 species from Kolkata [11]. Srivastava and Sinha documented 178 species from West Bengal [12]. Mitra recorded 65 species from Kolkata and its surroundings Howrah [13]. In a current studies of odonates 80 species enlisted from Kolkata and surrounding Howrah [14]. In another study 17 odonates recorded from agricultural fields of Howrah District, West Bengal [15]. We present here the first photographic record of the *Libellago lineata* (Burmeister, 1839) [17] from South West Bengal, India. Previously this dragonfly recorded only from North Bengal of state West Bengal [16, 17]. Srivastava and Sinha in their State Fauna Series 3: Fauna of West Bengal, part 4 exclude *Libellago lineata* (Burmeister, 1839) [17] from Odonata list of west Bengal [12]. *Libellago lineata* (Burmeister, 1839) [17] is a Least Concern species (ver 3.1) according to International Union for Conservation of Nature (IUCN). From India it was previously recorded from Gopaldhara, Assam, Nicobar Islands [18], Cachar, Assam, Dehra Dun [8], Rajasthan [19], Bastar [20], Arunachal Pradesh [21], Manipur and Tripura [13], Orissa [22], Maharashtra [23].

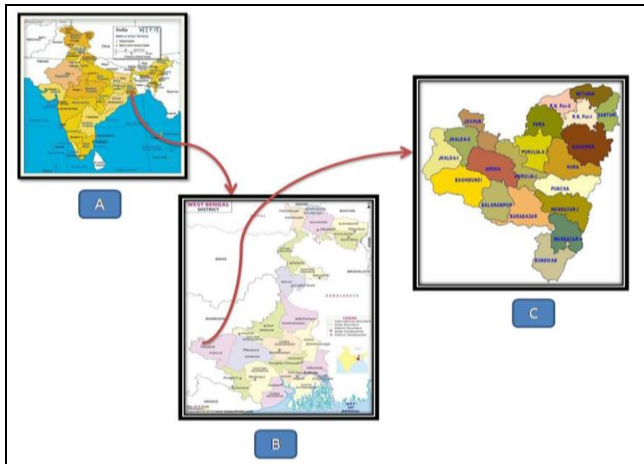
### Material methods and study area

Sample was photographed during documentation of odonates of Purulia district; West Bengal, India (Figure 1) through Pollard Walk Method [24, 25]. This is the first photographic record of *Libellago lineata* (Burmeister, 1839) [17] from the south West Bengal. On the day of 2017 (27.09.17) at around 04.30 hrs (04:30:02 PM) during the field surveys at the hills of this district of West Bengal we photographed two individuals of male and female of medium sized damselfly resting on small branches on hill stream, which is situated near Duarsini Ma Mandir of Purulia district; West Bengal (extends between 22.7626 North latitude and 86.45779 East longitude) and another observation on 03.09.17 at around 03.31 hrs (03:31:02 PM) from Turga dam, Baghmundi block of Purulia district; West Bengal (extends between 23.196371 North latitude and 86.066339 East longitude) (Figure 2 and 3). Information on this species is based on observation from 04.30 PM to 04.55 PM in Bundwan and 03.31 PM to 03.55 PM in Baghmundi. Specimen was photographed for further identification process with the help of High Resolution Digital Camera (Cannon 550 D with EOS 18- 55mm lens) and was identified using documents of Fraser, 1936 [8] and then confirmed by experts.

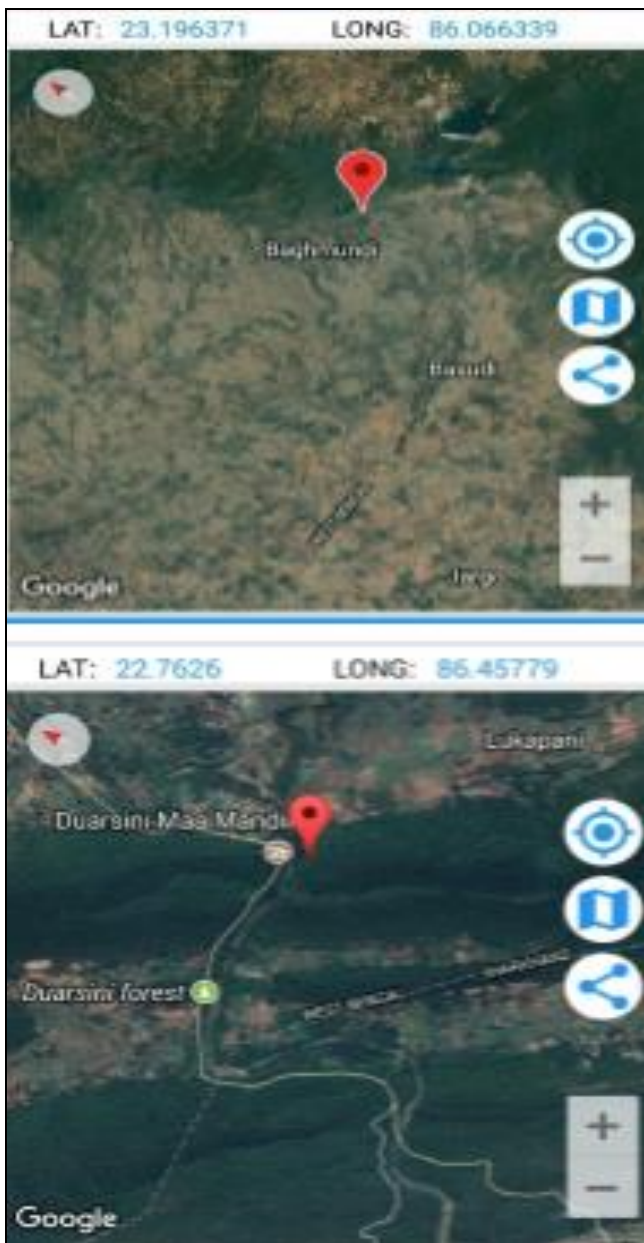
### Results

#### Species description

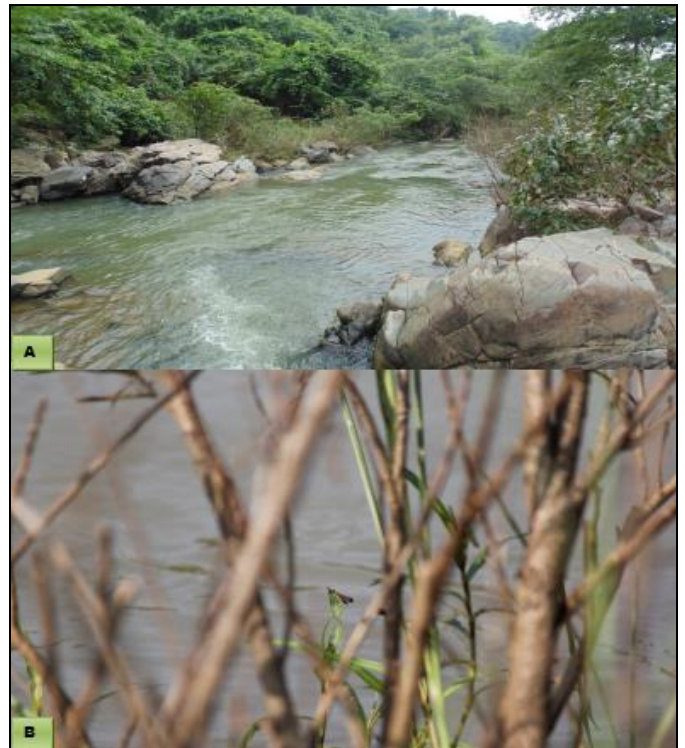
Male damselfly was small sized, black and yellowish with wings longer than abdomen. Wings of male were hyaline and tip was blackish. Thorax was black and marked with greenish yellow. Legs were black. Female was also more or less same as male with stout abdomen. Wings were entirely hyaline, tip not blackish (Figure 4). Male are more shy than females and they are very territorial.



**Fig 1:** Study area [India (A), West Bengal (B), Purulia District (C)]



**Fig 2:** Study areas of Purulia (District of record), West Bengal, India through Google map with Latitude and longitude



**Fig 3:** A and B. Habitats of *Libellago lineata* (Burmeister, 1839) [17], Duarsini, Purulia, West Bengal, India.



**Fig 4:** A. Male *Libellago lineata* (Burmeister, 1839) [17], Bundwan, Purulia; B. Female *Libellago lineata* (Burmeister, 1839) [17], Bundwan, Purulia; C. Male *Libellago lineata* (Burmeister, 1839) [17], Bagmundi, Purulia; D. Female *Libellago lineata* (Burmeister, 1839) [17], Bagmundi, Purulia.

**Systematic position of *Libellago lineata* (Burmeister, 1839)** [17].

**Class:** Insecta

**Order:** Odonata

**Infra Order:** Zygoptera

**Family:** Chlorocyphidae

**Genus:** *Libellago* Selys, 1853

**Species:** *Libellago lineata* (Burmeister, 1839) <sup>[17]</sup>

### Discussion

#### Early distributional range

*Libellago lineata* (Burmeister, 1839) <sup>[17]</sup> previously recorded from Buxa Tiger Reserve, Chilapata Wildlife Sanctuary and Gorumara National Park of North Bengal of State West Bengal (Pal, 2017; Anonymous, 2018) <sup>[16, 17]</sup>. From India it was previously recorded from Gopaldhara, Assam (Laidlaw, 1917a) <sup>[18]</sup>; Nicobar Islands (Laidlaw 1917a) <sup>[18]</sup>; Cachar, Assam (Fraser, 1928b and 1934b); Dehra Dun (Fraser 1928b; 1934b); Rajasthan (Prasad & Thakur 1981) <sup>[19]</sup>; Bastar (Prasad 1996a); Arunachal Pradesh (Prasad 1997b); Manipur and Tripura (Mitra, 2002) <sup>[13]</sup>; Orissa (Nair, 2011); Maharashtra (Tiple and Koparde, 2015).

#### Habitat structure of new locality

West Bengal is situated in eastern part of India, neighbor states are Odisha, Jharkhand, Bihar, Sikkim and Assam. On the eastern side the country Bangladesh is situated. Purulia is a large district of 23 districts of West Bengal and situated west part of it. The Area of Purulia is 6259 km<sup>2</sup>. The Purulia district lies between 22°60' N and 23°50' N latitudes and between 85°75' E and 86°65' E longitudes. One specimen actually photographed in Bandwan block of Purulia Sadar East Sub-division. The place of record lays 22.7626 North latitude and 86.45779 East longitudes. The place is nearer to Duarsini Ma Mandir of Duarsini. Another specimen photographed in Turga dam, Baghmundi block of Purulia Sadar West Sub-division. The place of record lays 22.7626 North latitude and 86.45779 East longitudes. Annual normal rainfall in this district is 1436 millimeter per year. Annual maximum temperature varies between 35-45°C, whereas minimum temperature varies between 10-12°C. Though most of the forest type of the district is dry deciduous but both the finding sites are situated in the moist patch of it. They prefer flowing water.

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