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NOTE

ADDITIONS TO THE ODONATA (INSECTA) FAUNA OF ASANSOL-DURGAPUR INDUSTRIAL AREA, WEST BENGAL, INDIA

Amar Kumar Nayak

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Additions to the Odonata (Insecta) fauna of Asansol-Durgapur Industrial Area, West Bengal, India

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To examine the diversity, occurrence and distribution pattern of dragonflies and damselflies (Odonata) from the selected study sites of Asansol-Durgapur industrial area of Paschim Bardhaman District of West Bengal, India an investigation was conducted by A.K. Nayak from January 2012 to December 2015. A combination of direct search and opportunistic sighting methods was applied to record odonate species (38 dragonflies and 19 damselflies) from the varied region of the study area. On the basis of this study, the first work on the Odonata fauna of Asansol–Durgapur Industrial Area by Nayak & Roy (2016) was reported. The aim of the present study is to update the checklist of Odonata fauna of Asansol-Durgapur Industrial Area.

Study area

The present study conducted at all the same study points along with two new study sites Kalyaneshwari Temple, Asansol & Kumarmangalam Park, Durgapur situated at Asansol-Durgapur area (23.689–23.520 °N & 86.966–87.312 °E), an important industrial urban zone of Paschim Bardhaman District of West Bengal, India (Figure 1). The six odonates are found from six different study points. The details of 13 study points are given in Table 1.

Data collection: A combination of direct search

technique (Sutherland 1996) and opportunistic sighting methods were applied during the present study (January 2016 to September 2019) to record odonate diversity and abundance. Observations were made by covering each study site twice a month involving different habitat types of odonates. During each sampling, efforts were made to enlist the encounter frequencies of different odonates from different sampling sites. The identification of odonates was done following Fraser (1933, 1934, 1936), Mitra (2006), Subramanian (2005, 2009, 2014), Nair (2011) and Babu et al. (2019). Nikon D5300 DSLR camera and Nikkor 70–300mm VR lens were used for photo documentation of the odonates.

A total of six different odonate species that involved both dragonflies (Anisoptera) and damselflies (Zygoptera) were recorded during the present study which was represented by six genera from four families. Among those reported families, one was represented by damselflies (Zygoptera), viz., Lestidae (one species and one genus). The rest of the three families were represented by dragonflies (Anisoptera), viz., Aeshnidae (one species and one genus), Gomphidae (two species and two genera), and Libellulidae (two species and two genera). The species *Gomphidia leonora* Mitra, 1994 is reported for the second time from India in this paper and the range

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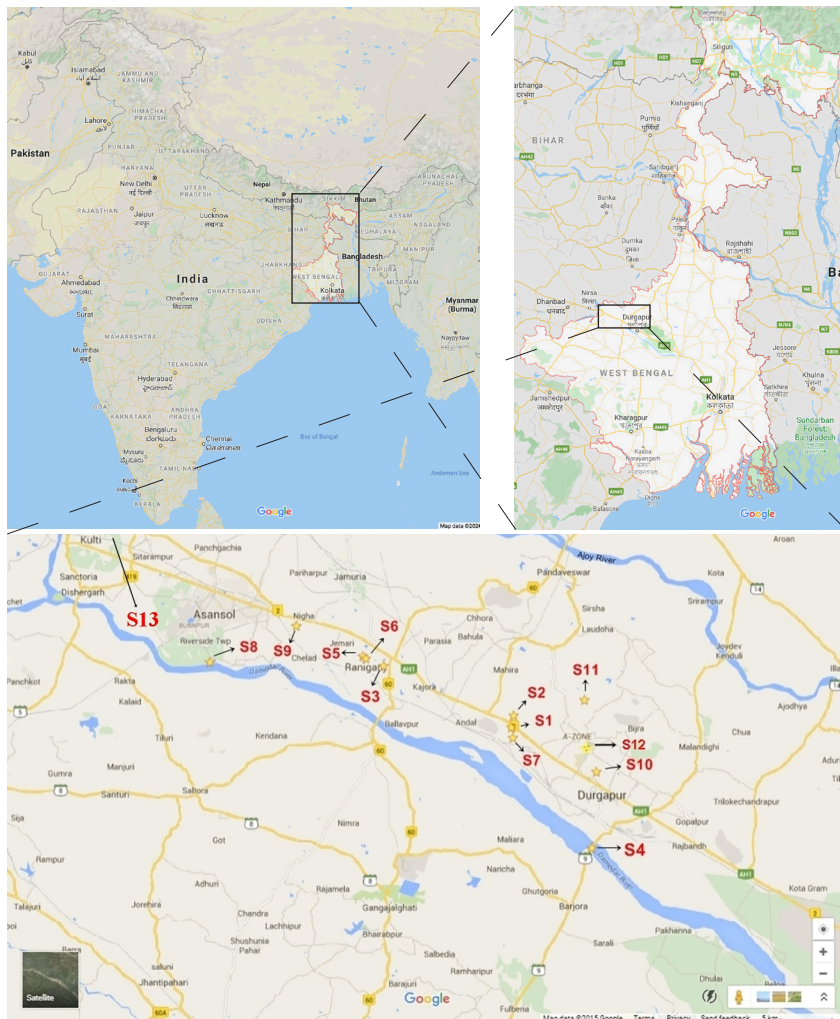


Figure 1. Study sites (S1–S13) under present investigation from Asansol-Durgapur area of Paschim Bardhaman District near West Bengal, India. Source: Google Maps.

extended from Susunia Hill, Bankura, West Bengal, India (23.395°N, 86.987°E) to Durgapur Barrage, Paschim Bardhaman, West Bengal, India (23.475°N, 87.302°E). A detailed account of findings on the six species found during the present study (January 2016–September 2019) is given below:

Suborder: Anisoptera

Family: Aeshnidae

1. *Anax ephippiger* (Burmeister, 1839)

31.viii.2019, Study Site – S2 (Image 1), Least Concern (Subramanian 2016)

Comment: Only one female species was found from the study area. The species was hovering over a paddy field and the flight was very agile. This species is not commonly seen in southern part of West Bengal.

Family: Gomphidae

2. *Gomphidia leonora* (Mitra, 1994)

30.v.2017, Study Site – S4 (Image 2), Data Deficient

(Sharma 2010)

Comment: Only one adult female of the species was known from Susunia Hill (Mitra et al. 1994). This time also a female species was found from a bushy river side area of Damodar at Durgapur Barrage, West Bengal.

3. *Macrogomphus montanus* (Selys, 1869)

26.vii.2014, Study Site – S1 (Image 3), Data Deficient (Subramanian 2010)

Comment: This species is not very common in southern Bengal and the author recorded it for the first time from the study area and another species from the same genus *Macrogomphus annulatus* was found in the same study site in 2014. This species was found under a shrub near the shade of a big tree.

Family: Libellulidae

4. *Orthetrum taeniolatum* (Schneider, 1845)

17.iv.2019, Study Site – S13 (Image 4), Least Concern (Mitra 2013)

Table 1. Brief description of the selected study sites including geo-coordinates and habitat types.

Location (study site)	Latitude (N)	Longitude (E)	Habitat type
S1 – Dubchururia Village	23.578°	87.228°	Remnants of dry deciduous forests with more than 20 large water bodies.
S2 – Andal Old Aerodrome	23.588°	87.230°	Open grassland and agricultural land with a slow flowing perennial stream.
S3 – Searsole Junior Basic School	23.630°	87.109°	Planted trees with four large water bodies surrounded by agriculture land.
S4 – Durgapur Barrage	23.475°	87.302°	Wetland dependent mixed vegetation with a perennial river.
S5 – Nimcha Village	23.638°	87.089°	Remnants of dry deciduous forests with eight large water bodies, interspaced with agricultural land.
S6 – Nimcha Coal Mine area	23.636°	87.093°	Mixed forest with a slow flowing perennial stream and open coal pits.
S7 – Gopalmath Rail colony	23.569°	87.229°	Open grassland and agricultural land with more than 10 large water bodies.
S8 – Nehru Park	23.634°	86.947°	Remnants of dry deciduous forests with a slow flowing perennial stream and a river.
S9 – Gunjan Ecological Park	23.664°	87.028°	Wetland dependent mixed vegetation with a large water body.
S10 – Ambuja Wetland	23.540°	87.306°	Wetland dependent mixed vegetation with a large water body.
S11 – Rana Pratap, A-Zone, Durgapur	23.601°	87.295°	Remnants of dry deciduous forests with a slow flowing perennial stream.
S12 – Mohan Kumarmangalam Park, B-Zone, Durgapur	23.564°	87.301°	Wetland dependent mixed vegetation with a large water body.
S13 – Kalyaneshwari Temple, Asansol	23.777°	86.829°	The study area situated beside the temple and the habitat is remnants of dry deciduous forests with a slow flowing perennial stream.

Comment: The species was found basking on a rock near a small stream. The day was too hot and the species was followed by various common species of the same genus. It is not very commonly seen in the study area.

5. *Trithemis aurora* (Burmeister, 1839)

19.iii.2017, Study Site – S9 (Image 5), Least Concern (Subramanian & Dow 2010)

Comment: The species was found in the dense area of Gunjan Ecological Park situated at Asansol. This species is common in West Bengal. The species likes shaded bushy areas.



Image 1. *Anax ephippiger* female, location - S2 (31.viii.2019).

Suborder: Zygoptera

Family: Lestidae

6. *Lestes viridulus* (Rambur, 1842)

22.xii.2017, Study Site – S12 (Image 6), Least Concern (Dow 2010)

Comment: The species is common and prefers to live under dense bushes and shaded area. The species was found from the new study site and this study site reported high Odonata diversity

With the addition of these six new records, the total number of odonates stand at 63. Out of these six species, *Gomphidia leonorae* Mitra, 1994 is a very important finding and the author is further involved in searching for the male. Considering the previous study of odonates (recorded 57 species) from the same study area, the present species count is surely an underestimation. The author strongly believes that sustained and co-ordinated efforts are necessary for documenting the odonate



Image 2. *Gomphidia leonorae* female, location - S4 (30.v.2017).

diversity of the entire state. This is possible through networking between the amateurs and professional researchers. Furthermore, since odonates are considered as biological indicator species, it is necessary that long-term monitoring needs to be taken up for major water



Image 3. *Macrogomphus montanus* female, location - S1 (26.vii.2014).



Image 6. *Lestes viridulus* female, location - S12 (22.xii.2017).



Image 4. *Orthetrum taeniolatum* male, location - S13 (17.iv.2019).



Image 5. *Trithemis aurora* female, location - S9 (19.iii.2017).

bodies in the study sites as well as in the state. Future investigations covering more study areas will certainly enrich our knowledge and understanding of odonate diversity and ecology from this important industrial region.

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