



Published by
www.researchtrend.net

First report of *Lestes elatus* (Hagen in Selys, 1862) from West Bengal, India

Saurav Dwari¹, Subhadeep Chowdhury² and
Amal Kumar Mondal³

¹ & ³: Plant Taxonomy, Biosystematics and Molecular Taxonomy Laboratory
UGC-DRS-SAP Department, Department of Botany & Forestry
Vidyasagar University, Midnapore-721 102, West Bengal, India
E mail: saurav.dwari@gmail.com, amalcaebotvu@gmail.com

²: DBT BCIL Research Trainee, DSR Genome Technologies Private. Limited, AQ-13/1, Sec V, Salt Lake City, Kolkata: 700091, E mail: isuvodeep@gmail.com

*Corresponding author: saurav.dwari@gmail.com

| Received: 06 March 2017 | Accepted: 15 April 2017 |

ABSTRACT

The first photographic record of the *Lestes elatus* (Hagen in Selys, 1862) from Howrah district, West Bengal, India is presented in this paper. During the Odonata survey of Howrah district of West Bengal this species photographed and identified first time for the state West Bengal. *Lestes elatus* (Hagen in Selys, 1862), commonly known as Emerald Spreadwing recorded in October, 2016. A medium sized pale brownish species documented from bush area of Amta 2 block of Howrah, West Bengal, India.

Key words: Photographic record, *Lestes elatus*, Emerald Spreadwing, Amta, Howrah, West Bengal.

INTRODUCTION

Insect is the largest group of animal kingdom which is the more than half of the total faunal species of the world (May, 1992). Among the insects order odonata, the dragonflies and damselflies are also a widely distributed group (Adarsh et al, 2014). They occurs closer to different water bodies (Tiple et al. 2008). Odonates are also valuable insects which act as an ecological indicator of environment (Rowe, 2003). Approximately 600 genera and 6000 species of 29 families have been described from all over the world (Silsby, 2011). From undivided India nearly 536 species of odonates recorded by Fraser (1933,

1934, 1936). In recent studies Mitra (2005) recorded 499 species and Subramanian (2005) 463 species from present India. The studies on odonates in W.B were started by Selys (1891) who recorded nearly 22 species from Kolkata. Srivastava and Sinha (1993) reported 178 species from W.B. Ultimately Mitra (2002) recorded 65 species from Kolkata and its surroundings Howrah. In another recent studies on of odonates 80 species listed from Kolkata and surrounding Howrah (Dawn, 2014). We present here the first photographic record of the *Lestes elatus* (Hagen in Selys, 1862) from Howrah district, West Bengal, India. Which is previously recorded from Odisha (Nair, 2011), Central part of India (Andrew et al., 2008), Peninsular India

(Subramanian, 2014) and Maharashtra (Rathod et al., 2012). Emerald spreadwing (*Lestes elatus*) is a Least Concern species (ver 3.1) according to International Union for Conservation of Nature (IUCN). According to Srivastava and Sinha (1993) only one species *Lestes thoracica* Laidlaw found in West Bengal and *Lestes platystylus* Rambur recorded as *Platylestes platystyla* Rambur. After that Gupta and Mitra (1995) was also recorded *Lestes platystylus* Rambur from Kolkata region. Then Dawn (2014) included another species *Lestes malabarica* Fraser from Kolkata and its surroundings. In recent studies Nayak and Roy (2016) recorded *Lestes umbrinus* Selys from Burdwan district of West Bengal.

MATERIALS AND METHODS

Through Pollard Walk Method (Pollard 1977; Pollard and Yates 1993) during documentation of odonates of Howrah district; West Bengal, India (Fig.1) sample was photographed. This is first photographic record of *Lestes elatus* (Hagen in Selys, 1862) from the state West Bengal. On the day of 2016 (21.10.16) at around 12.30 hrs (12:23:44 PM) during the regular field surveys at the wetlands of this district of West Bengal we photographed one individuals of medium sized damselfly with narrow green thoracic stripes resting on small branches nearby wetland, which is situated Amta 2 block of Howrah district; West Bengal (extends between 22.587691 North latitude and 87.964703 east longitude) (Fig.2). Information on this species is based on observation from 12.23

PM to 12.47 PM. Specimen was photographed for further identification process with the help of High Resolution Digital Camera (Canon 550 D with EOS 18- 55mm lens) and the identification was identified using documents of Subramanian, 2014; Nair, 2011 and confirmed by experts

RESULTS

Species description

A medium sized paler brown damselfly with diagnostic narrow metallic green thoracic stripes. Eyes are brownish. Thorax is pale brown in colour upperside marked with a pair of greenish to bluish stripes. Abdomen is stout. Wings are transparent with black spots. Upperside of abdomen is bluish in colour. Legs are brownish in colour (Fig.3-6). Sat with spread wings for several minutes, sometimes try to fly weakly and sat again.

Systematic position of *Lestes elatus* (Hagen in Selys, 1862)

Class: Insecta

Order: Odonata

Suborder: Zygoptera

Family: Lestidae

Genus: *Lestes*

Species: *Lestes elatus* (Hagen in Selys, 1862)

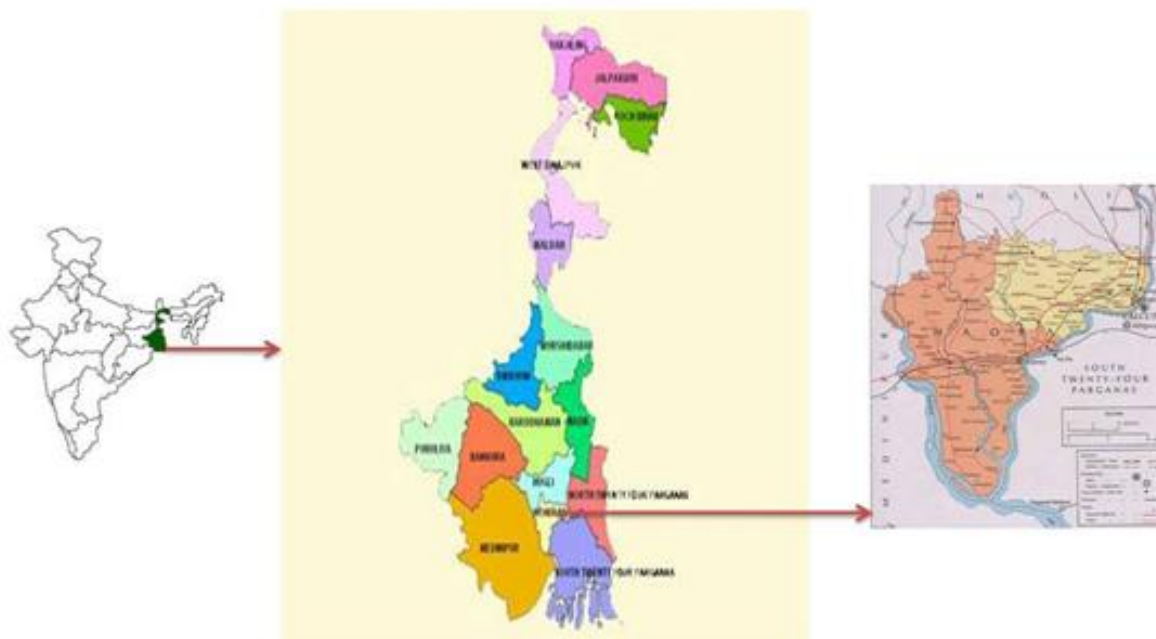


Fig. 1: Howrah (District of record), West Bengal, India.

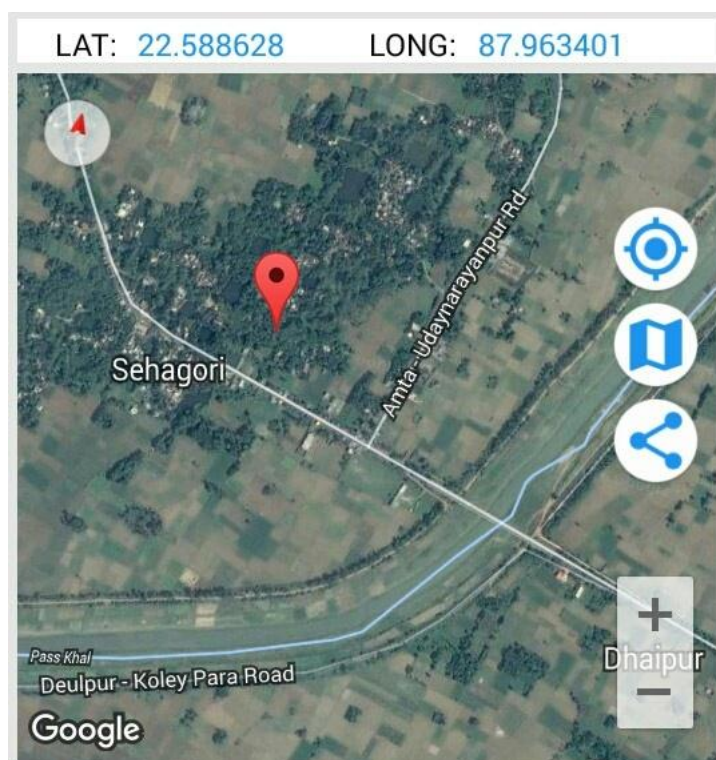


Fig. 2: Study area of Howrah (District of record), West Bengal, India through Google map with Latitude and longitude.

DISCUSSION

Early distributional range

Lestes elatus (Hagen in Selys, 1862) previously recorded from south, west and central India by several workers. Andrew, Subramanian and Tiple, 2008 recorded from central part of India, Tiple et al., 2012 from Jabalpur, Madhya Pradesh, Subramanian, 2014 from Peninsular India, Rathod et al., from Amravati, Maharashtra, Adarsh et al., 2014 from Thrissur, Kerala and Arulprakash and Gunathilagaraj, 2010 from Coimbatore and Salem of Tamilnadu, Rathod et al., 2016 from Southern Gujarat, Harisha, 2016 from Karnataka. From eastern India it is first recorded by Nair, 2011 from Odisha.

Habitat structure of new locality

West Bengal is a state of India located its eastern part. Neighbour states of West Bengal are Odisha, Jharkhand, Bihar, Sikkim and Assam. On the eastern side the country Bangladesh is situated. Howrah is a small district of the West Bengal. The Area of Howrah is 467 km². The Howrah district lies between 22°48' N and 22°12' N latitudes and between 88°23' E and 87°50' E longitudes. The

specimen actually photographed in Amta 2 block, one of the 15 blocks of Howrah. The place of record lays 22.587691 North latitude and 87.964703 east longitude. The place is nearer to Damodar River. Annual normal rainfall in this district is 1461 millimeter per year. Annual maximum temperature varies between 32-39°C, whereas minimum temperature varies between 8-10°C.

ACKNOWLEDGEMENT

We would like to express our heartfelt indebtedness to Prosenjit Dawn, Zoological Survey of India, M-Block, New Alipore, Kolkata – 700 053, West Bengal, India for his Identification help and confirmation of this species. We would want to convey our gratitude to the honorable Dr. Sanjukta Mondal (Parui), HOD and Associate Professor, WBES, Post Graduate Department of Zoology, Lady Brabourne College, Kolkata-700017, West Bengal, India, for her consistence help during my study period. Also thankful to UGC for their laboratory support in the form of DRS-SAP - Phage 1 [2011-2016] in our work. I would like to express my thanks to all research scholars of our laboratory.



Fig. 3: Full view of *Lestes elatus* (Hagen in Selys, 1862)



Fig 4: Close up thoracic view of *Lestes elatus* (Hagen in Selys, 1862)



Fig. 5: Close up abdominal view of *Lestes elatus* (Hagen in Selys, 1862)



Fig 6: Close up view of right side wings of *Lestes elatus* (Hagen in Selys, 1862)

REFERENCES

- Adarsh CK, Aneesh KS, Nameer PO. 2014. A preliminary checklist of Odonates in Kerala agricultural university (KAU) campus, Thrissur district, Kerala, Southern India J Threatened Taxa 6(8): 6127-6137.
- Andrew RJ, Subramanian KA, Tiple AD. 2008. Common odonates of central India, The 18th International Symposium of Odonatology", Hislop College, Nagpur, India. p. 1-50.
- Arulprakash R, Gunathilagaraj K. 2010. Abundance and diversity of Odonata in temporary water bodies of Coimbatore and Salem districts in Tamil Nadu, Journal of Threatened Taxa, 2(8): 1099-1102.
- Dawn P. 2014. Taxonomic study of Odonata [Insecta] in Kolkata and surroundings, West Bengal, India, Journal of Entomology and Zoology Studies, 2(3): 147-152.
- Fraser FC. 1933. The Fauna of British India including Ceylon and Burma, Odonata. Vol. I. Taylor and Fancis Ltd., London, p. 436.
- Fraser FC. 1934. The Fauna of British India including Ceylon and Burma, Odonata. Vol. I. Taylor and Fancis Ltd., London, p.442.
- Fraser FC. 1936. The Fauna of British India including Ceylon and Burma, Odonata. Vol. I. Taylor and Fancis Ltd., London, p. 461.
- Gupta IJ, De ML, Mitra TR. 1995. Conspectus of Odonata Fauna of Calcutta, India. Records of Zoological Survey of India, 95(1-2):107-121.
- Harisha MN. 2016. Evaluation of Status and Diversity of Odonates of Kondajji village, Harihar Taluk, Davanagere District, Karnataka, India, Journal of Entomology and Zoology Studies, 4(4): 384-388.
- May PG. 1992. Flower selection and the dynamics of lipid reserves in two nectarivorous butterflies. Ecology, 73: 2181-2191.
- Mitra TR. 2002. Geographical distribution of Odonata (Insecta) of Eastern India, Zoological Survey of India, 19(1): 1-208.
- Mitra TR. 2005. Evolutionary Adaptations in morphology and ecology of Tholymis tilliard (Fabricius) and Bradinopyga germinate (Rambur) (Insecta: Odonata), Records of Zoological Survey of India, 104: 300.
- Nayk AK, Roy US. 2016. An observation on the Odonata fauna of the Asansol- Durgapur Industrial Area, Burdwan, West Bengal, India, Journal of Threatened Taxa, 8(2): 8503-8517.
- Nair MV. 2011. Dragonflies & Damselflies of Orissa and Eastern India, Wildlife Organization, Forest & Environment

- Department, Government of Orissa, p. 1-254.
- Pollard E. 1977. A method for assessing changes in the abundance of butterflies, *Biological Conservation*, 12: 115–153.
- Pollard E, Yates TJ. 1993. *Monitoring Butterflies for Ecology and Conservation*, Chapman and Hall. London.
- Rathod PP, Manwar NA, Pawar SS, Raja IA. 2012. Diversity and Abundance of Dragonflies and Damselflies (Order - Odonata) in Agro Ecosystems around the Amravati City (M.S.), India in Monsoon Season, *International Journal of Advanced and Innovative Research*, 1(7): 174-182.
- Rathod DM, Parasharya BM, Talmale SS. 2016. Odonata (Insecta) diversity of Southern Gujarat, India, *Journal of Threatened Taxa*, 8(11): 9339-9349.
- Rowe R. 2003. Dragonflies: Behaviour and Ecology of Odonata. *Australian J. Entomol*, 42 (2), 210–211.
- Selys LED. 1891. Odonates in 'Viaggio Di Leonardo Fea in Birmania e Regional Vicine, *Annali. Mus. civ. Stor. nat. Giacomo Doria*, 2(10):433-518.
- Silby J. 2011. *Dragonflies of the world*”, Natural History Museum in association with CSIRO Publishing, UK and Europe, p .216.
- Srivastava VD, Sinha C. 1993. *Insecta: Odonata fauna of West Bengal, State Fauna Series, Part 4, Zoological Survey of India, Kolkata*, p. 51-168.
- Subramanian KA. 2005. *India –A lifescape, Dragonflies of India – A field guide*, Vigyan Prasar. India Offset Press, New Delhi, p. 118.
- Subramanian KA. 2014. A Checklist of Odonata (Insecta) of India, *Zoological Survey of India, Kolkata*, 2: 1-31.
- Tiple AD, Khurad AM, Andrew RJ. 2008. Species Diversity of Odonata in and around Nagpur City, Central India, *Fraseria* (Proceeding of the 18th International Symposium of Odonatology, Nagpur. 7: 41–45.
- Tiple AD, Paunikar S, Talmale SS. 2012. Dragonflies and Damselflies (Odonata: Insecta) of Tropical forest Research Institute, Jabalpur, Madhya Pradesh, Central India, *Journal of Threatened Taxa*, 4(4): 2529-2533.