

Short Communication

First Report of Rambur's Dropwing, *Neurothemis Ramburii* (Brauer, 1866) (Insecta: Odonata: Libellulidae) from Mainland, India.

Prabir Narayan Konwar¹, Jennifer Lyngdoh¹ and Bikramjit Sinha^{2*}

¹Zoological Survey of India, North Eastern Regional Centre, Shillong 793003, Meghalaya, India

²Zoological Survey of India, F.P.S. Building, Indian Museum Campus, 27 J. L. Nehru Road, Kolkata 700016, West Bengal, India

*Corresponding author: sinhabj@rediffmail.com

Received: April 19, 2026; revised: June 30, 2026; accepted: July 10, 2026

DOI:

Published Online: July 2026

Abstract: Odonates are important predators in nature feeding on mosquitoes and other small insects, thus, maintaining ecological balance. Among Odonata, Libellulidae is an important family, which contains the genus *Neurothemis* Brauer, 1867 having striking wing patterns and coloration. In the present study, new distributional record of a species under the genus, *Neurothemis ramburii* (Brauer, 1866) from Khomi Village in Phek district of Nagaland in North-East India is reported, thereby extending the known range of the species. The identity of the species was confirmed through morphological characters like wing maculation, wing venation, and unique pigmentation of wings and features of the genitalia. Though the present report is based on a single specimen, there is probability of finding more numbers with extensive exploration of similar habitats or localities in the region. Previously, *N. ramburii* was recorded only from the Andaman and Nicobar Islands. The present record of the species from Nagaland, thus, represents the first confirmed occurrence of this species from mainland India.

Keywords: Andaman & Nicobar Islands, Biodiversity, Nagaland, *Neurothemis*.

Introduction

The North-East India comprising of the eight states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura occupies a substantial part of both the Indo-Burma biodiversity hotspot and Himalaya biodiversity hotspot. The region is known for its rich biodiversity displaying an assemblage of Indian, Indo-Chinese as well as its unique faunal elements. However, the odonate fauna of this region remains inadequately explored (Joshi *et al.*, 2017). Difficult terrain, inadequate infrastructure, and lack of resources make the documentation of biodiversity particularly faunal diversity challenging and as a result, many species are yet to be properly documented in this region. (Joshi *et al.*, 2017; Subramanian and Babu, 2017; Myers *et al.*, 2000 and Kalkman *et al.*, 2020.

Within the insect order Odonata, the family Libellulidae represents the most speciose and geographically widespread group (Shukla, 2025). Members of this family are highly adaptable and are found in a wide range of freshwater habitats, including ponds, lakes, marshes, rivers and temporary water bodies, particularly across tropical and subtropical regions (Corbet, 1999; Kalkman *et al.*, 2008; Subramanian, 2009 and Dijkstra *et al.*, 2013). The family Libellulidae comprises of 1039 species globally (Paulson *et al.*, 2026) and in India, it is represented by 91 species under 40 genera. (Subramanian and Babu, 2017). Members of the family Libellulidae are characterized by hind wings broadly rounded at the base, a distinctive boot-shaped anal loop, and fore- and hind-wing triangles that differ in shape and position; the antenodal

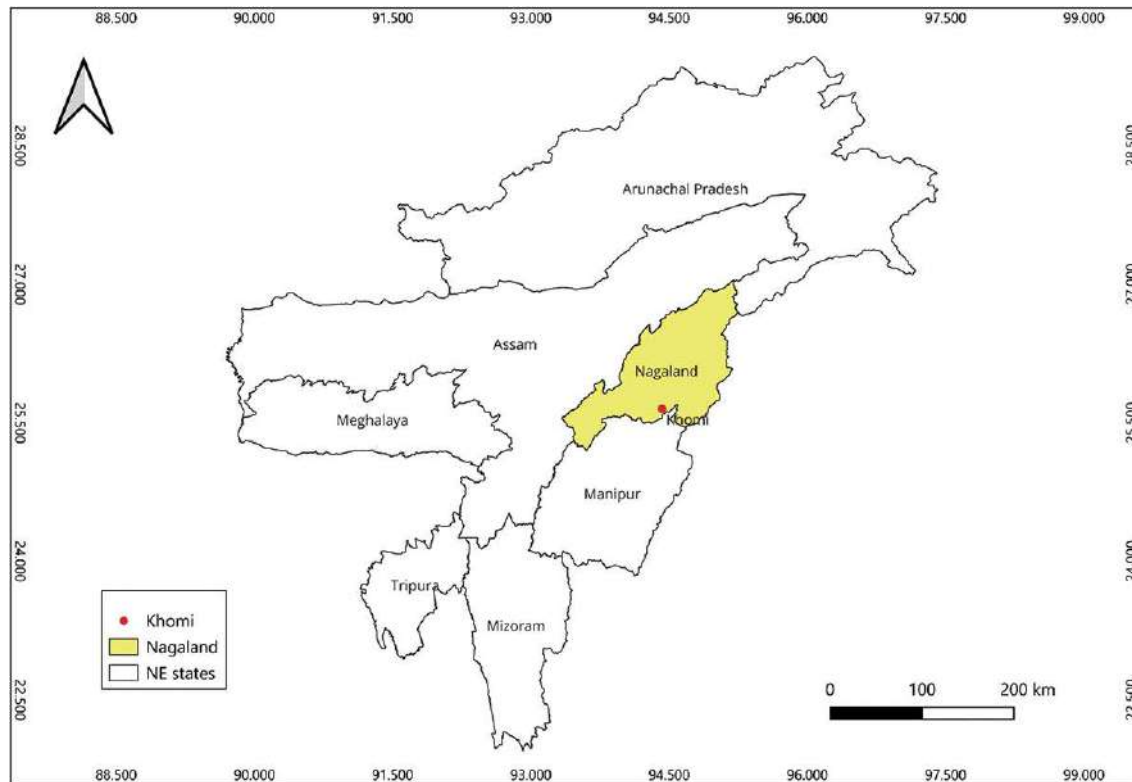


Fig. 1. A map of North East India showing the collection locality (red dot) of *Neurothemis ramburii* in Nagaland.

Disclaimer: Map lines delineate study areas and do not necessarily depict accepted national boundaries.

cross-veins are generally complete and well developed (Fraser, 1936; Silsby, 2001; James, 2008; Dijkstra and Kalkman, 2012).

Members of the genus *Neurothemis* Brauer, 1867 of the family Libellulidae are medium-sized dragonflies (Anisoptera) characterized by broad wings that are partially or fully coloured in one or both sexes and body has usually some shades of yellow or reddish brown (Fraser, 1936). Female wings are generally hyaline or lightly tinted, abdomen moderately slender and anal loop is well developed. Globally, the genus *Neurothemis* is represented by 17 species (Paulson *et al.*, 2026), out of which, five species are reported from India, namely *Neurothemis degener* Selys, 1879, *N. fulvia* (Drury, 1773), *N. intermedia* (Rambur, 1842), *N. tullia* (Drury, 1773), and *N. ramburii* (Brauer, 1866) according to Kalkman *et al.*, 2020.

Neurothemis ramburii, commonly known as the **Red Percher**, a vibrant species of dragonfly belonging to the family Libellulidae was first described in the year 1866 by the Austrian

zoologist Friedrich Moritz Brauer as *Polyneura ramburii* from Celebes (now known as Sulawesi), Indonesia (Brauer, 1866). In the very next year, the genus *Polyneura* was reassessed and replaced as *Neurothemis* (Brauer, 1867). Globally, the species is reported from Borneo, Java, the Lesser Sunda Islands, the Moluccas, and islands of the west coast of New Guinea, the Philippines, Sulawesi and Sumatra (Seehausen and Dow, 2016). In India, *N. ramburii* is known only from the Andaman and Nicobar Islands (**Hämäläinen and Veenakumari, 1999**). As per IUCN, the species is categorized as Least Concern (Dow, 2019).

Materials and methods

Materials Examined: 1 example ♂, Khomi Village, Phek Dist, Nagaland, India, Lat. 25.65141; Long. 94.42335; Alt 1561 m; Date of Collection: 11.viii.2024, Collected by Dr. B. Sinha and Party, (Registration No. I/ODO/NERC/511).

A single male specimen was collected from Khomi Village, Phek District of Nagaland in North



Fig. 2. An adult male *Neurothemis ramburii* (Brauer, 1866) from Nagaland, India.

East India (Fig. 1). The specimen was collected using aerial insect net at dusk hours around a man-made pond located between two hill slopes. The collected specimen was preserved in dry condition in the field. In the laboratory, it was pinned following standard protocol and the morphological examination was done under a stereo-microscope (Make-Quasmo, Model-SZB45E). The Habitus and wing venation photographs were taken with a mobile camera (realme P3) and photo-micrographs were captured with a camera attached with a Leica EZ4E microscope. The individual specimen was identified using the keys and descriptions provided in Fraser (1936). GPS coordinates and altitude of the collection site were also recorded. The specimen was deposited in National Zoological Collections of the Zoological Survey of India in its North Eastern Regional Centre, Shillong.

Result

Neurothemis ramburii (Brauer, 1866) is a medium-sized libellulid dragonfly which has prominent red colour on both wings in both sexes. One of the diagnostic characteristics of *N. ramburii* is the presence of only one cubito-anal cross vein in Hind Wing, but rarely two or three cross veins can also be seen (Seehausen and Dow, 2016). In males, the abdomen shows dark markings on the upper (dorsal) rear part of each segment from segment 3 to segment 10. A lateral dark stripe is also present, which gradually becomes broader towards the end



Fig. 3. Wing venation of *Neurothemis ramburii* from Nagaland, India.

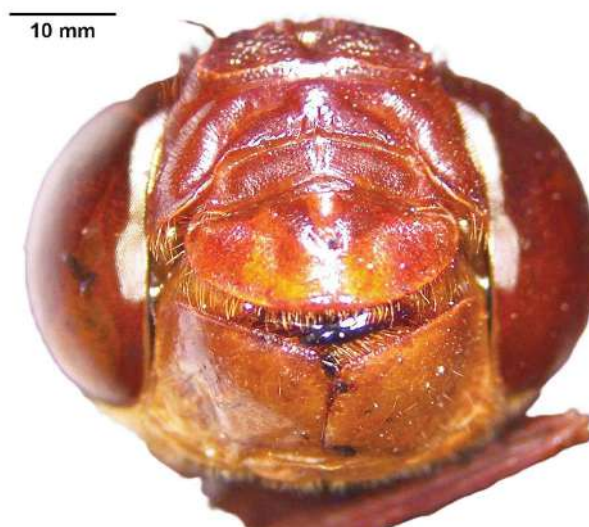


Fig. 4. Head (front view) of *Neurothemis ramburii* from Nagaland, India.

segments. On segments 8 and 9, this lateral stripe joins with the dorsal marking at the tip, leaving only a small red area at the base of segment 9. The abdominal markings of *N. ramburii* females are similar to the male but are slightly more intensive. Variation in wing maculation can be seen in *N. ramburii*. In the forewing, the outer edge of the coloured area is usually straight or slightly rounded. In the hindwing, the coloured patch bends gently towards the base of the wing. Generally, the marking

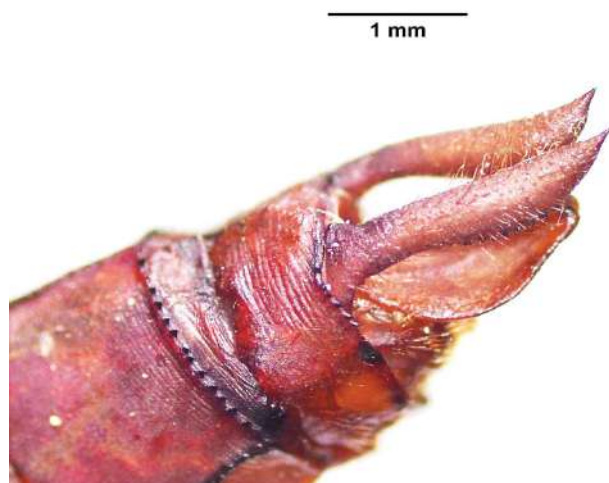


Fig. 5. Anal appendages (lateral view) of *Neurothemis ramburii* from Nagaland, India.

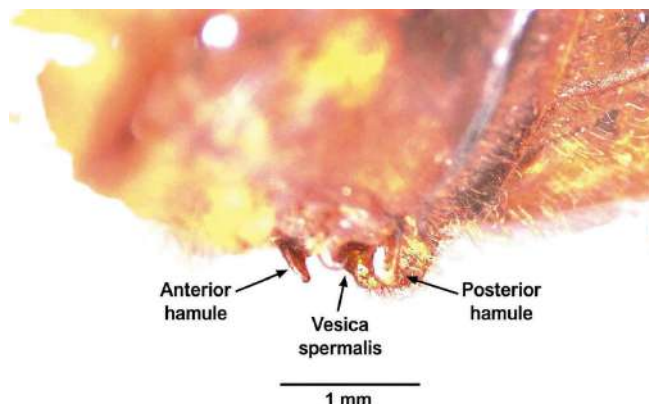


Fig. 6. Secondary Genitalia (lateral view) of *Neurothemis ramburii* from Nagaland, India.

may extend up to the pterostigma in both wings, near posterior margin around the anal loop (Seehausen and Dow, 2016).

After thorough diagnosis of the collected specimen, following measurements were noted; total body length 59.74 mm, abdomen 36.86 mm, forewing 52.4 mm, hindwing 51.35 mm, nodal index: FW 18-27/27-17, HW 19-15/16-20. Wings maculation the specimen extending to midway from nodus to pterostigma and is dark reddish-brown in colour. Pigmentation in wing not extending to apex of wings (both forewing and hindwing). Pigmented portions of the wing are clearly separated (curved in shape) from the hyaline or apex portion of the wing (Fig. 2) Wing maculation is curved towards base in hindwing. Venation is less denser and only

one cubito-anal crossvein is present in the hindwing (Fig. 3). Pterostigma dark reddish-brown, even darker than the wing coloration. The first two lines of cells from the costal side of the wings near pterostigma are also pigmented with light reddish-brown colour. Thorax dark with no pruinescence; abdomen stout. Head with contiguous compound eyes of reddish-brown colour. The frons, clypeus and labrum show similar reddish-brown pigmentation and the labrum is surrounded by numerous small hairs (Fig. 4). Anal appendages are conventional libellulidae shaped (Fig. 5). The secondary genitalia is moderately developed, with a small anterior hamule, a broader posterior hamule, and a multi-segmented vesica spermalis bearing short cornua (Fig. 6). Presence of these characters confirms the specimen as *Neurothemis ramburii*. These characters show similarities with the earlier descriptions of the species (Orr, 2005; Seehausen and Dow, 2016). This present record from Nagaland, thus, constitutes the first report of this species from mainland India.

Discussion

The present record of *N. ramburii* from Nagaland represents a notable range extension of the species in the Indo-Burma biodiversity hotspot, confirming its presence in mainland India for the first time. As the specimen was collected from a locality in Nagaland bordering Manipur, there are high chances of occurrence of the species in the later. This record highlights a possible faunal continuity between the Andaman region and the mainland Indo-Burma biogeographic zone. As the state of Nagaland and other North-East states of India are connected to the South East Asian countries by land, there is a high probability of finding more number of similar species found in those countries if extensive faunal surveys are done in North-East India. Continued faunal surveys in this region will help in improving our knowledge of species diversity, distributional range, and conservation status.

Acknowledgment

The authors are grateful to Dr. Dhriti Banerjee, Director, Zoological Survey of India, Kolkata, for

providing the necessary facilities and encouragement. We also express our sincere gratitude to Dr. K. A. Subramanian, Scientist F and Officer-in-Charge, Southern Regional Centre, Zoological Survey of India, Centre, for confirming identity of the species. Sincere thanks are also extended to Dr. Uttam Saikia, Bhaskar Saikia, Rajib Goswami and Amlanjyoti Gautam at ZSI, NERC, Shillong for providing the necessary support and cooperation during the course of this work.

Reference

- Brauer F. 1866.** Beschreibungen neuer exotischer Libellen [Descriptions of new exotic dragonflies]. Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien. 16: 563-570.
- Brauer F. 1867.** Ueber den Dimorphismus der Weibchen in der Libellulinen-Gattung *Neurothemis*. Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien. 17: 17-30.
- Corbet PS. 1999.** Dragonflies: Behaviour and Ecology of Odonata. Cornell University Press.
- Dijkstra KDB and Kalkman VJ. 2012.** Phylogeny, classification and taxonomy of European dragonflies and damselflies (Odonata). Zootaxa. 3486: 1-29.
- Dijkstra KDB, Bechly G, Bybee SM, Dow RA, Dumont HJ, Fleck G, Garrison RW, Hämäläinen M, Kalkman VJ, Karube H, May ML, Orr AG, Paulson DR, Rehn AC, Theischinger G, Trueman JWH, van Tol J, von Ellenrieder N and Ware J. 2013.** The classification and diversity of dragonflies and damselflies (Odonata). Zootaxa. 3703(1): 36-45.
- Dow RA. 2019.** *Neurothemis ramburii*. The IUCN Red List of Threatened Species 2019: e.T163690A83302471. <https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T163690A83302471.en>. Accessed on 19 April 2026.
- Fraser FC. 1936.** Odonata Vol. III: The Fauna of British India, Including Ceylon and Burma: Taylor and Francis Ltd., London. Pp.: 1-461.
- Hämäläinen M and Veenakumari K. 1999.** Additions to the odonate fauna of the Andaman and Nicobar Islands, Indian Ocean. Notulae Odonatologicae. 5(3): 27-29.
- James AC. 2008.** Dragonflies and Damselflies of the World. CSIRO Publishing, Australia.
- Joshi S, Veino J, Veino D, Veino L, Veino R and Kunte K. 2017.** Additions to the Indian dragonfly fauna, and new records of two enigmatic damselflies (Insecta: Odonata) from northeastern India. Journal of Threatened Taxa. 9(7): 10433-10444.
- Kalkman VJ, Babu R, Bedjaniè M, Conniff K, Gyeltshen T, Khan MK, Subramanian KA and Zia A. 2020.** Checklist of the dragonflies and damselflies (Odonata) of India (Published by the Director, Zoological Survey of India, Kolkata).
- Kalkman VJ, Clausnitzer V, Dijkstra KDB, Orr AG, Paulson DR and Van Tol J. 2008.** Global diversity of dragonflies (Odonata) in freshwater. Hydrobiologia. 595: 351-363.
- Myers N, Mittermeier RA, Mittermeier CG, da Fonseca GAB and Kent J. 2000.** Biodiversity hotspots for conservation priorities. Nature. 403: 853-858.
- Orr AG. 2005** Dragonflies of Peninsular Malaysia and Singapore. Natural History Publications (Borneo).
- Paulson D, Schorr M, Abbott J, Bota-Sierra C, Deliry C, Dijkstra KDB and Lozano F. 2026.** World Odonata List. Odonata. Central, University of Alabama. Available online at: <https://www.odonatacentral.org/app/#/wol/>.
- Seehausen M and Dow RA. 2016.** Morphological studies and taxonomic considerations on the 'reddish-brown-winged' group of *Neurothemis* Brauer, 1867, with the description of *N. taiwanensis* sp. nov. (Odonata: Libellulidae). Odonatologica. 45(3-4): 151-178.
- Shukla A. 2025.** Diversity of Libellulidae (Odonata: Anisoptera) in Bhavnagar, Gujarat, India. International Journal of Entomology Research. 10(10): 143-145.
- Silby J. 2001.** Dragonflies of the World. Smithsonian Institution Press, Washington, D.C.
- Subramanian KA and Babu R. 2017.** Checklist of Odonata (Insecta) of India (Version 3.0). Zoological Survey of India.
- Subramanian KA. 2009.** Dragonflies and Damselflies of Peninsular India – A Field Guide. Vigyan Prasara, New Delhi.