

**CONFIRMATORY REPORT OF DAMSELFLY (ODONATA) PIXIE DARTLET,  
*ISCHNURA NURSEI* (MORTON, 1907) FROM BANGLADESH**

Md. Hamidur Rahaman Naim<sup>1</sup>, Md. Shalauddin<sup>1</sup>, Durjoy Raha Antu<sup>1\*</sup>

*Department of Zoology, Jagannath University, Dhaka 1100, Bangladesh*

Odonata (dragonflies and damselflies) are one of the finest known and gorgeous aquatic insects distributed all over the world except Antarctica (Trueman 2007) and predominantly inhabit the tropical and subtropical regions (Dumont 1991). Odonates are amphibiotic insects where the adult stages are terrestrial and the immature stages are aquatic, highly depended on all kind of freshwater ecosystems like rivers, streams, marshes, lakes and even small pools and rice fields (Corbet 1999). These insects are considered as good indicators for monitoring the health of freshwater ecosystems because they are species-specific to a certain type of habitat (Tiple *et al.* 2013). The genus *Ischnura* (Charpentier 1840) is a widely distributed genus (Westfall and May 1996). About 70 species of this genus have been described so far (Dijkstra and Kalkman 2012), including 11 species in the Indian subcontinent in which 3 species (*e.g.*, *I. rubilio*, *I. rufostigma* and *I. senegalensis*) distributed in Bangladesh (Kalkman *et al.* 2020, Shah and Khan 2020).

During a regular Odonata survey at Harirampur Upazila of Manikganj district in 05 July 2020 at 07:30 h (GMT+6), a male *Ischnura nursei* (Fig.1) was observed and photographed as basing on a flower cluster of *Leptochloa chinensis* (L.) in a flooded crop field (23°45'50.976"N, 89°56'20.328"E). Photographs were taken with a mobile phone from different angle for further identification. On the basis of taxonomic identification, the existence of this species is confirmed in Bangladesh. The habitat is mostly used for cultivation of seasonal crops (*e.g.*, rice, jute, wheat, pulses, oilseeds, vegetables, spices, and potato). *I. nursei* is distributed (Fig.2) in India and Pakistan (Nair 2011, Zia *et al.* 2011); Iran (Domunt *et al.* 2011); United Arab Emirates (Fulner and Judas 2013); Oman (Kunz 2015) and Nepal (Aryal 2019).

The species *I. nursei* (Fig. 1) was identified through prominent tricoloured abdomen (S1-S5 red, S6-S7 yellow and S8-S10 black) from the dorsum and lateral sides (Morton 1907, Fisher 1920, Fresher 1933, Laidlaw 1916 and 1919, Nair 2011 and Subramanian 2009); the pterostigma on the forewing was larger than on the hind wing and reddish in color. The anal appendages

\*Author for correspondence: <durjoyantu@gmail.com>

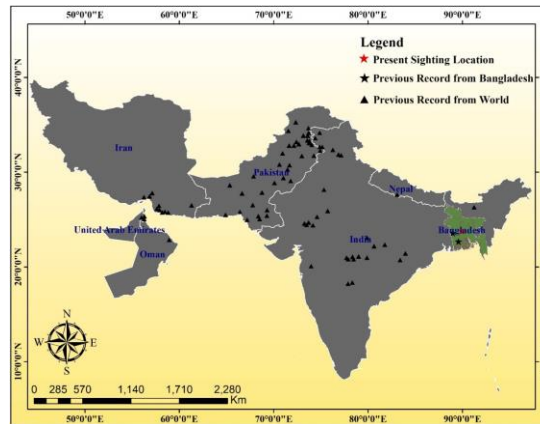


Fig. 1. Distribution of *Ischnura nursei* throughout the world and Bangladesh

(superior and inferior) indicated the specimen as male. Morton (1907) described this species as *I. nursei*, due to confusion of generic placement. After Laidlaw (1919), introduced this species to the genus *Rhodischnura* Laidlaw, 1919.

Until published a survey report of insects and mites by Alam (1967) from Bangladesh (then East Pakistan) this species was known only from India (Kalkman *et al.* 2020) and Pakistan (Kanth 1985). After that this species was recorded from Iran (Dumont *et al.* 2011), further Dumont (2013) reintroduced this species under *Ischnura* genus. Subsequently, that species was recorded as *I. nursei* from United Arab Emirates (Feulner and Judas 2013); Oman (Kunz 2015) and Nepal (Aryal 2019). This species was also recorded as *R. nursei* from two locations of southwest Bangladesh (Bashar *et al.* 2014). However, this was excluded from recent Bangladeshi checklist because of the lack of taxonomic clarity and also probably because of the misidentification of the genus (Kalkman *et al.* 2020, Shah and Khan 2020).



Fig. 2. *Ischnura nursei* (Morton, 1907) A. Dorsal view of male; B. Flower cluster of *Leptochloa chinensis* (L.) Nees.

We reported the authentic confirmation of *I. nursei* in Bangladesh with proper taxonomic identification and photographic documentation. The nearest sighted locations of that species are in India about 342 km northeast, 597 km southwest and in Nepal 798 km northwest from the present sighted location.

Considering the distance, it is most likely that this species is resident species in Bangladesh and possibly could be found another region of Bangladesh. To enrich knowledge on Odonates of Bangladesh a baseline comprehensive survey is needed throughout the country.

*Acknowledgements:* The authors are thankful to Sujan Kumar Datta (Department of Zoology, University of Dhaka, 1000) and Kawsar Khan (Department of Biological Sciences Macquarie University, NSW-2109, Australia) for reviewing the manuscript.

#### LITERATURE CITED

- ALAM, M.Z. 1967. *A Report on the survey of insect and mite fauna of East Pakistan*. East Pakistan Agricultural Research Institute, Dacca. 151 pp.
- ALI, S. and RIPLEY, S.D. 1973. *Handbook of the Birds of India and Pakistan*. Oxford Univ. Press, Bombay, London, New York. Vol.8, xvi +227 pp.
- AMEEN, M. and RAHMAN, M.F. 1973. Larval and adult digestive tracts of *Tribolium castaneum* (Herbst) (Coleoptera: Tenebrionidae). *Int. J. Insect Morphol. & Embryol.* 2: 137-152.
- BASHAR, K., Reza M.S., RAZZAK, M.A., RAHMAN K.M.Z., GODA P. and HOWLADER, A.J. 2014. Faunistic study of Odonata (Dragonfly & Damselfly) in some selected regions of Bangladesh. *Journal of Entomology and Zoology Studies.* 2(4): 1-6.
- CHOWDHURY, S.H. 1970. Functional changes in the midgut epithelium of the larva of *Chaoborus obscuripes* Van der Wulp (in Russian with English summary). *Zool. Zh.* 49: 249-256.
- CORBET, P. S. 1999. *Dragonflies: behaviour and ecology of Odonata*. Aquatic Insects. 23(1): 83.
- De BEER, G.R. 1940. Embryology and Taxonomy. In: *The New Systematics*. (Ed., Huxley, J.) Oxford Univ. Press, London, pp.365-393.
- DIJKSTRA, K.D and KALKMAN V.J. 2012. Phylogeny, classification and taxonomy of European dragonflies and damselflies (Odonata): a review. *Organisms Diversity & Evolution.* 12(3): 209-227.
- DUMONT, H.J. 2013. Phylogeny of the genus *Ischnura*, with emphasis on the Old-World taxa (Zygoptera: Coenagrionidae). *Odonatologica.* 42: 301-308.
- DUMONT, H.J. 1991. *Odonata of the Levant*. Israel academy of sciences and humanities. Vol. 5. 297 pp.
- DUMONT, H.J., KIANY, M. and SADEGHI, S. 2011. First record of *Rhodischnura nursei* (Morton) from Iran (Zygoptera: Coenagrionidae). *Odonatologica.* 40: 251-254.
- FEULNER, G.R. AND JUDAS J. 2013. First UAE records of two Odonata: the dragonfly *Urothemis thomasi* and the damselfly *Ischnura nursei*. *Tribulus.* 21: 4-13.

- FRASER, F.C. 1920. Notes on Indian dragonflies, 1: a description of the dimorphic females of *Rhodischnura nursei* Morton. *Rec. Indian Mus.* **19**(2): 31-33.
- FRASER, F.C. 1933. *The fauna of British India, including Ceylon and Burma*. Odonata. Vol. I. Taylor & Francis Ltd., London, 423 pp.
- FRASER, F.C. 1934. *The fauna of British India, including Ceylon and Burma*. Odonata. Vol. II. Taylor & Francis Ltd., London, 398 pp.
- FRASER, F.C. 1936. *The Fauna of British India including Ceylon and Burma*. Odonata. Vol. III. Taylor & Francis Ltd., London, 461 pp.
- HABIB, M.S.A., HOSSAIN, M., IQBAL, K.F., KHAN, T., ISLAM, S., SARIF, S., and JEWEL M.M. 2016. *Dragonflies and Damselflies of Bangladesh, inventory first phase*. Jiban Bikash Karjocrom, Dhaka. 96 pp.
- KABIR, S.M.H., AHMED, M., AHMED, A.T.A., RAHMAN, A.K.A., HAQUE, E.U., BEGUM, Z.N.T., HASSAN, M.A. and KHONDKER, M. 2008. *Encyclopedia of Flora and Fauna of Bangladesh*, Vol.19. *Apterygota and Pterygota (Part)*. Asiatic Society of Bangladesh, Dhaka. 275 pp.
- KALKMAN, V.J., BABU R., BEDIANIC, M., CONNIFF, K., GYELTSHEN T., KHAN M.K., SUBRAMANIAN, K.A., ZIA, A. and ORR, A.G. 2020. Checklist of the dragonflies and damselflies (Insecta: Odonata) of Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka. *Zootaxa*, **4849**(1): 1-84.
- KANTH, Z.I. 1985. *Odonata of Azad Jammu and Kashmir*. Dissertation, University of Agriculture Faisalabad [Pakistan]. 102pp.
- KHAN, M. K. 2021. *Gynacantha chaplini* sp. nov., a new dragonfly from Bangladesh (Odonata: Aeshnidae). *Odonatologica*. **50**(1/2): 95-105.
- LAHIRI, A.R. 1987. *Studies on the Odonata fauna of Meghalaya*. Records of the Zoological Survey of India, Occasional Paper. **99**: 1-402.
- LAIDLAW, F.F. 1916. Notes on Indian Odonata. *Rec. Indian Mus.* **12**(4): 131-132.
- LAIDLAW, F.F. 1919. A list of the dragonflies recorded from the Indian Empire with special reference to the collection of the Indian Museum, 2: the family Agrionidae, B: the legions Argia and Agrion. *Rec. Indian. Mus.* **16**: 169-195.
- MITRA, T.R. 1983. A list of Odonata of Calcutta. *Entomologist's Monthly Magazine*. **119**: 29-31.
- MORTON, K.J. 1907. Odonata collected by Lt. Colonel Nurse, chiefly in north western India. *Trans. ent. Soc. Lond.* **1907**: 303-308.
- NAIR, M.V. 2011. *Dragonflies & damselflies of Orissa and Eastern India*. Wildlife Organisation, Forest & Environment Department, Government of Orissa. 252pp.
- PRASHAD, M. and VARSHNEY, R.K. 1988. *The Odonata of Bihar, India*. Zoological Survey of India. Vol. **110**, pp.45.
- SAYED, M.B. and HARUYAMA, S. 2015. Dynamics of Land Use/Cover Change in Manikganj District, Bangladesh: A Case Study of Manikganj Sadar Upazila. *Journal of Geographic Information System*. **7**(06):579.

- SHAH, M.N.A and KHAN, M.K. 2020. OdoBD: An online database for the dragonflies and damselflies of Bangladesh. *PLoS ONE*. **15**(4): e0231727.
- SUBRAMANIAN, K.A. 2009. *Dragonflies of India- A field guide*. Vigyan Prasar, India.180pp.
- TIPLE, A.D., ANDREW, R.J. SUBRAMANIAN, K.A. and TALMALE S.S. 2013. Odonata of Vidarbha region, Maharashtra state, Central India. *Odonatologica*. **42**(3): 237-245.
- TIPLE, A.D., KHURAD, A.M. and ANDREW, R.J. 2008. Species diversity of Odonata in and around Nagpur City, central India. *Fraseria*. **7**: 41-45.
- TRUEMAN, J.W. 2007. A brief history of the classification and nomenclature of Odonata. *Zootaxa*. **1668**(1):381-394.
- WESTFALL, M. J. and MAY, M. L. 2006. *Damselflies of North America (2<sup>nd</sup> edition)*. Scientific Publishers, Florida.Vol.**649**, XII+502 pp.
- ZIA, A.M., NAEEM, M.A., RAFI, F., NAZ, S., AF-SHEEN, A. F. and ILYAS, M. 2011. Damselflies (Zygoptera: Odonata) of Pakistan: Part I. *Journal of Insect Science*. 11: 1-27.

*(Manuscript received on 10 March; 2023 revised on 28April; 2023)*