

First report of *Menemerus nigli* (Araneae: Salticidae) from India

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Abstract

Menemerus nigli Wesolowska & Freudenschuss, 2012 previously known from Western Pakistan is reported in Eastern India. Illustrations of the habitus, male palp and distribution map are provided. DNA barcode data obtained for this species is available at BOLD.

Keywords: spider, Pakistan, Aranei, easternmost record.

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Introduction

The genus *Menemerus* Simon, 1868 is represented by 67 nominal species. Of which, five species are known from India; *Menemerus albocinctus* Keyserling, 1890, *M. bivittatus* (Dufour, 1831), *M. brachygnathus* (Thorell, 1887), *M. brevibulbis* (Thorell, 1887) and *M. fulvus* (L. Koch, 1878) (Prószyński 2016, World Spider Catalog 2017). While studying jumping spiders of India we report *M. nigli* for the first time from India, the species was previously known from its type locality in Pakistan. Furthermore, the validity of the species has been confirmed by with DNA barcode. This species was previously known only from the type locality in Pakistan.

Materials and Methods

The specimen was hand collected and stored in 70% alcohol. It was later examined and photographed using Leica EZ4 HD stereomicroscope. All images were then processed with the aid of LAS core software (LAS EZ 3.0). Species was identified using diagnostic keys provided by Wesolowska & Freudenschuss (2012). All measurements are in millimeters. The studied specimen has been deposited in the NZC (National Zoological Collections) at the Zoological Survey of India, Kolkata. Legs were used for isolation of genomic DNA. Amplification of the partial fragment cytochrome C oxidase subunit I (mtCOI) gene was performed following Barrett & Hebert (2005). The sequencing was

carried out on 3730 DNA Analyzer (Applied BioSystems) in the in-house sequencing facility of Zoological Survey of India. The resulting sequence was submitted to BOLD (Barcode of Life Data Systems) under the project titled “Barcoding Spiders of India” with barcode index number (BIN) AAQ0156.

Taxonomy

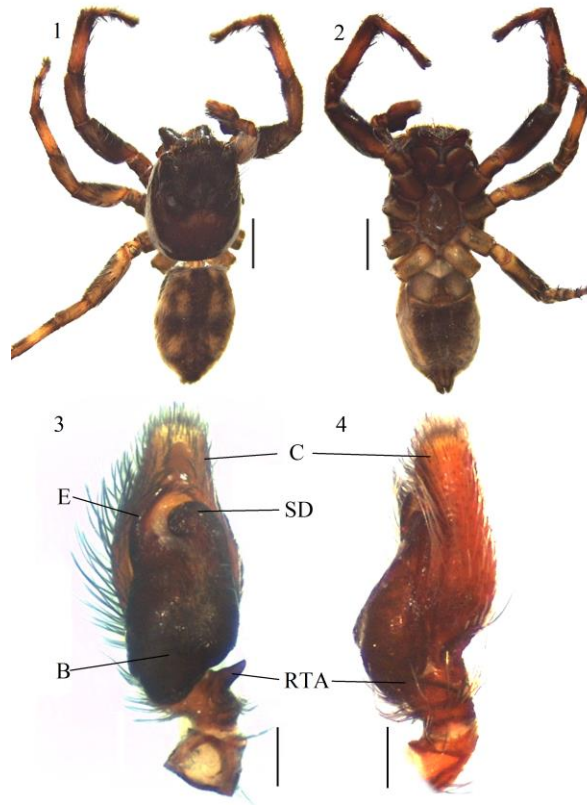
Menemerus nigli Wesolowska & Freudenschuss, 2012
(Figs. 1-4, Map)

Menemerus nigli Wesolowska and Freudenschuss, 2012: 449, figs. 1-6 (♂).

Material examined: INDIA. 1♂ (ZSI-AA-451), Behala, Kolkata district, West Bengal (22.49°N, 88.32°E, 11m), 7.viii.2016, leg. Sumantika Chatterjee.

Comments: Total length 4.89. Carapace 2.44 long, 1.9 wide; abdomen 2.45 long, 1.66 wide. Eye field: length 1.12, anterior width 1.57, posterior width 1.45. This species is known from a single male holotype from Western Pakistan which was collected under the stone. The specimen from India was collected on a wall from human habitation, inside a building.

Distribution: The species was described from Turbat, Pakistan. The new locality lies over 2500kms away from the type locality. This is



Figs. 1–4: *Menemerus nigli*, male. 1, dorsal view; 2, ventral view; 3, male left palp, ventral view; 4, same, retrolateral view. Abbreviations: B – bulb, C – cymbium, E – embolus, RTA – retrolateral tibial apophysis, SD – sperm duct. Scales; 1–2, 1 mm; 3–4, 0.25 mm.

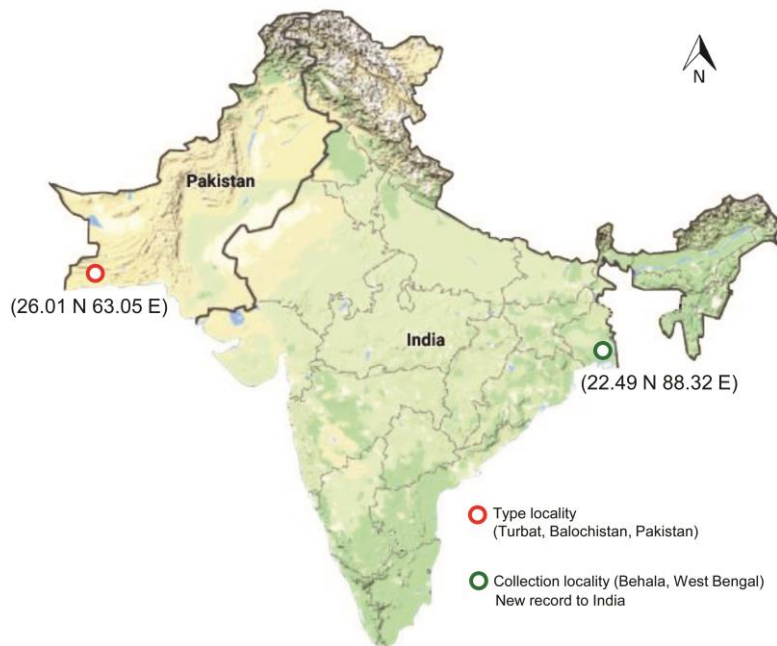


Figure 5. Map of distributional records of *Menemerus nigli*. The original template of the terrain map copied from Google Map (<https://maps.google.com>) and edited in Adobe Photoshop CS 8.0

the easternmost record of the species (Map).

Molecular Data: The DNA barcode data of *M. nigli* was evaluated in the similarity search engine of BOLD database (Ratnasingham & Hebert 2007). The sequence developed in our study showed 100% similarity with sequences of *M. nigli* from Pakistan. The mtCOI barcode profile of this species is given.

TATAGTAGGAAGTCAATAAGAGTATT
AATTTCGAATGGAGTTAGGTCAAACGGG
AAGTTTTTTAGGAAATGATCATATATAT
AATGTAATTGTTACTGCTCATGCTTTTG
TTATAATTTTTTTTATAGTAATACCTAT
TTTAATTGGAGGGTTTGGAATTTGATTA
GTTCTCTAATGTTAGGTGCTCCTGATA
TAGCTTTTCCTCGAATAAATAATTTAAG
ATTTTGATTATTACCTCCTTCCTTGATA
TTATTGTTTGTTCATCTTTAGCTGAAA
TAGGAGTAGGAGCTGGATGAACAGTAT
ATCCTCCTTTGGCTTCAATTGTTGGACA
TAATGGAAGATCGGTGGATTTTGCTATT
TTTTTCATTACATTTAGCTGGAGCTTCAT
CTATTATAGGTGCTATTAATTTTATTTT
AACTGTAATTAATATACGTTCTGTTCAA
ATAAGATTAGATAAGGTTCTCTATTG
TGTGATCAGTTGTTATTACTGCTGTGCT
TCTTTTGTTATCTTTACCTGTTTTAGCAG
GTGCAATTACTATATTATTAACAGATCG
AAATTTTAATAAC

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References

- Barrett, R.D.H., and Hebert, P.D.N. 2005. Identifying spiders through DNA barcodes. *Canadian Journal of Zoology* 83: 481–491.
- Prószyński, J. 2016. Salticidae (Araneae) of the world, Chapter II. Available at <http://www.peckhamia.com/salticidae/index.html> (accessed 24 March, 2017)
- Ratnasingham, S. and Hebert, P.D.N. 2007. BOLD: The Barcode of Life Data System (www.barcodinglife.org). *Molecular Ecology Notes* 7: 355–364. DOI:10.1111/j.1471-8286.2006.01678.x
- Wesołowska, W. and Freudenschuss, M. 2012. A new species of *Menemerus* from Pakistan (Araneae: Salticidae). *Genus* 23: 449–453.
- World Spider Catalog 2017. World Spider Catalog. Natural History Museum Bern, online at <http://wsc.nmbe.ch>, version 18.0. (accessed 24 March 2017)