

Removal of the millipede *Harpurostreptus krausi* Demange, 1962 (Diplopoda: Spirostreptida) from the Indian fauna

ROHIT RANNAVRE^{1,*}, PETER DECKER² & SUBHASH DONDE¹

¹ Department of Zoology, Kirti M. Doongursee College (Autonomous), Dadar (W), Mumbai – 400028, Maharashtra, India

² Senckenberg Museum of Natural History Görlitz, Am Museum 1, 02826 Görlitz, Germany

* Corresponding author: Rohit Rannavre (rohit.rannavre@gmail.com)

Received: 19 April 2024. Accepted: 9 May 2024

Abstract. The present contribution deals with the genus *Harpurostreptus* Attems, 1936 currently known to inhabit India and Sri Lanka. The type locality of one of its members, *H. krausi* Demange, 1962, so far erroneously mentioned as "India, Anuradhapura", is shown to be a case of misinterpretation or mislabeling; the species actually originates from Sri Lanka, not India.

Zusammenfassung: Streichung des Doppelfüßers *Harpurostreptus krausi* Demange, 1962 (Diplopoda: Spirostreptida) aus der indischen Fauna. Der vorliegende Beitrag befasst sich mit der Gattung *Harpurostreptus* Attems, 1936, von der derzeit bekannt ist, dass sie in Indien und Sri Lanka lebt. Die Typlokalität einer ihrer Arten, *H. krausi* Demange, 1962, die bisher fälschlicherweise als "Indien, Anuradhapura" angegeben wurde, erweist sich als Fehlinterpretation oder Fehletikettierung; die Art stammt tatsächlich aus Sri Lanka, nicht aus Indien.

Keywords. Diplopods, taxonomy, distribution, India, Sri Lanka

1 Introduction

Millipedes, constituting the class Diplopoda, belong to the third most diverse group of terrestrial arthropods with ~12,000 to 13,000 described species globally categorized into 16 orders, over 2,900 genera and about 144 families (BREWER et al. 2012, SHELLEY 2002, 2007, SIERWALD & BOND 2007, SIERWALD et al. 2024). In addition, it is estimated that the actual diversity of these creatures is nearly 80,000 (HOFFMAN 1980).

India, a South Asian country with a diverse range of ecosystems and wildlife, is renowned for its majestic Himalayas, vast Thar desert, lush Western Ghats forests and picturesque coastlines along the Bay of Bengal and the Arabian Sea. The diplopod fauna of the country, though undeniably understudied, harbors ~280 species scattered across 12 orders, 26 families and ~90 genera (ANILKUMAR et al. 2022, ASWATHY & SUDHIRKUMAR 2022, ASWATHY et al. 2021, BHAKAT 2023a, 2023b, GOLOVATCH & WESENER 2016, SANKARAN & SEBASTIAN 2017, 2018, 2020).

Here, our primary focus is on resolving a years-long discrepancy in the Indian fauna, particularly concerning the millipede *Harpurostreptus krausi* Demange, 1962. In contrast to prior reports that mistakenly assigned its origin to India (DE ZOYSA et al. 2016, DEMANGE 1962; GOLOVATCH & WESENER 2016, JEEKEL 2006), the correct information indicates that the species is of Sri Lankan origin, not Indian.

2 Materials and methods

Abbreviations

M—Male

F—Female

SMF—Senckenberg Research Institute, Frankfurt am Main, Germany

Material crosschecked

1 M holotype (SMF 3977), 2 F paratypes (SMF 3978)

3 Results and discussions

An investigation of the spirostreptid genus *Harpurostreptus* Attems, 1936 revealed that the initial assignment of the type locality of *H. krausi* as “India, Anuradhapura, Löw-Bear leg., 17.II.1912” by DEMANGE (1962: 374-376, figs 14-17), as well as the labels of the type material at SMF (Figure 1, now corrected), is erroneous as the actual site, Anuradhapura, is within the borders of the North Central Province in Sri Lanka. Further exploration into the matter came across another publication by the same author, DEMANGE (1981), corroborating the presence of the species in the Northern Province (Per Aru) of the island nation. Interestingly, the Senckenberg AQUILA collection database provides records indicating that Mr. Oscar Löw-Bear, the collector of the species, was present in a bay town named Weligama in the Southern Province of the country from February 2nd to February 28th, 1912, for collection of several species of arachnids, crustaceans, echinoderms and fishes, a fact further supported by ANONYMOUS (1920). The AQUILA database also contains three records of reptiles collected by Löw-Bear. These records unfortunately lack precise collecting dates and are listed as: “1912”, “01 Jan 1912-31 Dec 1912” and the third record has no specified date. Given all the evidence and information at hand, the current circumstances can be attributed to either a misinterpretation or a mislabelling which ultimately leads to the fact that the true homeland of the species is certainly Sri Lanka, regardless of the specific location.

4 Conclusions

The South Asian genus *Harpurostreptus* Attems, 1936 presently incorporates a total of eight species (Table 1). Out of these, four species are endemic to India, three to Sri Lanka, and one is shared between both countries.

We strongly believe that it is crucial not only to identify but also to rectify such errors in order to prevent any misrepresentation in the future as the validation of geographical distributions contribute significantly to the authenticity and reliability of scientific knowledge by benefiting both the scientific community and efforts in biodiversity conservation.

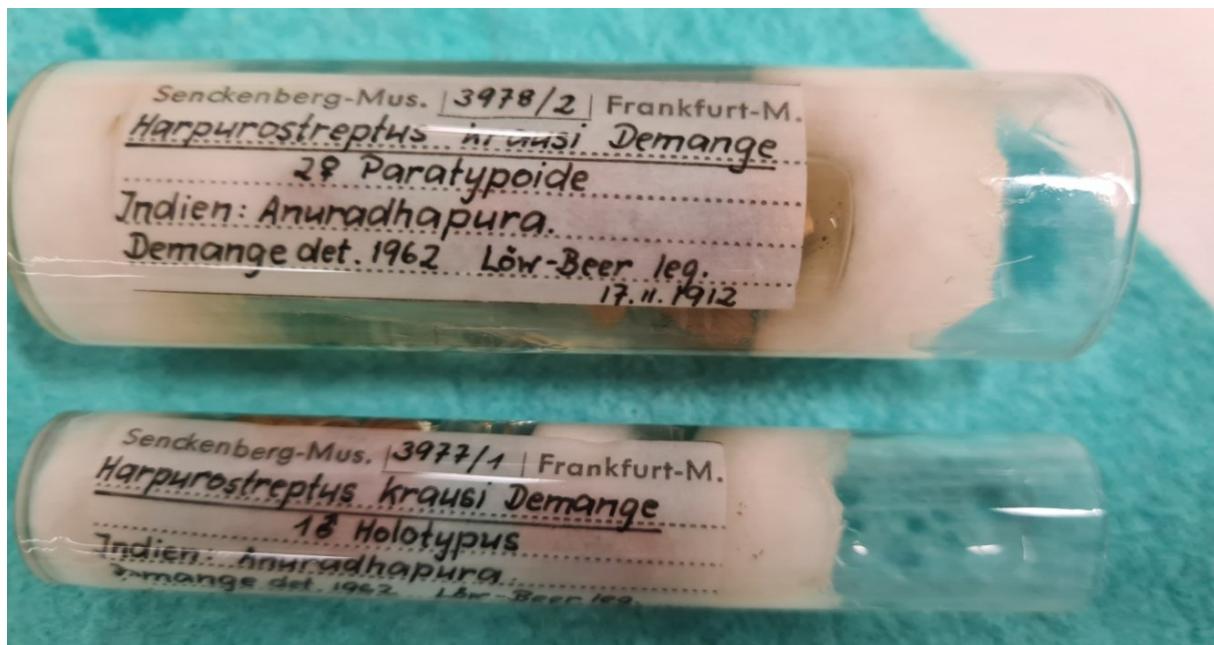


Figure 1: Image of the vials and labels of the types of *Harpurostreptus krausi*, located at the Senckenberg Research Institute, Frankfurt. Photograph: Peter Jäger.

Table 1. Currently known representatives of the genus *Harpurostreptus* Attems, 1936.

TAXON	DISTRIBUTION
Order Spirostreptida Brandt, 1833	
Family Harpagophoridae Attems, 1909	
Genus <i>Harpurostreptus</i> Attems, 1936	
<i>Harpurostreptus attemsi</i> Carl, 1941	Sri Lanka
<i>Harpurostreptus hamifer</i> (Humbert, 1865)	India & Sri Lanka
<i>Harpurostreptus jonesi jonesi</i> (Verhoeff, 1938)	India
<i>Harpurostreptus jonesi hamus</i> Demange, 1961	India
<i>Harpurostreptus krausi</i> Demange, 1962	Sri Lanka
<i>Harpurostreptus matarae</i> Carl, 1941	Sri Lanka
<i>Harpurostreptus montivagus</i> Carl, 1941	India
<i>Harpurostreptus prasadani</i> Demange, 1989	India
<i>Harpurostreptus virgatus</i> Attems, 1936	India

Acknowledgments

We are grateful to Dr. Peter Jäger (SMF) for his assistance in providing information regarding the type material. Thanks are also due to Dr. D. V. Pawar, the Principal, and the staff of the Department of Zoology at Kirti M. Doongursee College (Autonomous), Mumbai, India, for their continuous support and encouragement. Also thanks to the editors of Schubartiana for checking the manuscript.

References

- ANILKUMAR, P.A.; WESENER, T.; MORITZ, L. (2022) : First record of the order Polyzoniida from the Indian subcontinent with an integrative description of a new genus (Diplopoda, Colobognatha, Siphonotidae). – Zootaxa 5182 (5): 401-428. doi: [10.11646/zootaxa.5182.5.1](https://doi.org/10.11646/zootaxa.5182.5.1)
- ANONYMOUS (1920): Oscar-Löw-Berl-Stiftung. – Bericht der Senckenbergischen Naturforschenden Gesellschaft in Frankfurt am Main 50: 58-66. pdf: www.biodiversitylibrary.org/page/9000049
- ASWATHY, M.D.; SUDHIRKUMAR, A.V. (2022): Review of the millipede genus *Propygodesmus* Silvestri, 1920, with the description of a new species from a sacred grove in Kerala, India (Diplopoda: Polydesmida: Pyrgodesmidae). – Zootaxa 5116 (4): 591-599. doi: [10.11646/zootaxa.5116.4.7](https://doi.org/10.11646/zootaxa.5116.4.7)
- ASWATHY, M.D.; GOLOVATCH, S.I.; SUDHIKUMAR, A.V. (2021) : The millipede genus *Klimakodesmus* Carl, 1932, with the description of a new species from Kerala state, southern India (Diplopoda, Polydesmida, Pyrgodesmidae). – Zootaxa 4980 (2): 373-382. doi: [10.11646/zootaxa.4980.2.8](https://doi.org/10.11646/zootaxa.4980.2.8)
- BHAKAT, S. (2023a): A new paradoxosomatid millipede, *Manikidesmus suriensis* (Polydesmida: Paradoxosomatidae) from West Bengal, India. – Journal of Entomology and Zoology Studies 11 (2): 142-147. doi: [10.22271/j.ento.2023.v11.i2b.9187](https://doi.org/10.22271/j.ento.2023.v11.i2b.9187)
- BHAKAT, S. (2023b): A new species of the genus *Carlogonus* (Spirostreptida: Harpagophoridae) from West Bengal, India. – Journal of Entomology and Zoology Studies 11 (3): 111-115. doi: [10.22271/j.ento.2023.v11.i3b.9197](https://doi.org/10.22271/j.ento.2023.v11.i3b.9197)
- BREWER, M.S.; SIERWALD, P.; BOND, J.E. (2012): Millipede taxonomy after 250 years: classification and taxonomic practices in a mega-diverse yet understudied arthropod group. – PLoS One 7 (5): 1-12. doi: [10.1371/journal.pone.0037240](https://doi.org/10.1371/journal.pone.0037240)
- DE ZOYA, H.K.S.; NGUYEN, D.A.; WICKRAMASINGHE, S. (2016): Annotated checklist of millipedes (Myriapoda: Diplopoda) of Sri Lanka. – Zootaxa 4061 (5): 451-482. doi: [10.11646/zootaxa.4061.5.1](https://doi.org/10.11646/zootaxa.4061.5.1)
- DEMANGE, J.-M. (1962): Matériaux pour servir à une revision des Harpagophoridae. II. Sur une collection du Senckenberg-Museum. – Senckenbergiana biologica 43 (5): 369-376.
- DEMANGE, J.-M. (1981): Spirostreptida, Harpagophoridae (Myriapoda—Diplopoda) de Sri Lanka. – Entomologica Scandinavica, Supplement 11: 63-80.
- GOLOVATCH, S.I.; WESENER, T. (2016): A species checklist of the millipedes (Myriapoda, Diplopoda) of India. – Zootaxa 4129 (1): 1-75. doi: [10.11646/zootaxa.4129.1.1](https://doi.org/10.11646/zootaxa.4129.1.1)
- HOFFMAN, R.L. (1980): Classification of the Diplopoda. – Muséum d'histoire naturelle, Genève: 237 pp.
- JEEKEL, C.A.W. (2006): A bibliographic catalogue of the Oriental Harpagophoridae (Diplopoda, Spirostreptida). – Myriapod Memoranda 9: 5-58.
- SANKARAN, P.M.; SEBASTIAN, P.A. (2017): The South Asian millipede genus *Chondromorpha* Silvestri, 1897 (Diplopoda, Polydesmida, Paradoxosomatidae, Sulciferini): redescriptions and synonymies. – Zootaxa 4350 (1): 61-83. doi: [10.11646/zootaxa.4350.1.3](https://doi.org/10.11646/zootaxa.4350.1.3)
- SANKARAN, P.M.; SEBASTIAN, P.A. (2018): A new species of and a new transfer from the millipede genus *Polydrepanum* Carl, 1932 (Polydesmida, Paradoxosomatidae, Polydrepanini). – Zootaxa 4471 (1): 169-178. doi: [10.11646/zootaxa.4471.1.8](https://doi.org/10.11646/zootaxa.4471.1.8)
- SANKARAN, P.M.; SEBASTIAN; P.A. (2020): A redescription and a synonym in the South Asian millipede genus *Xenobolus* Carl, 1919 (Spirobolida, Pachybolidae). – Zootaxa 4780 (1): 165-179. doi: [10.11646/zootaxa.4780.1.8](https://doi.org/10.11646/zootaxa.4780.1.8)
- SHELLEY, R.M. (2002): A revised, annotated, family-level classification of the Diplopoda. – Arthropoda Selecta 11 (3): 187-207.
- SHELLEY, R.M. (2007): Taxonomy of extant Diplopoda (Millipeds) in the modern era: Perspectives for future advancements and observations on the global diplopod community (Arthropoda : Diplopoda). – Zootaxa 1668: 343-362. doi: [10.11646/zootaxa.1668.1.18](https://doi.org/10.11646/zootaxa.1668.1.18)
- SIERWALD, P.; BOND, J.E. (2007): Current status of the myriapod class diplopoda (Millipedes): Taxonomic diversity and phylogeny. – Annual Review of Entomology 52: 401-420. doi: [10.1146/annurev.ento.52.111805.090210](https://doi.org/10.1146/annurev.ento.52.111805.090210)
- SIERWALD, P.; DECKER, P.; SPELDA, J. (2024): MilliBase. Accessed at www.millibase.org on 2024-04-19. doi: [10.14284/370](https://doi.org/10.14284/370)