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# Journal of Threatened Taxa



Open Access



10.11609/jott.2023.15.12.24291-24450  
[www.threatenedtaxa.org](http://www.threatenedtaxa.org)

26 December 2023 (Online & Print)  
15(12): 24291-24450  
ISSN 0974-7907 (Online)  
ISSN 0974-7893 (Print)





ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

Publisher  
**Wildlife Information Liaison Development Society**  
[www.wild.zooreach.org](http://www.wild.zooreach.org)

Host  
**Zoo Outreach Organization**  
[www.zooreach.org](http://www.zooreach.org)

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Cover: The critically endangered *Lilium polyphyllum* in watercolour and acrylics. © Aishwarya S Kumar.



such as Meghalaya, Assam, Arunachal Pradesh, and Sikkim (Mukhopadhyay & Halder 2003). However, there is no record of *R. (Eurybatus) formosa* from the state of Mizoram. During one of the tours to Champhai district, Mizoram, the specimens of *R. (Eurybatus) formosa* were collected and examined.

## MATERIALS AND METHODS

### Study area

Mizoram is situated between at 23.36°N & 92.8°E and is located in northeastern India, bounded by Myanmar to the east and south, Bangladesh to the west, state of Tripura to the north-west, Assam to the north, and Manipur to the north-east. The state of Mizoram has a great diversity in phyto-physiognomies which are distributed according to an altitudinal gradient from tropical evergreen to montane and temperate areas. High rainfall and moist climate provide a high base for rich biodiversity consequently the total land under vegetation is 90.68% (Sati et al. 2014). With a tree cover area of about 75%, Mizoram ranks third in India with the highest total forest cover with immense timber plant species such as *Schima wallichii*, *Tectona grandis*, *Castanopsis* sp., and *Macaranga* sp. (SFR 2019). These timber plant species attract a large number of insects belonging to Cerambycidae.

### Sample collection

The specimens were collected during faunistic surveys conducted at Murlen National Park, Mizoram in 2018 (Figure 1). Prior permission was taken from the Murlen National Park office for conducting the survey and collection of specimens. Two females were collected from dense vegetation. Both specimens are deposited at the National Zoological Collections of Zoological Survey of India, North Eastern Regional Centre, Shillong, Meghalaya. The specimens were dried and examined under a Labomed CZM4 stereo zoom microscope, and photographed with Canon PowerShot G3 X digital camera.

## RESULTS

### Materials examined

Two females collected from a woody forest at Murlen, Champhai district, Mizoram, 01.xi.2018 & 03.xi.2018, geocoordinate readings, 23.39°N & 93.17°E; 23.31°N & 93.16°E, coll. Dr. U. Saikia and group, ZSI, NERC, Shillong, Registration No.: I/COL/NERC/221; I/COL/NERC/222. The species was identified using keys/characters in Gahan (1906).

### Diagnostic characters

Female: Head black; pronotum red, bearing from three to four distinct black marks or spots; the entire

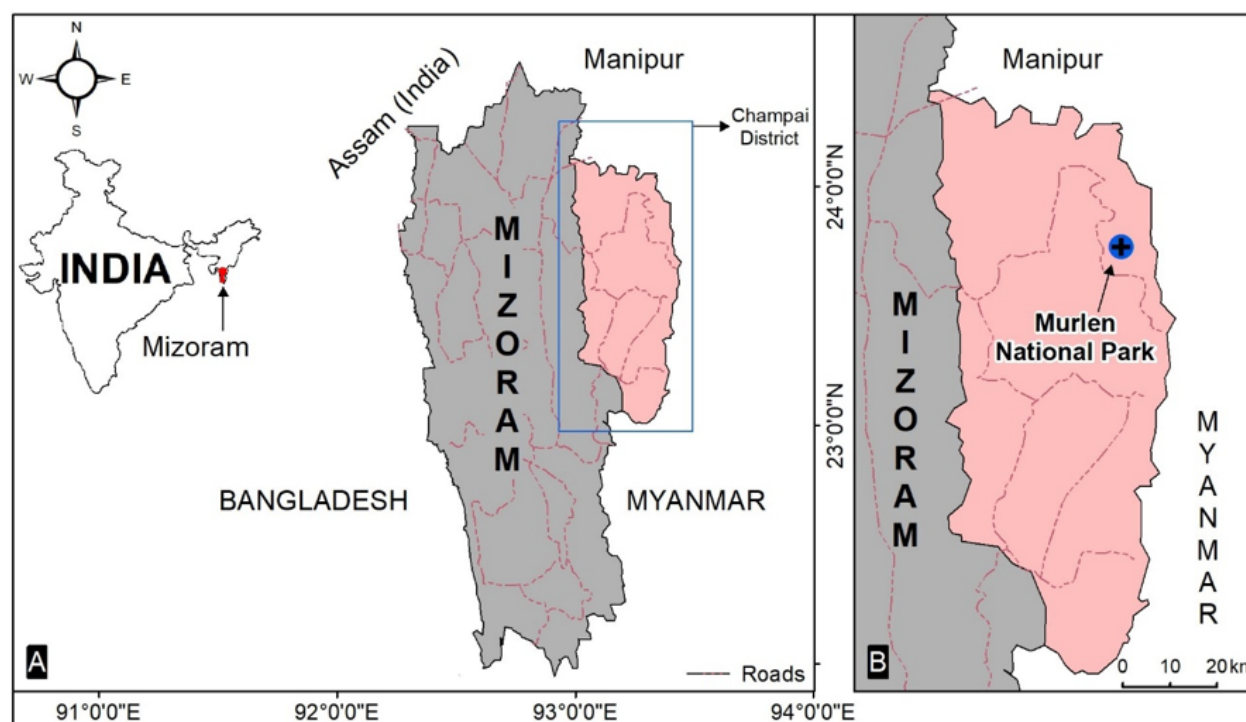


Figure 1. Location map of Murlen National Park in Champhai District, Mizoram.

region of the mesosternum along with the coxal borders of prosternum and metasternum black; elytra red, having a broad black band at the base and also behind the middle, with two black oblique spots, one placed on the dorsal and the other one laterally between the bands; body beneath red, with last ventral segment black (Image 1, 2). Femora is sub clavately thickened beyond the middle or sub-fusiform, scantily punctulate and slightly nitid. Intercoxal process of the prosternum and mesosternum is narrow.

Disc of the pronotum is prominent with four black spots, two are median while the remaining two are lateral. The antero-median spot on the prothorax is small and disappears in some as it is apparent in one of the studied specimens in this communication. Prothorax is globose and protuberant at the sides, a character which is distinct in the case of females and this is very much clearly visible and prominent in the two specimens studied; each of the lateral black spots is placed on a small conical tubercle making it distinct in females. All measurements are in 'mm'.

Specimen 1/ Specimen 2; total length: 25.25/28.45; antennae length: 26.40/30.77; prothorax length: 4.86/4.84; prothorax width: 5.45/5.82; humeral angle width: 6.52/8.15.

## DISCUSSION

Based on earlier works by Gahan (1906), a total of six species have been recorded under the genus, *Rosalia* Audinet-Serville, 1833. *Rosalia formosa* (Saunders, 1839) has been recorded from the Himalaya: Sikkim: Darjeeling; Barrackpore; Assam (as per Gahan 1906) but not from Mizoram- hence this is a new record for the state. The other five species known to occur in northeastern India are: *Rosalia decempunctata* (Westwood, 1848), *Rosalia gravaida* Lameere, 1887, *Rosalia lateritia* (Hope, 1831), *Rosalia hariola* Thomson, 1860, and *Rosalia lameerei* Brongniart, 1891 (Takakuwa 1994; Sreedevi et al. 2017). Elsewhere, *R. formosa* has been reported from, China, Myanmar, Nepal, Laos, and Thailand (Mitra et al. 2017). Another subspecies *Rosalia formosa pallens* Gressitt, 1945, which has its distribution in China and Vietnam, has been redescribed by Takakuwa (1994). The subspecies is very similar to the nominotypical subspecies from India at first sight; however, the basal black band of elytra, in the case of *R. formosa pallens*, partly touches the external margins which in the case of *R. formosa* extends completely; while, the postmedian black band of elytra is more or less oblique at anterior margin when compared to *R. formosa* where it is nearly straight. Given the rich biodiversity of the region, and



Image 1. *Rosalia formosa* (Saunders, 1839), dorsal view. © Amit Rana.

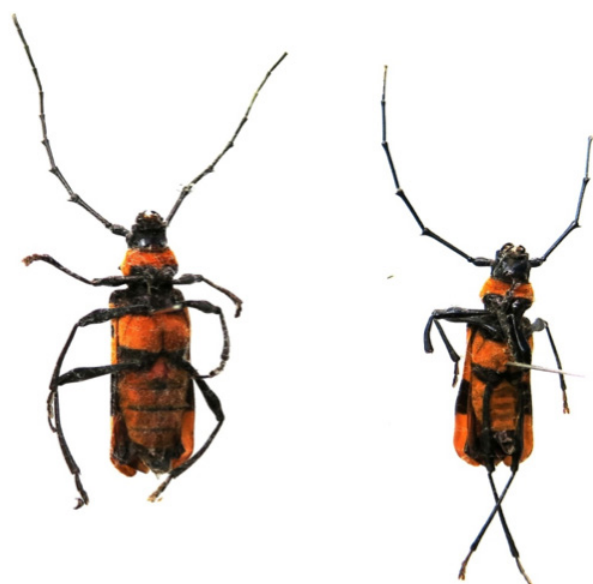


Image 2. *Rosalia formosa* (Saunders, 1839), ventral view. © Amit Rana.

the diverse species of cerambycid beetles, more faunistic surveys and systematic studies can lead to discoveries of new species or addition to known species.

## REFERENCES

- Agarwala, B.K. & P.P. Bhattacharjee (2012). Long-horned Beetles (Coleoptera: Cerambycidae) and Tortoise Beetles (Chrysomelidae: Cassidinae) of Tripura, northeastern India with some new additions. *Journal of Threatened Taxa* 4(13): 3223–3227. <https://doi.org/10.11609/JOTT.o2951.3223-7>
- Gahan, C.J. (1906). *The Fauna of British India, Ceylon & Burma*, Vol. I. Taylor and Francis, London, 329 pp.

- Hegde, V.D., S. Yadav, P. Burathoki & B. Saikia (2022). New state records of longhorn beetles (Insecta: Coleoptera: Cerambycidae) from Meghalaya, India. *Journal of Threatened Taxa* 14(8): 21720–21726. <https://doi.org/10.11609/jott.7058.14.8.21720-21726>
- Kariyanna, B., M. Mohan, R. Gupta & F. Vitali (2017). The checklist of longhorn beetles (Coleoptera: Cerambycidae) from India. *Zootaxa* 4345(1): 001–317.
- Kumawat, M.M., K.M. Singh & V.V. Ramamurthy (2015). A checklist of the Long-horned Beetles (Coleoptera: Cerambycidae) of Arunachal Pradesh, northeastern India with several new reports. *Journal of Threatened Taxa* 7(12): 7879–7901. <https://doi.org/10.11609/JoTT.o4007.7879-901>
- Mitra, B., U. Chakraborti, K. Mallick, S. Bhaumik & P. Das (2017). An updated list of cerambycid beetles (Coleoptera: Cerambycidae) of Assam, India. *Records of the Zoological Survey of India* 117(1): 78–90.
- Mozhui, L., A. Rana, K. Neikha & L.N. Kakati (2020). A checklist of long horn beetles (Coleoptera: Cerambycidae) of Lumami, Zunheboto District, Nagaland with 23 new records. *Halteres* 11: 118–128.
- Mukhopadhyay, P. & S.K. Halder (2003). Insecta: Coleoptera: Cerambycidae. Fauna of Sikkim. State Fauna Series, Zoological Survey of India 9(3): 181–199.
- Sati, V.P., P. Rinawma, N.B. Singh & C.U.B. Rao (2014). Diversity, use pattern and management of forest resources in the Eastern Himalaya: a case study of Mizoram, India. *Journal of Forests* 1(1): 1–10.
- SFR (2019). *Forest Survey of India, Vol. II*. Indian State of Forest Report. Ministry of Environment Forest and Climate Change, Government of India, Allied Printers, Dehradun, 382 pp.
- Sreedevi, K., H.V. Ghate, M. Sharma & S. Kulanthaivel (2017). First record of the longhorn beetle, *Rosalia lameerei* Brongniart (Cerambycidae: Cerambycinae: Compsocerini) from India, with additional descriptions of male. *Entomon* 42(1): 37–40.
- Takakuwa, M. (1994). The genus *Rosalia* (Coleoptera, Cerambycidae) from North Vietnam with description of a new species. *Bulletin of the Kanagawa Prefectural Museum Natural Science* 23: 1–6.
- Wang, Q. (ed.) (2017). *Cerambycidae of the World: Biology and Pest Management*. CRC Press, Taylor and Francis Group, Boca Raton, FL, 628 pp.



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The Managing Editor, JoTT,  
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**Journal of Threatened Taxa** is indexed/abstracted in Bibliography of Systematic Mycology, Biological Abstracts, BIOSIS Previews, CAB Abstracts, EBSCO, Google Scholar, Index Copernicus, Index Fungorum, JournalSeek, National Academy of Agricultural Sciences, NewJour, OCLC WorldCat, SCOPUS, Stanford University Libraries, Virtual Library of Biology, Zoological Records.

NAAS rating (India) 5.64



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ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

December 2023 | Vol. 15 | No. 12 | Pages: 24291–24450

Date of Publication: 26 December 2023 (Online & Print)

DOI: 10.11609/jott.2023.15.12.24291-24450

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