

A new visual perspective on mimicry by an Indian jumping spider: *Harmochirus exaggeratus* (Araneae: Salticidae)

Murali Dharan S¹

¹ Email awayk3n@gmail.com

Abstract. Salticid spiders in India are primarily known for their ant-mimicking forms. This note presents the first record of beetle mimicry in an Indian jumping spider, *Harmochirus exaggeratus* Caleb & Mathai 2015, based on field photography in Tamil Nadu. The mimicry is not dorsal but lateral—visible from a side angle—and suggests a 2D silhouette that resembles small beetles such as coccinellids. This mimicry may serve as visual deception against predators or insects that view the spider from ground level. The observation adds ecological context to the species and broadens our knowledge of mimicry strategies within Indian Salticidae.

Mimicry is widespread among salticid spiders. In India, ant mimicry dominates, with genera like *Myrmarachne* and *Bocus* representing well-known examples. However, beetle mimicry has not been reported from India, although it has been found in other salticids, to include Australasian *Coccorchestes* species (Allan 2022; Hill 2025) and the Neotropical *Jollas oklanderae* (Baigorria & Rubio 2024). Modification of the first leg to resemble an insect head when observed from the side has also been described for a number of salticids, to include *Ohilimia* species, endemic to tropical Australasia (Hill & Ng 2025), and one undescribed Nearctic *Tutelina* sp. (Hill & Edwards 2021).

Here, I provide the first photographic documentation of the beetle-like appearance of the Indian salticid *Harmochirus exaggeratus*, a species previously described by Caleb & Mathai (2015) from Chennai, Tamil Nadu. This mimicry becomes apparent only when the spider is viewed from the side (Figure 1). Unlike spiders that look like insects when viewed from any direction, the resemblance is only revealed when the *H. exaggeratus* is viewed from either side, creating a silhouette strikingly similar to a small, domed beetle, complete with head and antenna. When viewed from other directions (Figures 2-3), they are still beetle-like, but the mimicry is not so effective. For predators or prey living with these spiders, this effect may represent a form of either Batesian (defensive) or aggressive mimicry, respectively. The effect is obvious when living spiders are observed under natural conditions, but is not generally recognized as most taxonomy has been based on preserved specimens. This highlights the importance of field observations for our study of these spiders.

Harmochirus exaggeratus, *H. brachiatus* Thorell 1877, and *H. zabkai* Logunov 2001 are relatively small jumping spiders, all about 3.0-5.0 mm in body length. The coloration of *H. exaggeratus*, named for the "exaggerated" appearance of spiders in this genus, tends to be subtle, with earthy browns and intricate markings comprised of scattered iridescent gold to violet scales (Figures 2-3; see Logunov 2001; Hill 2022). If present and distinct, two shining dorsal spots (each a group of iridescent scales) of *H. exaggeratus*, placed behind each AME and between the PME at the rear of the eye region, look like beetle elytral reflections. These are absent in other *Harmochirus* species recorded from India (Figure 3), which tend to have a more uniform cover of scales in the eye region.



Figure 1 (continued on next page). Adult *Harmochirus exaggeratus*. 1, 3-6, ♀. 2, ♂. These were found in a scrub-grassland interface near Erode, Tamil Nadu, India. 1, This ♀ was stationary on a dried leaf, legs compact, body pressed low to the substrate. Viewed from a low, side angle—typical of how other insects or ground predators might perceive it—the spider presented a smooth, continuous curve from carapace to abdomen, dark and reflective, resembling the outline of a beetle.



Figure 1 (continued from previous page). Adult *Harmochirus exaggeratus*. 7-8, ♂. 9-12, ♀. The female of this species is notably larger (~4.4 mm) than typical conspecific males (~3.4 mm), with a robust, doomed abdomen and hardened glossy cuticle that mimics beetles. The spider's body did not display the distinct separation of prosoma and opisthosoma, or elongation typical of many salticids in an alert stance. Instead, it presented a compact, hump-backed profile, with its domed body, glossy cuticle and subdued movement producing a convincing beetle-like illusion.



Figure 2. Other views of adult female (1-3) and adult male (4-8) *Harmochirus exaggeratus*. The male is smaller, more slender, and less distinctly beetle-like in appearance compared to the robust, mimetic female. However the male has the wide, fringed tibiae of legs I, and also raises these legs in the air, much like the antennae of an insect.



Figure 3. Dorsal views of adult ♀ *Harmochirus exaggeratus*, showing areas of iridescent gold scales on the carapace and dorsal opisthosoma.



Figure 4. Other species of *Harmochirus*. 1-3, Adult ♂ *H. brachiatus* Thorell 1877. 4-5, Adult ♀ *H. zabkai* Logunov 2001.

Acknowledgements

I thank David E. Hill for his assistance with the review and preparation of this manuscript.

References

- Allan 2022.** Maurice D. Allan. 2 Sep 2022. Association of the jumping spider *Coccorchestes ferreus* (Araneae: Salticidae: Euophryini) with a small, black weevil (Coleoptera: Curculionidae: Cryptorhynchinae: *Trigonopterus* cf. *laetus*). Peckhamia 278.1: 1-2.
- Baigorria & Rubio 2024.** Julián E.M. Baigorria, Gonzalo D. Rubio. 29 Nov 2024. *Jollas oklanderae* n. sp., a new beetle-like spider from Northeast Argentina (Araneae: Salticidae: Sitticini). Peckhamia 324.1: 1-8.
- Caleb & Mathai 2015.** John T. D. Caleb, Manu Thomas Mathai. Jan 2015. Description of a new species of *Harmochirus* Simon (Araneae: Salticidae) from South India. Munis Entomology & Zoology 10 (1): 117-121.
- Hill 2022.** David E. Hill. 22 Oct 2022. Jumping spider scales. Peckhamia 279.1: 1-83.
- Hill 2025.** David Edwin Hill. 23 Mar 2025. Biogeography of euophryine jumping spiders (Araneae: Salticidae). Peckhamia 327.1: 1-60.
- Hill & Edwards 2021.** David E. Hill, G. B. Edwards. 28 Aug 2021. Fluorescence in jumping spiders of the genus *Tutelina* (Araneae: Salticidae: Dendryphantini). Peckhamia 245.1: 1-9.
- Hill & Ng 2025.** David E. Hill, Yongi Ng. 8 Jan 2025. Standing display of the Australasian jumping spider *Ohilimia* (Araneae: Salticidae: Euophryini: Papuaphryni). Peckhamia 326.1: 1-12.
- Logunov 2001.** Dmitri V. Logunov. A redefinition of the genera *Bianor* Peckham & Peckham, 1885 and *Harmochirus* Simon, 1885, with the establishment of a new genus *Sibianor* gen. n. (Aranei: Salticidae). Arthropoda Selecta 9 (4, 2000): 221-286.
- Thorell 1877.** T. Thorell. Studi sui Ragni Malesi e Papuani. I. Ragni di Selebes raccolti nel 1874 dal Dott. O. Beccari. Annali del Museo Civico di Storia Naturale di Genova 10: 341-637.