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# Journal of Threatened Taxa

Building evidence for conservation globally

[www.threatenedtaxa.org](http://www.threatenedtaxa.org)

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

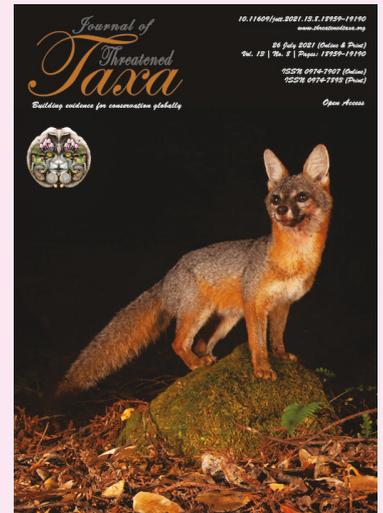
## NOTE

### A NEW DISTRIBUTION RECORD OF *BIANOR ANGULOSUS* (KARSCH, 1879) (ARANEAE: SALTICIDAE) FROM KERALA, INDIA

Nishi Babu, John T.D. Caleb & G. Prasad

26 July 2021 | Vol. 13 | No. 8 | Pages: 19177–19180

DOI: [10.11609/jott.7069.13.8.19177-19180](https://doi.org/10.11609/jott.7069.13.8.19177-19180)



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## A new distribution record of *Bianor angulosus* (Karsch, 1879) (Araneae: Salticidae) from Kerala, India

Nishi Babu<sup>1</sup> , John T.D. Caleb<sup>2</sup>  & G. Prasad<sup>3</sup> 

<sup>1,3</sup>Department of Zoology, University of Kerala, Kariavattom, Thiruvananthapuram, Kerala 695581, India.

<sup>2</sup>No. 27, Saravana Nagar, Manigantapuram, Thirumullivoyal, Chennai, Tamil Nadu 600062, India.

<sup>1</sup>nishibabu510@gmail.com, <sup>2</sup>caleb87woodgate@gmail.com, <sup>3</sup>probios1@gmail.com (corresponding author)

**Abbreviations:** CP—central epigynal pocket | PLE—posterior lateral eyes | RTA—retrolateral tibial apophysis.

Globally, the salticid fauna is represented by 6,334 species under 659 genera (World Spider Catalog 2021) and the Indian diversity by 275 species under 99 genera (Caleb & Sankaran 2021). The cosmopolitan genus *Bianor* was established by Peckham & Peckham (1885) with *Scythropa maculata* Keyserling, 1883 as its type species. At present, this genus includes 27 species (World Spider Catalog 2021) of which eight are known from India (Caleb & Sankaran 2020). The present paper deals with the description and first distributional record of *Bianor angulosus* (Karsch, 1879) from Kerala.

The study was conducted at Kainakary (9.52°N, 76.39°E) in Kuttanad, Kerala. Collection and observations were made early morning from the paddy fields in both rabi and kharif crop seasons. The duration of the study was from July 2019 to August 2020. Specimens were photographed while alive, then collected either by hand or using a sweeping net and preserved in 70% alcohol. Detailed examination was done using a stereozoom

microscope (Magnus, MS 24). The epigynum was dissected, cleared in 10% KOH and mounted on a temporary slide and observed under a compound microscope (Leica DM1000 LED) at both 10X and 20X magnifications to study the internal structures. Male left palp was removed and observed. All the measurements are in millimeters (mm). The studied specimens are deposited in the Zoological Museum of the Department of Zoology, University of Kerala, Kariavattom.

Genus *Bianor* Peckham & Peckham, 1886  
*Bianor angulosus* (Karsch, 1879) (Images 1–6)  
*Ballus angulosus* Karsch, 1879: 553

*Bianor angulosus* Żabka, 1988: 442, figs. 56–58; Logunov, 2001: 231, figs. 47–74; Logunov, 2019: 101, figs. 1–3, 5–10

*Bianor hotingchiehi* Żabka, 1985: 210, figs. 1–15

*Bianor simoni* Żabka, 1985: 204, figs. 30–34

For a complete list of taxonomic references refer the World Spider Catalog (2021).

Material examined: KUDZEN2021.I.01a, 28.viii.2019, 2 females from Kainakary, Kuttanad (9.52°N, 76.39°E), coll. Nishi Babu; KUDZEN2021.I.01b, 15.ix.2020, 2 males,

**Editor:** Anonymity requested.

**Date of publication:** 26 July 2021 (online & print)

**Citation:** Babu, N., J.T.D. Caleb & G. Prasad (2021). A new distribution record of *Bianor angulosus* (Karsch, 1879) (Araneae: Salticidae) from Kerala, India. *Journal of Threatened Taxa* 13(8): 19177–19180. https://doi.org/10.11609/jott.7069.13.8.19177-19180

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**Funding:** CSIR-UGC.

**Competing interests:** The authors declare no competing interests.

**Acknowledgements:** We are grateful to Dr. Pradeep M.S., Division of Arachnology, Sacred Heart College, Thevara for his support and guidance. Nishi Babu (NB) likes to thank Mr. Thomas Mathew (Farmer) for providing necessary facilities during the field work. NB thanks Mr. Binish Roopas for his constant support and for providing the photographs of the specimen taken during the field visit. CSIR-UGC Fellowship to NB is acknowledged.



same data as of females.

**Description:** Female—total length: 5.05, cephalothorax length: 2.04, width: 2.20. Abdomen length: 3.01, width: 2.15. Clypeus height 0.15. Morphometry of legs given in Table 1. Cephalothorax dark brownish, covered with straw colored hairs medially; broadest at PLE. Eye field trapezoid, distinctly broader posteriorly; posterior thoracic slope steep, almost vertical (Image 2). Clypeus densely covered with small white hairs. Chelicerae with single retromarginal tooth and two promarginal teeth. Sternum oval, reddish-brown, covered with white hairs. Maxillae, labium and chelicerae brownish. Leg formula 1342. Leg I stronger and longer than rest. Leg I brown, legs II-IV yellowish. Palp brown, covered with tiny white hairs. Abdomen elongated oval. Dorsally brown, covered with white and yellow hairs (Image 2). Posterior medial region with rows of black and white hairs. Epigyne ventrally with well-developed fossae and copulatory openings on either side of CP; internal structures with long, coiled insemination ducts; spermathecae tubular and elongated with fertilization ducts set apically (Images 3, 4). Spinnerets brown.

**Male**—total length: 5.08, Cephalothorax length: 2.45, width: 2.03. Abdomen length: 2.63, width 1.36. Clypeus height 0.10. Morphometry of legs given in Table 2. Cephalothorax punctured reticulate, shining, russet, covered with white elongate scales forming bright white patches behind posterior lateral eyes and white marginal stripes (Image 1). Clypeus brown with row of long white hairs. Sternum brownish-yellow covered with white hairs. Maxillae, labium and chelicerae yellowish-brown. Leg formula 1342. Leg I brown, legs II-IV yellowish. Palps brownish; small and broad cymbium; embolus thin, needle-like emerging from the proximal region of the bulb and tapering toward the tip; a membranous region present at 3 o' clock position; RTA thick, broad at its base and slightly curved and pointed at the tip (Images 5, 6). Abdomen dorsally brown in colour with three pairs of white spots or a pair of longitudinal white stripes (Image 1). Sides and ventral region yellow. Spinnerets yellowish-brown. Rest of the characters are same as in female.

**Distribution:** India: Assam, Bihar, Himachal Pradesh, Karnataka, Kerala (present study), Odisha, Punjab, and West Bengal (Caleb 2019) (Image 7). The species is widespread throughout South and Southeast Asia from India, Sri Lanka, Bhutan, Bangladesh, China, Myanmar, Vietnam, Thailand, Malaysia, and Indonesia (World Spider Catalog 2021).

**Habitat:** The specimens were collected from a foliage of paddy as indicated in the previous study (Logunov

**Table 1. Leg measurements of female (KUDZEN2021.I.01a).**

	Leg I	Leg II	Leg III	Leg IV
Femur	1.48	1.18	1.54	1.44
Patella	0.82	0.66	0.73	0.60
Tibia	1.28	0.79	0.68	0.75
Metatarsus	0.72	0.54	0.71	0.88
Tarsus	0.60	0.45	0.50	0.43
<b>Total</b>	<b>4.90</b>	<b>3.62</b>	<b>4.16</b>	<b>4.10</b>

**Table 2. Leg measurements of male (KUDZEN2021.I.01b).**

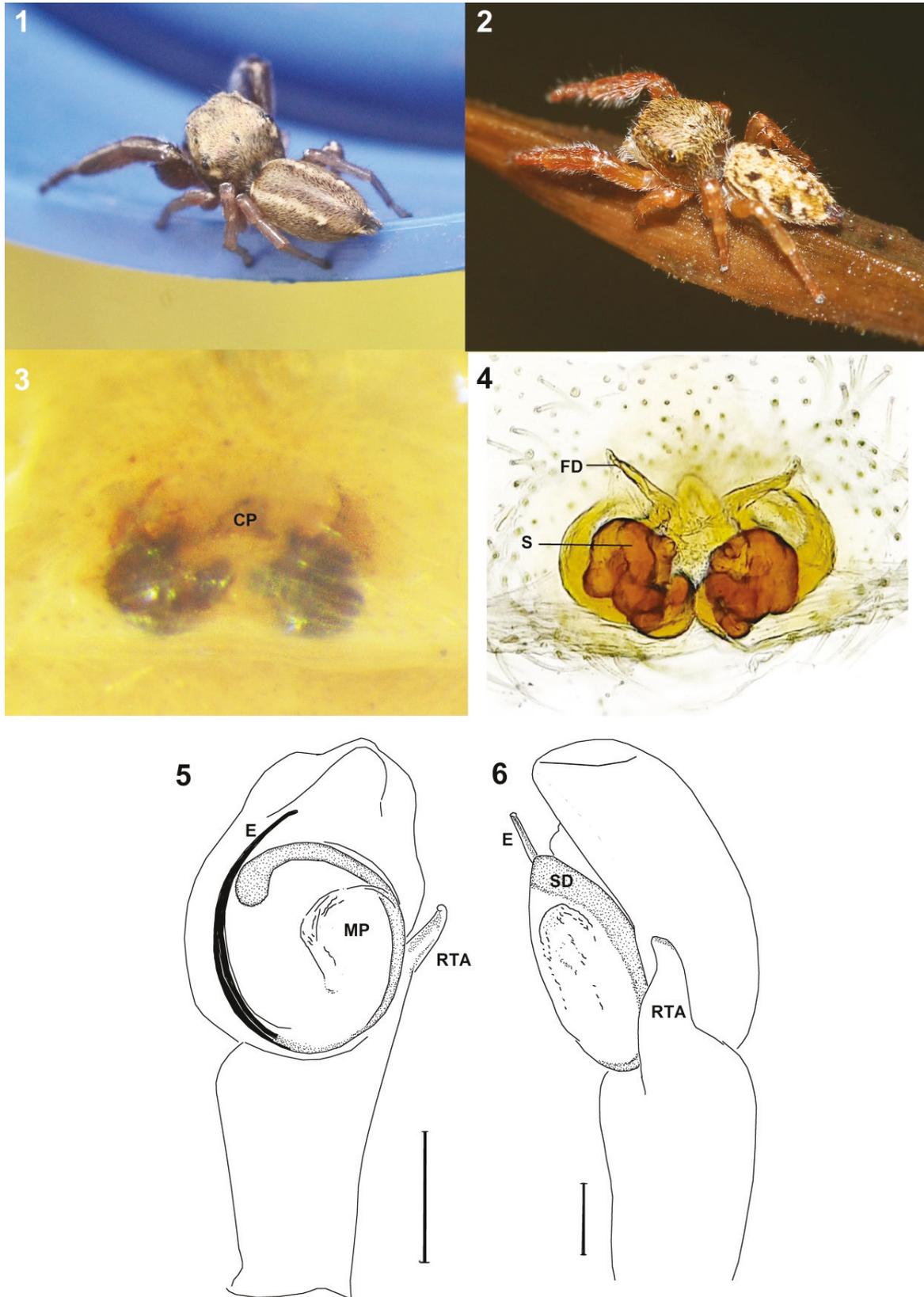
	Leg I	Leg II	Leg III	Leg IV
Femur	1.46	1.16	1.51	1.40
Patella	0.80	0.60	0.72	0.59
Tibia	1.13	0.75	0.64	0.81
Metatarsus	0.70	0.50	0.72	0.88
Tarsus	0.60	0.43	0.50	0.40
<b>Total</b>	<b>4.69</b>	<b>3.44</b>	<b>4.09</b>	<b>4.08</b>

2001). The species constructs sac like webs and takes shelter in them.

**Note:** The species appears to exhibit a wide range of variations in coloration, size and morphology (Logunov 2001: 234). Our samples fall within one of the variations already illustrated for the species and its synonyms. The abdominal pattern of the male with a pair of longitudinal white stripes is similar to that illustrated by Logunov (cf. Image 1 with fig. 62 in Logunov 2001). The shape of RTA is identical to the samples from Sumatra and Vietnam (cf. Image 6 with fig. 64 in Logunov 2001 and fig. 2 in Žabka 1985). The epigyne with slanted central pocket appears similar to specimen from Vietnam and the internal structures are also identical with the same (cf. Images 3, 4 with figs. 8, 11 in Žabka 1985).

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Images 1–6. 1—*Bianor angulosus* male habitus (dorsal view) | 2—female habitus (dorsal view) | 3—female epigynum, ventral view | 4—vulva, dorsal view | 5—male palp, ventral view | 6—same, retrolateral view. Abbreviations: CP—central epigynal pocket | E—embolus | FD—fertilization duct | MP—membranous patch | RTA—retrolateral tibial apophysis | S—spermatheca | SD—sperm duct. Images 3 & 4 not to scale. Scale bars: 5—0.2mm, 6—0.1mm. © 1, 3 & 4 Nishi Babu; 2 Binish Roopas.



Image 7. New collecting locality of *Bianor angulosus* is shown in yellow circle. Red circles represent previous distribution records in India.

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

July 2021 | Vol. 13 | No. 8 | Pages: 18959–19190

Date of Publication: 26 July 2021 (Online & Print)

DOI: 10.11609/jott.2021.13.8.18959-19190

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