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NOTE

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

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

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

Nishi Babu¹ , John T.D. Caleb² & G. Prasad³

^{1,3} Department of Zoology, University of Kerala, Kariavattom, Thiruvananthapuram, Kerala 695581, India.

² No. 27, Saravana Nagar, Manigantapuram, Thirumullavoyal, Chennai, Tamil Nadu 600062, India.

¹ nishibabu510@gmail.com, ² caleb87woodgate@gmail.com, ³ 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,

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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
Total	4.90	3.62	4.16	4.10

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

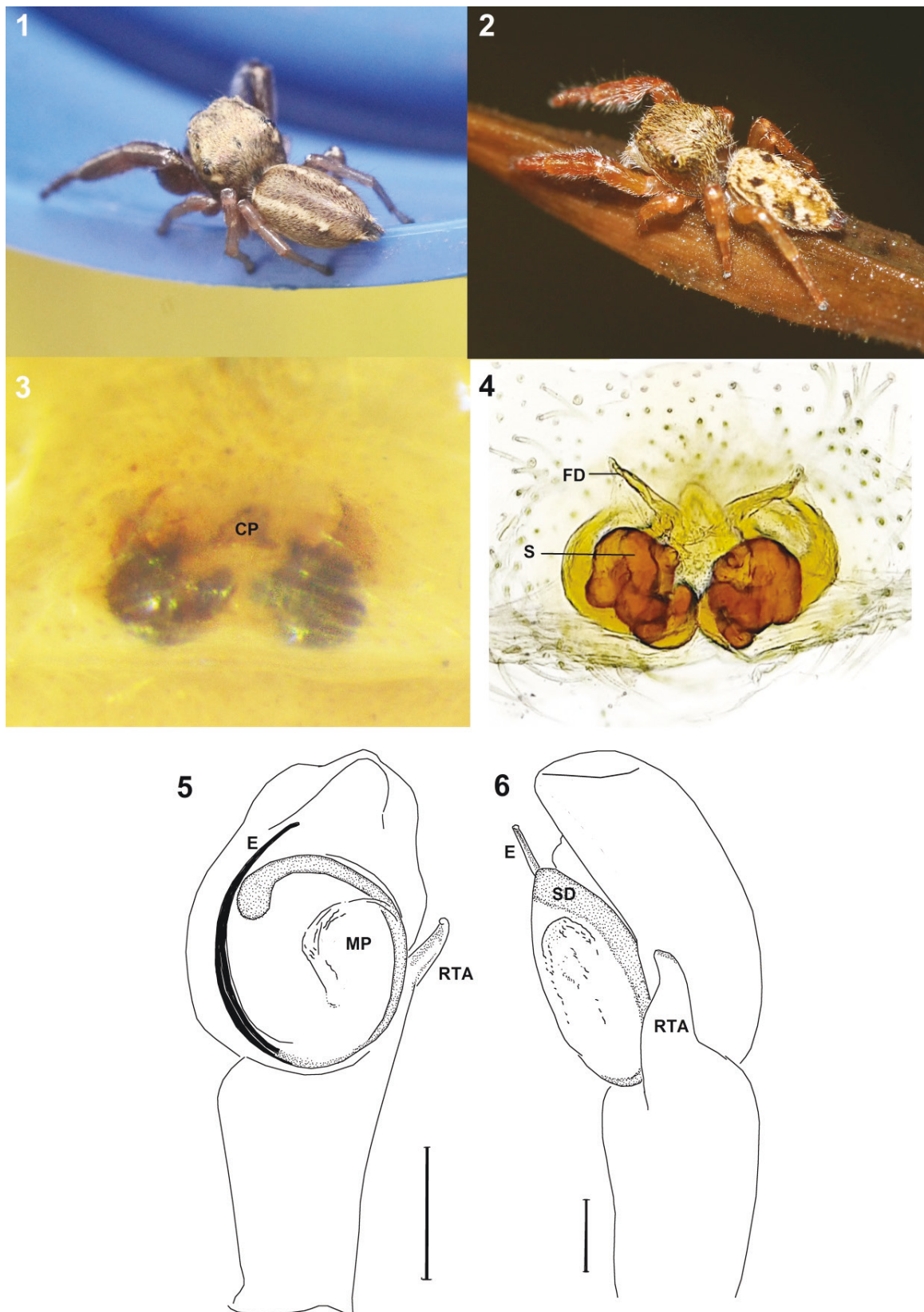
	Leg I	Leg II	Leg III	Leg IV
Femur	1.46	1.16	1.51	1.40
Patella	0.80	0.60	0.72	0.59
Tibia	1.13	0.75	0.64	0.81
Metatarsus	0.70	0.50	0.72	0.88
Tarsus	0.60	0.43	0.50	0.40
Total	4.69	3.44	4.09	4.08

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).

References

- Caleb, J.T.D. (2019). *An Annotated checklist of jumping spiders (Araneae: Salticidae) of India*. AkiNik Publications, New Delhi, 75pp.
- Caleb, J.T.D. & P.M. Sankaran (2021). *Araneae of India*. Version 2021, online at <http://www.indianspiders.in> (accessed on 5 January 2021).
- Karsch F. (1879). Arachnologische Beiträge. *Zeitschrift für die Gesamten Naturwissenschaften* 52: 534–562.
- Logunov, D.V. (2001). A redefinition of the genera *Bianor* Peckham & Peckham, 1885 and *Harmochirus* Simon, 1885, with the establishment of a new genus *Sibinor* gen. n. (Aranei: Salticidae). *Arthropoda Selecta* 9(4): 221–286.
- Logunov, D.V. (2019). Taxonomic notes on the *Harmochirus* Simon, 1903 from South and South-East Asia (Aranei: Salticidae). *Arthropoda Selecta* 28(1): 99–112.
- Peckham, G.W. & E.G. Peckham (1885). Genera of the family Attidae: with the partial synonymy. *Transactions of the Wisconsin Academy*



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.

of Science, Arts and Letters 6: 225–342.

World Spider Catalog (2021). World Spider Catalog. Natural History Museum Bern, online at <http://wsc.nmhc.ch>, version, 22. Accessed on 18 February 2021.

Żabka, M. (1985). Systematic and zoogeographic study on the family Salticidae (Araneae) from Viet-Nam. *Annales Zoologici, Warszawa* 39: 197–485.

Żabka, M. (1988). Salticidae (Araneae) of Oriental, Australian and Pacific regions, III. *Annales Zoologici, Warszawa* 41: 421–479.





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Communications

Distribution and habitat preferences of the Chinese Pangolin *Manis pentadactyla* (Mammalia: Manidae) in the mid-hills of Nepal

– Suman Acharya, Hari Prasad Sharma, Rajeev Bhattarai, Beeju Poudyal, Sonia Sharma & Suraj Upadhaya, Pp. 18959–18966

On the occurrence of the Himalayan Wolf *Canis lupus*, L. 1758 (Mammalia: Carnivora: Canidae) in the Gaurishankar Conservation Area, Nepal; its existence confirmed through sign and visual evidence in Rolwaling Valley

– Bishnu Prasad Pandey, Shankar Man Thami, Rabin Shrestha & Mukesh Kumar Chalise, Pp. 18967–18974

Group size, crowding, and age class composition of the threatened Sambar *Rusa unicolor* (Kerr, 1792) (Mammalia: Cetartiodactyla: Cervidae) in the semi-arid regions of northeastern Rajasthan, India

– Deepak Rai & Kalpana, Pp. 18975–18985

Study on the impacts of LULC change on the wildlife habitat and the livelihood of people in and around Dampa Tiger Reserve, Mizoram, India

– Sushanto Gouda, Janmejey Sethy, Netrapal Singh Chauhan & Harendra Singh Bargali, Pp. 18986–18992

Characterisation of breeding habitat of Grizzled Giant Squirrel *Ratufa macroura* (Mammalia: Sciuridae) in Chinnar Wildlife Sanctuary, Western Ghats, India

– Kiran Thomas & P.O. Nameer, Pp. 18993–19001

Seasonal prey availability and diet composition of Lesser Asiatic Yellow House Bat *Scotophilus kuhlii* Leach, 1821

– Shani Kumar Bharti & Vadmalai Elangovan, Pp. 19002–19010

Bird composition, diversity and foraging guilds in agricultural landscapes: a case study from eastern Uttar Pradesh, India

– Yashmita-Ulman & Manoj Singh, Pp. 19011–19028

Identification of a unique barb from the dorsal body contour feathers of the Indian Pitta *Pitta brachyura* (Aves: Passeriformes: Pittidae)

– Prateek Dey, Swapna Devi Ray, Sanjeev Kumar Sharma, Padmanabhan Pramod & Ram Pratap Singh, Pp. 19029–19039

Moths of the superfamily Gelechioidea (Microlepidoptera) from the Western Ghats of India

– Amit Katewa & Prakash Chand Pathania, Pp. 19040–19052

On the diversity and abundance of riparian odonate fauna (Insecta) of the midstream Chalakkudy River, Kerala, India

– C. Nitha Bose, C.F. Binoy & Francy K. Kakkassery, Pp. 19053–19059

Species diversity and abundance patterns of epiphytic orchids in Aralam Wildlife Sanctuary in Kerala, India

– Jis Sebastian, Durairaj Kathiresan & Giby Kuriakose, Pp. 19060–19069

Status and conservation needs of *Cycas pectinata* Buch.-Ham. in its natural habitat at Baroiyadhala National Park, Bangladesh

– M.K. Hossain, M.A. Hossain, S. Hossen, M.R. Rahman, M.I. Hossain, S.K. Nath & M.B.N. Siddiqui, Pp. 19070–19078

Review

Limitations of current knowledge about the ecology of Grey Foxes hamper conservation efforts

– Maximilian L. Allen, Alexandra C. Avrin, Morgan J. Farmer, Laura S. Whipple, Emmarie P. Alexander, Alyson M. Cervantes & Javan M. Bauder, Pp. 19079–19092

Short Communications

On the freshwater fish fauna of Krishna River, Sangli District, Maharashtra, India

– Suresh M. Kumbhar, Shrikant S. Jadhav, Swapnali B. Lad, Abhijit B. Ghadage, Satyawar S. Patil & C. Shiva Shankar, Pp. 19093–19101

Diversity and distribution of the large centipedes (Chilopoda: Scolopendromorpha) in the Phia Oac - Phia Den National Park, Vietnam

– Le Xuan Son, Nguyen Thi Tu Anh, Tran Thi Thanh Binh, Thu Anh T. Nguyen & Anh D. Nguyen, Pp. 19102–19107

Diversity of ants in Aarey Milk Colony, Mumbai, India

– Akshay Gawade & Amol P. Patwardhan, Pp. 19108–19117

First record of ghost shrimp *Corallianassa coutierei* (Nobili, 1904) (Decapoda: Axiidea: Callichiridae) from Indian waters

– Piyush Vadher, Hitesh Kardani, Prakash Bambhaniya & Imtiaz Beleem, Pp. 19118–19124

A preliminary checklist of dragonflies and damselflies (Insecta: Odonata) of Vakkom Grama Panchayath, Thiruvananthapuram District, Kerala, India

– J. Arunima & P.O. Nameer, Pp. 19125–19136

Diversity pattern of butterfly communities (Lepidoptera) in different habitat types of Nahan, Himachal Pradesh, India

– Suveena Thakur, Suneet Bahrdwaj & Amar Paul Singh, Pp. 19137–19143

Descriptions of the early stages of *Vagrans egista sinha* (Lepidoptera: Nymphalidae) with notes on its host plant *Xylosma longifolia* Clos from the western Himalaya of India

– Pranav Gokhale & M.A. Yathumon, Pp. 19144–19148

Notes

First photographic record of Mishmi Takin *Budorcus taxicolor taxicolor* and Red Goral *Nemorhaedus baileyi* from Kamlang Tiger Reserve, Arunachal Pradesh, India

– Cheshta Singh & Deepti Gupta, Pp. 19149–19152

Utilisation of honey trap method to ensnare a dispersing sub-adult Bengal Tiger *Panthera tigris tigris* L. in a human dominated landscape

– Gobind Sagar Bhardwaj, Balaji Kari & Arvind Mathur, Pp. 19153–19155

First camera trap photographs of Indian Pangolin *Manis crassicaudata* (Mammalia: Pholidota: Manidae) from Pakistan

– Misbah Bint Riaz, Faraz Akrim, Siddiq Qasim, Syed Afaq Bukhari, Asad Aslam, Muhammad Waseem, Rizwana Imtiaz & Tariq Mahmood, Pp. 19156–19158

Photographic record of Lesser Flamingo *Phoeniconaias minor* (Aves: Phoenicopteridae) in Ramganga river, Bareilly, India

– Pichaimuthu Gangaikaran, Aftab A. Usmani, G.V. Gopi, S.A. Hussain & Khursid A. Khan, Pp. 19159–19161

Total length and head length relationship in Mugger Crocodiles *Crocodylus palustris* (Reptilia: Crocodylia: Crocodylidae) in Iran

– Asghar Mobaraki, Elham Abtin, Malihe Erfani & Colin Stevenson, Pp. 19162–19164

First record of the hoverfly genus *Spilomyia* Meigen (Diptera: Syrphidae) for Pakistan

– Muhammad Asghar Hassan, Imran Bodlah, Riaz Hussain, Azan Karam, Fazlullah & Azaz Ahmad, Pp. 19165–19167

Rediscovery of Watson's Demon *Stimula swinhoei swinhoei* (Elwes & Edwards, 1897) (Lepidoptera: Hesperidae: Hesperinae) in Meghalaya, India after 60 years

– Suman Bhowmik & Atanu Bora, Pp. 19168–19170

A record of *Ourapteryx dierli* Inoue, 1994 (Lepidoptera: Geometridae: Ennominae) from the Garhwal Himalaya, India

– Arun P. Singh & Lekhendra, Pp. 19171–19172

Report of *Bradinopyga konkanensis* Joshi & Sawant, 2020 (Insecta: Odonata) from Kerala, India

– Muhammed Haneef, B. Raju Stiven Crasta & A. Vivek Chandran, Pp. 19173–19176

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

– Nishi Babu, John T.D. Caleb & G. Prasad, Pp. 19177–19180

Notes on lectotypification of the Assam Ironwood *Mesua assamica* (King & Prain) Kosterm. (Calophyllaceae)

– Prantik Sharma Baruah, Sachin Kumar Borthakur & Bhoben Tanti, Pp. 19181–19184

On the rediscovery of a rare root parasite *Gleadovia ruborum* Gamble & Prain (Orobanchaceae) from Uttarakhand, western Himalaya, India

– Amit Kumar, Navendu V. Page, Bhupendra S. Adhikari, Manoj V. Nair & Gopal S. Rawat, Pp. 19185–19188

Occurrence of vivipary in *Ophiorrhiza rugosa* Wall. (Rubiaceae)

– Birina Bhuyan & Sanjib Baruah, Pp. 19189–19190

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