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Cover: Nile Crocodile *Crocodylus niloticus* regulating body temperature on a warm day. Digital art on Procreate by © Aakanksha Komanduri.



## First record of the genus *Berlandina* Dalmás, 1922 (Araneae: Gnaphosidae) from India, with notes on *B. plumalis* (O. Pickard-Cambridge, 1872) and its synonymy

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**Abstract:** The ground spider genus *Berlandina* Dalmás, 1922 is reported for the first time from India with the record of *B. plumalis* (O. Pickard-Cambridge, 1872) in the Kachchh region of Gujarat. Previously known from western Africa through the Mediterranean to central Asia, including Iran and Afghanistan, *B. plumalis* is here recorded for the first time from India, extending its known distribution eastwards into the Indian subcontinent. Also, *B. afghana* Denis, 1958 syn. rest. is once again proposed as a junior synonym of *B. plumalis*. A detailed diagnosis is provided to distinguish *B. plumalis* from other congeners, supported by comprehensive illustrations of the male and female copulatory organs.

**Keywords:** Arachnida, arid habitat, biodiversity, distribution, ground spider, Gujarat, Kachchh, morphology, range extension, taxonomy.

સારાંશ: આ અભ્યાસમાં ગુજરાતના કચ્છ પ્રદેશમાંથી *Berlandina plumalis* (O. Pickard-Cambridge, 1872) પ્રજાતિની નોંધ સાથે *Berlandina* Dalmás, 1922 જાતિનો ભારતમાંથી પ્રથમ અહેવાલ રજૂ કરવામાં આવે છે. આ પ્રજાતિ અગાઉ પશ્ચિમ આફ્રિકા, ભૂમધ્યસાગરીય પ્રદેશ, ઇરાન, અફઘાનિસ્તાન તથા મધ્ય એશિયાના અન્ય વિસ્તારોમાંથી જાણીતી હતી. ભારતમાંથી થયેલી આ નવી નોંધ તેના જાણીતા વિતરણક્ષેત્રને ભારતીય ઉપખંડ સુધી વિસ્તારે છે. ઉપરાંત, *B. afghana* Denis, 1958 syn. rest. ને પુનઃ *B. plumalis* નો Junior synonym તરીકે પ્રસ્તાવિત કરવામાં આવે છે. *B. plumalis* ને સમાન જાતિની અન્ય પ્રજાતિઓથી અલગ ઓળખી શકાય તે માટે તેના નિદાનાત્મક લક્ષણોનું વિગતવાર વર્ણન આપવામાં આવ્યું છે, જેને નર અને માદા જનન અંગોની વિસ્તૃત આકૃતિઓ દ્વારા સમર્થન આપવામાં આવ્યું છે.

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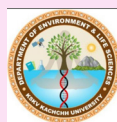
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## INTRODUCTION

The spider family Gnaphosidae Banks, 1892 comprises 2,498 species across 154 genera globally (WSC 2026), with 28 genera and 140 species known from India (Caleb & Sankaran 2026). Despite extensive taxonomic and distributional studies on this family, continued research regularly yields new species descriptions and additional records, contributing to a more comprehensive understanding of its global and regional diversity (Sankaran & Caleb 2021, 2025; Zakharov & Ovtsharenko 2022; Lin & Li 2023; Wunderlich 2023; Esyunin et al. 2024; Liu & Zhang 2024; Shodmonov & Fomichev 2025).

The genus *Berlandina* Dalmas, 1922, a member of subfamily Gnaphosinae Banks, 1892, consists of 43 species distributed across various biogeographical regions. The genus is widespread across the Palaearctic region and the northern part of Afrotropical region (Shodmonov & Fomichev 2025; WSC 2026). In this study, we document the first record of the genus *Berlandina* from India, marked by the occurrence of *B. plumalis* (O. Pickard-Cambridge, 1872) in the arid region of Kachchh, Gujarat.

*Berlandina afghana* Denis, 1958 was originally described from Afghanistan with two subspecies, *B. a. afghana* and *B. a. spininarsis* (Denis, 1958). It was later synonymised with *B. plumalis* by Levy (1995) based on variation in epigynal structures, but was subsequently revalidated by Marusik et al. (2014b) based on differences in receptacle size. Based on observed intraspecific variation in female copulatory morphology, the present study again treats *B. afghana* as a junior synonym of *B. plumalis*.

## MATERIALS AND METHODS

The specimens were hand-collected, preserved in 70% ethanol and studied under a Zeiss SteREO Discovery.V20 stereomicroscope. Microphotographic images were taken by a Axiocam 208 color digital camera attached to the stereomicroscope and enabled with the software Zeiss ZEN 3.3. The left male palp was removed, studied and photographed by placing it in a cavity block filled with 70% ethanol. The epigynes were dissected, cleared of soft tissues using 10% KOH, and studied and photographed by placing them in a cavity block filled with 70% ethanol. Drawings were hand made by examining the microscopic images. All measurements are in millimeters (mm). The species was identified based on Levy (1995), Shodmonov & Fomichev (2025) and

Marusik et al. (2014b), and the terminology follows the former. The examined specimens have been deposited in the reference collection of Zoology Research Lab at the Department of Zoology, R.R. Lalan College, Bhuj, Kachchh.

The following abbreviations are used: AH—anterior hood | AME—anterior median eye | ALE—anterior lateral eye | CD—copulatory duct | CO—copulatory opening | E—embolus | F—fovea | MA—median apophysis | PME—posterior median eye | PLE—posterior lateral eye | PR—primary receptacle | RTA—retrolateral tibial apophysis | S—septum | SD—sperm duct | SR—secondary receptacle | ST—subtegulum.

## TAXONOMY

Family Gnaphosidae Banks, 1892

Genus *Berlandina* Dalmas, 1922

Type species: *Gnaphosa plumalis* O. Pickard-Cambridge, 1872

**Diagnosis:** For detailed diagnostic features of the genus see (Koch 1839; Dalmas 1921; Levy 1995; Marusik et al. 2014a).

### *Berlandina plumalis* (O. Pickard-Cambridge, 1872)

(Images 1–25)

*Gnaphosa plumalis* O. Pickard-Cambridge, 1872: 225, pl. 15, fig. 3 (male)

*Berlandia plumalis* Dalmas, 1921: 268, figure 45, 52–53 (male, female, S of *Callilepis passerina* (Simon, 1884), *Gnaphosa cinereoplumosa* (Simon, 1878) and *G. rhodopis* L. Koch, 1875); Levy, 1995: 940, figure 53–56; Marusik et al. 2014b: 418, figure 7a–b, 8; Shodmonov & Fomichev 2025: 514, figure 10–23, 43

*Berlandina afghana* Denis, 1958: 92, figure 14 (female) syn. rest.

*Berlandina afghana* Marusik et al. 2014b: 416, figure 1, 3a–b, 4, 5a–b, 6 (female)

For a complete list of taxonomic references, see the WSC (2026).

### Materials examined

RRLC-ZC/SP-10, 16.vii.2024, 1 female, India, Gujarat, Kachchh District, Bhuj, from R.R. Lalan College Campus (23.238° N, 69.658° E), 107 m, leg. S. Parmar; RRLC-ZC/SP-11, 3.ix.2024, 2 female, India, Gujarat, Kachchh District, from Kodki Village (23.246° N, 69.597° E), 638 m, leg. S. Parmar; RRLC-ZC/SP-12, 2.i.2025, 1 male and 2 female, India, Gujarat, Kachchh District, from Kukma Village (23.217° N, 69.753° E), 190 m, leg. S. Parmar.

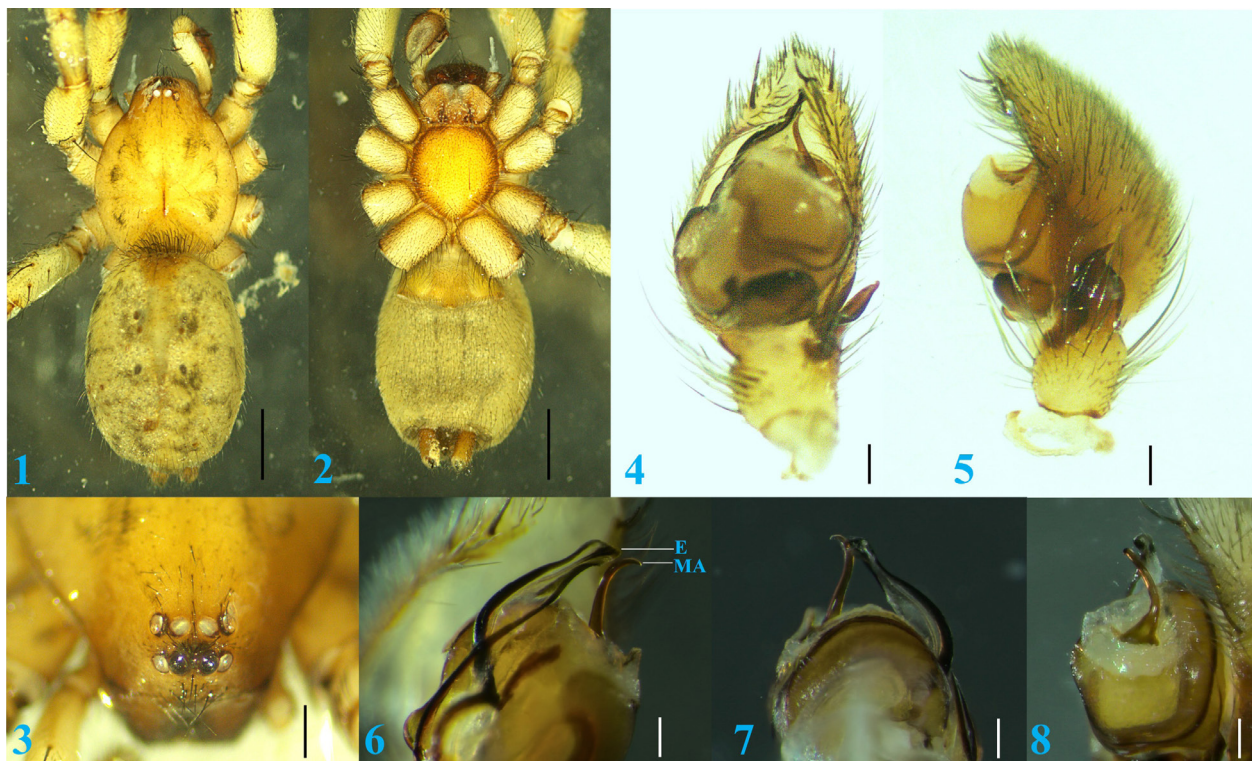
From arid habitat with sparse vegetation.

### Diagnosis

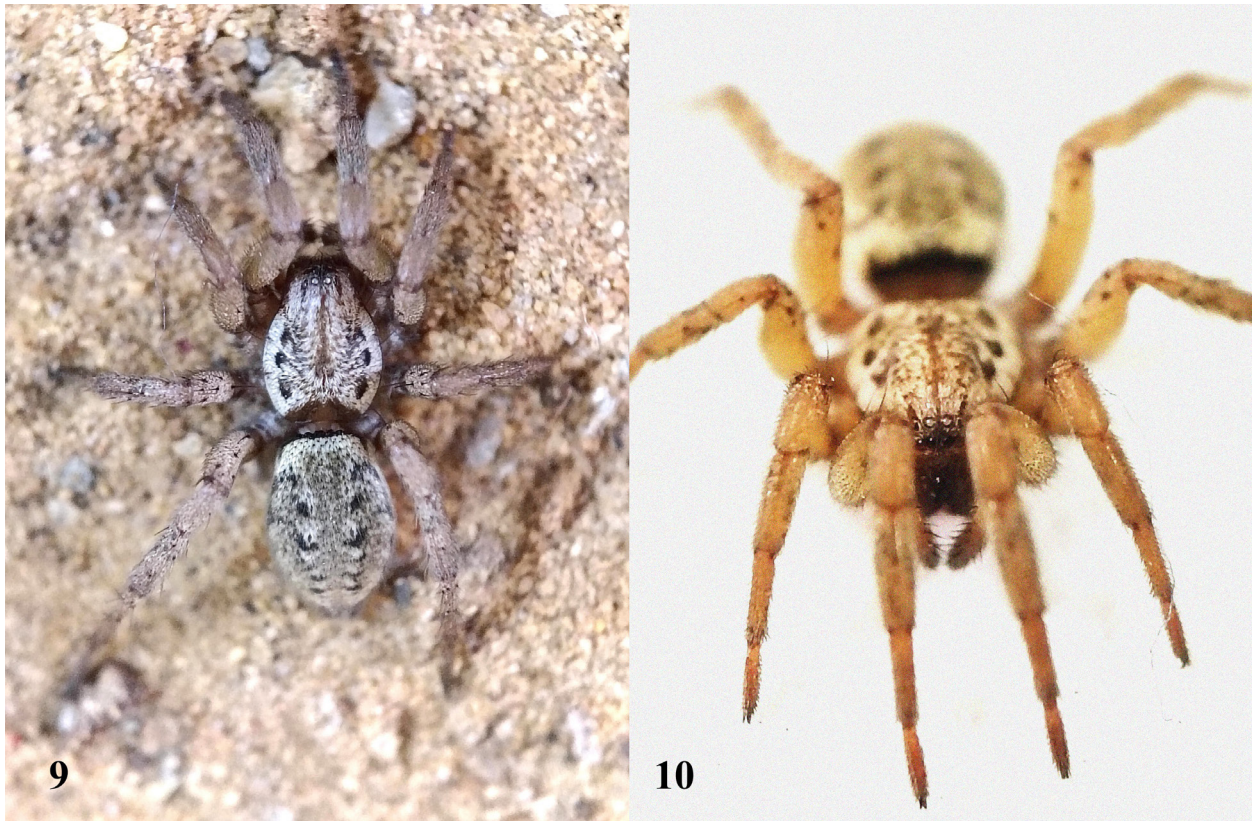
The male of *B. plumalis* is most similar to that of *B. nabozenkoi* Ponomarev & Tsvetkov, 2006 by having a hook-like retrolateral tibial apophysis (RTA) bent dorsally and a long membranous embolus (E), but can be easily distinguished by following combination of characters: thinner apical part of RTA in *B. plumalis* (vs. thick apical part of RTA in *B. nabozenkoi*; figure 106 in Marusik et al. (2014a)) and straight E in *B. plumalis* (Image 4, 6–8, 18) (vs. strongly curved in *B. nabozenkoi*; figure 105 & 108 in Marusik et al. (2014a)). The female of *B. plumalis* is also very close to that of *B. nabozenkoi* by having a well-developed elongated septum (S) and large arcuate copulatory ducts (CD), but can be easily distinguished by following combination of characters: epigynal receptacles, secondary receptacles (SR) placed entally to CD in *B. plumalis* (vs. SR placed posteriorly in *B. nabozenkoi*; figure 2 in Ponomarev et al (2018)) and a circular fovea (F) in *B. plumalis* (vs. trapezoidal fovea in *B. nabozenkoi*; figure 1 in Ponomarev et al (2018)).

### Description

Male (in alcohol, from Kukma Village) (Image 1–8, 18–19): Body length 5.98. Carapace length 2.72, width 2.35, abdomen length 3.26, width 2.52. Eye inter-distances: AME 0.13, ALE 0.11, PME 0.10, PLE 0.10, AME–AME 0.08, AME–ALE 0.03, ALE–ALE 0.27, ALE–PME 0.17, PLE–PLE 0.38, PME–PME 0.09, PME–PLE 0.07, AME–PME 0.15, ALE–PLE 0.14. Measurements of legs: I 7.2 [2, 1.1, 1.7, 1.3, 1.1], II 6.5 [1.9, 1, 1.2, 1.4, 1], III 6 [1.7, 0.7, 1, 1.6, 1], IV missing. Leg formula 1234. Spination (dprv): I [Fe d1–1–0 v0–0–1; Ti r0–1–1; Mt r2–0–2], II [Fe d1–1–0 v0–0–1; Ti r2–0–2 v0–1–0; Mt r1–1–2 v0–0–1], III [Fe d2–2–2 v0–0–1; Pa d1–0–1 p1 v1; Ti d1–1–1 p1–0–0 v2–2–2; Mt d2–2–2 r2–2–2 v0–0–1]. Carapace yellowish-brown with slightly darker median groove and dark setae patches on lateral sides. Labium, endites, and sternum yellowish-brown. Chelicerae brownish. Legs the same colour as carapace, without annulations. Abdomen beige, without any clear pattern, although some brown markings visible. Spinnerets uniformly light brown. Palp (Image 4–8, 18–19): RTA wide, as long as tibia, broad at the base with hook-like pointed tip, curved dorsally; cymbium yellowish-brown, twice as long as tibia,



Images 1–8. Male of *Berlandina plumalis* (O. Pickard-Cambridge, 1872): 1—General appearance, dorsal view | 2—Same, ventral view | 3—Cephalothorax, antero-dorsal view | 4—Left palp, ventral view | 5—Same, retrolateral view | 6—bulb, ventro-prolateral view | 7—same, dorsal view | 8—Same, retrolateral view. Abbreviations used in the images: E—embolus | MA—median apophysis. Scale bars: 1 mm (1–2) | 0.2 mm (3) | 0.1 mm (4–8). © Subhash Parmar.



Images 9–10. Live female of *Berlandina plumalis* (O. Pickard-Cambridge, 1872): 9—dorsal view | 10—anterodorsal view. © Subhash Parmar.

dorsally covered with dense scopula; cymbial furrow elongated; subtegulum (ST) placed postero-ventrally; median apophysis (MA) long, bent ventrally, smaller than E and partly hidden by E; E long, spirally twisted basally, straight apically with arrow-like tip.

Female (Image 9–10, 11–17, 20–21, 23, 23; from Kukma Village): body length 6.65. Carapace length 3.00, width 2.20, abdomen length 3.61, width 2.30. Eye sizes and inter-distances: AME 0.12, ALE 0.12, PME 0.13, PLE 0.12, AME–AME 0.11, AME–ALE 0.03, ALE–ALE 0.26, ALE–PME 0.17, PLE–PLE 0.29, PME–PME 0.09, PME–PLE 0.07, AME–PME 0.15, ALE–PLE 0.16. Measurements of legs. I 6.91 [2.09, 1.17, 1.51, 1.20, 0.92], II 6.0 [1.80, 1.07, 1.10, 1.14, 0.89], III 6.13 [1.7, 0.94, 1.00, 1.49, 1.00], IV 8.87 [2.34, 1.23, 1.62, 2.40, 1.28]. Leg formula 4132. Leg supination (dprv): I [Fe d1–1–0 p0–0–1; Ti v2–1–1; Mt v3–0–2], II [Fe d1–1–0 p1–0–1; Ti p0–0–1 v1–1–2; Mt v2–1–2], III [Fe d1–2–1 p1–1–1 r0–2–1; Pa p1 r1; Ti d1–0–0 p1–0–1 r0–1–1 v1–2–2; Mt d1–2–0 p1–1–0 r0–1–0 v2–1–0], IV [Fe d1–1–1 p0–0–1 r0–1–0; Pa r1; Ti d1–0–1 p1–1–1 r0–1–2 v2–2–2; Mt d1–2–0 p1–1–0 r1–0–0 v2–1–2]. Carapace yellowish-brown, with dark edges and three pairs of dark spots laterally. Chelicerae brownish. Labium, endites and sternum light brown. Coxae yellow.

Abdomen yellowish-grey with herringbone pattern; yellow colored ventrally. Spinnerets light brown. Legs yellowish-brown. Epigyne (Image 15–17, 20–21, 23): epigynal plate wider than long; fovea (F) circular; anterior hood (AH) arcuate with horizontal “3” shaped marking on margin; copulatory openings (CO) large, placed laterally; copulatory ducts (CD) large and arcuate; primary receptacles (PR) and secondary receptacles (SR) oval shaped and subequal in size.

#### Variations in male palpal morphology

In the present study the male palp has long spirally twisted E with arrow-like tip (Image 4, 6, Figure 2) which is similar to those from Uzbekistan (Shodmonov & Fomichev 2025, figure 13–14, 16–18) but minor different from Israel (E situated within a long sheath; Levy 1995, figure 53–54) and Crete (well sclerotized with a distal curl; Chatzaki et al. 2002, figure 13–14); tegulum flat (Image 4–5, 18–19), which is similar to those from Uzbekistan (Shodmonov & Fomichev 2025, figure 13–18) but minor different from Crete (voluminous tegulum, Chatzaki et al. 2002, figure 13–14); RTA as long as tibia (Image 4–5, 18–19) in present specimen which is similar to those from Uzbekistan (Shodmonov & Fomichev 2025, figure



Images 11–17. Female of *Berlandina plumalis* (O. Pickard-Cambridge, 1872): 11—general appearance, dorsal view | 12—Same, ventral view | 13—cephalothorax, anterodorsal view | 14—Spinnerets, ventral view | 15—Intact epigyne, ventral view | 16—macerated epigyne, ventral view | 17—Same, dorsal view. Abbreviations used in the images: AH—anterior hood | CD—copulatory ducts | CO—copulatory openings | F—fovea | PR—primary receptacles | S—septum | SR—secondary receptacles. Scale bars: 1 mm (11–12) | 0.5 mm (13–15) | 0.1 mm (16–17). © Subhash Parmar.

13–18) but differ from that of Israel (RTA longer than tibia, Levy 1995, figure 53–54).

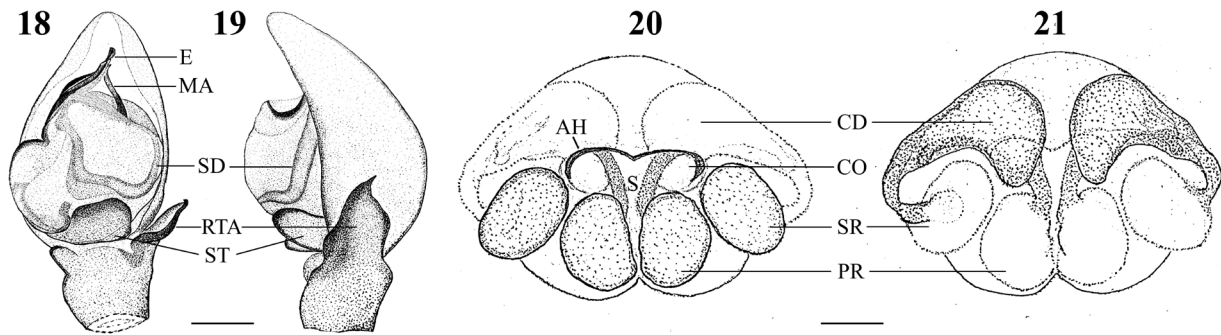
#### Variations in female epigynal morphology

In the present study we have collected a total of five female specimens, which show noticeable variation in the size of receptacles. One female (from Kukma Village) has unequal size of receptacles, larger PR and smaller SR (Image 24), which is similar to those from Uzbekistan (Shodmonov & Fomichev 2025, figure 21–23) and Israel (SR much smaller than in our specimens) (Marusik et al. 2014b, figure 7–8) and Crete (Chatzaki et al. 2002, figure 15–16), but female from Israel collected by Levy (1995) had smaller PR and larger SR (see figure 55–56 in Levy, 1995); three females (from Bhuj, Kodki and Kukma villages) have subequal PR and SR (Image 19), similar to

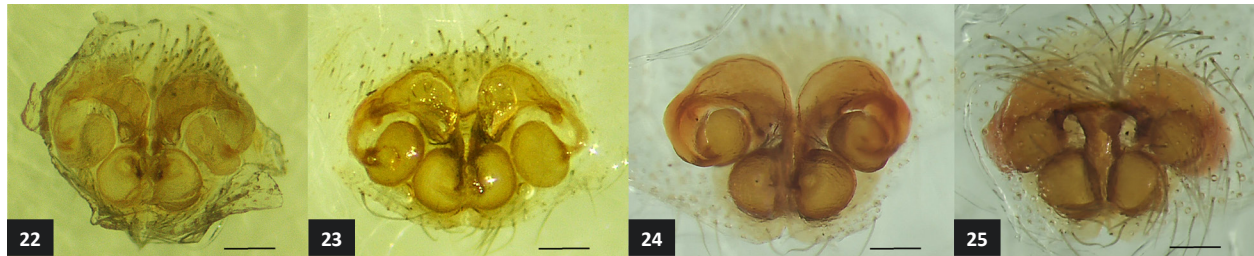
that of *B. afghana* from Pakistan (Marusik et al. 2014b, figure 3–6) and the other female (from Kodki village) has subequal PR and SR but SR constricted (Image 22). The female from Kukma Village has arcuate AH (Image 25), which is similar to those of from Uzbekistan (Shodmonov & Fomichev 2025, figure 21–23), Israel (Marusik et al. 2014b, figure 7–8) and Iran (Zamani et al. 2015, figure 2c); other specimens have AH arcuate with horizontal “3” shaped marking on margin (Image 15–16, 20), which is similar to that from Crete (Chatzaki et al. 2002, figure 15–16).

#### Justification of synonymy

The male and female specimens were collected together from the same localities (Kukma Village (1 male, 2 female) and Kodki village (2 female), Gujarat, India). An



Images 18–21. Copulatory organs of *Berlandina plumalis* (O. Pickard-Cambridge, 1872): 18—Left palp, ventral view | 19—same, retrolateral view | 20—Epigyne, ventral view | 21—same, dorsal view. Abbreviations used in the images: AH—anterior hood | CD—copulatory ducts | CO—copulatory openings | E—embolus | MA—median apophysis | PR—primary receptacles | RTA—retrolateral tibial apophysis | S—septum | SD—sperm duct | SR—secondary receptacles | ST—subtegulum. Scale bars: 0.2 mm (18–21). © Subhash Parmar



Images 22–25. Intraspecific variation in epigyne of *Berlandina plumalis* (O. Pickard-Cambridge, 1872) collected from different localities: 22—from Kodki Village | 23—from Bhuj | 24—from Kukma Village, dorsal view | 25—same, ventral view. Scale bars: 0.2 mm (22–24). © Subhash Parmar.

examination of these specimens revealed that the male fully corresponds in palpal morphology to *B. plumalis* as described by Levy (1995) and redescribed by Shodmonov & Fomichev (2025). However, the associated females exhibit noticeable variation in epigynal morphology. Some specimens closely match the epigyne of *B. plumalis* (Image 24), whereas others resemble that described for *B. afghana* (Image 16–17; 22–23), particularly in the size and shape of the receptacles and the configuration of the copulatory ducts. The differences in size of epigynal receptacles, can be considered as intraspecific variation (Image 22–25). Previously, *B. afghana* was synonymised with *B. plumalis* by Levy (1995) based on variation in external and internal parts of epigynum. Later, Marusik et al. (2014b) rejected this synonymy based on the size of primary and secondary receptacles (observed in single specimen), however, they could not assess variability. Based on these observations we consider *B. afghana* as a junior synonym of *B. plumalis* and this synonymy is reinstated in the present study.

#### Remarks

The species was collected near the burrows of the

Indian spiny-tailed lizard (*Saara hardwickii* (Gray, 1827)) (Image 27). Previously, this species had been reported from rodent burrows (Denis 1958).

#### Habitat and Vegetation (Image 26–27)

The specimens were collected from Kachchh District, an arid region in the westernmost part of Gujarat, characterized by xerophytic vegetation. The habitat consists mainly of thorny shrubs, grasses, and herbs, including *Neltuma juliflora*, *Launaea procumbens*, *Tridax procumbens*, *Xenostegia tridentata*, *Evolvulus alsinoides*, *Alysicarpus* sp., and *Echinochloa colonum*. The species' presence near the burrows of the Indian spiny-tailed lizard indicates an ecological association with arid environments. Previously, it was observed that the species is more abundant in the semi-arid and arid habitats (Levy 1995; Marusik et al. 2014b; Shodmonov & Fomichev 2025).

**Distribution:** West Africa, Mediterranean to Central Asia, Afghanistan, Iran, Pakistan (WSC 2026) and India (new record, Figure 1).

**Distribution in India:** Gujarat (new record, Figure 1).



Images 26–27. Habitat of *Berlandina plumalis* (O. Pickard-Cambridge, 1872): 26—arid habitat with sparse vegetation in Kachchh, Gujarat | 27—spiny-tailed lizard's burrow (marked by yellow arrow). © Subhash Parmar.

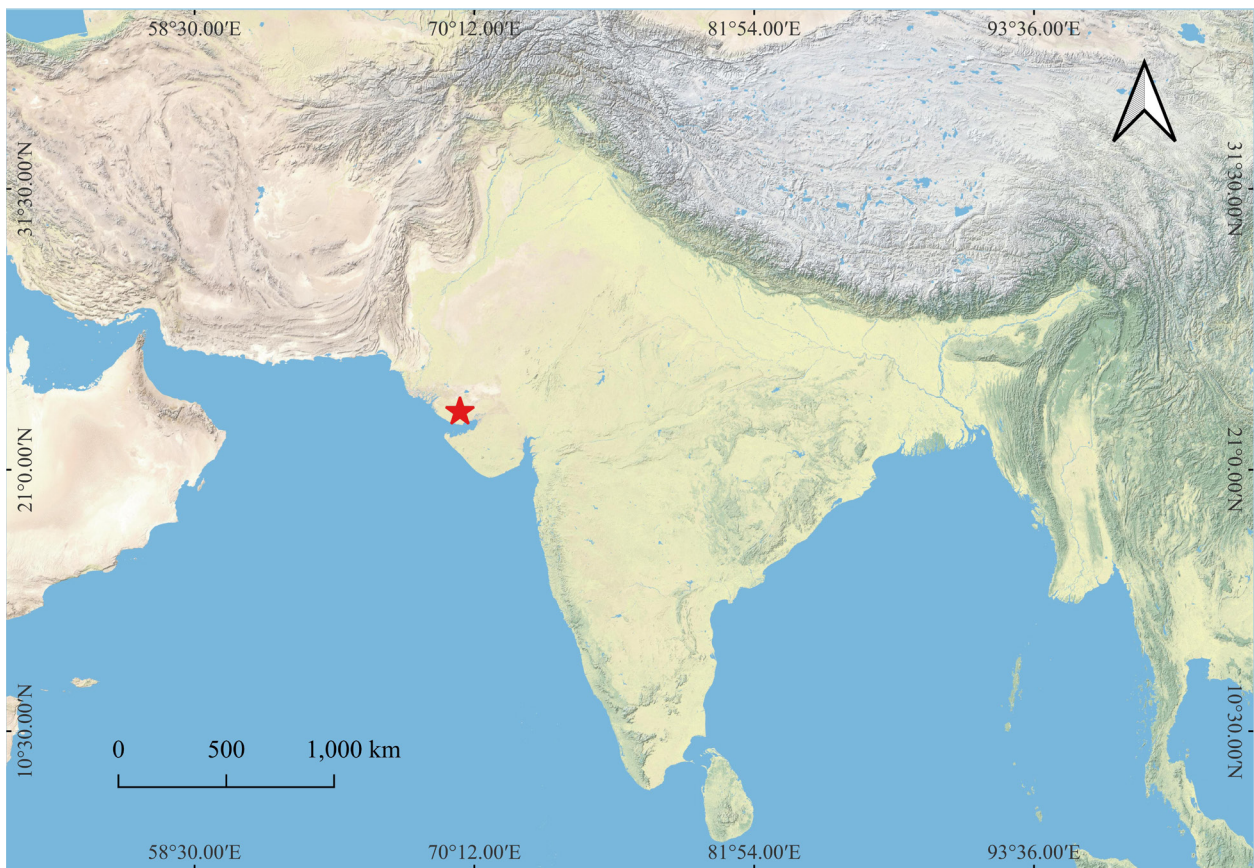


Figure 1. Distribution of *Berlandina plumalis* (O. Pickard-Cambridge, 1872) in Gujarat, India (red star).

## DISCUSSION

The present record of *B. plumalis* from Gujarat represents a significant eastward extension of the genus into the Indian subcontinent. Comparative analysis with previously published accounts from the Palaearctic and adjacent regions reveals considerable variation in copulatory structures. In females, variation is evident in the relative size and shape of primary and secondary receptacles, as well as in the morphology of the epigynal hood. Minor variability is also observed in male palpal morphology, particularly in the length of the retrolateral tibial apophysis, the degree of embolar curvature and sclerotization. Although these differences are notable, no consistent, discrete characters were identified that would allow separation of the Indian material from *B. plumalis* as currently understood. The general morphology of genital structures in both sexes agrees well with published diagnoses of the species. The observed variation is therefore interpreted as intraspecific, possibly reflecting geographic differentiation across its wide distribution, as well as inconsistencies in earlier illustrations and descriptions. The extent of morphological variability documented across populations from different regions raises the possibility that *B. plumalis* represents a species complex. In this context, the species described from Afghanistan may prove to be conspecific.

## REFERENCES

- Caleb, J.T.D. & P.M. Sankaran (2026). Araneae of India, Version 2025. <https://www.indianspiders.in> (accessed on 29 December 2025).
- Chatzaki, M., K. Thaler & M. Mylonas (2002). Ground spiders (Gnaphosidae, Araneae) of Crete and adjacent areas of Greece. Taxonomy and distribution. II. *Revue Suisse de Zoologie* 109(3): 603–633. <https://doi.org/10.5962/bhl.part.79612>
- Dalmas, R.De. (1921). Monographie des araignées de la section des *Pterotricha* (Aran. Gnaphosidae). *Annales de la Société Entomologique de France* 89: 233–328.
- Denis, J. (1958). Araignées (Araneidea) de l'Afghanistan. I. Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening i Kjøbenhavn. 120: 81–120.
- Esyunin, S.L., A.V. Ponomarev & A.A. Kabdrakhimov (2024). The spider fauna (Aranei) of Zapadno-Kazakhstanskaya Oblast of Kazakhstan. New records and taxonomic remarks. *Euroasian Entomological Journal* 22(6): 317–325. <https://doi.org/10.15298/euroasentj.22.06.07>
- Koch, C.L. (1839). Die Arachniden. C. H. Zeh'sche Buchhandlung, Nürnberg, Fünfter Band, pp. 125–158, pl. 175–180 (f. 418–431); Sechster Band, pp. 1–156, pl. 181–216 (f. 432–540); Siebenter Bd, pp. 1–106, pl. 217–246 (f. 541–584). [for the correct year of publication see Brignoli, 1985b]. <https://doi.org/10.5962/bhl.title.43744>
- Levy, G. (1995). Revision of the spider subfamily Gnaphosinae in Israel (Araneae: Gnaphosidae). *Journal of Natural History* 29(4): 919–981. <https://doi.org/10.1080/00222939500770351>
- Lin, Y.J. & S.Q. Li (2023). On nine ground spiders from Xishuangbanna, China (Araneae, Gnaphosidae), including two new genera and seven new species. *ZooKeys* 1174: 141–174. <https://doi.org/10.3897/zookeys.1174.106340>
- Liu, B. & F. Zhang (2024). *Hotwheels* gen. nov., a new ground spider genus (Araneae, Gnaphosidae) from southwest China. *ZooKeys* 1189: 337–347. <https://doi.org/10.3897/zookeys.1189.115996>
- Marusik, Y.M., A.A. Fomichev & M.M. Omelko (2014a). A survey of East Palaearctic Gnaphosidae (Araneae). 1. On the *Berlandina* Dalmas, 1922 (Gnaphosinae) from Mongolia and adjacent regions. *Zootaxa* 3827(2): 187–213. <https://doi.org/10.11646/zootaxa.3827.2.4>
- Marusik, Y.M., F. Ballarin, M.M. Omelko & S. Koponen (2014b). On new and interesting records of spiders from northern Pakistan and India (Aranei). *Arthropoda Selecta* 23(4): 415–424. <https://doi.org/10.15298/arthsel.23.4.09>
- Pickard-Cambridge, O (1872). General list of the spiders of Palestine and Syria, with descriptions of numerous new species, and characters of two new genera. *Proceedings of the Zoological Society of London* 40(1): 212–354, pl. 13–16. <https://doi.org/10.1111/j.1469-7998.1872.tb00489.x>
- Ponomarev, A.V., V.V. Bastaev, D.A. Dubovikoff & V.Y. Shmatko (2018). On a small collection of spiders (Aranei) from the Astrakhan Reserve (Russia). *Arthropoda Selecta* 27(3): 244–256. <https://doi.org/10.15298/arthsel.27.3.09>
- Sankaran, P.M. & J.T.D. Caleb (2021). On the taxonomic validity of Indian ground spiders: V. Genera *Megamyrmaekion* Reuss, 1834, *Sosticus* Chamberlin, 1922 and *Gaviphosa* gen. nov. (Araneae: Gnaphosidae). *Zootaxa* 5040(4): 539–564. <https://doi.org/10.11646/zootaxa.5040.4.5>
- Sankaran, P.M. & J.T.D. Caleb (2025). On the taxonomic validity of Indian ground spiders: VI. Genera *Ladissa* Simon, 1907, *Melicymnis* Simon, 1885, and *Poecilochroa* Westring, 1874 (Araneae: Gnaphosidae). *Zootaxa* 5673(1): 132–142. <https://doi.org/10.11646/zootaxa.5673.1.9>
- Shodmonov, F.A. & A.A. Fomichev (2025). New and poorly known species of *Berlandina* Dalmas, 1922 (Araneae: Gnaphosidae) from Uzbekistan. *Acta Biologica Sibirica* 11: 509–525. <https://doi.org/10.5281/zenodo.15188746>
- WSC (2026). World Spider Catalog, Version 26. Natural History Museum Bern. <http://wsc.nmbe.ch> (accessed on 02 February 2026). <https://doi.org/10.24436/2>
- Wunderlich, J. (2023). Contribution to the spider (Araneida) fauna of the Algarve, Portugal, with notes on the phylogeny of the superfamily Araneoidea and the description of the new araneoid family Fonteferridae. *Beiträge zur Araneologie* 16: 4–112, 231–233.
- Zakharov, B.P. & V.I. Ovtsharenko (2022). A revision of the ground spider genus *Zelanda* Özdikmen, 2009 (Araneae: Gnaphosidae), with a description of a new genus from Australasia. *Arachnology* 19(Special Issue): 265–301. <https://doi.org/10.13156/ arac.2022.19.sp1.265>
- Zamani, A., O.Mirshamsi, B. Jannesar, Y.M. Marusik & S.L. Esyunin (2015). New data on spider fauna of Iran (Arachnida: Araneae), Part II. *Zoology and Ecology* 25(4): 339–346. <https://doi.org/10.1080/21658005.2015.1068508>

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