

New and poorly known species of *Berlandina* Dalmas, 1922 (Araneae: Gnaphosidae) from Uzbekistan

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Abstract

Three new species of the gnaphosid spider genus *Berlandina* Dalmas, 1922 are described from Uzbekistan based on males: *B. izzatullaevi* sp. n. (Samarkand Region), *B. jabborovi* sp. n. and *B. khalimovi* sp. n. (both from Surxondaryo Region). The poorly-illustrated species, *B. plumalis* (O. Pickard-Cambridge, 1872), is redescribed based on newly collected specimens from Uzbekistan. All studied species are assigned to their respective species-groups. Detailed (re)descriptions, digital photographs and a distribution map are provided.

Keywords

Biodiversity, Central Asia, ground spiders, new record, new species, redescription, species grouping

Introduction

Berlandina Dalmas, 1922 is a relatively large genus of ground spiders, containing 40 described species (World Spider Catalog 2025). The genus is widespread across the Palaearctic and the northern part of Afrotropical Realm (Marusik et al. 2014; World Spider Catalog 2025). Within the Palaearctic, *Berlandina* is well studied owing to the existence of one global (Marusik et al. 2014) and several regional surveys (Fomichev & Marusik 2017; 2019). The genus exhibits the highest species diversity in Central Asia generally, and in Mongolia particularly, from where 10 species have been recorded/described (Marusik et al. 2014; Fomichev & Marusik 2017). Three species of *Berlandina* are known from Uzbekistan: *B. caspica* Ponomarev, 1979, *B. plumalis* (O. Pickard-Cambridge, 1872) and *B. propinqua* Roewer, 1961 (Mikhailov 2024). The first two species are widespread and known based on both sexes, while the last is known only based on the original description of a single female (Roewer 1961; Zamani et al. 2015; 2017; World Spider Catalog 2025). Representatives of *Berlandina* in southern part of Central Asia (Tajikistan, Uzbekistan) have never been studied. Several field trips undertaken by the senior author in recent years have shown that the diversity of the genus in southern Central Asia, namely in Uzbekistan, is much greater than previously known and includes a number of undescribed species. The aims of the present paper are: 1) to provide detailed descriptions of three new species, 2) to provide redescription of one poorly known species, 3) update and expand the division of the genus into species-groups.

Materials and methods

Spiders were collected by hand and preserved in 70% ethanol. The specimens were photographed using an Olympus DP74 camera attached to an Olympus SZX16 stereomicroscope at the Altai State University (Barnaul, Russia). Photographs were taken of specimens placed in an alcohol-filled dish with white cotton at the bottom. Epigyne was cleared in KOH/water solution until soft tissues were dissolved. Digital images were montaged using Zerene Stacker software. The distribution map was produced using the online mapping application SimpleMappr (Shorthouse 2010). All measurements are in millimeters. Length of leg segments were measured on their dorsal side. Leg measurements are shown as: femur, patella, tibia, metatarsus, tarsus (total length). Spination of legs are based on examination of one specimen of each species (one side of the body). Apical spines on metatarsi III–IV were not counted. The terminology and format of description follows Ovtsharenko et al. (1992) and Marusik et al. (2014), with modifications. All examined material is deposited in the Institute of Systematics and Ecology of Animals SB RAS, Novosibirsk, Russia (ISEA; curator G.N. Azarkina).

Abbreviations: AH – anterior hood, ALE – anterior lateral eye, AME – anterior median eye, CD – copulatory duct, CF – cymbial furrow, CO – copulatory opening,

d – dorsal, E – embolus, EA – embolic apophysis, EB – embolic base, EO – embolic opening, F – fovea, Fe – femur, MA – median apophysis, MOQ – median ocular quadrangle, Mt – metatarsus, p – prolateral, Pa – patella, PLE – posterior lateral eye, PME – posterior median eye, PR – primarily receptacle, r – retrolateral, RP – retrolateral protrusion of T, RTA – retrolateral tibial apophysis, S – septum, SD – sperm duct, SR – secondary receptacle, St – subtegulum, T – tegulum, TA – tegular apophysis, Ti – tibia, TR – tegular ridge, Ts – tarsus, v – ventral.

Results

Species survey

Gnaphosidae Banks, 1892

Berlandina Dalmas, 1922

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

Comments. *Berlandina* is similar to *Gnaphosa* Latreille, 1804 in having a serrated keel on the chelicerae, but can be easily distinguished by larger posterior median eyes, thick embolus (vs. filamentous) and in having no epigynal scape (Marusik et al. 2014). In their review, Marusik et al. (2014) split 14 species from Central Palaearctic into five species-groups according to the shape of male palp and epigyne. This was the first and only attempt to divide the genus into species-groups. However, European, Middle Eastern and North African species were not considered, meaning the review was incomplete. In the present paper, we assigned each of the species under consideration to specific species-groups, and for one of the species we propose a new species-group.

Berlandina izzatullaevi sp. n.

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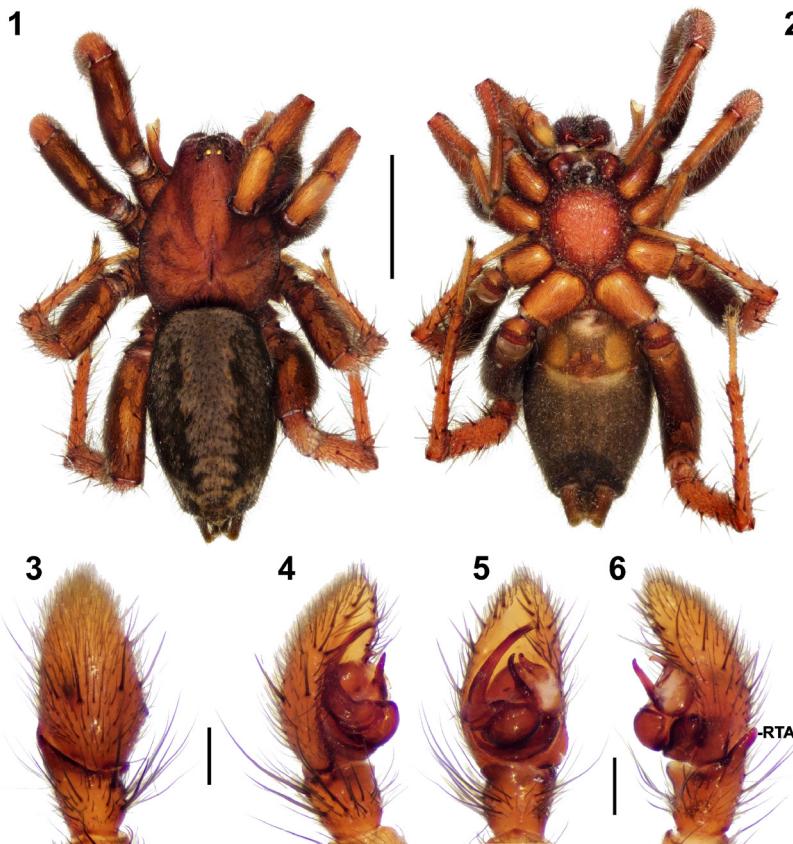
Figs 1–9, 42, 46, 49–50

Type material. Holotype ♂ (ISEA), UZBEKISTAN: Samarkand Region, Zarafshan Mountain Range, Aman-Kutan Mountain Pass, 39.302345N, 66.896734E, steppe meadow with rocks, 1900 m, 15.06.2024 (F. Shodmonov).

Etymology. The specific name is a patronym in honor of Zuvaldullo I. Izzatullaev, famous Uzbek malacologist, discoverer of the malacofauna of Central Asia, professor of the Department of Zoology of Samarkand State University.

Diagnosis. The male of *B. izzatullaevi* sp. n. is most similar to those of *B. cinerea* (Menge, 1872), which is widespread from Europe to South Siberia, and *B. shumskyi* Kovblyuk, 2003 from the Crimea. All the three species possess a long, sharply pointed tegular apophysis (TA) and a long and thin smoothly curved embolus (E).

The male of the new species can be easily distinguished from those of *B. cinerea* and *B. shumskyi* by the absolutely straight TA in prolateral view (vs. strongly curved: cf. Figs 4, 7 and figs 11–12 in Kovblyuk (2003)), and by the retrolateral tibial apophysis (RTA) twice shorter than tibia (vs. 2–3 times longer; cf. Fig. 6 and fig. 2 in Tuneva & Esyunin (2001) and fig. 2 in Kovblyuk (2003)). Finally, the male of *B. izzatullaevi* sp. n. differs from that of *B. cinerea* by the median apophysis (MA) twice shorter than TA (vs. MA slightly longer than TA; cf. Figs 7–9 and fig 1 in Tuneva & Esyunin (2002)).



Figures 1–6. General appearance (1–2) and palp (3–6) of male of *Berlandina izzatullaevi* sp. n. 1, 3 – dorsal; 2, 5 – ventral; 4 – prolateral; 6 – retrolateral. Scale bars: 1–2=2 mm; 3–6=0.2 mm. Abbreviation: RTA – retrolateral tibial apophysis.

Description. Male. Total length 6.50. Carapace: 3.18 long, 2.33 wide. Abdomen: 3.45 long, 2.10 wide. Coloration. Carapace brick-colored. Chelicerae and labium dark brown. Sternum and endites brown. Coxae and palps yellow brown. Legs: Fe dark brown with yellow spots; Pa–Ts yellow brown. Abdomen dark gray with wide longitudinal light gray band. Venter of the abdomen light gray. Spinnerets dark gray

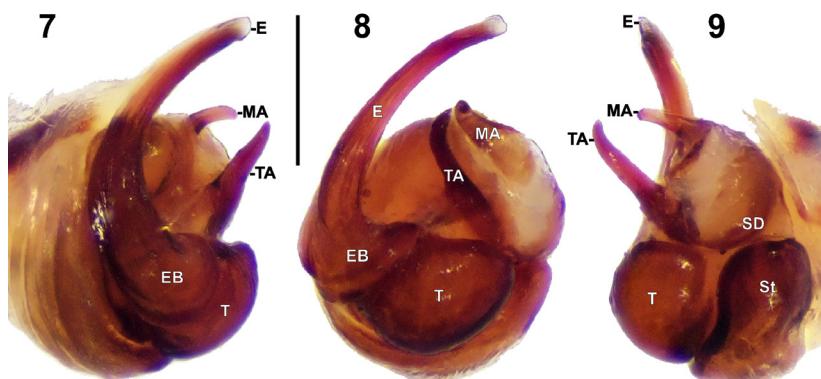
dorsally, yellow gray ventrally. Eye sizes and interdistances: AME 0.09, ALE 0.11, PME 0.09, PLE 0.10, AME-AME 0.07, AME-ALE 0.03, PME-PME 0.10, PME-PLE 0.10, ALE-PLE 0.17. MOQ length 0.33, front width 0.26, back width 0.29. Leg measurements: I: 2.20, 1.20, 1.50, 1.28, 1.00 (7.18); II: 1.98, 1.08, 1.25, 1.20, 0.90 (6.41); III: 1.85, 0.98, 1.08, 1.55, 0.90 (6.36); IV: 2.55, 1.25, 1.65, 2.53, 1.13 (9.11). Leg spination: I: Fe d1-1-0 p0-0-1; Ti v0-1-2; Mt v2-1-2. II: Fe d1-1-0 p0-0-1; Ti v0-1-2; Mt v2-1-2. III: Fe d1-1-1 p0-1-1 r0-1-1; Pa p1 r1; Ti d1-0-0 p1-1-1 r0-1-1 v2-2-2; Mt d1-2-0 p1-1-0 r1-1-0 v0-2-2. IV: Fe d1-1-1 p0-0-1 r0-0-1; Pa p1 r1; Ti d1-0-1 p1-1-1 r1-1-1 v2-2-2; Mt d1-2-0 p1-1-0 r1-1-0 v2-0-2.

Male palp as in Figs 3–9, 42. Tibia 2.5x shorter than cymbium. Retrolateral tibial apophysis (RTA) digitiform, 2x shorter than tibia, with rounded tip. Cymbium 2x longer than wide. Cymbial furrow absent. Bulb 1.4x longer than wide. Tegulum (T) strongly bulged. Subtegulum (St) located posterio-retrolaterally. Sperm duct (SD) poorly visible. Tegular apophysis (TA) long, sharply pointed, straight in lateral views. Median apophysis (MA) almost straight, 2x shorter than TA. Embolic base (EB) conical. Embolus (E) smoothly curved, very long and thin, 6.3x longer than width. Embolic apex rounded.

Female unknown.

Distribution. Only the type locality (Figs 46, 49–50).

Comments. *Berlandina izzatullaevi* sp. n., *B. cinerea* and *B. shumskyi* can be united into one species-group (herein termed the *cinerea* species-group) by a number of characters: 1) long, sharply pointed tegular apophysis; 2) long and relatively thin smoothly curved embolus, starting from a 9 o' clock position; 3) poorly visible sperm duct; 4) strongly bulged tegulum; 5) heart-shaped fovea and copulatory ducts; 6) very small receptacles. Members of this group are distributed from Western Europe through Crimea and Iran to eastern Uzbekistan (Kovblyuk 2003; Nentwig et al. 2025; present data).



Figures 7–9. Bulb of *Berlandina izzatullaevi* sp. n. 7 – prolateral; 8 – ventral; 9 – retrolateral. Scale bar: 0.2 mm. Abbreviations: E – embolus, EB – embolic base, MA – median apophysis, SD – sperm duct, St – subtegulum, T – tegulum, TA – tegular apophysis.

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

Figs 10–23, 43, 47–50

Gnaphosa plumalis O. Pickard-Cambridge, 1872: 225, pl. 15, f. 3 (♂).

Berlandina plumalis: Chatzaki, Thaler & Mylonas 2002: 609, f. 13–16 (♂♀).

For the full list of 27 taxonomic entries see World Spider Catalog (2025).

Material examined. 1♂ (ISEA), UZBEKISTAN, Fergana Region, Chinabad Village, 40.62N, 70.85E, sand dunes with tugai (gallery forest) woodlands, 400 m, 25.05.2024 (F. Shodmonov); 1♂ 1♀ (ISEA), Qashqadaryo Region, Sundukli Desert, 11 km W of Pamuk Village, 38.99N, 64.94E, tugai (gallery) forest, 300 m, 29.06.2024 (F. Shodmonov); 1♂ (ISEA), Surxondaryo Region, 4 km NW from Termez City, Khakim-at-Termezi Mausoleum, 37° 16'34N, 67° 11'49E, the border of tugai (gallery forest) and clayey desert, 300 m, 02.04.2023 (F. Shodmonov).

Diagnosis. The male of *B. plumalis* is similar to that of *B. nabozhenkoi* Ponomarev & Tsvetkov, 2006, which is widespread from Turkey to Iran. Both species possess a hook-like retrolateral tibial apophysis (RTA) bent dorsally, and a long membranous embolus (E). The male of *B. plumalis* can be distinguished from that of *B. nabozhenkoi* by a much thinner apical part of RTA (cf. Fig. 15 and fig. 106 in Marusik et al. (2014)) and straight E (vs. strongly curved; cf. Figs 14, 17 and figs 105, 108 in the same paper). The female of *B. plumalis* is also similar to that of *B. nabozhenkoi*. Both species have a well-developed elongated septum (S) and large arcuate copulatory ducts (CD). The female of *B. plumalis* differs from that of *B. nabozhenkoi* by a circular fovea (F) (vs. trapezoidal; cf. Figs 21–22 and fig. 1 in Ponomarev et al. (2018)) and by the secondary receptacles (SR) located entally to CD (vs. posteriorly; cf. Fig. 23 and fig. 2 in the same paper).

Description. Male (from Chinabad). Total length 5.55. Carapace: 2.50 long, 1.90 wide. Abdomen: 3.25 long, 1.50 wide. Coloration. Carapace yellow brown, with dark edges and three pairs of dark spots laterally. Pars cephalica outlined by dark stripes. Chelicerae brown. Labium, endites, sternum and coxae yellow brown. Palps yellow, cymbium light brown. Legs yellow brown, darker distally. Abdomen gray, with vague yellow herringbone pattern. Venter of the abdomen cream-colored. Spinnerets yellow. Eye sizes and interdistances: AME 0.13, ALE 0.10, PME 0.11, PLE 0.10, AME–AME 0.07, AME–ALE 0.03, PME–PME 0.09, PME–PLE 0.06, ALE–PLE 0.13; MOQ length 0.33, front width 0.33, back width 0.31. Leg measurements: I: 1.93, 1.03, 1.40, 1.05, 0.88 (6.29); II: 1.68, 0.93, 1.13, 1.13, 0.85 (5.72); III: 1.63, 0.83, 0.95, 1.43, 0.88 (5.72); IV: 2.18, 1.10, 1.53, 2.38, 1.18 (8.37). Leg spination: I: Fe d1-1-0 p0-0-1; Ti v2-1-2; Mt v2-0-2. II: Fe d1-1-0 p0-0-1; Ti p0-0-1 v1-1-2; Mt p0-1-0 v2-0-2. III: Fe d1-1-1 p0-1-1 r0-1-1; Pa p1 r1; Ti d1-0-0 p1-1-1 r0-1-1 v2-2-2; Mt d1-1-0 p1-1-0 r1-1-0 v2-0-2. IV: Fe d1-1-0 p0-0-1 r0-0-1; Pa r1; Ti d1-0-1 p1-1-1 r1-1-1 v2-2-2; Mt d1-2-0 p1-1-0 r1-1-0 v2-0-2.



Figures 10–15. General appearance (10–11) and palp (12–15) of male of *Berlandina plu-malis*. 10, 12 – dorsal; 11, 14 – ventral; 13 – prolateral; 15 – retro-lateral. Scale bars: 10–11=2 mm; 12–15=0.2 mm. Abbreviations: CF – cymbial furrow, RTA – retrolateral tibial apophysis.

Male palp as in Figs 12–18, 43. Tibia 2.7x shorter than cymbium. Retrolateral tibial apophysis (RTA) hook-like, almost as long as tibia. Cymbium 2x longer than wide. Cymbial furrow (CF) elongated, 2x shorter than cymbium. Bulb 1.2x longer than wide. Tegulum (T) flat. Subtegulum (St) located postero-retrolaterally. Sperm duct (SD) well visible, sinusoidal in ventral view. Tegular apophysis absent. Median apophysis (MA) crescent, partly hidden by embolus (E). E spirally twisted basally, straight apically. Embolic apex arrow-shaped.

Female. Total length 6.70. Carapace: 2.93 long, 2.20 wide. Abdomen: 3.65 long, 2.30 wide. Coloration. Carapace light brown, with dark edges and three pairs of dark spots laterally. Pars cephalica outlined by dark stripes. Chelicerae brown. Labium and sternum light brown. Endites and coxae yellow. Palps: Fe–Ti yellow, Ts

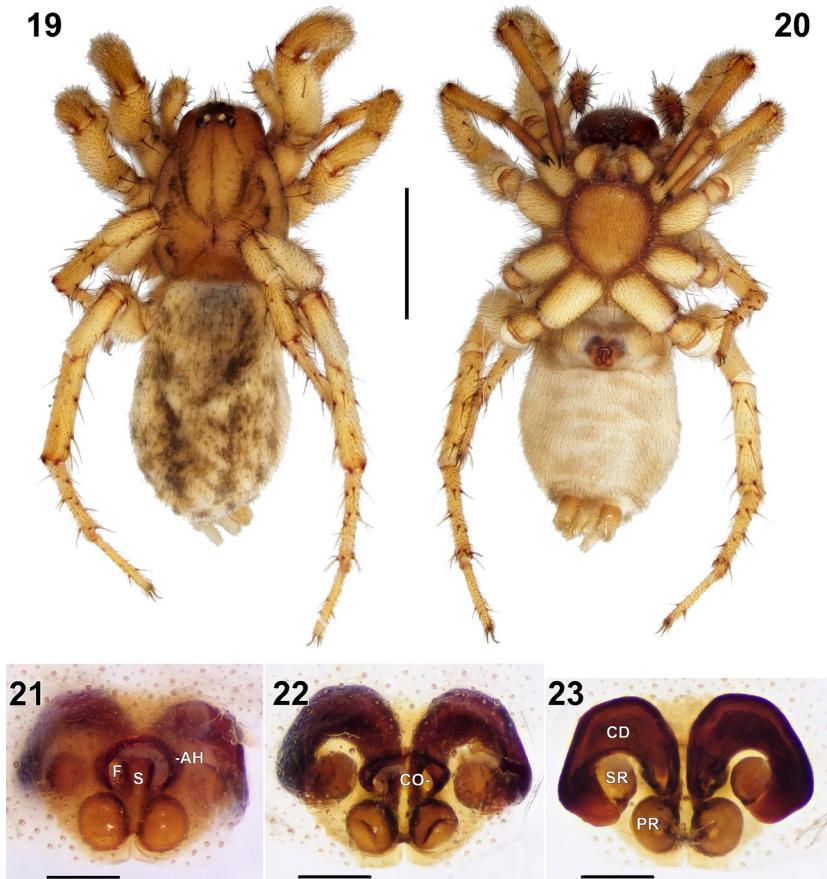
– brown. Legs: Fe–Ti yellow, Mt–Ts light brown. Abdomen yellow gray with vague herringbone pattern. Venter of the abdomen cream-colored. Spinnerets yellow. Eye sizes and interdistances: AME 0.11, ALE 0.11, PME 0.13, PLE 0.11, AME–AME 0.10, AME–ALE 0.03, PME–PME 0.10, PME–PLE 0.07, ALE–PLE 0.16; MOQ length 0.33, front width 0.33, back width 0.36. Leg measurements: I: 2.08, 1.18, 1.50, 1.20, 0.93 (6.89); II: 1.80, 1.08, 1.10, 1.13, 0.88 (5.99); III: 1.68, 0.95, 1.00, 1.50, 1.00 (6.13); IV: 2.35, 1.23, 1.63, 2.40, 1.28 (8.89). Leg spination: I: Fe d1-1-0 p0-0-1; Ti v2-1-2; Mt v3-0-2. II: Fe d1-1-0 p0-0-1; 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 p1-1-1 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 r0-0-1; Pa r1; Ti d1-0-1 p1-1-1 r1-1-2 v2-2-2; Mt d1-2-0 p1-1-0 r1-1-0 v2-0-2.



Figures 16–18. Bulb of *Berlandina plumalis*. 16 – prolateral; 17 – ventral; 18 – retrolateral. Scale bar: 0.2 mm. Abbreviations: E – embolus, MA – median apophysis, SD – sperm duct, St – subtegulum, T – tegulum.

Epigyne as in Figs 21–23. Epigynal plate 1.2x wider than long. Fovea (F) circular. Anterior hood (AH) arcuate. Copulatory openings (CO) large, located laterally. Copulatory ducts (CD) massive, arcuate. Primarily receptacles (PR) ovoid, about same size as F. Secondary receptacles (SR) ovoid, slightly smaller than PR.

Distribution. Widespread from West Africa through Central Asia and Afghanistan to Burma (Simon 1884; Zamani et al. 2015; WSC 2025). The Burmese record (sub: *Pythonissa passerina* Simon, 1884) based on female, is extremely doubtful. Judging by Simon's drawing of the epigyne (Simon 1884: fig. 7), this spider does not even belong to *Berlandina*. In addition, the vast majority of representatives of *Berlandina* are clearly confined to the xeric regions of the Palaearctic (Marusik et al. 2014; Figs 46–48). It is highly unlikely that a representative of the genus inhabits the humid tropical forests of Indo-Malayan Realm which includes the territory of Burma.



Figures 19–23. General appearance (19–20) and epigyne (21–23) of female of *Berlandina plumalis*. 19 – dorsal; 20 – ventral; 21 – intact, ventral; 22 – macerated, ventral; 23 – macerated, dorsal. Scale bars: 19–20=2 mm; 21–23=0.2 mm. Abbreviations: AH – anterior hood, CD – copulatory duct, CO – copulatory opening, F – fovea, PR – primarily receptacle, S – septum, SR – secondary receptacle.

Comments. In their review, Marusik et al. (2014) proposed a monotypic *nabozhenkoi* species-group. This group was defined by the following features: 1) the large tibial apophysis with the tip bent dorsally; 2) sperm duct making a right angle; 3) the small median apophysis; 4) the embolus starting at about 7.30–8.00 o'clock position; 5) the embolus thin and bent at right angle near tip; 6) the epigyne with trapezoidal fovea and septum (Marusik et al. 2014). The male of *B. plumalis* possess almost all the characters listed for male of *B. nabozhenkoi*, excluding the embolus bend. The epigyne of *B. plumalis* is also very similar to that of *B. nabozhenkoi* in having well developed elongated septum and large arcuate copulatory ducts. There is no doubt that these two species belong to the same group. Therefore, the more correct name of this species group is *Berlandina plumalis* species-group. In addition to the

features of this group listed by Marusik et al. (2014), it is worth pointing out a membranous embolus twisted around its axis. Although *B. plumalis* is the generotype, this species is still poorly-illustrated. That is why we decided to provide its detailed digital photographs and a redescription based on newly collected specimens.

***Berlandina jabborovi* sp. n.**

<http://zoobank.org/947F43E0-2FB0-446F-A78D-F331E9A48BA7>

Figs 24–32, 44, 48–50

Type material. Holotype ♂ (ISEA), UZBEKISTAN: Surxondaryo Region, 4 km NW from Termez City, Khakim-at-Termezi Mausoleum, 37°16'34"N, 67°11'49"E, the border of tugai (gallery forest) and clayey desert, 300 m, 02.04.2023 (F. Shodmonov).

Etymology. The specific name is a patronym in honor of Abdurashid R. Jabborov, ornithologist, Head of the Department of Zoology of Samarkand State University.

Diagnosis. The male of the new species is most similar to those of *B. khalimovi* sp. n. (Uzbekistan), *B. koponeni* Marusik, Fomichev & Omelko, 2014 (Mongolia and Inner Mongolia), *B. mishenini* Marusik, Fomichev & Omelko, 2014, *B. ovthsharenkoi* Marusik, Fomichev & Omelko, 2014 (both from Mongolia) and *B. ubsunurica* Marusik & Logunov, 1995 (Tuva and Mongolia). All these species possess a short and wide embolus (E) starting from a 9–10 o'clock position and a diagonal course of sperm duct (SD). The male of *B. jabborovi* sp. n. can be differed from the males of all above mentioned species by the tegulum (T) with triangular retrolateral protrusion (RP) (vs. absent: cf. Figs 28, 31 and figs 1, 6, 22, 27, 30, 34, 38, 44 in Marusik et al. (2014)). The male of *B. jabborovi* sp. n. can be distinguished from those of *B. mishenini* and *B. ubsunurica* by a solid E with sharply pointed tip (vs. complex E with blunt tip). Finally, the male of the new species differs from those of *B. koponeni*, *B. ovthsharenkoi* and *B. khalimovi* sp. n. by the presence of semicircular embolic apophysis (EA).

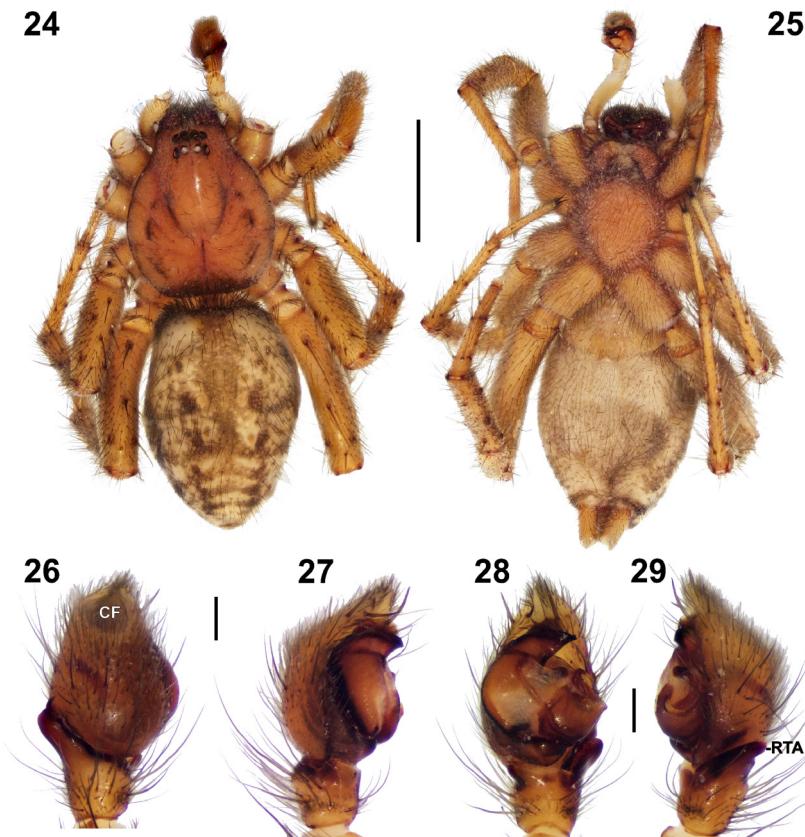
Description. Male. Total length 7.00. Carapace: 3.13 long, 2.45 wide. Abdomen: 4.00 long, 2.60 wide. Coloration. Carapace orange brown, with dark edges and three pairs of dark spots laterally. Pars cephalica outlined by dark stripes. Chelicerae dark brown. Labium brown. Endites sternum and coxae light brown. Palps yellow, cymbium brown. Legs yellow brown. Abdomen yellow gray with gray cardiac mark and vague herringbone pattern. Venter of the abdomen beige. Spinnerets yellow orange. Eye sizes and interdistances: AME 0.11, ALE 0.11, PME 0.11, PLE 0.11, AME–AME 0.10, AME–ALE 0.01, PME–PME 0.09, PME–PLE 0.09, ALE–PLE 0.19; MOQ length 0.36, front width 0.33, back width 0.36. Leg measurements: I: 2.43, 1.25, 1.78, 1.60, 1.23 (8.29); II: 2.13, 1.15, 1.45, 1.45, 1.15 (7.33); III: 2.05, 1.03, 1.30, 1.88, 1.13 (7.39); IV: 2.83, 1.30, 2.00, 2.78, 1.45 (10.36). Leg spination: I: Fe d1-1-0 p0-0-1; Ti v2-1-2; Mt v0-2-2. II: Fe d1-1-0 p0-0-1; Ti p0-0-1 v1-1-2; Mt 0-1-0 v2-0-2. III: Fe d1-1-1 p1-0-1 r0-1-1; Pa p1 r1; Ti d1-0-0 p1-1-1 r1-1-1 v2-2-2; Mt d1-1-0 p1-1-0

r1-1-0 v2-0-2. IV: Fe d1-1-1 p0-0-1 r0-1-1; Pa p1 r1; Ti d1-0-1 p1-1-1 r1-1-1 v2-2-2; Mt d1-2-0 p1-1-0 r1-1-0 v2-0-2.

Male palp as in Figs 26–32, 44. Tibia 3x shorter than cymbium. Retrolateral tibial apophysis (RTA) wide, bent dorsally, as long as tibia. Cymbium 1.6x longer than wide. Cymbial furrow (CF) circular, 3.5x shorter than cymbium. Bulb 1.3x longer than wide. Tegulum (T) flat in lateral view, with triangular retrolateral protrusion (RP). Subtegulum (St) located posteriorly. Sperm duct (SD) well visible, almost straight. Tegular ridge (TR) semicircular in ventral view. Median apophysis (MA) hook-shaped, partly hidden by T in ventral view. Embolus (E) triangular, with semicircular embolic apophysis (EA). Embolic opening (EO) large, clearly visible in anterior view.

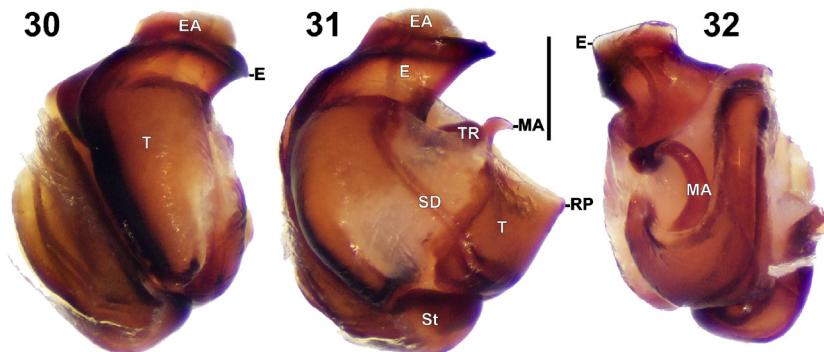
Female unknown.

Distribution. Only the type locality (Figs 48–50).



Figures 24–29. General appearance (24–25) and palp (26–29) of *Berlandina jabborovi* sp. n. 24, 26 – dorsal; 25, 28 – ventral; 27 – prolateral; 29 – retrolateral. Scale bars: 24–25=2 mm; 26–29=0.2 mm. Abbreviations: CF – cymbial furrow, RTA – retrolateral tibial apophysis.

Comments. The new species belongs to the *ubsunurica* species-group, judging by: 1) wide retrolateral tibial apophysis with tip directed dorsally; 2) diagonal course of sperm duct; 3) short and wide embolus starting from a 9–10 o'clock position. Members of the *ubsunurica* species-group are distributed from western Kazakhstan to Inner Mongolia (Marusik et al. 2014). See also comments for *B. khalimovi* sp. n.



Figures 30–32. Bulb of *Berlandina jabbrovi* sp. n. 30 – prolateral; 31 – ventral; 32 – retrolateral. Scale bar: 0.2 mm. Abbreviations: E – embolus, EA – embolic apophysis, MA – median apophysis, SD – sperm duct, RP – retrolateral extension of T, St – subtegulum, T – tegulum, TR – tegular ridge.

Berlandina khalimovi sp. n.

<http://zoobank.org/C35FAD58-8650-4089-B77A-AEB648F8DFAE>

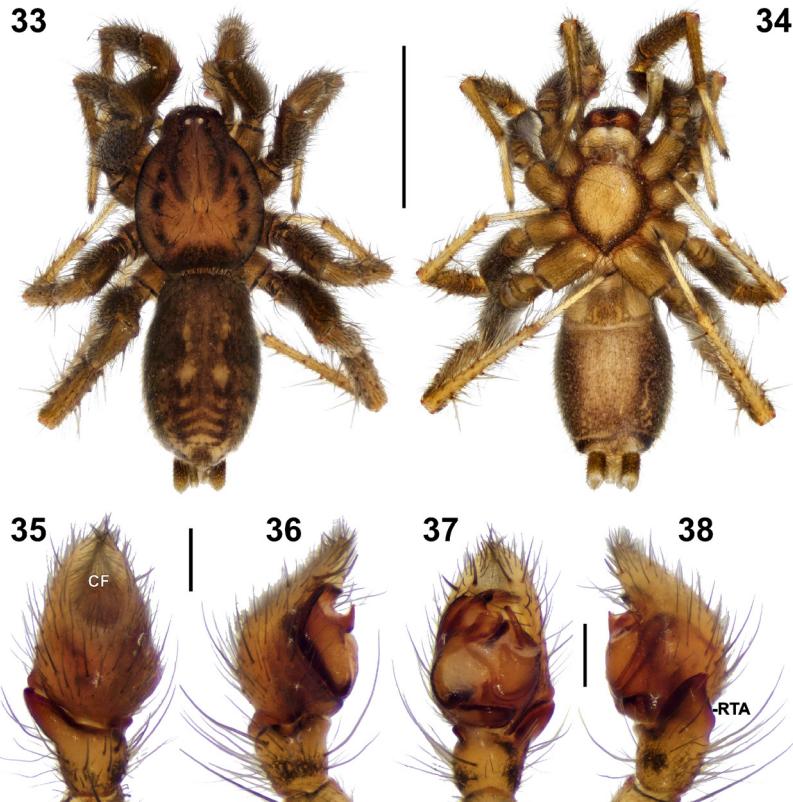
Figs 33–41, 45, 48–50

Type material. Holotype ♂ (ISEA), UZBEKISTAN: Surxondaryo Region, 4 km NW from Termez City, Khakim-at-Termezi Mausoleum, 37°16'34"N, 67°11'49"E, the border of tugai (gallery forest) and clayey desert, 300 m, 02.04.2023 (F. Shodmonov); paratype: 1♂ (ISEA), same data as holotype.

Etymology. The specific name is a patronym in honor of Fazliddin Z. Khalimov, entomologist, Docent of the Department of Zoology of Samarkand State University.

Diagnosis. The male of the new species is most similar to those of *B. jabbrovi* sp. n., *B. koponeni*, *B. mishenini*, *B. ovthsharenkoi* and *B. ubsunurica*. All these species possess a short and wide embolus (E) starting from a 9–10 o'clock position and a diagonal course of sperm duct (SD). The male of *B. khalimovi* sp. n. can be differentiated from those of *B. mishenini* and *B. ubsunurica* by E with a sharply pointed tip (vs. blunt: cf. Figs 37, 40 and figs 1, 6, 22, 27 in Marusik et al. (2014)). The male of the new species can be distinguished from that of *B. koponeni* by E wider than long, with strongly curved apical part (vs. E longer than wide, with straight apical part: cf. Figs 37, 40 and figs 30, 34 in the same paper). The male of *B. khalimovi* sp. n. differs from that of *B. ovthsharenkoi* by the concave tegular ridge (TR) (vs. strongly

convex, hanging over the median apophysis (MA); cf. Figs 37, 40 and figs 38, 44 in the same paper). Finally, the male of *B. khalimovi* sp. n. does not possess a triangular retrolateral protrusion of the tegulum (T), while it is present in *B. jabborovi* sp. n. (cf. Figs 37, 40 and 28, 31).



Figures 33–38. General appearance (33–34) and palp (35–38) of male of *Berlandina khalimovi* sp. n. 33, 35 – dorsal; 34, 37 – ventral; 36 – prolateral; 38 – retrolateral. Scale bars: 33–34=2 mm; 35–38=0.2 mm. Abbreviations: CF – cymbial furrow, RTA – retrolateral tibial apophysis.

Description. Male (Holotype). Total length 4.50. Carapace: 2.13 long, 1.63 wide. Abdomen: 2.45 long, 1.45 wide. Coloration. Carapace brown with dark edges and three pairs of dark spots laterally. Pars cephalica outlined by dark stripes stretching from PLEs. Chelicerae brown. Labium, endites and coxae yellow brown. Sternum yellow brown with dark brown edges. Palps yellow brown, cymbium light brown. Legs yellow brown, tarsi yellow. Abdomen gray with yellow herringbone pattern. Venter of the abdomen and spinnerets yellow gray. Eye sizes and interdistances: AME 0.06, ALE 0.10, PME 0.10, PLE 0.10, AME–AME 0.06, AME–ALE 0.03, PME–PME 0.06, PME–PLE 0.04, ALE–PLE 0.13; MOQ length 0.27, front width 0.21, back

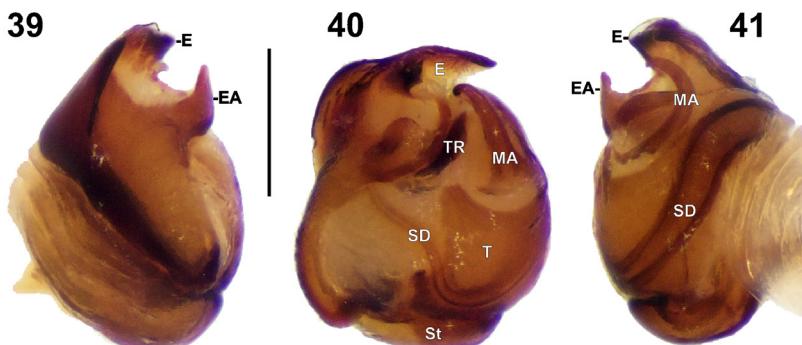
width 0.26. Leg measurements: I: 1.58, 0.85, 1.10, 0.95, 0.83 (5.31); II: 1.43, 0.78, 0.90, 0.88, 0.80 (4.79); III: 1.33, 0.68, 0.83, 1.13, 0.83 (4.80); IV: 1.93, 0.93, 1.35, 1.90, 1.00 (7.11). Leg spination: I: Fe d1-1-0 p0-0-1; Ti v2-1-2; Mt v2-0-2. II: Fe d1-1-0 p0-0-1; Ti p0-0-1 v1-1-2; Mt v2-1-2. III: Fe d1-1-0 p0-1-0 r0-1-1; Pa p1 r1; Ti d1-0-0 p1-1-1 r1-0-1 v2-2-2; Mt d0-1-0 p1-1-0 r1-1-0 v2-0-2. IV: Fe d1-1-0 p0-0-1 r0-0-1; Pa r1; Ti d1-0-0 p1-1-2 r1-1-2 v2-2-2; Mt d0-2-0 p1-1-0 r1-1-0 v2-0-2.

Male palp as in Figs 35–41, 45. Tibia 2.8x shorter than cymbium. Retrolateral tibial apophysis (RTA) wide, triangular, as long as tibia. Cymbium 1.5x longer than wide. Cymbial furrow (CF) ovoid, 2x shorter than cymbium. Bulb 1.2x longer than wide. Tegulum (T) flat in lateral view. Subtegulum (St) located posteriorly. Sperm duct (SD) well visible, slightly S-shaped. Tegular ridge (TR) elongated in ventral view. Median apophysis (MA) hook-shaped, 2x shorter than embolus (E). E complex, with triangular apical part. Embolic apophysis (EA) triangular in lateral views.

Female unknown.

Distribution. Only the type locality (Figs 48–50).

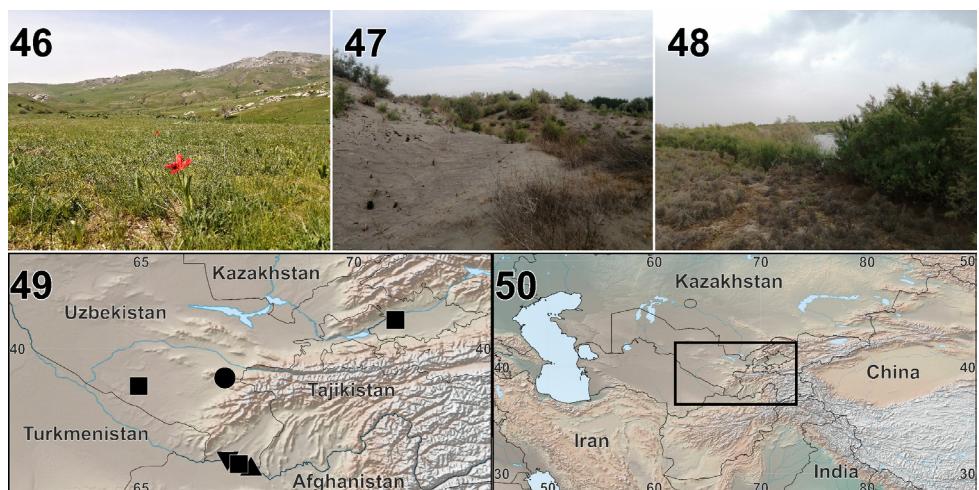
Comments. Judging by palpal features, *B. khalimovi* sp. n. belongs to the *ubsunurica* species-group (see comments for *B. jabborovi* sp. n.). The records of *B. khalimovi* sp. n. and *B. jabborovi* sp. n. in southern Uzbekistan represents the most southwestern localities of any species from the *ubsunurica* group. Interestingly, *B. khalimovi* sp. n. was found in the same locality and in the same habitat as *B. jabborovi* sp. n. and *B. plumalis* (Fig. 48). Such syntopy of several *Berlandina* species may indicate that the actual diversity of the genus in Central Asia is much greater than currently known.



Figures 39–41. Bulb of *Berlandina khalimovi* sp. n. 39 – prolateral; 40 – ventral; 41 – retrolateral. Scale bar: 0.2 mm. Abbreviations: E – embolus, EA – embolic apophysis, MA – median apophysis, SD – sperm duct, St – subtegulum, T – tegulum, TR – tegular ridge.



Figures 42–45. Bulb of *Berlandina izzatullaevi* sp. n. (42), *B. plumalis* (43), *B. jabborovi* sp. n. (44) and *B. khalimovi* sp. n. (45). 42–45 – anterior. Scale bars: 0.2 mm. Abbreviation: EO – embolic opening.



Figures 46–50. Habitats of studied *Berlandina* species in Uzbekistan (46–48) and their collecting localities (49–50). 46 – habitat of *B. izzatullaevi* sp. n. in Aman-Kutan Mountain Pass; 47 – habitat of *B. plumalis* near Chinabad Village; 48 – habitat of *B. plumalis*, *B. jabborovi* sp. n. and *B. khalimovi* sp. n. near Termez City. Circle – *B. izzatullaevi* sp. n.; square – *B. plumalis*; triangle – *B. jabborovi* sp. n.; inverted triangle – *B. khalimovi* sp. n. The frame on Fig. 50 refers to the content of Fig. 49. 46–48 – courtesy of Mukhammadtuichi Rakhimov.

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