

## **Description of the Female of *Berlandina mesopotamica* (Araneae: Gnaphosidae)**

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## Description of the female of *Berlandina mesopotamica* (Araneae: Gnaphosidae)

Azhar Mohammed Al-Khazali & Alexander A. Fomichev



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**Abstract.** The species *Berlandina mesopotamica* Al-Khazali, 2020 was recently described from southern Iraq on the basis of males. Here the female is described and illustrated for the first time.

**Key words:** biodiversity, ground spiders, Iraq, taxonomy

**Zusammenfassung. Beschreibung des Weibchens von *Berlandina mesopotamica* (Araneae: Gnaphosidae).** *Berlandina mesopotamica* Al-Khazali, 2020 wurde basierend auf Männchen aktuell aus dem Irak beschrieben. Nun wird das Weibchen der Art erstmals beschrieben und abgebildet.

**المخلص. وصف لأنثى النوع *Berlandina mesopotamica* (الرَّتِيلَاوَات : العنكبَاب الارضية).** النوع *Berlandina mesopotamica* Al-Khazali, 2020 تم وصفه مؤخراً من جنوب العراق بالإعتماد على الذكور فقط، في الورقة الحالية تم وصف وتوضيح الانثى لأول مرة.

With 40 described species, *Berlandina* Dalmás, 1922 is a relatively large genus of Gnaphosidae. It is distributed in the Palaearctic and the northern part of the Afrotropical Region (Marusik et al. 2014, WSC 2020). Within the Palaearctic, *Berlandina* is well studied due to the wide-scale revision by Marusik et al. (2014) and a few other regional surveys (Fomichev & Marusik 2017, 2019). To date, only four species of Gnaphosidae have been reported from Iraq: *Pterotricha arzhantsevi* Fomichev, Marusik & Koponen, 2018, *Nomisio conigera* (Spassky, 1941) (Fomichev et al. 2018), *Gnaphosa dolosa* Herman, 1879 (Al-Khazali & Hussein 2019) and the recently described *Berlandina mesopotamica* Al-Khazali, 2020 (Al-Khazali 2020). The latter species was described based on two males collected in Dhi Qar Province (southern Iraq). While studying newly collected material from the type locality of *B. mesopotamica*, we found several females of *Berlandina* whose epigynes were similar to those of *B. venatrix*, a species closely related to *B. mesopotamica*. This allows us to conclude that these females belong to this species and, as a result, we describe the female of *B. mesopotamica* herein for the first time.

### Material and methods

The material was photographed using an Olympus DP74 camera attached to an Olympus SZX16 stereomicroscope at the Altai State University (Barnaul, Russia). Photographs of the epigyne were taken in a dish with white cotton at the bottom, filled with alcohol. The epigyne was cleared in a KOH/water solution until the soft tissues were dissolved. Digital images were montaged using Helicon Focus software (<http://www.photo-soft.ru/helicon-focus/>). All measurements are in millimetres. Length of leg segments were measured on their dorsal sides. Leg measurements are shown as: femur, patella, tibia, metatarsus, tarsus (total length).

### Abbreviations used in the text

Leg segments: Fe – femur, Pa – patella, Ti – tibia, Mt – metatarsus. Leg spination: d – dorsal, p – prolateral, r – retrolateral, v – ventral. Copulatory organs: Ah – anterior hood, Cd – copulatory duct, Co – copulatory opening, Fo – fovea, Pm – posterior margin of the fovea, Re – receptacle, Ro – receptacle outgrowth, Sb – septal base. Material examined will be deposited in the Institute of Systematics and Ecology of Animals SB RAS, Novosibirsk, Russia (ISEA).

The format of the description and terminology follows Marusik et al. (2014) and Platnick & Shadab (1975), with some modifications.

### Results

***Berlandina mesopotamica*** Al-Khazali, 2020 (Figs 1a-e, 2a-c) *B. mesopotamica* Al-Khazali, 2020: 444, figs 2A-C, 3A-H (♂). **Material examined.** IRAQ, Dhi Qar Province: 2 ♀♀, 1 juv. ♀ (ISEA), Qalt Suker District, 31.80264°N, 46.02310°E, 17. Jan. 2019, A. M. Al-Khazali leg.

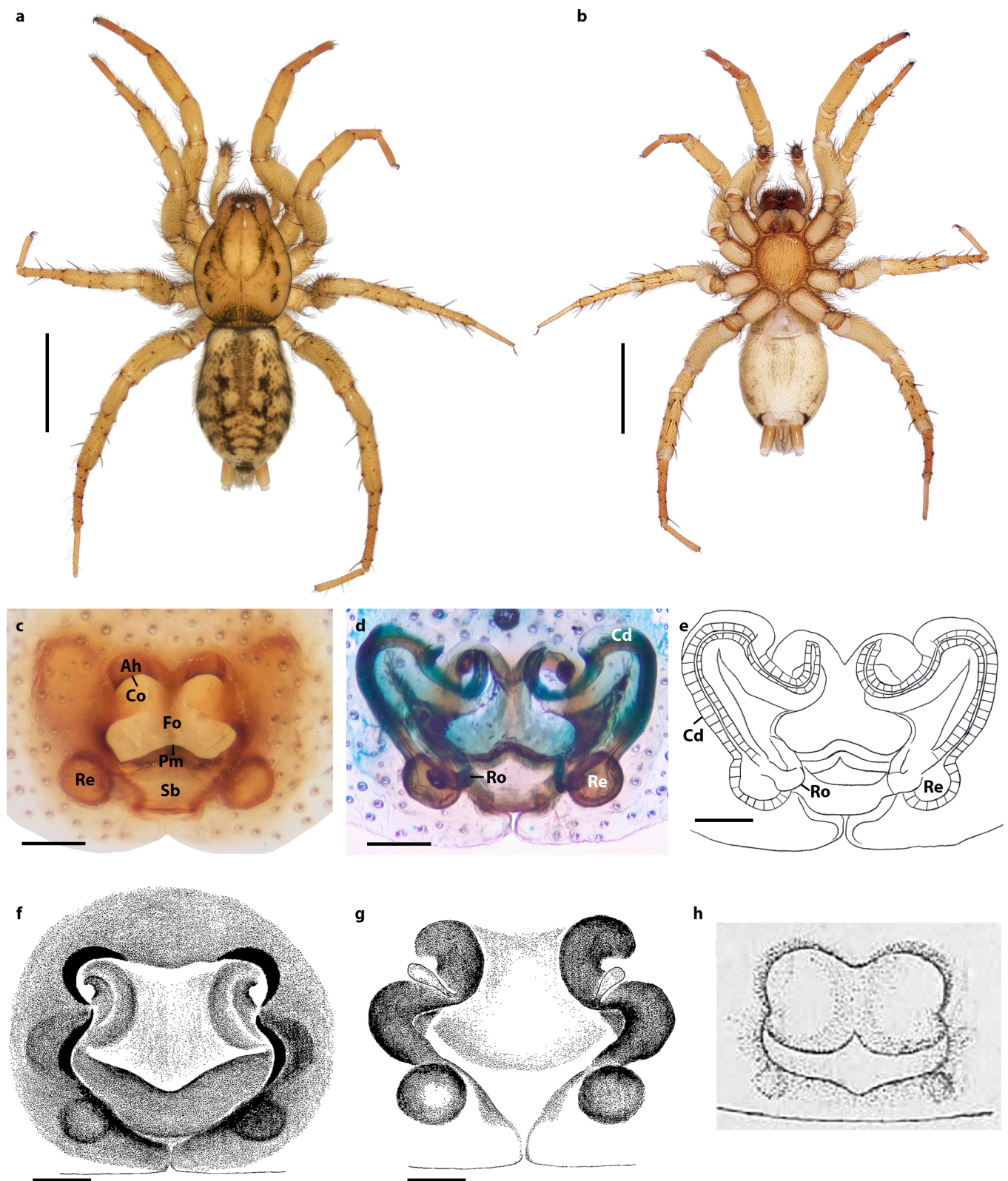
**Diagnosis.** The female of *Berlandina mesopotamica* resembles those of *B. venatrix* (O. Pickard-Cambridge, 1874) and *B. deserticola* (Dalmás, 1921) in having a similar rectangular epigynal fovea (Fo). It can be distinguished from *B. venatrix* by the C-shaped copulatory ducts (Cd) (vs. S-shaped) (compare Fig. 1d-e, g) and by the concave posterior margin of the fovea (Pm) (vs. convex) (compare Fig. 1c, f). *B. mesopotamica* differs from *B. deserticola* by a trapezoidal fovea (vs. rectangular) (compare Fig. 1c, h) and by larger receptacles (Re) separated by 2 diameters (vs. separated by 4 diameters) (compare Fig. 1c, d, e, h).

**Description.** Female. Total length 5.7. Carapace: 2.63 long, 2.0 wide. Carapace light-brown with a pattern of four pairs of dark-grey spots laterally, two grey stripes on sides of pars cephalica and dark-grey edges. Sternum and labium light-brown. Maxillae yellow. Chelicerae dark-brown. Palps and legs yellow, darker distally. Opisthosoma yellow dorsally with grey pattern, beige ventrally. Spinnerets yellow, surrounded by black semicircle on underside of abdomen. Measurements of legs: I: 1.9, 1.05, 1.3, 1.08, 0.95 (6.28). II: 1.63, 0.95, 1.08, 1.03, 0.9 (5.59). III: 1.5, 0.83, 0.9, 1.38, 0.95 (5.56). IV: 2.13, 1.05, 1.43, 2.18, 1.13 (7.92). 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 p0-1-0 v2-0-2. III: Fe d1-1-1 p0-1-1 r0-1-1; Pa

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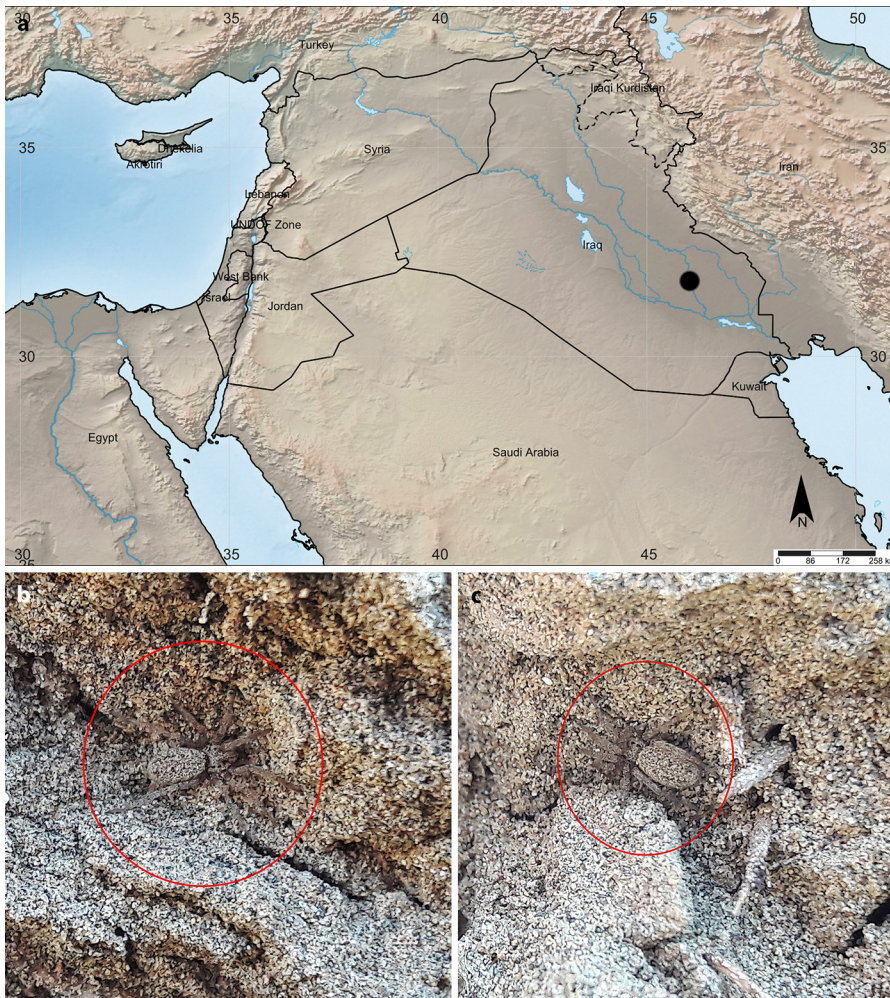


**Fig. 1:** *Berlandina* females. **a-e.** *Berlandina mesopotamica*. **a.** habitus in dorsal view; **b.** habitus in ventral view; **c.** epigyne; **d, e.** vulva. **f, g:** *Berlandina venatrix*. **f.** epigyne; **g.** vulva. **h:** *Berlandina deserticola*, epigyne. Scale bars: a-b. 2 mm, c-g. 0.1 mm. f-g. after Levy (1995); h. after Dalmás (1921). Abbreviations: Ah = anterior hood, Cd = copulatory duct, Co = copulatory opening, Fo = fovea, Pm = posterior margin of the fovea, Re = receptacle, Ro = receptacle outgrowth, Sb = septal base

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

Epigyne and vulva as in Fig. 1c, d, e; with rectangular fovea,

pentagonal septal base (Sb) and two anterior hoods. Receptacles round, spaced by two diameters, bearing outgrowths (Ro) mesially. Copulatory ducts C-shaped, longer than fovea. Copulatory openings (Co) located in anterior part of the fovea, just below the anterior hood.



**Fig. 2:** *Berlandina mesopotamica*. **a.** map showing the type locality in Dhi Qar Province (circle) (simplemappr.net); **b, c.** live specimens in their natural habitat

Male. See Al-Khazali (2020)

**Distribution.** Known only from the type locality (Fig. 2a).

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