

## A new and easternmost species of *Loureedia* (Aranei: Eresidae) from Iran

### Новый и самый восточный вид рода *Loureedia* (Aranei: Eresidae) из Ирана

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КЛЮЧЕВЫЕ СЛОВА: Araneae, Ближний Восток, пауки-эрезиды.

**ABSTRACT:** A new species, *Loureedia phoenixi* sp.n., is described and illustrated on the basis of two male specimens from Alborz Province of Iran and its distribution is mapped based on the type locality and photographic records. These records represent the easternmost distribution limit of the genus.

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**РЕЗЮМЕ.** Описан новый *Loureedia phoenixi* sp.n. на основе двух самцов из провинции Альборз. Показано его распространение: типовое местообитание и локалитеты задокументированные по фотографиям. Новый вид существенно расширяет ареал рода на восток.

#### Introduction

*Loureedia* Miller, Griswold, Scharff, Řezáč, Szűts et Marhabaie, 2012 is a recently described genus with three named species distributed in the Mediterranean, from Morocco and Spain to Israel [WSC, 2020], all of which have been surveyed by Henriques *et al.* [2018]. The genus is known from Iran based on unpublished material and photographic records [Szűts *et al.*, 2018; Henriques *et al.*, 2018]. We recently acquired two male specimens of *Loureedia* from northern Iran. Examination of the male palp and comparison of the abdominal pattern with those of other known species revealed it to be an undescribed species. Until recently, only three other species of Eresidae were known to occur in Iran: one species of *Eresus* Walckenaer, 1805 and two species of *Stegodyphus* Simon, 1873 [Zamani *et al.*, 2020]. The goal of this paper is to provide a description of the

new species and to compare the conductor morphology of all species of the genus.

#### Material and methods

The holotype was photographed at the Zoological Museum of the University of Turku, Finland, using an Olympus Camedia E-520 camera attached to an Olympus SZX16 stereomicroscope. Digital images were stacked using Zerene Stacker v 1.04. Length of leg and palp segments were measured on the dorsal side and are listed as: total length (femur, patella, tibia, metatarsus, tarsus). All measurements are given in millimetres. The type specimens will be deposited at the Muséum d'histoire naturelle, Genève, Switzerland (MHNG).

**Abbreviations: Eyes:** *ALE* — anterior lateral eye, *AME* — anterior median eye, *PLE* — posterior lateral eye, *PME* — posterior median eye. **Legs:** *Fe* — femur, *Pt* — patella, *Ti* — tibia, *Mt* — metatarsus, *Ta* — tarsus.

#### Taxonomy

##### Family Eresidae C.L. Koch, 1845

##### Genus *Loureedia* Miller, Griswold, Scharff, Řezáč, Szűts et Marhabaie, 2012

*Loureedia* Miller *et al.*, 2012: 81.

*Loureedia*: Henriques *et al.*, 2018: 5.

**TYPE SPECIES.** *Eresus annulipes* Lucas, 1857, *Patria ignota* [unknown site]

**DIAGNOSIS.** Males of *Loureedia* differ from those belonging to other genera by the strongly divergent branched conductor, with the branches subequal to the conductor's stem length (vs. only the tip is branched or not branched). Females of *Loureedia* cannot be distinguished from those of *Eresus*.

**COMPOSITION.** Four species: *L. annulipes* (Lucas, 1857), *L. colleni* Henriques, Miñano et Pérez-Zarcos, 2018, *L. lucasi* (Simon, 1873) and *L. phoenixi* sp.n.

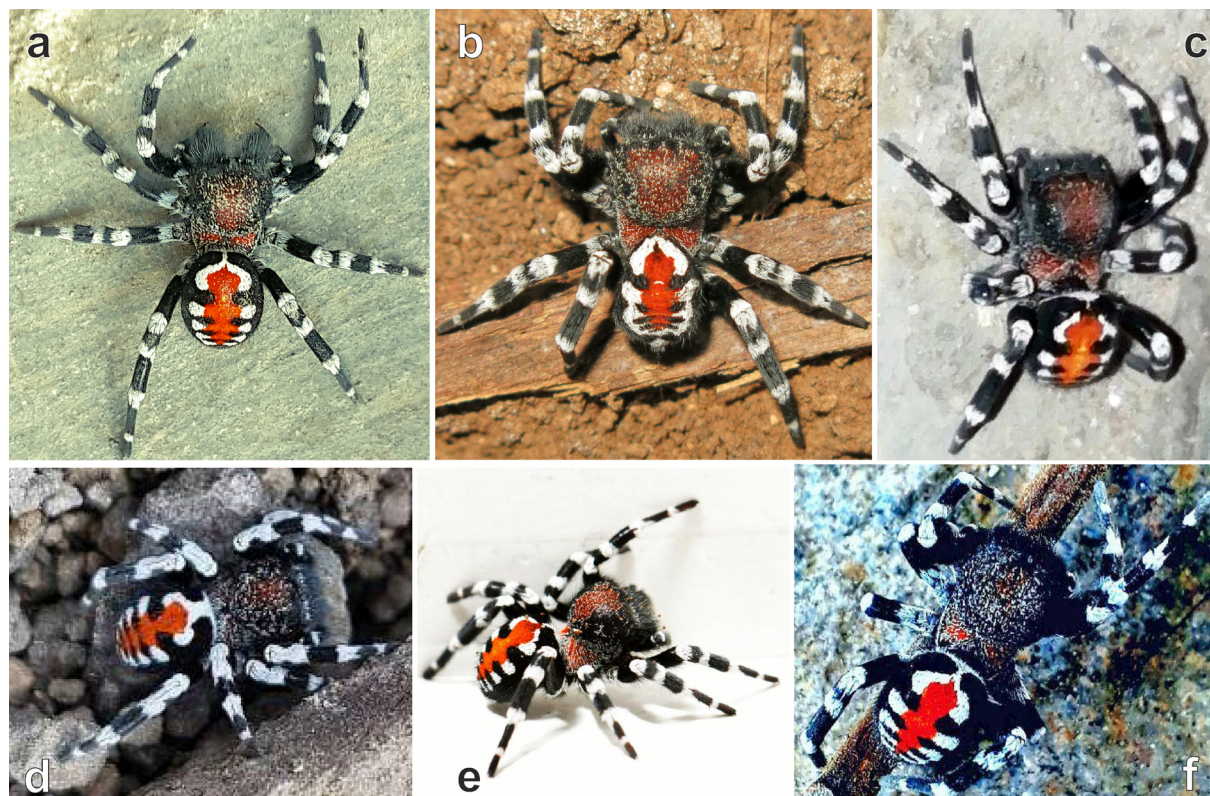


Fig. 1. Habitus of *in vivo* specimens of *Loureedia phoenixi* sp.n. Alborz Province: Karaj (N. Sheikh) (a), Tehran Province: Pardisan Park (A. Zamani) (b), Fars Province: Shiraz (Sh. Hesami) (c), Tehran Province: Kuhsar (B. Golavi) (d), Tehran Province: Rudehen (A. Bolhari) (e) and Kerman Province: Shahr-e Babak (H. Asgari) (f).

Рис. 1. Внешний вид *in vivo* самцов *Loureedia phoenixi* sp.n. Провинция Альборз: Karaj (фото N. Sheikh) (a); провинция Тегеран: Pardisan Park (фото A. Zamani) (b), провинция Фарс: Шираз (фото Sh. Hesami) (c), провинция Тегеран: Kuhsar (фото B. Golavi) (d), провинция Тегеран: Rudehen (фото A. Bolhari) (e) и провинция Керман: Shahr-e Babak (фото H. Asgari) (f).

DISTRIBUTION. From Morocco and Spain to Iran.

*Loureedia phoenixi* sp.n.

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Figs 1a–f, 2a–d, 3a–f, 4.

*Loureedia* sp.: Henriques *et al.*, 2018: 7, fig. 2h (♂)

TYPE MATERIAL. Holotype ♂, paratype 1 ♂ (MHNG): IRAN, Alborz Province: Karaj, Chenarak, 35.8845821°N, 50.9306001°E, 8.11.2019 (A. Beigi).

PHOTOGRAPHIC RECORDS. 1 ♂: Alborz Province: Karaj, 11.10.2016 (N. Sheikh); 1 ♂: Fars Province: Shiraz, Shahrak-e Sadra, 29.8047439°N, 52.4232364°E, 02.11.2018 (Sh. Hesami); 1 ♂: Kerman Province: Shahr-e Babak, Meymand Vil., 30.229139°N, 55.3718125°E, 27.10.2017 (H. Asgari); 1 ♂: Tehran Province: Kuhsar, 35.7744789°N, 51.293026311°E, 11.11.2018 (B. Golavi); 1 ♂: Pardisan Park, 35.7451381°N, 51.3558087°E, 5.11.2016 (A. Zamani); 1 ♂: Rudehen, 10.2015 (A. Bolhari).

ETYMOLOGY. The new species is named after the American actor, producer and animal rights activist Joaquin Phoenix in recognition of his praised portrayal of the title character in the 2019 movie “Joker” and as a reference to the male abdominal pattern of the new species, which resembles the famous facial makeup of this character.

DIAGNOSIS. The new species differs from congeners by the prolateral arm of the conductor (*Pa*) which is pointed and almost the same length as the retrolateral arm of the conductor (*Ra*). The conductor arms are not as pointed and

retrolateral arm is distinctly longer than the prolateral one in other species (cf. Figs 3f and 3g–i).

DESCRIPTION. Male (holotype). Habitus as in Figs 1a–f, 2a–d. Total length 8.35. Carapace 5.25 long, 4.0 wide. Eye sizes and interdistances: AME: 0.14, ALE: 0.26, PME: 0.29, PLE: 0.19, AME–AME: 0.2, ALE–AME: 0.11. Carapace, sternum, labium, chelicerae and maxillae dark brown with tones of red. Carapace mostly covered by long black setae and scattered short white setae, with localized patches of short red setae mostly in the *pars thoracica* or the center of *pars cephalica*. Legs covered with thin black hairs, with distinct regions of white hairs at the joints of all segments that rarely connect with each other, forming distinct white rings. Abdomen with a compact, longitudinal median red stripe with lateral projections with compact white spots at their tips. The anteriormost pair of white spots either contiguous or very close to each other, sometimes merging with a distinct white spot above the pedicel, forming an anterior white shield.

Legs and palp measurements:

	Fe	Pt	Ti	Mt	Ta	Total
Palp	1.58	0.75	0.25	–	1.2	3.78
I	3.25	1.5	1.88	2.13	1.38	10.14
II	2.88	1.5	1.51	1.88	1.13	8.9
III	2.75	1.5	1.38	1.63	0.95	8.21
IV	3.5	1.75	2.25	2.25	1.25	11





Fig. 2. Habitus of the holotype of *Loureedia phoenixi* sp.n.: a — dorsal, b — ventral, c — lateral, d — frontal.

Рис. 2. Внешний вид голотипа *Loureedia phoenixi* sp.n.: а — сверху; б — снизу; с — сбоку; д — спереди.

Palp as in Figs 3a–f. Femur as long as tibia+cymbium, 3 times longer than wide. Length of conductor's arms subequal. Tibia shorter than wide. Cymbium about 2 times longer than wide. Prolateral margin of conductor almost straight, forming right angle with the posterior margin. Prolateral and retrolateral arms of conductor subequal in length, both with sharply pointed tips.

Female. Unknown.

**PHENOLOGY.** All available records of the new species are from late October and early November, congruent with the known phenology of most other *Loureedia* species [Henriques *et al.*, 2018].

**DISTRIBUTION.** The new species is the first of the genus to be found outside of the Mediterranean, and this extends the distribution over 1500 km to the east. It is endemic to Iran (Fig. 4), collected from the type locality in Alborz Province, with photographic records in Tehran, Fars and Kerman provinces, northern and south-central Iran. Although, specimens from the north and south appear identical, we cannot rule out that the southern populations (for which only photographic records are available) could represent a different species; this shall be further investigated when specimens from those localities are available.

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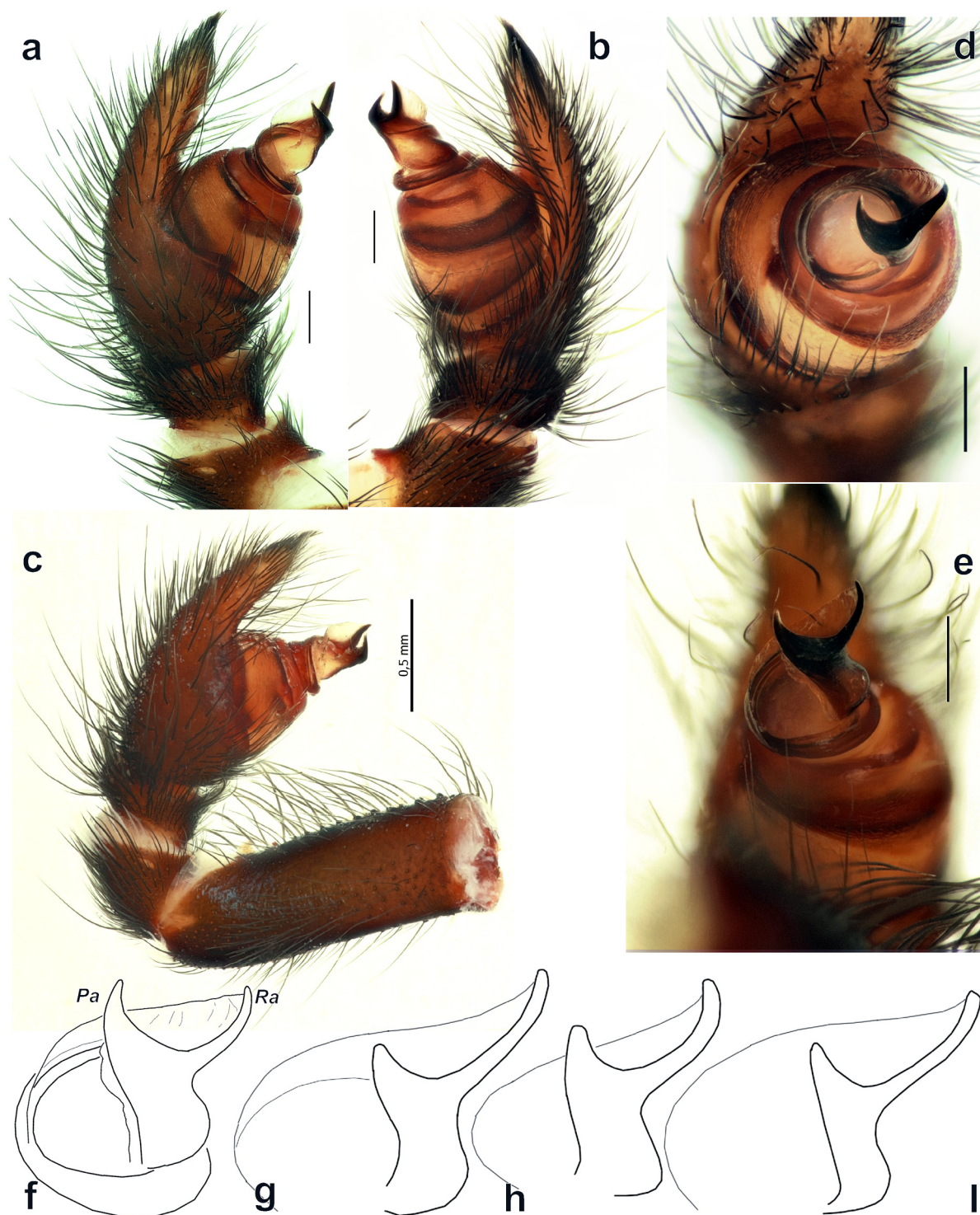


Fig. 3. Male palps of *Loureedia phoenixi* sp.n. (a–f, holotype), *L. annulipes* (g), *L. lucasi* (h) and *L. colleni* (i). a, c — prolateral, b — retrolateral, d — apical, e–i — ventral, f–i — conductor, ventral. g–i — after Henriques *et al.* [2018] with modifications. Scale = 0.02 mm if not otherwise indicated. Abbreviations: Pa — prolateral arm of conductor, Ra — retrolateral arm of conductor.

Рис. 3. Пальпа самца *Loureedia phoenixi* sp.n. (голотип, а–f), *L. annulipes* (g), *L. lucasi* (h) and *L. colleni* (i). а, с — пролатерально; b — ретролатерально; d — сверху, e–i — снизу, f–i — кондуктор снизу. g–i — по Henriques *et al.* [2018] с изменениями. Масштаб 0,2 мм если не указано иначе. Сокращения: Pa — пролатеральная ветвь кондуктора, Ra — ретролатеральная ветвь кондуктора.

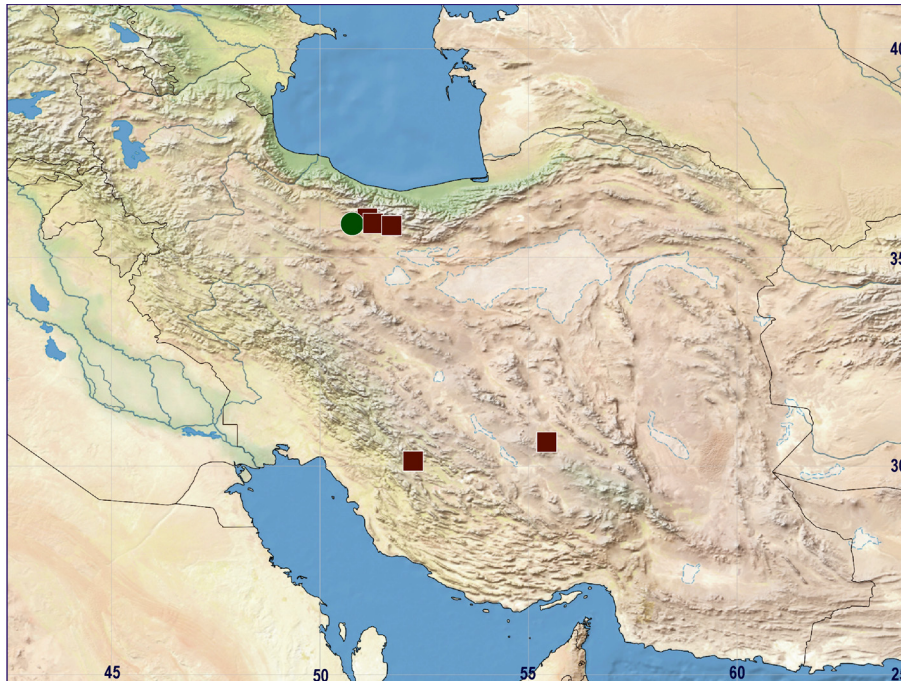


Fig. 4. Distribution of *Loureedia phoenixi* sp.n. in Iran. Circle — type locality, squares — photographic records.

Рис.4. Распространение *Loureedia phoenixi* sp.n.. Круг — типовой локалитет; квадраты — места, где задокументированы находки по фотографиям.

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