

## Description of the female huntsman spider *Curicaberis pedregal* Rheims (Araneae: Sparassidae) from central Mexico and a new record from Tlaxcala state

## Descripción de la hembra de la araña cazadora *Curicaberis pedregal* Rheims (Araneae: Sparassidae) del centro de México y un nuevo registro para el estado de Tlaxcala



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**ABSTRACT.** The female of the spider *Curicaberis pedregal* Rheims, 2015 (Sparassidae) is described for the first time. The description is based on two adult females from the state of Tlaxcala, Mexico. Species corroboration is based on two males of the species, collected together with the females. With these new records, the species is currently known to be distributed in the central Mexican states of Mexico City and Tlaxcala.

**Key words:** Spiders; Nearctic; taxonomy; temperate forest; urban areas

**RESUMEN.** La hembra de la araña *Curicaberis pedregal* Rheims, 2015 (Sparassidae) es descrita por primera vez. La

descripción está basada en dos hembras adultas del estado de Tlaxcala, México. La corroboración de la especie está basada en dos machos de la especie, recolectados junto con las hembras. Con estos nuevos registros, actualmente la especie está distribuida en Ciudad de México y Tlaxcala, estados del centro de México.

**Palabras clave:** Arañas; Neártico; taxonomía; bosque templado; áreas urbanas

## INTRODUCTION

The spider family Sparassidae Bertkau, 1872 commonly known as huntsman spiders worldwide or *arañas cangrejo* (=crab spiders) in Mexico, is composed by 98 genera and 1,523 described species. The spider genus *Curicaberis* Rheims, 2015, is currently composed of 32 described species (WSC 2025). Previously, these spiders were classified into the genus *Olios* Walckenaer, 1837, however, morphological studies and comparisons made by Rheims (2015) of species assigned to *Olios* from Central and North America (mainly Mexico) showed that these species are clearly not congeneric and were thus re-grouped and transferred to the genus *Curicaberis* (Rheims 2015). Even, there are still Mexican species that currently are in *Olios* and will be transferred to other genera soon (Rheims 2010, *per. comm.*). The genus *Olios* was redelimited by Jäger (2020) and does not occur in the Neotropical or Nearctic regions. All species from these regions still in *Olios* are considered *incertae sedis*.

Most of the species of *Curicaberis* are Neotropical and distributed in Mexico, with some occurring in the Nearctic region. *Curicaberis abnormis* (Keyserling, 1884), *C. bibranchiatus* (Fox, 1937), and *C. peninsulanus* (Banks, 1898) are distributed in the USA and Mexico. Five species are distributed in Central America, with *C. ferrugineus* (C. L. Koch, 1836) having the broadest distribution from the USA to Guatemala.

Originally, *Curicaberis pedregal* was described by Rheims (2015) from Pedregal de San Ángel, an urban zone in western Mexico City. However, the species was described based only on a single adult male. The female of this species has remained undocumented until now. In this contribution, the female *C. pedregal* is described based on adult specimens collected together with males, which are here redescribed. The specimens are from Tlaxcala state in central Mexico increasing the distribution range of this species.

## MATERIALS AND METHODS

The specimens were collected by hand and preserved in 80% ethanol, labeled with their respective field data. The specimens are deposited in the CARCIB: Colección de Aracnología (CARCIB), Centro de Investigaciones Biológicas del Noroeste, CIBNOR S.C, La Paz, Baja California Sur, Mexico. (Curator Dra: M. L. Jiménez). Observations and descriptions were made using a Nexius Zoom stereoscope. An AmScope model MU-100-HS 16MP APTINA color digital camera attached to the stereoscope was used to photograph structures for the descriptions. Prior to examination and photography, the structures under observation were submerged in gel alcohol and 80% ethanol to facilitate proper visualization and immobilization, following Valdez-Mondragón (2010a). Morphological nomenclature and measurements follow Rheims (2015). All measurements in the descriptions are presented in millimeters (mm). Photographs were edited using Adobe Photoshop CS6. Dissection needles and tweezers were used in the dissection of the palps, legs, and spermathecae. Female genitalia and male palps were dissected and cleaned with KOH 10%. Female genitalia were cleared with clove oil following Levi (1965). The acronym AMNH mentioned in the

descriptions refers to the American Museum of Natural History, New York, USA. The distribution map was generated using QGIS version 3.36. Abbreviations used in the descriptions are as follows: C, conductor; CD, copulatory duct; Cy, cymbium; dRTA, dorsal branch of Retrolateral Tibial Apophysis (RTA); E, embolus; GP, glandular projection; LL, lateral lobes; MS, median septum; RTA, retrolateral tibial apophysis; SP, spermathecae; T, tegulum; vRTA1, projection 1 of ventral branch of RTA; vRTA2, projection 2 of ventral branch of RTA.

## RESULTS

### Taxonomy

**Family** Sparassidae Bertkau, 1872

**Genus** *Curicaberis* Rheims, 2015

**Type species.** *Ocypete ferruginea* C. L. Koch, 1836, female described from Pico de Orizaba, Veracruz, Mexico.

**Composition:** 32 species, see complete list of species in the WSC (2025).

**Diagnosis.** Males of *Curicaberis* are distinguished from those of the type species of *Olios* (from where species are being transferred), *Olios argelasius*, by the palp with RTA double branched, with dRTA usually spike-like and vRTA with two projections (Rheims 2015: figs 18, 22, 28, 32), whereas it is single branched and simple in *O. argelasius* (Jäger et al. 2011: 128, figs 5, 6). The females are distinguished by epigyne with lateral lobes parallel (Rheims 2015, figs 19, 23, 29, 33), while touching anteriorly in *O. argelasius* (Jäger et al. 2011: 128, fig. 7). *Curicaberis* is further distinguished from all remaining Neotropical genera by the male palp with a massive conductor arising medially from tegulum (Rheims 2015: figs 17, 21, 27, 31) and by the female vulva with internal duct system composed of short and strongly sclerotized copulatory ducts, large, hyaline, sac-like spermathecae and long fertilization ducts (Rheims 2015: figs 20, 24, 26, 30) (Rheims 2015).

**Description.** See Rheims (2015: 402, 403) for a complete description and identification key for male and females.

**Distribution.** Mexico, USA, Guatemala, Costa Rica, and Nicaragua; see distribution maps by Rheims (2015).

***Curicaberis pedregal*** Rheims, 2015

*Curicaberis pedregal* Rheims, 2015: 435, f. 81–82 (Description of male, female unknown). (Figs. 1–14)

**Type material.** MEXICO: Mexico City: ♂ holotype from Pedregal de San Angel [19.3212°N, 99.207502°W; 2,350 m], Álvaro Obregón, 15.VI.1941, J. Alvarez leg. (AMNH) (not examined).

**Specimens examined.** MEXICO: Tlaxcala: 1♂, 1♀ (CARCIB-Ar-5358) from the facilities of the Regional Laboratory of Biodiversity and Tissue Culture, Institute of Biology, UNAM-Tlaxcala [19.3650°N, 98.1320°W; 2,434 m], San Manuel Morcom ex-factory, San Miguel Contla, Santa Cruz Municipality; 13.VI.2017; A. Valdez leg., daytime collection. 1♂, 1♀ (CARCIB-Ar-5359) from same locality; 24.IX.2017; A. Juárez leg., daytime collection.

**Diagnosis.** From Rheims (2015): “Males of *C. pedregal* are distinguished from those of the other species of the genus by the palp with vRTA2 bifid with one branch short and stout and the other almost as long as dRTA, with an aculeus-like projection at tip and by the tegulum proximally swollen (Figs. 5–8, 9)”. Females of *C. pedregal*, resemble those of *C. ferrugineus* (Rheims 2015: figs. 53–54) and *C. potosi* (Rheims 2015: figs. 83–84) in having a median septum rebordered along the entire width and laterally, forming an anterior atrium (Figs 11–12). They are distinguished from *C. ferrugineus* by the anterior atrium short, more than 2 times wider than long (roughly 1.5 times longer than wide in *C. ferrugineus*) and from both species by the posterior margin of the MS

strongly indented medially and with pair of lateral depressions, giving it an M-shaped appearance (posterior margin roughly straight and lacking lateral depressions in both other species).

**Description. Male (CARCIB-Ar-5358).** *Measurements.* Total length 9.50. Carapace 4.80 long, 4.46 wide. Clypeus length 0.25. Diameter of AME 0.30, ALE 0.27, PME 0.20, PLE 0.25. Sternum 2.40 long, 2.30 wide. Leg lengths: I- femur 5.70/ patella 2.50/ tibia 5.70/ metatarsus 5.60/ tarsus 1.90/ total 21.40; II- 6.40/ 2.60/ 6.40/ 6.10/ 1.90/ 23.40; III- 5.20/ 2.00/ 4.50/ 4.40/ 1.60/ 17.7; IV- 5.90/ 2.00/ 5.20/ 5.50/ 1.70/ 20.30. Leg formula: 2-1-4-3.



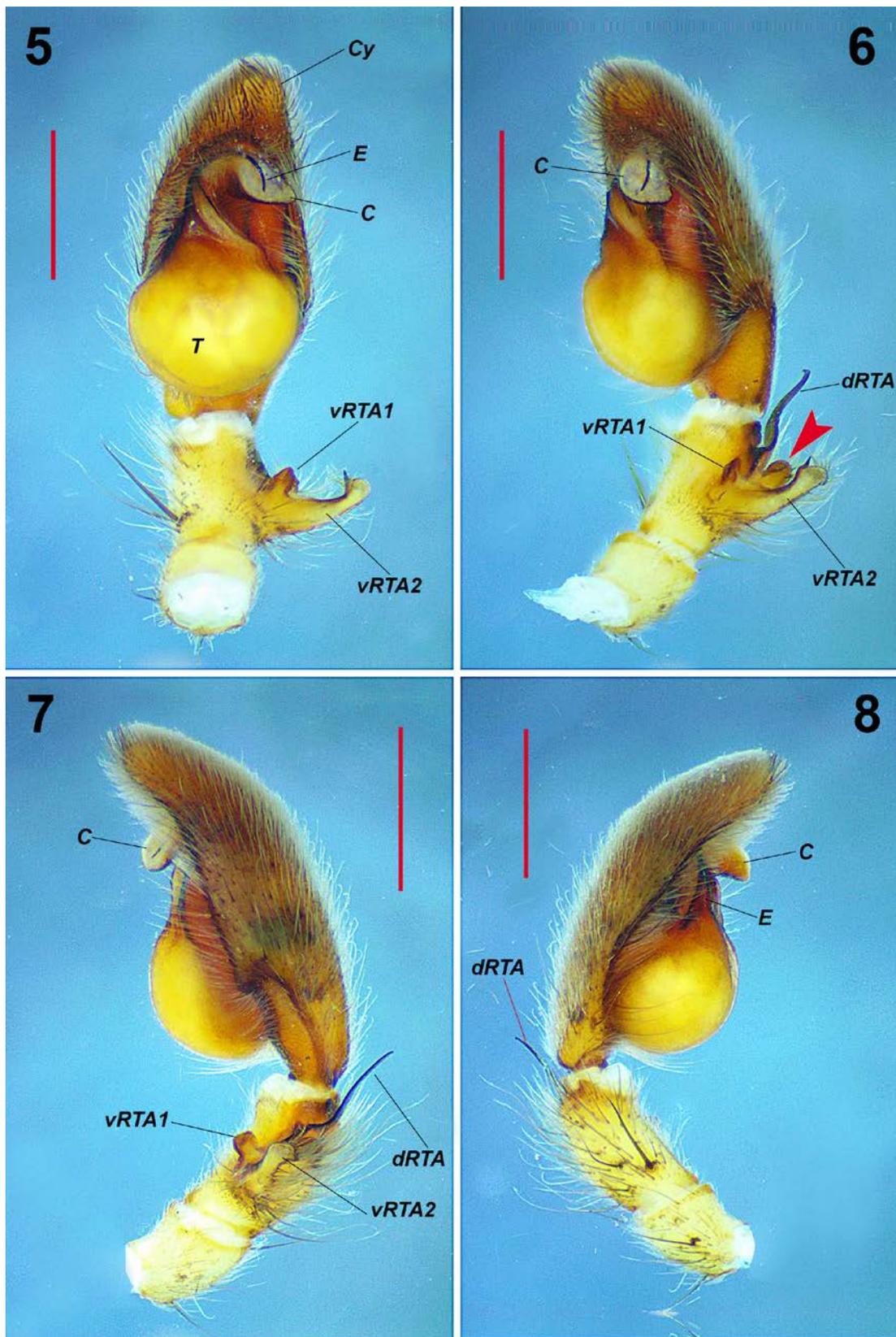
**Figures 1–4.** *Curicaberis pedregal*. 1–2) Male habitus, dorsal and ventral views. 3–4) Female habitus, dorsal and ventral views. Scale bars: 5 mm.

**Prosoma.** Pale orange, with thin black lines toward coxae I and II. Ocular region slightly darker, with small black speckling (Fig. 1). Sternum shield-shaped, pale orange, with small speckling, slightly longer than wide (Fig. 2). Labium square, wider than long, pale orange, becoming paler distally, not fused to the sternum (Fig. 2). Endites pale orange distally, darker basally.

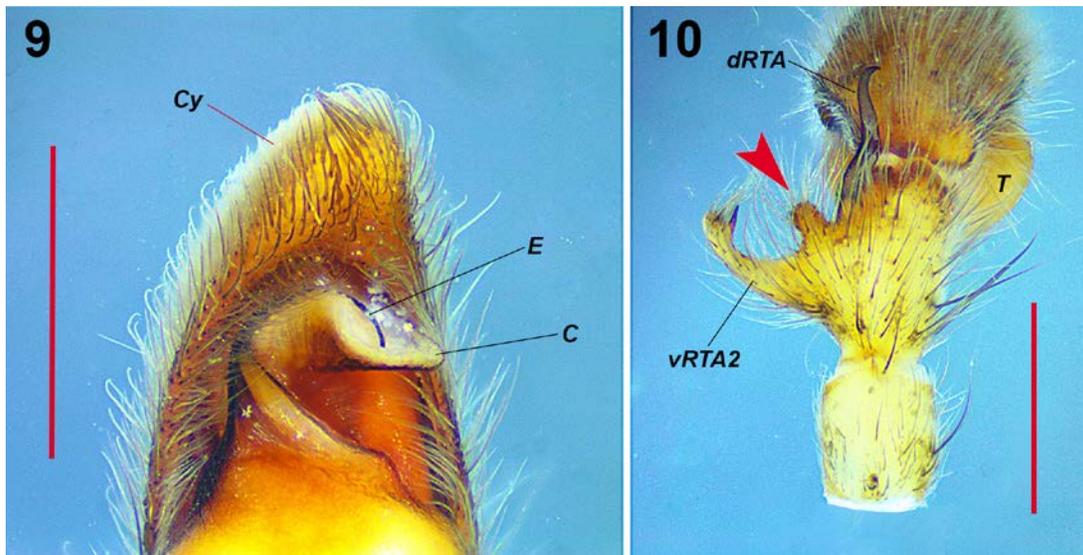
**Chelicerae.** Orange, with small black speckling. Fangs reddish, with three subequal teeth on retro margin, two subequal teeth on pro margin, which is covered by numerous long setae.

**Palps.** Femora, patellae, and tibia pale orange, setose, mottled with brown spots (Fig. 5–8). Cymbium brown, setose, conical distally (Fig. 5, 6). Tegulum conspicuous, rounded, protruding from cymbium in ventral view (Fig. 5). Conductor wide, located behind the embolus (Fig. 5–7). dRTA sigmoid in retrolateral-ventral and dorsal views (Fig. 6, 10). Embolus curved, hook-shaped (Fig. 5, 9). Dorsal finger-shaped apophysis between vRTA2 and dRTA (arrows Fig. 6, 10).

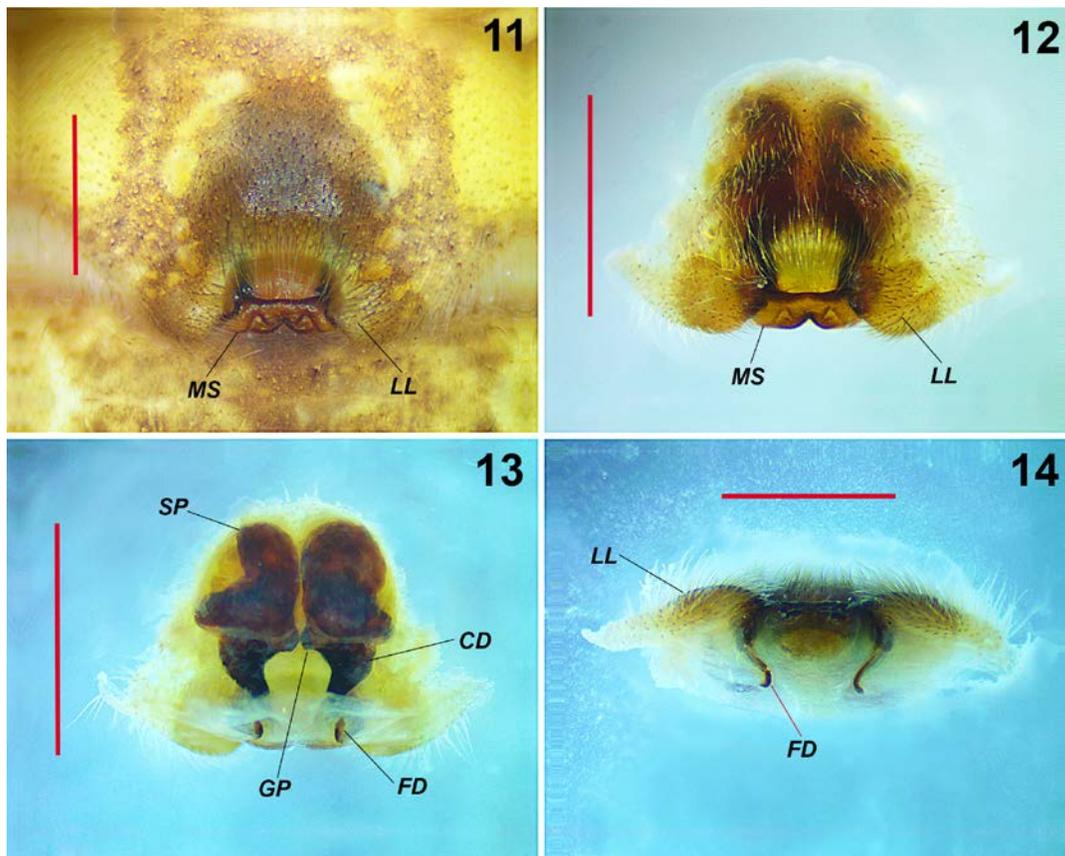
**Legs.** Orange coloration, becoming darker from tibiae to tarsi (Fig. 1). Legs mottled with long, spread spines on all segments (Fig. 1, 2). Metatarsi and tarsi with dense scopulae (Fig. 1). Claws densely tufted (Fig. 1, 2).



**Figures 5–8.** *Curicaberis pedregal*. Male, left palp. 5–6) Ventral and retrolateral-ventral views, respectively (red arrow indicates the dorsal finger-shaped apophysis between vRTA2 and dRTA). 7–8) Retrolateral and prolateral views, respectively. Scale bars: 1 mm.



**Figures 9–10.** *Curicaberis pedregal*. Male, left palp. 9) Distal half of the palp showing the embolus and conductor in detail, ventral view. 10, Dorsal view showing the vRTA2 and dRTA (red arrow indicates the dorsal finger-shaped apophysis between vRTA2 and dRTA). Scale bars: 1 mm.



**Figures 11–14.** *Curicaberis pedregal*. Female, epigyne. 11–12) Ventral view, dissected and not dissected, respectively. 13) Cleared epigyne, dorsal view. 14) Posterior view, showing the fertilization ducts (FD). Scale bars: 1 mm.

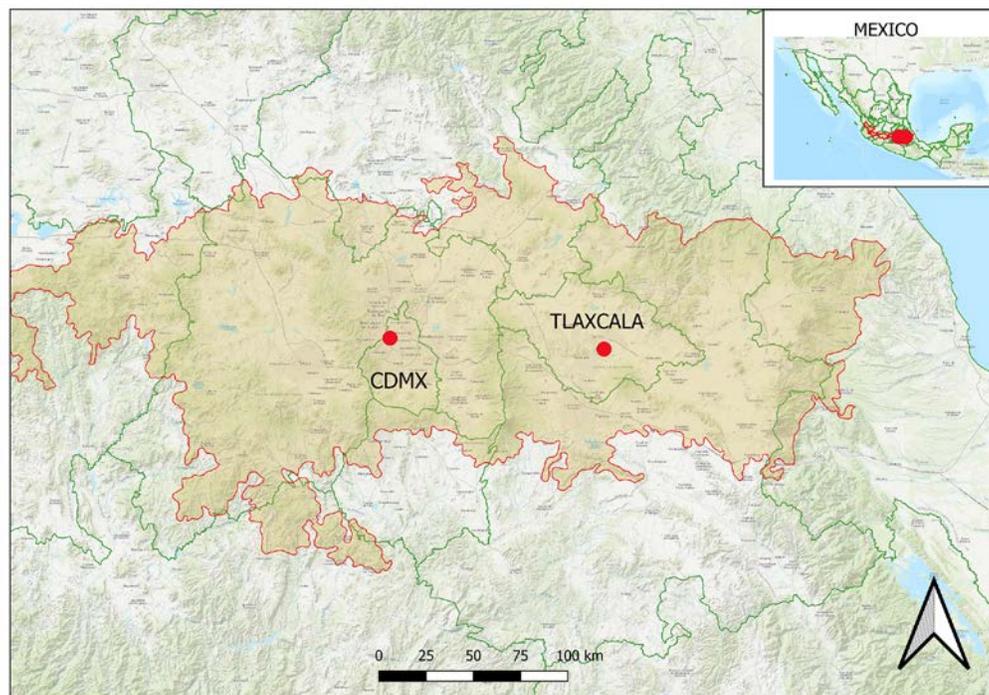
**Opisthosoma.** Oval, longer than wide and high, cream colored, mottled with brown spots, distal half with slightly marked brown chevron lines (Fig. 1). Ventral plate of gonopore mottled with brown spots (Fig. 2). Spinnerets orange, ALS conical and widest, PLS cylindrical and longest.

**Female (CARCIB-Ar-5358).** *Measurements.* Total length 10.80. Carapace 5.40 long, 4.80 wide. Clypeus length 0.20. Diameter of AME 0.28, ALE 0.26, PME 0.23, PLE 0.26. Sternum 2.40 long, 2.40 wide. Leg lengths: I- femur 5.40/ patella 2.60/ tibia 5.10/ metatarsus 4.70/ tarsus 1.70/ total 19.50; II- 6.00/ 2.60/ 5.30/ 5.00/ 1.70/ 20.60; III- 4.90/ 2.10/ 4.10/ 3.60/ 1.50/ 16.20; IV- 5.30/ 2.20/ 4.50/ 4.30/ 1.60/ 17.90. Leg formula: 2-1-4-3. *Epigyne:* Square-shaped in ventral view, surrounded by an oval dark brown region (Fig. 11). Median septum M-shaped (Fig. 11, 12). Spermathecae oval, longer than wide, close to each other, with a notch to each side, copulatory ducts in dorsal view curved in inner face (Fig. 13). Fertilization ducts sigmoid in posterior view (Fig. 14).

**Variation.** Females with general coloration of body darker orange than males (Fig. 1, 3). Females with legs shorter and stouter than males (Fig. 1–4). Females with opisthosoma darker in posterior part than males (Fig. 1, 3). Females with chelicerae stouter than males. Sternum, labium, and endites slightly darker orange in females than males (Fig. 2, 4). No variation was noted in the palps or epigynum. Males (N = 2): carapace length: 4.80, 4.90 ( $x = 4.85$ ), tibia I: 5.70, 5.90 ( $x = 5.8$ ). Females (N=2): carapace length: 5.40, 5.70 ( $x = 5.55$ ), tibia I: 5.10, 5.20 ( $x = 5.15$ ).

**Natural history.** The specimens were collected during the day within the facilities of the Regional Laboratory of Biodiversity and Tissue Culture (RLBTC), Institute of Biology, UNAM-Tlaxcala. All the specimens were collected active on the walls of the RLBTC. The natural vegetation in this urban area is oak-pine temperate forests, at an elevation of 2,434 m a.s.l. This region belongs to the Trans-Mexican Volcanic Belt (TMVB) biogeographic province, characterized by temperate-cold climate and pine-oak forests at high altitude.

**Distribution.** Mexico City and newly recorded from Tlaxcala (Fig. 15).



**Figure 15.** Known distribution records of *Curicaberis pedregal*. The light orange region outlined in red represents the Trans-Mexican Volcanic Belt (TMVB) biogeographic province. CDMX, Mexico City (type locality).

## DISCUSSION

The description of the female *C. pedregal* and the new record from Tlaxcala provide updated information about the distribution of this species; however, more specimens are necessary for the complete descriptions of several species within this genus. From the 32 described species, eight are known only by male specimens and seven by only female specimens. Seventeen species of the genus *Curicaberis* are described using both male and female adult specimens, but most of the type material used for these descriptions were based on one or a few specimens from each sex. Due to this, the intraspecific morphological variation per species and per sex is difficult to establish. Nowadays, new species are often described based on suboptimal or inadequate material, specimens, or data. Specifically, thousands of species have been described from a single specimen, a single sex, a single locality, immature specimens, poorly preserved specimens, using photographs rather than specimens, from specimens lacking precise locality data, or even from specimens without any biologically meaningful type locality (Huber *et al.*, 2024). The inclusion of several specimens in a species description allows the intra- and inter-specific variation to be addressed. Furthermore, combining morphological data with genetic analyses in an integrative taxonomic framework allows for the identification and delimitation of lineages or species (Ortiz & Francke, 2016; Hazzi & Hormiga, 2021; Nolasco & Valdez-Mondragón, 2022; Smith & Carstens, 2022; Valdez-Mondragón & Cabrera-Espinosa, 2023; Navarro-Rodríguez & Valdez-Mondragón, 2024).

In the case of the genus *Curicaberis*, more collecting efforts are needed for most of the species. Several species have colonized urban regions in both tropical and temperate or high-altitude regions from Mexico (*pers. obs.*). Some huntsman spiders are considered synanthropic species, commonly found inside houses and buildings in Mexican cities. However, the abundance of these spiders into urban regions is unknown, in comparison with other common urban spider families where some species are even cosmopolite and with high known densities into houses and buildings in big cities worldwide, including species of medical importance (Vetter & Barger 2002; Sandidge & Hopwood 2005; Valdez-Mondragón 2010b).

While the contribution by Rheims (2015) considerably improved the knowledge of this genus in North America, wide regions from Mexico remain to be sampled, mainly in the western, northeast, and southeast regions of the country.

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