

## NEW RECORD OF *CHACO TUCUMANA* GOLOBOFF, 1995 (ARANEAE, PYCNOTHELIDAE) IN ARGENTINA

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### ABSTRACT

We report a new record of geographic distribution for *Chaco tucumana* at Salta province, northern Argentina. This is the northernmost location known for the species. We also present data on the species' natural history and distribution maps including comments on the biogeographical provinces and ecoregions involved.

**Keywords:** Distribution, Mygalomorphae, Salta, Dry Chaco, burrow architecture.

### RESUMEN

#### Nuevo registro de *Chaco tucumana* Goloboff, 1995 (Araneae, Pycnothelidae) en Argentina

Reportamos un nuevo registro en la distribución geográfica de *Chaco tucumana* en la provincia de Salta, norte de Argentina. Es la localidad más al norte conocida para la especie. Además, presentamos datos sobre la historia natural de la especie y mapas de distribución incluyendo comentarios de las provincias biogeográficas y ecorregiones involucradas.

**Palabras clave:** Distribución, Mygalomorphae, Salta, Chaco Seco, arquitectura de cueva.

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### Introduction

The family Pycnothelidae Chamberlin, 1917 was recently revalidated by Opatova *et al.* (2020) to accommodate taxa formerly belonging to a diverse mix of nemesiid subfamilies (Raven, 1985). The family has a distribution that includes Africa, Australia, South America and New Zealand (World Spider Catalog, 2022). Until to date, the family contains 15 genera and 137 described species (Montes de Oca *et al.*, 2022;

World Spider Catalog, 2022). Spiders belonging to this family can be distinguished by the combination of the following characters: presence of small to large, yellow pallid, soft, developed intercheliceral tumescence covered with few to many setae; cymbium lacking dorsal spines; patella III with 1–1–1 prolateral spines; bipectinate tarsal claws; male tarsi flexible; short spinnerets; tarsal organ located on apical central region; presence of tarsal scopula and absence of claw tufts (Goloboff, 1995; Montes de Oca *et al.*, 2022)

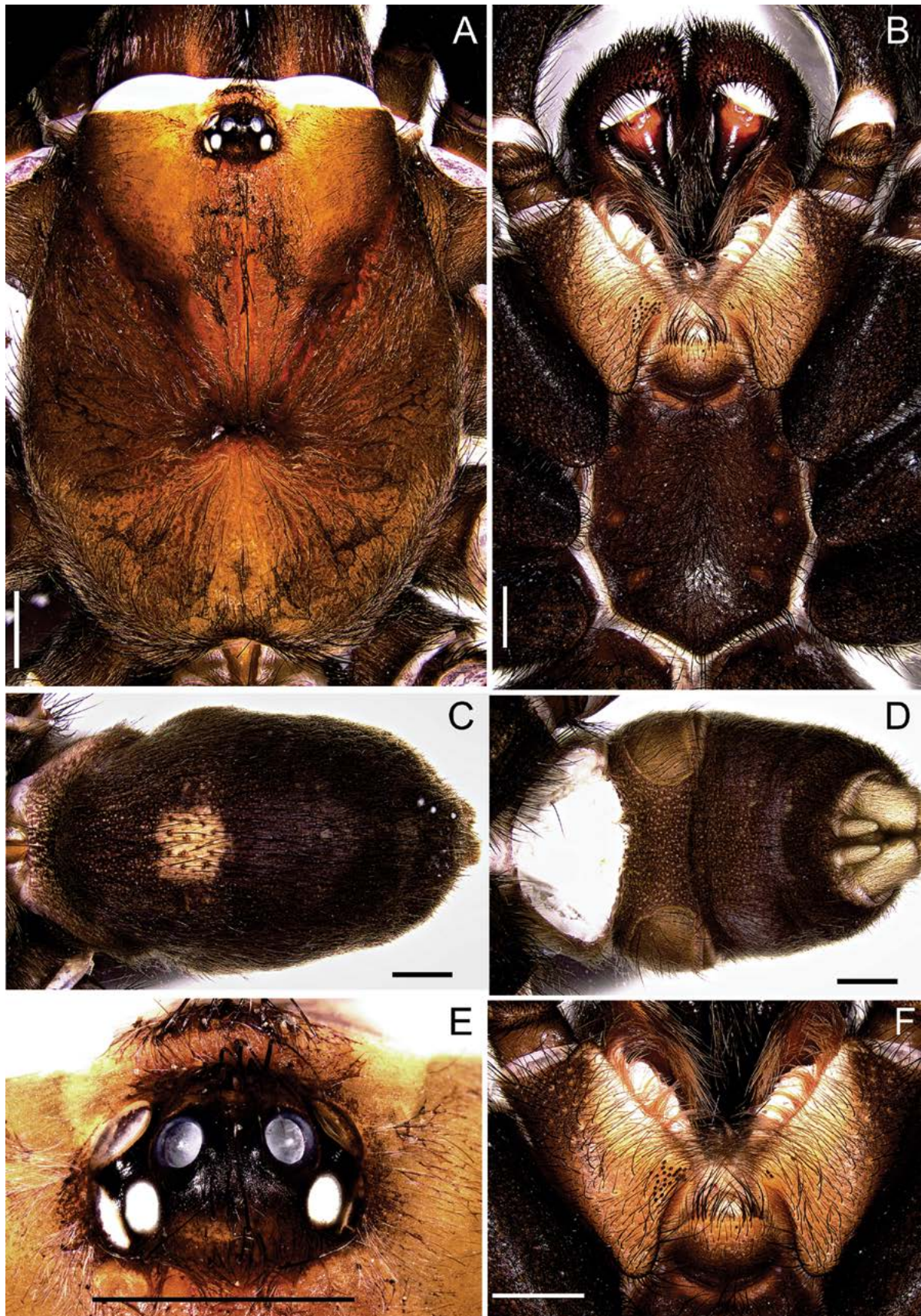


Fig. 1.– *Chaco tucumana*, female. A, carapace, dorsal view; B, sternum, labium and maxillae; C, abdomen, dorsal view; D, abdomen, ventral view; E, eyes, dorsal view; F, labium and maxillae, ventral view. Scale bars = 1 mm.

Fig. 1.– *Chaco tucumana*, hembra. A, cefalotórax, vista dorsal; B, esternón, labio y maxilas; C, abdomen, vista dorsal; D, abdomen, vista ventral; E, ojos, vista dorsal; F, labio y maxilas, vista ventral. Escala = 1 mm.

The genus *Chaco* Tullgren, 1905 was established based on *C. obscura* Tullgren, 1905 from Salta province, northern Argentina. The genus currently includes 12 species, six from Argentina, two from Brazil, two from Chile and two from Uruguay (Goloboff, 1995; Montes de Oca & Pérez-Miles, 2013; Ferretti, 2014; Indicatti *et al.*, 2015). *Chaco* comprises species characterized by four short spinnerets, males with low distal spur on prolateral tibia I bearing three or more spines and absence of inferior claw on all tarsi; females are characterized by having a patterned carapace and legs, no pumpkiniform spigots; absence of inferior tarsal claw and absence of scopula on anterior tibiae (Goloboff, 1995). All the species of the genus for which data exist live in burrows, closed with a trapdoor.

In a recent survey in Salta and Tucumán provinces, northern Argentina, we recorded individuals of *C. tucumana* Goloboff, 1995. Thus, in the present work, we present a new record of *C. tucumana* for Argentina along with an identification, illustration of morphological characters and a distribution map of the geographic range of the species.

### Material and methods

Spiders were captured during the day by carefully searching the substrate for potential trap doors. Photographs of the female (*habitus*) and habitat were taken with a Sony DSC-Hx200v. Specimens are deposited in the arachnological collection of



Fig. 2.– *Chaco tucumana*, female. A, metatarsus and tarsus of leg I, retrolateral view; B, metatarsus and tarsus of leg IV, retrolateral view; C, spermatheca, dorsal view. Scale bars = 1 mm.

Fig. 2.– *Chaco tucumana*, hembra. A, metatarso y tarso de la pata I, vista retrolateral; B, metatarso y tarso de la pata IV, vista retrolateral; C, espermateca, vista dorsal. Escala = 1 mm.

CERZOS-Universidad Nacional del Sur (Buenos Aires, Argentina). Spermathecae were dissected and photographed in dorsal view. Photographs were taken with a MShot digital camera mounted on a Leica S APO stereomicroscope. Images were stacked by the image stacking software Helicon Focus 7. The distribution maps were made using the free software QGIS ([www.qgis.org](http://www.qgis.org)). The shape file of the Biogeographic provinces for Argentina was obtained from Arana *et al.* (2017).

## Results and discussion

### *Chaco tucumana* Goloboff, 1995

Figs. 1–3

#### MATERIAL EXAMINED

TUCUMÁN, Tafí Viejo department, El Cadillal, Aguas Chiquitas, on the banks of the Río Loro (26°36'57.1" S, 65°11'3" W), 22 April 2022, Nicoletta, Panchuk, Schwerdt, Ferretti cols., 1 female (UNS-M0789). SALTA, Guachipas department, Guachipas (25°31'35.2" S, 65°30'28.5" W), 23 April

2022, Nicoletta, Panchuk, Schwerdt, Ferretti cols., 1 female (UNS-M0790).

#### IDENTIFICATION

Specimens were identified as *Chaco tucumana* based on the dark uniform color (abdomen with light brown spots) (Figs. 1A–D), fovea procurved (Fig. 1A), labium with two cuspules (Fig. 1F), the flexible anterior female tarsi (Fig. 2A), the dense scopulae on posterior tarsi (Fig. 2B) and spermathecae without basal protuberance and short ducts (Fig. 2C).

#### NATURAL HISTORY

The spiders constructed burrows with a door (Figs. 3B–C, F–G). The burrows found were not branched, in contrast to what was reported by Goloboff (1995), but our observations are scarce. Goloboff (1995) reports that the trapdoor has a hinge articulating loosely and sometimes consisting only of a few silk threads and it does not fit inside the burrow mouth instead being generally larger than the burrow opening and lying on the edges of the burrow mouth. In Tucumán province, the door of the specimen found was similar to that reported by Goloboff (1995), with few threads

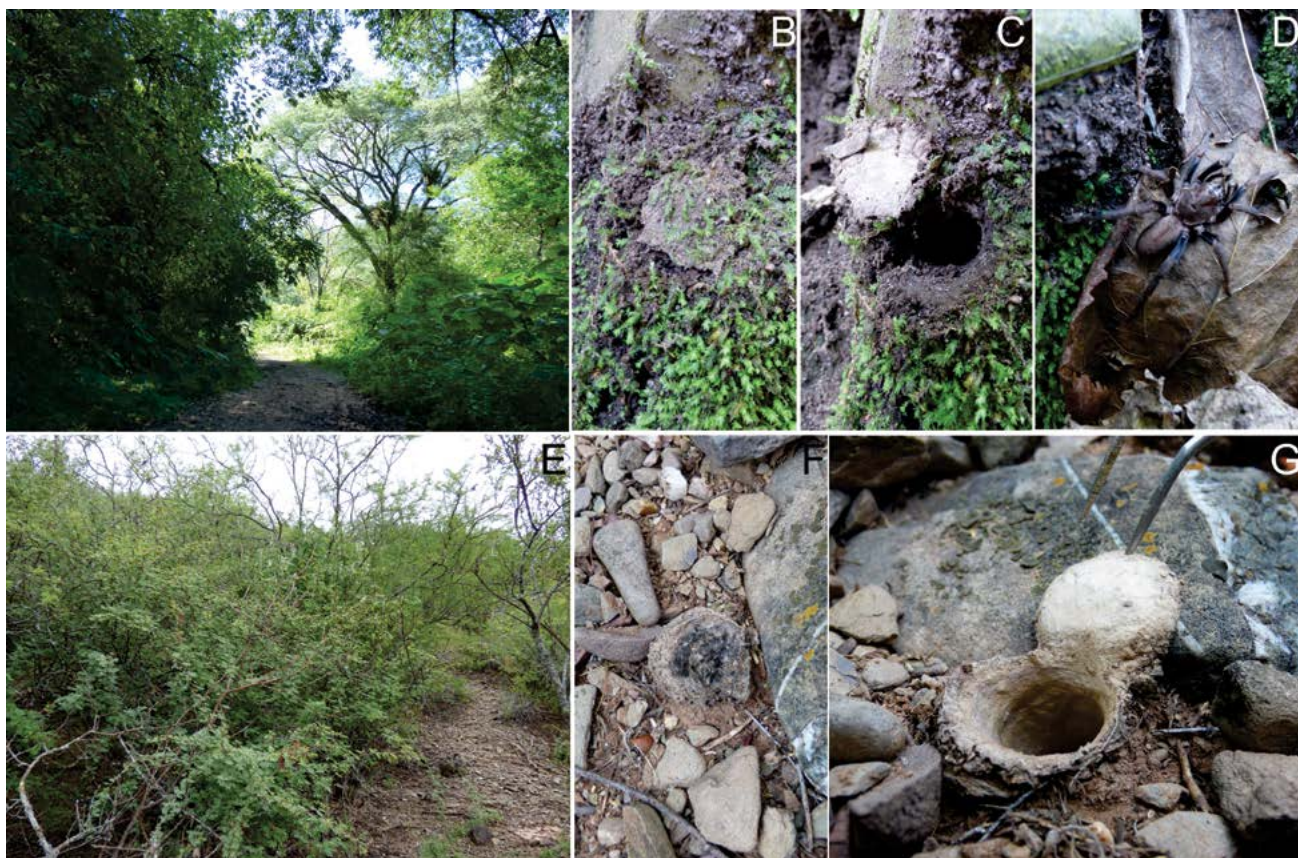


Fig. 3.– Habitats of *C. tucumana*. A, habitat in Tucumán province, Yungas ecoregion; B, close trapdoor; C, open burrow; D, adult female, *habitus*; E, habitat in Salta province, Dry Chaco ecoregion; F, close trapdoor; G, open burrow.

Fig. 3.– Hábitat de *C. tucumana*. A, hábitat en provincia de Tucumán, ecorregión de las Yungas; B, tapa trampa cerrada; C, cueva abierta; D, hembra adulta, *habitus*; E, hábitat en provincia de Salta, ecorregión del Chaco Seco; F, tapa trampa cerrada; G, cueva abierta.

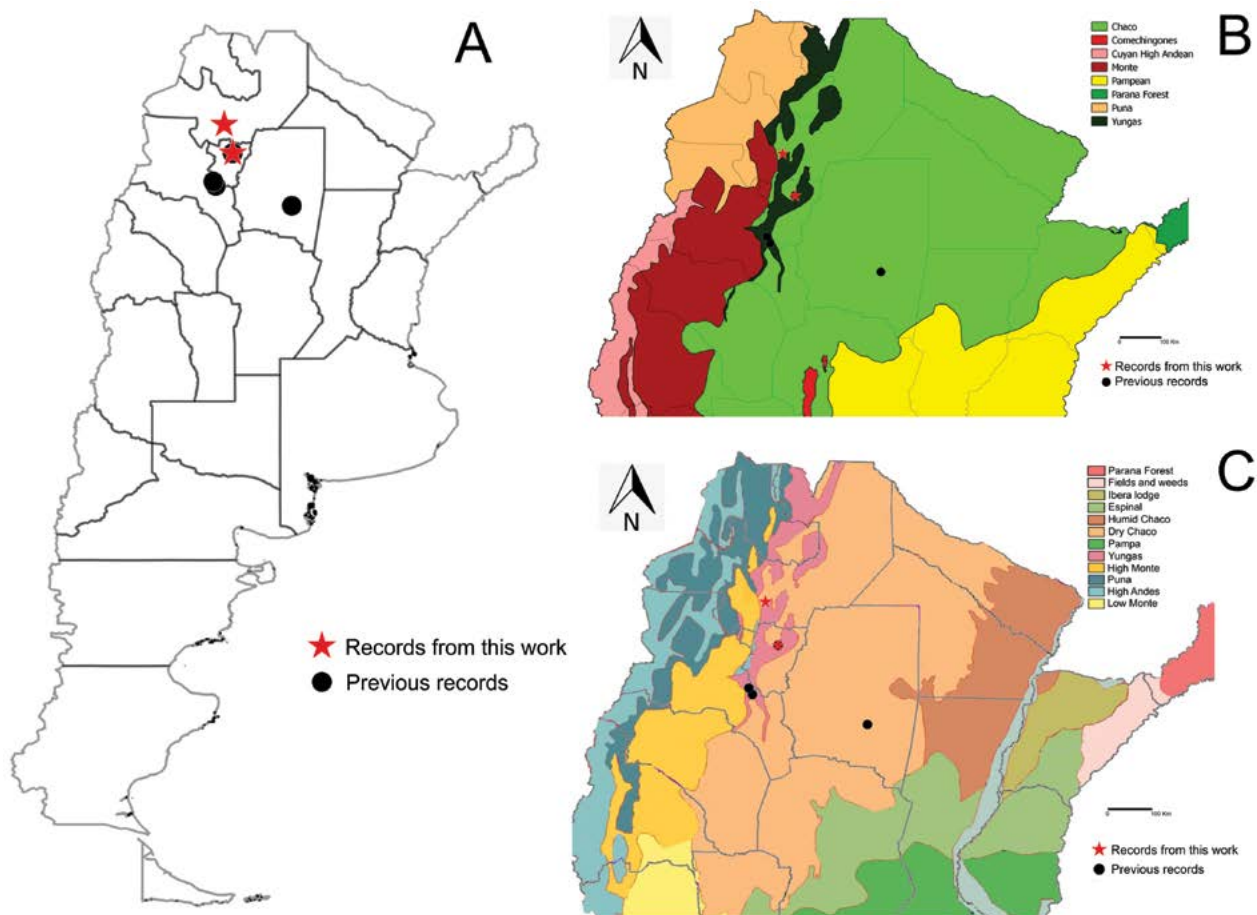


Fig. 4.– A, distribution map of *C. tucumana*; B, map considering biogeographic provinces; C, map considering ecoregions.

Fig. 4.– A, mapa de distribución de *C. tucumana*; B, mapa considerando las provincias biogeográficas; C, mapa considerando las ecorregiones.

holding the door (Fig. 3C) and not fitting tightly in the burrow mouth (Figs. 3B-C). The specimen (Fig. 3D) was collected at almost vertical banks (Fig. 3A) at the foot of a large tree. In contrast, the specimen from Salta province was collected in a burrow constructed close to a rock (Fig. 3F-G) up on a hill slope, in a drier soil (Fig. 3E) and with the hinge articulating more firmly with dense silk (Fig. 3G). In addition, the upper portion of the burrow was noticeably prolonged (Fig. 3G), an aspect similar to that reported for *C. tigre* Goloboff, 1995 (Goloboff, 1995: figs 151–152) in contrast to the general burrow shape of *C. tucumana*.

#### DISTRIBUTION

Previously known from Catamarca, Santiago del Estero and Tucumán provinces (Fig. 4).

New distribution record: SALTA, Guachipas department, Guachipas locality (25°31'35.2" S, 65°30'28.5" W) (Fig. 4).

The new record at Salta province (unusual type of burrow) belongs to the Chacoan Biogeographic province (Arana *et al.*, 2021) (Fig. 4B) and the Dry Chaco ecoregion (Fig. 4C), while the typical burrows of *C. tucumana* were observed in the Yungas

Biogeographic province and ecoregion (Figs. 4B–C). Maybe those differences in burrow types are associated with the environmental conditions of the different habitats, being the Chacoan records represented by drier sites than the Yungas. Although Goloboff (1995) did not state about the burrows found for some juveniles presumably of *C. tucumana* inhabiting Colonia Dora, Santiago del Estero, it is expected that those would present the same burrow architecture of the female from Salta, because both areas fit the environmental conditions of the Dry Chaco.

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#### References

Arana, M.D., Martínez, G.A., Oggero, A.J., Natale, E.S. & Morrone, J.J., 2017. Map and shapefile of the

- biogeographic provinces of Argentina. *Zootaxa*, 4341(3): 420–422. <https://doi.org/10.11646/zootaxa.4341.3.6>
- Arana, M.D., Natale, E., Ferretti, N., Romano, G., Oggero, A., Martínez, G., Posadas, P. & Morrone, J.J., 2021. *Esquema biogeográfico de la República Argentina*. Opera lilloana, 56, Fundación Miguel Lillo, Tucumán, Argentina.
- Ferretti, N., 2014. *Chaco ansilta* new species from Mendoza province, Western Argentina (Araneae: Nemesiidae). *Anais da Academia Brasileira de Ciências*, 86(4): 1887–1898. <https://doi.org/10.1095/0001-3765201420140226>
- Goloboff, P.A., 1995. A revision of the South American spiders of the family Nemesiidae (Araneae, Mygalomorphae). Part I: species from Peru, Chile, Argentina, and Uruguay. *Bulletin of the American Museum of Natural History*, 224: 1–189.
- Indicatti, R.P., Folly-Ramos, E., Vargas, A.B., Lucas, S.M. & Brescovit, A.D., 2015. Two new tiny Nemesiidae species from Reserva Biológica do Tinguá, Rio de Janeiro, Brazil (Araneae: Mygalomorphae). *Zoologia*, (Curitiba) 32(2): 123–138. [errata: *Zoologia* (Curitiba) 32(6): 541] <https://doi.org/10.1590/S1984-46702015000200003>
- Montes de Oca, L., Indicatti, R.P., Opatova, V., Almeida, M., Pérez-Miles, F. & Bond, J.E., 2022. Phylogenomic analysis, reclassification, and evolution of South American nemesioid burrowing mygalomorph spiders. *Molecular Phylogenetics and Evolution*, 168(107377): 1–19. <https://doi.org/10.1016/j.ympev.2021.107377>
- Montes de Oca, L. & Pérez-Miles, F., 2013. Two new species of *Chaco* Tullgren from the Atlantic coast of Uruguay (Araneae, Mygalomorphae, Nemesiidae). *ZooKeys*, 337: 73–87. <https://doi.org/10.3897/zookeys.337.5779>
- Opatova, V., Hamilton, C.A., Hedin, M., Montes de Oca, L., Král, J. & Bond, J.E., 2020. Phylogenetic systematics and evolution of the spider infraorder Mygalomorphae using genomic scale data. *Systematic Biology*, 69(4): 671–707. <https://doi.org/10.1093/sysbio/syz064>
- Raven, R.J., 1985. The spider infraorder Mygalomorphae (Araneae): cladistics and systematics. *Bulletin of the American Museum of Natural History*, 182: 1–180.
- World Spider Catalog, 2022. *World Spider Catalog. Version 23.0*. Natural History Museum Bern. Available from <http://wsc.nmbe.ch> [accessed 16 Jun. 2022].