



## “The Cordyceps spider”: *Taczanowskia waska* sp. nov. (Araneae: Araneidae), a new spider species and a novel case of mimicry of an araneopathogenic fungus (Cordycipitaceae: *Gibellula*)

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### Abstract

Herein, we describe a new species of the rare spider genus *Taczanowskia* Keyserling, 1879 (Araneae: Araneidae), *Taczanowskia waska* sp. nov. (♀) from the Ecuadorian Amazon. Additionally, we discuss its unique fungal mimicry, comment on *Taczanowskia* ecology, and provide an updated taxonomic key for females of the genus. The importance of this discovery extends well beyond the description of a novel taxon, representing the first reported case of Arachnid mimicry of an araneopathogenic fungus. Finally, we discuss the application of citizen science to collecting ecological and biogeographical data on arachnids and its potential use for describing new taxa.

**Key words:** Fungal-mimicry, arachnids, mycelium, Amazon, Llanganates-Sangay Connectivity Corridor

### Introduction

The Llanganates-Sangay Connectivity Corridor (CELS) lies within one of the world’s most significant biodiversity hotspots, the Tropical Andes and its convergence with the Amazon Basin (INABIO *et al.* 2023; Reyes-Puig *et al.* 2024a; Ríos-Alvear *et al.* 2024). The corridor was declared a “Gift to the Earth” by the World Wildlife Fund because of its critical watershed system, floral and faunal diversity, variety of habitats and ecosystems, high levels of diversity and endemism, and its role in maintaining climate balance at a planetary level (Fundación Natura 2002; Ríos-Alvear *et al.* 2015; Ríos-Alvear *et al.* 2024). In recent years, dozens of new species have been described in CELS, including a snake (Ortega-Andrade *et al.* 2022), frogs (Ortega *et al.* 2022; Reyes-Puig *et al.* 2024b), small beetles (Tapuy-Avilés *et al.* 2025), and spiders (Huber *et al.* 2023; Sherwood *et al.* 2023).

The New World genus *Taczanowskia* Keyserling, 1879, is one of the least understood genera of the family Araneidae, with only a few specimens collected since its description (Díaz-Guevara *et al.* 2023). Members of this family are better known as orb-weavers because of the conspicuous geometric orbicular web that they build to catch prey (Jordán *et al.* 2021; Scharff & Coddington 2020). However, *Taczanowskia* does not build webs and specializes in catching prey actively (Eberhard 1981). With only one paper from the 1980s (Eberhard 1981) detailing the natural history of the genus, its ecology and behavior remain poorly known, likely because *Taczanowskia* specimens are rare, or at least difficult to find in the field. However, citizen science platforms could help us gather data on this rarely observed genus through user-driven, opportunistic registries.

Citizen science platforms provide a method of generating large-scale biodiversity and natural history observations across a wide geographical range, and they are becoming a valuable source of biodiversity data worldwide (Chandler

*et al.* 2017; Geurts *et al.* 2022). Platforms like iNaturalist can contribute to our understanding of the distribution and the monitoring and management of rare taxa (Aristeidou *et al.* 2021; Mesaglio *et al.* 2021; Geurts *et al.* 2022; Zhang *et al.* 2022). iNaturalist has also proven useful as a way for experts to encounter novel species through the online platform, and in some cases form collaborations with observers to describe new species. Such was the case with *Vanilla sekui*, recently described from the Waska Amazonía study site (Damián-Parizaca *et al.* 2025).

Insects and arachnids display an incredible diversity of disguises. They are known to masquerade and mimic various plant structures, lichens, laves, other invertebrates, egg sacs, and even bird droppings (Rettenmeyer 1970; Jackson & Whitehouse 1986; Kuntner *et al.* 2016; Wang *et al.* 2016; Xu *et al.* 2022; Omelko 2025). There are no reports of arachnid mimicry of araneopathogenic fungi in the literature. Although unpublished, there is evidence of this type of mimicry in spiders, which we discuss herein. Furthermore, similar cases have been reported of insects mimicking fungi (e.g. Tweed *et al.* 2024).

Through our investigation, we have uncovered several cases of fungi mimicry in spiders from non-academic sources. On iNaturalist, as well as a WordPress website, we found araneid spiders from Madagascar, Uganda, coastal Brazil, and Vietnam, with surprisingly similar abdominal structures closely resembling the appearance of *Gibellula* fungi. We hypothesize that this novel type of mimicry prevents the spider from being preyed upon, and also makes it more successful at hunting, as it can go unnoticed by mimicking a spider infected with a “cordyceps” fungus.

Herein, we discuss the importance of using citizen science to collect distributional and ecological data on less-studied taxa like spiders, with comments on an iNaturalist observation of a new species of *Taczanowskia*, mimicking a spider infected by *Gibellula* (Hypocreales: Cordycipitaceae). This unique record is concluded with the description of *Taczanowskia waska* **sp. nov.**, known from two locations, the Waska Amazonía headquarters in Mera, Pastaza, Ecuador, and Bolivia.

## Material and methods

The discovery of *Taczanowskia waska* **sp. nov.** was made through the iNaturalist platform. The observation was recorded opportunistically on a nighttime naturalist hike in the Waska Amazonía study site. Author AGB and the other observers believed the spider to be a *Gibellula* fungus, collecting it because they had never seen a living “cordyceps”. Through the iNaturalist platform the spider was soon identified as *Taczanowskia* and commenters encouraged us to pursue scientific revision of the specimen. Contact was made with DRDG, who carried out additional observations and photographs of the live specimen. One other specimen of *Taczanowskia waska* **sp. nov.** from Bolivia, collected in the year 1903, was discovered in a German collection and examined by ND as part of this species description. Additionally, we obtained occurrence data for individuals of *Taczanowskia* from Ecuador updated to iNaturalist (<https://www.inaturalist.org>). Data searching and extraction were conducted in August 2025. For each occurrence point, we compiled geographic data and all associated information were validated individually, in order to elaborate a distribution map of the genus based on citizen science records from Ecuador.

The examined material is deposited in the Arachnological Collection of the Instituto Nacional de Biodiversidad, Quito, Ecuador (MECN-AR). Morphological measurements were made using a stereomicroscope AMSCOPE SM-3 Series adapted with an AMSCOPE digital camera (MU500-HS) installed with the IC Measure v.2.0.0.161 software. The photographs were taken using a DSLR Nikon D5600 camera adapted with a SIGMA macro lens 105 mm F 2.8, and the Raynox DCR-250 macro lens. The images were stacked with the image stacking software Helicon Focus, v.7.5.6 (Helicon Soft Ltd; <https://www.heliconsoft.com>). The female genitalia were dissected using a sharp entomological needle, washed in ethanol 80%, and subsequently digested with a Pancreatin solution as described in Álvarez-Padilla & Hormiga (2007).

All measurements are in millimeters. The abbreviations used in the text and figures are: **PLE** = Posterior lateral eyes, **AME** = Anterior median eyes, **ALE** = anterior lateral eyes, **PME** = Posterior median eyes, **FD** = Fertilization duct, **S** = spermathecae, **Sc** = scape, **AC** = aciniform (gland spigot), **CY** = cylindrical (gland spigot), **MaA** = major ampullate (gland spigot), **MiA** = minor ampullate (gland spigot).

## Taxonomy

### Family Araneidae Clerck, 1757

### Genus *Taczanowskia* Keyserling, 1879

**Type species.** *Taczanowskia striata* Keyserling, 1879

**Diagnosis.** The genus *Taczanowskia* has never been included in any molecular phylogeny (e.g. Dimitrov *et al.* 2017; Kallal *et al.* 2020; Sharff *et al.* 2020), however, the first phylogenetic hypotheses of its generic position based on morphological characters were proposed by Jordán *et al.* (2021). Within Araneidae sensu lato, *Taczanowskia* is thought to be related to *Celaenia* from Australia and New Zealand (Levi 1996), thus belonging to the Mastophorines clade (Sharff *et al.* 2020). Both genera share a unique synapomorphy, the unusual leg claws, a long claw and a short claw on the first two legs (Levi, 1996: Fig. 22).

*Taczanowskia* species can be easily differentiated from other Araneidae genera by the following characteristics: Carapace almost as wide as long, cephalic area narrower than half the carapace's widest diameter (Levi, 1996: Fig. 2,8,12,16), abdomen wider than long (except in *T. yasuni*), and the first two pairs of legs with a claw much longer than the others (Levi, 1996: Fig. 22). These are characteristics shared with the Australian genus *Celaenia* Thorell, 1868, but unique among American Araneidae genera (Levi 1996; Díaz-Guevara *et al.* 2023).

**Distribution.** From Southern Mexico to southern South America.

**Composition.** *Taczanowskia gustavoi* Ibarra-Núñez, 2013, *Taczanowskia mirabilis* Simon, 1897, *Taczanowskia onowoka* Jordán, Domínguez-Trujillo & Cisneros-Heredia, 2021, *Taczanowskia sextuberculata* Keyserling, 1892, *Taczanowskia striata* Keyserling, 1879, *Taczanowskia trilobata* Simon, 1897, *Taczanowskia waska* **sp. nov.**, *Taczanowskia yasuni* Díaz-Guevara, Macías-Tulcán & Galvis, 2024.

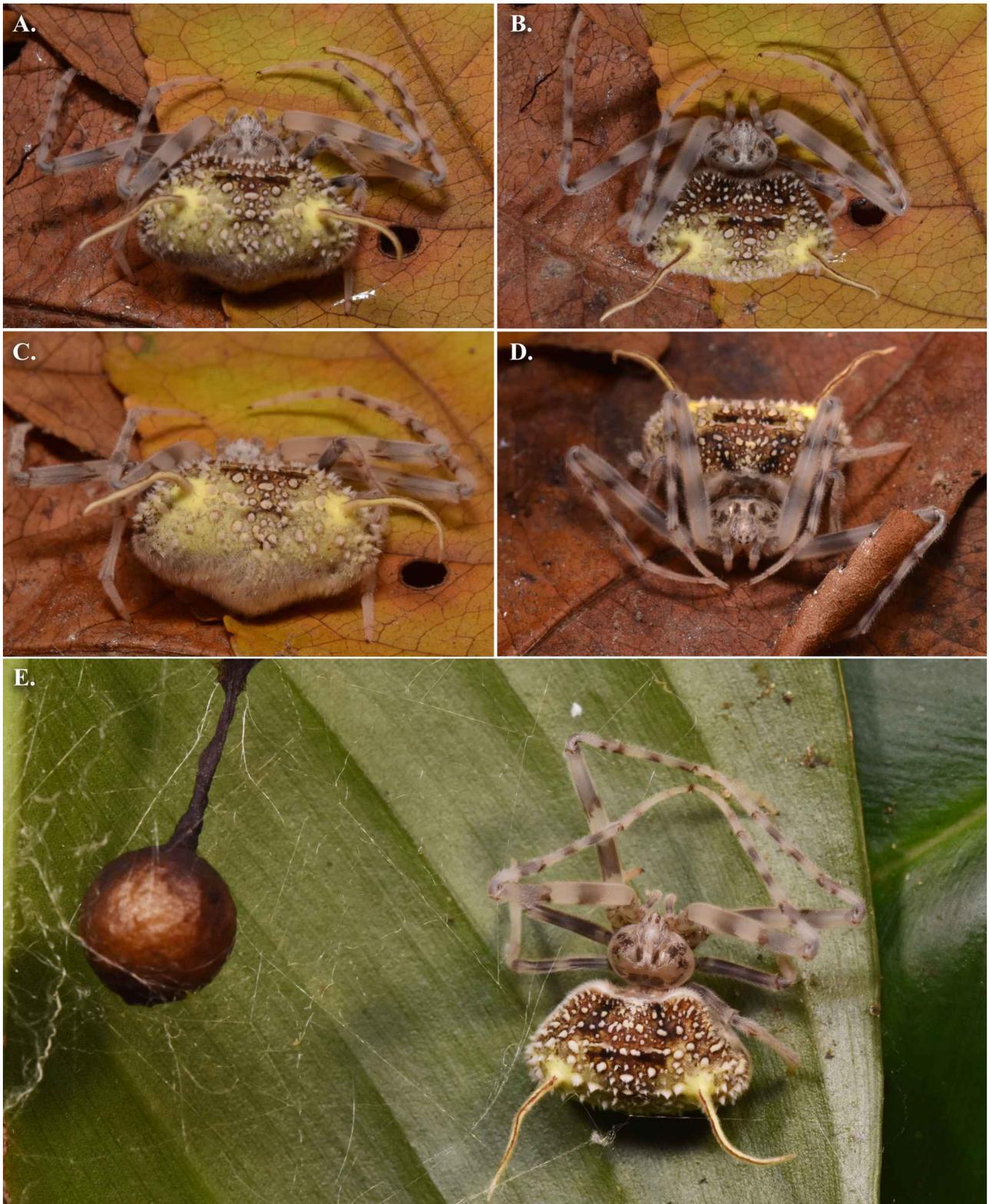
### *Taczanowskia waska* new species

**Type material.** ♀ holotype from ECUADOR, Pastaza: Mera, Waska Amazonía Reserve, 1135m, 1.45300S, 78.11355W, 08 August 2025, Col. Alexander Bentley (MECN-AR 1700).

**Other material examined.** ♀ from Bolivia, (1000–1800m) 23.07.1903, Col. Ch. Bock (ZMH-ARA-A00032812).

**Etymology.** The specific epithet honors the Waska Amazonía Foundation, where the new species was found. Waska is a non-profit dedicated to connecting people to nature and science, as well as investigating and conserving the Amazon rainforest. Additionally, the word “waska” in Kichwa means root or vine, like the host plant where *T. waska* **sp. nov.** was found. In naming this species, the authors hope that this fascinating creature may be an inspiration to Ecuadorians and a reminder that there remains much to be discovered in our own back yards.

**Diagnosis.** The female of *T. waska* **sp. nov.** differs from other species of the genus by a unique pair of long and unsclerotized tubercles on the dorsum of the abdomen (Figs 1A–D, 2A, 3A) (vs. abdomen with three lobes in *T. trilobata* Simon, 1897, three pairs of dorsal tubercles in *T. sextuberculata* Keyserling, 1892, the absence of tubercles in *T. yasuni* Díaz-Guevara, Macías-Tulcán & Galvis, 2024, just a pair of wide and short tubercles in *T. striata* Keyserling, 1879, a pair of small dorsal tubercles on the sides of the abdomen in *T. onowoka* Jordán, Domínguez-Trujillo & Cisneros-Heredia, 2021, and numerous small dorsal structures in the dorsum of the abdomen in *T. gustavoi* Ibarra-Núñez, 2013). *T. waska* **sp. nov.** resembles *T. mirabilis* Simon, 1897 by an abdomen clearly wider than long with tubercles on it, however, it can be differentiated by the following characteristics: the pair of dorsal tubercles clearly longer (almost as long as the opisthosoma length in *T. waska* **sp. nov.**) (Figs. 1A–D), abundant presence of setae on the opisthosoma especially on the posterior side, presence of bundles of setae in the opisthosma (Figs. 1A–D, 2A), and a bifurcated row of spines on femur III (Fig. 2D). Whereas in *T. mirabilis* (Levi 1996) the pair of dorsal tubercles are short, absence of setae on the opisthosoma especially on the posterior side, and absence of bifurcated row of spines on femur III (Levi, 1996: fig 8).

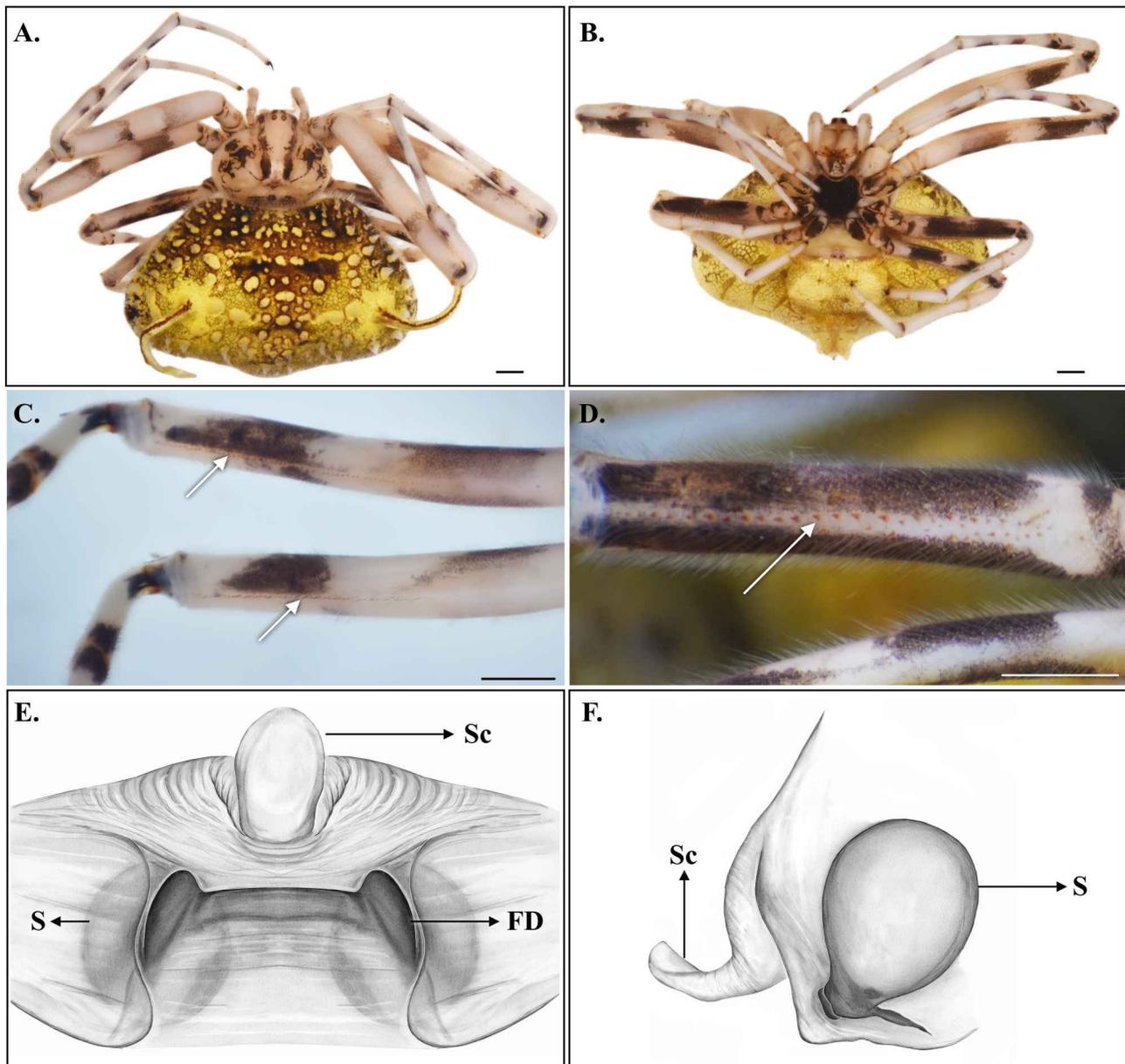


**FIGURE 1.** *Taczanowskia waska* sp. nov., female holotype, alive. A, dorsal view. B, second dorsal view. C, posterior dorsal view. D, frontal view. E, posterior dorsal view with an ovisac.

**Description.** *Female* (holotype): Total length 9.03; carapace 2.79 long, 4.32 maximum width in thoracic region, 1.81 width behind PLE. Eyes length: PME 0.12; PLE 0.08; AME 0.16; ALE 0.13. Eye interdistance: AME-AME 0.18; AME-ALE 0.28; AME-PME 0.09; PME-PLE 0.32; PME-PME 0.16. Opisthosoma: 6.51 long, 10.82 maximum

width. Leg measurements (leg number: femur, patella, tibia, metatarsus, tarsus): I: 6.19, 2.65, 3.44, 2.64, 1.09; II: 6.16, 2.45, 3.85, 2.28, 1.05; III: 3.73, 1.73, 2.52, 1.35, 0.69; IV: 3.74, 1.64, 2.77, 1.77, 0.72.

Carapace, prosoma creamy covered with white hairs and scattered, irregular black marks (Figs. 1 A–D, 2A); thoracic area with a distinct white patch in the middle (Fig. 2A); cephalothorax much narrower than thoracic area (Fig. 2A, 3A); labium and endites creamy, endites with a black lateral patch (Fig. 2B); sternum completely black (Fig. 2B, 3B). Legs white with black marks, especially on coxae (Fig. 2B); leg I and II with a long ventral row of tiny spines on the femur, almost imperceptible (Fig. 2C), leg III with a bifurcated row of 35–40 spines in femur (starting as two rows of spines, but as it approaches the patella, becomes one) (Fig. 2D), leg IV without spines. Anterior section of opisthosoma covered with blackish, brownish and yellowish small dots and creamy patches surrounded by black rings with white hairs rising inside them (Figs. 1A–D: 2A); posterior section of opisthosoma with two big yellowish patches from which a pair of long and slender tubercles emerge (Figs. 1A–D, 2A, 3A), posterior section of the abdomen completely covered of white hairs (Fig. 1A, C).

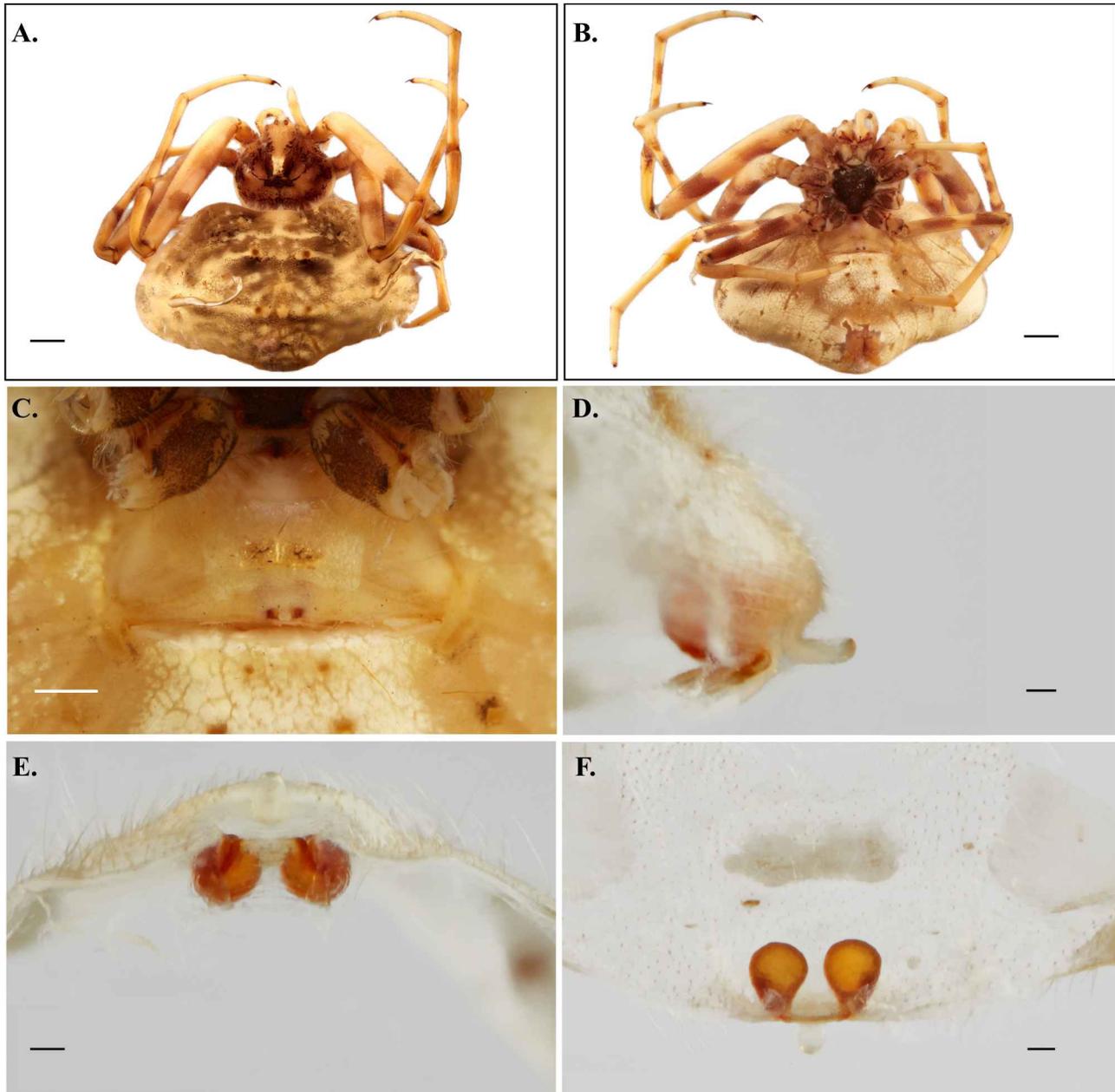


**FIGURE 2.** *Taczanowskia waska* sp. nov., preserved in ethanol. A, Female holotype dorsal view. B, ventral view. C, Femur I and II (arrows indicate the row of diminute spines). D, Femur III (arrow indicates the bifurked row of spines). E, internal genitalia illustration, posterior view. F. same, lateral view. Scale bars = 1.0 mm.

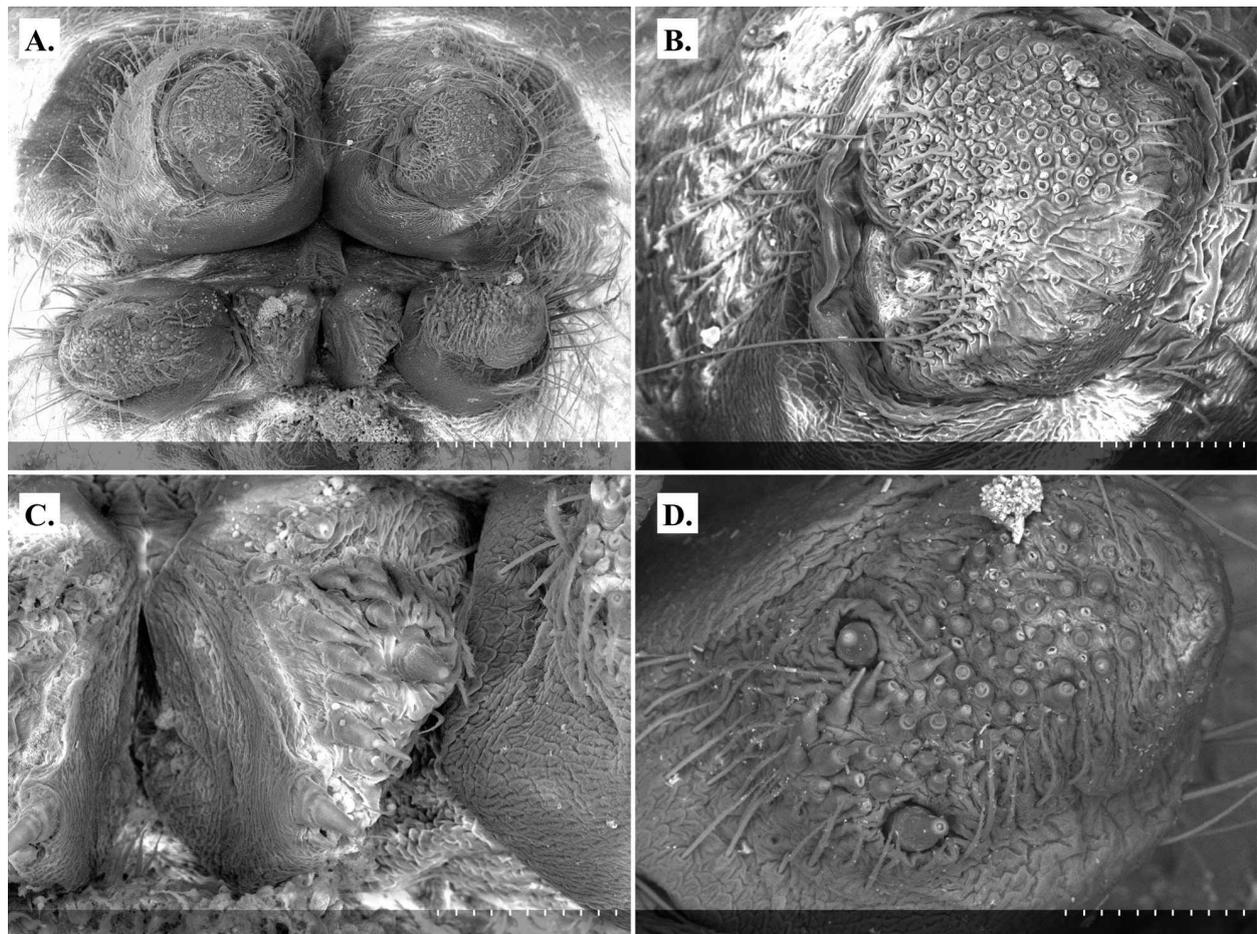
Spinnerets (Fig. 4A–D): Anterior lateral spinneret with MaA gland spigot and large field of AC (~ 125 gland spigots); posterior median spinneret with one MiA gland spigot, one cylindrical gland spigot (CY) and field of AC (12 gland spigots); posterior lateral spinneret with two cylindrical gland spigot (CY) and field of AC (~ 45 gland spigots), note the absence of flagelliform gland spigot and aggregate gland spigot.

Epigynum with short, wrinkled scape not reaching epigastric groove with a unique central pit (Figs. 3C:), central division large and rectangular (Figs. 3D–F); internal genitalia with two large, oval spermathecae, short fertilization ducts (Figs. 2E–F: 3E–F).

**Male.** Unknown



**FIGURE 3.** *Taczanowskia waska* sp. nov. female (ZMH-ARA-A00032812). A, Female, dorsal view. B, ventral view. C, epigynum, ventral view. D, same, lateral view. E, same, posterior view cleared. F, ventral view cleared. A, B. Scale bars = 1.0 mm. C, Scale bar = 0.5 mm. D–F. Scale bars = 0.1 mm.



**FIGURE 4.** *Taczanowskia waska* sp. nov. SEM female (ZMH-ARA-A00032812). A, Spinnerets, apical view. B, ALS, apical view. C, PMS, apical view. D, PLS, apical view. A, Scale bars = 0.4 mm. B–D, Scale bars = 0.1 mm.

### Identification key for females of the genus *Taczanowskia*

Modified from Levi (1996), Ibarra-Núñez (2013), Jordán *et al.* (2021), and Díaz-Guevara *et al.* (2023).

1. Sides of opisthosoma with two lobes; opisthosoma widest near its posterior end . . . *T. trilobata* Simon (Levi, 1996: fig. 20)
- 1'. Opisthosoma without such lobes; widest in the middle. . . . . 2
2. Femora III with a ventral row of teeth (Ibarra-Núñez, 2013: Fig.9; Díaz-Guevara *et al.* 2021: Fig 2F; Fig 2D) . . . . . 3
- 2'. Femora III without a ventral row of teeth . . . . . 6
3. Opisthosoma with dorsal tubercles (Levi, 1996: figs. 8,12,16,27,28; Ibarra-Núñez, 2013: figs 1–3; Jordán *et al.* 2021: fig 6) . . . . . 4
- 3'. Opisthosoma without tubercles (Díaz-Guevara., *et al.* 2021:Figs. 2A–C ) . . . . . 5
4. Opisthosoma almost circular in dorsal view, with numerous dorsal tubercles . . . . .  
. . . . . *T. gustavo* Ibarra-Núñez (Ibarra-Núñez, 2013: figs. 1–3)
- 4'. Opisthosoma covered with bunches of white hairs with two elongated dorsal tubercles . . . . *T. waska* sp. nov. (Figs.2A–B)
5. Opisthosoma smooth and clearly longer than wide . . . . . *T. yasuni* (Díaz-Guevara *et al.*, 2023: Figs. 1A–C, 2A–C)
6. Dorsum of opisthosoma with three pairs of tubercles . . . . . *T. sextuberculata* Keyserling (Levi, 1996: fig. 12)
- 6'. Opisthosoma with one pair of dorsal tubercles . . . . . 7
7. Opisthosoma with colored patches, black feather-like setae and bundles of white setae on each side; carapace with radiating dark lines; total length less than 5.5 mm, narrower opisthosoma (1.4 times its length) . . . . .  
. . . . . *T. striata* Keyserling (Levi, 1996: fig. 16)
- 7'. Opisthosoma without feather-like setae, carapace without radiating dark lines; total length usually more than 6.0 mm, wider opisthosoma (1.8 times its length) . . . . . 8
8. Opisthosoma with patchy dark-light coloration, dark spots concentrated towards anterior margin and on lateral tips, bundles of white setae across the entire surface, forming a distinct reticulum; first two femora thick but lacking teeth on ventral region . . . . . *T. onowoka* Jordán, Domínguez-Trujillo & Cisneros-Heredia (Jordán *et al.* 2021: figs. 6A–D)
- 8'. Opisthosoma not as above, with different coloration patterns; bundles of setae absent; first two femora with teeth on ventral region . . . . . *T. mirabilis* Simon (Levi, 1996: fig. 8).

**Distribution.** *Taczanowskia waska* **sp. nov.** is known from Ecuador and Bolivia (Fig. 7). The Bolivian specimen was found deposited at the arachnology collection of the Hamburg Museum of Nature in Germany, and the Ecuadorian specimen was found at Waska Amazonía in Mera, Pastaza, Ecuador, -1.453005, -78.1135555, 1335 m a.s.l. (Fig. 7). The Waska Study site is a 100-hectare forest bordered by the Tigre river to the northeast and the Chico river to the southwest. It is characterized by an evergreen piedmont forest with elements of the evergreen low montane forest (Reyes-Puig *et al.* 2024), occupying a transition zone between the two ecosystems, at the feet of the Abitagua mountain range. Waska is located in the headwaters of the Pastaza river, a major tributary of the Amazon. Mera experiences some of the greatest precipitation anywhere in Ecuador, with a 5500 to 6000 mm average annually (Vargas *et al.* 2022, Waska weather station). The county forms part of the Llanganates-Sangay Connectivity Corridor, a nationally recognized connectivity corridor and biodiversity hotspot (Fundación Natura 2002; Ríos-Alvear *et al.* 2024).

*Taczanowskia waska* **sp. nov.** was found 120 meters from the Waska headquarters on August 8, 2025, at 20:34 hours. The spider was located at the border of a young forest (~20 yrs) and a more mature forest (~60 yrs) with a canopy height of 25–35 m and an open understory. It was perched with a brown egg sack beneath an Araceae leaf (subgenus *Pteromischum*) at a height of 145 cm above the forest floor.

## Natural history

Although little natural history information exists for this genus, *Taczanowskia* species are infamous for being hard to find (Díaz-Guevara *et al.* 2023). *Taczanowskia waska* **sp. nov.** possesses a rare kind of mimicry in which it imitates an araneopathogenic fungus, *Gibellula* (Figs. 5A). Waska has over 25 species of Cordycipitaceae and Ophiocordycipitaceae, with one genus, *Gibellula*, which infects spiders and other arachnids (Figs. 5A–H). This genus of fungus is common in the Waska Amazonía study site, being found on a variety of Arachnid hosts. Several morphospecies have been identified, at least one of which is characterized by white mycelium growth and one or more cream-yellow protuberances, usually protruding from the abdomen (Figure 5B–G).

*Gibellula* are almost always positioned on the underside of a leaf, where they are protected from heavy rain and falling objects. *Taczanowskia waska* **sp. nov.** was found in the exact same position as the *Gibellula*, sitting upside down on the underside of a leaf with its abdominal tubercles facing down towards the ground, its egg sac hanging in an irregular web some 10 cm away (Figs. 5A, 6A). The spider did not move at all when the leaf was flipped over, and the observers fully believed that the spider was a *Gibellula*. Only when touched did the spider move.

Both the appearance and behavior of *Taczanowskia waska* **sp. nov.** represent an incredible case of mimicry. The disguise is not masquerading because rather than imitating an inanimate object, the spider imitates a living fungus. The pallid abdominal coloration with small, white spikes perfectly imitates the mycelium of the fungus (Figure 5A). The almost translucent legs are very well hidden when tucked in. The two stroma-like tubercles look just like the fungal structures of the *Gibellula*, with the yellow, hairy pattern at the base of the tubercles appearing to be mycelium. The position of the spider and its unresolving stillness perfectly imitate a dead spider with a fungal pathogen (Figure 5A).

The evolutionary benefit of this adaptation may be two-fold, through both Batesian and aggressive mimicry, which has been observed in other spiders (Nelson & Jackson 2009; Nelson & Jackson 2012). The *Taczanowskia* disguises itself from predators, such as birds, by imitating an undesirable prey item. At the same time, this camouflage may serve as a hunting mechanism. *Taczanowskia* are unusual among orb-weavers because they hunt actively. Instead of using a spun web to capture their prey, they remain very still and use an enlarged claw to grab small invertebrates as they pass by (Eberhard 1981). The mimicry of *Taczanowskia waska* **sp. nov.** may also serve to disguise itself from potential prey items in the vicinity, feeling unthreatened by what appears to be a dead, fungus-infected spider.



**FIGURE 5.** Comparison of *Gibellula* specimens with *Taczanowskia waska* **sp.nov.** A, *Taczanowskia waska* **sp.nov.**, IN SITU. B–H, *Gibellula* on various Arachnid hosts from in and around the Waska study site.

## Fungal mimicry in Araneidae

Through iNaturalist and a Wordpress blog, four other species in the family Araneidae with apparent “Cordyceps” mimicry were identified: an Araneidae sp. from Vietnam (Figure 6B) (Bertner 2013), a *Mastophora leucacantha* from coastal Brazil (Figure 6F) (Coronado Antunes 2021), an *Acantharachne* sp. from Uganda (Figure C/D) (Deschandol 2023), and a *Exechocentrus lancearius* from Madagascar (Figure 6E) (Tomaszek 2024). Two of these are likely novel taxa, and two of them are known species, but the hypothesis of fungal mimicry has not been formally proposed. The *Gibellula* fungus is found in all four of these locations spanning three different continents. These additional observations provide more evidence supporting the hypothesis that multiple lineages of Orb-weavers have developed a mimicry of araneopathogenic fungi.



**FIGURE 6.** Records of spiders with apparent fungal mimicry. A, *Taczanowskia waska* **sp.nov.** from Pastaza, Ecuador (Copyright David R.Díaz-Guevara). B, Unknown Araneidae species from Huong National Park, Vietnam, 2013 (Copyright Paul Bertner). C,D, An undescribed species of *Acantharachne* from Uganda, 0.390, 33.113 (Copyright Frank Deschandol). E, *Exechocentrus lancearius* from Madagascar, -18.966, 48.592 (Copyright Artur Tomaszek). F, *Mastophora leucacantha* from coastal Brazil, -23.959, -46.190 (Copyright Thiago Gonçalves Coronado Antunes).

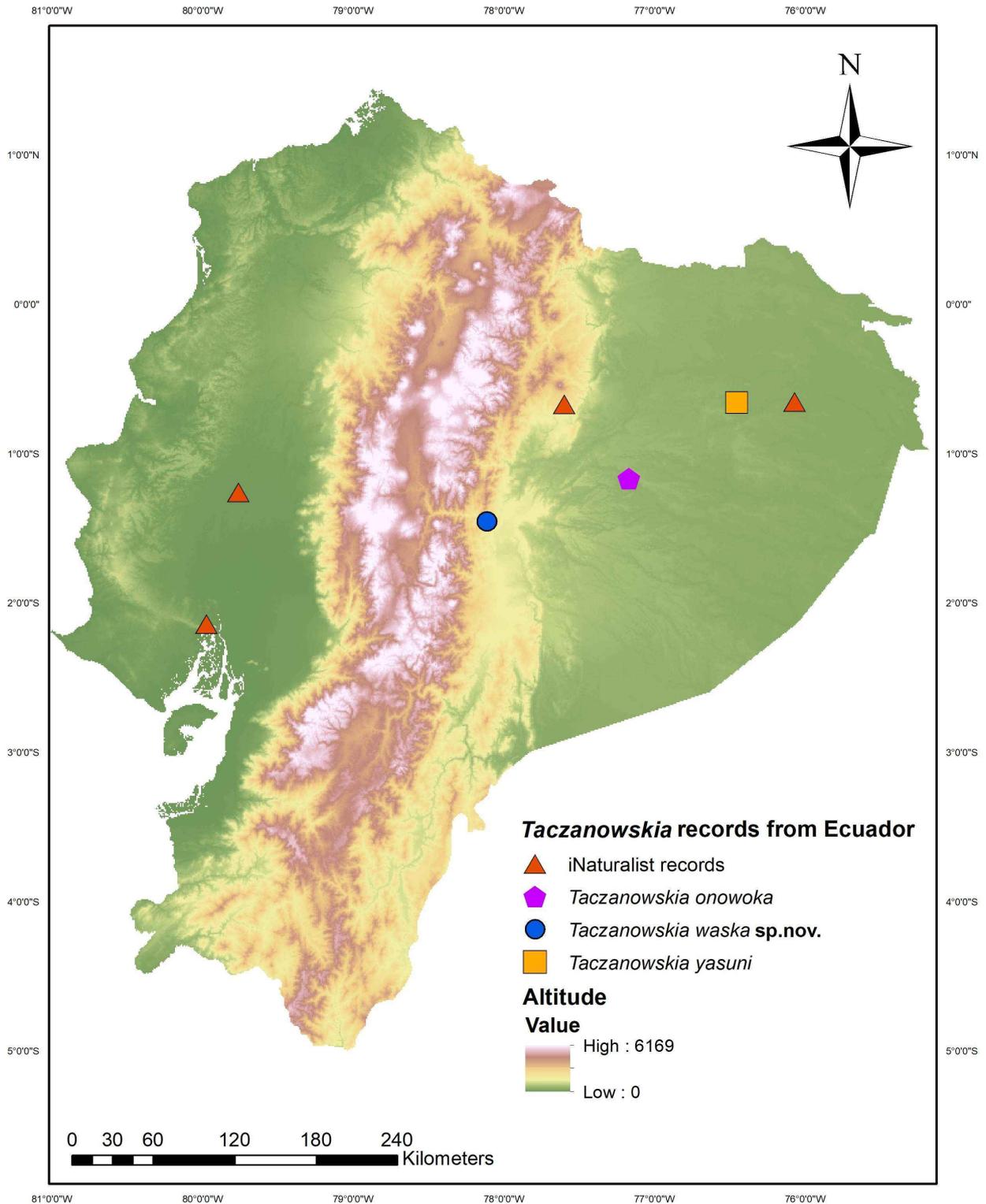


FIGURE 7. *Taczanowskia* records from Ecuador.

## Discussion

The importance of this discovery extends beyond the description of a new spider taxon. *Taczanowskia waska* **sp. nov.** represents a novel case of mimicry in which an arthropod imitates the fungal pathogen that infects its own kind. It is one of the first documented cases of such mimicry anywhere on Earth. *Taczanowskia* is an extremely rare genus, and we offer some of the first natural history observations of its behavior.

While other related genera of Araneidae have been reported to exhibit mimicry, this is the first case for a species of the genus *Taczanowskia*. The New World genus *Mastophora* Holmberg, 1876, thought to be the sister genus of *Taczanowskia* (Jordán et al 2021), exhibits aggressive chemical mimicry (Gemeno, 2000; Eberhard, 1977). *Mastophora dizzydeani* Eberhard, 1981, masquerades as a berry (Levi, 2003), and we propose that *M. leucacantha* (Simon, 1897) presents a similar fungal mimicry to that of *T. waska* **sp. nov.**, as can be observed in Figure 6F.

Furthermore, this case-study provides a model for citizen engagement in scientific processes. In one of the world's most arthropod-diverse regions, where arachnologists are few and far between, the iNaturalist platform proves an effective mechanism for better understanding the distribution and ecology of organisms, as well as the identification of novel taxa and opportunities for local collaboration on species descriptions. Other citizen science initiatives in the CELS corridor during recent years have produced not only meaningful discoveries, but also a growing interest by local people in their unique biodiversity (INABIO et al. 2023; Reyes-Puig et al. 2024a; Bentley et al. 2025; Hidalgo et al. 2025). As such, these citizen science approaches also serve as a conservation strategy, encouraging people to better care for their natural spaces and wildlife.

The “Cordyceps Spider” represents a remarkable example of mimicry in nature. This example of specialized coevolution may have much more to teach us, and we hope that it will inspire local people here in Ecuador to keep exploring their surroundings, for much remains to be discovered.

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