Running crab spiders (Araneae: Philodromidae) from Colombia: new species and records

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Abstract

We present new records and species of running crab spiders (family Philodromidae) from Colombia representing four genera: *Apollophanes* O. Pickard-Cambridge, 1898, *Gephyrellula* Strand, 1932, *Petrichus* Simon, 1886, and *Tibelloides* Mello-Leitão, 1939. The genus *Gephyrellula* is recorded based on the newly described *G. lavidabonita* **sp. nov.**, known from females from the department of Magdalena, constituting the northernmost known locality for the genus, at Sierra Nevada de Santa Marta. This new species can be differentiated from the (previously monotypic) type species *G. violacea* (Mello-Leitão, 1918), known from southeastern region of Brazil, by the longer than wide epiginal plates (wider than long in *G. violacea*), with narrower and shorter ducts of the glandular heads (thicker and longer in *G. violacea*), and by their more posteriorly placed fertilization ducts. The genus *Apollophanes* is here firstly recorded from males and females of *A. punctipes* (O. Pickard-Cambridge, 1891) from the Atlántico, Magdalena, Cesar, Cundinamarca, and Boyacá departments. *Tibelloides* is recorded from males and females of *T. bryantae* (Gertsch, 1933), from the departments of Magdalena and Meta, also representing northernmost known localities for the genus. Finally, new faunistic and taxonomic data is presented for *Petrichus*. Our examination of the holotype of *Thanatus granadensis* Keyserling, 1880 demonstrates this species is conspecific with more recently collected and better-preserved specimens of *Petrichus griseus* Berland, 1913, from the department of Santander. Therefore, we propose the new combination *Petrichus granadensis* **comb. nov.**, regard *P. griseus* as its junior synonym **syn. nov.**, and update knowledge of its distribution.

Keywords: faunistics ● Sierra Nevada de Santa Marta ● South America

Introduction

Running crab spiders of the family Philodromidae Thorell, 1869 are agile wandering hunters usually found on branches and leaves, hunting without the use of silk. Currently, this family comprises more than 520 species in 29 genera, 12 of which have strictly Old World distributions (World Spider Catalog 2024). Six genera have a shared distribution between the Old and New World at present: *Apollophanes* O. Pickard-Cambridge, 1898 (mostly from USA to Panama, with a few species in Hispaniola, Brazil, the Galápagos Islands, and one species from Russia), *Philodromus* Walckenaer, 1826 (mostly from the Old World, from Europe to far Asia, Africa and Australia, but with a few species in North America and Cuba), *Ebo* Keyserling, 1884 (mostly known from the USA and Canada, but with a few unreviewed species in Argentina, Kazakhstan, Russia, and India), *Rhysodromus* Schick, 1965 (mostly in the Old World, but with some species known from North America), *Thanatus* C. L. Koch, 1837 (mostly from the Old World, but with some species in North America and other unrevised species in South America and Africa), and *Tibellus* Simon, 1875 (mostly Old World, but with some North American species) (World Spider Catalog 2024).

In the Americas, eleven genera are currently known, also including the endemic *Titanebo* Gertsch, 1933 from North America (14 species from USA and Mexico); and ten genera from South America. These South American groups include *Cleocnemis* Simon, 1886 (eight species from Brazil and Argentina), *Eminella* Özdikmen, 2007 (one species from Argentina), *Fageia* Mello-Leitão, 1929 (six species from Brazil), *Gephyrellula* Strand, 1932 (one species from Brazil), *Gephyrina* Simon, 1895 (four species from Venezuela, St Vincent, Brazil, and Bolivia), *Paracleocnemis* Schiapelli & Gerschman, 1942 (two species from Argentina), *Petrichus* Simon, 1886 (14 species mainly distributed in southern South America, with most species in Argentina and Chile, and one from Colombia, Ecuador, and Peru), *Philodromops* Mello-Leitão, 1943 and *Procleocnemis* Mello-Leitão, 1929 (both with one species from Brazil), and *Tibelloides* Mello-Leitão, 1939 (four species from Venezuela to Argentina, but mostly in central-southern South America) (World Spider Catalog 2024).

However, there are several gaps in the distribution of Philodromidae in the New World, and especially the Neotropics where currently 94 species and 16 genera are known (Galvis 2024; World Spider Catalog 2024). In Colombia, there are only two previous references that included running crab spiders (ArachnoTrAC 2024): *Thanatus granadensis*, a species described by Keyserling (1880: 201) which was only referenced as collected in "N. Granada" (i.e. New Granada, a vast and ancient republic that included territories that are currently part of Colombia, Panama, Venezuela, and Ecuador), and *Petrichus griseus* Berland, 1913, known from a few specimens collected in Cundinamarca (Griotti *et al*. 2022).

In this work, we describe a new species (*G. lavidabonita* sp. nov.) of the newly recorded genus *Gephyrellula* Strand, 1932 from the Caribbean region of Colombia. Furthermore, we present substantial new faunistic data, including the first records of the genera *Apollophanes* O. Pickard-Cambridge, 1898 and *Tibelloides* Mello-Leitão, 1939 from the country.

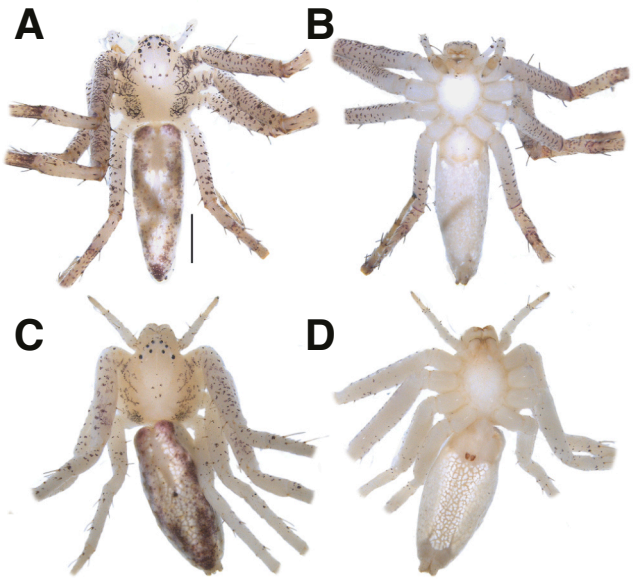

Fig. 1: *Apollophanes punctipes* (O. Pickard-Cambridge, 1891), habitus of male ICN-Ar 12960 (A–B) and female ICN-Ar 12960 (C–D). **A, C** dorsal views; **B, D** ventral views. Scale bar = 1 mm.

Finally, we clarify the taxonomy of *Petrichus griseus*, demonstrating it is a junior synonym of the newly combined *P. granadensis* (Keyserling, 1880) comb. nov.

Material and methods

The material examined, except the type specimen of *Thanatus granadensis* Keyserling, 1880, is deposited in the Arachnological Collection of the Instituto de Ciencias Naturales, Universidad Nacional de Colombia (ICN-Ar), Bogotá, Colombia. The holotype of *T. granadensis* is deposited in the Natural History Museum, London (BMNH) and was imaged using a Canon EOS 6D Mark II attached to a Leica MZ12.5 stereomicroscope, with images stacked using Helicon Focus software. The photographs of modern material were taken with a Leica MC–170 HD digital camera attached to a Leica M205A stereomicroscope, and then stacked with Leica Application Suite version 4.6.0 software. Measurements were taken with an AmScope MU300 digital camera, attached to an Advanced Optics JSZ–6 stereomicroscope. For visualization of female genitalia (except the type of *T. granadensis*, see remarks of that species), the epigynal plate was cleared in 80% lactic acid. For the general format of descriptions, see do Prado *et al*. (2022). Measurements are in millimetres.

Abbreviations: AGP = anterior guide pockets, C = membranous conductor, CoII = conductor (apical part), CA = copulatory atria, CD = copulatory duct, CG = copulatory guides, EB = embolar base, E = embolus, EG=epigynal groove, ES = epigynal suture, EG = epigynal groove, FD = fertilization duct, GH = glandular head of spermatheca, LGP = lateral guide pocket, LP = lateral plates, LL= lateral lobe, MCZ = Museum of Comparative Zoology, Harvard University, MD = mesal depression, MNHN = Muséum National d'Histoire Naturelle, Paris, MS = median septum,

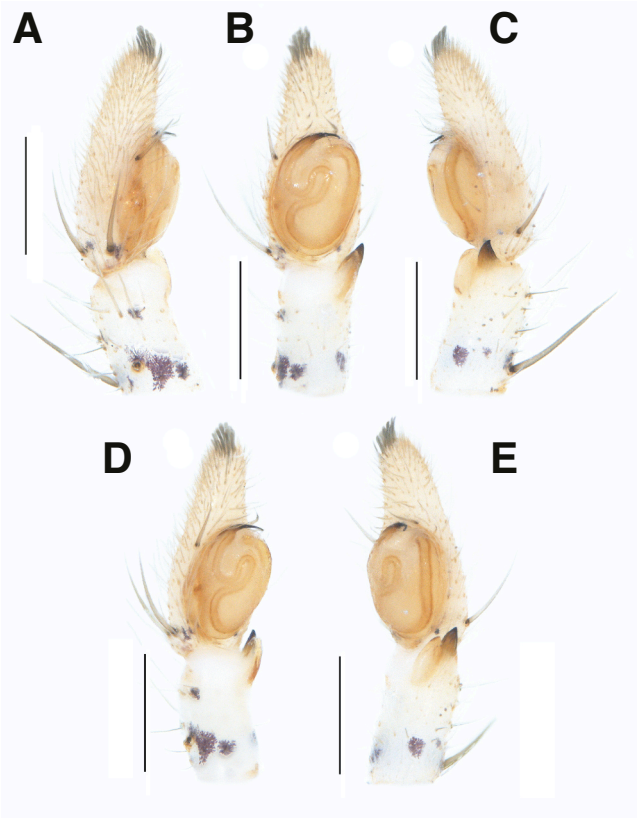

Fig. 2: *Apollophanes punctipes* (O. Pickard-Cambridge, 1891), male ICN-Ar 12960 left palp. **A** prolateral view; **B** ventral view; **C** retrolateral view; **D** proventral view; **E** retroventral view. Scale bars = 0.25 mm.

PR = posterior rim, PS = primary spermatheca, R = receptaculum, RTA = retrolateral tibial apophysis, RMC = retrolateral marginal conductor, SP = spermatheca, SDL = sperm duct loop, SS = secondary spermatheca, SD = spermatic ducts. Spination is scored with the following abbreviations: p = prolateral, r = retrolateral, v = ventral. [Information in brackets was added to complement verbatim label data.] Records without coordinates on the label were approximated to locations via gazetteers: GeoLocator (http://tools.freeside.sk/geolocator/geolocator.html) and GeoNames (http://www.geonames.org/). The distribution map was prepared in QGIS "Lima" (version 3.3.2, http://www.qgis.org/es/site/)..

Philodromidae Thorell, 1869

Apollophanes O. Pickard-Cambridge, 1898

Apollophanes O. Pickard-Cambridge, 1898: 252. Original description only, for other references see World Spider Catalog (2024).

Type species: *Tibellus punctipes* O. Pickard-Cambridge, 1891.

Note: For diagnosis and general description of the characters shared by species of *Apollophanes*, see Dondale & Redner (1975) and Logunov (1996).

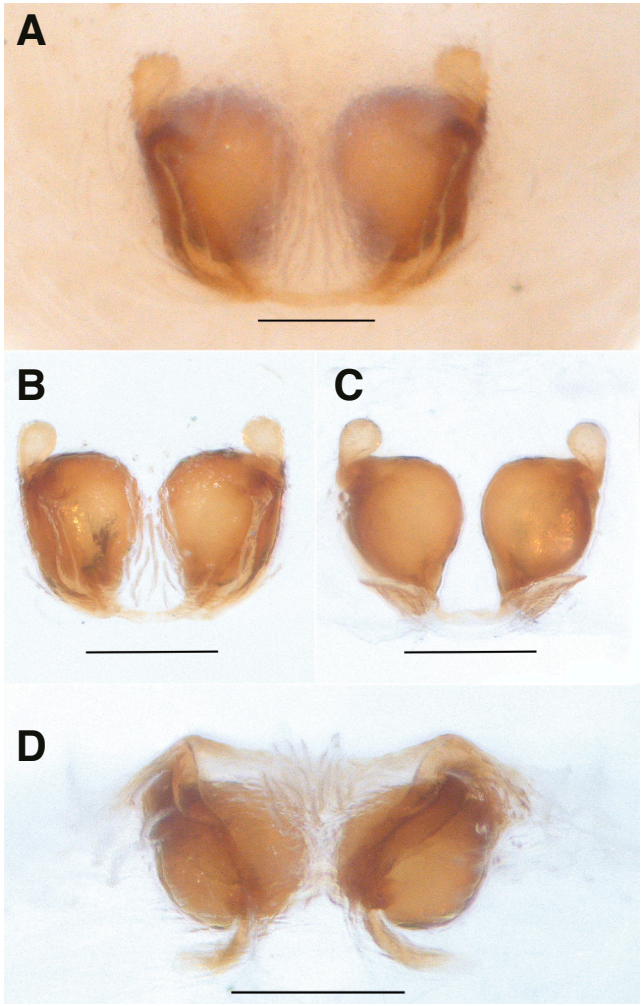

Fig. 3: *Apollophanes punctipes* (O. Pickard-Cambridge, 1891), female ICN-Ar 12960 genitalia. **A** epigyne, undissected, ventral view; **B** same, dissected and cleared; **C** vulva, cleared, dorsal view; **D** same, posterior view. Scale bars = 0.2 mm.

***Apollophanes punctipes* (O. Pickard-Cambridge, 1891)**
(Figs. 1A–D, 2A–E, 3A–D, 4A–G, 14–15)

Tibellus punctipes O. Pickard-Cambridge, 1891: 79, pl. 9, fig. 15 (♀).
Thanatus punctiger O. Pickard-Cambridge, 1891: 88, pl. 11, fig. 12 (♀).
Philodromus maculatipes O. Pickard-Cambridge, 1893: 118, pl. 15, fig. 14 (♂),
Apollophanes punctipes: O. Pickard-Cambridge (1898): 252.
Apollophanes distinctus O. Pickard-Cambridge, 1899: 290, pl. 32, fig. 2 (juv.),
Apollophanes punctipes: F. O. Pickard-Cambridge (1900): 132, pl. 9, figs. 19–20 (♂♀).
Apollophanes maculatipes: F. O. Pickard-Cambridge (1900): 132, pl. 8, fig. 21 (♂).
Apollophanes arizonensis Gertsch, 1933: 15, fig. 29 (♀).
Apollophanes similalis Gertsch, 1933: 15, fig. 30 (♀).
Apollophanes mexicanus Gertsch, 1933: 16, fig. 31 (♀).
Apollophanes punctipes Dondale & Redner (1975): 1178, figs. 1–2, 4–5, 13, 18–25 (♂♀).

Type material: See Dondale & Redner (1975).

Diagnosis: Males of *A. punctipes* can be distinguished from those of *A. babaly* Logunov, 1996 by the absence of a conductor (present in *A. babaly*), from *A. crispus* Dondale & Redner, 1975 by the embolus not ending with prolateral curvature at apex (embolus ending with prolateral curvature at apex in *A. crispus*), from *A. erectus* Dondale & Redner, 1975 by the thicker RTA with pointed apex (RTA thinner with rounded apex in *A. erectus*), from *A. fitzroyi* Baert, 2013 by the basally thinner embolus and VTA thicker than RTA (embolus basally wider and VTA not thicker than RTA in *A. fitzroyi*), from *A. longipes* (O. Pickard-Cambridge, 1896) by the embolus not straight (embolus straight in *A. longipes*), from *A. lonesomegeorgei* Baert, 2013 by the much shorter embolus, not curving retrolaterally nor ending lower down than the emergence point of the embolus (embolus elongate, curving retrolaterally and ending below emergence point of embolus in *A. lonesomegeorgei*), from *A. lujiani* Lin & Li, 2024 by the embolus not directed ventrally (directed ventrally in *A. lujiani*), from *A. aztecanus* Dondale & Redner, 1975, *A. gaucho* Francisco, Ott & Teixeira, 2016, and *A. macropalpus* (Paik, 1979) by the base of the tegulum not prominently projected (projected in *A. aztecanus*, *A. gaucho*, and *A. macropalpus*), from *A. margareta* Lowrie & Gertsch, 1955 by the pronounced recuvature of the posterior eye row (weakly recurved in *A. margareta*), and from *A. texanus* Banks, 1904 by the non-curved embolus (embolus curved in *A. texanus*).

Females can be distinguished from *A. babaly* by the quadrate posterior rim of the atrium (U-shaped in *A. babaly*), from *A. aztecanus*, *A. caribaeus* Dondale & Redner, 1975, and *A. punctatus* (Bryant, 1948) by the glandular head with distinct neck (not with distinct neck in *A. aztecanus*, *A. caribaeus*, and *A. punctatus*), from *A. fitzroyi* by the spermathecae protructing past outside of copulatory ducts (spermathecae not protruding past outside of copulatory ducts in *A. fitzroyi*), from *A. gaucho* by the non-trapezoid spermathecae (trapezoid in *A. gaucho*), from *A. indistinctus* Gertsch, 1933 by the thinner basal quarter of the spermathecae (wider in *A. indistinctus*), from *A. longipes* by the glandular head of the spermathecae not twice as long as wide (twice as long as wide in *A. longipes*), from *A. lujiani* by the glandular head of the spermathecae longer than wide (not longer than wide in *A. lujiani*), from *A. margareta* and *A. macropalpus* by the non-mediolaterally situated glandular heads of the spermathecae (mediolaterally situated in *A. margareta* and *A. macropalpus*), and from *A. texanus* by the spermathecae not three or more times longer than wide (spermathecae three or more times longer than wide in *A. texanus*).

Material examined: COLOMBIA: Atlántico: 1♂, 1♀ (ICN-Ar 12960), Puerto Colombia, Universidad del Norte, Observatorio de Aves, 11.02294°N 74.85114°W, 25 m, 25 September 2022, col. C. Casas, K. Marimón, E. Villarreal & A. Jiménez; 3♂♂, 1 juv. (ICN-Ar 12961), (same data). Boyacá: 1♀ (ICN-Ar 9935), Sogamoso, Vereda La Chorrera, [5.6863°N 72.9302°W], 2600 m, 30 December 2013, leg. D. Triana; 1♀ (ICN-Ar 9932), Tibasosa, [5.750°N 72.9943°W], 2500 m, 26 June 2015, leg. D. Triana. Cesar: 1♀ (ICN-Ar 12962), Valledupar, El Descanso, Tienda Claudia, 10.37783°N 73.45694°W, 315 m, 21 September 2022,

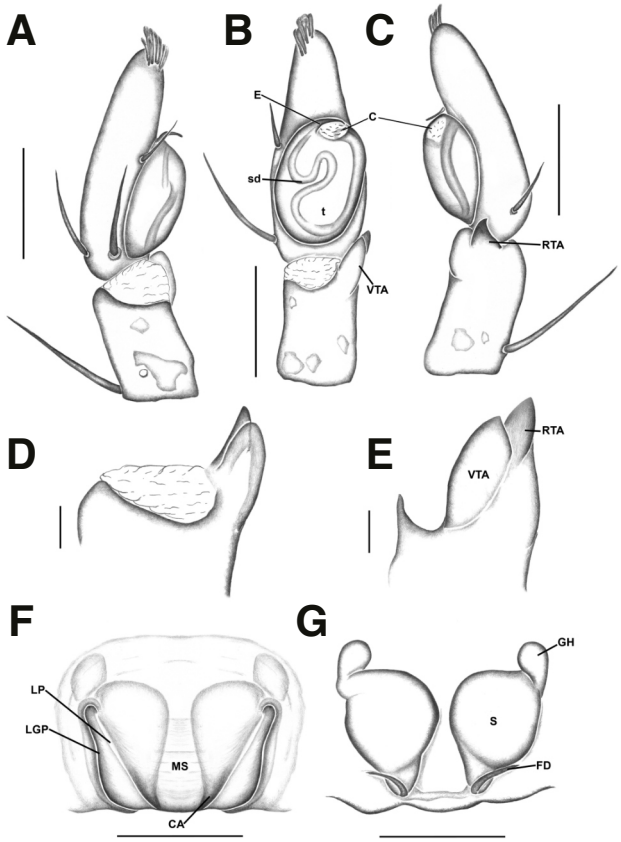

Fig. 4: *Apollophanes punctipes* (O. Pickard-Cambridge, 1891), male ICN-Ar 12960, left palp (A–E) and female epigyne (F–G). **A** prolateral view; **B** ventral view; **C** retrolateral view; **D** tibia, distal side, ventral view; **E** same, retrolateral view; **F** dorsal view; **G** vulva, ventral view. CA = copulatory atria, E = embolus, FD = fertilization duct, GH = glandular head of spermatheca, LGP = lateral guide pocket, LP = lateral plates, MS = median septum, RTA = retrolateral tibial apophysis, SP = spermatheca, sd = spermatic ducts, VTA = ventral tibial apophysis. Scale bars: = 0.25 mm (A–C), 0.05 mm D–E), 0.2 mm (F–G).

leg. W. Galvis; 1♀ (ICN-Ar 12963), Valledupar, Eco-Parque Los Besotes, [10.573°N 73.272°W], 590 m, 19 July 2015, leg. CARBIO team. Cundinamarca: 1♀ (ICN-Ar 9934), La Mesa, Agroparque Mutis, [4.6617°N 74.4233°W], 950 m, 21 November 2015, leg. E. Flórez. Magdalena: 1♀ (ICN-Ar 12964), Santa Marta, vía alterna al puerto, Vereda El Limón, 11.13411°N 74.21198°W, 80 m, 09 October 2022, leg. W. Galvis.

Distribution: Previously known from the USA to Panama (World Spider Catalog 2024) (Figs. 14–15), newly recorded from Colombia.

Remarks: The male palp of *A. punctipes* can vary intraspecifically, our material conforms to the morphology shown in fig. 2 of Dondale & Redner (1975). Some of the specimens here examined were collected beating border vegetation in the day and in the night, near the road or in a pastureland. Specimens are known, across its entire known range, from 25 to 2000 metres.

Gephyrellula Strand, 1932

Gephyrella Mello-Leitão (1918): 121.
Gephyrella: Mello-Leitão (1929): 107.

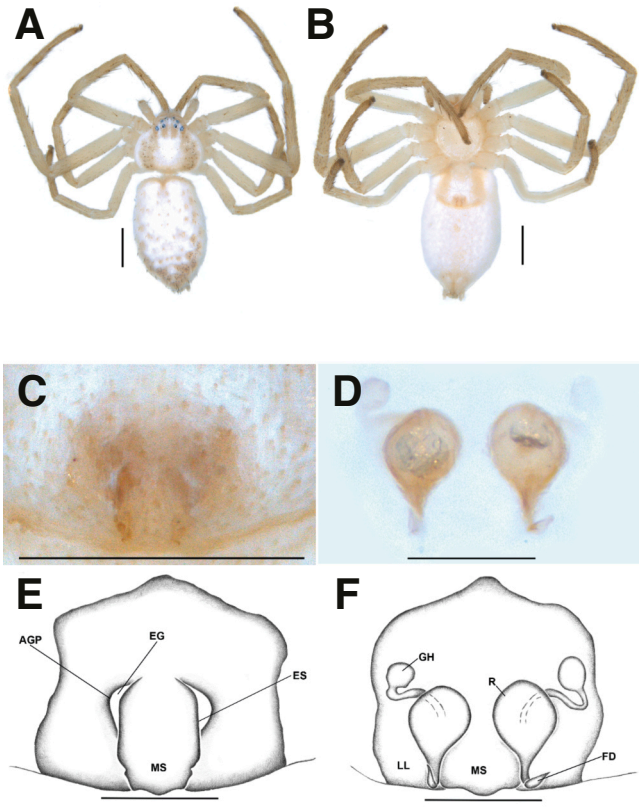

Fig. 5: *Gephyrellula lavidabonita* sp. nov., female, habitus (A–B) and genitalia of holotype ICN-Ar 12965 (C–F). **A** dorsal view; **B** ventral view; **C** epigyne, ventral view; **D** vulva, dorsal view; **E** drawing of epigyne, ventral view; **F** drawing of vulva, dorsal view. AGP = anterior guide pockets, EG = epigynal groove, ES = epigynal suture, FD = fertilization duct, GH = glandular head, LL = lateral lobe. R = receptaculum. Scale bars = 0.5 mm (A–B), 0.3 mm (C–D), 0.2 mm (E–F).

Gephyrellula Strand, 1932: 137 (replacement name for *Gephyrella*, preoccupied in Lepidoptera).

Type species: *Gephyrella violacea* Mello-Leitão, 1918.

Note: For diagnosis and general description, see Santos & Rheims (2018).

***Gephyrellula lavidabonita* sp. nov.** (Figs. 5A–E, 16)

Type material: Holotype ♀ (ICN-Ar 12965), COLOMBIA: Playa Escondida, Santa Marta, Magdalena, 11.13047°N 74.22938°W, 2 m, 12 December 2021, leg. W. Galvis.

Diagnosis: Females of *G. lavidabonita* sp. nov. can be differentiated from those of the previously monotypic *G. violacea* by the epigynal plates longer than wide (wider than long in *G. violacea*), with narrower and shorter ducts of the glandular heads (glandular heads thicker and longer in *G. violacea*), and by their more-posteriorly placed fertilization ducts. Also, the new species has poorly developed posterior guide pockets (developed in *G. violacea*), and more anteriorly elongated anterior guide pockets (AGP) (shorter and smaller in *G. violacea*).

Etymology: The species epithet is a noun in apposition derived from the Spanish *La Vida Bonita* (the beautiful life)

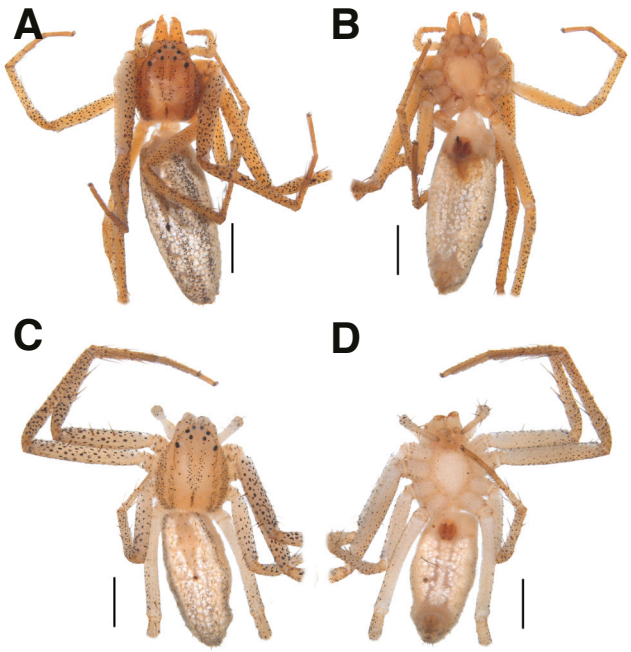

Fig. 6: *Tibelloides bryantae* (Gertsch, 1933), female habitus ICN-Ar 6366 (A–B) and ICN-Ar 6362 (C–D). **A, C** dorsal views; **B, D** ventral views. Scale bars: = 1 mm.

and refers to the beautiful life that the first author lived when the species was collected at the pleasing type locality in the Colombian Caribbean.

Description of holotype female: Total length 3.02. Carapace length 0.98, width 1.23. Opisthosoma length 2.04, width 1.30. Eyes: AME 0.05, ALE 0.08, PME 0.05, PLE 0.05; interdistances AME–AME 0.12, AME–ALE 0.06, ALE–ALE 0.20, PME–PME 0.12, PME–PLE 0.13, PLE–PLE 0.16. Carapace white with two wide light or pale brown longitudinal bands, with black dots and covered with a few black bristles. Ocular region with two light brown bands on white background. Eyes with white borders. Legs, pedipalps, chelicerae, labium, endites and sternum pale yellow without marks and spots. Opisthosoma white, dorsally with some scarce and more posteriorly-placed irregular pale brown patches, larger towards the posterior region, and with black bristles randomly arranged more abundant towards the posterior region (Figs 5A–E, 16). Legs: I 3.86 (1.14, 0.52, 0.93, 0.86, 0.41); II 4.96 (1.45, 0.61, 1.23, 1.15, 0.52); III 3.36 (1.01, 0.44, 0.78, 0.72, 0.41); IV 3.29 (1.07, 0.41, 0.73, 0.70, 0.38); trichobothria present dorsally on femora, tibiae, tarsi and metatarsi. Spination: femur I p 1–0–0, v 0–0–1; III–IV v 0–0–2; tibia I v 0–2–2, r 0–0–1; II v 2–2–2, r 0–1–0, p 0–1–0; III v 1–2–2; IV v 0–2–2; metatarsi I–II v 2–2–2, r 0–1–0; III v 2–2–2, p 0–1–0; IV v 2–2–2. Epigyne: epigynal plate longer than wide; as same for medial septum; epiginal sutures longitudinal with a pair of anterior elongated guide pockets and absent posterior guide pockets (Figs 13, 22). Vulva: glandular heads on long, narrow and curved ducts, dorsal to the rounded and posterior spermathecae; fertilization ducts posteriorly placed; glandular head ducts raising from medial region of spermathecae (Figs 9, 14, 23).

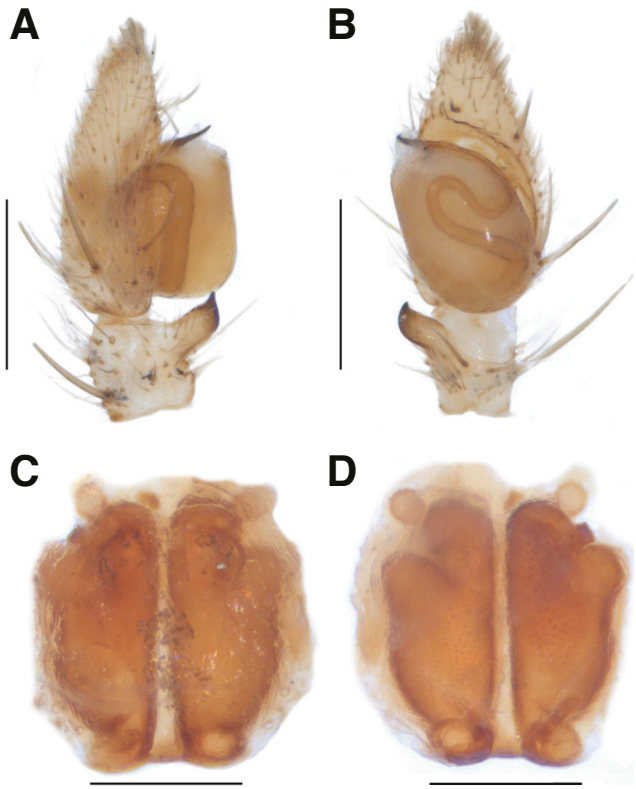

Fig. 7: *Tibelloides bryantae* (Gertsch, 1933), male ICN-Ar 9931, right palp (A–B), and female ICN-Ar 9931 genitalia, dissected and cleared (C–D). **A** retrolateral view; **B** ventral view; **C** epigyne, ventral view; **D** vulva, dorsal view. Scale bars = 0.25 mm.

Male unknown.

Distribution: Known only from its type locality in the Caribbean region of Colombia: Sierra Nevada de Santa Marta.

Remarks: We present the first record of the genus *Gephyrellula* in Colombia (Fig. 16), also being the westernmost and northernmost known location for the genus. Across its entire range, the species of the genus are known from between 2 to 810 m. The holotype female was collected by beating in a disturbed mangrove ecosystem, on Trupillo leaves (Fabaceae: *Neltuma juliflora* (Sw.) Raf.) during the daytime.

Tibelloides Mello-Leitão, 1939

Tibelloides Mello-Leitão, 1939: 76. Original description only, for other references see World Spider Catalog (2024).

Type species: *Tibelloides spatulifer* Mello-Leitão, 1939 (junior synonym of *Tibelloides punctulatus* (Taczanowski, 1872)).

Note: For diagnosis and general description of the characters shared by species of *Tibelloides*, see do Prado *et al.* (2022).

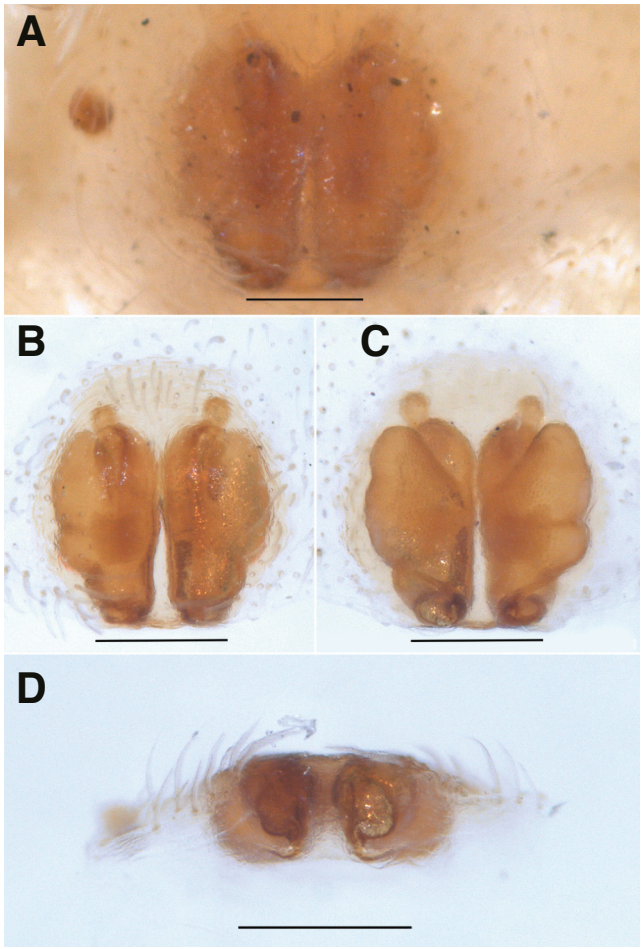

Fig. 8: *Tibelloides bryantae* (Gertsch, 1933), female ICN-Ar 9931 genitalia. **A** epigyne, undissected and not cleared, ventral view; **B** same, dissected and cleared, ventral view; **C** vulva, dorsal view; **D** same, posterior view. Scale bars = 0.2 mm.

***Tibelloides bryantae* (Gertsch, 1933)** (Figs. 6A–D, 7A–D, 8A–D, 9A–D, 17)

Apollophanes bryanti Gertsch, 1933: 14, figs. 22, 26 (♀).
Cleocnemis rudolphi Mello-Leitão, 1943: 168 (♂).
Cleocnemis bryanti: Dondale & Redner (1975): 1175.
Tibelloides bryantae: do Prado *et al*. (2022): 23, figs. 6a–f, 7a–g (♂♀).

Type material: Holotype ♀ *Apollophanes bryanti* (MCZ), PARAGUAY: Asuncion, Reimoser collection, not examined; holotype ♂ *Cleocnemis rudolphi* (MNRJ 41991), BRAZIL: Campina Grande, leg. R. von Ihering, not examined.

Diagnosis: Males of *T. bryantae* can be distinguished from those of *T. paraguensis* (Gertsch, 1933) and *T. punctulatus* (Taczanowski, 1872) by the embolus not projected vertically (projected vertically in *T. paraguensis* and *T. punctulatus*), and further from *T. punctulatus* by the non-tapered RTA (RTA tapered in *T. punctulatus*).

Females can be distinguished from *T. punctulatus* by non-trapezoid median septum (trapezoid in *T. punctulatus*) and from *T. paraguensis* by the absence of ventral projection on the copulatory ducts (present in *T. paraguensis*). *Tibelloides taquarae* (Keyserling, 1891), described from

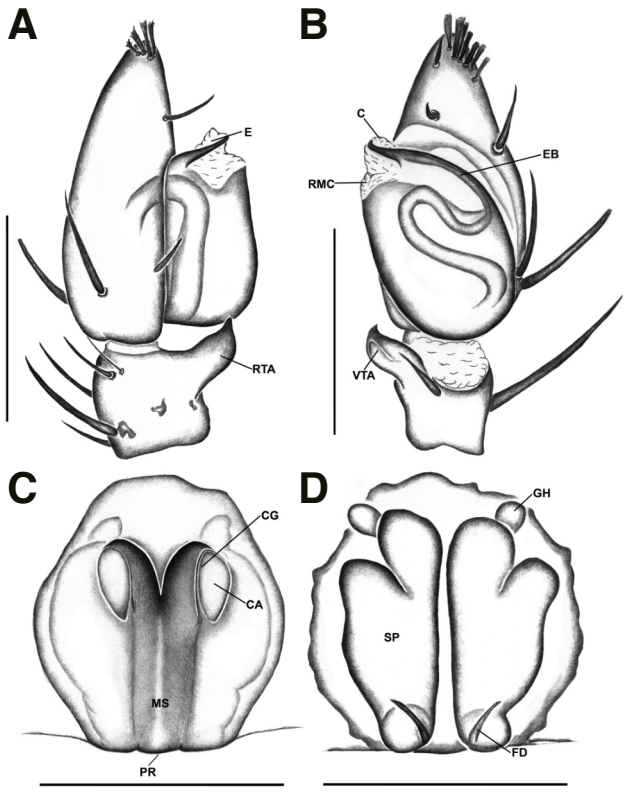

Fig. 9: *Tibelloides bryantae* (Gertsch, 1933), male ICN-Ar 9931, right palp (A–B), and female ICN-Ar 9931, genitalia, dissected and cleared (C–D). **A** retrolateral view; **B** ventral view; **C** epigyne, ventral view; **D** vulva, dorsal view. C = membranous conductor, CA = copulatory atria, CG = copulatory guides, E = embolus, EB = embolar base, FD = fertilization duct, GH = glandular head of spermatheca, MS = median septum, PR = posterior rim, RTA = retrolateral tibial apophysis, RMC = retrolateral marginal conductor, SP = spermatheca, VTA = ventral tibial apophysis. Scale bars = 0.25 mm (A–B), 0.5 mm (C–D)..

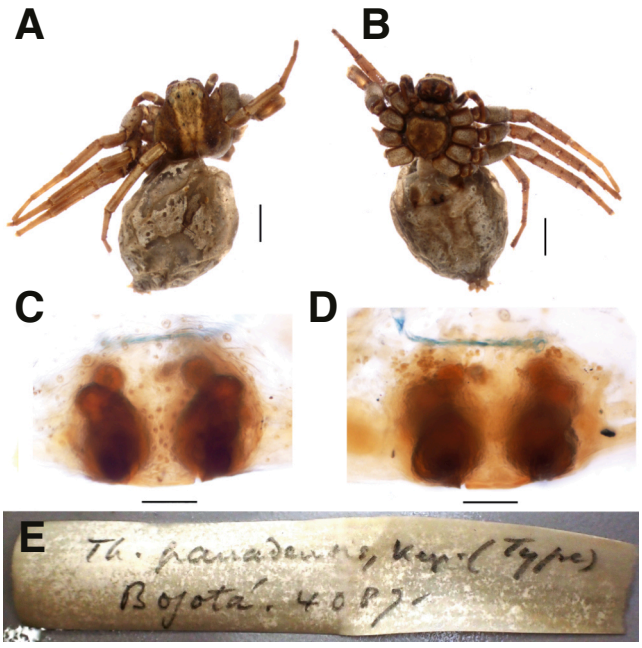

Fig. 10: *Petrichus granadensis* (Keyserling, 1880) comb. nov., holotype female (BMNH). **A** habitus, dorsal view; **B** same, ventral view; **C** epigyne, dissected and cleared, ventral view; **D** vulva, dorsal view; **E** original data label. Scale bars = 1 mm (A–B), 0.1 mm (C–D).

Fig. 11: *Petrichus granadensis* (Keyserling, 1880) comb. nov., habitus of non-type male ICN-Ar 769 (A–B) and non-type female ICN-Ar 6365 (C–D). **A, C** dorsal views; **B, D** ventral views. Scale bars = 2 mm.

both sexes, has not been redescribed in a modern context and thus cannot be diagnosed here. This is outside the scope of this work.

Material examined: COLOMBIA: Magdalena: 1♀ (ICN-Ar 12966), Santa Marta, Cerro Ziruma, camino a playa Inca Inca, 11.21325°N 74.22949°W, 82 m, 16 September 2022, leg. W. Galvis; 1♀ (ICN-Ar 6366), Santa Marta, Pozos Colorados, [11.1631°N 74.2288°W], 10 m, 10 December 1977, leg. Estudiantes de Biología Universidad Nacional de Colombia. Meta: 1♂, 1♀,1 juv. (ICN-Ar 6362), [Puerto López], Puerto Guadalupe, Finca Santana, [4.3173°N 72.4640°W], 300 m, July–December 2002, leg. L. Niño & D. Cuadros; 2♂♂, 2♀♀, 3 juvs. (ICN-Ar 9931), same data.

Distribution: Brazil (World Spider Catalog 2024), Colombia (new record), and Paraguay (World Spider Catalog 2024) (Fig. 17).

Remarks: We present the first record of the genus in Colombia, and the northernmost known location for the genus. Across its entire range, this species has a distribution between 10 and 300 metres. One of the females here examined (ICN–Ar 6366) was collected by beating border vegetation in a sub-xerophytic secondary ecosystem.

Petrichus Simon, 1886

Petrichus Simon, 1886: 564. Original description only, for other references see World Spider Catalog (2024).

Type species: *Petrichus marmoratus* Simon, 1886.

Note: For diagnosis and general description of the characters shared by species of *Petrichus*, see Griotti *et al*. (2022).

Petrichus granadensis (Keyserling, 1880) comb. nov.

(Figs. 10A–E, 11A–D, 12A–G, 13A–E, 18)

Thanatus granadensis Keyserling, 1880: 199, pl. 5, fig. 109 (♀).
Petrichus griseus Berland, 1913: 96 (♀). **syn. nov.**
Petrichus griseus: Griotti *et al*. (2022): 333, figs. 13a–f, 14a–e, 30e (♂♀).
Petrichus griseus: Dupérré (2023): 182, figs. 44A–D (♀).

Type material: Holotype ♀ *Thanatus granadensis* (BMNH), [COLOMBIA:] Bogotá, 4087, Keyserling coll., examined; lectotype ♀, paralectotype ♀ (MNHN AR–14477), Riobamba, Ecuador, 1901, leg. G. Rivet, not examined, figures from Griotti *et al*. (2022) examined.

Diagnosis: See Griotti *et al*. (2022).

Other material examined: COLOMBIA: Cundinamarca: 2♀♀, 1 juv. (ICN-Ar 2147), Mosquera, Laguna La Herrera, [4.6903°N 74.2763°W], 2600 m, 23 February 2002, leg. J. Martínez, G. Mora, A. Castañeda, and C. Niño; 1♂, 2♀♀ (ICN-Ar 2151), same locality, 28 May 2002, leg. C. Niño, J. Mora, J. Martínez and A. Castañeda; 2♂♂, 1♀ (ICN-Ar 796), Mosquera, Mondoñedo, [4.6831°N 74.2489°W], 2500 m, 02 October 2001, leg. A. Gómez; 2♀♀, 3 juvs. (ICN-Ar 2144), Mosquera, Mondoñedo, Desierto Zabrinsky, [4.6663°N 74.2852°W], 2600 m, 23 March 2002, leg. J. Martínez, C. Niño, G. Mora, and A. Castañeda; 1♀ (ICN-Ar 9933), same locality, 10 January 2014, leg. J. Guerrero; Santander: 1♀ (ICN-Ar 6365), [Encino], Páramo de la Rusia, [5.9797°N, 73.0408°W], 3400 m, leg. I. de Arévalo.

Remarks: We recently examined the holotype female of *Thanatus granadensis* Keyserling, 1880, housed in the Natural History Museum, London. The whole body itself is in reasonably good condition for such an old specimen (DS

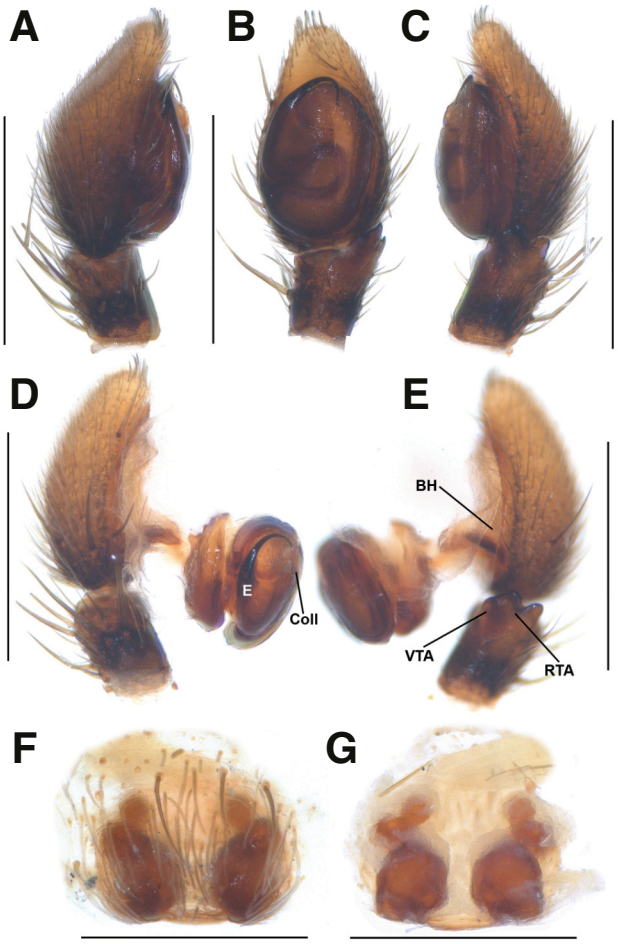

Fig. 12: *Petrichus granadensis* (Keyserling, 1880) comb. nov. male ICN-Ar 796 left palp (A–E), and female ICN-Ar 9931, genitalia, dissected and cleared (F–G). **A** prolateral view; **B** ventral view; **C** retrolateral view; **D** expanded palp, prolateral view; **E** same, retrolateral view; **F** epigyne, ventral view; **G** vulva, dorsal view. Scale bars = 0.5 mm.

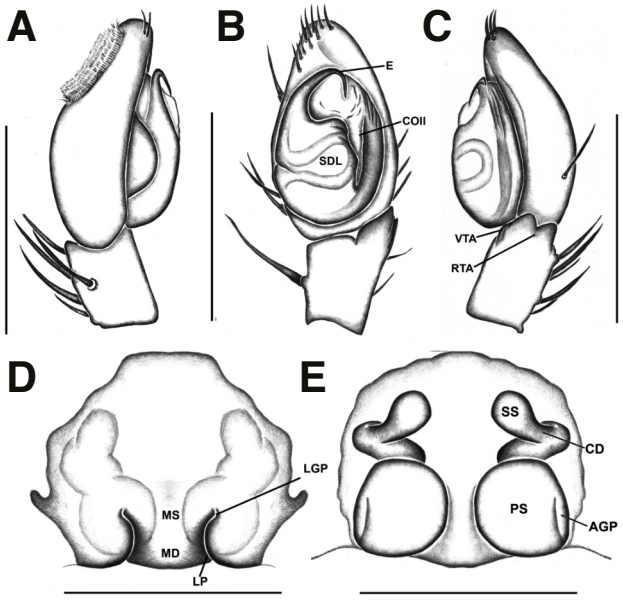

Fig. 13: *Petrichus granadensis* (Keyserling, 1880) comb. nov., male ICN-Ar 796, left palp (A–C), and female ICN-Ar 9931, genitalia, dissected and cleared (D–E). **A** prolateral view; **B** ventral view; **C** retrolateral view; **D** epigyne, ventral view; **E** vulva, dorsal view. AGP = anterior guide pockets, CD = copulatory duct, CoII = conductor (apical part), E = embolus, FD = fertilization duct, GH = glandular head of spermatheca, LGP = lateral guide pocket, LP = lateral plates, MD = mesal depression, MS = median septum, PS = primary spermatheca, RTA = retrolateral tibial apophysis, SDL = sperm duct loop, SS = secondary spermatheca, VTA = ventral tibial apophysis. Scale bars = 0.5 mm.

pers. obs.; Figs 10A–B). The dissected genitalia were cleared in a 5% KOH solution at a cool room temperature for only 3 hours, due to fears about the age and fragility of the sample, so some transparent cuticle is still present over the vulval structure. Nonetheless, it is clear that the morphology of the epigyne and vulva (Fig. 10C–D) are in agreement with *P. griseus*, of which we have examined several fresh specimens (Figs. 12–13). The markings of the carapace and abdomen are similar (cf. Figs. 10A–B and 11A–D). Whilst the original description (Keyserling 1880: 201) only mentioned "N. Granada", the label associated with the specimen clearly states the locality of Bogotá (Fig. 10E) which is a short distance from the locality of the aforementioned specimens of *P. griseus*. Therefore, based on the above reasons, we transfer *T. granadensis* to *Petrichus*, creating the new combination *Petrichus granadensis* comb. nov. We also thereby propose *P. griseus* syn. nov. as a junior synonym of *P. granadensis*.

Distribution: Previously known from Colombia, Ecuador and Peru (World Spider Catalog 2024) (Fig. 18).

Remarks: We present the first record of the species from the department of Santander. This is simultaneously the northernmost known record for the genus. Most of the specimens here examined were collected by pitfall traps on subxerophytic locations near Bogotá, Colombia. One of the females was also collected in a Páramo ecosystem, at La Rusia complex in the Andean paramos.

Discussion

The philodromid fauna of Colombia has been historically little studied: only two species, *Thanatus granadensis* and *Petrichus griseus*, were recorded prior to this paper, the latter being widely distributed also in Ecuador and Peru. With respect to *T. granadensis*, it was only known from a female labelled as originating from "N. Granada" by Keyserling; however, the revision of the type material allows us to recognize it as a species of *Petrichus* and to synonymize the junior synonym *P. griseus* with it. This contribution is the first step in understanding the Colombian philodromids in a modern context. Encompassing the new data given here, the Philodromidae from Colombia is currently comprised of four genera and four species, detailed above in the present work. Although, the diversity of the family is underrated, we note that during the revision of material of museum collections in the country we found several immature philodromids which could not be assigned to any species, and their distribution was not shared with the species recorded here. Thus, clearly more is to be learned about the Philodromidae of Colombia.

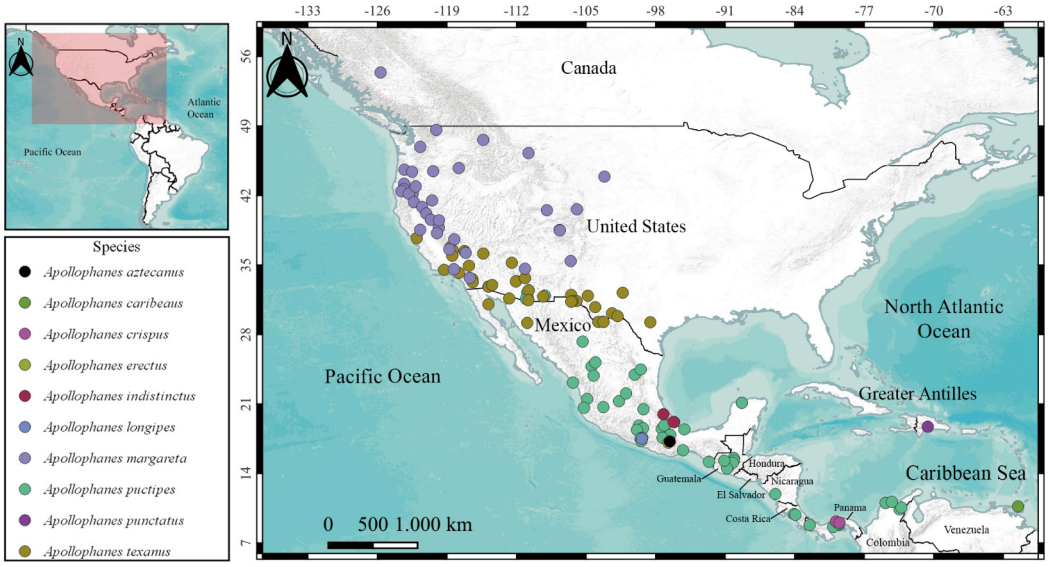

Fig. 14: Distribution map of *Apollophanes* O. Pickard−Cambridge, 1898 species from North America, based on distribution data in the previous literature (see World Spider Catalog 2024 for references for respective species).

Geographical distribution of Apollophanes

This genus is widespread in the New World from southern Canada to southern Brazil (Figs. 14–15). Most published records are from North and Central America. *Apollophanes* shows a wide distribution mainly in zones with high altitudes, although species such as *A. punctatus* and *A. fitzroyi* Baert, 2013 are found in low terrain in Cuba and the Galapagos Islands, respectively. Several species have distributions limited by ecological zones: *A. margareta* and *A. texanus* are restricted to the Nearctic region, while most other species are distributed in the neotropics. Only *A. punctipes* shows a distribution range from the Nearctic in the south of the United States. to the neotropics in Colombia. The species with the southernmost record in this genus is *A. crispus* Dondale & Redner, 1975, which is known from Panama and southern Brazil, although it is not known from any intermediate countries, likely only as an artefact of no dedicated fieldwork focusing on philodromids. It is very likely that this species will in future be recorded in Colombia and other South American countries.

Geographic distribution of Gephyrellula

This hitherto monotypic genus had only been recorded from the southeastern region of Brazil in the states of Pará, Sergipe, Tocantins, Bahia, Minas Gerais, Mato Grosso do Sul, Sao Paulo, Paraná, Santa Catarina, and Rio Grande do Sul. In this paper, we report the first record of this genus outside of Brazil (Fig. 16) based on the newly described *G. lavidabonita* sp. nov. from the Caribbean region of Colombia.

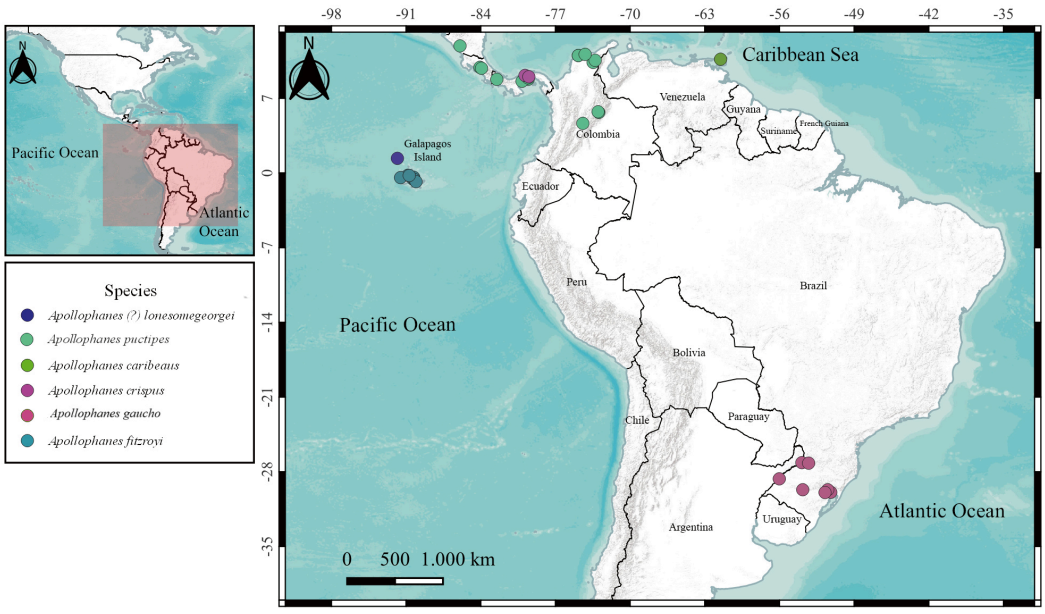

Fig. 15: Distribution map of *Apollophanes* O. Pickard−Cambridge, 1898 species from South America based on distribution data in the previous literature (see World Spider Catalog 2024 for references for respective species), and the new records herein.

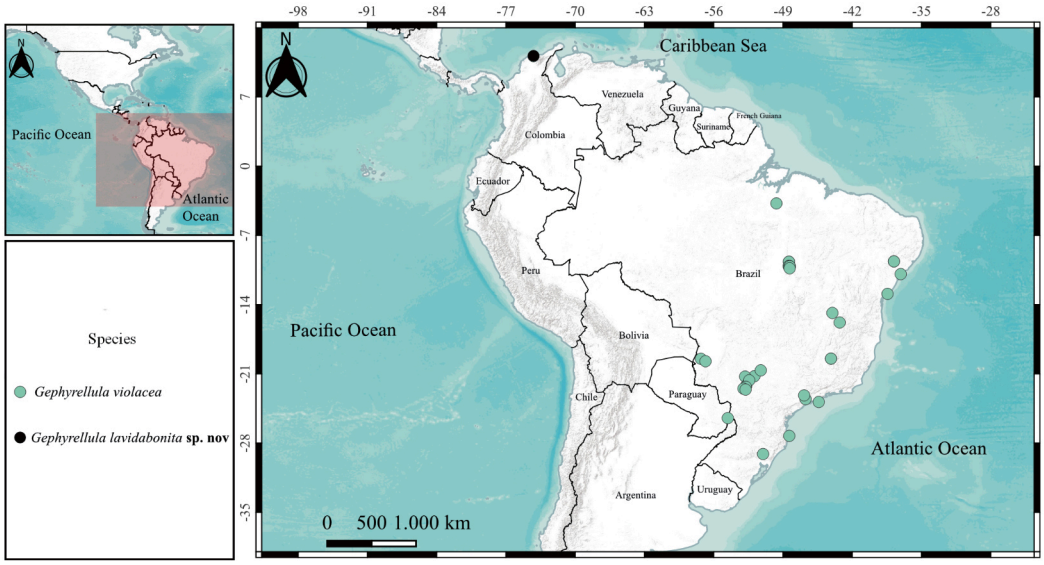

Fig. 16: Distribution map of the genus *Gephyrellula* Strand, 1932, based on Santos & Rheims (2018) and the new record herein.

Geographical distribution of Petrichus

The distribution of this genus (Fig. 17) is mainly in the south of South America, in Argentina and Chile, with its highest diversity associated with high altitude zones in the Andean region. Species such as *P. tullgreni*, *P. patagoniensis*, and *P. spira* have been recorded in the southernmost regions of America, in the Falkland Islands and Patagonia. Only one species is found in the north of South America: *P. granadensis* comb. nov., distributed in Peru, Ecuador, and Colombia in the Andes Mountain range. Some of the new records presented herein are the most northern and lowest altitude records known to date for the species. Other congeners also have wide altitudinal ranges, species such as *P. marmoratus*, which can be found 50–3600 m, *P. eremicus* 20–3500 m, *P. spira* 40–3300 m, and *P. tobioides* 500–2500 m.

Geographical distribution of Tibelloides

The genus is widely distributed in South America; the record of *T. bryantae* presented in this work is the northernmost for the genus (Fig. 18). Two species have distribution across several countries: *T. punctulatus* has been reported in Brazil, Peru, Argentina, Paraguay, Venezuela, and French

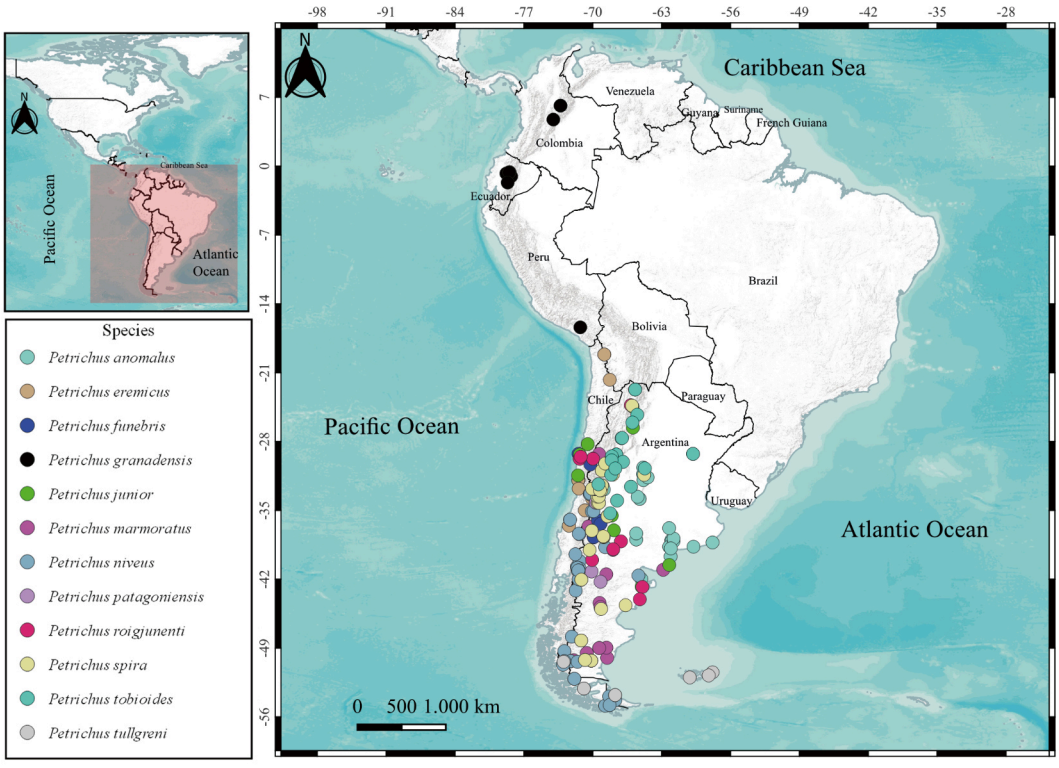

Fig. 17: Distribution map of the genus *Petrichus* Simon, 1886 based on Griotti *et al*. (2022) and the new records herein.

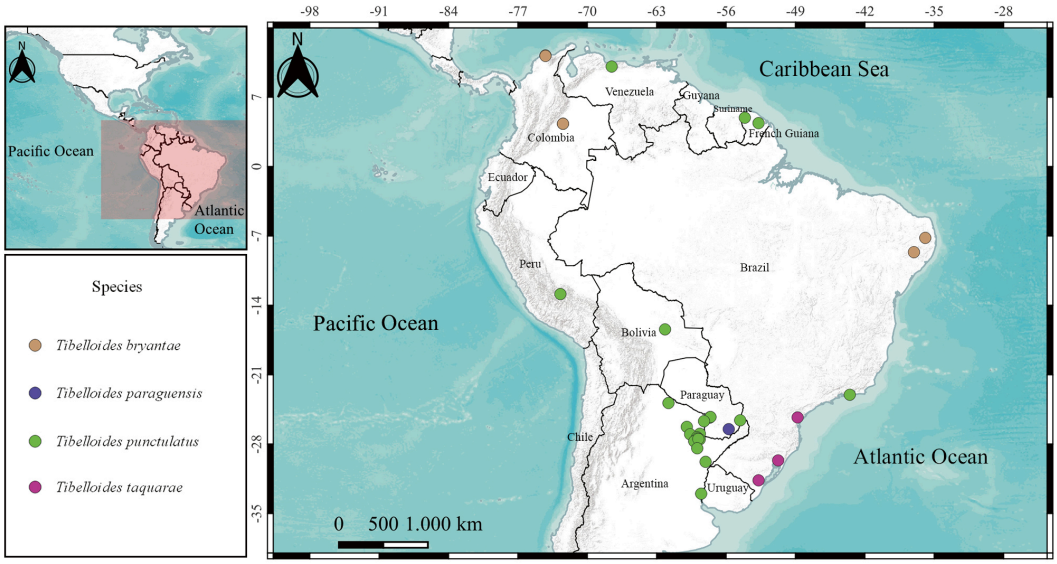

Fig. 18: Distribution map of the genus *Tibelloides* Mello-Leitão, 1939 based on do Prado *et al*. (2022) and the new records herein.

Guiana, and *T. bryantae* in Brazil and Colombia. The latter species is recorded from low altitudes in the departments of Meta and Magdalena. The other two species, *T. taquarae* and *T. paraguensis*, have more restricted distributions in southern Brazil and southern Paraguay, respectively.

Neotropical Philodromidae: *background and challenges for the future*

The family Philodromidae is undoubtedly considered a monophyletic group (do Prado *et al*. 2022), supported by various lines of evidence, both morphological (Muster 2009; Ramírez 2014) and molecular (Wheeler *et al*. 2017; Azevedo *et al*. 2022; Kulkarni *et al*. 2023). Although this family has a well defined and established status within the order, there remain significant unknowns regarding its identity, their morphological limits, its distribution, and their relationships among many of the genera valid today, especially in those groups present in the Neotropics (do Prado *et al*. 2022). This is partly because historically most systematic studies have focused on the Palearctic and Nearctic fauna (Griotti *et al*. 2022; World Spider Catalog 2024), leaving a crucial information gap in fully understanding the diversity of philodromids in other regions.

The lack of updated taxonomic information, stemming from the limited number of taxonomic studies, often hinders the recognition of the different lineages and species of Neotropical philodromids (do Prado *et al*. 2022). This deficiency is reflected, among other things, in the lack of new taxonomic descriptions with detailed morphological information, as well as in the lack of high quality illustrations and photographs (Pantoja, Drago-Bisneto & Saturnino 2020; Griotti *et al*. 2022; do Prado *et al*. 2022; Dupérré 2023; World Spider Catalog 2024).

With the recent increase in interest in this fauna, several studies, such as those by Francisco, Ott & Teixeira (2016), do Prado *et al*. (2022), Pantoja, Drago-Bisneto & Saturnino (2020), Santos & Rheims (2018), and Griotti *et al*. (2022), have significantly contributed to the understanding of the morphological and distributional limits of specific genera, such as *Apollophanes*, *Cleocnemis* Simon, 1886, *Tibelloides*, *Gephyrellula*, and *Petricus*. However, except for the study by Francisco, Ott & Teixeira (2016), these taxonomic revisions cover only a quarter of the 16 known genera in the region (do Prado *et al*. 2022). Meanwhile, morphological, and distributional knowledge of the remaining groups is based on old descriptions that lack relevant morphological information. This deficit of taxonomic update or revision hinders the accurate identification and comparison of these neotropical genera (Pantoja, Drago-Bisneto & Saturnino 2020; Dupérré 2022; Griotti *et al*. 2022; do Prado *et al*. 2022; World Spider Catalog 2024).

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