New species of Otiothopinae (Araneae: Palpimanidae) from Colombia

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Abstract

Six new Colombian species of Otiothops (O. besotes sp. n., O. doctorstrange sp. n., O. chicaque sp. n., O. vaupes sp. n.) and Fernandezina (F. andersoni sp. n., F. eduardoi sp. n.) are described. Diagnostic illustrations and distribution maps are provided for all of the new species, along with new records for O. macleayi Banks, 1929 and O. amazonicus Simon, 1887 from Colombia.

Key words: Neotropical region, haplogynae, taxonomy

Introduction

The Neotropical subfamily Otiothopinae Platnick, 1975 contains 70 described species placed in four genera: Otiothops MacLeay, 1839, Notiothops Platnick, Grismado & Ramírez, 1999, Fernandezina Birabén, 1951 and Anisaedus Simon, 1893. According to Platnick (1975), species of Otiothopinae can be distinguished by the absence of a conductor and any other accessory terminal sclerites on the male palp, and by the presence of only one or two soft spermathecae, without ducts.

Spiders in the genus Otiothops are usually found in leaf litter microhabitats in the tropical and subtropical forests of the Caribbean and Central and South America (Bryant 1940; Chickerling 1966; Platnick 1975; Platnick et al. 1999; Cala-Riquelme & Agnarsson 2014; Castro et al. 2015; World Spider Catalog 2018). The genus Fernandezina contains 12 species described from Brazil, Peru, Bolivia, Argentina and Guyana (Platnick 1975; Platnick et al. 1999; Castro et al. 2015; World Spider Catalog 2018). According to Platnick et al. (1999), species of Otiothops can be distinguished from species of Fernandezina by an expanded femur I and by the presence of a very short abdominal scute. In Colombia, Otiothops is represented by O. kochalkai Platnick, 1978 and O. calcaratus Mello-Leitão, 1927. Otiothops kochalkai has mostly been collected from leaf litter in the tropical forests of Magdalena state (Platnick 1978), while O. calcaratus is known from leaf litter in the páramo zone near Bogota (Platnick 1975).

In this paper, six new species of Otiothopinae are described from Colombia: O. besotes sp. n. from Cesar and La Guajira, O. doctorstrange sp. n. and F. eduardoi sp. n. from Bolivar, O. chicaque sp. n. from Cundinamarca, O. vaupes sp. n. from Vaupes, and F. andersoni sp. n. from Santa Maria. Otiothops besotes sp. n. and O. chicaque sp. n. could be closely related to species in the amazonicus group (Figs 2–4, 9–11). Otiothops vaupes sp. n. is included in the typicus group due to the morphology of the palpal bulb, which is greatly inflated (see Platnick 1975). In addition, we suggest that O. doctorstrange sp. n., O. kochalkai and O. fraunzi Wunderlich, 1999 could constitute a species-group characterized by the presence of a large, flattened embolus, and by the presence of a neck-like
constriction on the palpal bulb (Figs 15–18). Finally, *O. macleayi* Banks, 1929, a species previously known only from Panama, and *O. amazonicus* Simon, 1887, previously known only from Brazil, are reported from Colombia.

### Material and methods

Specimens were preserved in 96% ethanol. The extracted female genitalia were observed after digestion in potassium hydroxide (KOH) following Platnick *et al.* (1999). Illustrations of the male palps and female genitalia were made using images taken by a Nikon Camera Head DS-SI1 digital camera mounted on a NIKON 4024913 microscope. Collected specimens were geo-referenced *in situ* using a GPS GARMIN eTrex Legend® and indicated in the Material Examined section (below). The map was prepared in the Geographic Information System QGIS ‘Essen’ (version 2.14; http://qgis.org/es/site/index.html [accessed March 2018]), with raster files from DIVA-GIS© (http://www.diva-gis.org/gdata [accessed March 2018]).

Abbreviations and general morphological terminology follow Platnick *et al.* (1999), as follows: AD—anterodorsal diverticula; AP—anteromedian projection; CH—carapace height; CL—carapace length; Cy—Cymbium; CW—carapace width; E—embolus; F—femur; MR—median receptacula; Pa—patella; P—pedicel posterior apodeme; PP—poreplates; T—tibia. Specimens were deposited in the arachnological collection of the Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá, Colombia (ICN-Ar, E. Flórez) and entomological collection of the Museo Javeriano de Ciencias Naturales (MPUJ_ENT, D. Forero). All measurements are in millimetres.

### Key to the genera and species of Otiothopinae from Colombia (males required)

| 1. Specimens with expanded femur I (Figs 14, 19); abdominal scute very short or sometimes absent (Figs 1, 6) | genus *Otiothops* MacLeay, 1839 | [genus *Otiothops* MacLeay, 1839: 12. Type species by monotypy *Otiothops walckenaeri* MacLeay, 1839.]
| 2. Palpal tibia almost twice as wide as bulb (Figs 2–4) | *Otiothops besotes* sp. n. | [genus *Fernandezina* Biraben, 1951: 8. Family Palpimanidae Thorell, 1870] |
| 3. Bulb almost twice as wide as palpal tibia (Figs 20–23) | *Otiothops vaupes* sp. n. | |
| 4. Tip of embolus strongly curved, directed retrodorsally (Fig. 18) | *Otiothops amazonicus* Simon, 1887 | |
| 5. Embolus curved, considerably longer than bulb (Figs 26–27) | *Otiothops doctorstrange* sp. n. | |
| 6. Embolus projecting from near middle of bulb (Fig. 9–11) | *Otiothops chicaque* sp. n. | |
| 7. Tip of embolus straight and elongate (see Platnick 1975, figs 5–6) | *Fernandezina andersoni* sp. n. | |
| 8. Embolus curved, considerably longer than bulb (Figs 15–17) | *Otiothops calcaratus* Mello-Leitão, 1927 | |
| 9. Bulb without a narrow neck (Figs 26–27); embolus wider (Figs 26–27) | *Fernandezina eduardoi* sp. n. | |
| 10. Embolus straight, as long as bulb (see Platnick 1975, figs 59–60) | *Otiothops kochalkai* Platnick, 1978 | |
| 11. Embolus projecting from base of bulb (Fig. 13) | *Otiothops chicaque* sp. n. | |
| 12. Embolus complex (Figs 9–11, 13) | *Otiothops calcaratus* Mello-Leitão, 1927 | |
| 13. Embolus simple (Figs 15–17) | *Otiothops chickaque* sp. n. | |
| 14. Tip of embolus strongly curved, directed retrodorsally (Figs 13) | *Otiothops amazonicus* Simon, 1887 | |
| 15. Embolus projecting from near middle of bulb (Fig. 9–11) | *Otiothops calcaratus* Mello-Leitão, 1927 | |
| 16. Embolus curved, considerably longer than bulb (Figs 15–17) | *Otiothops doctorstrange* sp. n. | |
| 17. Tip of embolus straight and elongate (see Platnick 1975, figs 5–6) | *Fernandezina andersoni* sp. n. | |
| 18. Embolus simple (Figs 15–17) | *Otiothops chicaque* sp. n. | |
| 19. Embolus complex (Figs 9–11, 13) | *Otiothops calcaratus* Mello-Leitão, 1927 | |
| 20. Embolus simple (Figs 15–17) | *Otiothops calcaratus* Mello-Leitão, 1927 | |

### Taxonomy

**Family Palpimanidae Thorell, 1870**

**Subfamily Otiothopinae Platnick, 1975**

**Genus *Otiothops* MacLeay, 1839**

*Otiothops* MacLeay, 1839: 12. Type species by monotypy *Otiothops walckenaeri* MacLeay, 1839.
Otiothops besotes sp. n. Cala-Riquelme & Agnarsson, 2018
(Figs 1–5)

Type material. Male holotype from Ecoparque “Besotes”, Cesar, Valledupar, Colombia, 10.5740523°N, 73.27216440°W, 18 July 2015, dry forest leaf litter, CarBio Team (ICN-Ar10652). Paratype: 1 female, same data as holotype (ICN-Ar10653).

Other material examined. COLOMBIA: La Guajira: 1 male and 1 female, Monte de Oca, Bocatoma, 11.1728611°N, 72.3783611°W, 15 July 2015, dry forest leaf litter, CarBio Team (ICN-Ar 10654).

Diagnosis. Males of Otiothops besotes sp. n. resemble those of O. brevis Simon, 1893 by size of the palpal tibia, which is wider than the bulb (Figs 2–4; see also Platnick 1975, figs 61–62), but can be distinguished by the globe-shaped tibia and straight embolus (Figs 2–4). The female internal genitalia (Fig. 5) resemble those of O. birabení Mello-Leitão, 1945 by the presence of latero-median poreplates (Fig. 5; see also Brescovit and Bonaldo 1993, fig. 4), but differ by the wider anterior portion of the median receptacles, and by the shorter poreplates with a ringed texture.

FIGURES 1–5. Otiothops besotes sp. n. 1, Male holotype, habitus, dorsal view. 2–4, Male holotype, left palp (E = embolus, Cy = cymbium, Bu = Bulb): 2, prolateral view; 3, ventral view; 4, retrolateral view. 5, Female paratype, KOH digested internal genitalia, dorsal view (MR = median receptacles, P = pedicel posterior apodeme, PP = poreplates).
Etymology. The specific epithet is a noun in apposition referring to the type locality at ‘Los Besostes’, Valledupar, Cesar, Colombia.

Description. Male (holotype, ICN-Ar10652): Total length 3.8. Carapace: 1.85 long, 1.35 wide (at leg II), 0.85 high (at leg II). Leg I: femur 1.24 long, 0.62 wide. Abdomen: 1.95 long, 1.45 wide. Posterior median eyes contiguous. Palp: femur 0.48 long, 0.16 wide; patella 0.24 long, 0.22 wide; tibia 0.26 long, 0.34 wide; cymbium 0.4 long, 0.1 wide; embolus 0.38 long. Sclerotized portions of body dark orange; abdominal scute dark orange, unsclerotized portion of dorsal abdomen grey with light spots. Palpal femur thickened; tibia globe-shaped, 2.0 x wider than bulb; embolus longer than bulb, slightly curved at tip (Figs 2–4).

Female (paratype, ICN-Ar10653): Total length 5.2. Carapace: 2.25 long, 1.64 wide (at leg II), 1.05 high (at leg II). First leg: femur 1.42 long, 0.74 wide. Abdomen: 2.85 long, 1.5 wide, scute 0.85 long. Posterior median eyes contiguous. Sclerotized portions of body dark orange; abdominal scute dark orange, unsclerotized portion of dorsal abdomen grey with light spots. Genitalia (Fig. 5): anterior half of receptacles 2.0 x wider than posterior half, basally joined; pedicel with posterior apodemes; poreplates discoid shaped.

Distribution. Known from Valledupar and La Guajira, Colombia.

Natural history. The holotype and paratype were found in leaf litter in tropical dry forest.

Otiothops chicaque sp. n. Cala-Riquelme, Quijano-Cuervo & Agnarsson, 2018
(Figs 6–13)


Other material examined. COLOMBIA: Cundinamarca: 1 subadult female, same data as holotype (ICN-AR10684).

Diagnosis. Males of Otiothops chicaque sp. n. resemble those of species in the amazonicus group by the morphology of the embolus (Figs 8–11; see also Platnick 1975, figs 51–52), but can be distinguished by the embolus originating close to the middle of the bulb (Figs 9–11). Females can be distinguished from other species by the shape of the median receptacles, which are 5.0 x longer than wide, contiguous, with proximal poreplates (Fig. 12).

Etymology. The specific epithet is a noun in apposition referring to the type locality, Chicaque, San Antonio de Tequendama, Cundinamarca, Colombia.

Description. Male (holotype, ICN-AR10682): Total length 6.7. Carapace: 2.9 long, 2.2 wide (at leg II), 1.5 high (at leg II). Leg I: femur 1.95 long, 1.2 wide. Abdomen: 3.6 long, 2.0 wide, scute 0.3 long. Posterior median eyes separated by less than their own diameter. Palp: femur 0.75 long, 0.15 wide; patella 0.23 long, 0.20 wide; tibia 0.38 long, 0.30 wide; cymbium 0.58 long; embolus 0.35 long. Sclerotized portions of body dark orange; abdominal scute and unsclerotized portion of dorsal abdomen orange-brown. Palpal femur not thickened; tibia longer than wide; embolus shorter than cymbium, with bifurcate, L-shaped, curved tip (Figs 9–11).

Female (paratype, ICN-AR10683): Total length 6.4. Carapace: 2.8 long; 2.0 wide (at leg II), 1.2 high (at leg II). Leg I: femur 1.8 long, 0.9 wide. Abdomen: 3.6 long, 2.3 wide, scute 0.1 long. Posterior median eyes separated by their own diameter. Sclerotized portions of body dark orange; abdominal scute dark orange, unsclerotized portion of dorsal abdomen grey with light spots. Genitalia (Fig. 12): receptacles 5.0 x longer than wide, basally joined; pedicel with posterior apodemes; poreplates proximal.

Distribution. Known from the type locality at Chicaque, Cundinamarca, Colombia.

Natural history. The holotype and paratype were found in leaf litter in Andean forest.

Otiothops doctorstrange sp. n. Cala-Riquelme & Quijano-Cuervo, 2018
(Figs 14–17)

Type material. Male holotype from Reserva ‘La Flecha’, San Jacinto, Bolivar, Colombia, 9.8498556ºN, 75.1668972ºW, 10 September 2015, dry forest leaf litter, L. Quijano (ICN-Ar10655). Paratypes: 1 male, Isla Barú,
Other material examined. COLOMBIA: Bolivar: 1 subadult female and 1 juvenile, same data as holotype (ICN-Ar10656).

Diagnosis. Males of *Otiothops doctorstrange* sp. n. resemble those of *O. kochalkai* (Fig. 18; see also Platnick 1978, fig. 1), but can be distinguished by the shape of the cymbium, which is without a prolaterally bent tip, and by the shape of the embolus, which has a trajectory close to the bulb and a curved tip (Fig. 17). Females are unknown.

Etymology. The specific epithet is a noun in apposition referring to the Marvel comics “Doctor Strange” created by artist Steve Ditko and writer Stan Lee in 1963.

**FIGURES** 14–18. *Otiothops doctorstrange* sp. n. 14, Male holotype, habitus, dorsal view. 15–17, Male holotype, left palp (E = embolus, Cy = cymbium, Bu = bulb): 15, retrolateral view; 16, prolateral view; 17, ventral view. 18, *Otiothops kochalkai* Platnick, 1978, left palp, ventral view (E = embolus, Cy = cymbium, Bu = bulb).

**Description.** Male (holotype, ICN-Ar10655): Total length 3.85. Carapace: 1.8 long; 1.25 wide (at leg II), 0.95 high (at leg II). Leg I: femur 1.13 long, 0.58 wide. Abdomen: 1.95 long, 1.5 wide, scute 0.63 long. Posterior median eyes contiguous. Palp: femur 0.48 long, 0.1 wide; patella 0.15 long, 0.18 wide; tibia 0.28 long, 0.28 wide; cymbium 0.55 long; embolus 0.52 long. Sclerotized portions of body dark orange; abdominal scute and
unsclerotized portion of dorsal abdomen orange-brown. Palpal femur not thickened; tibia as long as wide; embolus almost as long as cymbium and 2.0 x longer than bulb, strongly curved in the apical third (figs. 15-17).

**Distribution.** Known from the type locality at San Jacinto (Bolivar), and Isla Barú (Bolivar) and Colosó (Sucre), Colombia.

**Natural history.** The holotype and paratypes was found in leaf litter in tropical dry forest.

*Otiothops vaupes* sp. n. Cala-Riquelme, Quijano-Cuervo & Agnarsson, 2018
(Figs 19–23)

**Type material.** Male holotype from Lago Taraira, Taraira, Vaupés, Colombia, 0.564744ºS- 69.6341099ºW, 1 April 2004, tropical rainforest leaf litter, J. Pinzon (MPUJ_ENT0058647). Paratype: 1 male, same data as holotype (MPUJ_ENT0058648.1).

**FIGURES 19–23. Otiothops vaupes** sp. n. 19, Male holotype, habitus dorsal view. 20-23, Male holotype, left palp (E = embolus, Cy = cymbium, Bu = bulb): 20–21, retrolateral view; 22, ventral view; 23, prolateral view.
Diagnosis. Males of *Otiothops vaupes* sp. n. resemble those of species in the *typicus* group by the greatly inflated palpal bulb (Figs 20–23; see also Platnick 1975; Brescovit and Bonaldo 1993), but can be distinguished by the shape of the embolus, which is curved and widened close to the tip (Figs. 20-23). Females are unknown.

Etymology. This specific epithet is a noun in apposition referring to the type locality from Vaupés, Colombia.

Description. Male (holotype, MPUJ_ENT0058647): Total length 5.8. Carapace: 2.7 long, 2.0 wide (at leg II), 1.2 high (at leg II). Leg I: femur 2.1 long, 1.0 wide. Abdomen: 2.8 long, 1.8 wide, acute 0.9 long. Posterior median eyes separated by less than their own diameter. Palp: femur 0.8 long, 0.3 wide; patella 0.25 long, 0.2 wide; tibia 0.37 long, 0.34 wide; cymbium 0.82 long; embolus 0.67 long. Sclerotized portions of body dark orange; abdominal scute and unsclerotized portion of dorsal abdomen orange-brown. Palpal femur not thickened; tibia longer than wide, considerably smaller than bulb; bulb inflated; embolus longer than bulb but shorter than cymbium, slightly curved with bifurcate tip (Figs 20–23).

Distribution. Known only from the type locality at Taraira, Vaupés, Colombia.

Natural history. The holotype and paratype were found in leaf litter in tropical rainforest.

*Otiothops amazonicus* Simon, 1887

(Fig. 13)


Material examined. COLOMBIA: Amazonia: 1 male Leticia, Comunidad indígena Monifue Amena, via Leticia-Tarapacá, 4.141667°S, 69.923256°W, 30 October 2003, tropical forest leaf litter, J. Pinzon (MPUJ_ENT0058649); 1 male, same data (MPUJ_ENT0058650).

*Otiothops kochalkai* Platnick, 1978

(Fig. 18)


Material examined. COLOMBIA: Magdalena: 1 male and 1 female, Santa Marta, Tayrona National Park, 20 km NW. of Bahía de Gairaca, 11.2500516ºN, 74.163961ºW, 6 November 1985, M. A. Müller (ICN-AR10681).

*Otiothops macleayi* Banks, 1929


Genus *Fernandezina* Birabén, 1951

*Fernandezina* Birabén, 1951: 545. Type species by original designation *Fernandezina pulchra*, Birabén, 1951.

*Fernandezina andersoni* sp. n. Cala-Riquelme & Agnarsson, 2018

(Figs 24–28)

Type material. Male holotype from 2 km NE. of Santa María, Almarena, Boyacá, Colombia, 4.857988ºN,
NEW SPECIES OF OTIOTHOPINAE FROM COLOMBIA

73.262355°W, 6 December 2016, Andean forest leaf litter, L. R. Anderson, M.G. Branstetter (ICN-Ar10689). Paratypes: 1 male, 2 females and 1 juvenile, same data as holotype (ICN-Ar10690).

Diagnosis. Males of *Fernandezina andersoni* sp. n. can be distinguished from other congeners by presence of a thin embolus which is as long as the cymbium; and by the absence of a constricted neck on the palpal bulb (Figs 26–27). Females can be distinguished from other congeners by the longer and wider receptacles (Fig. 28).

Etymology. The specific epithet is a patronym in honour of Dr. Robert Anderson, entomology research scientist at the Canadian Museum of Nature, Ottawa.

Description. Male (holotype, ICN-Ar10689): Total length 3.1. Carapace: reddish brown; 1.5 long, 1.05 wide (at leg II), 0.8 high (at leg II). Posterior median eyes separated by almost 3.0 x their own diameter. Legs: orange-yellow, first legs slightly darker; femur 1.13 long, 0.40 wide. Abdomen: reddish-grey; 1.6 long, 1.2 wide;
abdominal scute covering ca. 22% of dorsum. Palpal femur not thickened, 2.0 x longer than wide; tibia almost as long as wide; embolus 0.48 long, slightly longer than cymbium, thin and slightly curved (Figs 26–27).

**Female** (paratype, ICN-Ar10690): Total length 3.4. Carapace: reddish brown; 1.5 long, 1.1 wide (at leg II), 0.7 high (at leg II). Posterior median eyes separated by almost 3.0 x their own diameter. Legs: orange-brown, first legs slightly darker; femur 1.25 long, 0.5 wide. Abdomen: yellowish-brown; 1.65 long; scute covering ca. 12% of dorsum. Internal genitalia with two large receptacles, 4.0 x wider distally than proximally (Fig. 28).

**Distribution.** Known only from the type locality north-east of Santa María, Boyacá, Colombia.

**Natural history.** The holotype was found in leaf litter in Andean forest.

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**Fernandezina eduardoi** sp. n. Cala-Riquelme, Quijano-Cuervo & Sabogal-Gonzáles, 2018 (Figs 29–34)

**Type material.** Male holotype from Reserva Campesina ‘La Montaña’, Usiacuri, Atlántico, Colombia, 10.741163ºN, 74.976528ºW, 20–21 December 2013, tropical dry forest litter, L. Quijano Cuervo (ICN-Ar10685). Paratypes: 1 female, same data as holotype (ICN-AR10686); 2 females, Reserva ‘La Flecha’, San Jacinto, Bolívar, Colombia, 9.849856ºN, 75.166897ºW, 10 September 2015, dry forest leaf litter, L. Quijano (ICN-Ar10687); 1 male, Reserva Primates, Coloso, Sucre, Colombia, 9.49551ºN, 75.352179ºW, 1 October 2016, dry forest leaf litter, E. Villarreal (ICN-Ar10688).

**Diagnosis.** Males of **Fernandezina eduardoi** sp. n. resemble those of *F. ilheus* Platnick, Grisamado & Ramírez, 1999 by the distally constricted bulb (Figs 31–33; see also Platnick et al.1999, figs 22–24), but can be distinguished by the considerably longer, curved embolus, and by the longer narrow neck of the palpal bulb (Figs 31–33). Female can be distinguished from other congeners by the short and curved receptacles (Fig. 34).

**Etymology.** The specific epithet is a patronym in honour of Dr. Eduardo Florez Daza, a researcher of Colombian arachnids and professor of the Universidad Nacional de Colombia.

**Description.** Male (holotype, ICN-Ar10685): Total length 2.63. Carapace: reddish-brown; 1.35 long, 1.05 wide (at leg II), 0.57 high (at leg II). Posterior median eyes separated by almost 3.0 x their own diameter. Legs: orange-brown, first legs slightly darker; femur 0.92 long, 0.46 wide. Abdomen: yellowish-brown; 1.18 long; abdominal scute covering ca. 42% of dorsum. Palpal femur not thickened, 2.5 x longer than wide; tibia longer than wide; bulb funnel-shaped, narrowed in the apical quarter; embolus 0.63 long, 2.0 x longer than cymbium, slightly curved with strongly curved tip (Figs 31–33).

**Female** (paratype, ICN-Ar10686): Total length 2.85. Carapace: reddish brown; 1.40 long, 1.03 wide (at leg II), 0.65 high (at leg II). Posterior median eyes separated by almost 3.0 x their own diameter. Legs: orange-brown, first legs slightly darker; femur 1.24 long, 0.38 wide. Abdomen: yellowish-brown; 1.45 long; scute covering ca. 15% of dorsum. Internal genitalia with two short receptacles, thin and curved at the tip, wider at the base (Fig. 34).

**Distribution.** Known only from the type locality at Usiacuri, Atlántico, Colombia.

**Natural history.** The holotype and paratype were found in leaf litter in tropical dry forest.

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**Discussion**

Our knowledge of the taxonomy, biology, and distribution of Neotropical Otiothopinae remains relatively limited. Some of the described species are known only from their original descriptions (e.g. Platnick 1975, 1978), while others are known from relatively poor descriptions and original illustrations. Over the last 30 years, new species have been described from Argentina (Grisamado and Ramirez 2002; Grisamado 2008), Brazil (Brescovit and Bonaldo 1993; Ramirez and Grisamado 1996; Platnick et al.1999; Buckup and Ott 2004; Brescovit et al. 2007; Ott and Ott 2014; Castro et al. 2015), Chile (Platnick et al. 1999; Wunderlich 1999), Bolivia (Piacentini et al. 2013 ), Cuba (Cala-Riquelme and Agnarsson 2014), Guyana (Grisamado 2002), Venezuela (Wunderlich 1999) and a new genus *Notiothops* was described from Chile (Platnick et al. 1999). However, due to the difficulties of field collection, the high diversity and the existing regional gaps in the Neotropics, it is likely that a large part of the Neotropical otiothopine fauna remains undescribed (Platnick 1975; Platnick et al. 1999; Castro et al. 2015). In this study we found that in Colombia, the number of known species is clearly underestimated, with evidence for six new species and two new records.
FIGURES 29–34. Fernandezina eduardoi sp. n. 29, male holotype, habitus, dorsal view. 30, female paratype, habitus, dorsal view. 31–33, Male holotype, left palp (E = embolus, Cy = cymbium, Bu = bulb): 31, retrolateral view; 32, ventral view; 33, prolateral view. 28, Female paratype, KOH digested internal genitalia, dorsal view (MR = median receptacles).
FIGURE 35. Map showing the geographical distribution of the Colombian species of Otiothiopinae.

In general, *Otiothops* and *Fernandezina* contain species associated with leaf litter, and both genera can be clearly differentiated according to the shape of the leg I femur and the size of the male abdominal scute (Platnick 1975). Platnick (1975) designated seven neotropical species-groups for *Otiothops* and *Fernandezina*: the *amazonicus* group, the *oblongus* group, the *germaini* group, the *typicus* group, the *walckenaeri* group, the *rufus* group, and the *pulchra* group. Prior to this work, only the *oblongus* group (with *O. kochalkai*) and the *amazonicus* group (with *O. calcaratus*) were known from Colombia. However, a review of the morphology of *O. kochalkai* suggests that this species may not correspond to the *oblongus* group *sensu* Platnick (1978) and may belong to another as yet unnamed lineage. Indeed, according to the morphology of the palp, *O. doctorstrange* may be closely related to *O. kochalkai* and *O. franzi*. In all three species, the flattened embolus is considerably longer than the bulb, with a whip-like tip, and the bulb has a neck-shaped constriction at its base. This group could be called the *kochalkai* group. We also find that *O. vaupes* is likely placed in the *typicus* group, due to the inflated shape of the bulb, and that *O. chicaque* and *O. besotes* appear to be close relatives of other described species in the *amazonicus* group (see Platnick 1975). In this way, the *amazonicus* group from Colombia is currently composed of four species, including the new record of *O. amazonicus* from Leticia. For the two new species of *Fernandezina*, we found a morphological similarity with *F. ilheus* and *F. dasilvai* from Brazil.

For the female genitalia, we found that structures like the poreplate and ducts were sometimes difficult to locate once the KOH digestion was performed. This problem may be a product of the technique used, but we know that other authors have sometimes found these structures using the protocol proposed by Platnick *et al.* (1999). We believe that there could be better results using the enzymatic protocol proposed by Álvarez-Padilla and Hormiga...
(2007), although this has not yet been tested. Finally, we suggest further studies that include scanning electronic microscopy, in order to be able to better compare the morphology of Colombian species with those from the rest of the Neotropics, and to carry out phylogenetic studies using morphological and molecular characters, in order to test the monophyly of the species-groups and their affinities.

Acknowledgments

We are grateful to Neis Martínez Hernández, Robert Anderson, Dimitri Forero, Ligia Benavides, William Galvis, M.G. Branstetter and Eduardo Florez for kind help with obtaining additional samples. Many thanks to all the members of Colombian team CarBio for their tireless efforts in the field. We specially acknowledge the comments and critique of Antonio Brescovit and anonymous reviewers on the earlier version of this draft, and Michael Rix for a careful correction of our English text. Funding for this work came from NSF DEB-1050187-1050253-1314749 to IA and GB, and project QUIPU 201010026635 code 35046 to Eduardo Florez.

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