



A new species of *Paratropis* Simon, 1889 (Araneae: Paratropididae) from Guyana

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Abstract. A new species of *Paratropis* is herein described and illustrated, namely: *Paratropis minusculus* n. sp. based on males, females and immatures from Potaro-Siparuni, Guyana. Male e female of *P. minusculus* differ from those of all other species of the genus by having six eyes and by spinneret apical segment domed. In addition, we presented the first record of paratropidid species from Guyana, contribute to the knowledge of local biodiversity.

Keywords: Arachnida; biodiversity; Neotropics; taxonomy.

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The spiders of the family Paratropididae Simon, 1889 are found in the American continent, however, its distribution is only known in eight countries: Brazil, Colombia, Ecuador, Mexico, Panama, Peru, Saint Vincent and Venezuela and is represented by four genera: *Anisaspis* Simon, 1892; *Anisaspoides* F.O. Pickard-Cambridge, 1896; *Paratropis* Simon, 1889 and *Stormtropis* Perafán, Galvis & Pérez-Miles, 2019 (WORLD SPIDER CATALOG 2022).

The genus *Paratropis* is composed of six species and can be diagnosed in the family Paratropididae by soil encrusted on body, eye tubercle highly elevated, legs I of male without tibial spur, claw tufts absent and by having four spinnerets (RAVEN 1985, 1999; PERAFÁN *et al.* 2019; DUPÉRRÉ & TAPIA 2020).

The paratropidids are small and fossorial spiders of biology and ecology still little known. They can be found in rainforests, cave, near a stream river, and in montane forests, in microhabitat as under fallen logs and under boulders on the ground (RAVEN 1999; BERTANI 2013; VALDEZ-MONDRAGÓN *et al.* 2014; DUPÉRRÉ 2015; PERAFÁN *et al.* 2019; DUPÉRRÉ & TAPIA 2020).

The present work aims to describe a new species of *Paratropis* named here *Paratropis minusculus* n. sp. based on males, females and immatures from Potaro-Siparuni, Guyana. In addition, we present the first record of a paratropidid species from Guyana, contributing to the knowledge of the country biodiversity.

MATERIAL AND METHODS

Specimens were examined in 70% ethanol using a stereomicroscope Leica M80. All photographs and measurements were taken under stereomicroscope Leica M205A and a Leica application suite V4.10. All measurements are in millimeters. The left male palp was featured and illustrated in prolateral, ventral and retrolateral view. After dissection, female spermathecae were cleaned in clove oil (pure) for 30 minutes.

The total length was taken with the spider in the dorsal position. It was measured from the clypeus edge to posterior end of the abdomen. Chelicerae and spinnerets were not included.

The specimens are deposited at the Museum of Comparative Zoology (MCZ) of Harvard University, Cambridge, USA. The description and terminology follow RAVEN (1999) with some modifications proposed by BERTANI (2013). Abbreviations used in the descriptions and illustrations: (ALE) anterior lateral eyes, (AME) anterior median eyes, (ITC) inferior tarsal claw, (PLE) posterior lateral eyes, (PLS) posterior lateral spinnerets, (PME) posterior median eyes, (PMS) posterior median spinnerets, (MCZ) Museum of Comparative Zoology, Harvard University, Cambridge, USA, (STC) superior tarsal claw.

RESULTS

Family Paratropididae, Simon, 1889

Genus *Paratropis* Simon, 1889

Type species. *Paratropis scruposa* Simon, 1889.

Composition. *Paratropis elicioi* Dupérré, 2015, *Paratropis florezi* Perafán, Galvis & Pérez-Miles, 2019, *Paratropis otonga*, Dupérré & Tapia, 2020, *Paratropis papilligera* F.O.P. Cambridge, 1896, *Paratropis pristirana* Dupérré & Tapia, 2020, *Paratropis sanguinea* Mello-Leitão, 1923, *Paratropis scruposa* Simon, 1889, *P. seminermis* Caporiacco, 1955, *P. tuxtlenensis* Valdez-Mondragón, Mendoza & Francke, 2014. *Paratropis minusculus* n. sp.

Paratropis minusculus n. sp. (Figures 1-11).

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Type material. Holotype male (MCZ 47063) GUYANA: Potaro-Siparuni, Bay Camp, 8km WNW Chenapau, Potaro River, 5.00974°; -59.63593°, 12.III.2014 (M. G. Branstetter). Paratype 3 females (MCZ 47061), GUYANA: Potaro-Siparuni, 8km WNW Chenapau, Potaro River, 5.01198°; -59.64395°, 05.III.2014 (M. G. Branstetter).

Etymology: The specific name refers to the tiny size of the species.

Diagnosis. *Paratropis minusculus* n. sp. differ from those of all other species of the genus by having six eyes (Figure 7) and by PLS apical segment domed (Figures 5-6).

Description. Male Holotype (MCZ 47063): Total length: 3.3; carapace length 1.8, width 2.0; abdomen length 1.5, width 1.4. Coloration in alcohol: In general, the body coloration is brown dorsally and pale yellow ventrally, all body is encrusted with soil particles. *Carapace:* Caput slightly raised, encrusted with soil particles, and with small spines along midline and in lateral margins, eye tubercle elevated, fovea transverse. Eyes and eyes tubercle: PME absent; Tubercle 0.3 high; 0.31 long; 0.42 wide; clypeus 0.05 long. Sizes and inter-distances: AME 0.14; ALE 0.10; PLE 0.10; AME-AME 0.08; AME-ALE 0.02; ALE-PL 0.02. *Chelicerae:* Encrusted with sand and dirt dorsally, and with setae on apical part. Cheliceral furrow with teeth on both margins in two juxtaposed rows, promargin and retromargin with 8 teeth. *Endites:* Longer than wide, length 0.72, width 0.32, with conical projection anteriorly, without particles of soil, with 12 cuspules on left endite and 15 on right one. *Labium:* trapezoidal, not encrusted with particles of sand and dirt, with 11 cuspules. *Sternum:* rounded, length 0.9, width 1.0, encrusted with sand and dirt, with long setae and three oval sigilla (Figure 2). *Legs:* Leg lengths in Table 1. Leg formula 4123, leg I without tibial spur, femur, patella, tibia,

metatarsus and tarsus encrusted with sand and dirt. *Claws:* Tarsi with long STC lacking teeth on tarsi I-III, with teeth on tarsus IV. ITC absent from all legs. *Trichobothria:* palpal tibia, palpal tarsus, metatarsi and tarsi of legs with two, tibiae I, II, III with four, tibia IV with three trichobothria. All trichobothria on tarsus and metatarsus "protected" by a spine, and in tibia IV "protected" by a pair of spines. *Palp:* Bulb pyriform, embolus transparent, shorter than palp tibia and with an accentuated curved tip (Figures 3-4), palpal cymbium with numerous setae on apical part, palpal tibia with soil particles and with long setae ventrally, retrolaterally and prolaterally; patella with numerous curved setae dorsally. *Abdomen:* Brown, encrusted with sand and dirt (Figure 1). *Spinnerets:* PMS 0.16 long, 0.08 wide, 0.06 apart; PLS 0.12 basal, 0.06 middle, 0.09 distal; mid-widths (lateral) 0.15, 0.015, 0.010, respectively, apical segment domed (Figures 5-6).

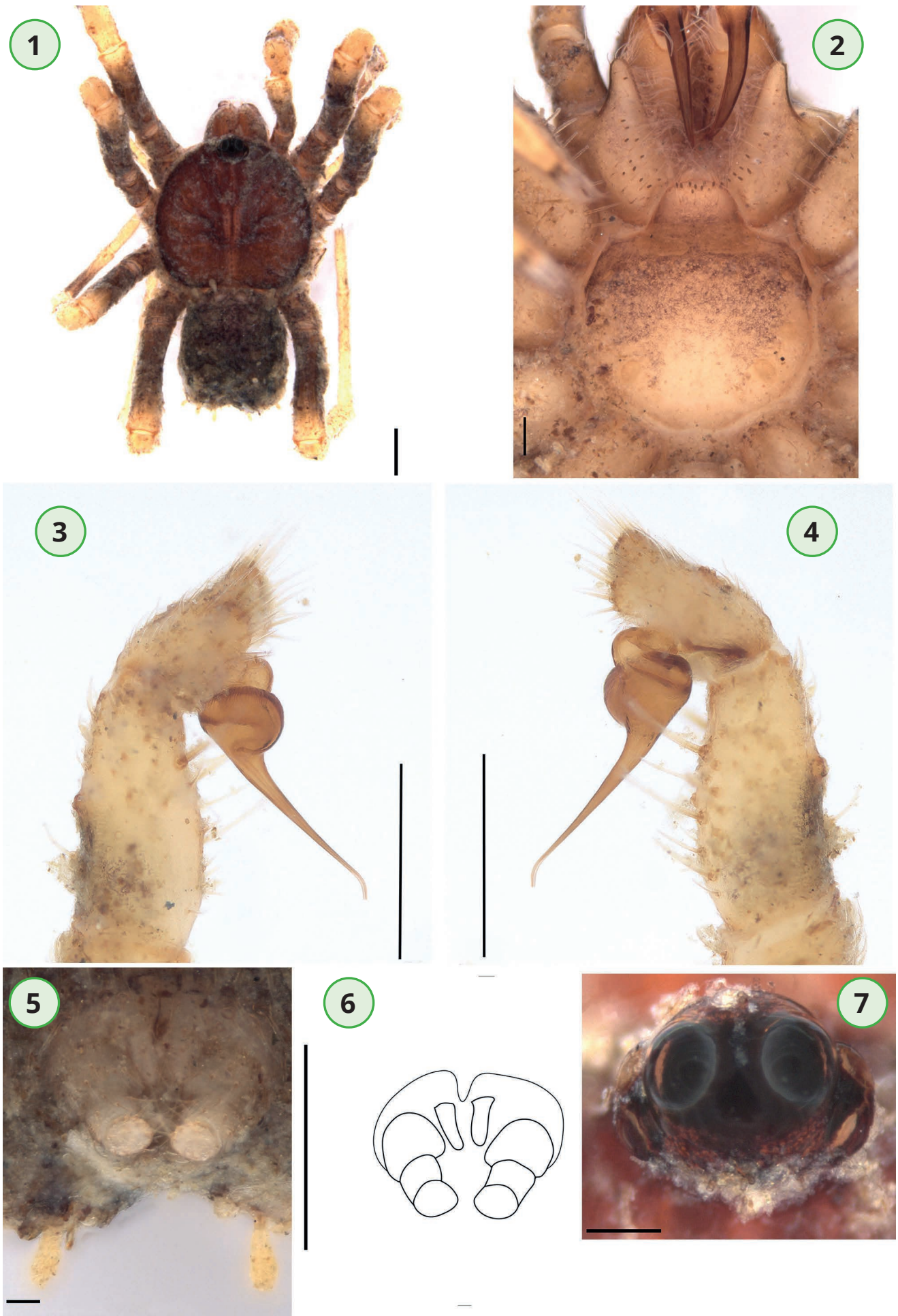
Description. Female Paratype (MCZ 47061). Total length: 4.3; carapace length 2.14, width: 2.31; abdomen length 2.23, width 2.54. Coloration in alcohol: Body coloration brown dorsally, pale orange ventrally, all body encrusted with soil particles. Carapace brown with particles of sand and dirt. *Carapace:* Caput slightly raised, encrusted with sand and dirt, with small setae along midline and in lateral margins, eye tubercle elevated, fovea transverse encrusted with sand and dirt. Eyes and eyes tubercle: PME absent; tubercle 0.28 high; 0.28 long; 0.39 wide; clypeus 0.06 wide. Sizes and inter-distances: AME 0.10; ALE 0.09; PLE 0.11; AME-AME 0.10; AME-ALE 0.01; ALE-PL 0.01. *Chelicerae:* Encrusted with soil particles dorsally, with setae on apical part. 0.51 long, 0.43 wide. Cheliceral furrow as in male, with 9 teeth on promargin and 9 on retromargin. *Endites:* longer than wide, length 0.81, width 0.37, with conical projection anteriorly, without particles of soil, with 14 cuspules on left endite and 19 on right one. *Labium:* trapezoidal, not encrusted with particles of sand and dirt, with 8 cuspules. *Sternum:* rounded, length 0.96, width 1.10, encrusted with sand and dirt, with long setae and three oval sigilla (Figure 9). *Legs:* Leg lengths in Table 2. Leg formula 4123, femur, patella, tibia, metatarsus and tarsus encrusted with sand and dirt. *Claws:* As in male. *Trichobothria:* palpal tarsus and tibia, tarsi, metatarsi and tibiae of legs with two trichobothria. All trichobothria on tarsi and metatarsi "protected" by a spine, on tibia IV "protected" by a pair of spines, as in male. *Spermathecae:* Two spermathecal receptacles ended in a fundus with projected lobes with one sclerotized duct ring in each side (Figure 10-11). *Abdomen:* Brown, encrusted with sand and dirt. *Spinnerets:* PMS 0.16 long, 0.08 wide, 0.06 apart; PLS 0.13 basal, 0.09 middle, 0.10

Table 1. Length of legs and palpal segments of *Paratropis minusculus* n. sp. (♂ MCZ 47063).

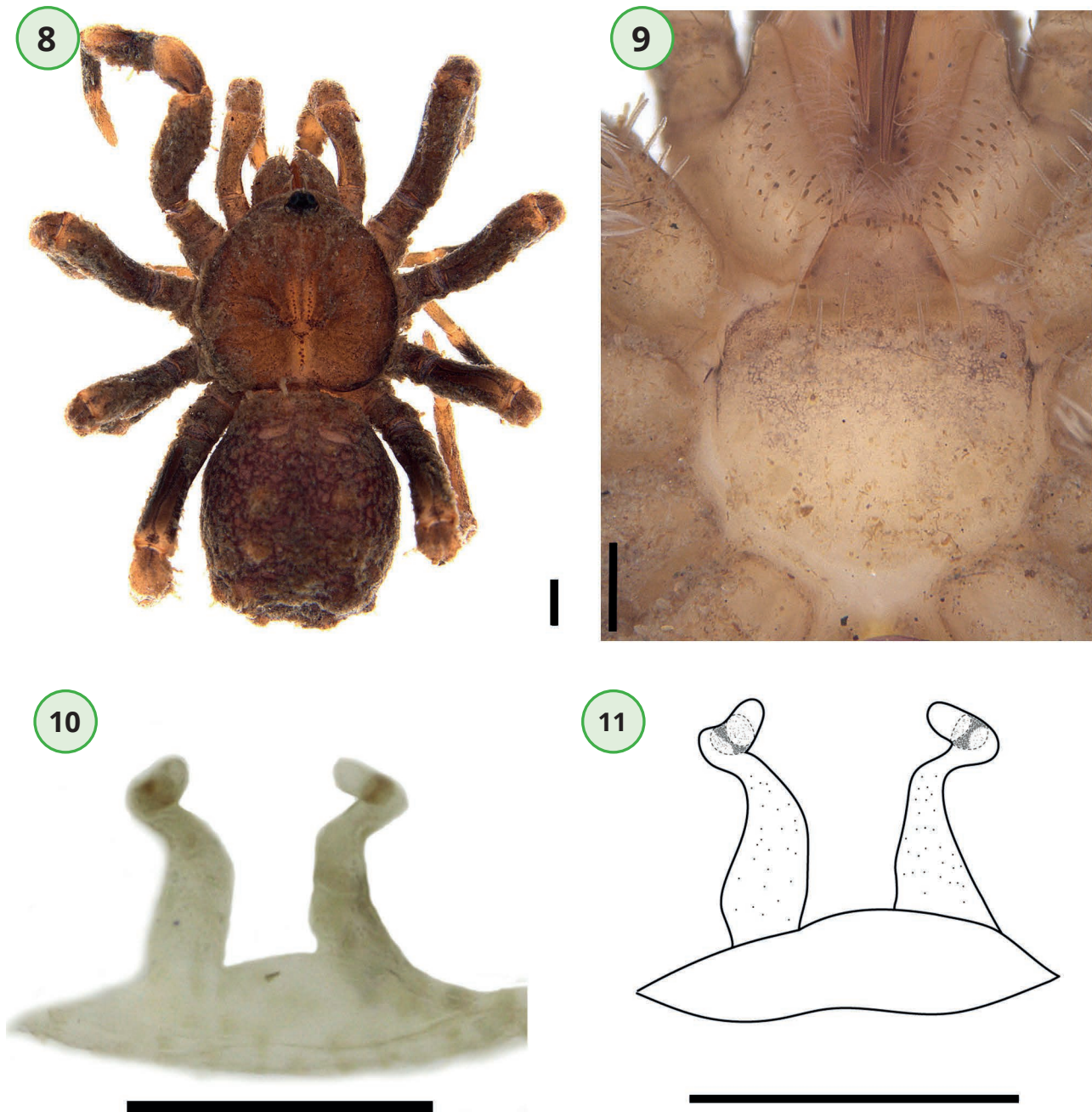
	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palp	0.48	0.24	0.27	-	0.16	1.15
I	0.72	0.36	0.61	0.70	0.31	2.70
II	0.70	0.36	0.49	0.54	0.31	2.40
III	0.60	0.31	0.37	0.50	0.32	2.09
IV	0.81	0.36	0.56	0.83	0.37	2.93

Table 2. Length of legs and palpal segments of *Paratropis minusculus* n. sp. (♀ MCZ 47061).

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palp	0.47	0.33	0.26	-	0.39	1.45
I	0.76	0.38	0.50	0.48	0.27	2.39
II	0.71	0.35	0.45	0.47	0.29	2.27
III	0.52	0.30	0.35	0.49	0.32	1.98
IV	0.64	0.34	0.61	0.73	0.38	2.70



Figures 1-7. *Paratropis minusculus* n. sp., male. (1) habitus, dorsal view; (2) sternum, labium and maxillae; 3-4 left palp, (3) prolateral view; (4) retrolateral view. (5-6) Spinnerets; (7) ocular tubercle. Scale bars: 1-2 = 0.3mm; 3-4 = 0.5 mm; 5-7 = 0.1 mm.



Figures 8-11. *Paratropis minusculus* n. sp., female. (8) habitus, dorsal view; (9) sternum; labium and maxillae; (10-11) spermathecae. Scale bars: 0.5 mm.

distal; mid-widths (lateral) 0.17, 0.15, 0.11, respectively, apical segment domed.

Natural history: All specimens were collected in the rainforest soil with the method miniWinkler in a forest at 490-575m of elevation on Potaro-Sinapuni region, Guyana.

Distribution: Known only from the type locality, Potaro-Sinapuni region, Guyana.

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