



Research article

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Hidden cryptic spiders: Eight new species of *Paratropis* from Colombia and Ecuador (Araneae, Paratropididae)

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Abstract. Eight new species of the genus *Paratropis* Simon, 1889 from Colombia and Ecuador, *Paratropis amfe* sp. nov., *P. aurelianoi* sp. nov., *P. calarca* sp. nov., *P. chami* sp. nov., *P. lluspiosa* sp. nov., *P. macca* sp. nov., *P. salsa* sp. nov., *P. urku* sp. nov., are here diagnosed, described and illustrated. Distribution of *Paratropis* is expanded to Mexico, Venezuela, Brazil, Peru, French Guiana, Ecuador, and Colombia. This work contributes to a better understanding of the taxonomy of *Paratropis* mainly under a biodiversity crisis scenario.

Keywords. Mygalomorphae, Neotropics, taxonomy, distribution, South America.

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Introduction

Paratropididae Simon, 1889, comprises small-sized spiders characterized by their cryptic habits. They are often found under leaf litter, fallen logs, and boulders, although some are fossorial, inhabiting rainforests, caves, and montane forests in the Neotropics. Despite their morphological singularity, the biology and ecology of these spiders remains poorly understood (Raven 1999; Bertani 2013; Valdez-Mondragón *et al.* 2014; Dupérré & Tapia 2020, 2024; Santos *et al.* 2025). The family can be distinguished by unique features such as a soil-encrusted cuticle along with the presence of pseudoscopulae, which are constituted by chemosensory, non-adhesive setae rather than true scopulae, as previously suggested by some authors (Pérez-Miles *et al.* 2017). At present, the family comprises the genera *Anisaspis* Simon, 1892, *Anisaspoides* F.O. Pickard-Cambridge, 1896, *Paratropis* Simon, 1889 and *Stormtropis* Perafán, Galvis & Pérez-Miles, 2019 (World Spider Catalog 2024).

The genus *Paratropis* has historically been characterized by a combination of somatic traits, such as eye size, the morphology of the ocular tubercle, labium shape, the presence of scopulae, and the morphology of endites and legs (Simon 1889). Simon's pioneering work on the genus emphasized these somatic characters, excluding genital characteristics, which are typically more diagnostic at the species or genus level in spider taxonomy. Subsequent studies proposed additional diagnostic characters (Raven 1985, 1999; Bertani 2013; Valdez-Mondragón *et al.* 2014; Perafán *et al.* 2019; Dupérré & Tapia 2020, 2024; Almeida & de Morais 2022; Sherwood *et al.* 2023; Santos *et al.* 2025). Raven (1985) indicated the absence of a third claw on leg II in species of *Paratropis* as a diagnostic character, though this was later refuted by the discovery of a species with a small, unpaired claw on tarsi I and II (Valdez-Mondragón *et al.* 2014) and recently Santos *et al.* (2025) reported the presence of ITC on all legs in other species of the genus.

The genus *Paratropis* currently comprises twenty one species: the type species *Paratropis scruposa* Simon, 1889, and *P. arenosa* Dupérré & Tapia, 2024, *P. carcosita* Dupérré & Tapia, 2024, *P. celiae* Santos, Gomes, Almeida, de Morais & Bertani, 2025, *P. criptica* Dupérré & Tapia, 2024, *P. elicioi* Dupérré, 2015, *P. esmeraldas* Dupérré & Tapia, 2024, *P. florezi* Perafán, Galvis & Pérez-Miles, 2019, *P. kapak* Dupérré & Tapia, 2024, *P. manauara* Santos, Gomes, Almeida, de Morais & Bertani, 2025, *P. minuscula* Almeida & de Morais, 2022, *P. otonga* Dupérré & Tapia, 2020, *P. papilligera* F.O. Pickard-Cambridge, 1896, *P. paschoa* Dupérré & Tapia, 2024, *P. pristirana* Dupérré & Tapia, 2020, *P. pukallucha* Dupérré & Tapia, 2024, *P. sanguinea* Mello-Leitao, 1923, *P. seminermis* Caporiacco, 1955, *P. tortue* Sherwood & Brescovit, 2023, *P. tuxtensis* Valdez-Mondragón, Mendoza & Francke, 2014, and *P. vulcanix* Santos, Gomes, Almeida, de Morais & Bertani, 2025. They are distributed across Mexico, Venezuela, Brazil, Peru, French Guiana, Ecuador, and Colombia. In this work, eight new species of *Paratropis* from Colombia and Ecuador are here diagnosed, described, and illustrated, contributing to the knowledge of the group diversity in these countries.

Material and methods

The specimens were examined using an Olympus SZ stereo microscope. All photographs and measurements were taken with a Leica M205A stereo microscope and processed with Leica Application Suite ver. 4.10. All measurements are in millimeters. The left male palp bulb was detached for illustration at prolateral, ventral, and retrolateral views. Female spermathecae were dissected and cleaned in pure clove oil for 25 minutes or treated with Naclens® enzyme tablets. The structure was immersed in this solution for 24 hours at approximately 20° C room temperature, resulting in the digestion of soft tissue.

The total length of the spiders was measured in dorsal view, from the edge of the clypeus to the posterior end of the abdomen, excluding the chelicerae and spinnerets. When soil particles covering parts of the spider hindered measurements, the particles were mechanically removed. For leg spination we consider only small, thick, well-sclerotized spines following Dupérré & Tapia (2020). The shape and distribution of trichobothria on the legs of each species followed Sherwood *et al.* (2023).

Abbreviations

ALE	=	anterior lateral eyes
AME	=	anterior median eyes
d	=	dorsal
Fe	=	femur
ITC	=	inferior tarsal claw
Me	=	metatarsus
p	=	prolateral
Pa	=	patella

PLE	=	posterior lateral eyes
PLS	=	posterior lateral spinnerets
PME	=	posterior median eyes
PMS	=	posterior median spinnerets
r	=	retrolateral
STC	=	superior tarsal claw
Ta	=	tarsus
Ti	=	tibia
v	=	ventral

Repositories

ICN	=	Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá
QCAZ	=	Quito-Católica-Zoología, Museo de Zoología, Pontificia Universidad Católica del Ecuador

Results

Descriptions of new species

Class Arachnida Cuvier, 1812
Order Araneae Clerck, 1757
Family Paratropididae Simon, 1889

Genus *Paratropis* Simon, 1889

Type species

Paratropis scruposa Simon, 1889, by monotypy.

Diagnosis

See Perafán *et al.* (2019) and Dupérré & Tapia (2020).

Paratropis amfe sp. nov.

[urn:lsid:zoobank.org:act:59DF5F1B-2720-4FA3-9DBC-7AA38D3B4496](https://doi.org/10.5281/zenodo.592720)

Figs 1, 13; Table 1

Differential diagnosis

Differs from most species, except *Paratropis otonga*, in the morphology of the spermathecae, constituted by two receptacles with a long neck and fundus with lobes laterally extended (Fig. 1E). Differs from *P. otonga* in the spermathecae receptacles morphology without longitudinal fold and with fundus lobes laterally extended. Additionally, differs in the geographic distribution given that *P. otonga* is known from the Ecuadorian provinces of Cotopaxi and Pichincha while *P. amfe* sp. nov. is from Colombia, Quindío. Differs from *P. chami* sp. nov., described based on a male, by the absence of abdominal tubercles (Fig. 1C).

Etymology

The specific epithet is a noun in apposition taken from a combination of letters of the name of Ana María Fuentes Espagnolo, the partner of one of the authors (FPM) throughout numerous adventures.

Type material

Holotype

COLOMBIA • ♀; Quindío, Salento, Camino nacional, Finca La Primavera; 4°38'33" N, 75°33' 53" W; 2740 m a.s.l.; Apr. 2017; L. Montes de Oca, C. Perafán and F. Pérez-Miles leg.; ICN-Ar111261.

Paratype

COLOMBIA • 1 ♀; same data as for holotype; ICN-Ar111262.

Description

Female (holotype ICN-Ar111261)

Total length 22.14, carapace length 8.36, width 8.28; abdomen length 12.71, width 8.35; chelicerae length 4.67. Color (in alcohol): carapace, and legs reddish dark brown, chelicerae dark brown, abdomen brown. Body with soil particles encrusted. Carapace: slightly setose, lateral margins with single line of spiniform setae with a single line of curved setae mixed with disperse clubbed setae; striae conspicuous; caput arched, separated from thoracic region by transverse fovea, straight, width 1.34. Eyes and ocular tubercle: tubercle length 1.28, width 1.28, very elevated (height 1.1) and forwardly directed, with few setae. Clypeus absent. Anterior eye row slightly procurved, posterior recurved. Ocular sizes and interdistances: AME 0.31, ALE 0.29, PME 0.17, PLE 0.23, AME–AME 0.13, AME–ALE 0.1, PME–PME 0.57, PME–PLE 0.09, ALE–PLE 0.08, AME–PME 0.13, ALE–ALE 0.9, PLE–PLE 0.84. Chelicerae: short sparse bristles on dorsal and lateral areas, long fine bristles on ventral and anterior area; basal segment with clubbed plumose setae. Cheliceral furrow with two rows of well-developed teeth, 9/10 and 12/14 teeth on promargin and retromargin, respectively. Labium: length 2.14, width 1.98, with 84 cuspules on anterior edge. Labio-sternal groove with two lateral mounds. Maxillae longer than wide, with the anterior prolateral lobe very elongated, conical, with 102/113 cuspules spaced, largely

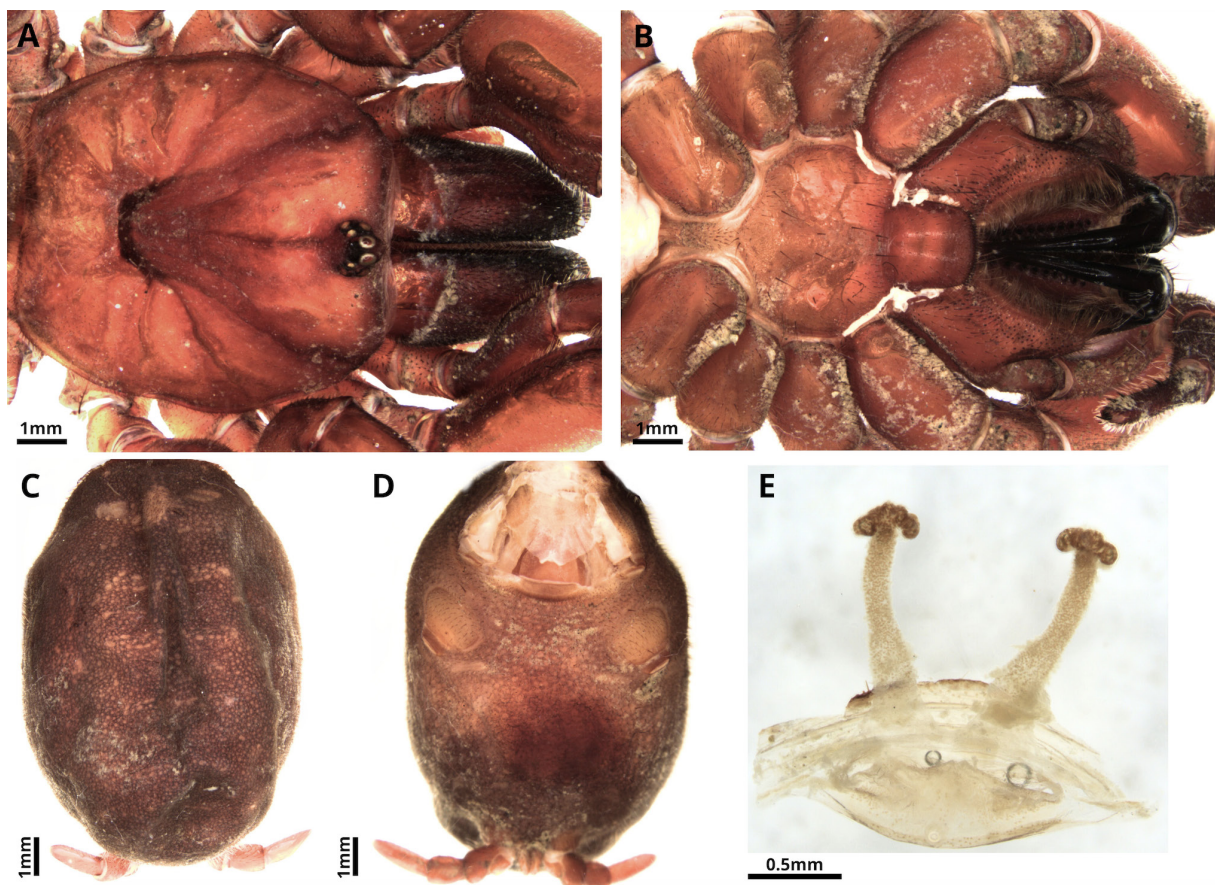


Fig. 1. *Paratropis amfe* sp. nov., holotype, ♀ (ICN-Ar111261). **A.** Carapace, dorsal view. **B.** Sternum, ventral view. **C.** Abdomen, dorsal view. **D.** Abdomen, ventral view. **E.** Female spermathecae, dorsal view.

Table 1. Length of legs and palpal segments of female holotype of *Paratropis amfe* sp. nov. (ICN-Ar111261).

	I	II	III	IV	Palp
Fe	6.33	4.4	3.5	5.05	2.2
Pa	2.65	2.67	1.8	2.61	1.24
Ti	6.48	3.96	3.13	5.57	2.4
Mt	5.17	3.78	2.93	3.53	–
Ta	2.59	2	2.35	2.09	2.41
Total	23.22	16.81	13.71	18.85	8.25

spread over prolatero-ventral border from the inner edge to anterior lobe. Sternum: length 3.62, width 4.47; three pairs of sigillae, anterior subcircular, median and posterior sigillae oval; anterior and median sigillae marginal, posterior submarginal. Anterior edge of sternum with a semicircular area slightly elevated (joined to labio-sternal groove). Legs: cuticle not encrusted with soil particles. Leg and palpal segments measurements provided in Table 1. Leg I clearly thicker than the others. Bristles, thorn-like setae and spines present. Trichobothria, filiform: Palp: Ti d7; Ta d7. Leg I: Ti d5; Me d5; Ta d14. Leg II: Ti d8; Me d5, Ta d11. Leg III: Ti d8; Me d4; Ta d11. Leg IV: Ti d6; Me d4; Ta d12. Tarsal pseudoscapulae not dense. Tarsal claws: small ITC present on leg I; STC with one tooth on all legs. Spination: principally thorn-like setae on all segments. Spines: Palp: Fe 0; Pa 0; Ti 0; Ta 6pv. Leg I: Fe 0; Pa 0; Ti 0; Me 19 pv; Ta 24 pv. Leg II: Fe 0; Pa 0; Ti 0; Me 4pv, 2p; Ta 0. Leg III: Fe 0; Pa 0; Ti 0; Me 1v, 3pv, 2pd; Ta 1pv. Leg IV: Fe 0; Pa 0; Ti 0; Me 2v, 4pv; Ta 1pv.

ABDOMEN. With a slight dorsal pattern of 3–5 lighter transversal stripes interrupted at the longitudinal medial line (Fig. 1C). Book lung apertures projected, oval, sclerotized. Two spermathecae receptacles with a long neck, without longitudinal fold and with fundus lobes laterally extended (Fig. 1E). Spinnerets: PMS length 0.86; PLS length 3.92, apical segment digitiform. Basal segment of PLS divided in two unequal cuticle plate.

Male

Unknown

Distribution

Only known from its type locality, Colombia, Quindío Department, Salento (Fig. 13).

Paratropis aurelianoi sp. nov.

[urn:lsid:zoobank.org:act:E8E2A975-0732-4338-9C9D-A1BCF4175DCD](https://doi.org/10.21203/rs.3.rs-111261)

Figs 2, 13; Table 2

Differential diagnosis

Females differ from those of most species of *Paratropis*, except *P. urku* sp. nov. and *P. salsa* sp. nov., in the shorter spermathecae receptacles (Fig. 2E). From *P. urku* in the narrower basis of the receptacles and from *P. salsa* in the wider, umbrella-like and less sclerotized receptacle fundus. Additionally, it differs from *P. urku* in the absence of abdominal pattern (Fig. 2C). Differs from *P. chami* sp. nov., described based on a male, by the morphology of abdominal tubercles which are smaller.

Etymology

The specific epithet (genitive) is a patronym in honor of Aureliano Buendía, the main character of *Cien Años de Soledad* the famous novel of Gabriel García Márquez, born in Aracataca, Magdalena, the Department where the species was found.

Type material

Holotype

COLOMBIA • ♀; Magdalena, Santa Marta, San Lorenzo; 11°06'41" N, 74°03'16" W; 3090 m a.s.l.; Apr. 2017; L. Montes de Oca, C. Perafán and F. Pérez-Miles leg.; ICN-Ar111263.

Paratype

COLOMBIA • 1 ♀; same data as for holotype; ICN-Ar111264.

Description

Female (holotype ICN-Ar111263)

Total length 10.49, carapace length 4.44, width 4.21; abdomen length 5.87, width 4.04; chelicerae length 2.28. Color (in alcohol): body with soil particles encrusted; carapace, and legs reddish dark brown, chelicerae dark brown, abdomen grayish brown. Carapace: slightly setose, lateral margins with single line of spiniform setae with a single line of curved setae mixed with disperse clubbed setae; striae conspicuous; caput arched, separated from thoracic region by transverse fovea, straight, width 0.73.

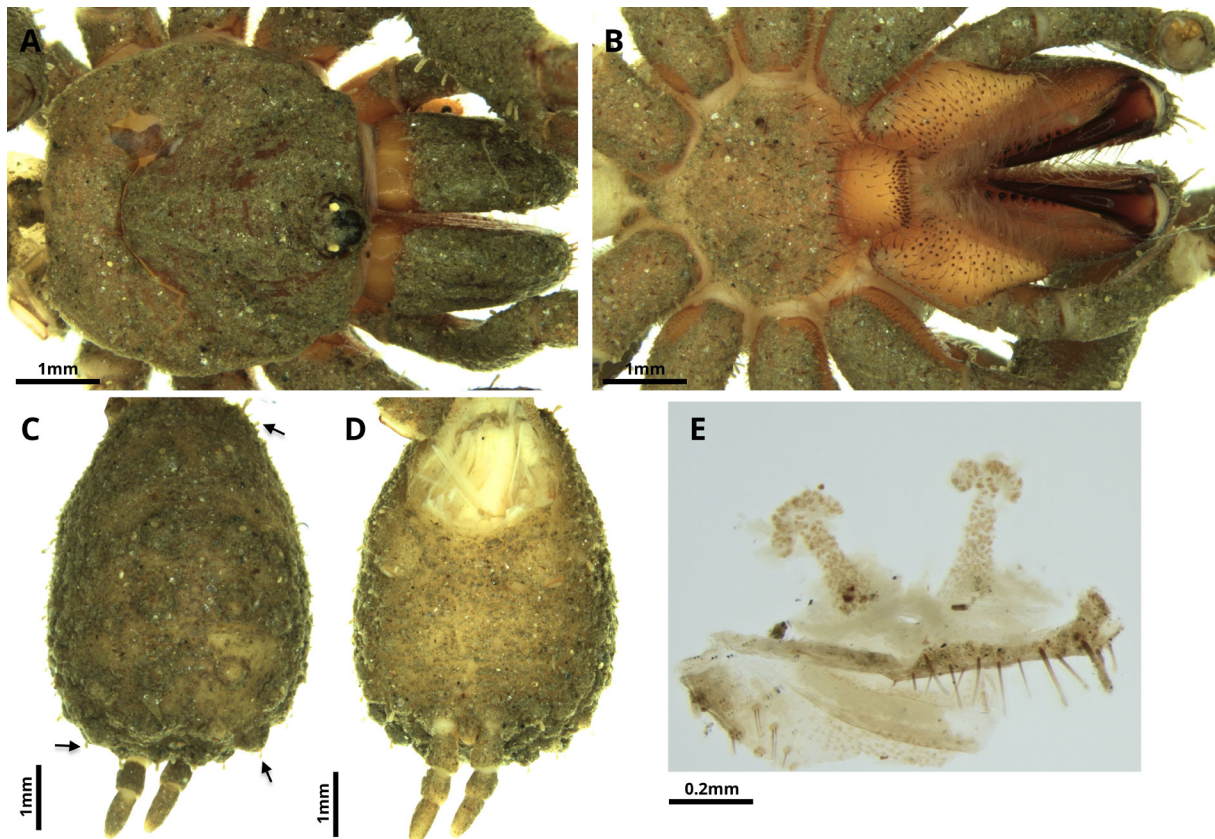


Fig. 2. *Paratropis aurelianoi* sp. nov., holotype, ♀ (ICN-Ar111263). **A.** Carapace, dorsal view. **B.** Sternum, ventral view. **C.** Abdomen, dorsal view. **D.** Abdomen, ventral view. **E.** Female spermathecae, dorsal view. Arrows show the bacilliform setae.

Table 2. Length of legs and palpal segments of female holotype of *Paratropis aurelianoi* sp. nov. (ICN-Ar111263).

	I	II	III	IV	Palp
Fe	3.18	2.45	1.61	2.96	2.14
Pa	1.49	1.57	1.27	1.56	1.20
Ti	2.60	1.95	1.71	2.6	1.06
Mt	1.79	1.42	0.92	1.85	–
Ta	0.83	1.04	1.21	1.50	1.30
Total	9.89	8.43	6.72	10.5	5.70

Eyes and ocular tubercle: tubercle length 0.68, width 0.77, very elevated (height 0.78) and forwardly directed, with few setae. Clypeus absent. Anterior eye row slightly procurved, posterior recurved. Ocular sizes and interdistances: AME 0.22, ALE 0.24, PME 0.14, PLE 0.23, AME–AME 0.11, AME–ALE 0.06, PME–PME 0.42, PME–PLE 0.05, ALE–PLE 0.07, AME–PME 0.11, ALE–ALE 0.73, PLE–PLE 0.58. Chelicerae: short sparse bristles on dorsal and lateral areas, long fine bristles on ventral and anterior area; basal segment with clubbed plumose setae. Cheliceral furrow with two rows of teeth well-developed, 8/9 and 7/10 teeth on promargin and retromargin, respectively. Labium: length 0.89, width 1.15, with 54 cuspules on anterior edge. Labio-sternal groove with two lateral mounds. Maxillae longer than wide, with the anterior prolateral lobe very elongated, conical; with 54/55 cuspules spaced, largely spread over prolatero-ventral border from the inner edge to anterior lobe. Sternum: length 2.04, width 2.58; three pairs of sigillae, anterior subcircular, median and posterior sigillae oval; anterior and median sigillae marginal, posterior submarginal. Anterior edge of sternum with a semicircular area slightly elevated (joined to labio-sternal groove). Legs: cuticle normal. Leg and palpal segments measurements provided in Table 2. Leg I clearly thicker than the others. Bristles, thorn-like setae and spines present. Trichobothria, filiform: Palp: Ti d4; Ta d4. Leg I: Ti d6; Me d3; Ta d6. Leg II: Ti d6; Me d3; Ta d6. Leg III: Ti d6, Me d4; Ta d5. Leg IV: Ti d4; Me d2; Ta d5. Tarsal pseudoscapula not dense. Tarsal claws: ITC present on leg I; STC with one tooth on all legs. Spination: principally thorn-like setae on all segments. Spines: Palp: Fe 0; Pa 0; Ti 0; Ta 1pv, rv. Leg I: Fe 0; Pa 0; Ti 0; Me 6v, 2pv, 2rv; Ta 5pv, 3rv. Leg II: Fe 0; Pa 0; Ti 0; Me 1v, 1pv, 1rv; Ta 0. Leg III: Fe 0; Pa 0; Ti 0; Me 2v, 1pv, 1rv; Ta 0. Leg IV: 0.

ABDOMEN. With four longitudinal dorsal rows of small tubercles, each emitting from its apex a plumose, bacilliform seta (Fig. 2C). Book lung apertures projected, oval, sclerotized. Two short spermathecal receptacles which ended in a multilobed fundus (Fig. 2E). Spinnerets: PMS length 0.34; PLS length 1.98, apical segment digitiform. Basal segment of PLS divided in two unequal cuticle plates.

Male

Unknown.

Distribution

Only known from its type locality, Colombia, Magdalena Department, Santa Marta, San Lorenzo (Fig. 13).

Paratropis calarca sp. nov.

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Figs 3, 13; Table 3

Differential diagnosis

Differs from all other species of *Paratropis* by the spermathecae receptacles morphology, with a wide basis which narrows in the basal third, followed by a long narrow neck terminating in a fundus with two lobes (Fig. 3E). An additional difference is the position and orientation of the receptacles, with long necks convergent, resembling parentheses. Differs from *P. chami* sp. nov., described based on a male, by the absence of abdominal tubercles (Fig. 3C).

Etymology

The specific epithet is a noun in apposition which refers to the mythical cacique Calarcá, tribal chief who resisted the Spanish conquest and was popular in the area where the species was found.

Type material

Holotype

COLOMBIA • ♀; Quindío, Calarcá, Corregimiento La Virginia, Paraje Peñas Blancas; [4°30'08" N, 75°38'11" W]; 1629 m a.s.l.; Apr. 2017; L. Montes de Oca, C. Perafán and F. Pérez-Miles leg.; ICN-Ar111265.

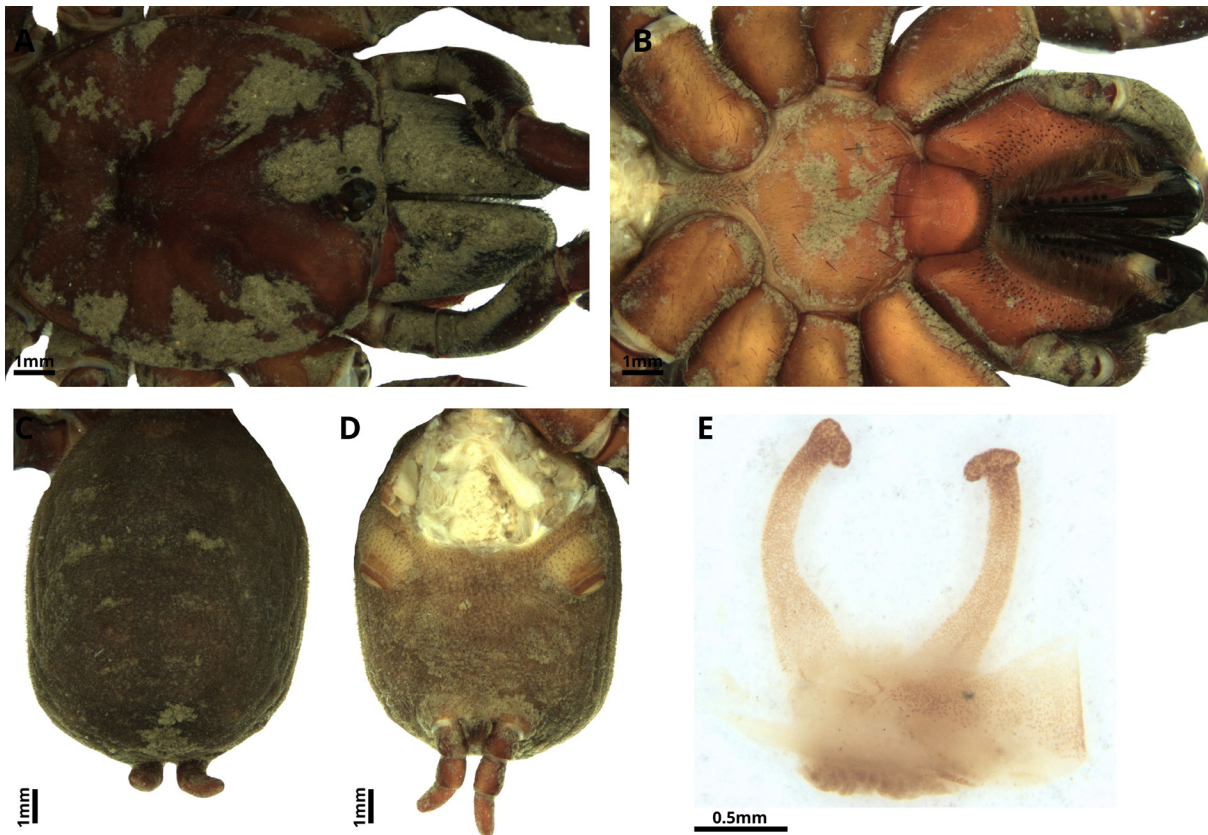


Fig. 3. *Paratropis calarca* sp. nov., holotype, ♀ (ICN-Ar111265). **A.** Carapace, dorsal view. **B.** Sternum, ventral view. **C.** Abdomen, dorsal view. **D.** Abdomen, ventral view. **E.** Female spermathecae, dorsal view.

Table 3. Length of legs and palpal segments of female holotype of *Paratropis calarca* sp. nov. (ICN-Ar111265).

	I	II	III	IV	Palp
Fe	8.43	6.22	5.31	6.70	4.93
Pa	3.55	3.41	3.04	3.72	2.13
Ti	6.15	3.92	2.49	5.77	2.43
Mt	4.44	3.84	3.23	5.48	–
Ta	2.42	2.51	2.58	1.98	2.84
Total	24.99	19.9	16.65	23.65	12.33

Paratype

COLOMBIA • 1 ♀; same data as for holotype; ICN-Ar111266.

Description**Female** (holotype ICN-Ar111265)

Total length 20.1, carapace length 9.42, width 9.62; abdomen length 10.79, width 8.64; chelicerae length 4.82. Color (in alcohol): body with soil particles encrusted; carapace, and legs reddish dark brown, chelicerae and abdomen dark brown. Carapace: slightly setose, lateral margins with single line of spiniform setae with a single line of curved setae mixed with disperse clubbed setae; striae conspicuous; caput arched, separated from thoracic region by transverse fovea, straight, width 1.58. Eyes and ocular tubercle: tubercle length 1.33, width 1.49, very elevated (height 1.15) and forwardly directed, with few setae. Clypeus absent. Anterior eye row slightly procurved, posterior recurved. Ocular sizes and interdistances: AME 0.36, ALE 0.24, PME 0.12, PLE 0.33, AME–AME 0.14, AME–ALE 0.18, PME–PME 0.71, PME–PLE 0.07, ALE–PLE 0.18, AME–PME 0.13, ALE–ALE 1.12, PLE–PLE 1.07. Chelicerae: short sparse bristles on dorsal and lateral areas, long fine bristles on ventral and anterior area; basal segment with clubbed plumose setae. Cheliceral furrow with two rows of teeth well-developed, 9/11 and 12/13 teeth on promargin and retromargin, respectively. Labium: length 2.39, width 2.37, with 49 cuspules on anterior edge. Labio-sternal groove with two lateral mounds. Maxillae longer than wide, with the anterior prolateral lobe very elongated, conical; with 88/100 cuspules spaced, largely spread over prolatero-ventral border from the inner edge to anterior lobe. Sternum: length 4.07, width 5.45; three pairs of sigillae, anterior subcircular, median and posterior sigillae oval; anterior and median sigillae marginal, posterior submarginal. Anterior edge of sternum with a semicircular area slightly elevated (joined to labio-sternal groove). Legs: cuticle normal. Leg and palpal segments measurements provided in Table 3. Leg I clearly thicker than the others. Bristles, thorn-like setae and spines present. Trichobothria: palp: Ti d9; Ta d11. Leg I: Me d3; Ta d13. Leg II: Me d4; Ta d13. Leg III: Ti d8; Me d4; Ta d13. Leg IV: Ti d5; Me d5; Ta d12.

Tarsal pseudoscopula not dense. Tarsal claws: ITC present on leg I; STC with one tooth on all legs. Spinination: principally thorn-like setae on all segments. Spines: Palp: Fe 0; Pa 0; Ti 0; Ta 3v. Leg I: Fe 0; Pa 0; Ti 4v; Me 24v; Ta 18v. Leg II: Fe 0; Pa 0; Ti 0; Me 4v, 1r; Ta 2vr. Leg III: Fe 0; Pa 0; Ti 1pv, 1v; Me 2p, 2pv, 5v; Ta 1p, 2pv. Leg IV: Fe 0; Pa 0; Ti 0; Me 3pv, 2v; Ta 3pv.

ABDOMEN. With no pattern, tubercles absent. Book lung apertures projected, oval, sclerotized. Two spermathecae receptacles with a wide basis which narrows in the basal third, followed by a long narrow neck finished in a fundus with fewer lobes and orientation of the receptacles, convergent (Fig. 3E).

Spinnerets: PMS length 1.02; PLS length 3.91, apical segment digitiform. Basal segment of PLS divided in two unequal cuticle plates

Male

Unknown.

Distribution

Only known from its type locality, Colombia, Quindío Department, Calarcá, Corregimiento La Virginia (Fig. 13).

Paratropis chami sp. nov.

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Figs 4–5, 13; Table 4

Differential diagnosis

Differs from most species of the genus except *P. lluspiosa* sp. nov. and *P. cryptica*, by the palpal bulb morphology (Fig. 5) which gradually narrows to the tip of the embolus (abruptly constricted in the basal tegulum in other species); tip of the embolus straight. Differs from *P. lluspiosa* and *P. cryptica* by the shorter and wider palpal bulb. Additionally, differs from *P. celiae* and *P. manauara* by the absence of subapical triangular tooth on the embolus and differs from *P. lluspiosa* in the presence of large conspicuous abdominal tubercles (Fig. 4C).

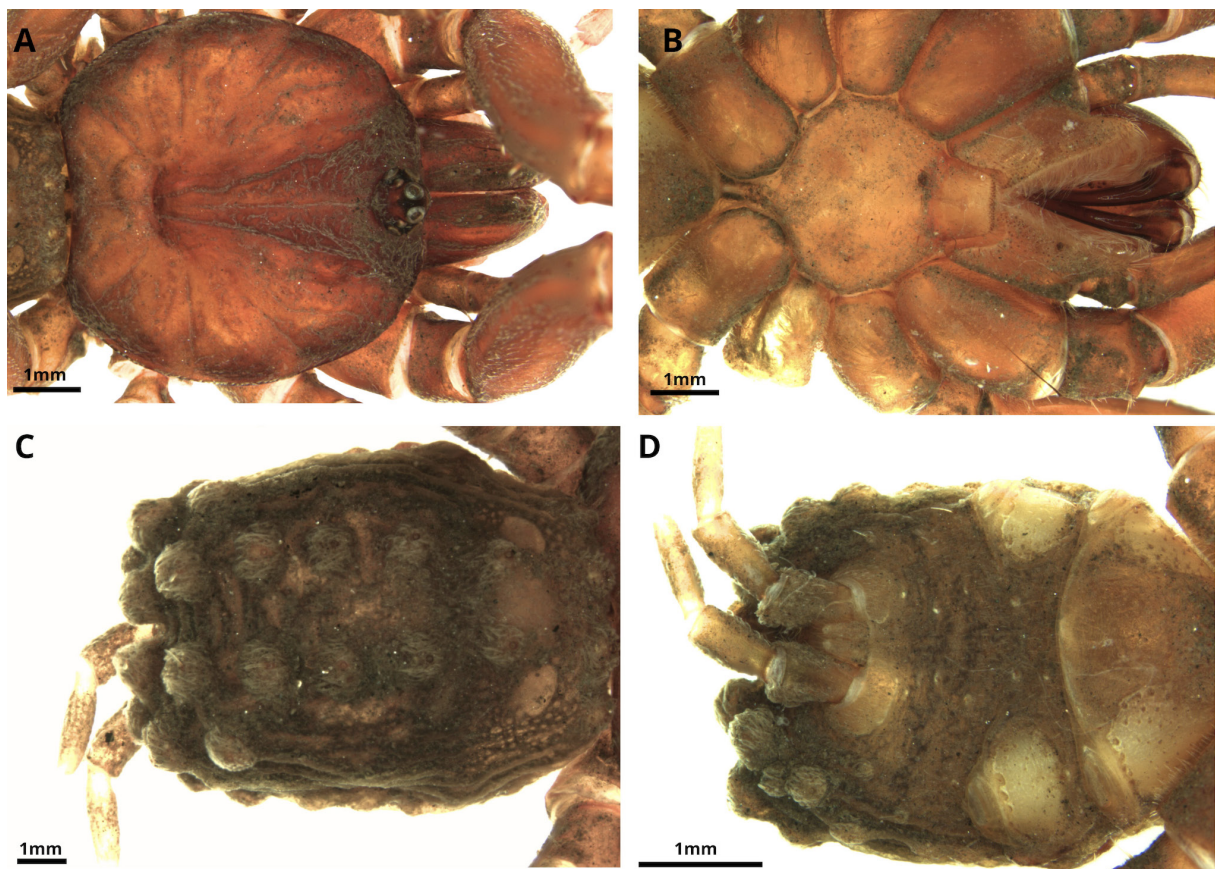


Fig. 4. *Paratropis chami* sp. nov., holotype, ♂ (ICN-Ar111267). **A.** Carapace, dorsal view. **B.** Sternum, ventral view. **C.** Abdomen, dorsal view. **D.** Abdomen, ventral view.

Etymology

The specific epithet is a noun in apposition, which refers to an ancestral indigenous community named Emberá Chamí, from the region where the species was found.

Type material

Holotype

COLOMBIA • ♂; Valle del Cauca, Alcalá, El Corgal, El Topacio; [4°13'19.9" N, 75°52'51.4" W]; 1200 m a.s.l.; Aug. 2014; S. Aliz leg.; ICN-Ar111267.

Description

Male (holotype ICN-Ar111267)

Total length 10.2, carapace length 5.28, width 5.23; abdomen length 4.71, width 3.36; chelicerae length 2.37. Color (in alcohol): body with soil particles encrusted; carapace, and legs reddish brown, chelicerae dark brown, abdomen grayish brown. Carapace: slightly setose, lateral margins with single line of spiniform setae with a single line of curved setae mixed with disperse clubbed setae; striae conspicuous; caput arched, separated from thoracic region by transverse fovea, straight, width 0.51. Eyes and ocular tubercle: tubercle length 0.82, width 0.93, elevated (height 0.81) and forwardly directed, with few setae. Clypeus absent. Anterior eye row slightly procurved, posterior recurved. Ocular sizes and interdistances: AME 0.28, ALE 0.26, PME 0.13, PLE 0.17, AME–AME 0.1, AME–ALE 0.06, PME–PME 0.47, PME–PLE 0.07, ALE–PLE 0.12, AME–PME 0.06, ALE–ALE 0.72, PLE–PLE 0.69. Chelicerae: short sparse bristles on dorsal and lateral areas, long fine bristles on ventral and anterior area; basal segment with clubbed plumose setae. Cheliceral furrow with two rows of well-developed teeth, 8/8 and 10/11 teeth on promargin and retromargin, respectively. Labium: length 0.89, width 1.06, with 44 cuspules on anterior edge. Labio-sternal groove with two lateral mounds. Maxillae longer than wide, with the anterior prolateral lobe very elongated, conical; with 41/44 cuspules spaced, largely spread over prolatero-ventral border from the inner edge to anterior lobe. Sternum: length 2.27, width 2.7; three pairs of sigillae, anterior subcircular, median and posterior sigillae oval; anterior and median sigillae marginal, posterior submarginal. Anterior edge of sternum with a semicircular area slightly elevated (joined to labio-sternal groove). Legs: cuticle normal. Leg and palpal segments measurements provided in Table 4. Leg I clearly thicker than the others. Bristles, thorn-like setae. Trichobothria: palp: Ti d7; Ta d4. Leg I: Ti d7; Me d4; Ta d8. Leg II: Ti d7; Me d4; Ta d7. Leg III: Ti d6; Me d4; Ta d6.

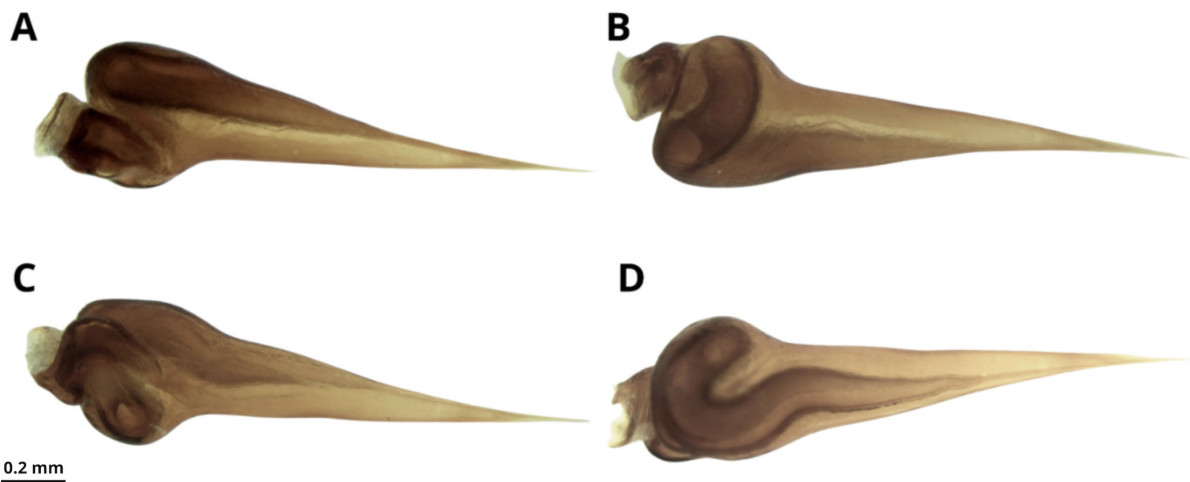


Fig. 5. *Paratropis chami* sp. nov., holotype, ♂ (ICN-Ar111267), left palpal bulb. **A.** Prolateral view. **B.** Retrolateral view. **C.** Dorsal view. **D.** Ventral view.

Table 4. Length of legs and palpal segments of male holotype of *Paratropis chami* sp. nov. (ICN-Ar111267).

	I	II	III	IV	Palp
Fe	4.43	3.22	3.53	4.52	1.82
Pa	1.98	1.22	1.64	1.44	1.21
Ti	4.23	3.24	2.20	3.82	1.64
Mt	3.48	2.65	2.77	4.19	–
Ta	1.95	1.19	1.56	1.88	0.58
Total	16.07	11.52	11.70	15.85	5.24

Leg IV: Ti d5; Me d4; Ta d7. Tarsal pseudoscapula not dense. Tarsal claws: ITC present on leg I; STC with one tooth on all legs. Spination: principally thorn-like setae on all segments. Spines: Palp: 0. Leg I: 0. Leg II: 0. Leg III: 0. Leg IV: 0.

ABDOMEN. With large, prominent tubercles, each emitting from its apex a plumose, bacilliform seta (Fig. 4). These tubercles are disposed along the dorsal face of the abdomen (Fig. 4C) and in the posterior and lateral regions of ventral face (Fig. 4D). Book lung apertures projected, oval, sclerotized. Palp: cymbium with two unequal lobes separated by a sclerotized groove. Palpal bulb subconical, wide, tegulum-embolus gradually narrowed towards the apex; apex stout but flattened (Fig. 5). Spinnerets: PMS length 0.42; PLS length 2.46, apical segment digitiform. Basal segment of PLS divided in two unequal cuticle plates.

Female

Unknown.

Distribution

Only known from its type locality, Colombia, Valle del Cauca Department, Alcalá (Fig. 13).

Paratropis macca sp. nov.

[urn:lsid:zoobank.org:act:2F48EDEB-FEED-4BF0-946A-03FD82EF4734](https://doi.org/10.21203/rs.3.rs-4748946/v1)

Figs 6–8, 13; Tables 5–6

Differential diagnosis

Males differ from those of all other co-generic species in the palpal bulb morphology with a conspicuous subapical curvature (ca 120°) in the embolus (Fig. 7). Additionally, they differ from those of *P. celiae* and *P. manauara* by the absence of subapical triangular tooth on the embolus and from those of *P. papilligera* by the absence of a baso-retrolateral conical process on tibia I. Females differ from those of all other species of *Paratropis* in the spiral morphology of the spermathecae receptacles (Fig. 8E).

Etymology

The specific epithet is a noun in apposition which refers to the nickname of Sir Paul McCartney, creative motor of the legendary band *The Beatles* and an icon of contemporary culture.

Type material

Holotype

COLOMBIA • ♂; Cundinamarca, Pacho Vda. Bomejal, Finca de Don Juan Gómez; 5°07'00" N, 74°08'59" W; 1700 m a.s.l.; 2 Aug. 2014; W. Galvis and D. Molina leg.; ICN-Ar111268.

Paratype

COLOMBIA • 1 ♀; same data as for holotype; ICN-Ar111269.

Additional material

COLOMBIA • 1 ♀; same data as for holotype; ICN-Ar111269bis.

Description

Male (holotype ICN-Ar111268)

Total length 12.8, carapace length 5.48, width 5.63; abdomen length 6.82, width 4.47; chelicerae length 4.29. Color (in alcohol): body with soil particles encrusted; carapace, and legs reddish brown, chelicerae dark brown, abdomen grayish brown. Carapace: slightly setose, lateral margins with single line of spiniform setae with a single line of curved setae mixed with disperse clubbed setae; striae conspicuous; caput arched, separated from thoracic region by transverse fovea, straight, width 0.9. Eyes and ocular tubercle: tubercle length 1.06, width 0.92, elevated (height 2) and forwardly directed, with few setae. Clypeus absent. Anterior eye row slightly procurved, posterior recurved. Ocular sizes and interdistances: AME 0.4, ALE 0.29, PME 0.2, PLE 0.72, AME–AME 0.28, AME–ALE 0.17, PME–PME 0.77, PME–PLE 0.19, ALE–PLE 0.23, AME–PME 0.22, ALE–ALE 1.19, PLE–PLE 1.09. Chelicerae: short sparse bristles on dorsal and lateral areas, long fine bristles on ventral and anterior area; basal segment with clubbed plumose setae. Cheliceral furrow with two rows of teeth well-developed, 9/10 and 13/13 teeth on promargin and retromargin, respectively. Labium: length 1.26, width 1.91, with 13 cuspsules on anterior edge. Labio-sternal groove with two lateral mounds. Maxillae longer than wide,

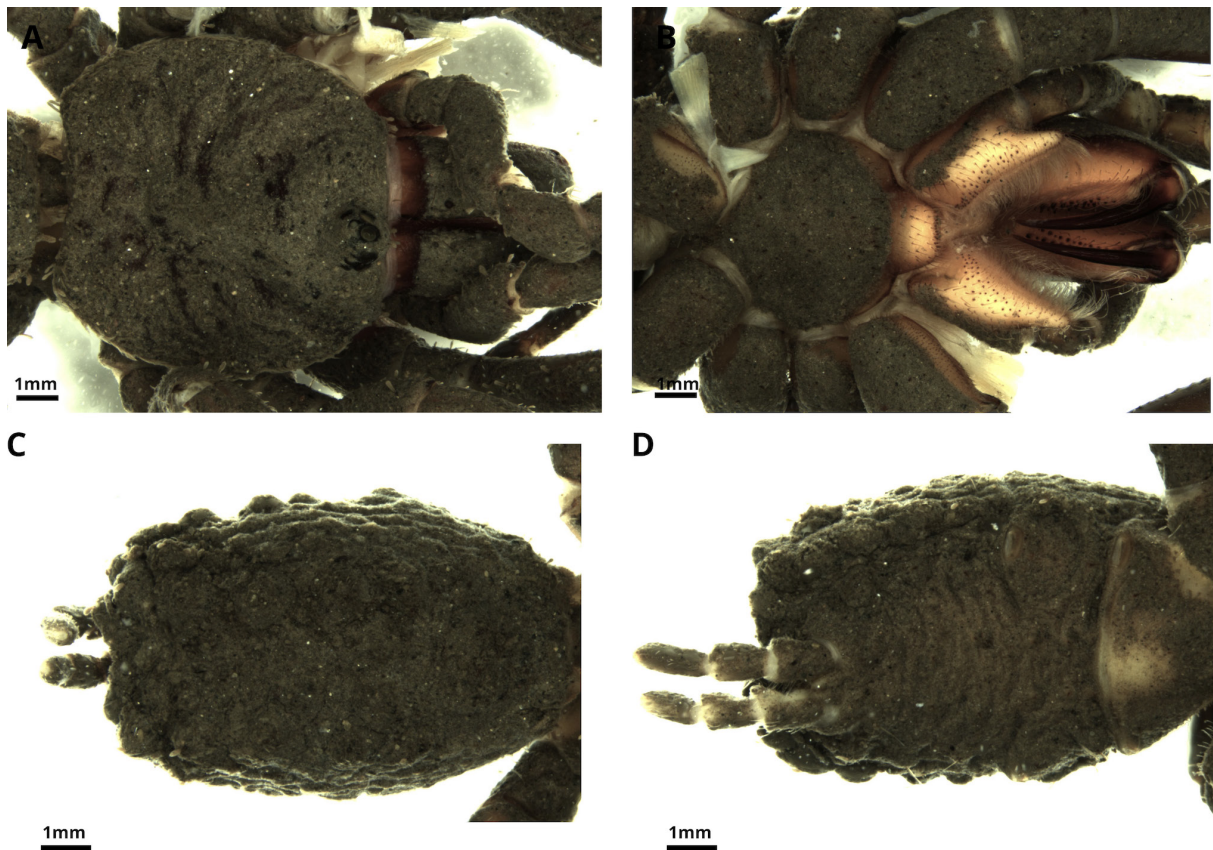


Fig. 6. *Paratropis macca* sp. nov., holotype, ♂ (ICN-Ar111268). **A.** Carapace, dorsal view **B.** Sternum, ventral view. **C.** Abdomen, dorsal view. **D.** Abdomen, ventral view.

with the anterior prolateral lobe very elongated, conical; with 36/40 cuspules spaced, largely spread over prolatero-ventral border from the inner edge to anterior lobe. Sternum: length 4.33, width 4.97; three pairs of sigillae, anterior subcircular, median and posterior sigillae oval; anterior and median sigillae marginal, posterior submarginal. Anterior edge of sternum with a semicircular area slightly elevated (joined to labio-sternal groove). Legs: cuticle normal. Leg and palpal segments measurements provided in Table 5. Leg I clearly thicker than the others. Bristles, thorn-like setae. Trichobothria: palp: Ti d5; Ta d4. Leg I: Ti d6; Me d4; Ta d6. Leg II: Ti d6; Me d4; Ta d6. Leg III: Ti d6; Me d4; Ta d4. Leg IV: Ti d4; Me d4; Ta d7. Tarsal pseudoscapula not dense. Claw tufts absent. Tarsal claws: ITC present on leg I; STC with one tooth on all legs. Spination: principally thorn-like setae on all segments. Spines: palp: 0. Leg I: 0. Leg II: 0. Leg III: Fe 0; Pa 0; Ti 2v, 1pv, 1rv; Me 1pv, 1rv; Ta 0. Leg IV: Fe 0; Pa 0; Ti 2v; Me 1p, 1rv; Ta 0.

ABDOMEN. With large tubercles. Book lung apertures projected, oval, sclerotized. Palp: cymbium with two unequal lobes separated by a sclerotized groove. Palpal bulb morphology with a conspicuous subapical curvature (ca 120°) in the embolus (Fig. 7). Spinnerets: PMS length 4.39; PLS length 0.67, apical segment digitiform. Basal segment of PLS divided in two unequal cuticle plates.

Female (paratype ICN-Ar111269)

Total length 10.32, carapace length 3.98, width 3.78; abdomen length 5.31, width 3.29; chelicerae length 2.1. Color (in alcohol): body with soil particles encrusted; carapace, and legs reddish dark brown, chelicerae dark brown, abdomen grayish brown. Carapace: slightly setose, lateral margins with single line of spiniform setae with a single line of curved setae mixed with disperse clubbed setae; striae conspicuous; caput arched, separated from thoracic region by transverse fovea, straight, width 0.7. Eyes and ocular tubercle: tubercle length 0.73, width 0.75, very elevated (height 0.81) and forwardly directed, with few setae. Clypeus absent. Anterior eye row slightly procurved, posterior recurved. Ocular sizes and interdistances: AME 0.19, ALE 0.2, PME 0.11, PLE 0.2, AME–AME 0.18, AME–ALE 0.05, PME–PME 0.42, PME–PLE 0.05, ALE–PLE 0.09, AME–PME 0.12, ALE–ALE 1, PLE–PLE 0.58. Chelicerae: short sparse bristles on dorsal and lateral areas, long fine bristles on ventral and anterior

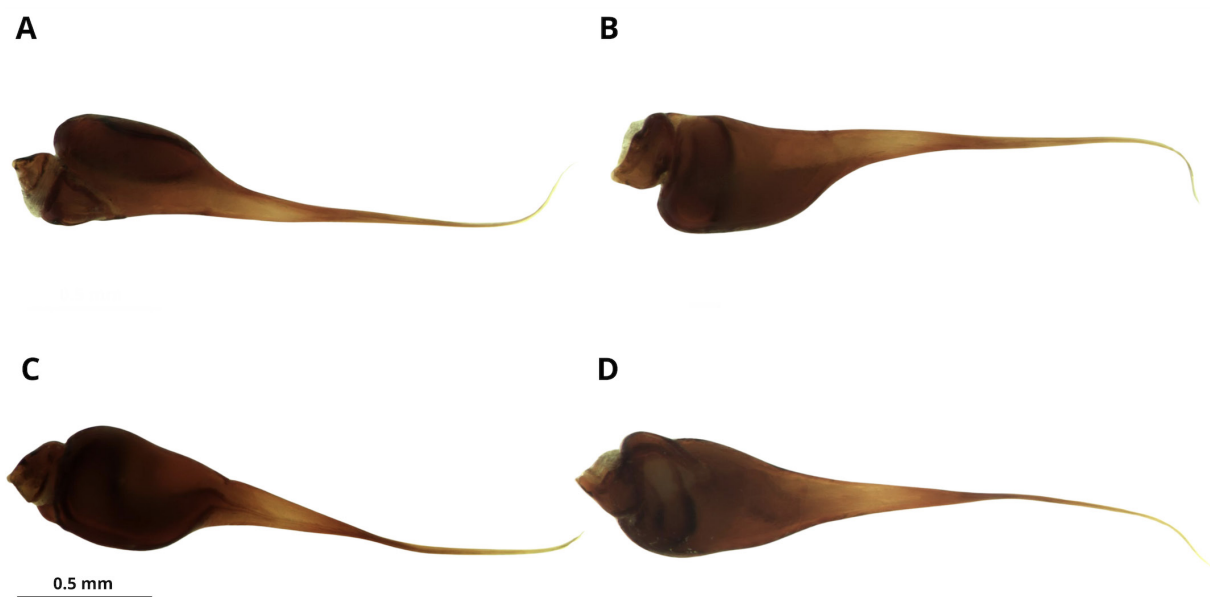


Fig. 7. *Paratropis macca* sp. nov., holotype, ♂ (ICN-Ar111268), left palpal bulb. **A.** Prolateral view. **B.** Retrolateral view. **C.** Dorsal view. **D.** Ventral view.

Table 5. Lengths of legs and palpal segments of male holotype of *Paratropis macca* sp. nov. (ICN-Ar111268).

	I	II	III	IV	Palp
Fe	3.45	2.82	2.43	4.231	1.32
Pa	1.33	1.34	1.27	1.38	0.70
Ti	3.22	2.35	2.1	2.99	1.9
Mt	2.28	2.54	2.3	3.38	–
Ta	1.43	1.64	1.52	2	0.57
Total	11.71	10.69	9.62	13.98	4.49

area; basal segment with clubbed plumose setae. Cheliceral furrow with two rows of well-developed teeth, 9/9 and 11/12 teeth on promargin and retromargin, respectively. Labium: length 0.66, width 0.98, with 22 cuspules on anterior edge. Labio-sternal groove with two lateral mounds. Maxillae longer than wide, with the anterior prolateral lobe very elongated, conical; with 30/32 cuspules spaced, largely spread over prolatero-ventral border from the inner edge to anterior lobe. Sternum: length 1.82, width 2.36; three pairs of sigillae, anterior subcircular, median and posterior sigillae oval; anterior and median

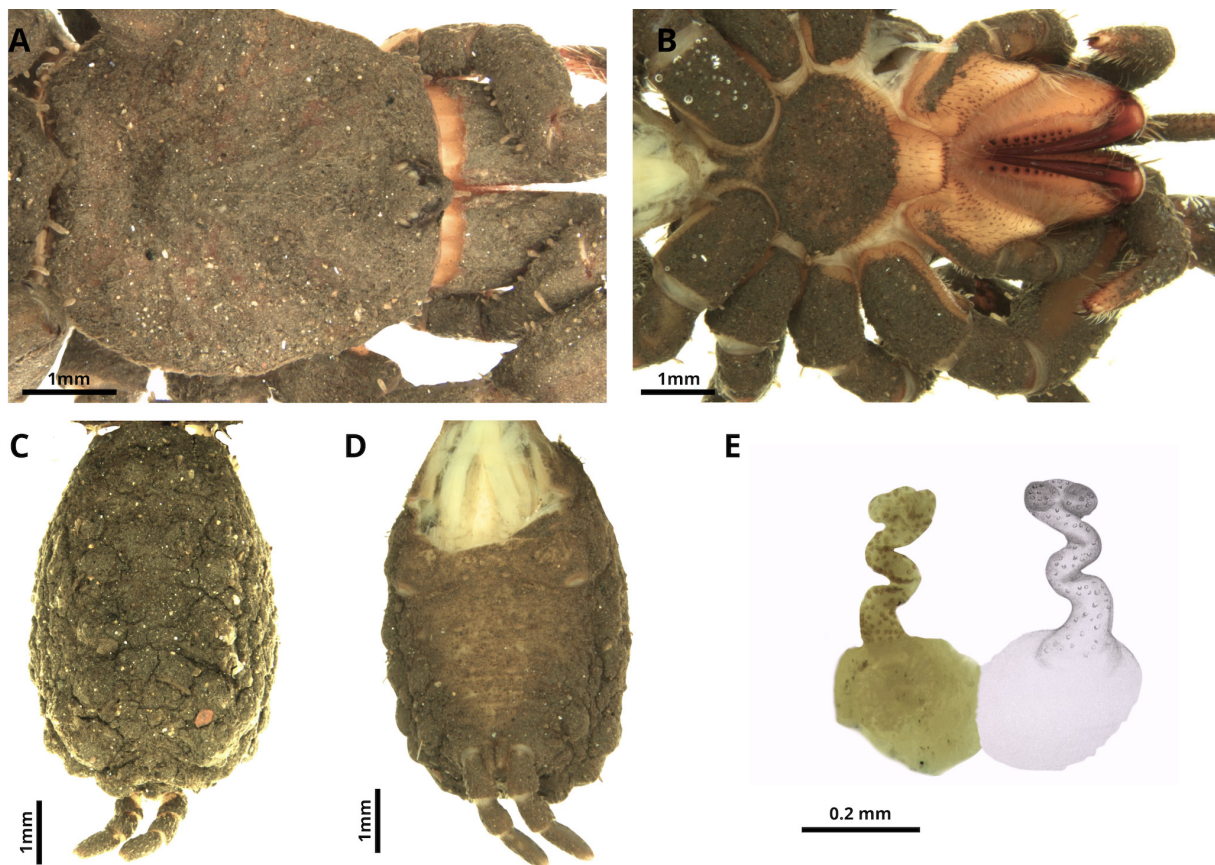


Fig. 8. *Paratropis macca* sp. nov., paratype, ♀ (ICN-Ar111269). **A.** Carapace, dorsal view **B.** Sternum, ventral view. **C.** Abdomen, dorsal view. **D.** Abdomen, ventral view. **E.** Female spermathecae, dorsal view. (Right spermathecal receptacle was reconstructed by drawing because damaged.)

Table 6. Lengths of legs and palpal segments of the female paratype of *Paratropis macca* sp. nov. (ICN-Ar111269).

	I	II	III	IV	Palp
Fe	3.72	2.28	2.1	2.85	1.81
Pa	1.61	1.51	1.5	1.52	1.1
Ti	2.67	1.74	1.53	2.75	1.01
Mt	1.8	1.6	1.32	2.78	–
Ta	1	0.98	2.1	1.67	1.45
Total	10.8	8.11	8.55	11.57	5.37

sigillae marginal, posterior submarginal. Anterior edge of sternum with a semicircular area slightly elevated (joined to labio-sternal groove). Legs: cuticle normal. Leg and palpal segments measurements provided in Table 6. Leg I clearly thicker than the others. Bristles, thorn-like setae and spines present. Trichobothria: palp: Ti d6; Ta d5. Leg I: Ti d6; Me d4; Ta d6. Leg II: Ti d6; Me d4; Ta d9. Leg III: Ti d6; Me d4; Ta d4. Leg IV: Ti d4; Me d4; Ta d6. Tarsal pseudoscapula not dense. Claw tufts absent. Tarsal claws: ITC present on leg I; STC with one tooth on all legs. Spination: principally thorn-like setae on all segments. Spines: Palp: Fe 0; Pa 0; Ti 0; Ta 1pv, 1rv. Leg I: Fe 0; Pa 0; Ti 0; Me 6v; Ta 6pv, 5rv. Leg II: Fe 0; Pa 0; Ti 0; Me 2v, 1pv, 1rv; Ta 0. Leg III: Fe 0; Pa 0; Ti 0; Me 1v, 1pv, 1p, 1rv; Ta 0. Leg IV: Fe 0; Pa 0; Ti 0; Me 3v, 1pv, Ta 0.

ABDOMEN. With large tubercles. Book lung apertures projected, oval, sclerotized. Two spermathecae receptacles with wide basis, spiral neck and two-lobed fundus (Fig. 8E). Spinnerets: PMS length 0.4; PLS length 2.11, apical segment digitiform. Basal segment of PLS divided in two unequal cuticle plates.

Distribution

Known only from its type locality, Colombia, Cundinamarca Department, Pacho vereda Bomejal (Fig. 13).

Paratropis salsa sp. nov.

[urn:lsid:zoobank.org:act:5984E00D-179D-48AD-8C39-341EEC7C37B4](https://doi.org/10.21203/rs.3.rs-5984E00D-179D-48AD-8C39-341EEC7C37B4)

Figs 9, 13; Table 7

Differential diagnosis

Differs from most species of the genus, excepting *P. urku* sp. nov. and *P. aurelianoi* sp. nov., in the shorter spermathecae receptacles (Fig. 9E). From *P. urku* in the narrower, slightly longer and more divergent spermathecae receptacles and from *P. aurelianoi* by the different dorsal abdominal pattern (Fig. 9C), absence of bacilliform setae on the abdomen and slightly longer spermathecae receptacles. Differs from *P. chami* sp. nov., described based on a male, by the morphology of abdominal tubercles which are smaller and without bacilliform setae.

Etymology

The specific epithet is a noun in apposition, referring to a popular music and dance form from South and Central America. Salsa is a very popular dance in Cali, the capital of Valle del Cauca, the Department where the species was found.

Type material

Holotype

COLOMBIA • ♀; Valle del Cauca, Cali, El Topacio; [3°22'06" N, 76°25'26" W]; 1645 m a.s.l.; Dec. 2004; I. Moreno leg.; ICN-Ar111270.

Description

Female (holotype ICN-Ar111270)

Total length 11.19, carapace length 4.44, width 4.6; abdomen length 6.16, width 4.15; chelicerae length 2.47. Color (in alcohol): body with soil particles encrusted; carapace, and legs reddish dark brown, chelicerae dark brown, abdomen grayish brown. Carapace: slightly setose, lateral margins with single line of spiniform setae with a single line of curved setae mixed with disperse clubbed setae; striae conspicuous; caput arched, separated from thoracic region by transverse fovea, straight, width 0.62. Eyes and ocular tubercle: tubercle length 0.91, width 0.95, very elevated (height 0.5) and forwardly directed, with few setae. Clypeus absent. Anterior eye row slightly procurved, posterior recurved. Ocular sizes and interdistances: AME 0.35, ALE 0.38, PME 0.28, PLE 0.33, AME–AME 0.18, AME–ALE 0.05, PME–PME 0.65, PME–PLE 0.03, ALE–PLE 0.05, AME–PME 0.05, ALE–ALE 0.73, PLE–PLE 0.85. Chelicerae: short sparse bristles on dorsal and lateral areas, long fine bristles on ventral and anterior area; basal segment with clubbed plumose setae. Cheliceral furrow with two rows of teeth well-developed, 10/10 and 12/14 teeth on promargin and retromargin, respectively. Labium: length 0.93, width 1.18, with 60 cuspules on anterior edge. Labio-sternal groove with two lateral mounds. Maxillae longer than

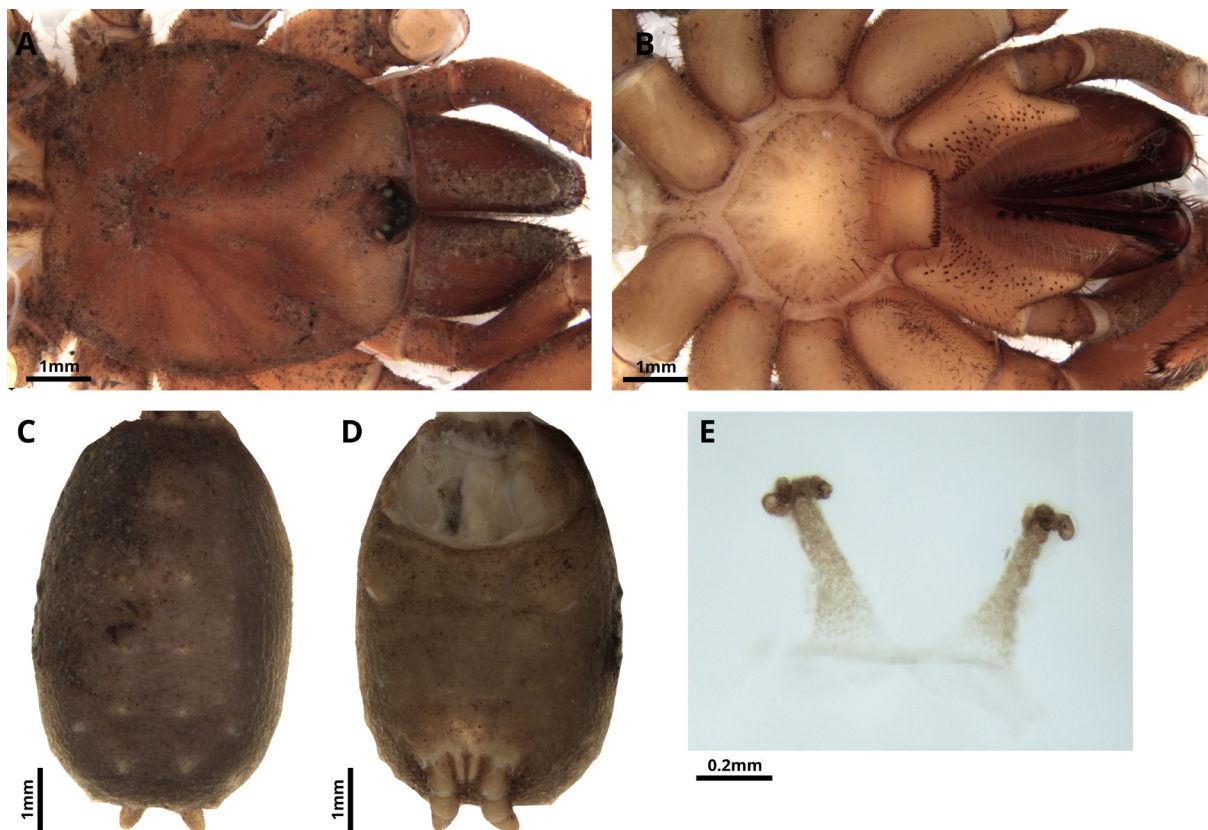


Fig. 9. *Paratropis salsa* sp. nov., holotype, ♀ (ICN-Ar111270). **A.** Carapace, dorsal view. **B.** Sternum, ventral view. **C.** Abdomen, dorsal view. **D.** Abdomen, ventral view. **E.** Female spermathecae, dorsal view.

Table 7. Length of legs and palpal segments of female holotype of *Paratropis salsa* sp. nov. (ICN-Ar111270).

	I	II	III	I	Palp
Fe	3.97	2.50	3.27	3.82	2.24
Pa	1.85	1.53	1.19	1.67	1.46
Ti	3.11	1.90	1.75	3.26	1.13
Mt	2.23	1.70	1.91	3.27	–
Ta	1.49	1.41	1.58	1.98	1.46
Total	12.65	9.04	9.7	14	6.29

wide, with the anterior prolateral lobe very elongated, conical; with 69/71 cuspules spaced, largely spread over prolatero-ventral border from the inner edge to anterior lobe. Sternum: length 2.1, width 2.6; three pairs of sigillae, anterior subcircular, median and posterior sigillae oval; anterior and median sigillae marginal, posterior submarginal. Anterior edge of sternum with a semicircular area slightly elevated (joined to labio-sternal groove). Legs: cuticle normal. Leg and palpal segments measurements provided in Table 7. Leg I clearly thicker than the others. Bristles, thorn-like setae and spines present. Trichobothria: filiform, palp: Ti d5; Ta d5. Leg I: Ti d4; Me d3; Ta d7. Leg II: Ti d7; Me d4; Ta d7. Leg III: Ti d6; Me d5; Ta d5. Leg IV Ti d3; Me d3; Ta d6. Tarsal pseudoscapula not dense. Claw tufts absent. Tarsal claws: ITC present on leg I; STC with one tooth on all legs. Spination: Palp: Fe 0; Pa 0; Ti 0; Ta 3pv. Leg I: Fe 0; Pa 0; Ti 0; Me 4v, 8pv; Ta 11pv. Leg II: Fe 0; Pa 0; Ti 1v; Me 3v; Ta 0. Leg III: Fe 0; Pa 0; Ti 0; Me 1v, 2pv; Ta 0. Leg IV: Fe 0; Pa 0; Ti 0; Me 0; Ta 0.

ABDOMEN. With four longitudinal dorsal rows of small tubercles with absence of bacilliform setae. Book lung apertures projected, oval, sclerotized. Two spermathecae receptacles with a short neck, with a longitudinal dorsal fold, ended in a multilobed fundus (Fig. 9E). Spinnerets: PMS length 0.4; PLS length 1.3, apical segment digitiform. Basal segment of PLS divided in two unequal cuticle plates.

Male

Unknown.

Distribution

Only known from its type locality, Colombia, Valle del Cauca Department (Fig. 13).

Paratropis urku sp. nov.

[urn:lsid:zoobank.org:act:ECA6834A-1490-4F4C-A153-D5B6C1305F1E](https://zoobank.org/urn:lsid:zoobank.org:act:ECA6834A-1490-4F4C-A153-D5B6C1305F1E)

Figs 10–13; Tables 8–9

Differential diagnosis

Male differs from that of all other species of the genus in the palpal bulb morphology by a shorter embolus, the absence of subapical triangular tooth on the embolus (Fig. 11), and the presence of an abdominal pattern comprising five transverse lighter stripes interrupted by a longitudinal medial band (Fig. 10C). Additionally, it differs from other species in the presence of dorsal abdominal spiniform setae, distributed in some transverse rows of few (4–1) setae each (Fig. 10C). Females differ from those of all other species in the spermathecae morphology, with two subconical receptacles with wide base, narrow neck and multilobed fundus (Fig. 12E).

Etymology

The specific epithet is a noun in apposition taken from Kichwa language referring to Kapak Urku, which means “lord of the mountains”.

Type material

Holotype

ECUADOR • ♂; Pichincha, Cayambe; 0°04'53" N, 78°08'59" W; 3640 m a.s.l.; 15 Oct. 2011; J. Bustillos leg.; QCAZ, MV-PAR-0028A.

Paratype

ECUADOR • 1 ♀; same data as for holotype; 0°04'54" N, 78°09'00" W; 3644 m a.s.l.; Oct. 2010; J. Bustillos leg.; QCAZ, MV-PAR-0028B.

Description

Male (holotype QCAZ, MV-PAR-0028A)

Total length 11.29, carapace length 4.99, width 5.11; abdomen length 5.96, width 4.2; chelicerae length 2.44. Color (in alcohol): carapace, and legs reddish dark brown, chelicerae dark brown, abdomen light grayish brown. Carapace: slightly setose, lateral margins with single line of spiniform setae with a single line of curved setae mixed with disperse clubbed setae; striae conspicuous; caput arched, separated from thoracic region by transverse fovea, straight, width 0.84. Eyes and ocular tubercle: tubercle length 0.71, width 0.83, elevated (height 0.58) and forwardly directed, with few setae. Clypeus absent. Anterior

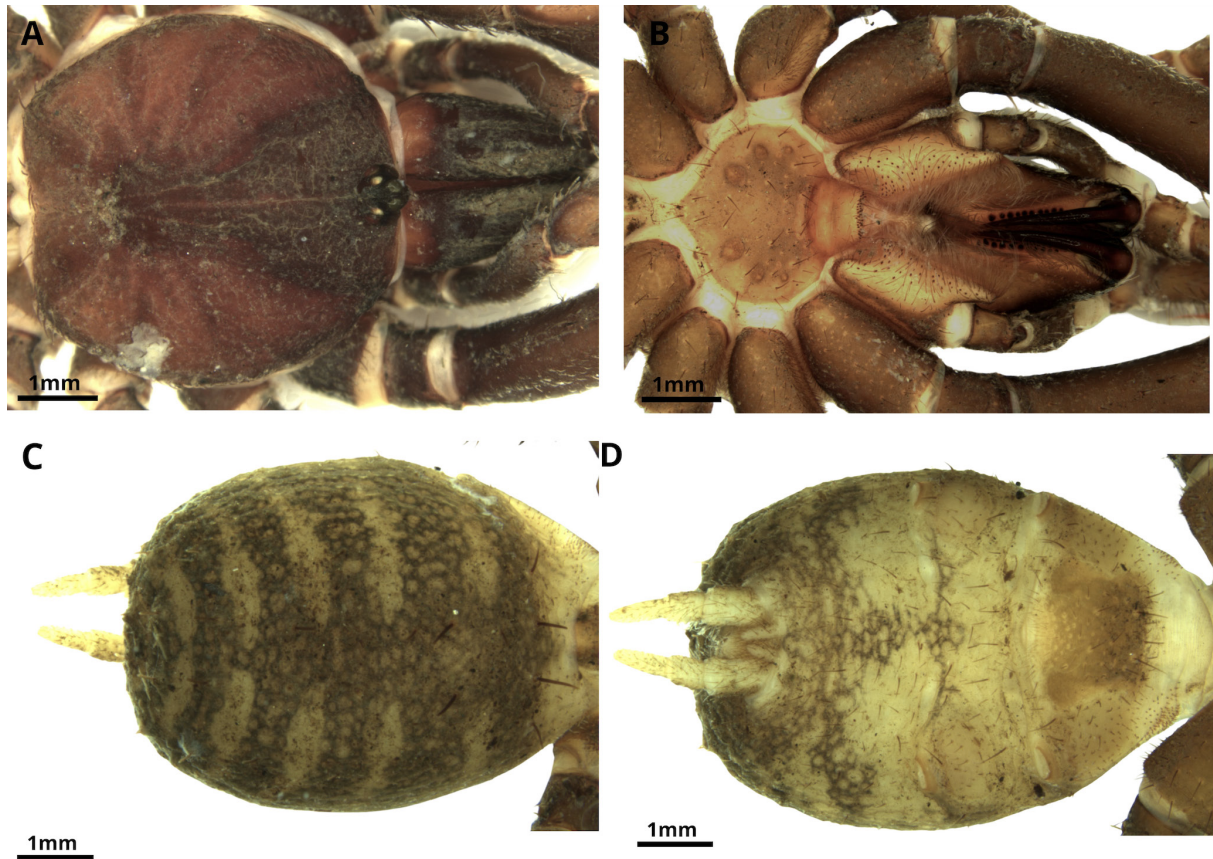


Fig. 10. *Paratropis urku* sp. nov., holotype, ♂ (QCAZ, MV-PAR-0028A). A. Carapace, dorsal view. B. Sternum, ventral view. C. Abdomen, dorsal view. D. Abdomen, ventral view.

Table 8. Length of legs and palpal segments of male holotype of *Paratropis vulcani* sp. nov. (QCAZ, MV-PAR-0028A).

	I	II	III	IV	Palp
Fe	2.55	2.39	2.81	2.09	1.92
Pa	2.14	1.74	1.56	1.69	1.19
Ti	2.08	1.89	1.75	2.73	1.61
Mt	2.28	1.18	2.08	3.33	–
Ta	1.33	0.80	1.49	2	1
Total	10.38	8	9.69	11.84	5.72

eye row slightly procurved, posterior recurved. Ocular sizes and interdistances: AME 0.17, ALE 0.24, PME 0.13, PLE 0.14, AME–AME 0.1, AME–ALE 0.08, PME–PME 0.29, PME–PLE 0.06, ALE–PLE 0.09, AME–PME 0.12, ALE–ALE 0.45, PLE–PLE 0.53. Chelicerae: short sparse bristles on dorsal and lateral areas, long fine bristles on ventral and anterior area; basal segment with clubbed plumose setae. Cheliceral furrow with two rows of well-developed teeth, 10/11 and 10/16 teeth on promargin and retromargin, respectively. Labium: length 0.81, width 1.17, with 33 cuspules on anterior edge. Labio-sternal groove with two lateral mounds. Maxillae longer than wide, with the anterior prolateral lobe very elongated, conical; with 46/48 cuspules spaced, largely spread over prolatero-ventral border from the inner edge to anterior lobe. Sternum: length 2.3, width 2.67; three pairs of sigillae, anterior subcircular, median and posterior sigillae oval; anterior and median sigillae marginal, posterior submarginal. Anterior edge of sternum with a semicircular area slightly elevated (joined to labio-sternal groove). Legs: cuticle normal. Leg and palpal segments measurements provided in Table 8. Bristles, thorn-like setae and spines present. Trichobothria: palp: Ti d6; Ta d6. Leg I: Ti d6; Me d4; Ta d9. Leg II: Ti d6; Me d3; Ta d5. Leg III: Ti d6; Me d3; Ta d6. Leg IV: Ti d4; Me d3; Ta d8. Tarsal pseudoscopula not dense. Claw tufts



Fig. 11. *Paratropis urku* sp. nov., holotype, ♂ (QCAZ, MV-PAR-0028A), left palpal bulb. A. Prolateral view. B. Retrolateral view. C. Dorsal view. D. Ventral view.

absent. Tarsal claws: ITC present on leg I; STC with one tooth on all legs. Spination: palp: 0. Leg I: Fe 0; Pa 1pv; Ti 0; Me 0; Ta 0. Leg II: Fe 0; Pa 0; Ti 0; Me 0; Ta 0. Leg III 0. Leg IV 0.

ABDOMEN. Dorsal pattern consisting in five transversal lighter stripes on each side and a longitudinal darker band (Fig. 10C). Anterior part of the abdomen with four long setae arranged in a transverse row. Book lung apertures projected, oval, sclerotized. Palp: cymbium with two unequal lobes separated by a sclerotized groove. Palpal bulb pyriform elongated; embolus curved, short, tapering to the apex (Fig. 11). Spinnerets: PMS length 1.02; PLS length 3.9, apical segment digitiform. Basal segment of PLS divided in two unequal cuticle plates.

Female (paratype QCAZ, MV-PAR-0028B)

Total length 12.32, carapace length 4.41, width 4.54; abdomen length 7.87, width 5.01; chelicerae length 2.43. Color (in alcohol): body with soil particles encrusted; carapace, and legs reddish dark brown, chelicerae dark brown, abdomen grayish brown. Carapace: slightly setose, lateral margins with single line of spiniform setae with a single line of curved setae mixed with disperse clubbed setae; striae conspicuous; caput arched, separated from thoracic region by transverse fovea, straight, width 0.68. Eyes and ocular tubercle: tubercle length 1.03, width 0.93, very elevated (height 0.32) and forwardly directed, with few setae. Clypeus absent. Anterior eye row slightly procurved, posterior recurved. Ocular sizes and interdistances: AME 0.21, ALE 0.23, PME 0.17, PLE 0.15, AME–AME 0.08, AME–ALE 0.06, PME–PME 0.4, PME–PLE 0.6, ALE–PLE 0.15, AME–PME 0.09, ALE–ALE 0.64, PLE–PLE 0.53.

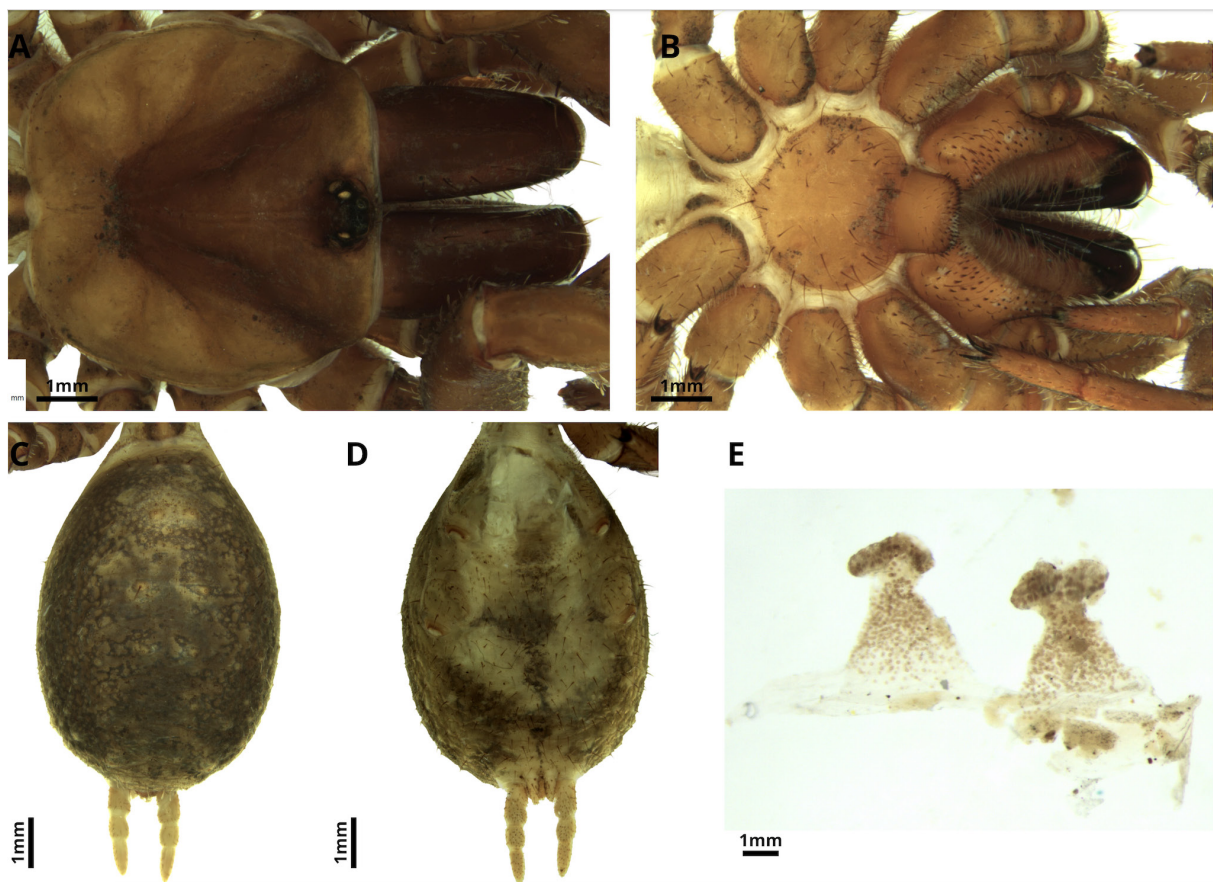


Fig. 12. *Paratropis urku* sp. nov., paratype, ♀ (QCAZ, MV-PAR-0028B). **A.** Carapace, dorsal view. **B.** Sternum, ventral view. **C.** Abdomen, dorsal view. **D.** Abdomen, ventral view. **E.** Female spermathecae, dorsal view.

Table 9. Length of legs and palpal segments of male holotype of *Paratropis vulcani* sp. nov. (QCAZ, MV-PAR-0028B).

	I	II	III	IV	Palp
Fe	2.55	2.39	1.26	1.16	1.94
Pa	2.14	1.74	1.25	1.44	1.47
Ti	2.08	1.89	1.46	2.26	0.99
Mt	2.28	1.18	0.98	2.52	–
Ta	1.33	0.8	0.71	1.33	1
Total	10.38	8	5.66	8.71	5.4

Chelicerae: short sparse bristles on dorsal and lateral areas, long fine bristles on ventral and anterior area; basal segment with clubbed plumose setae. Cheliceral furrow with two rows of well-developed teeth, 5/6 and 8/9 teeth on promargin and retromargin, respectively. Labium: length 0.91, width 1.15, with 53 cuspules on anterior edge. Labio-sternal groove with two lateral mounds. Maxillae longer than wide, with the anterior prolateral lobe very elongated, conical; with 39/41 cuspules spaced, largely spread over prolatero-ventral border from the inner edge to anterior lobe. Sternum: length 2.55, width 2.24; three pairs of sigillae, anterior subcircular, median and posterior sigillae oval; anterior and median sigillae marginal, posterior submarginal. Anterior edge of sternum with a semicircular area slightly elevated (joined to labio-sternal groove). Legs: cuticle normal. Leg and palpal segments measurements provided in Table 9. Leg I clearly thicker than the others. Bristles, thorn-like setae and spines present. Trichobothria: palp: Ti d4; Ta d5. Leg I: Ti d5; Me d4; Ta d4. Leg II: Ti d4; Me d2; Ta d5. Leg III: Ti d4; Me d2; Ta d3. Leg IV: Ti d4; Me d3; Ta d5. Tarsal pseudoscapula not dense. Claw tufts absent. Tarsal claws: ITC present on leg I; STC with one tooth on all legs. Spination: principally thorn-like setae on all segments. Spines: Palp: Fe 0; Pa 0; Ti 0; Ta 2pv. Leg I: Fe 0; Pa 0; Ti 0; Me 3v, 3pv; Ta 9pv. Leg II: Fe 0; Pa 0; Ti 0; Me 2pv, 1p; Ta 0. Leg III: Fe 0; Pa 0; Ti 0; Me 2pv, 1p; Ta 0. Leg IV: Fe 0; Pa 0; Ti 0; Me 2pv; Ta 0.

ABDOMEN. With four longitudinal dorsal rows of seven small tubercles, each emitting from its apex a plumose, bacilliform seta (Fig. 12C). Book lung apertures projected, oval, sclerotized. Two spermathecal subconical receptacles with wide base, narrow neck and multilobed fundus (Fig. 12E). Spinnerets: PMS length 0.86; PLS length 2.35, apical segment digitiform. Basal segment of PLS divided in two unequal cuticle plates.

Distribution

Known only from its type locality, Ecuador, Pichincha province, Cayambe (Fig. 13).

Paratropis lluspiosa sp. nov.

[urn:lsid:zoobank.org:act:E4CB6D17-AAB6-4B8B-B028-1C8E37F3DCAC](https://zoobank.org/urn:lsid:zoobank.org:act:E4CB6D17-AAB6-4B8B-B028-1C8E37F3DCAC)

Fig. 13

Paratropis elicioi [partim] – Perafán, Galvis & Pérez-Miles 2019: 8 (misidentified).

Differential diagnosis

Males differ from those of other species of the genus except *P. elicioi* by the palpal bulb very long and straight and by the absence of subapical triangular tooth on the embolus. From *P. elicioi* by the palpal

bulb morphology with an abrupt narrowing in the basis of the embolus, the shorter palpal bulb length which reaches the tip of the patella, and the higher number of labial and maxillary cuspules. Females differ from those of all other species by the spermathecae morphology, with two receptacles with a long and straight neck with a longitudinal dorsal fold ending in a multilobed fundus. Other diagnostic characters were indicated by Duperré & Tapia (2020: 344).

Etymology

The specific epithet is a noun in apposition which is taken from Nariño slang which refers to an animal, person or thing that is difficult to catch, slippery.

Type material

Holotype

COLOMBIA • ♂; Nariño, Barbacoas, Altaquer, Reserva Natural Río Ñambí; 1°16'59" N, 78°05'35" W; 1400 m a.s.l.; 17–27 Jul. 2012; M. Medrano leg.; ICN-Ar 11435.

Paratype

COLOMBIA • 1 ♀; same data as for holotype; ICN-Ar 11436.

Additional material

COLOMBIA – **Nariño** • 1 ♀; same data as for holotype; 1440 m a.s.l., 17–30 Jun. 2011, A. García leg.; ICN-Ar 6974. – **Valle del Cauca** • 1 ♂; Ansermanuevo, Finc. Florida; [4°34'18" N, 75°45'02" W]; 1600 m a.s.l.; 27 Sep. 2010; C. Santamaría leg.; ICN-Ar111271 • 1 ♀; same data as for preceding; ICN-Ar111271.

ECUADOR – **Pichincha** • 1 ♀; Santo Domingo; [0°15'29" S, 78°32'59" W]; 466 m a.s.l.; 1 Nov. 1999; M. Rivadeneira leg.; QCAZ, MV-PAR-018 • 1 ♀; Nanegalito; [0°04'06" N, 78°40'38" W]; 1500 m a.s.l.; 27 Dec. 1996; M. Davalos leg.; QCAZ, MV-PAR-015 • 1 ♀; same data as for preceding; 1400 m a.s.l.; 23 Jan. 1993; C. Segovia leg.; QCAZ, MV-PAR-07. – **Quito** • 1 ♀; Las Tolas; [0°00'10" N, 78°31'22" W]; 20 Mar. 1989; V. Utreras leg; QCAZ, MV-PAR-031.

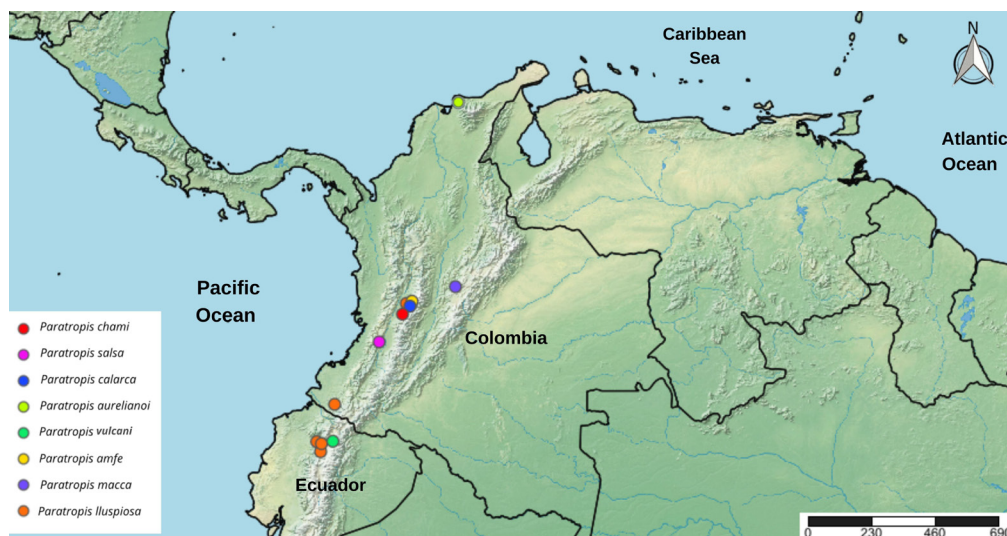


Fig. 13. Geographic distribution of the new species of the genus *Paratropis* Simon, 1889.

Description

See Perafán *et al.* (2019: 8, fig. 2) and the redescription of *P. elicioi* and comments by Duperré & Tapia (2020: 344).

Remarks

Perafán *et al.* (2019) studied several individuals of *Paratropis* from Southern Colombia and Northern Ecuador and identified them as *P. elicioi*. Duperré & Tapia (2020) compared the characteristics of that material with the type material of *P. elicioi* and suggested that the specimens described by Perafán *et al.* (2019) are not conspecific, but they did not describe it as a new one. After the analysis of the evidence presented by Duperré & Tapia (2020), we agree with their conclusions and consequently proposed *P. lluspiosa* sp. nov.

Discussion

The history of differences among paratropidid genera has been complex to follow. The number of species in the family has been increased, as was the character heterogeneity, making it difficult to differentiate between genera. Raven (1985) diagnosed *Paratropis* from *Anisaspis* and *Anisaspoides* by the presence of an ITC on leg I. This character was observed in the type species of *Paratropis* and described for the female of *Paratropis seminermis*; unfortunately, Caporiacco (1955) did not illustrate the spermathecae. Also, Santos *et al.* (2025) described an ITC on all legs in the female of *P. vulcanix*. Duperré (2015) differentiated *Paratropis* from these genera by the presence of PLS and PMS (PMS are absent in *Anisaspis* and *Anisaspoides*); however, Duperré (2015), while describing *P. elicioi*, contradicted the diagnostic character proposed by Raven (1985) because this species lacks an ITC on all legs.

Valdez-Mondragón *et al.* (2014) discussed the presence of a small ITC on leg II. This paper was the first one to illustrate the spermatheca of one species of *Paratropis*, showing the presence of receptacles with a multilobed fundus, marking the beginning of the characteristic multilobed spermathecal forms for the genus.

When *Stormtropis* was described, the authors diagnosed *Paratropis* from other paratropidids using the following character combination: presence of an ITC on legs I, two pairs of spinnerets (PMS and PLS), males without tibial apophysis, and palpal bulb with an embolus that is relatively straight, thin, and very elongated; females with spermathecal receptacles with a multilobed fundus. This spermathecal morphology with a multilobed fundus was also found in *Paratropis tuxtlenensis*, *P. florezi*, *P. otonga*, and *P. pristirana*. Duperré & Tapia (2020) also included multilobed vesicles as a diagnostic character for the genus. *Paratropis minuscula* constitutes the first exception, as the female has unilobed spermathecal receptacles and is also the only species of Paratropididae with six eyes. Afterward, Duperré & Tapia (2024) included several species with unilobed receptacles in the genus *Paratropis*, allowing them to affirm that females of *Paratropis* and *Stormtropis* lack differences. Also, Santos *et al.* (2025) included three species with unilobed receptacles and males with subapical teeth on the embolus in *Paratropis*. However, preventing inclusion of species with unilobed receptacles in *Paratropis*, females of both genera are clearly differentiated by the spermathecal morphology and males differ by the presence or absence of subapical teeth on the embolus (see Perafán *et al.* 2019). Duperré & Tapia (2024) also disregarded the value of the presence of an ITC as a diagnostic character for *Paratropis*, absent in *Stormtropis*, and considered it as an interspecific variation.

Even if we agree on the variation of the ITC, as Raven (1985) mentioned that it is a relative apomorphy, *Paratropis* now contains two groups of females with radically different spermathecal morphologies: one with multilobed and another with unilobed spermatheca, similar to *Stormtropis*. Also, we found males in *Paratropis*, with or without subapical teeth on the embolus, which was considered a difference

with *Stormtropis* (see Perafán *et al.* 2019). This raises doubts about the monophyly of *Paratropis* and presents a challenge for future studies on the systematics of this group.

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