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**Research article**

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# On the Neotropical spider genus *Hatitia* Brescovit, 1997 (Araneae: Anyphaenidae, Anyphaeninae), with the description of five new species

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**Abstract.** The genus *Hatitia* Brescovit, 1997 includes six species, the type species *Hatitia yhuaia* Brescovit, 1997, distributed in Peru, *H. canchaque* Brescovit, 1997, from Peru and Ecuador and *H. defolonguei* (Berland, 1913), *H. perrieri* (Berland, 1913) and *H. riveti* (Berland, 1913) all from Ecuador and *H. sericiea* (L. Koch, 1866) recorded in Colombia. The analysis of recent material from *Hatitia* specimens has allowed the records of *Hatitia yhuaia* to be expanded and to describe five additional species: *H. zarate* sp. nov. from Peru; *H. winayhuayna* sp. nov. from Peru and Bolivia; *H. cajuata* sp. nov. from Bolivia; *H. oxapampa* sp. nov. and *H. machiguenga* sp. nov. known only from Peru. Furthermore, *Anyphaena mollicoma* Keyserling, 1879 is considered a junior synonym of *Hatitia sericea*. As a result, a new emended diagnosis of the genus is presented. Additionally, complementary morphological data of *Hatitia yhuaia* are documented.

**Keywords.** Arachnida, Dionycha, ghost spider, South America, taxonomy.

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## Introduction

The spider genus *Hatitia* Brescovit, 1997 is one of the 37 genera of the subfamily Anyphaeninae Bertkau, 1878, which is currently included in a list of 59 genera belonging to the family Anyphaenidae Bertkau, 1878 (World Spider Catalog 2025). This genus can be distinguished from other Anyphaeninae by having the following combination of characters: endites with an almost straight outer margin, male palp with truncated distal margin of tegulum and provided with a spiraled embolus, female epigynum with anterior sclerotized hood, and internally with copulatory ducts large in the anterior region, narrowing abruptly in the posterior region, where it presents a small and globose seminal receptacles (Brescovit 1997: 114).

At present, the genus *Hatitia* comprises six valid species: *Hatitia yhuaia* Brescovit, 1997, the type species, described from Peru and *H. canchaque* Brescovit, 1997, from Peru and Ecuador (Brescovit 1997). Three additional species were described from Ecuador; *H. defonlonguei*, *H. perrieri* and *H. riveti*, all by Berland (1913), and *H. sericea* from Colombia by L. Koch (1866). The first two species were proposed and described by Brescovit (1997), and the three Ecuadorian species were recently redescribed and illustrated by Dupérré (2023).

In this study, we provide a redescription of *Hatitia sericea* (L. Koch, 1866) based on the examination of type specimens. Additionally, after examining the type material of *Anyphaena molicoma* Keyserling, 1879, we propose to consider it a junior synonym of *Hatitia sericea*. We describe five new species in the genus, *H. oxapampa* sp. nov., *H. machiguenga* sp. nov. and *H. zarate* sp. nov., all from Peru; *H. winayhuayna* sp. nov. from Peru and Bolivia, and *H. cajuata* sp. nov., exclusive to Bolivia. For *Hatitia yhuaia* Brescovit, 1997 and *H. riveti* (Berland, 1913), new distribution records and unprecedented SEM images of important morphological structures are provided. Additionally, for *H. canchaque* we provide photos of morphological structures. Finally, distribution maps are provided for all the species included in this study.

## Material and methods

The specimens examined are deposited in the following collections (curators in parentheses):

| | | |
|---|---|---|
| AMNH | = | American Museum of Natural History, New York, USA (L. Prendini) |
| BMNH | = | British Museum of Natural History, London, UK (J. Beccaloni) |
| CAS–ENT | = | Californian Academy of Sciences, San Francisco, USA (L. Esposito) |
| IBSP | = | Instituto Butantan, São Paulo, Brazil (A.D. Brescovit) |
| IRSN | = | Institut royal des Sciences naturelles de Belgique, Brussels, Belgium (W. Deconinck) |
| MCN | = | Museu de Ciências Naturais, SEMA, Porto Alegre, Brazil (R. Ott) |
| MNHN | = | Muséum national d'Histoire naturelle, Paris, France (C. Rollard) |
| MUSM–ENT | = | Museo de Historia Natural de San Marcos, Lima, Peru (D. Silva) |
| ZMH | = | Zoologisches Institut und Zoologisches Museum, Universität Hamburg, Hamburg, Germany (D. Harms) |

### Morphology

Specimens described in this work were examined in the Laboratório de Coleções Zoológicas, Instituto Butantan. All measurements are in millimeters. The terminology and format of the descriptions follow Oliveira & Brescovit (2021). Description of the leg spination mentions only those spines which differ from the general formula presented by Brescovit (1997: 114–115). Extended focal range photos were taken using a Leica 500 digital camera attached to a Leica MZ16A stereo microscope. The photographs were assembled using Leica Application Suite ver. 3.0.0. After dissection, in order to photograph, the female genitalia, the vulva was submerged for 24 hours in one tablet of an enzymatic eye lens cleaner (*Ultrazyme® enzymatic cleaner*) diluted in 5 mL of distilled water, to digest the non-chitinous tissue, before being submerged in clove oil for clarification. For scanning electron microscopy (SEM) images, legs, chelicerae, palpi and epigynum were removed and dehydrated through a series of graded ethanol (80–100%), dried through critical-point drying, mounted on metal stubs using adhesive copper tape and nail polish for fixation, and sputter coated with gold. SEM images were taken with a FEI Quanta 250 scanning electron microscope at the Laboratório de Biologia Estrutural e Funcional of the Instituto Butantan, São Paulo. Geographical coordinates are given as latitude and longitude (DMS); the coordinates in brackets were obtained with Google Maps. The geographic distribution of each species was mapped using ArcMap software, ver. 10.1.

**Abbreviations**

**Somatic morphology**

ALE = anterior lateral eyes
AME = anterior median eyes
p = prolateral
PLE = posterior lateral eyes
PME = posterior median eyes
r = retrolateral
v = ventral

**Genitalia** (♂)

C = cymbium
CP = cymbial projection
E = embolus
EP = embolic process
MA = median apophysis
MTA = median tibial apophysis
PA = patellar apophysis
PTA = prolateral tibial apophysis
RTA = retrolateral tibial apophysis
SD = sperm duct
ST = subtegulum
T = tegulum
TP = tegular protuberance
VTP = ventral tegular projection

**Genitalia** (♀)

A = atrium
CD = copulatory ducts
CO = copulatory opening
FD = fertilization ducts
LL = lateral lobes
H = hood
S = primary spermathecae
SR = seminal receptacles

## Results

### *Taxonomy*

Class Arachnida Cuvier, 1812
Order Araneae Clerk, 1757
Family Anyphaenidae Bertkau, 1878
Subfamily Anyphaeninae Bertkau, 1878

Genus ***Hatitia*** Brescovit, 1997

*Hatitia* Brescovit, 1997: 114–115, figs 309–314 (male holotype and female paratype, examined).

**Diagnosis**

Males of *Hatitia* resemble those of *Hibana* Brescovit, 1991, *Pippuhana* Brescovit, 1997, *Tafana* Simon, 1903 and *Umuara* Brescovit, 1997 by having a conical-shaped embolic process (EP) in the expanded copulatory bulb (see Brescovit 1997: figs 221, 229, 247, 301). They differ by the long and spiraled embolus where it rests on a distal truncated region of the tegulum (Figs 1E, 3A–D, 4C, 5E–G, 6E, 7C, 8C, 9B–C, 10C–D, 11D). The EP is short and not totally inserted in the expanded copulatory bulb and with a wide embolus base in *Hibana* (see Brescovit 1997: fig. 221); massive with insertion near the apex of the tegulum in *Pipphuana* (see Brescovit 1997: figs 301–302); wide in the middle and totally inserted in the expanded copulatory bulb behind the tegulum in *Tafana* (see Oliveira & Brescovit 2021: figs 9c–d); narrowed and totally inserted in the expanded copulatory bulb and with apophysis in the apex in *Umuara* (see Brescovit 1997: figs 247–248).

Additionally, *Hatitia* males present endites with an almost straight outer margin, a short median tibial apophysis in retrolateral view, a straight prolateral subtegulum prominent in the unexpanded palp, a ventral tegular projection near the median apophysis, a tegulum extremely projected and a rounded or conical cymbial projection in retrolateral and prolateral view (Figs 11C–H, 12C–H, 13C–H). Females of *Hatitia* resemble those of *Aljassa* Brescovit, 1997 and *Tafana* by the sinuous lateral lobes, parallel in the posterior region and posterior region with a cuticle covering the lateral lobes (see Brescovit 1997: fig. 287; Oliveira & Brescovit 2021: figs 15f, 17f, 19f, 22f, 25f). They differ by the wide and curved copulatory ducts in the anterior region in the internal vulva and seminal rounded receptacles in the middle of the copulatory ducts (Figs 1I, 4G, 7G, 8G, 10J, 11J). In *Aljassa*, the epigynal plate has a hood in the median region, coiled and narrow copulatory ducts, and a slender seminal receptacle in the anterior region of the internal vulva (see Brescovit 1997: fig. 288); in *Tafana* the copulatory ducts are sinuous with wide seminal receptacles near the spermathecae (see Oliveira & Brescovit 2021: figs 10g, 14g, 15g, 16g).

**Description** (see Brescovit 1997: 113–115)

Complementary data: carapace sub-rectangular, narrow in anterior region, and enlarged near coxae II–III, cephalic region moderately high (Figs 1A, C, 4A, 6C, 7A–B, 8A–B, 10A–B, 11A–B). Eyes, in dorsal view, with anterior row slightly recurved and posterior row straight (Figs 1A, C, 4A–B, 6C–D, 7A–B, 8A–B, 10A–B, 11A–B, 12A, 13A). Chelicerae long and projected, approximately half the length of the carapace in males and, shorter about a third of the carapace length, in females (Figs 1A–D, 2D–E, 6C). Fang base and shaft relative sizes, with shaft longer or base shorter than shaft (Fig. 2D). The fang base contains cheliceral glands in both males and females (Figs 2B–C, F, 5B, D), with 3–5 promarginal teeth and 3–5 retromarginal denticles (Figs 2A–B, D–E, 5A, C, 9A). Endites nearly straight on lateral margin (Figs 11C, 12B, 13B) or furrowed (Fig. 1B, D). Oval sternum, with setae, rounded at the apex, triangular at the base (Figs 1B, D, 13B) or narrow (Fig. 12B). Legs with two rows of trichobothria with striated base on the dorsum of the metatarsi and tarsi I–IV (Fig. 2H). Tarsal organ rounded and, located on the distal region of tarsus (Fig. 2I). Paired tarsal claws with 4–6 teeth (Fig. 2G). Male palp: dorsal patellar apophysis short and unique (Figs 4D–E, 7D, 8D, E, 10F); median tibial apophysis short and triangular or absent in the median region of the tibiae (Figs 3E, G, 4D–E, 5H–I, K, 7D–E, 8D–E, 9D–E, 10E–G); retrolateral tibial apophysis short conical with a wide base, may be present furrow in the middle and with a squamous or rugose texture (Figs 1E–F, 3F–G, 4C–E, 5H–K, 6E–G, 7C–E, 8C–E, 9B–E, 10C–G, 11E–G, 12D–F, 13E–G); prolateral tibial apophysis conical and short (Figs 6H, 12G); cymbium oval (Figs 1F–G, 8D, 10E, 11F, 13C), projected or with the retrolateral region excavated (Figs 12D, G–H, 13C–F), and also has retrolateral and prolateral projection at the base (Figs 4E, 7C, 8C, 9D–E, 12D); cymbial conductor with unique furrow (Figs 1E, 3A–B, 4C, 5E, 6E, 7C, 8C, 9B, 10D) or is bilobed at the apex (Fig. 13C–D); subtegulum prominent straight positioned in prolateral region in the unexpanded palp (Figs 1G, 4C, 6E, 10H, 11H, 12G, 13H); tegulum oval sclerotized (Figs 1E, 3A–B, 4C, 5E, 6E, 7C, 8C, 9B, 10C–D, 12C) or extremely projected (Figs 11D–H, 12C–H, 13C–H)

with a retrolaterally projected ventral tegular projection near the median apophysis (Figs 3C–D, 5E–G, 10D) or without a ventral tegular projection (Figs 11D–E, 13C–E); median apophysis sclerotized, long, and laminar with medially furrowed apex that is curved (Figs 3A, C–D, 4C, 5F–G, 6E, 7C, 8C, 9B–C, 10D, 11E–F, 12D, H, 13C, E); sperm duct presenting three or four loops in expanded or unexpanded palp to both, with tegulum projected or not (Figs 1E–G, 6E, 7C, 8C, 10C–D, 11D–H, 12C–H, 13C–H; see Brescovit 1997: figs 311–312); embolus long and filiform (Figs 1E, 3A–D, 4C, 5E–G, 6E, 7C, 8C, 9B–C, 10D, 11D, 12C, 13D). Epigynum with rounded hood (Figs 1H, 3H, 4F, 5L, 6I, 7F, 8F, 11I), or without (Fig. 10I); with sinuous lateral lobes, lobe parallel in the posterior region (Figs 1H, 3H, 4F, 5L, 6I, 7F, 8F, 10I, 11I); atrium short (Figs 1H, 3H, 4F, 6I, 7F); copulatory opening positioned in the anterior region (Figs 1H, 4F, 5L, 6I, 7F, 8F, 10I, 11I). Internally, the copulatory ducts are wide and curved, narrowing to the spermathecae in the posterior region (Figs 1I, 4G, 7G, 8G, 10J, 11J); seminal receptacles rounded in the middle of the copulatory ducts (Figs 1I, 7G, 8G, 10J, 11J) or inconspicuous (Fig. 4G); spermathecae oval, close to each other (Figs 1I, 4G, 8G, 10J, 11J) or separated by almost a third of their diameter (Fig. 7G); fertilization ducts slender, near the epigastric furrow, originating from the base of the spermathecae (Figs 1I, 4G, 7G, 8G, 10J, 11J).

Group ***yhuaia***

**Diagnosis**

The *yhuaia* group differs from the *canchaque* group by the palp lacking a tegular projection and endites with external lateral margin furrowed and by the female epigynum with hood positioned in the anterior region or absent (Figs 1E–I, 3A–H, 4C–G, 5E–L, 6E–I, 7C–G, 8C–G, 9B–E, 10C–J).

**Composition**

*Hatitia yhuaia*, *H. riveti*, *H. sericea*, *H. zarate* sp. nov., *H. winayhuayna* sp. nov. and *H. cajuata* sp. nov.

***Hatitia yhuaia*** Brescovit, 1997
Figs 1–3, 14

*Hatitia yhuaia* Brescovit, 1997: 115, figs 309–314.

**Diagnosis**

Males of *Hatitia yhuaia* differ from those of other species of the *yhuaia* group by having palps with a discrete median tibial apophysis and a short retrolateral tibial apophysis on the tibia (Figs 1E–F, 3E–G), while in the other species of the group, the median tibial apophysis is conspicuous, and the retrolateral tibial apophysis is elongated (Figs 4C–E, 5G–H, 6E–F, 7C, E, 8C, E, 9D–E, 10C–D, G), with the exception of *H. sericea*, which does not exhibit a median tibial apophysis (Fig. 6F–G). Females of *Hatitia yhuaia* differ from those of other species of the *yhuaia* group by the T-shaped epigynal plate with laterally elongated lateral lobes (Figs 1H–I, 3H). In *H. riveti*, the epigynal plate has lateral lobes attached anteriorly (Figs 4F–G, 5L; see Dupérré 2023: figs 12c–d); in *H. sericea*, the epigynal plate has narrow lateral lobes (Fig. 6I); in *H. zarate* sp. nov., the epigynal plate has cup-shaped lateral lobes and separate spermathecae (Fig. 7F–G); in *H. winayhuayna* sp. nov., the epigynal plate is Y-shaped with medially narrowed lateral lobes (Fig. 8F); in *H. cajuata* sp. nov., the U-shaped epigynal plate has straight lateral lobes and a wide atrium anteriorly (Fig. 10I–J).

**Material examined**

**Holotype**

PERU – **Cusco** • ♂; Wiñayhuaina; [13°07′00″ S, 72°34′00″ W]; 2700–3100 m a.s.l.; 10 Feb. 1990; D. Silva leg.; MUSM–ENT 0519285.

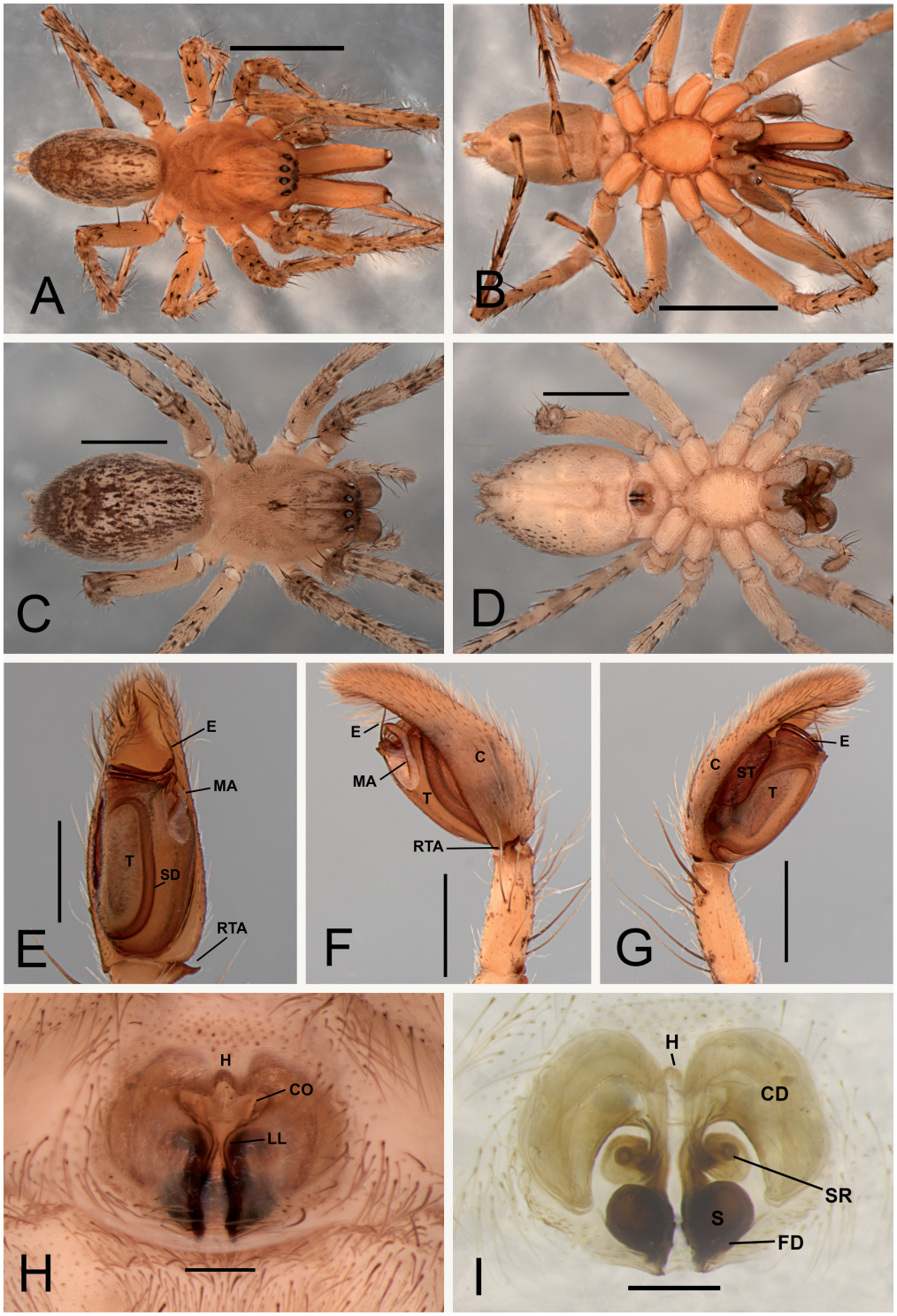


**Fig. 1.** *Hatitia yhuaia* Brescovit, 1997. **A–B, E–G**. ♂ (MCN24639). **C–D, H–I**. ♀ (IBSP 347623). **A**. Habitus, dorsal view. **B**. Habitus, ventral view. **C**. Habitus, dorsal view. **D**. Habitus, ventral view. **E**. Left palp, ventral view. **F**. Left palp, retrolateral view. **G**. Left palp, prolateral view. **H**. Epigynum, ventral view. **I**. Vulva, dorsal view. Abbreviations: C = cymbium; CD = copulatory ducts; CO = copulatory opening; E = embolus; FD = fertilization ducts; H = hood; LL = lateral lobes; MA = median apophysis; RTA = retrolateral tibial apophysis; S = spermathecae; SD = sperm duct; SR = seminal receptacles; ST = subtegulum; T = tegulum. Scale bars: A–D = 3.5 mm; E = 0.66 mm; F–G = 0.73 mm; H–I = 0.25 mm.

**Paratypes**

PERU – **Cusco** • 1 ♀; same data as for holotype; MUSM–ENT 0519285 • 2 ♂♂; Paucartambo, Pilcopata, Carretera National Park Del Manu [12°08′00″ S, 71°40′00″ W]; 18–19 Feb. 1990; D. Silva leg; MUSM–ENT 0519288 • 2 ♂♂; same data as for preceding; MCN 24639.

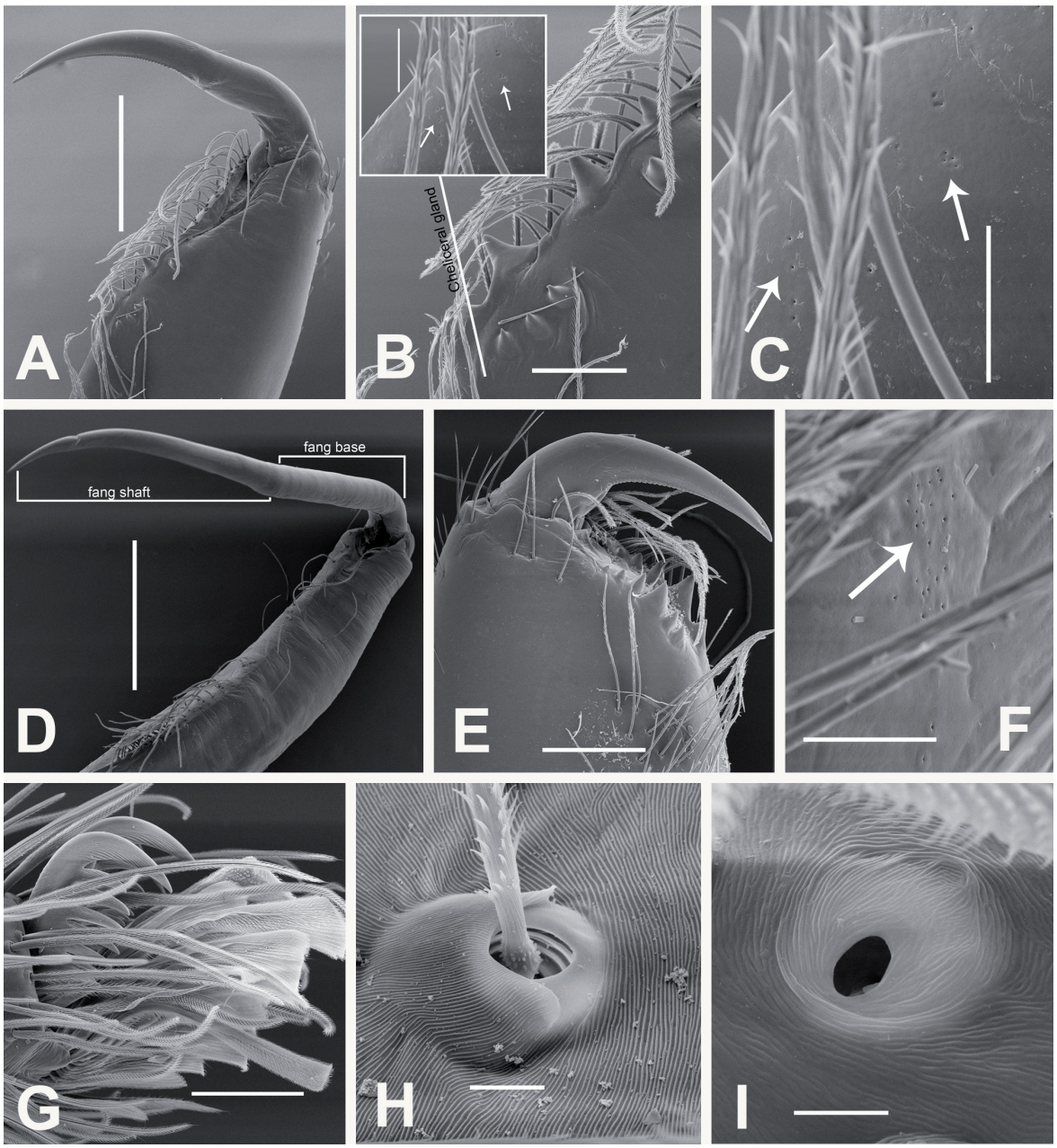


**Fig. 2.** *Hatitia yhuaia* Brescovit, 1997. **A–D**. ♂ (MUSM–ENT 0519289). **E, I**. ♀ (MUSM–ENT 0519289). **F**. ♀ (IBSP 347625). **G–H**. ♂ (IBSP 347625). **A**. Chelicerae, ventral view. **B**. Chelicerae, ventral view, detail (arrow indicating cheliceral glands). **C**. Cheliceral glands, ventral view (arrow indicating cheliceral glands). **D**. Chelicerae, ventral view, variation (fang shaft between fang base in the male). **E**. Chelicerae, ventral view. **F**. Cheliceral gland, ventral view, (arrow indicating cheliceral glands). **G**. Leg I, claws, lateral view. **H**. Tricobothrium, dorsal view. **I**. Tarsal organ, dorsal view. Scale bars: A = 0.4 mm; B = 0.1 mm (inset: 0.03 mm); C = 0.03 mm; D = 1 mm; E–F = 0.2 mm; G = 0.1 mm; H–I = 0.005 mm.

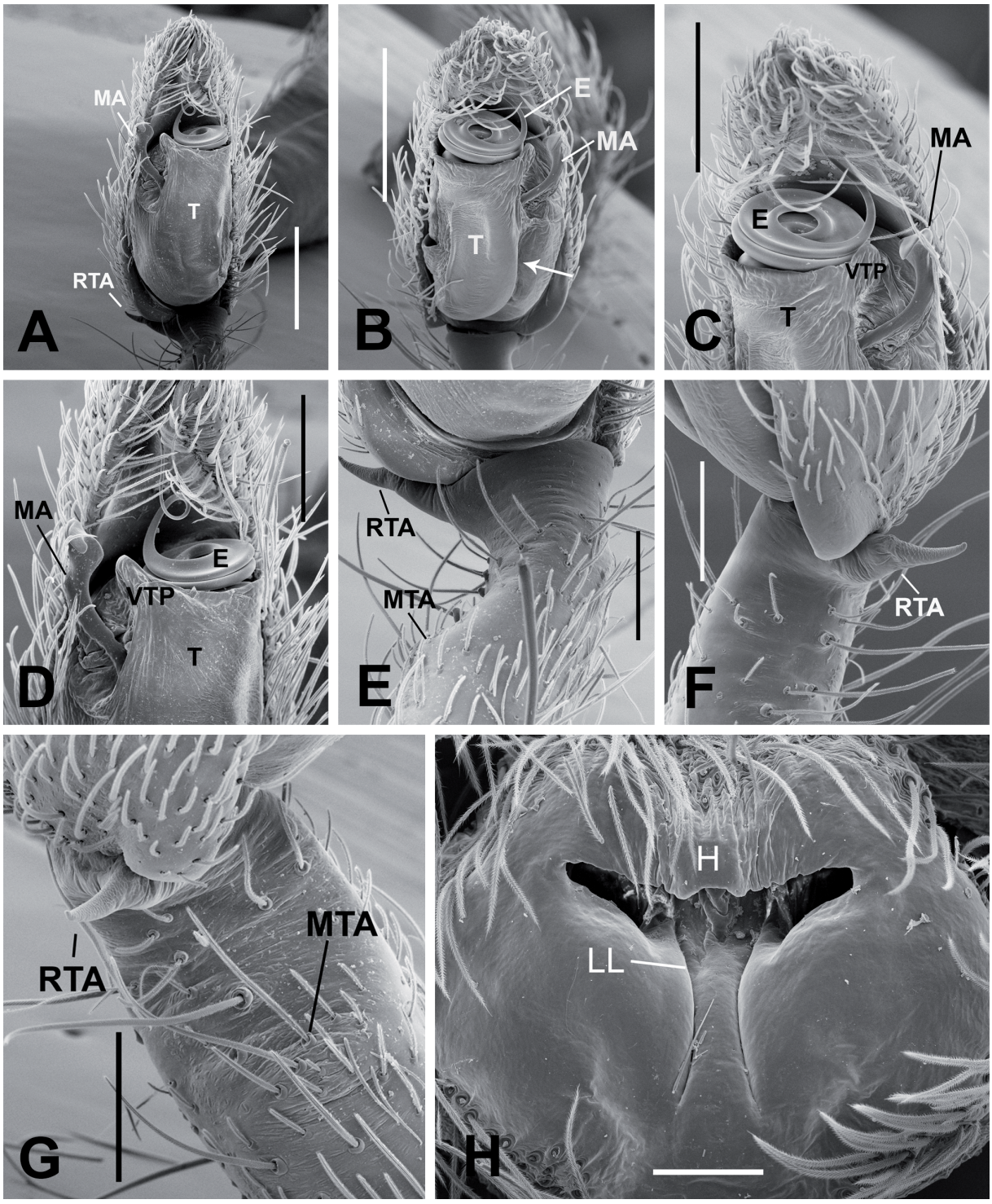


**Fig. 3.** *Hatitia yhuaia* Brescovit, 1997. **A, D–E, G**. ♂ (MUSM–ENT 0519289. **B–C, F, H**. ♀ (IBSP 347625). **A**. Right palp, ventral view. **B**. Left palp, ventral view (arrow indicating furrow in the tegulum). **C**. Left palp, ventral view. **D**. Right palp, ventral view. **E**. Right palp, ventral view. **F**. Left palp, retrolateral view. **G**. Right palp, retrolateral view. **H**. Epigynum, ventral view. Abbreviations: E = embolus; H = hood; LL = lateral lobes; MA = median apophysis; MTA = median tibial apophysis; RTA = retrolateral tibial apophysis; T = tegulum; VTP = ventral tegular projection. Scale bars: A–B = 0.5 mm; C–D = 0.3 mm; E–G = 0.2 mm; H = 0.1 mm.

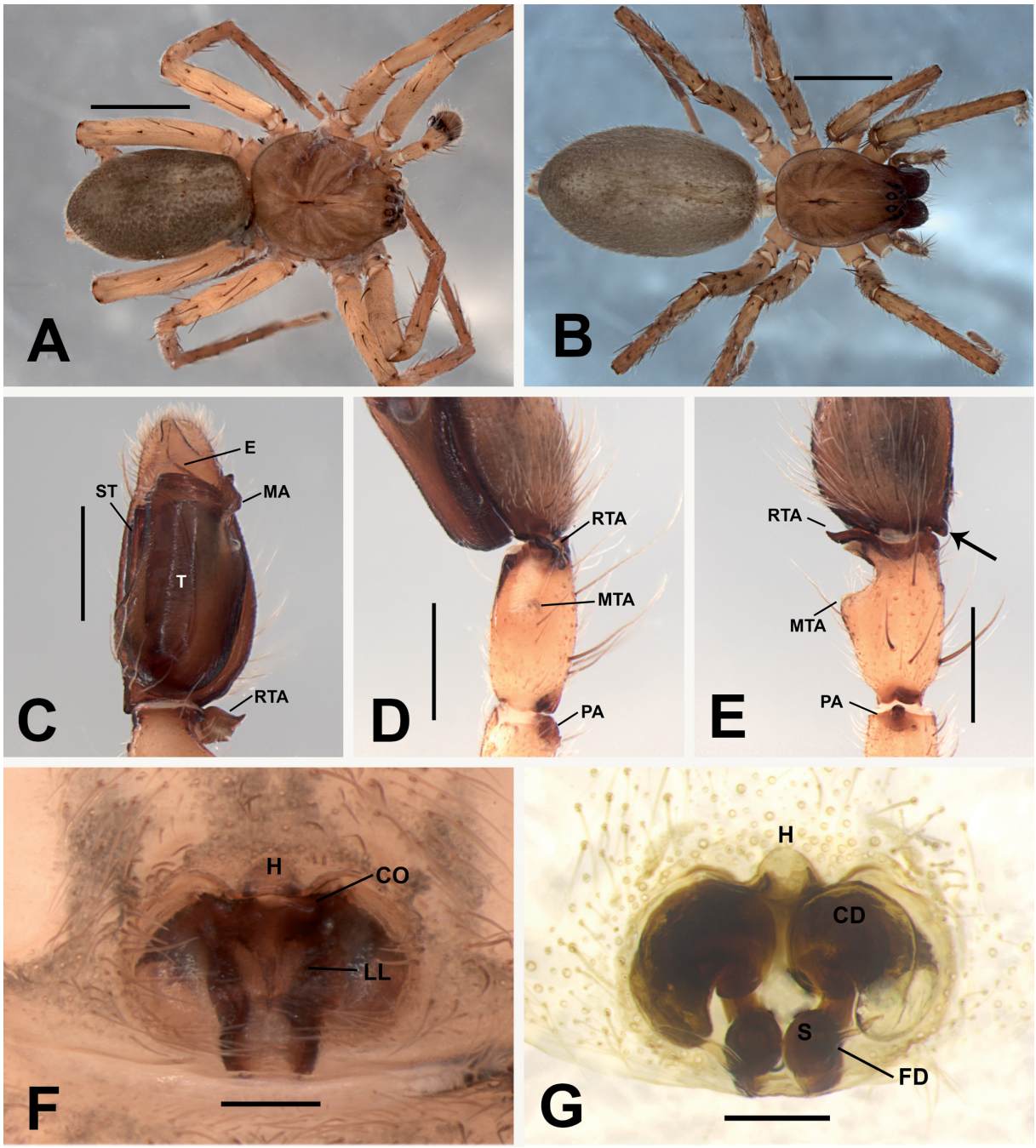


**Fig. 4.** *Hatitia riveti* (Berland, 1913). **A, C–E**. ♂ (IRSN EC10). **B, F–G**. ♀ (IRSN EC10). **A**. Habitus, dorsal view. **B**. Habitus, dorsal view. **C**. Left palp, ventral view. **D**. Left palp, retrolateral view. **E**. Left palp, dorsal view (arrow indicating prolateral cymbial projection). **F**. Epigynum, ventral view. **G**. Vulva, dorsal view. Abbreviations: CD = copulatory ducts; CO = copulatory opening; E = embolus; FD = fertilization ducts; H = hood; LL = lateral lobes; MA = median apophysis; MTA = median tibial apophysis; PA = patellar apophysis; RTA = retrolateral tibial apophysis; S = spermathecae; ST = subtegulum; T = tegulum. Scale bars: A–B = 3.5 mm; C–E = 0.66 mm; F–G = 0.25 mm.

**Other material examined**

BOLIVIA – **La Paz** • 1 ♀; [16°29′45″ S, 68°08′00″ W]; La Cumbre; 2 Aug. 1993; A.D. Brescovit and H. Höfer leg.; IBSP 347626 • 1 ♂, 1 ♀; Vale de Zongo [16°5′48.5″ S, 68°3′10″ W], transition Zeja and Puna Umeda; 3200 m a.s.l.; 5 Jul. 1993; A.D. Brescovit leg.; IBSP 347623 • 1 ♂, 1 ♀; same data as for preceding; IBSP 347624 • 1 ♂, 1 ♀; same data as for preceding; IBSP 347625.

PERU – **Cusco** • 5 ♂♂; Paucartambo, Pilcopata, Carretera, National Park Del Manu [12°08′00″ S, 71°40′00″ W]; 14–19 Feb. 1990; D. Silva leg; MUSM–ENT 0519287 • 1 ♂; Wiñayhuaina; [13°07′00″ S; 72°34′00″ W]; 2700–3100 m a.s.l.; 10 Feb. 1990; D. Silva leg.; MUSM–ENT 0519288 • 1 ♂, 1 ♀; Esperanza, between Paucartambo and Atalaya [13°08′00″ S, 71°25′00″ W]; 2900 m a.s.l.; 14 Feb. 1990; D. Silva leg.; MUSM–ENT 0519289.

**Description**

Male and female described by Brescovit (1997: 115–116, figs 309–314).

***Hatitia riveti*** (Berland, 1913)
Figs 4–5, 14

*Anyphaena riveti* Berland, 1913: 107, pl. 11 figs 97–101.

*Hatitia riveti* – Brescovit 1997: 115 (transferred from *Anyphaena*). — Dupérré 2023:133, figs 11a–b, 12a–d.

**Diagnosis**

Males of *Hatitia riveti* differ from those of other species in the *yhuaia* group by having palps with an enlarged, subquadrate and bilobed ventral tegular projection (Fig. 5F–G), while in *H. zarate* sp. nov., the ventral tegular projection is elongated and narrow (Fig. 7C); in *H. cajuata* sp. nov., the ventral tegular projection is wide and square (Fig. 10C–D); in the other species of the group, the ventral tegular projection is short and rounded (Figs 3C–D, 6E, 7C, 9C, 10D). Females of *Hatitia riveti* differ from those of other species of the *yhuaia* group by the epigynal plate with very enlarged lateral lobes across its entire length (Figs 4F, 5L), while in the other species of group, the lateral lobes are narrowed in the anteromedian region (Figs 1H, 3H, 6I, 7F, 8F;10I).

**Material examined**

ECUADOR – **Azuay** • 2 ♀♀, 2 imm.; Cuenca, Parque Nacional Cajas [2°50′46″ S. 79°13′13″ W]; 4000–4100 m a.s.l.; 25 Jul. 1992; Von Herche and Amelin leg.; IRSN 27948. – **Latacunga** • 1 ♂, 3 ♀♀; Cotopaxi province [0°40′00″ S, 78°26′00″ W]; 4100 m a.s.l.; Mar 1965; J. and H. Leleuph leg.; IRSN EC10 • 1 ♂, 1 ♀; same data as for preceding; IBSP 347628 • 4 ♀♀; same data as for preceding; IRSN 27948a • 1 ♀; same data as for preceding; IBSP 347629.

**Description**

Male and female described by Dupérré (2023: 133, figs 11a–b, 12a–d).

***Hatitia sericea*** (L. Koch, 1866)
Figs 6, 14

*Anyphaena sericea* L. Koch, 1866: 216, pl. 6 fig. 142 (material type, female holotype from Santa Fé de Bogota, currently Bogotá, Colombia, deposited in BMNH 1916.6.1.838, examined).

*Anyphaena mollicoma* Keyserling, 1879: 323, pl. 4 fig. 21 (material type, female holotype from Santa Fé de Bogota, currently Bogotá, Colombia, deposited in BMNH 1890.7.1.618, examined), **syn. nov.**

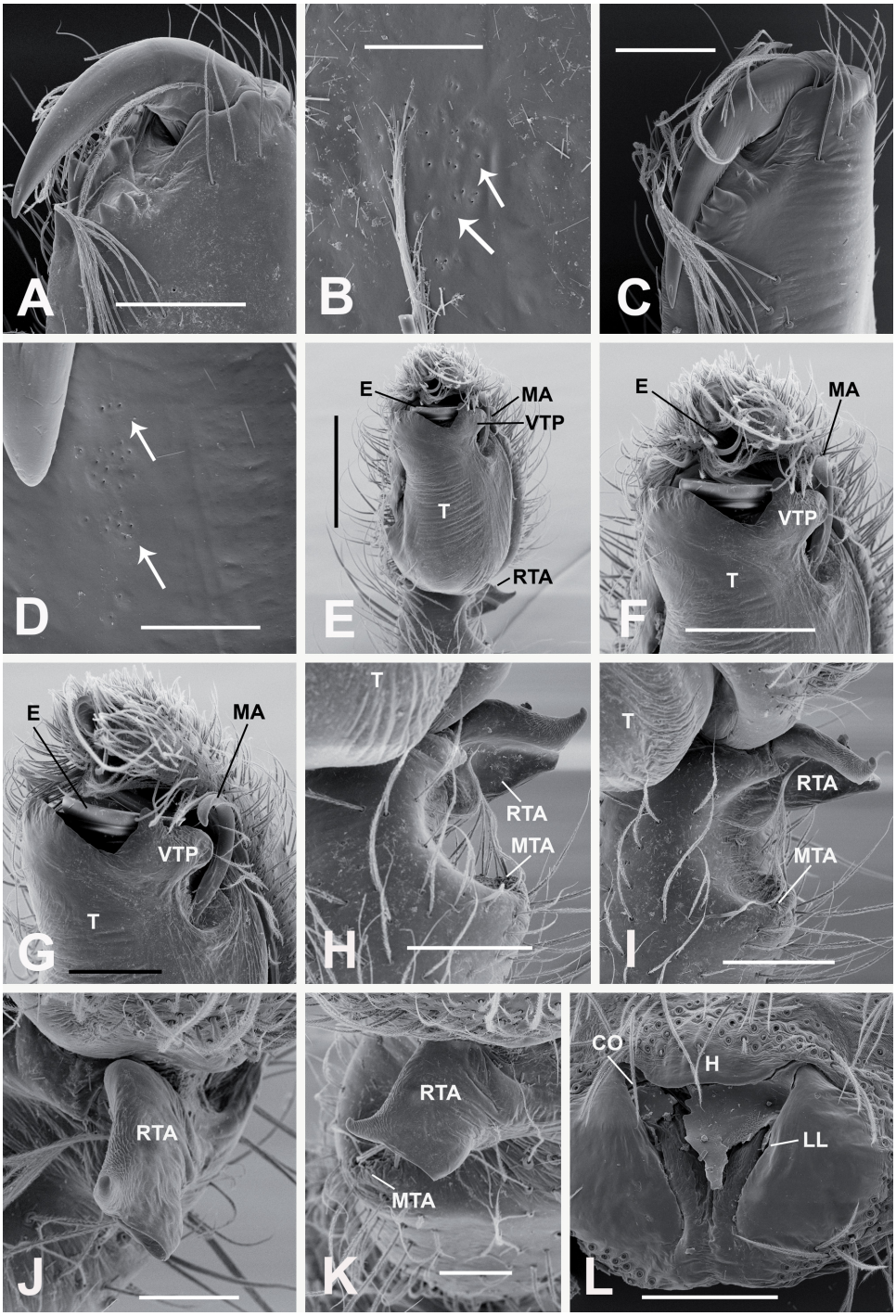


**Fig. 5.** *Hatitia riveti* (Berland, 1913). **A–B, L**. ♀ (IRSN ex EC10, IRSN 27948). **C–K**. ♂ (IRSN EC10). **A**. Chelicerae, ventral view. **B**. Chelicerae, ventral view, detail (arrow indicating cheliceral glands). **C**. Chelicerae, ventral view. **D**. Chelicerae, ventral view, detail (arrow indicating cheliceral glands). **E**. Left palp, ventral view. **F**. Left palp, detail apical, anterior view. **G**. Same, ventro-retrolateral view. **H**. Left palp, tibia, ventral view. **I**. Same, tibia, retrolateral view. **J**. Same, tibia, retrolateral view. **K**. Same, tibia, retrodorsal view. **L**. Epigynum, ventral view. Abbreviations: CO = copulatory opening; E = embolus; H = hood; LL = lateral lobes; MA = median apophysis; MTA = median tibial apophysis; RTA = retrolateral tibial apophysis; T = tegulum; VTP = ventral tegular projection. Scale bars: A, F–I = 0.3 mm; B, D = 0.02 mm; C, L = 0.2 mm; E = 0.5 mm; J–K = 0.1 mm.

*Anyphaena sericea* – Simon 1897: 103.
*Hatitia sericea* – Brescovit 1997: 115 (transferred from *Aysha*).

**Diagnosis**

Males of *Hatitia sericea* differ from those of the *yhuaia* group by the conical prolateral tibial apophysis and the absence of a median tibial apophysis in the tibia of the palpi (Fig. 6F–G). They can only be confused with *H. yhuaia* by the presence of an inconspicuous median tibial apophysis but differ by a long retrolateral tibial apophysis (Figs 1E, 3F, 6E–G).

Females of *Hatitia sericea* differ from those of other species of the *yhuaia* group by the epigynal plate with narrow lateral lobes, a triangular hood in the anterior region and an extremely short atrium (Fig. 6I). The epigynal plate is T-shaped with lateral lobes laterally elongated and copulatory ducts extremely wide present in *H. yhuaia* (Figs 1H–I, 3H); the epigynal plate has lateral lobes distant from each other in the anterior region and a large atrium in *H. riveti* (Figs 4F–G, 5L; see Dupérré 2023: figs 12c–d); an epigynal plate with lateral lobes cup-shaped in *H. zarate* sp. nov. (Fig. 7F–G); an epigynal plate Y-shaped with non-elongated lateral lobes and a short atrium in *H. winayhuayna* sp. nov. (Fig. 8F–G); the epigynal plate is U-shaped with straight lateral lobes and a wide atrium in *H. cajuata* sp. nov. (Fig. 10I–J).

**Material examined**

COLOMBIA • 1 ♂; Bogotá [4°35′53″ N, 74°4′33″ W], 12 mi E Bogotá; 13 Mar. 1955; Schlinder and E.S. Ross leg.; CAS–ENT 9122671.

**Remark**

The type of *Anyphaena sericea* was in precarious condition, with withered abdomen, loose and mostly broken legs and opaque color. The type of *Anyphaena mollicoma* is relatively well preserved, complete, and only slightly damaged. Its coloration is opaque, with the carapace, legs, and abdomen somewhat dried out.

**Description**

**Male** (CAS–ENT 9122671)
Carapace yellowish brown, with reddish brown paramedian bands. Chelicerae, endites, labium and sternum reddish brown. Legs yellowish, banded with brown, with yellow thighs ventrally. Abdomen gray, dorsally with brown anterior spot, laterally with brown streaks, ventrally with a brown median band (Fig. 6C). Total length 9.2. Carapace 4.2 long, 3.2 wide. Clypeus 0.12. Eye diameters: AME 0.9, ALE 0.10, PME 0.10, PLE 0.11. AME–AME 0.05, AME–ALE 0.03, PME–PME 0.08, PME–PLE 0.06, ALE–PLE 0.02. Chelicerae 3.4 long, a little shorter than carapace, with three promarginal teeth and four retromarginal denticles. Leg measurements: I – femur 4.4 / patella 1.6 / tibia 4.7 / metatarsus / 3.7 / tarsus 1.5 / total 15.9; II – 4.0 / 1.5 / 3.8 / 3.1 / 1.4 / 13.8; III – 3.2 / 1.2 / 2.2 / 2.7 / 0.8 / 10.1; IV – 3.8 / 1.4 / 2.8 / 3.8 / 1.0 / 12.8. Leg spination: III – tibia p1-1-1. Abdomen: length 5.1, epigastric furrow 1.0 from tracheal spiracle, spiracle 1.9 from base of spinnerets. Palp long conical with retrolateral tibial apophysis; long median apophysis, curved at apex; short ventral tegular projection near the median apophysis; filiform and spiraled embolus without apophysis, resting in tegulum; prominent subtegulum straight prolaterally (Figs 6E–H).

**Female** (holotype BMNH 1890.7.1.618)
Coloration is similar to that of the male, but the specimen is somewhat damaged (Fig. 6D). Total length 7.2. Carapace 2.65 long, 2.05 wide. Clypeus 0.14. Eye diameters: AME 0.12, ALE 0.15, PME 0.14, PLE 0.15. AME–AME 0.06, AME–ALE 0.05, PME–PME 0.15, PME–PLE 0.11, ALE–PLE 0.06. Chelicerae 1.25 long, with 3 promarginal teeth and 4 small retromarginal denticles. Leg measurements: I – femur 2.0 / patella 1.05 / tibia 1.85 / metatarsus 1.6 / tarsus 0.8 / total 7.3; II – 1.85 / 1.0 / 1.6 / 1.35 / 0.7 / 6.5; III –

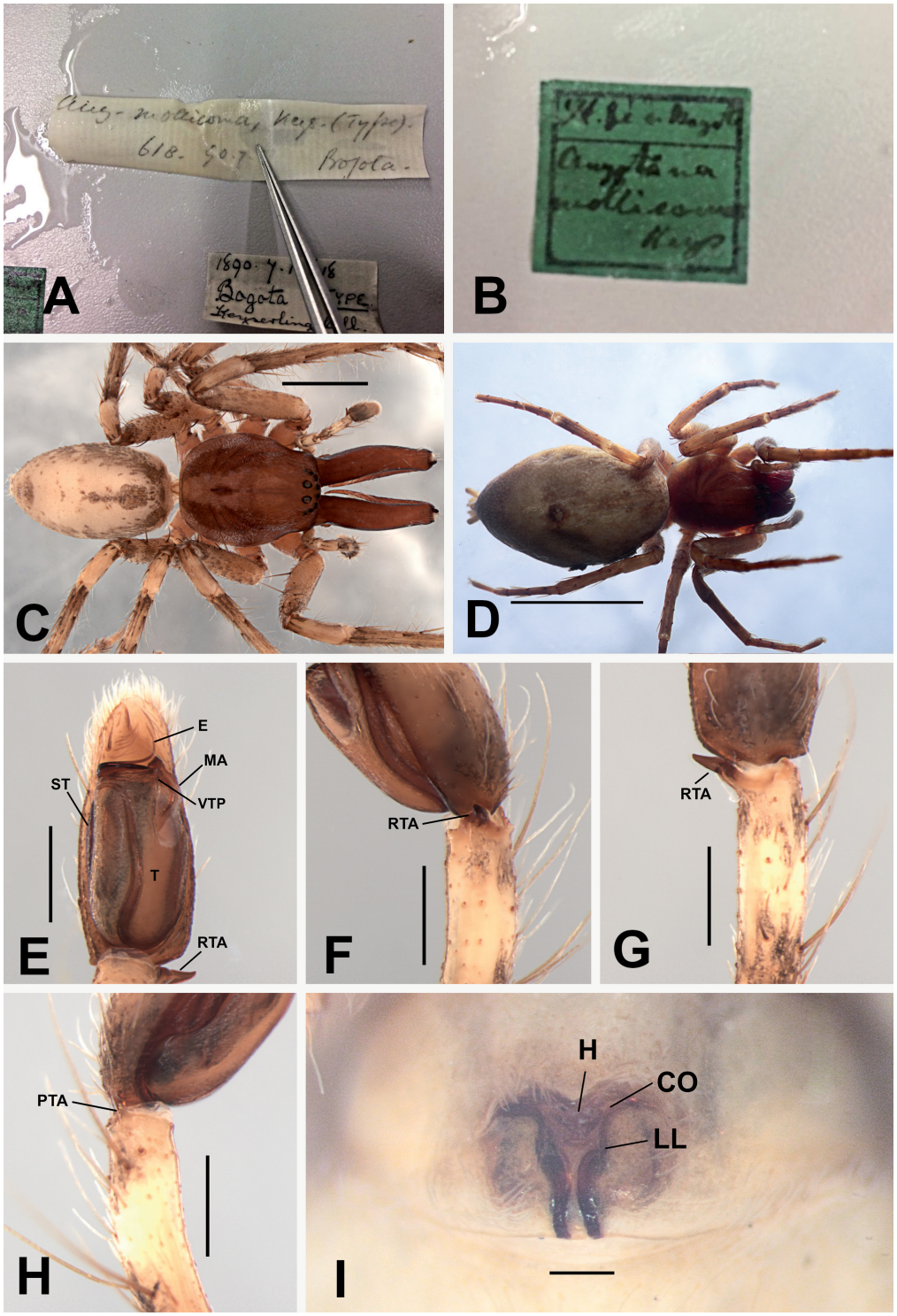


**Fig. 6.** *Hatitia sericea* (L. Koch, 1866). **A–B, D, I**. ♀ (BMNH 1890.7.1.618). **C, E–H**. ♂ (CAS–ENT 9122671). **D, I**. ♀ (BMNH 1890.7.1.618). **A–B**. Museum data. **C**. Habitus, dorsal view. **D**. Habitus, dorsal view. **E**. Left palp, ventral view. **F**. Left palp, retrolateral view. **G**. Left palp, dorsal view. **H**. Left palp, prolateral view. **I**. Epigynum, ventral view. Abbreviations: CO = copulatory opening; E = embolus; H = hood; LL = lateral lobes; MA = median apophysis; PTA = prolateral tibial apophysis; RTA = retrolateral tibial apophysis; ST = subtegulum; T = tegulum; VTP = ventral tegular projection. Scale bars: C–D = 3.5 mm; E–H = 0.5 mm; I = 0.25 mm.

1.6/0.85/1.1/1.3/0.6/5.45; IV – 1.9/0.85/1.6/2.0/0.7/7.05. Leg spination: II – tibia v1-2-2, p0-1-1, r1-0-1; III – tibia v1-1-2, r1-1-0; metatarsus v2-1-2 or v2-2-2; IV – tibia v1-2-2. Abdomen: length 5.05, epigastric furrow 1.25 from tracheal spiracle, spiracle 1.75 from base of spinnerets. Epigynum: triangular hood; sinuous lateral lobes, sclerotized and narrowed in the posterior region (Fig. 6I). Internally by transparence, with rounded and separated spermathecae (Fig. 6I).

**Distribution**

Known only from Bogotá, Colombia.

***Hatitia zarate*** sp. nov.
urn:lsid:zoobank.org:act:893A5DE4-C2BF-4101-AA8C-EAD3B01DCFAB
Figs 7, 15

**Diagnosis**

Males of *Hatitia zarate* sp. nov. resemble those of the *yhuaia* group by the conical median tibial apophysis (Figs 3E, G, 4D–E, 5H–I, 8D–E, 9D–E, 10E–H), but differ by the filiform and elongated retrolateral tibial apophysis and the long and truncated ventral tegular projection (Fig. 7C–E). Females of *Hatitia zarate* resemble those of the *yhuaia* group by the epigynal plate with parallel lateral lobes (Figs 1H, 3H, 4F, 5L, 6I, 7F, 8F, 10I, 11I). They differ by the epigynal plate having a semicircular and narrow hood in the anterior region (Fig. 7F), whereas a large hood and atrium are present in *H. yhuaia* (Figs 1H, 3H), in *H. riveti* (Figs 4F–G, 5L; see Dupérré 2023: fig. 12c), in *H. sericea* (Fig. 6I), in *H. winayhuayna* sp. nov. (Fig. 8F); or hood absent in *H. cajuata* sp. nov. (Fig. 10I).

**Etymology**

The specific epithet is toponymic in apposition and refers to the type locality.

**Material examined**

**Holotype**
PERU • ♂; Lima, Huarochiri Province, Chorritos II, Zona Reservada Bosque de Zárate [11°55′45.12″ S, 76°29′21.22″ W]; 2885 m a.s.l.; 1 Mar. 1980; I. Franke and N. Valencia leg.; MUSM–ENT 0519290.

**Paratype**
PERU • 1 ♀; same data as for holotype except Pampa Zarate; 3000 m a.s.l.; 21 Apr. 1980; I. Franke and N. Valencia leg.; MUSM–ENT 0519291.

**Other material examined**
PERU – **Lima** • 1 ♀; same data as for holotype; 30 Apr. 1978; MUSM–ENT 0519292 • 1 ♀; Huarochiri Province, Zona Reservada Bosque dos Mitos; [11°55′45.12″ S, 76°29′21.22″ W]; 2520 m a.s.l.; 30 Apr. 1978; I. Franke and N. Valencia leg.; IBSP 347621.

**Description**

**Male** (holotype, MUSM–ENT 0519290)
Carapace yellow with orange paramedian bands, with black streaks. Eye border black. Chelicerae orange with dark gray streaks. Labium brown. Endites yellow. Sternum yellow with greenish gray edges. Legs orange, with distal brown bands on femurs, tibiae and metatarsi. Abdomen gray, with dorsal median inverted V spot, laterally with greenish gray streaks, ventrally gray with sparse streaks (Fig. 7A). Total length 5.3. Carapace 2.6 long, 1.9 wide. Clypeus 0.08. Eye diameters: AME 0.10, ALE 0.16, PME 0.18, PLE 0.18. AME–AME 0.06, AME–ALE 0.04, PME–PME 0.10, PME–PLE 0.08, ALE–PLE 0.04. Chelicerae 1.1 long, with three promarginal teeth and five retromarginal denticles. Leg measurements:

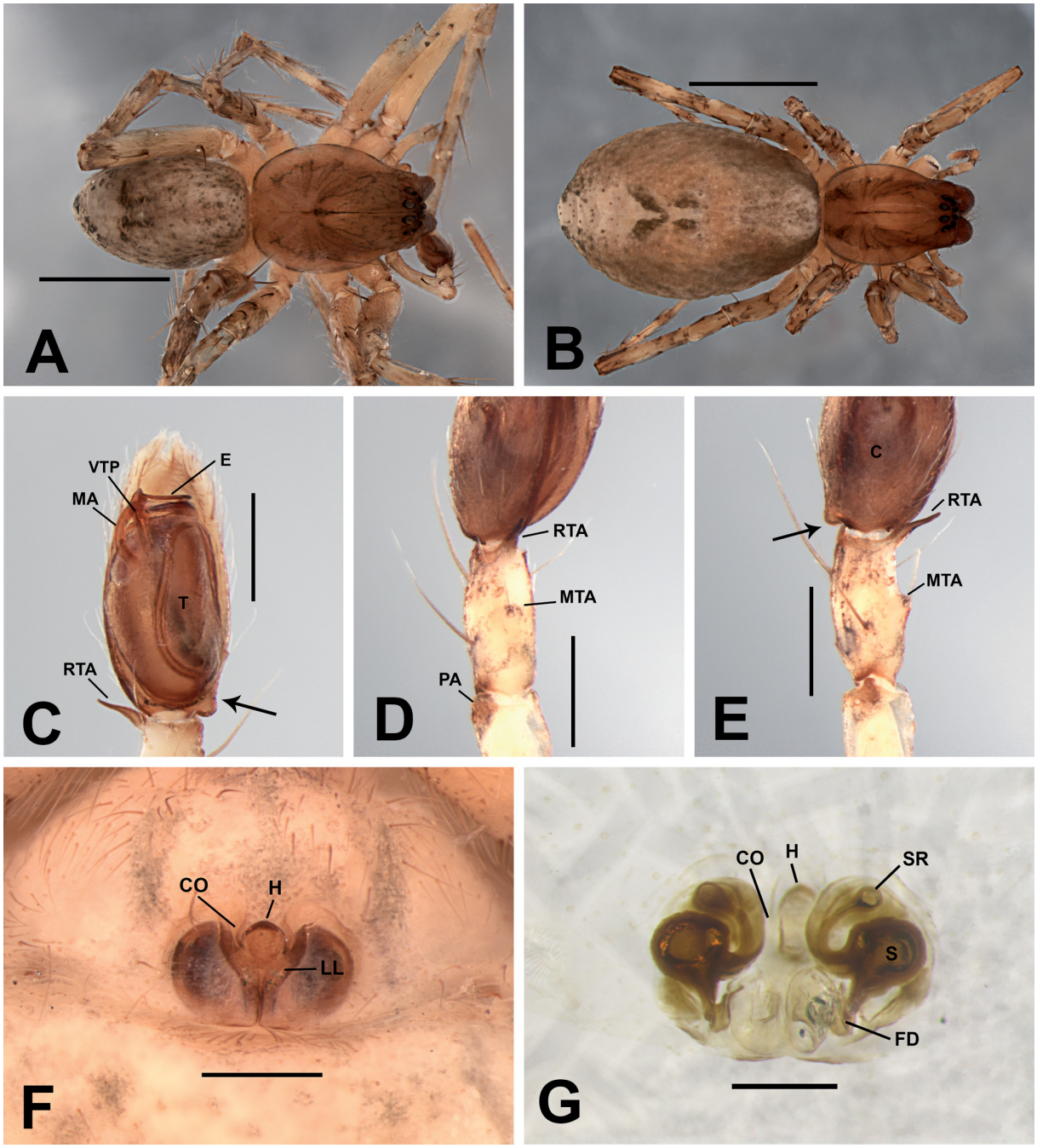


**Fig. 7.** *Hatitia zarate* sp. nov. **A, C–E**. Holotype, ♂ (MUSM–ENT 0519290). **B, F–G**. Paratype, ♀ (MUSM–ENT 0519291). **A**. Habitus, dorsal view. **B**. Habitus, dorsal view. **C**. Right palp, ventral view (arrow indicating the prolateral cymbial projection). **D**. Right palp, retrodorsal view. **E**. Right palp, dorsal view (arrow indicating the prolateral cymbial projection). **F**. Epigynum, ventral view. **G**. Vulva, dorsal view. Abbreviations: C = cymbium; CO = copulatory ducts; E = embolus; FD = fertilization ducts; H = hood; LL = lateral lobes; MA = median apophysis; MTA = median tibial apophysis; PA = patellar apophysis; RTA = retrolateral tibial apophysis; S = spermathecae; SR = seminal receptacles; T = tegulum; VTP = ventral tegular projection. Scale bars: A–B = 2.16 mm; C–E = 0.5 mm; F–G = 0.4 mm.

I – femur 2.5/patella 0.9/tibia 2.7/metatarsus 2.3/tarsus 1.1/total 9.5; II – 2.3/0.8/1.9/2.0/0.9/7.9; III – 1.9/0.6/1.4/1.5/0.6/6.0; IV – 2.6/0.8/2.3/2.8/0.8/9.3. Leg spination: I – tibia p1-1-0; III – tibia v1p-2-2; metatarsus v1p-2-2; IV – tibia v1p-2-2, p1-1-0, r1-1-0. Abdomen: length 2.8, epigastric furrow 0.6 from tracheal spiracle, spiracle 1.1 from base of spinnerets. Palp: short, rounded dorsal patellar apophysis; short, rounded median tibial apophysis; ventral tegular projection projected retrolaterally; long and slender median apophysis; filiform and spiraled embolus without apophysis, resting in tegulum; rounded sperm duct in middle of tegulum; prolateral, rounded cymbial projection (Fig. 7C–E).

**Female** (paratype, MUSM–ENT 0519291)
Coloration as in male, except labium orange and lighter back of abdomen (Fig. 7B). Total length 7.4. Carapace 2.5 long, 1.8 wide. Clypeus 0.10. Eye diameters: AME 0.10, ALE 0.14, PME 0.16, PLE 0.16. AME–AME 0.06, AME–ALE 00.04, PME–PME 0.10, PME–PLE 0.08, ALE–PLE 0.06. Chelicerae 1.0 long, with three promarginal teeth and seven retromarginal denticles. Leg measurements: I – femur 1.9/patella 0.7/tibia 1.8/metatarsus 1.4/tarsus 0.8/total 6.6; II – 1.7/0.7/1.5/1.6/0.6/6.1; III – 1.5/0.6/1.3/1.2/0.6/5.2; IV – 2.1/0.8/1.9/2.4/0.8/8.0. Leg spination: I – tibia p0, r0; metatarsus p0, r0; II – tibia v2-2-1p, p0, r0; metatarsus p0-1-0, r0; III–IV – tibia v1p-2-2, p1-1-0, r1-1-0. Abdomen: length 4.9, epigastric furrow 1.0 from tracheal spiracle, spiracle 2.1 from base of spinnerets. Epigynum: semicircular hood; short copulatory opening and atrium. Internally: short copulatory ducts; rounded and separated spermathecae; short seminal receptacles; membranous cuticle in posterior region (Fig. 7F–G).

**Variation**

Two females: total length 7.0–7.2; carapace 2.6–2.7; femur I 2.0–2.1.

**Distribution**

Known only to the Zona Reservada Bosque de Zarate, Lima, Peru.

***Hatitia winayhuayna*** sp. nov.
urn:lsid:zoobank.org:act:1486ED62-7AF2-4AE8-9BA8-682B61F96D42
Figs 8–9, 15

**Diagnosis**

Males of *Hatitia winayhuayna* sp. nov. resemble those of the *yhuaia* group by the conical median tibial apophysis (Figs 3E, G, 4D–E, 5H–I, 8D–E, 9D–E, 10E–H), but differ by the rugose, sickle-shaped, and elongated retrolateral tibial apophysis and a prolaterally pointed cymbial projection (Figs 8C–E, 9B–E). Females of *Hatitia winayhuayna* resemble those of *H. yhuaia*, *H. riveti*, and *H. cajuata* sp. nov. by the short hood and wide copulatory ducts (Figs 1H–I, 3H, 4F–G, 5L, 10I–J), but differ by the epigynal plate being Y-shaped with the curved extremity of the lateral lobes in a horizontal position in the anterior region (Fig. 8F–G). The epigynal plate is T-shaped with laterally elongated lateral lobes at the extremity in *H. yhuaia* (Figs 1H, 3H); the epigynal plate has lateral lobes distant from each in the anterior region and a large atrium in *H. riveti* (Figs 4F, 5L; see Dupérré 2023: fig. 12c), and the epigynal plate is U-shaped with straight lateral lobes and a wide atrium in *H. cajuata* (Fig. 10I).

**Etymology**

The specific name is related to the type locality, the word comes from Quechua and can be translated as “forever young”. For the natives of the region, this locality seems to connect in a special way with nature, making you feel alive or young forever.

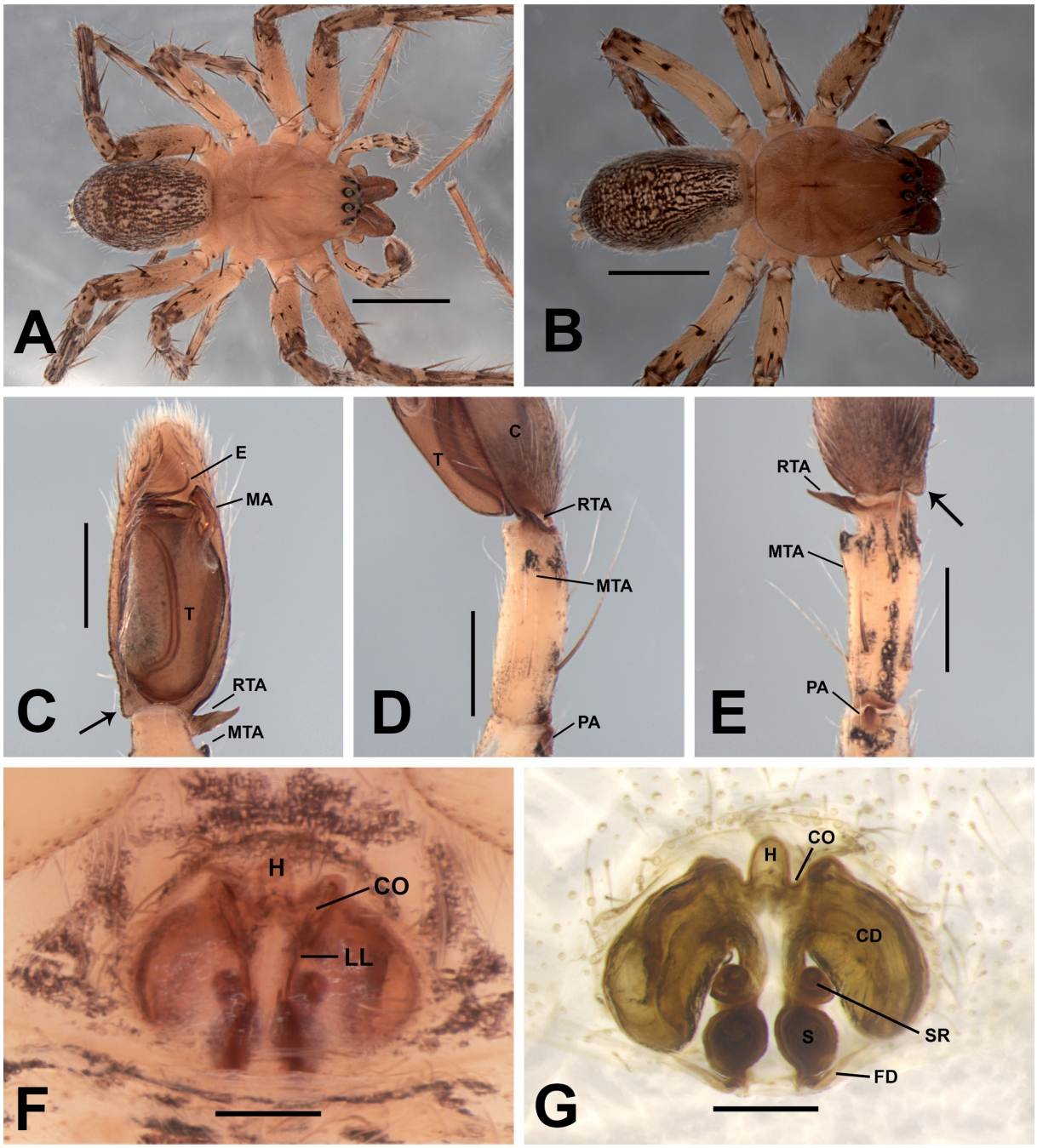


**Fig. 8.** *Hatitia winayhuayna* sp. nov. **A, C–E**. Holotype, ♂ (MUSM–ENT 0519293). **B, F–G**. Paratype, ♀ (MUSM–ENT 0519294). **A**. Habitus, dorsal view. **B**. Habitus, dorsal view. **C**. Left palp, ventral view (arrow indicating the prolateral cymbial projection). **D**. Left palp, retrolateral view. **E**. Left palp, dorsal view (arrow indicating the prolateral cymbial projection). **F**. Epigynum, ventral view. **G**. Vulva, dorsal view. Abbreviations: C = cymbium; CD = copulatory ducts; CO = copulatory opening; E = embolus; FD = fertilization ducts; H = hood; LL = lateral lobes; MA = median apophysis; MTA = median tibial apophysis; PA = patellar apophysis; RTA = retrolateral tibial apophysis; S = spermathecae; SR = seminal receptacles; T = tegulum. Scale bars: A–B = 3.5 mm; C–E = 0.6 mm; F–G = 0.25 mm.

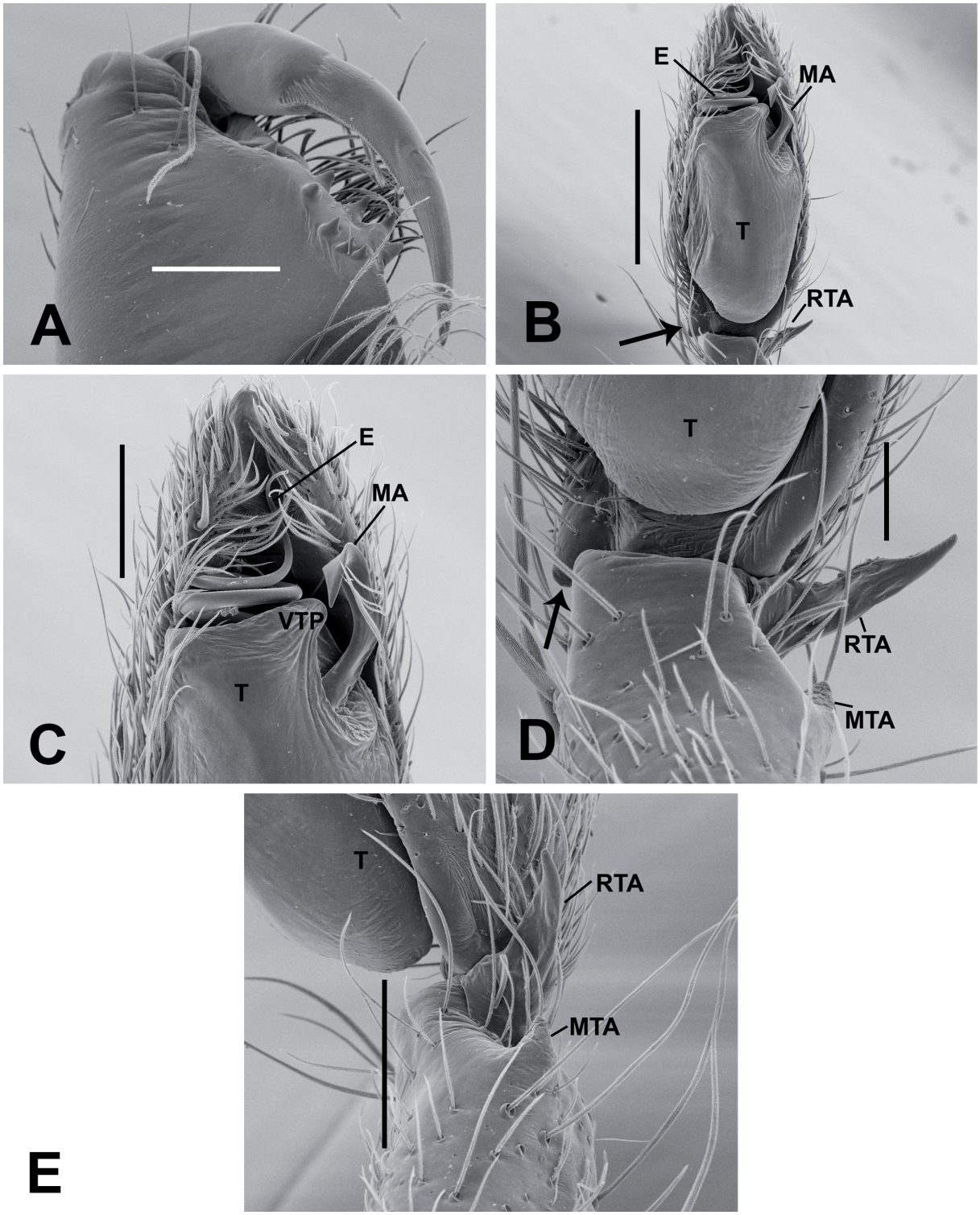


**Fig. 9.** *Hatitia winayhuayna* sp. nov., ♂ (MUSM–ENT 0519295). **A**. Chelicerae, ventral view. **B**. Left palp, ventral view (arrow indicating the prolateral cymbial projection). **C**. Left palp, ventral view, detail apical. **D**. Left palp, tibia, ventral view (arrow indicating the prolateral cymbial projection). **E**. Left palp, tibia, retrolateral view. Abbreviations: E = embolus; MA = median apophysis; MTA = median tibial apophysis; RTA = retrolateral tibial apophysis; T = tegulum; VTP = ventral tegular projection. Scale bars: A, C, E = 0.2 mm; B = 0.5 mm; D = 0.1 mm.

**Material examined**

**Holotype**

PERU • ♂; Cusco, Wiñayhuayna; [13°07′00″ S, 72°34′00″ W]; 10 Feb. 1990; D. Silva leg.; MUSM–ENT 0519293.

**Paratypes**

PERU – **Cusco** • 1 ♀; Paucartambo, Pilcopata, Carretera, National Park Del Manu [12°08′00″ S, 71°40′00″ W]; 2650 m a.s.l.; 18 Feb. 1990; D. Silva leg.; IBSP 347622 • 1 ♀; Wiñayhuayna; [13°07′00″ S, 72°34′00″ W]; 10 Feb. 1990; D. Silva leg.; MUSM–ENT 0519294.

**Other material examined**

BOLIVIA – **La Paz** • 1 ♂; Nor Yungas Province, Unduavi to Coroico [16°11′39″ S, 67°43′44″ W]; 2500–3000 m a.s.l.; 18–22 Nov. 1984; E. Peña leg.; AMNH.

PERU – **Cusco** • 1 ♂; Paucartambo, Pilcopata, Carretera, National Park Del Manu [12°08′00″ S, 71°40′00″ W]; 2650 m a.s.l.; 19 Feb. 1990; D. Silva leg.; MUSM–ENT 0519295 • 1 ♂; Machu Picchu [13°9′47″ S, 72°32′44″ W]; 2600–2800 m a.s.l.; 1–5 Sep. 1964; B. Malkin leg.; above ruins; AMNH.

**Description**

**Male** (holotype, MUSM–ENT 0519293)

Carapace orange, with reddish brown streaks. Black eye borders and thoracic groove dark brown. Chelicerae and labium reddish brown. Endites yellow. Sternum yellow with brown edges. Legs orange, sparsely banded with dark brown. Abdomen dorsally mottled dark brown, ventrally cream with scattered brown spots (Fig. 8A). Total length 6.9. Carapace 3.4 long, 2.5 wide. Clypeus 0.05. Eye diameters: AME 0.12, ALE 0.20, PME 0.20, PLE 0.20. AME–AME 0.06, AME–ALE 0.06, PME–PME 0.16, PME–PLE 0.14, ALE–PLE 0.06. Chelicerae 2.1 long, with three promarginal teeth and four retromarginal denticles. Leg measurements: I – femur 3.4/patella 1.4/tibia 3.8/metatarsus 3.3/tarsus 1.3/total 13.2; II – 3.2/1.2/2.7/2.8/1.1/11; III – 2.8/1.0/1.9/2.2/0.7/8.6; IV – 3.2/1.1/2.7/3.6/0.9/7.2. Leg spination: III – tibia r1-1-0; metatarsus p1-1-0, r1-1-0; IV – tibia p1-1-0, r1-1-0; metatarsus p1-1-0, r1-1-0. Abdomen: length 3.6, epigastric furrow 0.6 from tracheal spiracle, spiracle 1.7 from base of spinnerets. Palp: short, rounded dorsal patellar apophysis; triangular median tibial apophysis near retrolateral tibial apophysis; laminar and slender median apophysis; short ventral tegular projection near median apophysis; filiform and spiraled embolus resting in the tegulum (Figs 8C–E, 9B–E).

**Female** (paratype, IBSP 347622)

Coloration as in male except labium yellow (Fig. 8B). Total length 6.5. Carapace 2.8 long, 2.3 wide. Clypeus 0.20. Eye diameters: AME 0.25, ALE 0.45, PME 0.45, PLE 0.40. AME–AME 0.20, AME–ALE 0.15, PME–PME 0.35, PME–PLE 0.40, ALE–PLE 0.20. Chelicerae 1.2 long, with three promarginal teeth and four retromarginal denticles. Leg measurements: I – absent; II – femur 2.3/patella 1.0/tibia 2.1/metatarsus 1.8/tarsus 0.8/total 8; III – 1.9/0.8/1.1/1.7/0.6/6.1; IV –2.5/1.0/2.1/2.7/1.0/9.3. Leg spination: III–IV – tibia r1-1-0. Abdomen: length 3.2, epigastric furrow 0.6 from tracheal spiracle, spiracle 1.3 from base of spinnerets. Epigynum: rounded hood in anterior region; short atrium. Internally: wide copulatory ducts in anterior region; globous seminal receptacles near spermathecae; oval spermathecae; long fertilization ducts arising from middle of spermathecae positioned in posterior region (Fig. 8F–G).

**Variation**

Five males: total length 6.2–6.5; carapace 2.8–3.4; femur I 3.2–3.4.

**Distribution**

Known from Peru and Bolivia.

***Hatitia cajuata*** sp. nov.
urn:lsid:zoobank.org:act:6C097DFD-228B-40DA-B2F1-7FAFF085986C
Figs 10, 15

**Diagnosis**

Males of *Hatitia cajuata* sp. nov. resemble those of *H. sericea* by the conical prolateral tibial apophysis (Figs 6H, 10H) but differ by the short, curved retrolateral tibial apophysis and the laminar median apophysis furrowed in the middle (Fig. 10C–H). Females of *Hatitia cajuata* resemble those of *H. yhuaia*, *H. riveti*, *H. winayhuayna* sp. nov., and *H. zarate* sp. nov. by the epigynal plate with parallel lateral lobes (Figs 1H, 3H, 4F, 5L, 6I, 7F, 8F, 10I, 11I). They differ from them by the absence of a hood in the anterior region of the epigynal plate (Fig. 10I).

**Etymology**

The specific epithet is a toponymic in apposition and refers to the type locality.

**Material examined**

**Holotype**
BOLIVIA • ♂; La Paz, Circuata, Cajuata; [16°35′00″ S, 67°15′00″ W]; 2400 m a.s.l; 3–7 Dec. 1984; L. Peña leg.; AMNH.

**Paratypes**
BOLIVIA • 1 ♀; same data as for holotype; AMNH • 1 ♀; same data as for holotype; IBSP 347627.

**Description**

**Male** (holotype, AMNH)
Carapace and chelicerae reddish brown. Endites, labium and sternum yellow. Legs yellowish, with brown streaks on the tibiae and metatarsi. Abdomen yellowish, dorsally mottled dark brown and ventrally cream (Fig. 10A). Total length 6.0. Carapace 2.6 long, 2.1 wide. Clypeus 0.08. Eye diameters: AME0.10, ALE 0.16, PME 0.16, PLE 0.20. AME–AME 0.06, AME–ALE 0.04, PME–PME 0.10, PME–PLE 0.10, ALE–PLE 0.04. Chelicerae 1.1 long, with three promarginal teeth and five retromarginal denticles. Leg measurements: I – femur 3.0/patella 1.2/tibia 3.1/metatarsus 2.6/tarsus 1.1/total 11; II – 2.5/1.1/2.5/2.2/0.8/9.1; III – 2.1/0.8/1.5/1.9/0.7/7; IV – 2.7/1.0/2.3/3.1/0.7/9.8. Leg spination: I–II – tibia p1-1-0, r1-1-0; III – tibia v1p-2-2; IV – tibia r1-1-0. Abdomen: length 3.1, epigastric furrow 0.6 from tracheal spiracle, spiracle 1.4 from base of spinnerets. Palp: short, rounded patellar apophysis; short median tibial apophysis; rounded ventral tegular projection; oval tegulum; straight subtegulum positioned prolaterally; spiraled embolus resting on the tegulum (Fig. 10C–H).

**Female** (paratype AMNH)
Coloration as in male, except carapace yellowish in cephalic area and yellow pedipalps (Fig. 10B). Total length 6.7. Carapace 3.0 long, 2.4 wide. Clypeus 0.08. Eye diameters: AME 0.12, ALE 0.16, PME 0.16, PLE 0.16. AME–AME 0.08, AME–ALE 0.06, PME–PME 0.16, PME–PLE 0.16, ALE–PLE 0.08. Chelicerae 1.2 long, with teeth as in male. Leg measurements: I – femur 2.4/patella 1.1/tibia 2.5/metatarsus 2.0/tarsus 1.0/total 9; II – 2.3/1.0/2.0/1.8/0.8/7.9; III – 1.8/0.7/1.3/1.6/0.6/6; IV – 2.5/1.1/2.2/2.8/0.8/9.4. Leg spination: I–II – tibia p1-1-0, r1-1-0; III – tibia v1p-2-2; IV – tibia r1-1-0. Abdomen: length 3.6, epigastric furrow 0.6 from tracheal spiracle, spiracle 1.4 from base of spinnerets. Epigynum: wide atrium; epigynal plate in U-shaped with straight lateral lobes. Internally: wide copulatory ducts in anterior region, coiled in middle; inconspicuous seminal receptacles; oval spermathecae; long fertilization ducts (Fig. 10I–J).

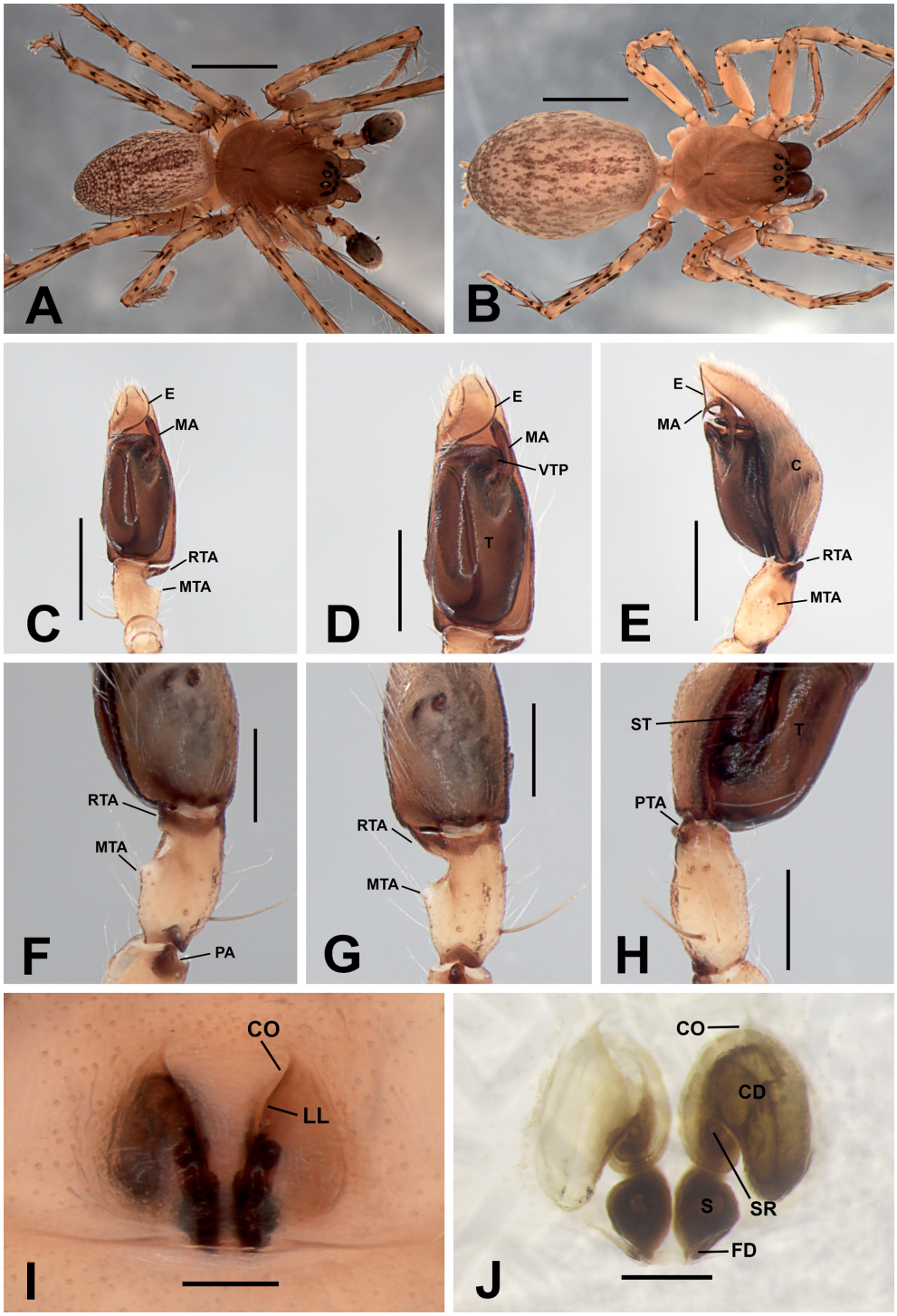


**Fig. 10.** *Hatitia cajuata* sp. nov. **A, C–H**. Holotype, ♂ (AMNH). **B, I–J**. Paratype, ♀ (AMNH). **A**. Habitus, dorsal view. **B**. Habitus, dorsal view. **C**. Left palp, ventral view. **D**. Left palp, ventral view. **E**. Left palp, retrolateral view. **F**. Left palp, retrodorsal view. **G**. Left palp, dorsal view. **H**. Left palp, prolateral view. **I**. Epigynum, ventral view. **J**. Vulva, dorsal view. Abbreviations: C = cymbium; CD = copulatory ducts; CO = copulatory opening; E = embolus; FD = fertilization ducts; LL = lateral lobes; MA = median apophysis; MTA = median tibial apophysis; PA = patellar apophysis; S = spermathecae; SR = seminal receptacles; ST = subtegulum; T = tegulum. Scale bars: A–B = 3.5 mm; C = 0.83 mm; D = 0.66 mm; E–H = 0.6 mm; I–J = 0.25 mm.

**Distribution**

Known only the La Paz area, in Bolivia.

Group ***canchaque***

**Diagnosis**

The *canchaque* group differs from the *yhuaia* group by the palp with a projected tegulum and endites with a straight lateral margin; and the female epigynum with hood positioned in the median region and curved copulatory ducts forming an arc (Figs 11C–J, 12C–H, 13C–H).

**Composition**

*Hatitia canchaque*, *H. oxapampa* sp. nov. and *H. machiguenga* sp. nov.

***Hatitia canchaque*** Brescovit, 1997
Figs 11, 14

*Hatitia canchaque* Brescovit, 1997: 117, figs 315–319.

**Diagnosis**

Males of *Hatitia canchaque* resemble those of *H. oxapampa* sp. nov. and *H. machiguenga* sp. nov. by the projected tegulum (Figs 11D–H, 12C–H, 13C–H) but differ by the rounded projection of the tegulum and the long triangular retrolateral tibial apophysis (Fig. 11D–H). Females differ from the others by the epigynal plate with lateral lobes curved, forming an arc, and a rounded hood in the median region of the epigynum (Fig. 11I–J).

**Material examined**

**Holotype**

PERU – **Piura** • ♂; Huancabamba, Canchaque [5°22′35″ S, 79°36′23″ W]; 22 Mar. 1989; D. Silva leg.; MUSM–ENT 0519296.

**Paratypes**

EQUADOR – **Loja province** • 2 ♂♂; Loja [3°59′26″ S, 79°12′18″ W]; 2200 m a.s.l.; 1 Aug.–20 Oct. 1905; F. Ohaws leg; ZMH • 1 ♂; same data as for preceding; MCN 24641.

PERU – **Piura** • 2 ♂♂, 1 ♀; same data as for holotype; MUSM–ENT 0519297 • 1 ♂; same data as for holotype; MCN 24641 • 1 ♀; same data as for holotype; MCN 24641.

**Description**

Male and female described by Brescovit (1997: 117–118, figs 315–319).

***Hatitia oxapampa*** sp. nov.
urn:lsid:zoobank.org:act:5A987235-603B-48A5-B410-9B734A51D1DB
Figs 12, 14

**Diagnosis**

Males of *Hatitia oxapampa* sp. nov. resemble those of *H. canchaque* and *H. machiguenga* sp. nov. by the projected tegulum (Figs 11D–H, 12C–H, 13C–H) but differ by the triangular projection of the tegulum, the short curved cymbial projection positioned retrolaterally, and the large median and hook-shaped apophysis (Fig. 12C–H).

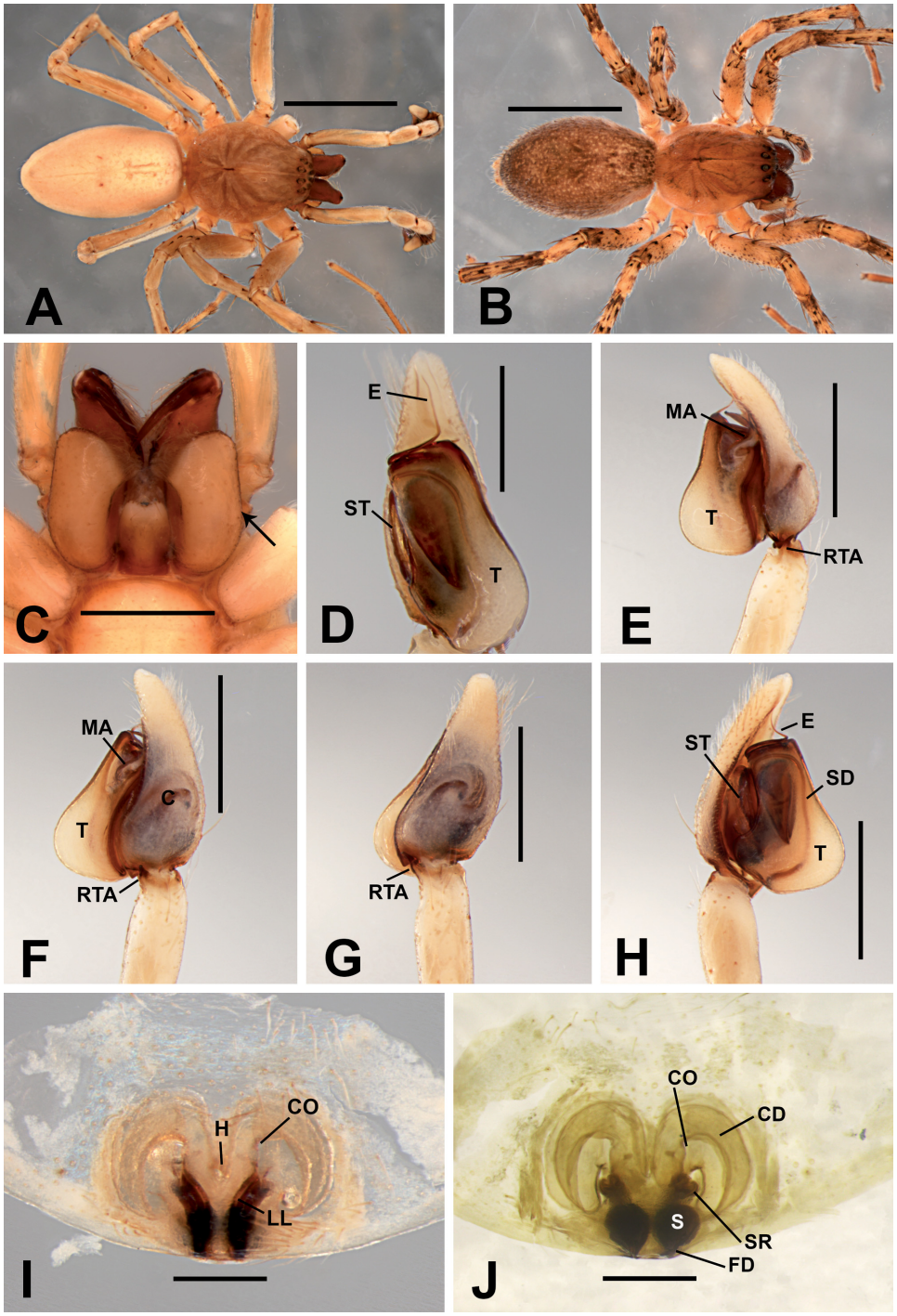


**Fig. 11.** *Hatitia canchaque* Brescovit, 1997. **A, C–H**. Paratype, ♂ (MCN 24640). **B, I–J**. Paratype, ♀ (MCN 24641). **A**. Habitus, dorsal view. **B**. Habitus, dorsal view. **C**. Endites, ventral view (arrow indicating endites border). **D**. Left palp, ventral view. **E**. Left palp, retrolateral view. **F**. Left palp, retrodorsal view. **G**. Left palp, dorsal view. **H**. Left palp, prolateral view. **I**. Epigynum, ventral view. **J**. Vulva, dorsal view. Abbreviations: C = cymbium; CD = copulatory ducts; CO = copulatory opening; E = embolus; FD = fertilization ducts; H = hood; LL = lateral lobes; MA = median apophysis; RTA = retrolateral tibial apophysis; S = spermathecae; SD = sperm duct; SR = seminal receptacles; ST = subtegulum; T = tegulum. Scale bars: A–B = 3.5 mm; C = 0.83 mm; D = 0.6 mm; E–H = 0.73 mm; I–J = 0.25 mm.

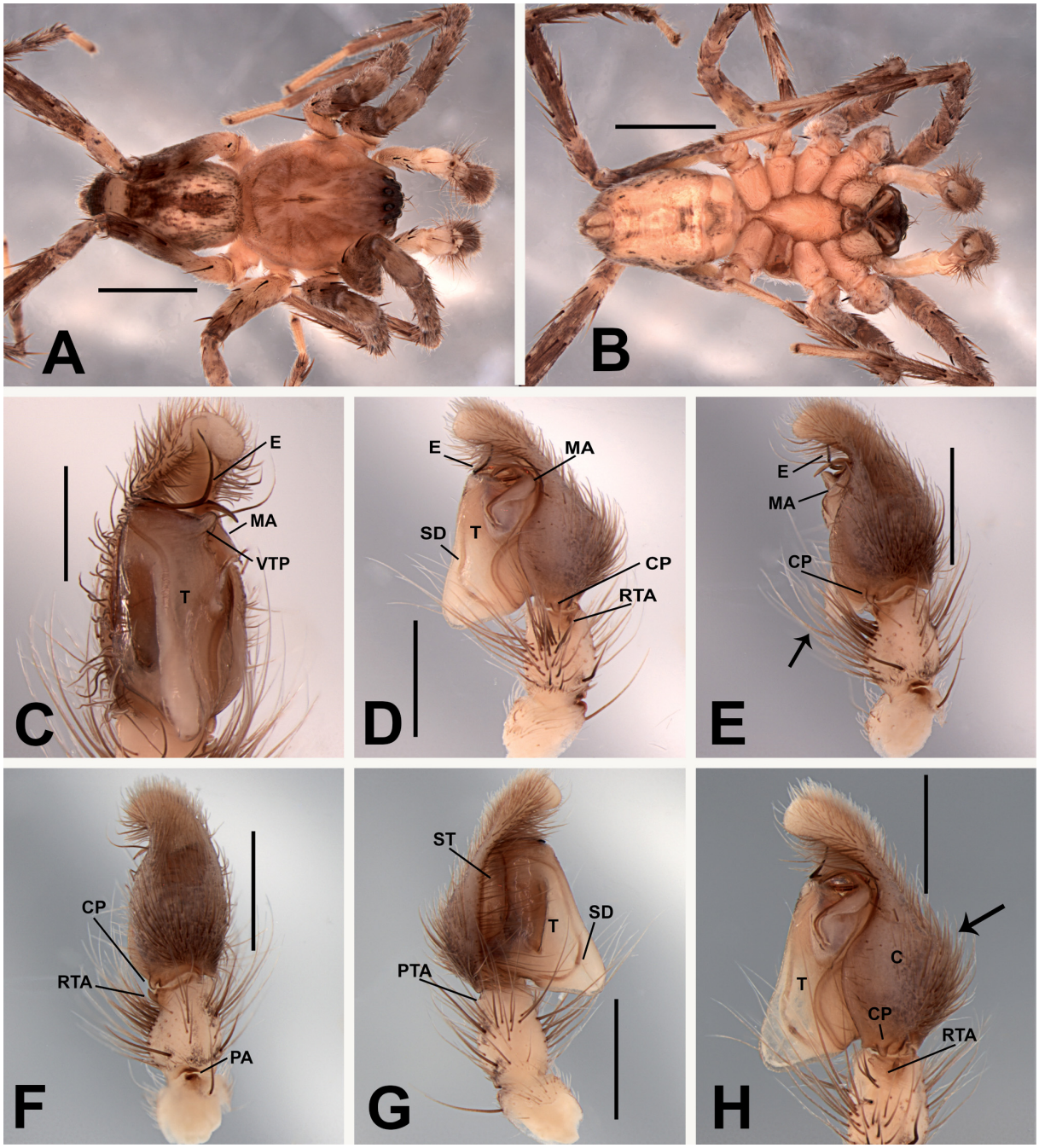


**Fig. 12.** *Hatitia oxapampa* sp. nov., holotype, ♂ (MUSM–ENT 0519298). **A**. Habitus, dorsal view. **B**. Habitus, ventral view. **C**. Left palp, ventral view. **D**. Left palp, retrolateral view. **E**. Left palp, retrodorsal view (arrow indicating rows of macrosetae). **F**. Left palp, dorsal view. **G**. Left palp, prolateral view. **H**. Left palp, retrolateral view (arrow indicating projected cymbium). Abbreviatios: C = cymbium; CP = cymbial projection; E = embolus; MA = median apophysis; PA = patellar apophysis; PTA = prolateral tibial apophysis; RTA = retrolateral tibial apophysis; SD = sperm duct; ST = subtegulum; T = tegulum; VTP = ventral tegular projection. Scale bars: A–B = 3.5 mm; C = 0.66 mm; D–G = 0.83 mm; H = 0.73 mm.

**Etymology**

The specific epithet is a toponymic in apposition and refers to the type locality.

**Material examined**

**Holotype**

PERU • ♂; Pasco region, Oxapampa; [10°35′00″ S, 75°24′00″ W]; 21 Jun. 1986; D. Silva leg.; MUSM–ENT 0519298.

**Description**

**Male** (holotype, MUSM–ENT 0519298)

Yellowish carapace with orange paramedian bands and black eye area. Palp cream with brown cymbium. Chelicera brown. Endites, labium and sternum yellow. Legs brown, with yellow ventral area of coxae. Abdomen yellow, dorsally with brown median longitudinal band, posterior edge dark brown and ventrally cream (Fig. 12A–B). Total length 6.7. Carapace 3.3 long, 2.8 wide. Clypeus 0.14. Eye diameters: AME 0.12, ALE 0.16, PME 0.18, PLE 0.16. AME–AME 0.08, AME–ALE 0.06, PME–PME 0.12, PME–PLE 0.16, ALE–PLE 0.10. Chelicerae 1.5 long, with three promarginal teeth and five retromarginal denticles. Leg measurements: I – femur 3.2 / patella 1.5 / tibia 3.2 / metatarsus 2.9 / tarsus 1.2 / total 12.0; II – 3.1 / 1.4 / 2.8 / 2.6 / 1.0 / 10.9; III – 2.8 / 1.2 / 2.0 / 2.4 / 0.7 / 9.1; IV – 3.0 / 1.5 / 2.8 / 3.8 / 1.1 / 12.2. Leg spination: I–II – tibia p1-1-0, r1-1-0; III – tibia p1-1-1. Abdomen: length 3.5, epigastric furrow 1.5 from tracheal spiracle, spiracle 0.6 from base of spinnerets. Palp: short, rounded patellar apophysis; rows of macrosetae on the tibiae; short, bifid retrolateral tibial apophysis; rounded ventral tegular projection near the median apophysis; straight subtegulum positioned prolaterally; sinuous sperm ducts; spiraled embolus resting on the tegulum; cymbium pointed (Fig. 12C–H).

**Female**

Unknown.

**Distribution**

Known only from the type locality.

***Hatitia machiguenga*** sp. nov.

urn:lsid:zoobank.org:act:3B64ABE5-287B-46F3-9A23-2C90825FB34D

Figs 13, 15

**Diagnosis**

Males of *Hatitia machiguenga* sp. nov. resemble those of *H. canchaque* and *H. oxapampa* sp. nov. by the projected tegulum (Figs 11D–H, 12C–H, 13C–H) but differ by the keel-shaped projection of the tegulum and the divided cymbial conductor (Fig. 13C–H).

**Etymology**

The specific name refers to the Machiguenga indigenous group. This is the best known and largest of the groups that live within the Manu National Park.

**Material examined**

**Holotype**

PERU • ♂; Cusco, Paucartambo, Pilcopata, National Park del Manu Carretera [12°08′00″ S, 71°40′00″ W]; 19 Mar. 1990; A. Cano and D. Silva leg.; MUSM–ENT 0519299.

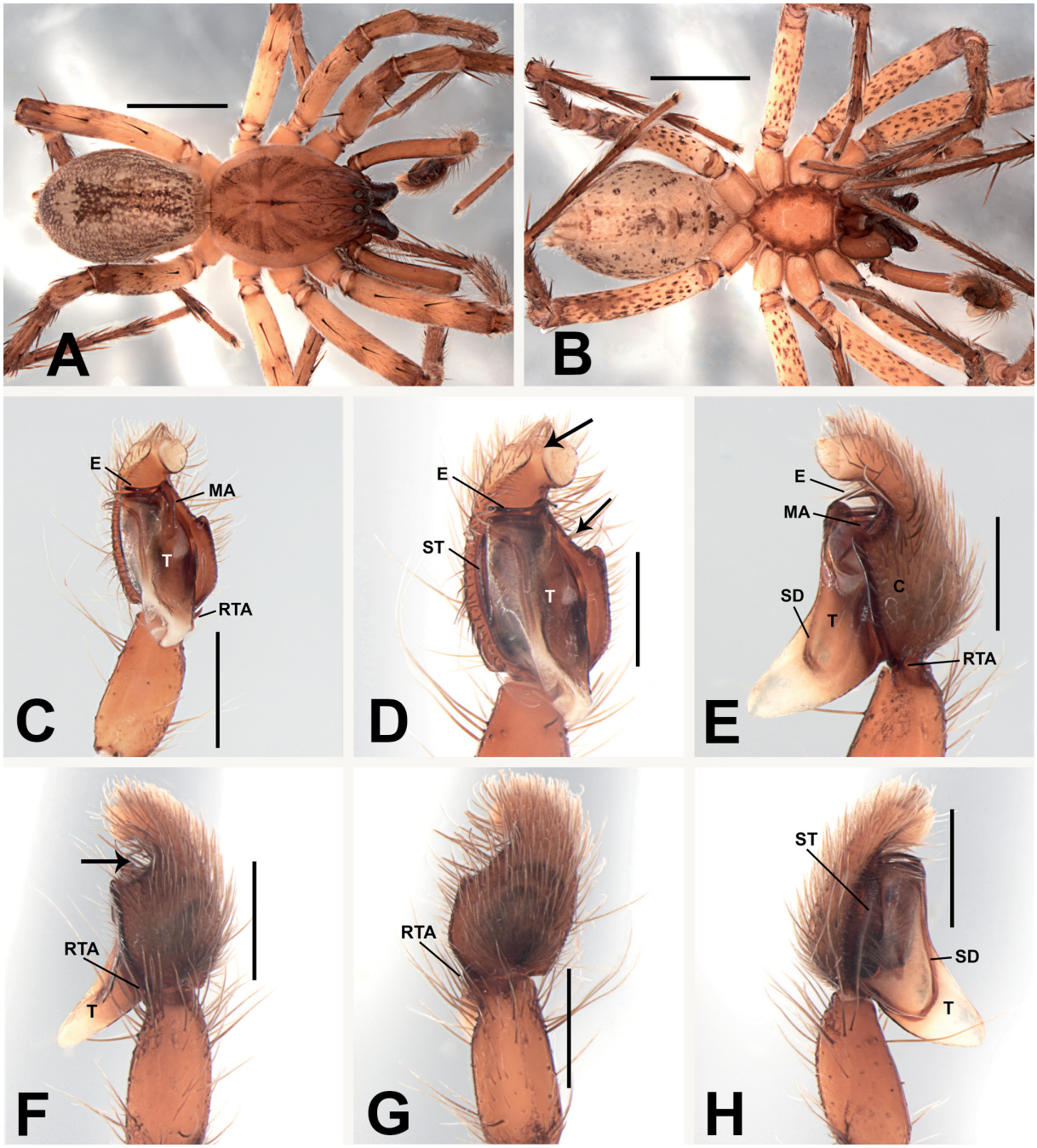


**Fig. 13.** *Hatitia machiguenga* sp. nov., holotype, ♂ (MUSM–ENT 0519299). **A**. Habitus, dorsal view. **B**. Habitus, ventral view. **C**. Left palp, ventral view. **D**. Left palp, ventral view (arrows indicating the divided cymbial conductor and retrolateral cymbial furrow). **E**. Left palp, retrolateral view. **F**. Left palp, retrodorsal view (arrow indicating retrolateral cymbial furrow). **G**. Left palp, dorsal view. **H**. Left palp, prolateral view. Abbreviations: C = cymbium; E = embolus; MA = median apophysis; RTA = retrolateral tibial apophysis; SD = sperm duct; ST = subtegulum; T = tegulum. Scale bars: A–B = 3.5 mm; C = 0.83 mm; D–E = 0.66 mm; F–H = 0.73 mm.

### Description

**Male** (holotype, MUSM–ENT 0519299)

Carapace brown, with orange edges, black eye area. Palps orange. Chelicerae and labium dark brown. Endites orange. Sternum yellow with brown edges. Legs with femurs ventrally pigmented brown, trochanters and coxae yellowish, other sclerites brown. Abdomen greenish gray, with brown dorsal band, gray ventrally (Fig. 13A–B). Total length 7.8. Carapace 3.5 long, 2.7 wide. Clypeus 0.10. Eye diameters: AME 0.16, ALE 0.20, PME 0.20, PLE 0.20. AME–AME 0.06, AME–ALE 0.06, PME–PME 0.12, PME–PLE 0.16, ALE–PLE 0.04. Chelicerae 1.8 long, with three promarginal teeth and five retromarginal denticles. Leg measurements: I – femur 3.7 / patella 1.5 / tibia 3.4 / metatarsus 3.1 / tarsus 1.4 / total 13.1; II – 3.4 / 1.4 / 3.2 / 2.6 / 1.3 / 11.9; III – 2.8 / 1.1 / 2.1 / 2.7 / 0.7 / 9.4; IV – 3.8 / 1.3 / 3.0 / 3.7 / 0.8 / 12.6. Leg spination: II – tibia v0-1p-2; III – tibia v1p-2-2; IV – tibia v2-1r-2. Abdomen: length 4.4, epigastric furrow 0.6 from tracheal spiracle, spiracle 1.4 from base of spinnerets. Palp: robust tibiae; short, conical retrolateral tibial apophysis; curved, laminar median apophysis; straight subtegulum positioned prolaterally; inconspicuous ventral tegular projection; sinuous sperm duct; spiraled embolus resting on the tegulum; cymbium furrowed apically and positioned retrolaterally (Fig. 13C–H).

**Female**

Unknown.

**Distribution**

Known only from the type locality.

## Discussion

### Morphological and taxonomic remarks

Among the somatic characters discussed by Brescovit (1997), the shape of the embolic process in the male palp was highlighted as a key feature for identifying potential generic groups. The conical-shaped embolic process can be found in at least six genera, viz. *Aljassa*, *Hatitia*, *Hibana*, *Pippuhana*, *Tafana* and *Umuara* (Brescovit 1997). The genera *Aljassa*, *Tafana* and *Umuara* share the presence of an embolar apophysis on the embolic process (see Brescovit 1997: figs 229, 247, 286). In contrast, *Hibana* does not present an embolar apophysis but instead presents an extremely wide embolar base (see Brescovit 1997: figs 221–222). Additionally, *Pippuhana* exhibits a conductor in the male palp (see Brescovit 1997: figs 301–302). Therefore, the pattern of a conical-shaped embolic process alone cannot be used to establish relationships between the genera, as variations in other structures may arise independently. Another interesting character is the ventral tegular projection in the male palp, which may indicate a close relationship between *Hatitia*, *Tafana* and *Umuara* due to the presence of the ventral tegular projection near the median apophysis. This structure is finger-shaped in the genus *Umuara* (see Oliveira & Brescovit 2015: figs 2b–c, 3b–c), it is membranous at the apical margin of the tegulum in *Tafana* of the *silhavyi* group (see Oliveira & Brescovit 2021: fig. 26a–c), and square in the *riveti* group (see Oliveira & Brescovit 2021: figs 12a–c, 18a–c). However, the ventral tegular projection of the male palp exhibits variations in shape and size between genera within the subfamily, suggesting that this condition may be highly homoplastic (Brescovit 1997). Furthermore, a possible relationship between the genera *Hatitia* and *Tafana* is their very similar geographic distribution, as both present patterns of distribution associated with the Andes Mountain range (see Oliveira & Brescovit 2021: figs 34–35).

### Geographical distribution patterns

The genus *Hatitia* is distributed along the northern and western edges of South America, with some species associated with high elevation regions of the Andes Mountain range (Figs 14–15). As here defined, the genus *Hatitia* shows a broad distributional range. The species *Hatitia yhuaia*, *H. canchaque*, *H. winayhaina* sp. nov., *H. zarate* sp. nov. and *H. machiguenga* sp. nov. are found in high elevation areas

such as Cusco, Esperanza, Wiñayhaina, Piúra (Loja), Machu Picchu, Zarate, and Parque Nacional Manú Carretera, 2700 to 3100 m a.s.l., in Peru, and from Coroico and Valle de Zongo with diverse ecological zones 3200 m a.s.l in Bolivia. The species *Hatitia riveti* occurs in Cotopaxi (4100 to 4200 m a.s.l.), and Parque Nacional de Cajas (3900 to 4200 m a.s.l.), while *H. canchaque* is found in Provincia Loja at 2200 m a.s.l. in Ecuador. Additionally, *H. cajuata* sp. nov. also inhabits high elevation areas in Cajuata at 2400 m a.s.l. in Bolivia. However, some species represent exceptions to this pattern, such as *H. canchaque* and *H. oxapampa* sp. nov., which are found in low-land areas of Peru, and *H. sericea* which occurs in Bogotá Colombia.

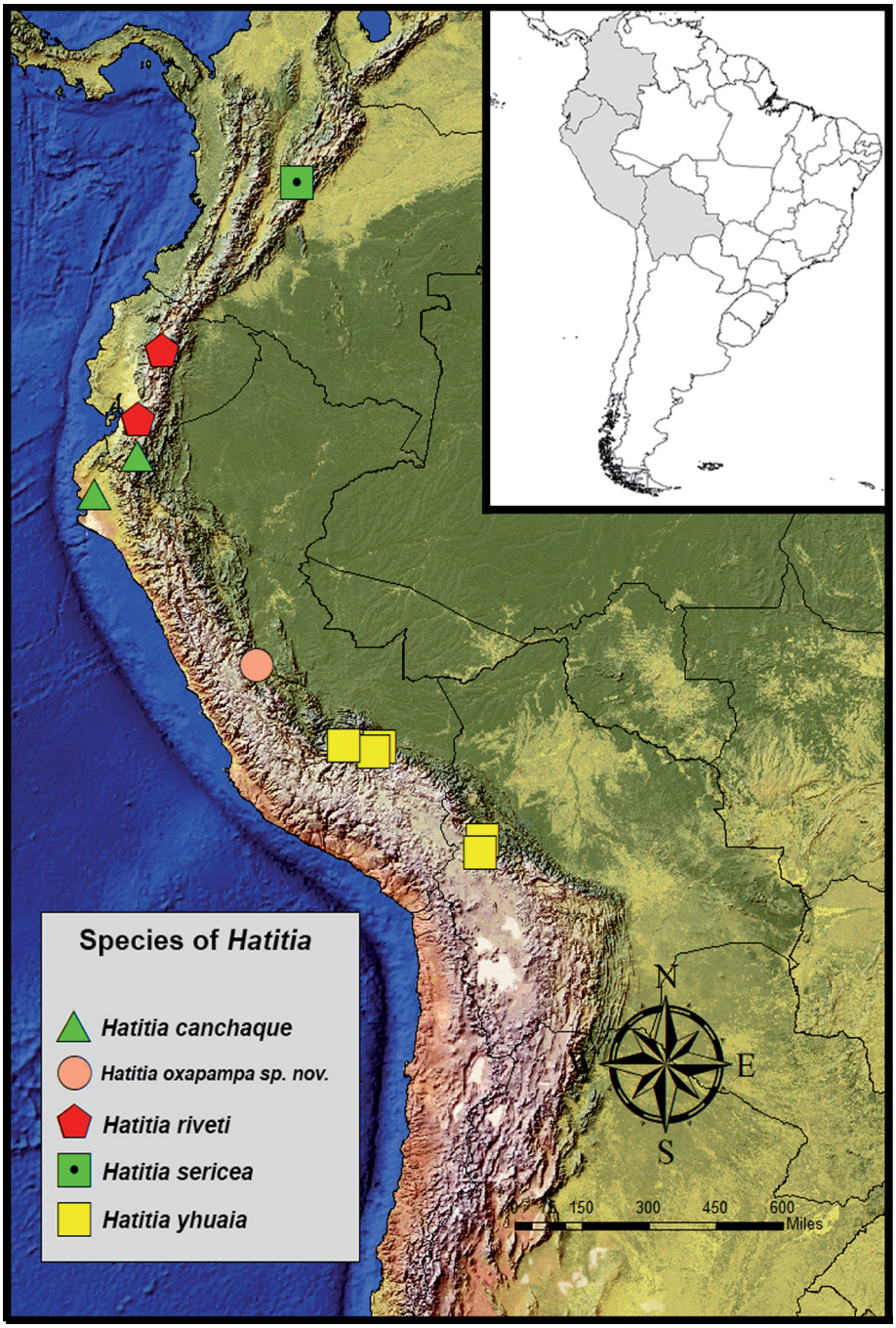


**Fig. 14.** Distribution map of species of *Hatitia* Brescovit, 1997.


**Fig. 14.** Distribution map of species of *Hatitia* Brescovit, 1997.

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