

ARTÍCULO:

***Cyriocosmus perezmilei* sp. n. from Bolivia (Araneae: Theraphosidae: Theraphosinae)**

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***Cyriocosmus perezmilei* sp. n. from Bolivia
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Abstract

Cyriocosmus perezmilei sp. n. from Bolivia, Beni province, is described, diagnosed and keyed inside the inner group of *Cyriocosmus* Simon 1903 which is represented by species with reduced paraembolic apophysis in male palpal bulb structures. The new species can be distinguished from all other congeners, except *C. blenginii* Pérez-Miles 1998, by uniformly coloured carapace and lateral four-striped pattern on abdomen. *C. perezmilei* sp. n. differs from *C. blenginii* by presence of the reduced paraembolic apophysis and bicolour femora (reddish brown, distally black).

Key words. Spider taxonomy

Taxonomy: *Cyriocosmus perezmilei* sp. nov.

***Cyriocosmus perezmilei* una nueva especie de Bolivia (Araneae: Theraphosidae: Theraphosinae)**

Resumen

Se describe y diagnostica *Cyriocosmus perezmilei* sp. n. de Bolivia, provincia de Beni. Esta se diferencia del resto de sus congéneres, excepto *C. blenginii* Pérez-Miles 1998, por presentar el cefalotórax uniformemente coloreado y el abdomen con cuatro franjas laterales. *C. perezmilei* sp. n. difiere de *C. blenginii* por presentar apófisis paraembólicas reducidas en los bulbos de los pedipalpos y por fémures bicolors (pardo rojizo, distalmente negro). Se ofrece una clave para diferenciar esta nueva especie del resto de los *Cyriocosmus* Simon 1903 con apófisis paraembólicas reducidas.

Palabras clave. Taxonomía de arañas.

Taxonomía: *Cyriocosmus perezmilei* sp. nov.

Introduction

Hapalopus sellatus from the upper Amazon and *Hapalopus elegans* from Orinoco region, Venezuela, were described by Simon in 1889. The genus *Cyriocosmus* Simon 1903 was established for both mentioned species, with *Cyriocosmus sellatus* as the type species. The genus *Cyriocosmus* is exclusive to tropical South America (Schiapelli & Gerschman de Pikelin, 1973) including northern Argentina, Brazil, Bolivia, Colombia, Paraguay, Tobago, Trinidad and Venezuela. Revisions and phylogenetic analyses of this genus were recently made by Pérez-Miles (1998) and Fukushima *et al.* (2005).

Eleven species belonging to *Cyriocosmus* have been described: *C. bertae* Pérez-Miles 1998, *C. blenginii* Pérez-Miles 1998, *C. chicoi* Pérez-Miles 1998, *C. elegans* (Simon 1889), *C. fasciatus* (Mello-Leitão 1930), *C. fernandoi* Fukushima, Bertani & da Silva 2005, *C. leetzi* Vol 1999, *C. nogueirane-toi* Fukushima, Bertani & da Silva 2005, *C. ritae* Pérez-Miles 1998, *C. sellatus* (Simon 1889), *C. versicolor* (Simon 1897).

Material and methods

Abbreviations: AME = anterior median eyes, ALE = anterior lateral eyes, PME = posterior median eyes, PLE = posterior lateral eyes, OQ = ocular quadrangle (including lateral eyes). pl = prolateral, rl = retrolateral, a = apical, c = central, b = basal. PA = paraembolic apophysis, PS = prolateral superior keel, E = embolus, TP = tegular protuberance. NMPC = National Museum (Natural History), Praha, Czech Republic.

All measurements were taken according to the central axis of structures and are given in millimetres. Measurements of the legs and palpal segments were taken dorsally, using a calliper, male tibial apophyses of leg I were measured from the point where they are separated. The measurement of the total body length includes chelicerae, cephalothorax and abdomen without spinnerets. Ocular tubercles were measured using a binocular microscope with ocular micrometer. The extent of tarsal and metatarsal scopulae was expressed as a percentage of the total length of the segment. Spermathecae were separated from the ecdysis of the female paratype and preserved in alcohol. The terminology of male palpal bulb structures follows Bertani (2000). The terminology of urticating hairs follows Cooke *et al.* (1972). The barbs of urticating hairs oriented to the body are considered as reversed. The spination of the leg segments were examined from both sides. Each leg segment was divided into four quadrants (dorsal, ventral, prolateral and retrolateral). An unequal numbers of spines of the same leg segments were expressed by " " in parentheses.

Cyriocosmus perezmilesi sp. n.

Figures 1-8, Tables I-II

TYPES: Male holotype, NMPC P6E-2983, from: Beni River, San Buenaventura, Bolivia, 14. Oct. 2004, Radan Kaderka col.; one female paratype, NMPC P6E-2985 & one male paratype, NMPC P6E-2984 (offspring of female paratype), the same locality, date and collector as holotype; one male paratype, NMPC P6E-2986, from: Buena Vista near Santa Cruz, Bolivia; 2003, Bretislav Fidra col..

ETYMOLOGY: The specific name is a patronym in honour of Dr. Fernando Pérez-Miles, a Uruguayan arachnologist who has contributed to the knowledge of theraphosid taxonomy.

DIAGNOSIS: *Cyriocosmus perezmilesi* sp. n. can be distinguished from all other congeners, except *C. blenginii*, by its uniformly coloured carapace and lateral four-striped abdominal pattern. It differs from *C. blenginii* by the presence of reduced paraembolic apophysis and by its bicoloured femora (reddish-brown, distally black).

MALE (Fig. 1): Total length: 20.0, cephalothorax length 8.7, width 7.0, chelicerae with 5 teeth on promargin (4 big, one small in basal half). Anterior eye row pro-

curved, posterior eye row recurved. Eye sizes and interdistances: AME 0.31 (circular), ALE 0.32 (oval), PME 0.27 (pyriform), PLE 0.27 (oval); AME-AME 0.16, AME-ALE 0.10, PME-PME 0.61, PME-PLE 0.03, ALE-PLE 0.19, AME-PME 0.06, OQ length 0.72, width 1.42. Ocular tubercle: length 0.82, width 1.42; clypeus absent. Fovea transverse, deep, width 1.4. Labium length 1.25, width 1.5, anterior side with 40-50 cuspules, maxilla with approximately 60 cuspules in basal third, a few of them reach the middle of maxilla. Sternum length 3.5, width 3.1, one visible pair of sternal sigilla located near coxae III (length 0.30, 0.20 from the edge of sternum). Leg pattern: IV, I, II, III. Incrassate leg segments absent.

Scopulae: All tarsi, 100% densely scopulated, metatarsus I 50%, metatarsus II 50%, metatarsus III 25%, metatarsus IV 15% scopulated. Tarsi I and II undivided, tarsus III thinly divided by line of setae, tarsus IV thinly divided by narrow band of setae. Scopulae on retrolateral face of femur IV is absent.

Spination: femora I-V and palp 0; patellae I-IV and palp 0; tibiae I v 0-0-2 (apical), p 0-0-1 (apical), d 0, II v 1-0-2 (apical), p 1, d 0, III v 1-1-2 (apical), r 0-(1-2)-0, d 0-(0-2)-0, IV v 1-1-2 (apical), d 1-1-0 (apical) and palp v 0, p 0-1-0, d 0; metatarsi I v 0-0-1 (apical), d 0, II v 1-0-1 (apical), d 0, III v 1-2-2 (apical), p 1, d 0-2-0, IV v 2-2-3 (apical), p 2, d 0-0-1 (apical).

Palpal organ as in Figures 2 and 3, embolus with short PA and smooth PS keel, tegulum with distinct TP on prolateral face. TP found in new species is not homologous with tegular apophysis (TA) which was found in species of the genus *Hommoeoma* Ausserer 1871 and used for generic diagnosis by Pérez-Miles *et al.* (1996). TP in new species is not digitiform but tubercular and visible in ventrally dorsal orientation than laterally. Retrolateral face of cymbium without field of spines. Presence of protuberance with cluster of spines on retrolateral face of palpal tibia. Two unequal tibial apophysis present on tibia I (Fig. 4): retrolateral tibial apophysis with very short stout spine at apex, length 1.1; prolateral tibial apophysis with one retrolateral spine at base, length 0.8. Metatarsus I is not sigmoidly curved but slightly broken in contact region with retrolateral tibial apophysis, metatarsus I is without a protuberance on retrolateral face. Coxal and trochanteral stridulatory hairs absent. Abdomen: urticating hairs of type III with short reversed barbs are located in central reddish brown glossy patch, length 0.30-0.37. Urticating hairs have no reversed barbs at apex. Posterior lateral spinnerets: 4.3, basal segment 1.0, middle segment 1.3, apical segment 2.0.

Coloration and covering hairs: dorsal view: chelicerae, carapace, coxae, trochanters and femora covered by light reddish brown pubescens except apical parts of femora which are black and intermixed by long pale hairs; patellae, tibiae, metatarsi and tarsi covered by black pubescens and long pale hairs. Patellae with two distinct longitudinal lines. Carapace without dark caput. Abdomen covered by black pubescens and long pale hairs except central reddish brown glossy patch. Length of central patch: 5.5, width 4.6. Four lateral stripes are

	Femur	Patella	Tibia	Metatars	Tarsus	Total
Palp	4.0	2.5	3.1	-	1.1	10.7
Leg I	8.0	4.0	6.2	6.0	4.2	28.4
Leg II	7.1	3.5	4.9	5.0	3.9	24.4
Leg III	6.0	2.9	3.8	5.0	3.3	21.0
Leg IV	8.2	3.4	7.0	8.0	4.0	30.6

Table 1: *Cyriocosmus perezmilesi* sp. n. Male holotype. Lengths of palpal and leg segments.



Fig. 1. *C. perezmilesi* sp. n. male holotype (NMPC P6E-2983), Bolivia, Beni River, San Buenaventura.

not joined with the central patch except the third one which reaches or almost reaches the central patch. Ventral view: labium, sternum, coxae, trochanters and femora except apical parts covered by light reddish brown pubescens intermixed with thick long reddish brown hairs; patellae, tibiae, metatarsi and tarsi covered by black pubescens and long pale hairs. Ventral abdomen including spinnerets with yellowish pubescens creating three well-developed lateral yellowish stripes, the fourth one is not joined at base with the ventral yellowish pubescens. Longitudinal dark band on ventral abdomen is absent.

FEMALE (Fig. 7) : Total length: 25.0, cephalothorax length 9.5, width 8.3, chelicerae with 6 teeth on promargin. Anterior eye row slightly procurved, posterior eye row recurved. Eye sizes and interdistances: AME 0.40 (circular), ALE 0.53 (oval), PME 0.23, PLE 0.40 (oval); AME-AME 0.20, AME-ALE 0.12, PME-PME 0.85, PME-PLE 0.09, ALE-PLE 0.10, AME-PME 0.09, OQ length 0.8, width 1.78. Ocular tubercle: length 1.2, width 1.85; clypeus absent. Fovea slightly procurved, width 1.6. Labium length 1.5, width 1.8, anterior side with 50-60 cuspules, maxillae with approximately 150 cuspules. Sternum length 4.0, width 3.5, with two visible pair of sternal sigilla located near coxae II (length 0.19, 0.14 from the edge of sternum) and near coxae III (length 0.32, 0.25 from the edge of sternum). Leg pattern: IV, I, II, III. Incrassate leg segments absent except

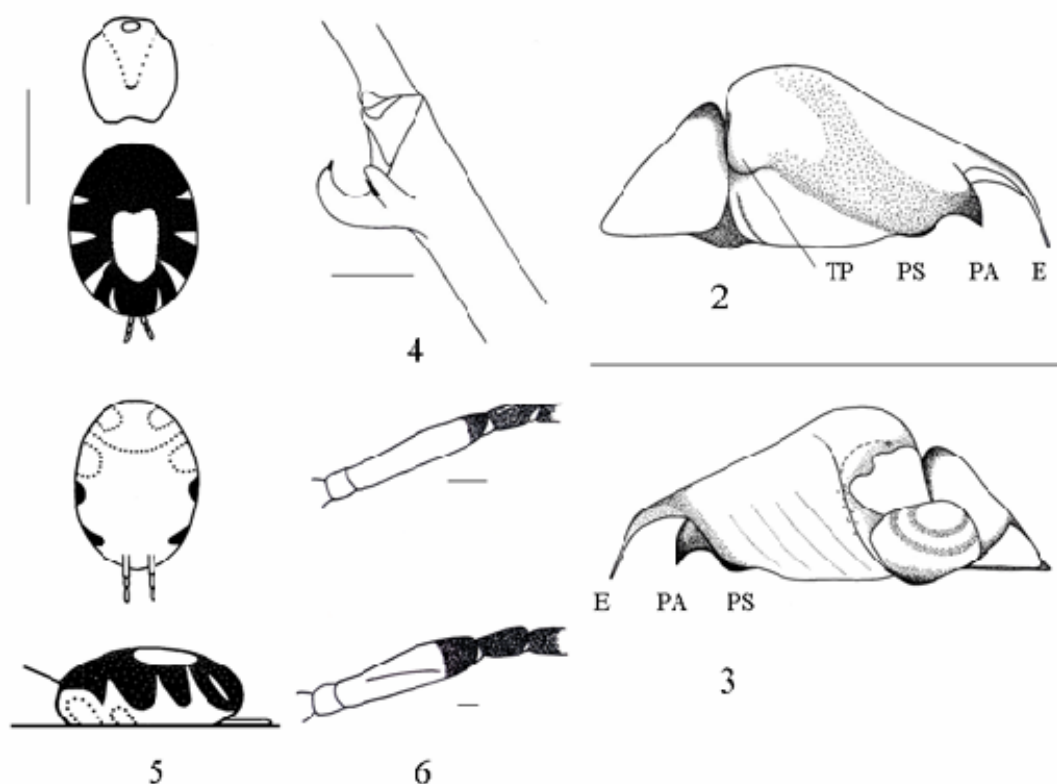
slightly incrassate femora III.

Scopulae: All tarsi, 100% densely scopulated, metatarsus I 90%, metatarsus II 75%, metatarsus III 40%, metatarsus IV 20% scopulated. Tarsi I, II not divided, tarsi III, IV divided by narrow band of setae. Scopulae on retrolateral face of femur IV is absent.

Spinination: femora I-IV and palp 0; patellae I-IV and palp 0; tibiae I v 0, II v 0, III v 0-0-2 (apical), p 0-1-0, IV v 0-0-2 (apical), r 1-0-1 (apical) and palp v 0-0-2 (apical); metatarsi I v 0-0-1 (apical), II v 1-0-1 (apical), III v 2-0-2 (apical), p 1-1-1, r 0-0-1, IV v 2-2-3 (apical), p 0-0-1 (apical), r 0-1-1 (apical).

Spermathecae (Fig. 8): two separated spiral seminal receptacles terminated with a caliciform extension. Coxal and trochanteral stridulatory hairs absent. Abdomen: urticating hairs of type III with short barbs are located in central reddish brown glossy patch, length 0.20-0.27. Urticating hairs have no reversed barbs at apex. Posterior lateral spinnerets: 7.5, basal segment 2.8, middle segment 2.2, apical segment 2.5.

Coloration and covering hairs (Figs. 5-6): dorsal view: chelicerae, carapace, coxae, trochanters and femora covered by light reddish brown pubescens except apical parts of femora which are black and intermixed by long pale hairs; patellae, tibiae, metatarsi and tarsi covered by black pubescens and long pale hairs. Patellae with two distinct longitudinal lines. Prolateral face of femur I without covering hairs. Carapace without dark caput. Abdomen covered by black pubescens and



Figs. 2.-6. *C. perezmilesi* sp. n. male holotype (NMPC P6E-2983), Bolivia, Beni River, San Buenaventura, morphology of male palpal bulb, prolateral (2), retrolateral (3). PS = prolateral superior keel, PA = paraembolic apophysis, E = embolus, TP = tegular protuberance. (4) Male tibial apophysis, prolateral, without covering hairs. *C. perezmilesi* new species female paratype, (NMPC P6E-2985), Bolivia, Beni River, San Buenaventura. (5) Colour pattern. From top, carapace, dorsal abdomen, ventral abdomen and lateral abdomen. (6) Examples of bicolour femora. From top, femur I, retrolateral and femur IV, prolateral. Scale bar = 1 mm (figures 2, 3, 4, 6). Scale bar = 10 mm (figure 5)

long pale hairs except central reddish brown glossy patch. Length of central patch: 5.7, width 4.9. Four lateral stripes are not joined with the central patch except the third one which reaches or almost reaches the central patch. Ventral view: labium, sternum, coxae, trochanters and femora except apical parts covered by light orange pubescens intermixed with thick long red-

dish brown hairs; patellae, tibiae, metatarsi and tarsi covered by black pubescens and long pale hairs. Ventral abdomen including spinnerets with yellowish pubescens creating three well-developed lateral yellowish stripes, the fourth one is not joined at base with the ventral yellowish pubescens. Longitudinal dark band on ventral abdomen is absent.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palp	4.6	2.7	3.0	-	3.1	13.4
Leg I	6.3	4.2	5.0	3.9	3.2	22.6
Leg II	5.8	3.8	4.0	3.9	3.2	20.7
Leg III	5.0	3.0	3.7	4.1	3.0	18.8
Leg IV	7.1	3.8	5.4	6.5	3.8	26.6

Table II: *Cyriocosmus perezmilesi* sp. n. Female paratype. Lengths of palpal and leg segments.



Fig. 7. *C. perezmilei* sp. n. female paratype (NMPC P6E-2985), Bolivia, Beni River, San Buenaventura.

KEY TO CYRIOCOSMUS SPECIES which share the reduced paraembolic apophysis in male palpal organ (modified from the key of *Cyriocosmus* species by Fukushima *et al.*, 2005):

FEMALES

(female of *Cyriocosmus bertae* is unknown)

1. Striped pattern on dorsal surface of abdomen.
 - present 2
 - absent, dark cephalic area present *Cyriocosmus versicolor*
2. Cephalic area:
 - the same colour as the carapace *Cyriocosmus perezmilei*
 - darker than the carapace 3
3. Dorsal abdomen with three clear stripes on each side *Cyriocosmus leetzi*
 - more than three stripes 4
4. Clear central patch covering approximately 80% of the dorsal abdomen *Cyriocosmus fasciatus*
 - Clear central patch covering approximately 30% of the dorsal abdomen *Cyriocosmus elegans*

MALES

1. Striped pattern on dorsal surface of abdomen:
 - present 2
 - absent 5
2. Cephalic area:
 - the same colour as the carapace *Cyriocosmus perezmilei*
 - darker than the carapace 3

3. Dorsal abdomen:

- with three clear stripes on each side; weakly developed PS keel *Cyriocosmus leetzi*
 - more than three stripes; well developed PS keel 4
4. Clear central patch covering approximately 80% of the dorsal abdomen *Cyriocosmus fasciatus*
 - clear central patch covering approximately 30% of the dorsal abdomen *Cyriocosmus elegans*
 5. Dark cephalic area present ... *Cyriocosmus versicolor*
 - cephalic area the same colour as the carapace *Cyriocosmus bertae*



Fig. 8. *C. perezmilei* sp. n. female paratype, (NMPC P6E-2985), Bolivia, Beni River, San Buenaventura, dissected spermathecae, ventral view. Two separated spiral seminal receptacles terminated with a caliciform extension.

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