The Neotropical genus *Cyriocosmus* Simon, 1903 and new species from Peru, Brazil and Venezuela (Araneae: Theraphosidae: Theraphosinae)

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**ABSTRACT**
*Cyriocosmus peruvianus* sp. nov., *C. itayensis* sp. nov., *C. aueri* sp. nov., *C. giganteus* sp. nov. from Peru, Loreto region, *C. hoeferi* sp. nov. from Brazil, *C. williamlamari* sp. nov. and *C. nicholausgordoni* sp. nov. from Venezuela are described, illustrated, diagnosed and both sexes, if known, keyed. New Peruvian species can be distinguished from all congeners, except *C. bertae* Pérez-Miles, 1998 and *C. pribiki* Pérez-Miles and Weinmann, 2009, by the uniformely coloured carapace and abdomen without stripes and by the short paraembolic apophysis in male palpal bulb. The female of *Cyriocosmus rita* Pérez-Miles, 1998 is described for the first time from a known Peruvian population near Iquitos.

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**Introduction**
In 1889, Simon described *Hapalopus sellatus* Simon, 1889 from the Upper Amazon and *Hapalopus elegans* Simon, 1889 from Venezuela. In 1897, Simon described *Cyclosternum versicolor* Simon, 1897 from Paraguay. In 1903, Simon established *Cyriocosmus* Simon, 1903 to accommodate both species primarily described in *Hapalopus* Ausserer, 1875, with *Cyriocosmus sellatus* as the generic type. Later on, Mello-Leitão (1930) established *Pseudhomoeomma* Mello-Leitão, 1930, with *Pseudhomoeomma fasciatum* Mello-Leitão, 1930 from Pará, Brazil as the generic type. Mello-Leitão (1939) described the male of *Cyriocosmus semifasciatus* Mello-Leitão, 1939 from Trinidad and the female of *Cyriocosmus nigriventris* Mello-Leitão, 1939 from Venezuela. Roewer (1942) transferred *Cyclosternum versicolor* to the genus *Hapalopus*. Later on, in 1973, Schiapelli and Gerschman newly defined the genus *Cyriocosmus*, synonymized *Pseudhomoeomma* with *Cyriocosmus* and *Pseudhomoeomma fasciatum* and *Cyriocosmus semifasciatus* with *Cyriocosmus elegans* and transferred *Hapalopus versicolor* (Simon, 1897) to *Cyriocosmus*. Raven (1985) synonymized *Erythropoicila* Fischel, 1927 from Venezuela with *Cyriocosmus*, with which it shares the divided tarsal scopulae and the characteristic elongate paraembolic apophysis, as well as *Erythropoicila plana* Fischel, 1927 with *Cyriocosmus elegans* (Raven, 1985). In 1998, Pérez-Miles described five new species (*Cyriocosmus butantan*...
Pérez-Miles, 1998, C. chicoi Pérez-Miles, 1998, C. rite Pérez-Miles, 1998, C. bertae Pérez-Miles, 1998 from Brazil and C. blenginii Pérez-Miles, 1998 from Bolivia), transferred *Cyriocosmus nigriventris* from Venezuela to *Metriopelma* Becker, 1878, and carried out a phylogenetic analysis of the genus *Cyriocosmus*. Vol (1999) described *Cyriocosmus leetzi* Vol, 1999 from Colombia. Fukushima et al. (2005) described two new species, *Cyriocosmus fernandoi* Fukushima et al., 2005 and *Cyriocosmus nogueiranetoi* Fukushima et al., 2005, restored *Cyriocosmus fasciatus* (contra Schiapelli and Gerschman de Pikelin, 1973), transferred *Cyriocosmus butantan* and *Metriopelma nigriventris* to *Hapalopus* and performed a new cladistic analysis of *Cyriocosmus*. In 2009, Pérez-Miles and Weinmann described two new species, *Cyriocosmus pribiki* Pérez-Miles and Weinmann, 2009 and *Cyriocosmus rogerioi* Pérez-Miles and Weinmann, 2009, from Peru. In 2007 and 2010, Kaderka described *Cyriocosmus perezmilesi* Kaderka, 2007 from the Beni province in Bolivia and *C. venezuelensis* Kaderka, 2010 from Venezuela and synonymized *Cyriocosmus rogerioi* with *Cyriocosmus pribiki*.

**Material and methods**

The material for this study was obtained from different institutions and private collections. The types were separately preserved in 70% ethanol and stored in the depositories of MUSM, NMPC, INPA and SMFD. All material was examined and measured using a binocular microscope Leica S6D with the magnification range from 6.3× up to 40× and an ocular graticule 10 mm/0.1 mm. All measurements were taken according to the central axis of structures and are provided in millimetres. The measurements of the leg and palpal segments were taken dorsally. The eye measurements were taken from the widest spans of the lens, AME in dorsal view, ALE, PLE and PME in dorsolateral view. The measurement of the total body length, excluding chelicerae and spinnerets, was made using a calliper.

The extents of tarsal and metatarsal scopulae on the ventral side of both leg segments were expressed as a percentage of the total length of the segment.

The leg spination was described using the following method: each leg segment was divided into four quadrants (dorsal, ventral, prolateral and retrolateral) and each quadrant separately described. An unequal numbers of spines of the same leg segments on the right and left side were expressed by parentheses.

The female spermathecae and male palpal bulbs were separated from the body and preserved in microvials in 70% alcohol together with the specimen. The terminology of male palpal bulb structures follows Bertani (2000). The terminology of spermathecal morphology follows Fukushima et al. (2005). The sclerotized basal plates of seminal receptacles, if present, can be flat, slightly convex or convex from dorsal view. The convex basal plates are mostly concave in ventral view.

The abdominal urticating setae were removed from the area of urticating setae by a pincette, placed in alcohol and examined using a binocular microscope Olympus BH2-RFCA. The terminology of urticating setae follows Cooke et al. (1972). The barbs of urticating setae whose tips are oriented towards the body are considered as reversed.

The photographs of preserved material were taken with a Canon G5 mounted directly on the eye piece of a binocular microscope Leica S6D illuminated by an incorporated LED ringlight. Photographs of live specimens were taken with a Canon G5. The line drawings were drawn according to the photos, using a transparent foil.


**Abbreviations**

Eye sizes and interdistances: AME = anterior median eyes, ALE = anterior lateral eyes, PME = posterior median eyes, PLE = posterior lateral eyes, OQ = ocular quadrangle (including lateral eyes). Spination: p = prolateral, r = retrolateral, d = dorsal, v = ventral. Male palpal bulb: PA = paraembolic apophysis, PS = prolateral superior keel, A = apical keel, E = embolus, TP = tegular protuberance. Cheliceral teeth pattern: v = small teeth, V = big teeth, – = space. PLS = posterior lateral spinnerets, PMS = posterior median spinnerets. Collections: IB = Instituto Butantan, São Paulo, Brazil. INPA = Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil. MACN = Museo Argentino de Ciencias Naturales, Buenos Aires. MNHN = Muséum National d’Histoire Naturelle, Paris. MUSM = Museo de Historia Natural, Lima, Peru. NMPC = National Museum (Natural History), Praha, Czech Republic. RKCP = Radan Kaderka private collection, Czech Republic. SMFD = Senckenberg Museum, Frankfurt, Germany. SMNK = Staatliches Museum für Naturkunde, Karlsruhe, Germany.

**Other material examined**

*Cyriocosmus aueri* sp. nov., male (RKCP 0195) from Peru, March 2010, Pavel Just ded.; *Cyriocosmus aueri* sp. nov., females (RKCP 0132), female (RKCP 0248) from Peru, Iquitos, the Amazon River, Nuevo Umaral, May 2009, Hans-Werner Auer col.; *Cyriocosmus elegans* (Simon, 1889), female (SMFD) from West Indies, Trinidad Island, Icacos Point, 17 May 1989, T. Mason col.; *Cyriocosmus itayensis* sp. nov., female (RKCP 0239), male (RKCP 0368), female (RKCP 0370) from Peru, Iquitos, Nauta, Rio Itaya, village of Luz del Oriente, March 2007, Hans-Werner Auer col., immature female (MUSM-ENT 0505128) from Peru, Loreto, Rio Itaya, 18 July 2012, Maria and Diana Silva col.; *Cyriocosmus leetzi* Vol, 1999, male holotype (MNHN AR 10111), female lectotype (MNHN AR 10112) from Colombia, without further information, *Cyriocosmus leetzi* Vol, 1999, female (RKCP 0197), male (RKCP 0251), male (RKCP 0240), female (RKCP 0364), female (RKCP 0365), male (RKCP 0478) from Peru, Iquitos, Rio Nanay, village of Cuyana, 2008, Hans-Werner Auer col.; *Cyriocosmus pribiki* Pérez-Miles and Weinmann, 2009, male holotype (SMFD 60237), two female paratypes (SMFD 60238) from Peru, Amazonas, Tingo, Gualap, male (SMFD 60239, holotype of *Cyriocosmus rogerioi* Pérez-Miles and Weinmann, 2009) from Peru, Amazonas, Gualap, Chachapoyas, 22 October 1996, František Pribik col.; *Cyriocosmus rita* Pérez-Miles, 1998, male (RKCP 0347), male (MUSM-ENT 0506544, formerly RKCP 0557), male (MUSM-ENT 0506545, formerly RKCP 0561), female (RKCP 0348), female (NMPC P6A-5732, formerly RKCP 0225), female (RKCP 0349), female (MUSM-ENT 0506543, formerly RKCP 0562), female (MUSM-ENT 0506546, formerly RKCP 0523) from Peru, Iquitos, the Amazon River, Las Palmas (approximately 60 km east from Iquitos), May 2009, Hans-Werner Auer col.; *Cyriocosmus sellatus* (Simon, 1889), male allotype (MNHN AR 12331, formerly MNHN 8102) from the Upper Amazon River, male (MUSM-ENT 0504034) from Peru,
Loreto, Yanamono, 80 km east from Iquitos, 20–26 July 1984, Rina Ramirez Mesias col.; *Cyriocosmus* sp., female (INPA 1040) from Brazil, Amazonas, Prezidente Figueiredo, Hidrelétrica de Balbina, Reserva Biológica do Uatumã (Ilha da Copa), 13 July 2006, A. L. Tourinho col.; *Cyriocosmus* sp., female exuvia (RKCP 0550) from Peru, Iquitos, Rio Mamon, southern bank, November 1994, Dr L. Rayor col.; *Cyriocosmus* sp., juvenile male (SMFD) from Peru, Loreto, Rio Tigre, Monteverde, 2 April 1993, Dr William Lamar col.; *Cyriocosmus* sp. (probably *C. aueri* sp. nov.), juv. female (SMFD) from Peru, Loreto, Rio Tigre, 2 April 1993, Dr William Lamar col.; *Cyriocosmus* sp. (probably *C. aueri* sp. nov.), female (SMFD) from Peru, Loreto, Rio Yarapa, October 1993, Dr William Lamar col.; *Cyriocosmus* sp. (affinity to *C. ritei* Pérez-Miles, 1998), female (SMFD) from Peru, Loreto, Rio Ucayali, May 1993, Dr William Lamar col.; *Cyriocosmus* sp. (affinity to *C. ritei* Pérez-Miles, 1998), female (SMFD) from Peru, Loreto, Rio Samiria, 10 May 1993, S. Baldwin col.

**Taxonomy**

**Family** THERAPHOSIDAE Thorell, 1869  
**Subfamily** THERAPHOSINAE Thorell, 1869  
**Genus** *Cyriocosmus* Simon, 1903

**Synonymies**  
*Erythropoicila* Fischel, 1927; *Pseudhomoeomma* Mello-Leitão, 1930

**Type species**  
*C. sellatus* (Simon 1889)

**Generic diagnosis**  
Differs from all known genera of Theraphosinae by the presence of the paraembolic apophysis in male palpal bulbs (Figures 25, 26) and by the presence of spermathecae with two separated spiral seminal receptacles, mostly terminating with caliciform or globular extension (Figure 29a–h), with reversion in *C. nogueira-netoi* having S-shaped receptacles, in combination with the presence of the type III urticating setae (Kaderka 2010, figure 13) in the central patch on dorsal abdomen (Figures 3d, 6d, 10d, 11d, 13d, 14d, 16d, 19c, 20d, 21c, 23c).

**Species included**  
*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 and da Silva, 2005, *C. leetzi* Vol, 1999, *C. nogueiranetoi* Fukushima, Bertani and da Silva, 2005, *C. perezmilesi* Kaderka, 2007, *C. pribiki* Pérez-Miles and Weinmann, 2009, *C. ritei* Pérez-Miles, 1998, *C. sellatus* (Simon, 1889), *C. venezuelensis* Kaderka, 2010, *C. versicolor* (Simon, 1897).

**Distribution**  
*Cyriocosmus* is exclusive to (sub-)tropical South America (Schiapelli and Gerschman de Pikelin 1973) including northern Argentina, Brazil, Bolivia, Colombia, Paraguay, Peru,
Tobago, Trinidad and Venezuela, including Isla Margarita (Figure 36). Spiders of the genus inhabit tropical and non-tropical areas, lowland rainforests as well as high-altitude forests at the elevation of 3000 m asl (Fukushima et al. 2005; Pérez-Miles and Weinmann 2009).

**Description**
The genus *Cyriocosmus* comprises small to medium-sized spiders, with total length 10–32 mm, excluding chelicerae and spinnerets. Carapace oval, uniformly coloured or with bicoloured pattern. Caput moderately domed. Eye tubercle oval, flattened, distinctly wider than longer, with eight eyes, anterior eye row slightly procurved, posterior row slightly recurved in dorsal view, a group of strong setae present on the median anterior margin of the tubercle. Clypeus absent to very narrow. Fovea transverse, straight to slightly procurved. Chelicerae without rastellum and stridulatory bristles, with teeth on promargin (7–10), first basal teeth are complemented with granulation. Labium domed, wider than longer, with 30–100 cuspules in anterior third, maxillae with 100–360 cuspules in basal half on ventral side, maxillary lobe pronounced into conical process. Variability in number of labial and maxillary cuspules in *Cyriocosmus perezmilesi* was described by Kaderka (2010). Labiosternal groove distinct, shallow and flat, with two slightly separate or joined elongated sigilla. Sternum oval, with three pairs of small, oval sigilla located near coxae III, coxae II and coxae I, posteriorly separated from the margin approximately by their own diameter. Legs uniformly hirsute, with (Figures 12b, 17b, 34) or without (Figures 1b, 7) whitish or yellowish longitudinal striation on dorsal side. Leg pattern (from longest to shortest): I>IV>II>III in *Cyriocosmus ritae* or IV>I>II>III in all congeners. Leg segments: generally uniform to slightly incrassate on femur III. Incrassate tibia I is present in males of *C. ritae* only (Figure 24b).

Dense scopulae on ventral side of all tarsi, metatarsi partly scopulate, scopulae more extended on anterior than on posterior legs. Tarsal scopulae I, II usually undivided, on tarsi III, IV usually divided by longitudinal band of setae. Retrolateral side of femur IV and prolateral side of femur I without pad of plumose setae. Maxillary and trochanteral stridulatory setae or bristles absent. Spination as in species descriptions. Dorsal side of all tarsi with two irregular longitudinal rows of very short claviform trichobothria. Paired tarsal claws without teeth, third claw absent in all tarsi. Claw tufts dense, bilobate, present on all tarsi.

Abdomen uniformly coloured (Figures 1b, 7) or with lateral stripes (Figures 12b, 16c, 17b, 34). Urticating setae of type III (Kaderka 2010, figure 13) with very short reversed barbs are located in central semicircular (Figure 13d) to U-shaped glossy patch (Figures 17b, 34). Abdomen ventrally with (Figures 16e, 23d) or without dark longitudinal band. Four spinnerets present. PLS composed of three digitiform segments. PMS digitiform, mono-segmented.

Male palpal organ: embolus with long (Figure 26a–d) or short PA (Figures 25, 26e–h, 32a–d) and with smooth (Figures 25a–d, 26e–h, 32a–d) or crested PS keel (Fukushima et al. 2005, figures 1–4), PS keel is absent only in males of *Cyriocosmus giganteus* sp. nov. (Figure 25g, h). Apical keel is present only in *Cyriocosmus versicolor* and *Cyriocosmus perezmilesi* (Figure 32g, h; Fukushima et al. 2005, figures 1, 2). Tegulum with distinct granulated TP, projecting prolaterally (Figure 25a–h). Retrolateral face of cymbium with (Figure 24a) or without basal field of spiniform setae (in Fukushima et al. 2005 called
‘spines’). Palpal tibia with distinct (Figures 2e, 5e, 18e) or indistinct (Figures 18c, 20f) retrolateral process which is usually covered with numerous spiniform setae, absent in males of C. fernandoi, C. hoeferi sp. nov., C. nogueiranetoi and C. versicolor. Two unequal tibial apophyses are present on tibia I (Figures 27, 28): a longer retrolateral tibial apophysis, usually with short apical spine and a shorter prolateral tibial apophysis usually with single, well-developed retrolateral spine at base. Metatarsus I not sigmoidly curved, without basal or median protuberance on retrolateral face, except the males of C. ritae having a median protuberance (Figure 24b). Male metatarsus I flexion between both tibial apophyses, except C. fernandoi and C. versicolor with flexion on retrolateral side of retrolateral tibial apophysis, C. pribiki on retrolateral tibial apophysis and C. ritae with flexion on prolateral tibial apophysis.

Females with spermathecae composed of two separated spiral seminal receptacles, distally terminating with caliciform (Figure 29a, f, g) or globular extension (Figure 29b, c, e, h), with or without sclerotized basal plates. If present they can be flat (Figure 29a, f) or convex (Figures 29c, g, 35a, b).

**Cyriocosmus peruvianus** sp. nov.
(Figures 1–3, 25a, b, 27a, 29a, 30, 33a–d, Tables 1, 2)

**Types**
Male holotype (NMPC P6A-5725) from Peru, Iquitos, Rio Nanay, village of Cuyana, 2008, Hans-Werner Auer col.; one female paratype (NMPC P6A-5726) and one male paratype (SMFD), the same locality and date as the holotype, Jorge Portilla col.

**Etymology**
The specific name is derived from a distribution area covering a part of the Peruvian Amazon rainforest.

**Diagnosis**
Cyriocosmus peruvianus** sp. nov. can be distinguished from all other congeners, except C. itayensis sp. nov., C. aueri sp. nov., C. giganteus sp. nov., C. bertae and C. pribiki, by its uniformly coloured carapace and abdomen and by the short paraembolic apophysis in male palpal bulb. It differs from C. itayensis sp. nov., C. aueri sp. nov., C. bertae and C. pribiki by having the caliciform extension in female seminal receptacles, from C. itayensis sp. nov. also by the different morphology of male palpal bulb, from C. aueri sp. nov. also by the different coloration and the flat basal plates of female seminal receptacles, from C. giganteus sp. nov. by having the prolateral superior keel in male palpal bulb and the embolus approximately twice as long, from C. bertae also by having a smooth prolateral superior keel and by the presence of a retrolateral process on male palpal tibia, from C. pribiki also by the different coloration, flat basal plates of female seminal receptacles, cymbium without spiniform setae and by the metatarsal flexion between the two tibial apophyses.
Known only from Maynas province in Loreto region, Rio Nanay near Iquitos in Peru. The region is a part of the Amazonian lowland originally covered with rainforest.

**Description**

Male (NMPC P6A-5725) (Figures 1a, 2, 25a, b, 27a): Total length: 18.2, carapace length 9.6, width 8.2, chelicerae with 8–9 teeth on promargin. Cheliceral teeth pattern from basal end: right side: VvVV-V-VvV, 1 small and 8 big teeth. Left side: VVVV-V-VVV, 8 big
teeth. Anterior eye row slightly procurved, posterior eye row slightly recurved. Eye sizes and interdistances (Figure 2c): AME 0.39 (circular), ALE 0.39 (oval), PME 0.29 (oval), PLE 0.36 (oval), AME–AME 0.08, AME–ALE 0.10, PME–PME 0.73, PME–PLE 0.08, ALE–PLE 0.13,
AME–PME 0.06, OQ length 0.83, width 1.61. Ocular tubercle flattened, clypeus absent. Fovea transverse, straight, width 0.8, 6.0 from anterior edge of carapace. Labium length 1.27, width 1.73, anterior third with 77 cuspules, maxillae with 221–231 cuspules in basal
half. Sternum length 4.6, width 4.0, three pairs of sternal sigilla located near coxae III (length 0.31, 0.47 from edge of sternum), coxae II (length 0.26, 0.26 from edge of sternum) and coxae I (length 0.13, 0.28 from edge of sternum). Leg pattern: IV>I>II>III. Incrassate leg segments: slightly incrassate femur III.

Scopulae: All tarsi 100% densely scopulate, metatarsi I, II 50%, metatarsi III 40%, metatarsi IV 15% scopulate. Tarsal scopulae I, II undivided, intermixed with long setae in longitudinal row, tarsal scopulae III, IV divided by narrow longitudinal band of setae.

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

Palpal organ as in Figure 25a and b, embolus with short PA and with smooth PS keel. Tegulum with distinct granulated TP, projecting prolaterally. Retrolateral face of cymbium without basal field of spiniform setae. Retrolateral face of palpal tibia with distinct subapical protuberance covered with cluster of numerous spiniform setae (Figure 2e).

Two unequal subapical apophyses are present on tibia I (Figure 27a): a longer retrolateral tibial apophysis with very short apical spine, a shorter prolateral tibial apophysis with single, well-developed retrolateral spine at base and approximately of the same length as prolateral tibial apophysis. Metatarsus I not sigmoidly curved and without basal or median protuberance on retrolateral face. Metatarsus I flexion is between both tibial apophyses.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 5.98, basal segment 2.18, middle segment 1.52, apical segment 2.28, all digitiform. PMS: 1.05.

Coloration and covering setae: dorsal view (Figures 1a, 2a): carapace uniformly reddish-brown, and covered with golden pubescence, without dark caput, coxae, trochantera and chelicerae reddish-brown, and covered with golden pubescence, femora, patellae, tibiae, metatarsi and tarsi black, intermixed with long, pale setae. Patellae I, II and palpal patella with two distinct longitudinal stripes without covering setae, patellae III, IV with single diagonal stripe. Abdomen covered with short black setae, intermixed with long, pale setae in posterior part, except central reddish-brown glossy patch in shape of heart. Length of central patch: 3.6, width 4.0. Ventral view (Figure 2b): labium, sternum, coxae and trochantera reddish-brown, femora, patellae, tibiae and metatarsi black. Abdomen ventrally without dark longitudinal band (Figure 2d). Spinnerets dark brown.

Female (NMPC P6A-5726) (Figures 3a–e, 29a): Total length: 23.0, carapace length 10.1, width 9.2, chelicerae with 9–10 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vvvv-VvVVV, 6 smaller and 4 big teeth. Left side: vvvvV-VVVV, 5 smaller and 4 big teeth. Anterior eye row procurred, posterior eye row recurved. Eye sizes and interdistances (Figure 3c): AME 0.42 (circular), ALE 0.52 (oval), PME 0.26 (oval), PLE 0.42

| Table 2. Cyriocosmus peruvianus sp. nov. Female paratype. Lengths of palpal and leg segments. |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
| Palp   | 5.1     | 3.4   | 3.5   | —      | 4.4     | 16.4 |
| Leg I  | 6.9     | 4.8   | 5.2   | 4.3    | 4.0     | 25.2 |
| Leg II | 6.2     | 4.1   | 4.3   | 3.9    | 3.8     | 22.3 |
| Leg III| 5.5     | 3.7   | 3.5   | 4.2    | 3.5     | 20.4 |
| Leg IV | 7.1     | 4.1   | 5.4   | 6.3    | 3.9     | 26.8 |

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(oval), AME–AME 0.16, AME–ALE 0.16, PME–PME 0.86, PME–PLE 0.03, ALE–PLE 0.16, AME–PME 0.12, OQ length 0.91, width 1.91. Ocular tubercle: length 1.35, width 1.91, clypeus absent. Fovea transverse, straight, width 1.76, 7.22 from anterior edge of carapace. Labium length 1.47, width 1.85, anterior quarter with 94 cuspules, maxillae with 218–234 cuspules. Sternum length 4.6, width 4.58, with three visible pairs of sternal sigilla located near coxae III (length 0.52, 0.44 from edge of sternum), coxae II (length 0.26, 0.34 from edge of sternum) and coxae I (length 0.23, 0.36 from edge of sternum). Leg pattern: IV > I > II > III. All leg segments uniform.

Scopulae: All tarsi 100% densely scopulate, metatarsi I 50%, metatarsi II, III 40%, metatarsi IV 20% scopulate. Tarsal scopulae I, II divided by longitudinal line of setae, tarsal scopulae III, IV divided by longitudinal band of setae.

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

Spermathecae (Figure 29a): two separated spiral seminal receptacles, distally terminated with caliciform extension, basally with flat sclerotized plates.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 6.61, basal segment 2.55, middle segment 1.88, apical segment 2.18, all digitiform. PMS: 1.17.

Coloration and covering setae: dorsal view (Figure 1b): carapace uniformly reddish-brown, and covered with golden pubescence, without dark caput, coxae, trochantera and chelicerae reddish-brown, and covered with golden pubescence, femora, patellae, tibiae, metatarsi and tarsi black, intermixed with long, pale setae. Palpal patellae, patellae I, II, tibiae I–IV with two distinct longitudinal stripes without covering setae, patellae III, IV with single diagonal stripe. Prolateral face of coxae I covered with very short spiniform setae above and below suture. Palpal femur and femur I prolaterally partly bare. Abdomen (Figure 3d) covered with short black setae, intermixed with long, pale setae in posterior part, except central reddish-brown glossy patch in shape of heart. Length of central patch: 4.17, width 4.81. Ventral view (Figure 3b): labium, sternum, coxae and trochantera reddish-brown, femora, patellae, tibiae and metatarsi black. Abdomen ventrally without dark longitudinal band (Figure 3e). Spinnerets dark brown.

Variability

The variability in morphology of male palpal bulbs is shown in Figure 30, in the shape of spermathecae in Figure 33a–d. The variability in the length of the carapace, the number and the arrangement of the cheliceral teeth, the number of labial and maxillary cuspules, the leg pattern and the spination of tibial apophyses is shown in Table 3.

Cyriocosmus itayensis sp. nov.
(Figures 4–6, 25c, d, 27b, 29b, 31e–h, 33e, f, Tables 4, 5)

Types
Male holotype (NMPC P6A-5727) from Peru, Iquitos, Nauta, Rio Itaya, village of Luz del Oriente, March 2007, Hans-Werner Auer col.; one female paratype (NMPC P6A-5728),
Table 3. The variability in carapace length, number and arrangement of cheliceral teeth, number of labial and maxillary cuspules, leg pattern and spination of tibial apophyses.

| Specimens               | Collection and ID number | Length of carapace (mm) | Number of cheliceral teeth | Number of cheliceral teeth pattern from basal end | Number of labial cuspules | Number of maxillary cuspules | Leg pattern | Spination of tibial apophyses |
|-------------------------|--------------------------|-------------------------|-----------------------------|-----------------------------------------------|--------------------------|-----------------------------|-------------|-----------------------------|
| Cyriocosmus peruvianus, male holotype | NMPC P6A-5725 | 9.6 | 9 | 8 | VVVVV-VVV | 77 | 231 | 221 | N> bip> iii | 1 (i) | 1 (a) |
| Cyriocosmus peruvianus, male paratype | RKCP 0479 (SMFD) | 7.9 | 9 | 9 | vVVVV-VVV | 103 | 196 | 191 | N> bip> iii | 1 (i) | 1 (a) |
| Cyriocosmus peruvianus, male | RKCP 0478 | 9.9 | 8 | 9 | www-VVV | 94 | 212 | 219 | N> bip> iii | 1 (i) | 1 (a) |
| Cyriocosmus peruvianus, male | RKCP 0064 | 9.6 | 10 | 9 | wwwww-WWV | 92 | 221 | 222 | N> bip> iii | 1 (i) | 1 (a) |
| Cyriocosmus peruvianus, male | RKCP 0238 | 8.1 | 8 | 9 | vvWV-WVV | 69 | 170 | 165 | N> bip> iii | 1–2 (i) | 1 (a) |
| Cyriocosmus peruvianus, male | RKCP 0240 | 8.7 | 9 | 9 | wwwww-WWV | 90 | 196 | 218 | N> bip> iii | 1 (i) | 1 (a) |
| Cyriocosmus peruvianus, female paratype | NMPC P6A-5726 | 10.1 | 10 | 9 | www-WVV | 94 | 218 | 234 | N> bip> iii | — | — |
| Cyriocosmus peruvianus, female paratype | RKCP 0365 | 8.1 | 8 | 8 | www-WVV | 86 | 229 | 221 | N> bip> iii | — | — |

Minimum: 7.9, Maximum: 10.1, Arithmetical mean: 9.0, Standard deviation: 0.8

(Continued)
Table 3. (Continued).

| Specimens | Collection and ID number | Length of carapace mm | Number of cheliceral teeth | Number of cheliceral teeth pattern from basal end | Cheliceral teeth pattern from basal end | Number of labial cuspules right side | Number of labial cuspules left side | Number of maxillary cuspules right side | Number of maxillary cuspules left side | Leg pattern | Spination of tibial apophyses PL branch | Spination of tibial apophyses RL branch |
|-----------|--------------------------|-----------------------|-----------------------------|-----------------------------------------------|----------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|------------|----------------------------------------|----------------------------------------|
| Cyriocosmus itayensis, male | RKCP 0369 (SMFD) | 10.1 | 9 | 9 | vVVV-V-WW | vVVV-V-WW | 97 | 264 | 277 | N>II>III | 1 (i) | 1 (a) |
| Cyriocosmus itayensis, male paratype | RKCP 0368 | 13.0 | 10 | 10 | vVVVV-V-WW | vVVVV-V-WW | 135 | 327 | 333 | N>II>III | 1 (i) | 1 (a) |
| Cyriocosmus itayensis, female paratype | NMPC P6A-5728 | 11.6 | 10 | 9 | vVVVV-V-WV | vVVVV-V-WV | 102 | 361 | 359 | N>II>III | — | — |
| Minimum | | 10.1 | 9 | 9 | | | 96 | 264 | 277 | |
| Maximum | | 13 | 10 | 10 | | | 135 | 361 | 359 | |
| Arithmetical mean | | 11.4 | 10 | 10 | vVVVV-V-WV | vVVVV-V-WV | 108 | 312 | 315 | |
| Standard deviation | | 1.0 | 10 | 10 | | | 14 | 32 | 31 | |
| Cyriocosmus aueri, male holotype | NMPC P6A-5729 | 9.9 | 9 | 9 | vVVV-V-WW | vVVV-V-WW | 76 | 210 | 208 | N>II>III | 1 (i) | 1 (a) |
| Cyriocosmus aueri, male paratype | SMFD | 9.8 | 10 | 10 | vVVVV-V-WV | vVVVV-V-WV | 72 | 179 | 169 | N>II>III | 1 (i) | 1 (a) |
| Cyriocosmus aueri, male | RKCP 0195 | 9.6 | 10 | 9 | vVVVV-V-WV | vVVVV-V-WV | 77 | 230 | 252 | N>II>III | 1 (i) | 1 (a) |
| Cyriocosmus aueri, female paratype | NMPC P6A-5730 | 13.1 | 9 | 9 | vVVVV-V-WV | vVVVV-V-WV | 84 | 243 | 231 | N>II>III | — | — |
| Cyriocosmus aueri, female | RKCP 0248 | 12.1 | 9 | 10 | vVVVV-VW | vVVVV-VW | 99 | 194 | 226 | N>II>III | — | — |
| Minimum | | 9.6 | 9 | 9 | | | 72 | 179 | 169 | |
| Maximum | | 13.1 | 10 | 10 | | | 99 | 243 | 252 | |
| Arithmetical mean | | 10.9 | 10 | 10 | vVVVV-VW | vVVVV-VW | 82 | 211 | 217 | |
| Standard deviation | | 1.4 | 10 | 10 | | | 8 | 20 | 23 | |
| Cyriocosmus hoeferi, male holotype | INPA 8803 | 5.4 | 8 | 8 | vVVV-VVW | vVVV-VVW | 43 | 108 | 113 | N>II>III | 1 (i) | 1 (a) |

(Continued)
Table 3. (Continued).

| Specimens            | Collection and ID number | Length of carapace mm | Number of cheliceral teeth right side | Number of cheliceral teeth left side | Cheliceral teeth pattern from basal end right side | Cheliceral teeth pattern from basal end left side | Number of labial cuspules right side | Number of maxillary cuspules right side | Number of maxillary cuspules left side | Leg pattern | Spination of tibial apophyses PL branch | Spination of tibial apophyses RL branch |
|----------------------|--------------------------|-----------------------|---------------------------------------|--------------------------------------|-----------------------------------------------|------------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|-------------|------------------------------------------|------------------------------------------|
| Cyriocosmus hoeferi, male paratype | SMFD                      | 5.0                   | 8                                     | 7                                    | vWvVvvVvV                               | VvVvVvVvV                                | 43                                  | 109                                  | 117                                  | N>IV>II>III | 1 (i)                                    | 1 (a)                                    |
| Minimum              |                          | 5.0                   | 8                                     | 7                                    | 43                                  | 108                                  | 113                                  |                                       |                                       |             |                                          |                                          |
| Maximum              |                          | 5.4                   | 8                                     | 8                                    | 43                                  | 109                                  | 117                                  |                                       |                                       |             |                                          |                                          |
| Arithmetical mean    |                          | 5.2                   |                                        |                                       | 43                                  |                                       |                                       |                                       |                                       |             |                                          |                                          |
| Standard deviation   |                          | 0.2                   |                                        |                                       | 0                                  | 1                                    | 2                                    |                                       |                                       |             |                                          |                                          |
| Cyriocosmus rite, male holotype | IB 4951                 | 6.9                   | 8                                     | 8                                    | 95                                  | 160                                  | 200                                  | b>IV>II>III                          | ?                                 | ?                              |                                          |
| Cyriocosmus rite, male | NMPC P6A-5731           | 5.5                   | 7                                     | 7                                    | VvvVvVvVv                              | VvVvVvVvVv                              | 44                                  | 139                                  | 139                                  | b>IV>II>III | 1 (i)                                    | 1 (a)                                    |
| Cyriocosmus rite, female | NMPC P6A-5732           | 6.6                   | 7                                     | 7                                    | VVVvVvVvVv                            | VVVvVvVvVvVv                            | 66                                  | 139                                  | 139                                  | N>IV>II>III | —                                        | —                                        |
| Cyriocosmus rite, female | RKCP 0225               | 7.1                   | 8                                     | 8                                    | vVVvVvVvVv                            | vVVvVvVvVvVv                            | 56                                  | damaged                              | damaged                              | N>IV>II>III | —                                        | —                                        |
| Minimum              |                          | 5.5                   | 7                                     | 7                                    | 44                                  | 139                                  | 139                                  |                                       |                                       |             |                                          |                                          |
| Maximum              |                          | 7.1                   | 8                                     | 8                                    | 95                                  | 184                                  | 200                                  |                                       |                                       |             |                                          |                                          |
| Arithmetical mean    |                          | 6.5                   |                                        |                                       | 65                                  | 161                                  | 171                                  |                                       |                                       |             |                                          |                                          |
| Standard deviation   |                          | 0.5                   |                                        |                                       | 15                                  | 15                                   | 22                                    |                                       |                                       |             |                                          |                                          |

Abbreviations: i = inner a = apical
found in a burrow about 30–40 cm long, and one male paratype (SMFD), the same locality, date and collector as the holotype.

**Etymology**
The specific name is derived from the type locality near the Itaya River in the Peruvian Amazon.
Figure 5. *Cyriocosmus itayensis* sp. nov., male holotype (NMPC P6A-5727, formerly RKCP 0366) from Peru, Iquitos, Rio Itaya. (a) Carapace, coxae and trochantera, dorsal view. (b) Sternum, labium, coxae and trochantera, ventral view. (c) Ocular tubercle, dorsal view. (d) Abdomen without striped pattern, ventral view. (e) Cymbium and tibia of left palp, arrow shows retrolateral process covered with numerous spiniform setae, retrolateral view. Scale bar = 1 mm (c, e). Scale bar = 10 mm (a, b, d).
Diagnosis

Cyriocosmus itayensis sp. nov. can be distinguished from all other congeners, except C. peruvianus sp. nov., C. aueri sp. nov., C. giganteus sp. nov., C. bertae and C. pribiki, by its uniformly coloured carapace and abdomen and by the short paraembolic apophysis in the male palpal bulb. Differs from C. peruvianus sp. nov. by having the globular extension in female seminal receptacles, from C. aueri sp. nov. by the different coloration and by having the flat basal plates in seminal receptacles, from C. giganteus sp. nov. by having the prolateral superior keel and approximately two times longer embolus in male palpal bulb, from C. bertae by having a smooth prolateral superior keel and by the presence of the retrolateral process on male palpal tibia, from C. pribiki by the different
Table 4. *Cyriocosmus itayensis* sp. nov. Male holotype. Lengths of palpal and leg segments.

|       | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|-------|-------|---------|-------|------------|--------|-------|
| Palp  | 5.1   | 3.5     | 4.0   | —          | 1.6    | 14.2  |
| Leg I | 8.3   | 4.8     | 6.1   | 6.6        | 4.6    | 30.4  |
| Leg II| 7.5   | 4.0     | 5.1   | 5.6        | 4.2    | 26.4  |
| Leg III| 6.6  | 3.5     | 4.0   | 5.5        | 3.7    | 23.3  |
| Leg IV| 8.0   | 3.8     | 6.6   | 7.9        | 4.2    | 30.5  |

Table 5. *Cyriocosmus itayensis* sp. nov. Female paratype. Lengths of palpal and leg segments.

|       | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|-------|-------|---------|-------|------------|--------|-------|
| Palp  | 5.9   | 3.9     | 4.0   | —          | 4.8    | 18.6  |
| Leg I | 8.0   | 5.6     | 6.3   | 5.0        | 4.8    | 29.7  |
| Leg II| 7.2   | 4.8     | 4.8   | 4.7        | 4.7    | 26.2  |
| Leg III| 6.6  | 4.2     | 4.0   | 5.1        | 4.5    | 24.4  |
| Leg IV| 8.5   | 4.7     | 6.2   | 7.4        | 4.7    | 31.5  |

coloration, cymbium without spiniform setae and by the metatarsal flexion between the two tibial apophyses.

**Distribution** (Figures 36, 37)

Known only from Peru, Maynas province in Loreto region, Rio Itaya near Iquitos. The region is originally covered with lowland rainforest.

**Description**

Male (NMPC P6A-5727) (Figures 4a, 5a–e, 25c, d, 27b): Total length: 21.7, carapace length 10.7, width 9.8, chelicerae with 9 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vVVVV-VVV, 1 small and 8 big teeth. Left side: vVVVV-VVV, 1 small and 8 big teeth. Anterior eye row slightly procurved, posterior eye row slightly recurved. Eye sizes and interdistances (Figure 5c): AME 0.41 (circular), ALE 0.48 (oval), PME 0.29 (oval), PLE 0.36 (oval), AME–AME 0.08, AME–ALE 0.12, PME–PME 0.78, PME–PLE 0.04, ALE–PLE 0.12, AME–PME 0.20, OQ length 0.81, width 1.74. Clypeus absent. Fovea transverse, straight, width 1.35, 6.9 from anterior edge of carapace. Labium length 1.68, width 1.68, anterior third with 96 cuspules, maxillae with 292–295 cuspules in anterior basal half, a few of them extending beyond the half. Sternum length 4.83, width 4.52, three pairs of sternal sigilla located near coxae III (length 0.49, 0.39 from edge of sternum), coxae II (length 0.23, 0.31 from edge of sternum) and coxae I (length 0.18, 0.26 from edge of sternum). Leg pattern: IV>1>II>III. Incrassate leg segments: femur III.

Scopulae: All tarsi 100% densely scopulate, metatarsi I–III 50%, metatarsi IV 25% scopulate. Tarsal scopulae I, II undivided, in tarsi III divided by longitudinal line of setae, in tarsi IV divided by narrow longitudinal band of setae.

Spination: femora I p 0-0-2, II p 0-0-2, III p 0-0-1, d 0-1-1, IV p 0-0-1 (apical), d 0-0-1 and femora of palps p 0-0-1; patellae I–IV and patellae of palp 0; tibiae I v 0-1-0, p 1-1-0, r 0-0-1 (apical), II v 1-1-3 (apical), p 1-1-0, r 1-1-0, III v 0-2-2 (apical), p 1-1-0, r 1-1-0, IV v 2-2-3 (apical), p 1-1-0, r 1-1-0 and tibiae of palps p 1-1-0; metatarsi I v 0-0-2 (apical), p 0-1-0, II v 0-0-2 (apical), p 0-1-1 (apical), r 0-1-1 (apical), III v 1-1-1 (apical), p 2-2-2 (apical), r 0-1-1 (apical), IV v 2-2-1-2 (apical), p 0-1-1 (apical), r 0-1-1 (apical), tarsi I–IV and tarsi of palps 0.
Palpal organ as in Figures 25c, d, embolus with short PA, smooth PS keel is fused with PA. Tegulum with distinct granulated TP, projecting prolaterally. Retrolateral face of cymbium without basal field of spiniform setae. Retrolateral face of palpal tibia with distinct subapical protuberance covered with cluster of numerous spiniform setae (Figure 5e). Two unequal subapical apophyses are present on tibia I (Figure 27b): a longer retrolateral tibial apophysis with very short, stout spine at apex, a shorter prolateral tibial apophysis with single, well-developed retrolateral spine at base, approximately of the same length as prolateral tibial apophysis. Metatarsus I not sigmoidly curved and without basal or median protuberance on retrolateral face. Metatarsus I flexion is between both tibial apophyses.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 6.91, basal segment 2.39, middle segment 2.03, apical segment 2.49, all digitiform. PMS: 1.27.

Coloration and covering setae: dorsal view (Figures 4a, 5a): carapace uniformly reddish-brown, and covered with golden pubescence, without dark caput, coxae, trochantera and chelicerae reddish-brown, and covered with golden pubescence, femora, patellae, tibiae, metatarsi and tarsi black, intermixed with long, pale setae. Patellae I, II and palpal patella with two distinct longitudinal stripes without covering setae, patellae III, IV with single diagonal stripe. Abdomen covered with short black setae, intermixed with long, pale setae in posterior part, except central reddish-brown glossy patch in shape of a heart. Length of central patch: 3.68, width 4.34. Ventral view (Figure 5b): labium, sternum, coxae and trochantera reddish-brown, femora, patellae, tibiae and metatarsi black. Abdomen ventrally without dark longitudinal band (Figure 5d). Spinnerets dark brown.

Female (NMPC P6A-5728) (Figures 4b, 6a–e, 29b): Total length: 26.2, carapace length 11.6, width 10.0, chelicerae with 9–10 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vVVVVVV-VVV, 1 small and 9 big teeth. Left side: vVVVV-VVV, 1 small and 8 big teeth. Anterior eye row slightly procurved, posterior eye row slightly recurved. Eye sizes and interdistances (Figure 6c): AME 0.59 (circular), ALE 0.46 (oval), PME 0.33, PLE 0.38 (oval), AME-AME 0.10, AME-AL 0.10, PME-PME 0.95, PME-PLE 0.06, AME-PLE 0.13, AME-PME 0.07, OQ length 0.88, width 1.98. Ocular tubercle: length 1.61, width 1.98, clypeus absent. Fovea transverse, procurved, width 2.2, 8.2 from anterior edge of carapace. Labium length 2.0, width 2.1, anterior half with 102 cuspules, maxillae with 359–361 cuspules. Almost rounded sternum, length 5.6, width 5.0, with three visible pairs of sternal sigilla located near coxae III (length 0.62, 0.73 from edge of sternum), coxae II (length 0.52, 0.49 from edge of sternum) and coxae I (length 0.29, 0.27 from edge of sternum). Leg pattern: IV>I>II>III. All leg segments uniform.

Scopulae: All tarsi 100% densely scopulate, metatarsi I, II 60%, metatarsi III 40%, metatarsi IV 25% scopulate. Tarsal scopulae I, II divided by longitudinal line of setae, in tarsi III divided by narrow longitudinal band of setae, in tarsi IV divided by wide longitudinal band of setae.

Spination: femora I p 0-0-1, II–IV and femora of palps p 0-0-1; patellae I–IV and patellae of palps 0; tibiae I v 0-0-1 (apical), II v 0-0-2 (apical), p 0-1-0, III v 0-0-2 (apical), p 1-1-0, r 1-1-0, IV v 0-0-2 (apical), r 1-0-1 and tibiae of palps v 0-0-3 (apical); metatarsi I v 0-0-1 (apical), II v 0-0-3 (apical), p 0-1-1, III v 1-2-3 (apical), p 1-2-1, d 0-1-1, IV v 1-2-3 (apical), p 0-1-1, r 0-1-1, tarsi I–IV and tarsi of palps 0.
Spermathecae (Figure 29b): two separated spiral seminal receptacles, distally terminated with globular extension, basally with slightly convex sclerotized plates.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 8.65, basal segment 3.26, middle segment 2.44, apical segment 2.95, all digitiform. PMS: 1.59.

Coloration and covering setae: dorsal view (Figure 4b): carapace uniformly reddish-brown, without dark caput, coxae and trochanteria reddish-brown, chelicerae reddish-brown, and covered with golden pubescence, femora, patellae, tibiae, metatarsi and tarsi black, intermixed with long, pale setae. Patellae I, II and palpal patella with two indistinct parallel longitudinal stripes without covering setae, patellae III, IV with two unequal and indistinct diagonal stripes. Tibiae without such stripes. Femur I prolaterally almost bare. Retrolateral face of femur IV partly bare. Abdomen (Figure 6d) covered with short black setae, intermixed with long, pale setae in posterior part, except central reddish-brown glossy patch in shape of heart. Length of central patch: 5.0, width 4.8. Ventral view (Figure 6b): labium and maxillae reddish-brown, sternum, coxae and trochanteria light brown, femora, patellae, tibiae and metatarsi black. Abdomen ventrally without dark longitudinal band (Figure 6e). Spinnerets dark grey.

**Variability**
The variability in morphology of male palpal bulbs is shown on Figure 31e–h, in the shape of spermathecae on Figure 33e, f. In adult females the seminal receptacles have slightly convex basal sclerotized plates which are less extended and less sclerotized in juvenile specimens. The variability in the length of the carapace, the number and the arrangement of the cheliceral teeth, the number of labial and maxillary cuspules, the leg pattern and the spination of tibial apophyses is shown in Table 3.

*Cyriocosmus aueri* sp. nov.
(Figures 7–11, 25e, f, 27c, 29c, 31a–d, 33g, h, Tables 6, 7)

**Types**
Male holotype (NMPC P6A-5729) from Peru, Iquitos, at margin of the Amazon River, village of Nuevo Umaral, May 2009, Hans-Werner Auer col.; two female paratypes (NMPC P6A-5730; SMFD), the same locality, date and collector as the holotype (both found in a c.30 cm long burrow); male paratype (SMFD) from Peru, Loreto, Rio Tigre, Comunidad Monteverde, 4°14’42.95”S, 74°21’36.02”W, 2 April 1993, Dr William Lamar col.; male paratype (MUSM-ENT 0504033) from Peru, Loreto, Rio Tigre, Cocha Shinguito, 5°08’5, 74°45’W (c.100 m), 25 May 1990, Diana Silva Dávila col.

**Etymology**
The specific name is a patronym in honour of Hans-Werner Auer, who found all new species here described from Amazon rainforest in the Loreto region, Peru.

**Diagnosis**
*Cyriocosmus aueri* sp. nov. can be distinguished from all other congeners, except *C. peruvianus* sp. nov., *C. itayensis* sp. nov., *C. giganteus* sp. nov., *C. bertae* and *C. pribiki*, by its uniformly coloured carapace and abdomen and by the short paraembolic
Figure 7. *Cyriocosmus aueri* sp. nov. from Peru, Iquitos, the Amazon River, Nuevo Umaral, female paratype (NMPC P6A-5730, formerly RKCP 541). Scale bar = 10 mm.

Figure 8. *Cyriocosmus aueri* sp. nov. from Peru, Iquitos, the Amazon River, Nuevo Umaral in a natural habitat (photo by Stefan Prein).
apophysis in male palpal bulb. Differs from *C. peruvianus* sp. nov. and *C. itayensis* sp. nov. by the different coloration and by the spermathecae with the globular extension of seminal receptacles and convex basal plates, from *C. giganteus* sp. nov. by the different coloration and the different shape of male palpal bulb having the prolateral superior keel, from *C. bertae* by the different coloration, by having a smooth prolateral superior keel and of a different shape, from *C. pribiki* by the different coloration, cymbium without spiniform setae and by the metatarsal flexion between the both tibial apophyses.

**Distribution (Figures 36, 37)**

Known from the type locality, also recorded from Peru, Loreto, Rio Tigre, Monteverde (material examined) and from Peru, Loreto, Pacaya-Samiria National Reserve (Cavallo 2009) (material not examined). The region is covered with the Amazon rainforest.

**Description**

Male (NMPC P6A-5729) (Figures 10a–e, 25e, f, 27c): Total length: 19.2, carapace length 9.9, width 8.8, chelicerae with 9 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vVVVV-VVV, 1 small and 8 big teeth. Left side: vVVVV-VVV, 1 small and 8 big teeth. Anterior eye row slightly procurved, posterior eye row recurved. Eye sizes and interdistances (Figure 10c): AME 0.44 (circular), ALE 0.47 (oval), PME 0.31 (oval),
Figure 10. *Cyriocosmus aueri* sp. nov., male holotype (NMPC P6A-5729, formerly RKCP 0245) from Peru, Iquitos, the Amazon River, Nuevo Umaral. (a) Carapace, coxae and trochantera, dorsal view. (b) Sternum, labium, coxae and trochantera, ventral view. (c) Ocular tubercle, dorsal view. (d) Abdomen without striped pattern, dorsal view. (e) Cymbium and tibia of left palp, arrow shows indistinct retrolateral process covered with numerous spiniform setae, ventroretrolateral view. Scale bar = 1 mm (c, d, e). Scale bar = 10 mm (a, b).
Figure 11. Cyriocosmus aueri sp. nov., female paratype (NMPC P6A-5730, formerly RKCP 0541) from Peru, Iquitos, the Amazon River, Nuevo Umaral. (a) Carapace and coxae, dorsal view. (b) Sternum, labium and coxae, ventral view. (c) Ocular tubercle, dorsal view. (d, e) Abdomen without striped pattern, (d) dorsal view, posterior part without covering setae, (e) ventral view. Scale bar = 1 mm (c). Scale bar = 10 mm (a, b, d, e).

Table 6. Cyriocosmus aueri sp. nov. Male holotype. Lengths of palpal and leg segments.

|        | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|--------|-------|---------|-------|------------|--------|-------|
| Palp   | 4.8   | 3.1     | 3.8   | —          | 1.4    | 13.1  |
| Leg I  | 7.6   | 4.6     | 6.3   | 5.1        | 3.8    | 27.4  |
| Leg II | 7.1   | 3.8     | 5.1   | 4.7        | 3.6    | 24.3  |
| Leg III| 6.0   | 3.3     | 3.8   | 4.6        | 3.2    | 20.9  |
| Leg IV | 7.2   | 3.7     | 6.1   | 6.8        | 3.8    | 27.6  |

PLE 0.36 (oval), AME–AME 0.13, AME–ALE 0.16, PME–PME 0.78, PME–PLE 0.03, ALE–PLE 0.13, AME–PME 0.05, OQ length 1.33, width 1.72. Clypeus absent. Fovea transverse, straight, width 1.56, 6.74 from anterior edge of carapace. Labium length 1.43, width
1.87, anterior third with 76 cuspules, maxillae with 208–210 cuspules in anterior basal half, a few of them extending beyond the half. Sternum length 5.08, width 4.01, three pairs of sternal sigilla located near coxae III (length 0.44, 0.39 from edge of sternum), coxae II (length 0.28, 0.21 from edge of sternum) and coxae I (length 0.21, 0.26 from edge of sternum). Leg pattern: IV>I>II>III. Incrassate leg segments: femur III.

Scopulae: All tarsi 100% densely scopulate, metatarsi I 40%, metatarsi II 50%, metatarsi III 40%, metatarsi IV 20% scopulate. Tarsal scopulae I undivided, in tarsi II divided by longitudinal line of setae, in tarsi III, IV divided by narrow longitudinal band of setae.

Spination: femora I d 0-0-2 (apical), II d 0-0-1 (apical), III d 0-0-1, IV d 0-0-1 and femora of palps d 0-0-2 (apical); patellae I–IV and patellae of palp 0; tibiae I p 0-1-0, r 0-0-1 (apical, near retrolateral tibial apophysis), II v 0-1-2 (apical), p 0-1-1, III v 0-2-2 (apical), p 0-0-1, r 0-1-1, IV v 1-1-2 (apical), p 0-0-1, r 0-1-1 and tibiae of palps p 0-1-0; metatarsi I v 0-0-1 (apical), II v 0-1-2 (apical), p 0-1-0, III v 2-1-2 (apical), p 2-2-1 (apical), r 0-1-1 (apical), IV v 2-2-1-3 (apical), p 0-1-1 (apical), d 0-0-1 (apical), tarsi I–IV and tarsi of palps 0.

Palpal organ as in Figure 25e, f, embolus with short PA, smooth PS keel is fused with PA. Tegulum with distinct granulated TP, projecting prolaterally. Retrolateral face of cymbium without basal field of spiniform setae. Retrolateral face of palpal tibia with indistinct subapical protuberance covered with cluster of numerous spiniform setae (Figure 10e). Two unequal subapical apophyses are present on tibia I (Figure 27c): a longer retrolateral tibial apophysis with very short, stout spine at apex, a shorter prolateral tibial apophysis with single, well-developed retrolateral basal spine reaching approximately two-thirds of its length. Metatarsus I not sigmoidly curved and without basal or median protuberance on retrolateral face. Metatarsus I flexion is between both tibial apophyses.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 4.74, basal segment 1.46, middle segment 1.46, apical segment 1.82, all digitiform. PMS: 0.88.

Coloration and covering setae: dorsal view (Figure 10a): carapace uniformly dark grey, and covered with pale peripheral pubescence, coxae, trochantera and femora dark grey, and covered with long, pale setae, chelicerae dark grey, anteriorly covered with pale pubescence, patellae, tibiae, metatarsi and tarsi light brown, intermixed with long, pale setae. Patellae I, II and palpal patella with two distinct longitudinal stripes without covering setae, patellae III, IV with two unequal diagonal stripes. Palpal femora, femora I, II with single longitudinal stripe, femora III, IV and tibiae II–IV with two such stripes. Abdomen (Figure 10d) covered with short black setae, intermixed with long, pale setae in posterior part, except central light brown glossy patch in shape of heart. Length of central patch: 3.53, width 3.37. Ventral view (Figure 10b): labium, sternum, coxae and trochantera brown, femora dark grey, patellae, tibiae and metatarsi brown. Abdomen ventrally dark grey, without longitudinal band. Spinnerets light brown.

Table 7. *Cyriocosmus aueri* sp. nov. Female paratype. Lengths of palpal and leg segments.

|       | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|-------|-------|---------|-------|------------|--------|-------|
| Palp  | 6.3   | 4.3     | 4.3   | —          | 4.8    | 19.7  |
| Leg I | 8.8   | 6.3     | 6.4   | 5.3        | 4.5    | 31.3  |
| Leg II| 7.7   | 5.5     | 5.1   | 4.7        | 4.0    | 27.0  |
| Leg III| 6.9 | 4.5     | 4.3   | 4.8        | 4.3    | 24.8  |
| Leg IV| 8.8   | 5.3     | 6.4   | 7.6        | 4.5    | 32.6  |
Female (NMPC P6A-5730) (Figures 7, 11a–e, 29c): Total length: 27.3, carapace length 13.1, width 11.6, chelicerae with 9 teeth on promargin. Cheliceral teeth pattern from basal end: right side: VVVVVV-VVV, 9 big teeth. Left side: VVVV-VVV, 9 big teeth. Anterior eye row procurred, posterior eye row recurved. Eye sizes and interdistances (Figure 11c): AME 0.53 (circular), ALE 0.60 (oval), PME 0.44 (semicircular), PLE 0.50 (oval), AME–AME 0.22, AME–ALE 0.26, PME–PME 1.09, PME–PLE 0.09, ALE–PLE 0.23, AME–PME 0.08, OQ length 1.12, width 2.34. Ocular tubercle: length 1.77, width 2.34, clypeus absent. Fovea transverse, slightly procurred, width 2.0, 8.9 from anterior edge of carapace. Labium length 1.7, width 2.1, anterior half with 84 cuspules, maxillae with 231–243 cuspules. Sternum length 5.9, width 5.4, with three visible pairs of sternal sigilla located near coxae III (length 0.55, 0.52 from edge of sternum), coxae II (length 0.40, 0.47 from edge of sternum) and coxae I (length 0.25, 0.42 from edge of sternum). Leg pattern: IV>I>II>III. All leg segments uniform.

Scopulae: All tarsi 100% densely scopulate, metatarsi I 60%, metatarsi II 50%, metatarsi III 30%, metatarsi IV 15% scopulate. Tarsal scopulae I, II integral, in tarsi III, IV divided by longitudinal band of setae.

Spination: femora I p 0-0-1, II p 0-0-1, III 0, IV 0 and femora of palps 0-0-1; patellae I–IV and patellae of palps 0; tibiae I v 0-0-1 (apical), II v 0-0-2 (apical), III v 0-0-2 (apical), p 1-1-0, r 1-1-0, IV v 0-(1–2)-2 (apical), r 0-(0–1)-1 (apical) and tibiae of palps v 0-0-3 (apical); metatarsi I v 0-0-1 (apical), II v 0-(1–2)-3 (apical), III v 1-2-3 (apical), p 1-1-2 (apical), r 0-1-1, IV v 1-2-1-3 (apical), p 0-1-1, r 0-1-1, tarsi I–IV and tarsi of palps 0.

Spermathecae (Figure 29c): two separated spiral seminal receptacles, distally terminated with sclerotized globular extension, basally with well-developed convex sclerotized plates.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 7.23, basal segment 2.34, middle segment 2.24, apical segment 2.65, all digitiform. PMS: 1.27.

Coloration and covering setae: dorsal view (Figures 7, 11a): carapace uniformly dark grey, and covered with pale peripheral pubescence, coxae, trochantera and femora dark grey, and covered with long, pale setae, chelicerae dark grey, anteriorly covered with pale pubescence, patellae, tibiae, metatarsi and tarsi light brown, intermixed with long, pale setae. Patellae I, II and palpal patellae with two distinct longitudinal stripes without covering setae, patellae III, IV with two unequal diagonal stripes. Tibiae two parallel longitudinal stripes without covering setae. Palpal femur and femur I prolaterally bare. Abdomen (Figure 11d) covered with short black setae, intermixed with long, pale setae in posterior part, except central light brown glossy patch in shape of heart. Length of central patch: 6.1, width 5.9. Ventral view (Figure 11b): sternum, coxae and trochantera light brown, femora grey, patellae, tibiae, metatarsi and tarsi light brown. Abdomen ventrally dark grey, without longitudinal band (Figure 11e). Spinnerets light brown.

**Variability**

The variability in morphology of male palpal bulbs is shown on Figure 31a–d, and in the shape of spermathecae on Figure 33g–h. The variability in the length of the carapace, the number and the arrangement of the cheliceral teeth, the number of labial and maxillary cuspules, the leg pattern and the spination of tibial apophyses is shown in Table 3.
Cyriocosmus hoeferi sp. nov.
(Figures 12–14, 26e–h, 28a, 29d, Tables 8, 9)

Types
Male holotype (INPA 8803, formerly SMNK-ARA 0956) from Brazil, Manaus, Reserva Florestal Ducke, 42°55′40″S, 59°58′10″W, 18 March 1992, Hubert Höfer and Thierry Gasnier col.; one female paratype (SMFD) and one male paratype (SMFD) from Brazil, Amazonas, Manaus, Rio Tarumã, 2 km from the confluence with Rio Negro, 3°01′10.4″S, 60°06′33.6″W, June 1995, N. C. Gordon & R. C. West col. (found in fossorial retreats at base of rotting mossy stump in primary tropical forest).

Etymology
The specific name is a patronym in honour of Dr Hubert Höfer, who found and photographed this new species in the Amazon rainforest near Manaus, Brazil.

Diagnosis
Cyriocosmus hoeferi sp. nov. can be distinguished from all other congeners by its black carapace with two lateral whitish stripes, abdomen with four lateral stripes, joined neither basally nor apically with urticating setae patch, and by the short and wide paraembolic apophysis in male palpal bulb. The spermathecae are without sclerotized basal plates, both spiral necks are basally almost joined.

Distribution (Figures 36, 38)
Known only from the two localities in the Central Brazilian Amazon. The region is originally covered with lowland rainforest.

Description
Male (SMNK-ARA 0956) (Figures 12a, 13, 26g, h, 28a): Total length: 10.3, carapace length 5.4, width 4.6, chelicerae with 8 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vVvv-v-VVV, 4 small and 4 big teeth. Left side: vVvv-v-VVV, 4 small and 4 big teeth. Anterior eye row procurved, posterior eye row recurved. Eye sizes and interdistances (Figure 13f): AME 0.27 (circular), ALE 0.25 (oval), PME 0.16, PLE 0.16 (oval), AME–AME 0.06, AME–ALE 0.05, PME–PME 0.44, PME–PLE 0.03, ALE–PLE 0.11, AME–PM 0.05, OQ length 0.455, width 0.923. Ocular tubercle: length 0.728, width 0.923. Clypeus absent. Fovea transverse, straight, width 0.34, 3.56 from anterior edge of carapace. Labium length 0.62, width 1.09, anterior quarter with 43 cuspules, maxillae with 108–113 cuspules in anterior basal half, a few of them extending beyond the half. Sternum length 2.69, width 2.26, three pairs of sternal sigilla located near coxae III (length 0.19, 0.13 from edge of sternum), coxae II and coxae I. Leg pattern: IV I > II > III. Incrassate leg segments: femur III.

Scopulae: All tarsi 100% densely scopulate, metatarsi I, II 50%, metatarsi III 40%, metatarsi IV 20% scopulate. Tarsal scopulae I integral, in tarsi II, III divided by longitudinal line of setae, in tarsi IV divided by narrow longitudinal band of setae.

Spination: femora I d 0-0-1, II 0, III d 0-0-1, IV 0 and femora of palp 0; patellae I–IV and patellae of palp 0; tibiae I v 1-0-0, r 0-0-1 (apical), II v 3-0-2 (apical), p 0-1-0, III v 0-2-2 (apical), p 0-1-0, r 0-1-0, IV v 0-2-2 (apical), p 0-1-0, r 0-0-1 and tibiae of palps 0; metatarsi
Figure 12. *Cyriocosmus hoeferi* sp. nov. (a) Male holotype (INPA 8803, formerly SMNK-ARA 0956) from Brazil, Manaus, Reserva florestal Adolpho Ducke (photo by Hubert Höfer). (b) Female paratype (SMFD) from Brazil, Manaus, 2 km up Rio Tarumã, off Rio Negro (photo by Rick C. West). Scale bar = 10 mm.
Figure 13. *Cyriocosmus hoeferi* sp. nov., male holotype (INPA 8803, formerly SMNK-ARA 0956) from Brazil Manaus, Reserva florestal Adolpho Ducke. (a) Carapace, coxae and trochantera, dorsal view. (b) Sternum, labium, coxae and trochantera, ventral view. (c–e) Abdomen with striped pattern and the indistinct longitudinal ventral band, (c) lateral, (d) dorsal and (e) ventral view. (f) Ocular tubercle, dorsal view. (g) Cymbium without bulb and tibia of left palp, arrow shows indistinct retrolateral process covered only with setae, retrolateral view. Scale bar = 1 mm.
I v 0-0-1 (apical), II v 0-1-1 (apical), III v 0-1-2 (apical), p 1-1-1, r 0-1-1, IV v 1-2-3 (apical), d 0-2-2, tarsi I–IV and tarsi of palps 0.

Palpal organ as in Figure 26g, h, embolus with short triangular PA reaching approximately half of embolus, smooth triangular PS keel is fused with PA. Tegulum with distinct granulated TP, projecting prolaterally. Retrolateral face of cymbium without basal field of

Figure 14. *Cyriocosmus hoeferi* sp. nov., female paratype (SMFD) from Brazil, Manaus, 2 km up Rio Tarumã, off Rio Negro. (a) Carapace, coxae, trochantera and chelicerae, dorsal view. (b) Sternum, labium, coxae and trochantera, ventral view. (c) Abdomen with striped pattern, lateral view. (d, e) Abdomen, (d) dorsal view, (e) ventral view. (f) Ocular tubercle, dorsal view. Scale bar = 1 mm (a–c, f). Scale bar = 10 mm (d, e).
spiniform setae, prolateral cymbial lobe longer than retrolateral one. Retrolateral face of palpal tibia with distinct subapical protuberance not covered with cluster of numerous spiniform setae but with setae only (Figure 13g). Two unequal subapical apophyses are present on tibia I (Figure 28a): a longer retrolateral tibial apophysis with short, stout subapical spine, a shorter prolateral tibial apophysis with single, well-developed retrolateral spine at base and approximately of the same length as prolateral tibial apophysis. Metatarsus I not sigmoidly curved and without basal or median protuberance on retrolateral face. Metatarsus I flexion is between both tibial apophyses.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 4.00, basal segment 1.27, middle segment 1.01, apical segment 1.72, all digitiform. PMS: 0.65.

Coloration and covering setae: dorsal view (Figures 12a, 13a): carapace black with yellowish peripheral stripes, 0.4–0.5 wide, joined neither anteriorly nor posteriorly, coxae, trochantera, femora, patellae, tibiae and metatarsi black with longitudinal whitish stripes, tarsi black, chelicerae black, dorsally covered with yellowish pubescence. Patellae I, II and palpal patella with two indistinct longitudinal stripes without covering setae, patellae III, IV with single indistinct diagonal stripe. Abdomen (Figure 13d) covered with short black setae, intermixed with long, dark setae in posterior part, except central oval reddish patch and four pale lateral stripes, joined neither basally nor apically with central patch. Length of central patch: 2.08, width 1.88. Ventral view (Figure 13b): coloration damaged by long-term preservation in alcohol. Abdomen ventrally with indistinct longitudinal band (Figure 13e). Spinnerets grey.

Female (SMFD) (Figures 12b, 14a–14f, 29d): Total length: 14.1, carapace length 6.2, width 5.6, chelicerae with 8 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vVVVVVV, 1 small and 7 big teeth. Left side: vVVVVVV, 1 small and 7 big teeth. Anterior eye row slightly procured, posterior eye row recurved. Eye sizes and interdistances (Figure 14f): AME 0.29 (circular), ALE 0.30 (oval), PME 0.16, PLE 0.21 (oval), AME–AME 0.08, AME–ALE 0.10, PME–PME 0.57, PME–PLE 0.06, ALE–PLE 0.13, AME–PME 0.08, OQ length 0.59, width 1.21. Ocular tubercle: length 0.86, width 1.21, clypeus absent.

### Table 8. *Cyriocosmus hoeferi* sp. nov. Male holotype from Brazil, Manaus, Reserva Ducke. Lengths of palpal and leg segments.

|       | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|-------|-------|---------|-------|------------|--------|-------|
| Palp  | 3.0   | 1.6     | 2.3   | —          | 0.7    | 7.6   |
| Leg I | 4.6   | 2.1     | 3.4   | 3.5        | 2.7    | 16.3  |
| Leg II| 4.3   | 2.3     | 3.1   | 3.2        | 2.4    | 15.3  |
| Leg III| 3.6  | 2.0     | 2.6   | 3.1        | 2.5    | 13.8  |
| Leg IV| 5.0   | 2.1     | 4.2   | 5.1        | 2.9    | 19.3  |

### Table 9. *Cyriocosmus hoeferi* sp. nov. Female paratype from Brazil, Manaus, Rio Tarumá. Lengths of palpal and leg segments.

|       | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|-------|-------|---------|-------|------------|--------|-------|
| Palp  | 3.0   | 1.6     | 2.3   | —          | 0.7    | 7.6   |
| Leg I | 4.6   | 2.1     | 3.4   | 3.5        | 2.7    | 16.3  |
| Leg II| 4.3   | 2.3     | 3.1   | 3.2        | 2.4    | 15.3  |
| Leg III| 3.6  | 2.0     | 2.6   | 3.1        | 2.5    | 13.8  |
| Leg IV| 5.0   | 2.1     | 4.2   | 5.1        | 2.9    | 19.3  |
Fovea transverse, procurved, width 0.8, 3.9 from anterior edge of carapace. Labium length 0.9, width 1.2, anterior quarter with 48 cuspules, maxillae with 130 cuspules. Oval sternum, length 3.3, width 2.9, with three visible pairs of sternal sigilla located near coxae III (length 0.31, 0.16 from edge of sternum), coxae II and coxae I. Leg pattern: IV>l>II>I. All leg segments uniform, except slightly incrassate femora III.

Scopulae: All tarsi 100% densely scopulate, metatarsi I 70%, metatarsi II, III 60%, metatarsi IV 15% scopulate. Tarsal scopulae I integral, in tarsi II divided by longitudinal line of setae, in tarsi III divided by longitudinal band of setae, in tarsi IV divided by wide band of setae.

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

Spermathecae (Figure 29d): two separated spiral seminal receptacles, distally terminated with shallow caliciform extension, without sclerotized basal plates, basally almost joined.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 5.07, basal segment 1.69, middle segment 1.56, apical segment 1.82, all digitiform. PMS: 0.78.

Coloration and covering setae: dorsal view (Figures 12b, 14a): carapace black with two narrow whitish lateral stripes, joined neither anteriorly nor posteriorly, coxae, trochantera, femora, patellae, tibiae and metatarsi black with whitish longitudinal stripes. Tarsi black. All femora with two longitudinal stripes without covering setae, one of them on retrolateral face, the other on dorsal face. Patellae I, II with two longitudinal stripes, patellae III, IV with unequal diagonal stripes without covering setae. Femur I prolaterally bare. Abdomen black (Figure 14d), except central oval reddish glossy patch. Length of central patch: 3.1, width 2.5. Ventral view (Figure 14b): coloration damaged by long-term preservation in alcohol. Abdomen ventrally with indistinct longitudinal band (Figure 14e).

**Variability**

The variability in morphology of male palpal bulbs is shown on Figure 26e–h. The PS keel in the male from Rio Tarumã is not so pronounced as in the male holotype where it is subtriangular. Further comparative study of the specimens from both populations isolated by Rio Tarumã is necessary. The variability in the length of the carapace, the number and the arrangement of the cheliceral teeth, the number of labial and maxillary cuspules, the leg pattern and the spination of tibial apophyses is shown in Table 3.

**Cyriocosmus williamlamari** sp. nov.
(Figures 15, 16, 29g, Table 10)

**Types**

Female holotype (SMFD) from Venezuela, Apure, Rio Matiyure, Hato El Cedral, 7°28'36.12"N, 69°20'43.08"W, 4 September 1994, William Lamar col., found in moist savannah adjacent to gallery forest fragment in the late afternoon, under piece of wood.
Etymology
The specific name is a patronym in honour of Dr William Lamar, who found this new species in Venezuela whilst filming with the BBC.

Diagnosis
Cyriocosmus williamlamari sp. nov. can be distinguished from all other congeners by the reddish-brown carapace with the black caput, the abdomen with four lateral stripes, apically not joined with urticating setae patch, three clear stripes are basally joined, the fourth stripe is located near spinnerets, and by the presence of the dark longitudinal ventral band. Spermathecae have very well-developed convex basal plates.

Distribution (Figure 36)
Known only from the type locality.

Description
Female (SMFD) (Figures 15–16f, 29g): Total length: 13.6, carapace length 5.9, width 4.7, chelicerae with 9 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vVvvV-VVV, 5 small and 4 big teeth. Left side: vVvvV-VVV, 4 small and 5 big teeth. Anterior eye row procurred, posterior eye row recurved. Eye sizes and interdistances (Figure 16f): AME 0.25 (circular), ALE 0.33 (oval), PME 0.16 (U-shaped), PLE 0.29 (oval), AME–AME 0.12, AME–ALE 0.10, PME–PME 0.47, PME–PLE 0.03, ALE–PLE 0.05, AME–PME 0.05, OQ length 0.56, width 1.07. Ocular tubercle: length 0.83, width 1.07, clypeus absent.
Fovea transverse, straight, width 0.75, 3.9 from anterior edge of carapace. Labium length 0.9, width 1.2, anterior third with 44 cuspules, maxillae with 124–137 cuspules. Sternum length 2.9, width 2.5, with three visible pairs of sternal sigilla located near coxae III (length 0.29, 0.18 from edge of sternum), coxae II and coxae I. Leg pattern: IV>I>II>III. All leg segments uniform, except slightly incrassate femora III.

Figure 16. Cyriocosmus williamlamari sp. nov., female holotype (SMFD) from Venezuela, Apure, Rio Caicara, Hato El Cedral. (a) Carapace, coxae, trochantera and chelicerae, dorsal view. (b) Sternum, labium, coxae and trochantera, ventral view. (c–e) Abdomen with striped pattern, (c) lateral view, (d) dorsal view, (e) ventral view. (f) Ocular tubercle, dorsal view. Scale bar = 1 mm.
Scopulae: All tarsi 100% densely scopulate, metatarsi I 60%, metatarsi II 50%, metatarsi III 30%, metatarsi IV 15% scopulate. Tarsal scopulae I, II integral, in tarsi III divided by narrow longitudinal band of setae, in tarsi IV divided by wide longitudinal band of setae.

Spination: femora I–IV and femora of palps 0; patellae I–IV and patellae of palps 0; tibiae I 0, II 0, III v 0-1-2 (apical), p 0-1-0, r 0-1-0, IV v 0-1-2 (apical), r 1-0-1 and tibiae of palps v 0-0-2 (apical); metatarsi I v 0-0-1 (apical), II v 1-0-1 (apical), III v 0-2-3 (apical), p 1-1-1, r 0-1-1, IV v 0-3-3 (apical), p 0-1-1, r 0-(0–1)-1, tarsi I–IV and tarsi of palps 0.

Spermathecae (Figure 29g): two separated spiral seminal receptacles, distally terminated with caliciform extension, basally with very well developed convex sclerotized plates.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 2.8, basal segment 1.07, middle segment 0.66, apical segment 1.07, all digitiform. PMS: 0.60.

Coloration and covering setae: dorsal view (Figures 15, 16a): carapace reddish-brown, and covered with golden pubescence, with black caput, coxae and trochantera reddish-brown, chelicerae dark, femora black, patellae, tibiae, metatarsi and tarsi dark, dorsally with whitish longitudinal stripes. Patellae I, II and palpal patella with two unequal parallel longitudinal stripes without covering setae, patellae III, IV with single diagonal stripe. Palpal femur and femur I prolaterally bare. Abdomen (Figure 16d) covered with short black setae, intermixed with long, pale setae in posterior part, except central reddish-brown glossy patch in shape of heart and four lateral stripes on each side, not reaching the patch, the first three lateral stripes basally joined, the fourth pair basally not joined. Length of central patch: 2.2, width 1.8. Ventral view (Figure 16b): labium, sternum, coxae and trochantera reddish-brown, femora, patellae, tibiae and metatarsi dark. Abdomen ventrally with dark longitudinal band (Figure 16e). Spinnerets light brown.

**Cyriocosmus nicholausgordoni** sp. nov.

(Figures 17–19, 28c, 32c, d, 35b, Tables 11, 12)

**Types**

Male holotype (SMFD) from Venezuela, State of Amazonas, Puerto Ayacucho, Pozo Crystal (inside fallen rotten damp log), 15 February 1995, R. C. West col.; one female paratype (SMFD), the same data as in the male holotype.

**Etymology**

The specific name is a patronym in honour of the late Nick Gordon. Nick Gordon found this new species together with the collector while making a documentary about tarantulas.
Figure 17. *Cyriocosmus nicholausgordoni* sp. nov. from Venezuela, Amazonas, Puerto Ayacucho, Pozo Crystal. (a) Male holotype (SMFD), dorsal view. (b) Female paratype (SMFD), dorsal view. Scale bar = 10 mm. Photo by Rick C. West.
Figure 18. *Cyriocosmus nicholausgordoni* sp. nov., male holotype (SMFD) from Venezuela, Amazonas, Puerto Ayacucho, Pozo Crystal. (a) Carapace, dorsal view. (b) Sternum, labium, coxae, maxillae and trochantera, ventral view. (c, d) Palpal tibia and cymbium without bulb, (c) retrolateral view, (d) ventral view. (e) *Cyriocosmus leetzi* Vol, 1999, male (RKCP 0579), Venezuela, Táchira, San Cristobal, Agua Dulce. Palpal tibia with distinct process covered with numerous spiniform setae, retrolateral view. Arrows show the basal fields of spiniform setae on retrolateral face of cymbium. Scale bar = 1 mm (c, d, e). Scale bar = 10 mm (a, b).
Figure 19. *Cyriocosmus nicholausgordoni* sp. nov., female paratype (SMFD) from Venezuela, Amazonas, Puerto Ayacucho, Pozo Crystal. (a) Carapace, coxae, trochantera and chelicerae, dorsal view. (b) Sternum, labium, coxae, maxillae and trochantera, ventral view. (c) Abdomen with striped pattern, dorsal view. (d) Ocular tubercle, dorsal view. (e) *Cyriocosmus nicholausgordoni* sp. nov., male holotype (SMFD), Venezuela, Amazonas, Puerto Ayacucho, Pozo Crystal. Ocular tubercle, dorsal view. Scale bar = 1 mm (d, e). Scale bar = 10 mm (a–c).
**Diagnosis**

*Cyriocosmus nicholausgordoni* sp. nov. can be distinguished from all other congeners, except *C. leetzi* Vol, 1999, by its reddish-brown carapace with the black caput and seven radially arranged black spots in the thoracic area, and by the presence of the dark longitudinal ventral band. Males have short paraembolic apophysis and weakly developed prolateral superior keel in palpal bulb morphology, female spermathecae have a caliciform extension and convex basal plates. From *C. leetzi* it differs by the black femora without whitish longitudinal stripes on the dorsal face and the presence of the fourth pair of very narrow lateral stripes near spinnerets. Males also differ by the absence of retrolateral process in palpal tibia, instead there is only a cluster of numerous spiniform setae.

**Distribution** *(Figure 36)*

Known only from the type locality. The region is originally covered with the Amazon rainforest.

**Description**

Male (SMFD) *(Figures 17a, 18a–d, 19e, 28c, 32c, d, 35b)*: Total length: 16.7, carapace length 7.9, width 6.8, chelicerae with 8 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vV-VVVVVV, 1 small and 7 big teeth. Left side: vV-VVVVVV, 1 small and 7 big teeth. Anterior eye row slightly procurred, posterior eye row recurved. Eye sizes and interdistances *(Figure 19e)*: AME 0.33 (circular), ALE 0.32 (oval), PME 0.22 (oval), PLE 0.31 (oval), AME–AME 0.17, AME–ALE 0.10, PME–PME 0.64, PME–PLE 0.03, ALE–PLE 0.12, AME–PME 0.06, OQ length 0.637, width 1.235. Ocular tubercle: length 1.092, width 1.235. Clypeus absent. Fovea transverse, straight, width 0.78, 5.45 from anterior edge of carapace. Labium length 1.04, width 1.35, anterior third with 45 cuspules, maxilla with 147–149 cuspules in anterior basal half. Sternum length 4.05, width 3.15, three pairs of sternal sigilla located near coxae III (length 0.26, 0.44 from edge of sternum), coxae II and coxae I. Leg pattern: IV>I>II>III. Incrassate leg segments: slightly incrassate femur III.

### Table 11. *Cyriocosmus nicholausgordoni* sp. nov. Male holotype from Venezuela, Amazonas, Puerto Ayacucho, Pozo Crystal. Lengths of palpal and leg segments.

| Segments | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|----------|-------|---------|-------|------------|--------|-------|
| Palp     | 3.9   | 2.5     | 3.2   | —          | 1.4    | 11.0  |
| Leg I    | 6.8   | 4.1     | 5.0   | 5.1        | 3.5    | 24.5  |
| Leg II   | 6.0   | 3.4     | 4.3   | 4.4        | 3.1    | 21.2  |
| Leg III  | 5.2   | 2.9     | 3.4   | 4.4        | 3.2    | 19.1  |
| Leg IV   | 6.7   | 3.4     | 5.3   | 6.5        | 3.7    | 25.6  |

### Table 12. *Cyriocosmus nicholausgordoni* sp. nov. Female paratype from Venezuela, Amazonas, Puerto Ayacucho, Pozo Crystal. Lengths of palpal and leg segments.

| Segments | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|----------|-------|---------|-------|------------|--------|-------|
| Palp     | 4.4   | 3.1     | 3.2   | —          | 3.6    | 14.3  |
| Leg I    | 5.6   | 4.6     | 5.0   | 4.2        | 3.2    | 22.6  |
| Leg II   | 5.3   | 3.9     | 4.0   | 3.9        | 3.4    | 20.5  |
| Leg III  | 5.1   | 3.5     | 3.0   | 4.1        | 3.6    | 19.3  |
| Leg IV   | 6.5   | 3.9     | 5.0   | 5.9        | 3.8    | 25.1  |
Scopulae: All tarsi 100% densely scopulate, metatarsi I 100%, metatarsi II 80%, metatarsi III 50%, metatarsi IV 35% scopulate. Tarsal scopulae I integral, in tarsi II divided by longitudinal line of setae, in tarsi III divided by narrow longitudinal band of setae, in tarsi IV divided by wide longitudinal band of setae.

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

Palpal organ as in Figure 32c, d, embolus with short PA reaching approximately one sixth of embolus, smooth PS keel is not fused with PA. Tegulum with distinct granulated TP, projecting prolaterally. Retrolateral face of cymbium with basal field of spiniform setae. Protuberance on retrolateral face of palpal tibia is absent, instead there is only a cluster of numerous spiniform setae (Figure 18c, d). Two unequal subapical apophyses are present on tibia I (Figure 28c): a longer retrolateral tibial apophysis with single subapical spine on dorsal side, a shorter prolateral tibial apophysis with single, well-developed retrolateral basal spine reaching approximately two-thirds of its length. Metatarsus I not sigmoidly curved and without basal or median protuberance on retrolateral face. Metatarsus I flexion is between both tibial apophyses.

Abdomen: urticating setae of type III are located in central patch. PLS: length 3.69, basal segment 1.30, middle segment 0.83, apical segment 1.56, all digitiform. PMS: 0.73.

Coloration and covering setae: dorsal view (Figures 17a, 18a): carapace reddish-brown with black caput and seven radially arranged black spots in thoracic area, coxae and trochantera reddish-brown, femora black, patellae, tibiae, metatarsi black with longitudinal whitish stripes, tarsi black, chelicerae dorsally covered with whitish pubescence. Patellae I, II and palpal patella with two longitudinal stripes, patellae III, IV with two unequal diagonal stripes. Abdomen black with central reddish-brown patch of urticating setae and three pairs of clear lateral stripes, basally joined, the second and the third pair is joined with central patch. The fourth pair of very narrow stripes is located near spinnerets. Length of central patch: 3.46, width 3.26. Ventral view (Figure 18b): labium, sternum, coxae and trochantera reddish-brown, femora, patellae, tibiae, metatarsi and tarsi dark grey. Abdomen ventrally with dark longitudinal band. Spinnerets fawn.

Female (SMFD) (Figures 17b, 19a–19d, 35b): Total length: 21.5, carapace length 10.0, width 7.8, chelicerae with 9–10 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vvvvvVVV, 6 small and 3 big teeth. Left side: vvvvvVvVvV, 7 small and 3 big teeth. Anterior eye row slightly procurved, posterior eye row recurved. Eye sizes and interdistances (Figure 19d): AME 0.38 (circular), ALE 0.38 (oval), PME 0.26 (oval), PLE 0.29 (oval), AME–AME 0.20, AME–ALE 0.13, PME–PME 0.74, PME–PLE 0.05, ALE–PLE 0.17, AME–PME 0.11, OQ length 0.74, width 1.46. Ocular tubercle: length 1.27, width 1.46, clypeus absent. Fovea transverse, straight, width 1.3, 7.0 from anterior edge of carapace. Labium length 1.30, width 1.85, anterior third with 36 cusuples, maxillae with 159–163 cusuples. Sternum length 5.0, width 4.2, with three visible pairs of sternal sigilla located near coxae III (length 0.42, 0.68 from edge of sternum), coxae II (length 0.46, 0.44 from edge of sternum) and coxae I. Leg pattern: IV>I>II>III. All leg segments uniform.
Scopulae: All tarsi 100% densely scopulate, metatarsi I 90%, metatarsi II 70%, metatarsi III 60%, metatarsi IV 30% scopulate. Tarsal scopulae I, II integral, only with thin longitudinal line of setae, tarsal scopulae III, IV divided by longitudinal band of setae.

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

Spermathecae (Figure 35b): two separated spiral seminal receptacles, distally terminated with caliciform extension, basally with convex sclerotized plates.

Abdomen: urticating setae of type III are located in central U-shaped patch. PLS (damaged): length 4.9, basal segment 1.46, middle segment 1.33, apical segment 2.11, all digitiform. PMS: 0.94.

Coloration and covering setae: dorsal view (Figures 17b, 19a): carapace reddish-brown with black caput and seven radially arranged, fused black spots in thoracic area, coxae and trochantera reddish-brown, femora black with only triangular spot at apex, patellae, tibiae and metatarsi black with whitish longitudinal stripes. Tarsi black. Patellae I, II with two longitudinal stripes, patellae III, IV with two unequal diagonal stripes. Abdomen (Figure 19c) black except central U-shaped reddish-brown patch and three pairs of clear reddish-brown lateral stripes, joined both basally and apically with central U-shaped patch, complemented by fourth pair of very narrow stripes near spinnerets. Length of central patch: 6.7, width 4.5. Ventral view (Figure 19b): labium, sternum, coxae and trochanera reddish-brown, femora, patellae, tibiae, metatarsi and tarsi dark grey. Abdomen ventrally with dark longitudinal band.

_Cyriocosmus giganteus_ sp. nov.  
(Figures 20, 25g, h, 28b, Table 13)

**Types**
Male holotype (MUSM-ENT 0505244) from Peru, Loreto, Estación Biológica Quebrada Blanco, 4°21'S, 73°09'W, 11 September 2007, Peter Gottleuber col.

**Etymology**
The specific name, _giganteus_ (adjectivum, Latin) means giant, and refers to the size of this new species and to the fact that this male holotype is so far the largest known male in the genus.

**Diagnosis**
_Cyriocosmus giganteus_ sp. nov. can be distinguished from all other congeners by the uniformly coloured carapace, abdomen without stripes and by the male palpal bulb without prolateral superior keel.

**Distribution** (Figures 36, 37)
Known only from the type locality.
Figure 20. *Cyriocosmus giganteus* sp. nov., male holotype (MUSM-ENT 0505244) from Peru, Loreto, Estación Quebrada Blanco. (a) Carapace, dorsal view. (b) Sternum, labium, coxae and maxillae, ventral view. (c) Ocular tubercle, dorsal view. (d, e) Abdomen without striped pattern, (d) dorsal view, (e) ventral view. (f) Cymbium and tibia of right palp, arrow shows indistinct retrolateral process covered with numerous spiniform setae, retrolateral view. Scale bar = 1 mm (c, f). Scale bar = 10 mm (a, b, d, e).
**Table 13.** *Cyriocosmus giganteus* sp. nov. Male holotype from Peru, Loreto, Quebrada Blanco.

| Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|-------|---------|-------|------------|--------|-------|
| Palp  | 7.4     | 4.2   | 5.7        | —      | 2.6   | 19.9  |
| Leg I | 12.2    | 7.1   | 9.2        | 9.8    | 6.5   | 44.8  |
| Leg II| 10.7    | 5.7   | 8.0        | 8.8    | 5.8   | 39.0  |
| Leg III| 9.2   | 5.2   | 6.1        | 7.9    | 5.5   | 33.9  |
| Leg IV| 12.0    | 6.1   | 9.7        | 12.0   | 6.6   | 46.4  |

**Description**

Male (MUSM-ENT 0505244) (Figures 20, 25g, h, 28b): Total length: 26.7, carapace length 14.5, width 11.9, chelicerae with 10 teeth on promargin. Cheliceral teeth pattern from basal end: right side: vvvvv-vVVV, 7 small and 3 big teeth. Left side: vvvvv-VVVV, 6 small and 4 big teeth. Anterior eye row procured, posterior eye row recurved. Eye sizes and interdistances (Figure 20c): AME 0.53 (circular), ALE 0.49 (oval), PME 0.34 (oval), PLE 0.39 (oval), AME–AME 0.13, AME–ALE 0.17, PME–PME 1.01, PME–PLE 0.03, ALE–PLE 0.17, AME–PME 0.05, OQ length 0.92, width 1.95. Ocular tubercle: length 1.72, width 1.95, clypeus absent. Fovea transverse, straight, width 2.0, 9.0 from anterior edge of carapace. Labium length 1.69, width 2.14, anterior half with 101 cuspules, maxillae with 306–325 cuspules. Oval sternum, length 6.39, width 5.45, with three visible pairs of sternal sigilla located near coxae III (length 0.59, 0.88 from edge of sternum), coxae II (length 0.45, 0.70 from edge of sternum) and coxae I (length 0.29). Leg pattern: IV>I>II>III. Incrassate leg segments: femur III.

Scopulae: All tarsi 100% densely scopulate, metatarsi I, II 60%, metatarsi III 50%, metatarsi IV 25% scopulate. Tarsal scopulae I, II integral, in tarsi III divided by longitudinal line of setae, in tarsi IV divided by longitudinal band of setae.

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

Palpal organ as in Figure 25g, h, embolus with short narrow PA reaching approximately one-third of embolus, PS keel is absent. Tegulum with distinct TP, projecting prolaterally. Retrolateral face of cymbium without basal field of spiniform setae, both cymbial lobes approximately of the same length. Retrolateral face of palpal tibia with indistinct subapical protuberance covered with cluster of numerous spiniform setae (Figure 20f). Two unequal subapical apophyses are present on tibia I (Figure 28b): a longer retrolateral tibial apophysis with short, stout subapical spine on dorsal face, a shorter prolateral tibial apophysis, apically flattened, with single, well-developed retrolateral spine at base and approximately of the same length as prolateral tibial apophysis. Metatarsus I not sigmoidly curved and without basal or median protuberance on retrolateral face. Metatarsus I flexion is between both tibial apophyses.

Abdomen: urticating setae of type III are located in central patch. PLS: length 6.91, basal segment 2.03, middle segment 1.78, apical segment 3.10, all digitiform. PMS: 1.43.
Coloration and covering setae: dorsal view (Figure 20a): carapace dark brown, and covered with golden pubescence, coxae and trochantera covered with golden pubescence, chelicerae black, dorsally covered with golden pubescence, femora black, patellae, tibiae, metatarsi and tarsi dark brown, without whitish longitudinal stripes. Patellae I, II and palpal patella with two longitudinal parallel stripes, patellae III, IV with single diagonal stripe. Abdomen (Figure 20d) covered with short black setae, intermixed with long, pale setae in posterior part, except central yellowish brown patch. Length of central patch: 5.4, width 5.6. Ventral view (Figure 20b): labium and maxillae reddish-brown, sternum, coxae and trochantera dark brown, femora black, patellae, tibiae and metatarsi dark brown. Abdomen ventrally without dark longitudinal band (Figure 20e). Spinnerets brown.

**Cyriocosmus sellatus** (Simon, 1889)
(Figures 21, 26c, d, 32e, f)

*Hapalopus sellatus* Simon, 1889: 218.
*Cyriocosmus sellatus*: Simon, 1903: 929, figure 1082. Schiapelli and Gerschman de Pikelin, 1973: 67, figures 16–22. Pérez-Miles *et al.*, 1996: 48, figure 16. Pérez-Miles, 1998: 100. Fukushima *et al.*, 2005: 11, figures 19, 20, 32, 49.

**Types**
Female holotype (MNHN 8102, newly MNHN AR 12330), male allotype (MNHN 8102, newly MNHN AR 12331), immature male (MNHN 8102, newly MNHN AR 12332) from Brazil, Upper Amazonas, São Paulo de Olivença, Fonte Boa. Male allotype examined. The designation of the types follows Schiapelli and Gerschman de Pikelin (1973) and differs from the records in MNHN made by Gerschman de Pikelin and Schiapelli.

**Diagnosis**
The species can be distinguished from all other congeners by lacking the striped pattern on dorsal abdomen (Figure 21c) and by the black carapace with two pale and wide lateral stripes (Figure 21a), in combination with the yellowish longitudinal stripes on the dorsal face of the legs in females. The males have a long paraembolic apophysis and indistinct prolateral superior keel in palpal bulb (Figures 21f, 26c, d, 32e, f).

**Distribution** (Figures 36, 37)
Known only from Brazil, Upper Amazonas, São Paulo de Olivença, Fonte Boa, and newly from Peru, Loreto, Yanamono, 80 km east of Iquitos.

**Notes**
All types are uniformly light brown due to the long-term preservation in alcohol. Simon (1889) mentioned in the original description that females of *C. sellatus* have yellowish longitudinal stripes on the dorsal faces of the legs and pointed out the presence of two pale and wide lateral stripes on the carapace as well. These traits are newly included in the diagnosis. It is supposed that the yellowish longitudinal stripes are present in males.
as well and are obviously much more distinct, as in males of other species with pale longitudinal stripes on the legs.

Figure 21. Cyriocosmus sellatus (Simon, 1889), male (MUSM-ENT 0504034) from Peru, Loreto, Yanamono. (a) Carapace, dorsal view. (b) Sternum, labium, coxae, maxillae and trochantera, ventral view. (c, d) Abdomen without striped pattern, (c) dorsal view, (d) ventral view. (e) Ocular tubercle, dorsal view. (f) Cymbium and tibia of left palp, arrow shows distinct retrolateral process covered with numerous spiniform setae, retrolateral view. Scale bar = 1 mm (b, e, f). Scale bar = 10 mm (a, c, d).
Cyriocosmus ritae Pérez-Miles, 1998
(Figures 22–24, 26a, b, 27d, 29f, 33i, j, Tables 14, 15)

Cyriocosmus ritae: Pérez-Miles, 1998: 98, figures 14–20. Fukushima et al., 2005: 11, figures 17, 18, 31, 48.

Types
Male holotype (IB 4951) from Brazil, Acre, Rio Branco, Reserva florestal do Humaitá, 11 April 1996, team of collectors from IB and SMNK (A. D. Brescovit, A. Bonaldo, H. Metzner, H. Höfer). Female unknown. Male holotype not examined, only photo provided by Dr Hubert Höfer.

Diagnosis (from Fukushima et al. 2005):
The males differ from all other congeners by having incrassate tibia I (Figure 24b) and a median protuberance on the retrolateral metatarsus I (Figure 24b).

Distribution and natural history (Figures 36, 37)
Known from the type locality in Brazil, Acre, Rio Branco, Reserva florestal do Humaitá, as well as from Peru, Colonia, Rio Callería, and newly from Iquitos, the Amazon River, Las Palmas, a small village near the Amazon River, approximately 60 km east from Iquitos. In the latter locality the spiders showed an arboreal lifestyle. Approximately 60% of 25 specimens were found 1–2 m up inside the silked leaves of Cecropia tree (Urticaceae). The rest of the specimens were found on the trunks, both in a tangle of adherent root fibres in retreats 0.5–1.5 m high, and also inside tree cavities approximately 2 m high.

Description

![Figure 22. Cyriocosmus ritae Pérez-Miles, 1998 from Peru, Iquitos, the Amazon River, Las Palmas. (a) Male (NMPC P6A-5731, formerly RKCP 0347), dorsal view. (b) Female (NMPC P6A-5732, formerly RKCP 0348) and (c) juvenile female (RKCP 0523), dorsal view. Scale bar = 10 mm.](image-url)
Male (NMPC P6A-5731, formerly RKCP 0347) (Figures 22a, 24a, b, 26a, b, 27d): Total length: 11.4, carapace length 5.5, width 5.1, chelicerae with 7 teeth on promargin, with granulation near the first two basal teeth. Cheliceral teeth pattern from basal end: right side: Vvvv-VVv. Left side: Vvvv-VVVv. Anterior eye row slightly procurved, posterior eye...
row recurved. Eye sizes and interdistances: AME 0.29 (circular), ALE 0.33 (oval), PME 0.18 (almost circular except outer fifth which is cut), PLE 0.29 (oval), AME–AME 0.09, AME–ALE 0.09, PME–PME 0.52, PME–PLE 0.05, ALE–PLE 0.07, AME–PME 0.01, OQ length 0.55, width 1.14. Clypeus absent. Fovea transverse, straight, width 0.55, 3.61 from anterior edge of carapace. Labium length 0.74, width 1.05, anterior third with 44 cuspules, maxillae with

**Figure 24.** *Cyriocosmus ritae* Pérez-Miles, 1998, male (NMPC P6A-5731, formerly RKCP 0347) from Peru, Iquitos, the Amazon River, Las Palmas. (a) Palpal tibia with cymbium, retrolateral view. Arrow 1 shows retrolateral process, apically covered with spiniform setae. Arrow 2 shows spiniform setae on retrolateral cymbial lobe. (b) Tibia, metatarsus and tarsus of right leg I. Arrow 3 shows small median protuberance on the retrolateral face of metatarsus I. Scale bar = 1 mm.

**Table 14.** *Cyriocosmus ritae* Pérez-Miles, 1998. Male from Peru, Iquitos, Las Palmas. Lengths of palpal and leg segments.

|       | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|-------|-------|---------|-------|------------|--------|-------|
| Palp  | 2.8   | 1.5     | 2.2   | —          | 1.0    | 7.5   |
| Leg I | 5.1   | 2.4     | 3.6   | 4.5        | 2.5    | 18.1  |
| Leg II| 4.5   | 2.2     | 3.6   | 3.6        | 2.1    | 16.0  |
| Leg III| 3.6 | 2.0    | 2.4   | 3.0        | 2.0    | 13.0  |
| Leg IV| 4.8   | 2.3     | 4.0   | 4.4        | 2.4    | 17.9  |
Table 15. *Cyriocosmus ritae* Pérez-Miles, 1998. Female from Peru, Iquitos, Las Palmas. Lengths of palpal and leg segments.

|        | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|--------|-------|---------|-------|------------|--------|-------|
| Palp   | 3.3   | 2.3     | 2.5   | —          | 2.9    | 11.0  |
| Leg I  | 5.2   | 3.3     | 3.8   | 3.4        | 2.9    | 18.6  |
| Leg II | 4.3   | 2.9     | 3.0   | 2.9        | 2.7    | 15.8  |
| Leg III| 4.0   | 2.3     | 2.4   | 3.1        | 2.4    | 14.2  |
| Leg IV | 5.3   | 2.8     | 4.0   | 4.6        | 2.5    | 19.2  |

Figure 25 (a, b) *Cyriocosmus peruvianus* sp. nov., male holotype (NMPC P6A-5725, formerly RKCP 0480) from Peru, Iquitos, Rio Nanay. Morphology of right male palpal bulb, (a) prolateral view, (b) retrolateral view, basal sclerite damaged. (c, d) *Cyriocosmus itayensis* sp. nov., male holotype (NMPC P6A-5727, formerly RKCP 0366) from Peru, Iquitos, Rio Itaya. Morphology of right male palpal bulb, (c) prolateral view, (d) retrolateral view. (e, f) *Cyriocomus aueri* sp. nov., male holotype (NMPC P6A-5729, formerly RKCP 0245) from Peru, Iquitos, Nuevo Umaral. Morphology of right palpal bulb, (e) prolateral view, (f) retrolateral view. (g, h) *Cyriocosmus giganteus* sp. nov., male holotype (MUSM-ENT 0505244) from Peru, Loreto, Estación Quebrada Blanco. Morphology of left male palpal bulb, (g) retrolateral view, (h) prolateral view. Scale bar = 1 mm.
139 cuspules. Almost rounded sternum, length 2.87, width 2.54, with three difficult-to-notice pairs of sternal sigilla located near coxae I, II and III. Leg pattern: I>IV>II>III. Incrassate leg segments: tibia I, slightly femur III.

Scopulae: All tarsi 100% densely scopulate, metatarsi I 65%, metatarsi II 50%, metatarsi III 40%, metatarsi IV 20% scopulate. Tarsal scopulae I, II integral, in tarsi III, IV divided by narrow longitudinal band of setae.

Figure 26. (a, b) *Cyriocosmus ritaee* Pérez-Miles, 1998, male (NMPC P6A-5731, formerly RKCP 0347) from Peru, Iquitos, the Amazon River, Las Palmas. Morphology of right male palpal bulb, (a) prolateral view, (b) retrolateral view. (c, d) *Cyriocosmus sellatus* (Simon 1889), male allotype (MNHN AR 12331, formerly MNHN 8102) from Upper Amazonas. Morphology of right male palpal bulb, (c) prolateral view, (d) retrolateral view. (e, f) *Cyriocosmus hoeferi* sp. nov., male paratype (SMFD) from Brazil, Manaus, Rio Tarumá. Morphology of right male palpal bulb, (e) prolateral view, (f) retrolateral view. (g, h) *Cyriocosmus hoeferi* sp. nov., male holotype (INPA 8803, formerly SMNK-ARA 0956) from Brazil, Manaus, Reserva Ducke. Morphology of left male palpal bulb, (g) prolateral view, (h) retrolateral view. Scale bar = 1 mm.
Figure 27. (a) Cyriocosmus peruvianus sp. nov., male holotype (NMPC P6A-5725, formerly RKCP 0480) from Peru, Iquitos, Rio Nanay. Right tibia I with apophyses, ventral view. (b) Cyriocosmus itayensis sp. nov., male holotype (NMPC P6A-5727, formerly RKCP 0366) from Peru, Iquitos, Rio Itaya. Right tibia I with apophyses, ventral view. (c) Cyriocosmus aueri sp. nov., male holotype (NMPC P6A-5729, formerly RKCP 0245) from Peru, Iquitos, Nuevo Umaral. Left tibia I with apophyses, ventral view. (d) Cyriocosmus ritaë Pérez-Miles, 1998, male (NMPC P6A-5731, formerly RKCP 0347) from Peru, Iquitos, the Amazon River, Las Palmas. Right tibia I with apophyses, ventral view. Scale bar = 1 mm.
Figure 28. (a) Cyriocosmus hoeferi sp. nov., male holotype (INPA 8803, formerly SMNK-ARA 0956) from Brazil, Manaus, Reserva Ducke. Right tibia I with apophyses, prolaterally ventral view. (b) Cyriocosmus giganteus sp. nov., male holotype (MUSM-ENT 0505244) from Peru, Loreto, Estación Biológica Quebrada Blanco. Left tibia I with apophyses, prolaterally ventral view. (c) Cyriocosmus nicholausgordoni sp. nov., male holotype (SMFD) from Venezuela, Amazonas, Puerto Ayacucho, Pozo Crystal. Left tibia I with apophyses, prolaterally ventral view. Scale bar = 1 mm.
Figure 29. (a) *Cyriocosmus peruvianus* sp. nov., female paratype (NMPC P6A-5726, formerly RKCP 0363) from Peru, Iquitos, Rio Nanay, village of Cuyana. Spermathecae with two separated spiral seminal receptacles, terminated with a caliciform extension, ventral view. (b) *Cyriocosmus itayensis* sp. nov., female paratype (NMPC P6A-5728, formerly RKCP 0367) from Peru, Iquitos, Rio Itaya. Spermathecae with two separated spiral seminal receptacles, terminated with a globular extension, ventral view. (c) *Cyriocosmus aueri* sp. nov., female paratype (NMPC P6A-5730, formerly RKCP 0541) from Peru, Iquitos, the Amazon River, Nuevo Umaral. Spermathecae with two separated spiral seminal receptacles, terminated with a globular extension, ventral view. (d) *Cyriocosmus hoeferi* sp. nov., female (SMFD) from Brazil, Manaus, the Tarumá River, spermathecae with two spiral seminal receptacles, terminated with a shallow caliciform extension, ventral view. (e) *Cyriocosmus pribiki* Pérez-Miles and Weinmann, 2009, female paratype (SMFD 60238, fragmented female) from Peru, Amazonas, Tingo, Gualap. Spermathecae with two separated spiral seminal receptacles, terminated with a globular extension, including uterus externus, dorsal view. (f) *Cyriocosmus ritaе* Pérez-Miles, 1998, female (NMPC P6A-5732, formerly RKCP 0348) from Peru, Iquitos, the Amazon River, Las Palmas, spermathecae with two spiral seminal receptacles, terminated with a caliciform extension, ventral view. (g) *Cyriocosmus williamlamari* sp. nov., female holotype (SMFD) from Venezuela, Apure, Rio Caicara, Hato El Cedral. Spermathecae with two separated spiral seminal receptacles, terminated with a caliciform extension, ventral view. (h) *Cyriocosmus* sp., female (MUSM-ENT 0506719) from Peru, Madre de Dios, Puerto Maldonado. Spermathecae with two separated spiral seminal receptacles, terminated with a globular extension, ventral view. Scale bar = 1 mm.
Spination: femora I p 0-0-1, II p 0-0-2, III d 0-0-2, IV r 0-0-1 and femora of palps 0; patellae I – IV and patellae of palps 0; tibiae I v 0-(0–1)-0, r 0-0-1 (apical), II v 1-1-2 (apical), p 0-1-0, III v 0-1-2 (apical), r 0-1-0, p 0-2-0, IV v 1-1-2 (apical), r 1-1-1 and tibiae of palps 0; metatarsi I v 0-0-1 (apical), II v 1-0-1 (apical), III v 0-1-3 (apical), r 0-1-1, p 0-2-1, IV v 0-1-3 (apical), r 0-1-1, p 0-2-2, tarsi I–IV and tarsi of palps 0.

Palpal organ as in Figure 26a, b, embolus with long PA, reaching more than half of embolus, crested PS keel is not fused with PA. Tegulum with distinct granulated TP, projecting prolaterally. Retrolateral face of cymbium with basal field of spiniform setae. Retrolateral face of palp tibia with distinct subapical protuberance covered with cluster of numerous spiniform setae (Figure 24a). Two unequal subapical apophyses are present on tibia I (Figures 24b, 27d): a longer retrolateral tibial apophysis with short, stout spine at apex, a shorter prolateral tibial apophysis, apically flattened, with single inner, sigmoidly curved spine with extremely stout base and approximately of the same length as prolateral apophysis. Metatarsus I not sigmoidly curved. Instead, there is median

Figure 30. Cyriocosmus peruvianus sp. nov., males from Peru, Iquitos, Rio Nanay, Cuyana. Variability in the morphology of male palpal bulbs. (a, b) Male (RKCP 0064), (a) prolateral view, (b) retrolateral view. (c, d) Male (RKCP 0238), (c) prolateral view, (d) retrolateral view. (e, f) Male (RKCP 0240), (e) prolateral view, (f) retrolateral view. (g, h) Male (RKCP 0479), (g) prolateral view, (h) retrolateral view. Scale bar = 1 mm.
protuberance on its retrolateral face (Figure 24b). Metatarsus I flexion is on prolateral tibial apophysis.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 3.09, basal segment 1.01, middle segment 0.81, apical segment 1.27, all digitiform. PMS: 0.57.

Coloration and covering setae: dorsal view (Figure 22a): carapace, coxae and trochanters reddish-brown, covered with golden pubescence, except dark oval spot covering caput and surroundings of fovea, chelicerae dark brown, and covered with golden pubescence, femora, tibiae, metatarsi and tarsi dark grey and intermixed with long, dark setae, palpal patellae, patellae of all legs and distal halves of all metatarsi covered with short whitish setae. Patellae I, II and palpal patellae with two distinct longitudinal stripes without covering setae, patellae III with two diagonal stripes, patellae IV with...
single diagonal stripe. Abdomen covered with short black setae, intermixed with long, pale setae in posterior part, except central reddish-brown glossy patch, three lateral stripes on each side, basally joined, two short stripes on each side of spinnerets and two weak anteriorly located spots near area of urticating setae. Length of central patch: 3.56, width 2.34. Ventral view: labium, sternum, coxae and trochantera reddish-brown,
Figure 33. (a–d) *Cyriocosmus peruvianus* sp. nov. from Peru, Iquitos, Rio Nanay, Cuyana, morphology of spermathecae, (a) female (RKCP 0237), (b) female (RKCP 0365), dissected from the specimens in alcohol, (c) female (RKCP 0364), (d) female paratype (NMPC P6A-5726, formerly RKCP 0363), dissected from exuviae. (e, f) *Cyriocosmus itayensis* sp. nov. from Peru, Iquitos, Rio Itaya, Luz del Oriente, morphology of spermathecae, (e) female (RKCP 0239), dissected from the specimen in alcohol, (f) juvenile female (RKCP 0370), dissected from exuvia. (g, h) *Cyriocosmus aueri* sp. nov. from Peru, Iquitos, the Amazon River, Nuevo Umaral, morphology of spermathecae, (g) female (RKCP 0132), (h) juvenile female (car. 6.2) (RKCP 0485), dissected from exuviae. (i, j) *Cyriocosmus ritaeker* Pérez-Miles, 1998 from Peru, Iquitos, the Amazon River, Las Palmas, morphology of spermathecae, (i) female (RKCP 0225), (j) immature (car. 6.6) and mature female (RKCP 0349), all dissected from exuviae. Scale bar = 1 mm.
femora, patellae, tibiae, metatarsi and tarsi dark grey. Abdomen ventrally with dark longitudinal band. Spinnerets: fawn.

Female (NMPC P6A-5732, formerly RKCP 0348) (Figures 22b, 23a-e, 29f): Total length: 16.3, carapace length 6.6, width 6.3, chelicerae with 7 teeth on promargin. Cheliceral teeth pattern from basal end: right side: V-VVVVVV, 7 big teeth. Left side: V-VVVVVV, 7 big teeth. Anterior eye row slightly procurved, posterior eye row recurved. Eye sizes and interdistances (Figure 23e): AME 0.33 (circular), ALE 0.39 (oval), PME 0.25 (oval), PLE 0.34 (oval), AME–AME 0.09, AME–ALE 0.12, PME–PME 0.62, PME–PLE 0.06, ALE–PLE 0.09, AME–PME 0.06, OQ length 0.96, width 1.34. Clypeus absent. Fovea transverse, procured, width 1.1, 4.6 from anterior edge of carapace. Labium length 1.1, width 1.3, anterior half with 66 cuspules, maxillae with

Figure 34. *Cyriocosmus leetzi* Vol, 1999, Venezuela, State of Táchira, San Cristobal, Agua Dulce. Female (RKCP 0197), dorsal view. Scale bar = 10 mm.

Figure 35. (a) *Cyriocosmus leetzi* Vol, 1999 from Venezuela, Táchira, San Cristobal, Agua Dulce (RKCP 0197), morphology of spermathecae, dissected from the exuvia. (b) *Cyriocosmus nicholausgordoni* sp. nov. from Venezuela, Amazonas, Puerto Ayacucho, Pozo Crystal, female paratype (SMFD), morphology of spermathecae, dissected from the specimen in alcohol. Scale bar = 1 mm.
Figure 36. Distribution map of the Neotropic genus *Cyriocosmus*. Scale bar: 1000 km.
175–184 cuspules. Almost rounded sternum, length 3.1, width 3.2, with three visible pairs of sternal sigilla located near coxae III (length 0.36, 0.31 from edge of sternum), coxae II (length 0.16, 0.16 from edge of sternum) and coxae I (length 0.08, 0.16 from edge of sternum). Leg pattern: IV>I>II>III. All leg segments uniform.

Scopulae: All tarsi 100% densely scopulate, metatarsi I, II 60%, metatarsi III 35%, metatarsi IV 20% scopulate. Tarsal scopulae I, II divided by longitudinal line of setae, in tarsi III, IV divided by narrow longitudinal band of setae.
Spination: femora I–IV and femora of palps 0; patellae I–IV and patellae of palps 0; tibiae I 0, II 0, III v 0-0-2 (apical), d 0-1-0, p 0-1-0, IV v 0-0-2 (apical), r 0-1-0 and tibiae of palps v 0-0-3 (apical); metatarsi I v 0-0-1 (apical), II v 0-1-1 (apical), III v 0-2-3 (apical), d 0-1-1 (apical), p 0-1-1 (apical), IV v 0-2-2 (apical), p 0-1-1 (apical), d 0-1-0, r 0-0-1 (apical), tarsi I–IV and tarsi of palps 0.

Spermathecae (Figure 29f): two separated spiral seminal receptacles, distally terminated with caliciform extension, basally with flat, weakly sclerotized plates.

Abdomen: urticating setae of type III are located in central glossy patch. PLS: length 5.39, basal segment 2.00, middle segment 1.43, apical segment 1.93, all digitiform. PMS: 0.91.

Coloration and covering setae: dorsal view (Figures 22b, 23a): carapace, coxae and trochantera reddish-brown, and covered with golden pubescence, except dark oval spot covering caput and surroundings of fovea, chelicerae dark brown, and covered with golden pubescence, femora, patellae, tibiae, metatarsi and tarsi dark grey and intermixed with long, dark setae, except patellae of posterior legs which are covered with short whitish setae, femora IV with golden basal pubescence. Patellae I, II and palpal patellae with two distinct longitudinal stripes without covering setae, patellae III, IV with single diagonal stripe. Palpal femur and femur I prolaterally bare. Retrolateral face of femur IV bare. Abdomen (Figure 23c) covered with short black setae, intermixed with long, pale setae in posterior part, except central reddish-brown glossy patch, three lateral stripes on each side, basally joined, two short stripes on each side of spinnerets and two weak anteriorly located spots near area of urticating setae. Length of central patch: 6.4, width 3.5. Ventral view (Figure 23b): labium, sternum, coxae and trochantera reddish-brown, femora, patellae, tibiae and metatarsi and tarsi dark grey. Abdomen ventrally with dark longitudinal band (Figure 23d). Spinnerets: basal segment reddish-brown, central segment grey, apical segment dark grey.

Variability

The variability in the shape of spermathecae is shown in Figure 33i, j. The variability in the length of the carapace, the number and the arrangement of the cheliceral teeth, the number of labial and maxillary cuspules, the leg pattern and the spination of tibial apophyses is shown in Table 3.

Coloration during ontogeny

Carapace light brown, with a dark caput and surrounding of fovea, abdomen black, with three light brown lateral stripes, basally joined, and two short stripes near spinnerets, not basally joined, dorsally with a light brown, U-shaped patch of urticating setae. Femora and tarsi black, patellae, tibiae and metatarsi light brown.

Cyriocosmus leetzi Vol, 1999
(Figures 32a, b, 34, 35a)

Cyriocosmus leetzi: Vol, 1999: 2–10, figures 1–8. Holotype female and paratype male, MNHN from Colombia, Villavicencio, south of Rio Meta, without further information. Cyriocosmus leetzi: Fukushima et al., 2005: 10–11, figures 5, 6, 26, 38, 42. Holotype female, MNHN from Colombia, without further information.
**Diagnosis**

Differs from all other congeners, except *C. nicholausgordoni* sp. nov., by its reddish-brown carapace with the black caput and seven radially arranged black spots in the thoracic area, and by the presence of the dark longitudinal ventral band. From *C. nicholausgordoni* sp. nov. it differs by the black femora with whitish longitudinal stripes on the dorsal face. Males also differ by the presence of the retrolateral process in palpal tibia with a cluster of numerous spiniform setae (Figure 18e).

**Distribution (Figure 36)**

Known from Colombia (unknown locality of type) and from two other localities: Casanare, Agua Azul, Vereda El Guineo; Meta, Cubarral, Vereda Vergel, the Upper Jupuoaro River (630 m) (Fukushima et al. 2005), and newly from Venezuela, State of Táchira, San Cristobal, Agua Dulce.

**Discussion**

Although very much has been written about species concepts and species delimitation, discerning different species with unknown distribution, known only from few localities within large biogeographical units, as for example the Amazon basin, remains difficult.

In theraphosid spiders we most often know only one or few specimens from a single population and nothing about neighbouring (sub-)populations, i.e. about the whole metapopulation, as defined by Levins (1969). Thus we are not able to assess the differences between various populations based on their different eco-evolutionary dynamics and local adaptations during the permanently running process of speciation.

How could we assess the distribution area and species delimitation of *Cyriocosmus leetzi* Vol, 1999? *Cyriocosmus leetzi* is now known from the type population in Colombia and from Venezuelan population in Táchira. The representatives of both populations share the common reddish-brown carapace with the black caput and seven radially arranged black spots in the thoracic area, the black abdomen with three clear lateral stripes joined with the U-shaped urticating setae patch, and the black legs, dorsally with whitish longitudinal stripes (Figure 34). The male palpal bulb morphology with short PA is similar and comparable in both populations, as is the shape of spermathecae with caliciform extensions and convex basal plates. A comparative analysis of the species was done, combined with that of the closely related *Cyriocosmus nicholausgordoni* sp. nov., and the differences are shown in Table 16. In the case of *Cyriocosmus leetzi*, only two traits show differences that can be assessed as significant: the presence of the fourth pair of very narrow stripes near spinnerets, not basally joined with three clear lateral stripes (present only in the non-type Venezuelan population), and a range of metatarsal scopulae. Moreover, it was recorded in the population from Táchira that a pair of short anterior stripes near pedicelo, well visible in juveniles, disappears during ontogeny. There is no reason to doubt that both populations of *Cyriocosmus leetzi* and *Cyriocosmus nicholausgordoni* sp. nov. belong to the same lineage because of the high degree of conformity.

It is also evident that the type population and the population from Táchira may represent populations connected along the eastern side of the mountain range of Andes, but the population of *Cyriocosmus nicholausgordoni* sp. nov. from Amazonas is
| Source                     | Cyriocosmus leetz Vol, 1999 | Cyriocosmus leetz Vol, 1999 | Cyriocosmus leetz Vol, 1999 | Assessment | Cyriocosmus nicholausgordoni sp. nov. | Assessment |
|---------------------------|-----------------------------|-----------------------------|-----------------------------|------------|--------------------------------------|------------|
| **Males**                 |                             |                             |                             |            |                                      |            |
| Type/non-type male        | male, RKCP 0251             | male paratype, MNHN         | male paratype, MNHN         |            | male, SMFD                           |            |
| Collector                 | V. Fura & B. Velas          | Colombia                     | Colombia                     |            | Rick C. West                         |            |
| Date                      | March 2006                  | without data                | without data                |            | 15 February 1995                     |            |
| Total length, without    | 14.6                        | 14.6                         | 16.7                        |            | 16.7                                 |            |
| chelicerae and spinnerets|                             |                             |                             |            |                                      |            |
| Carapace (L/W/ratio)      | 4.75/3.75/1.267             | 7.8/6.6/1.182               | 7.9/6.8/1.162               |            |                                      |            |
| Fovea                     | transverse, straight        | transverse, straight        | transverse, straight        |            |                                      |            |
| Labium (L/W/ratio)        | 0.94/1.32/0.712             | 1.04/1.35/0.769             | 1.08/1.47/0.86              |            |                                      |            |
| Labial cuspules           | numerous                    | 45                          | 45                          |            |                                      |            |
| Maxillary cuspules        | numerous                    | 153–161                     | 147–149                     |            |                                      |            |
| Cheliceral teeth          | 8–9                         | 8                            | 8                           |            |                                      |            |
| Tarsal scopulae I         | 100%, undivided             | 100%, undivided              | 100%                        |            | 100%                                 |            |
| Tarsal scopulae II        | 100%, undivided             | 100%, divided by band of setae | 100%                       |            | 100%                                 |            |
| Tarsal scopulae III       | 100%, divided by band of setae | 100%, divided by band of setae | 100%                       |            | 100%                                 |            |
| Tarsal scopulae IV        | 100%, divided by band of setae | 100%, divided by band of setae | 100%                       |            | 100%                                 |            |
| Metatarsal scopulae I     | 25%                         | 40%                         | 100%                        |            | 100%                                 |            |
| Metatarsal scopulae II    | 25%                         | 40%                         | 80%                         |            | 100%                                 |            |
| Metatarsal scopulae III   | absent                       | 50%                         | discrepancy 50%              |            |                                      |            |
| Metatarsal scopulae IV    | absent                       | 20%                         | discrepancy 35%              |            |                                      |            |

(Continued)
| Source | *Cyriocosmus leetzi* Vol, 1999 | *Cyriocosmus leetzi* Vol, 1999 | Assessment | *Cyriocosmus nicholausgordoni* sp. nov. |
|---|---|---|---|---|
| **Males** | | | | |
| original description | type examined | examined | examined | |
| **♂** | | | | |
| Tibia I | not incrassate, with 2 tibial apophyses | not incrassate, with 2 tibial apophyses | not incrassate, with 2 tibial apophyses | not incrassate, with 2 tibial apophyses |
| Metatarsus I | without RL median protuberance | without RL median protuberance | without RL median protuberance | without RL median protuberance |
| Male metatarsus I flexion | between prolateral and retrolateral branch | between prolateral and retrolateral branch | between prolateral and retrolateral branch | between prolateral and retrolateral branch |
| Cymbium | with RL field of basal spines | with RL field of basal spines | with RL field of basal spines | with RL field of basal spines |
| Palpal tibia | with RL protuberance | with RL protuberance | with RL protuberance, apically covered with a cluster of numerous spines | without RL protuberance, only a cluster of numerous spines present |
| Bulb, PS keel: | smooth | smooth | smooth | smooth |
| Bulb, fusion of PS | not fused | not fused | not fused | not fused |
| Bulb, PI keel: | absent | absent | absent | absent |
| Leg pattern | IV > I > II > III | IV > I > II > III | IV > I > II > III | IV > I > II > III |
| Spination: | | | | |
| femora of palp | 0 | p 0-0-1 | p 0-0-1 | d 0-0-1 |
| femora I | p 0-0-1 | p 0-0-1 | d 0-0-1 | d 0-0-1 |
| femora II | p 0-0-1 | p 0-0-1 | d 0-0-1 | d 0-0-1 |
| femora III | p 0-1-0, d 0-0-1 | 0 | p 0-0-1, d 0-0-1 | 0 |
| femora IV | 0 | 0 | 0 | 0 |
| patellae | 0 | 0 | 0 | 0 |
| tibiae of palp | 0 | 0 | 0 | 0 |
| tibiae I | p 0-0-1, r 0-1-1 | v 0-1-1(a) | v 0-1-1(a) | v 0-1-1(a) |
| tibiae II | v 0-1-2, p 0-0-1 | v 0-1-2(a), p 0-1-0 | v 0-1-2(a), p 0-1-0 | v 0-1-2(a), p 0-1-0 |
| tibiae III | 0 | v 0-1-2(a), p 0-1-0, r 1-1-0 | v 0-1-2(a), p 0-1-0, r 1-1-0 | discrepancy |
| tibiae IV | v 2-0-2, p 1-0-1, r 2-0-1 | v 0-1-2(a), p 1-1-0, r 1-1-0 | v 0-1-2(a), p 1-1-0, r 1-1-0 | v 2-1-3(a), r 0-1-1 |
| metatarsi I | v 0-1-0 | v 0-1-0 | v 0-1-0 | v 0-0-1(a) |
| metatarsi II | v 0-1-1 (small apical nodule on dorsal face) | v 0-1-1(a) | v 0-1-1(a) | v 2-0-1, p 0-1-0 |

(Continued)
| Source | Table 16. (Continued). | Table 16. (Continued). | Table 16. (Continued). | Table 16. (Continued). | Table 16. (Continued). |
|--------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Source | *Cyriocosmus leetzi* Vol, 1999 | *Cyriocosmus leetzi* Vol, 1999 | *Cyriocosmus leetzi* Vol, 1999 | *Assessment* | *Cyriocosmus nicholausgordoni* sp. nov. |
| Source | Vol, 1999 | Fukushima et al., 2005 | — | — | — |
| **Males** | **original description** | **type examined** | **examined** | **examined** | **examined** |
| Metatarsi III | v 0-1-4, p 1-0-0, r 0-1-0 | v 0-2-3(a), p 0-1-1, r 0-1-1 | v 0-2-3(a), p 0-1-1, r 0-1-1 | v 1-1-1, p 2-2-2, r 0-0-1 | v 1-1-1(a), p 1-3-2(a), r 0-1-2(a) |
| Metatarsi IV | v 0-1-3, p 2-0-1, r 0-1-1 | v 0-2-1-3(a), p 0-0-1, r 0-1-1 | v 0-2-1-3(a), p 0-0-1, r 0-1-1 | 0 | 0 |
| Tarsi | 0 | III | III | conformity | conformity |
| UH types | U-HapU | U-HapU (1.200) | U-HapU (3.60/2.30/1.56) | U-HapU | U-HapU (1.061) |
| **Coloration:** | | | | | |
| Cephalothorax | reddish-brown with black caput, thoracic area with seven radially arranged black spots | reddish-brown with black caput, thoracic area with seven radially arranged black spots | reddish-brown with black caput, thoracic area with seven radially arranged black spots | conformity | conformity |
| Coxae | reddish-brown | reddish-brown | reddish-brown | conformity | conformity |
| Trochanters | reddish-brown | reddish-brown | reddish-brown | conformity | conformity |
| Femora | black with very narrow longitudinal whitish stripe in apical half | black with very narrow longitudinal whitish stripe | black with very narrow longitudinal whitish stripe | conformity | conformity |
| Pattelae | black with longitudinal whitish stripe | black with longitudinal whitish stripe | black with longitudinal whitish stripe | conformity | conformity |
| Tibiae | black with longitudinal whitish stripe | black with longitudinal whitish stripe | black with longitudinal whitish stripe | conformity | conformity |
| Metatarsi | black with longitudinal whitish stripe | black with longitudinal whitish stripe | black with longitudinal whitish stripe | conformity | conformity |
| Tarsi | dark grey | dark grey | dark grey | conformity | conformity |
| Dorsal abdomen black, with stripes | black, with stripes | black, with stripes | black, with stripes | conformity | conformity |
| Number of lateral stripes | 3, joined with central patch and joined basally | 3, joined with central patch and joined basally | 4 (3+1), 3 clear lateral stripes joined with central patch and joined basally, fourth pair of very narrow stripes near spinnerets not joined | conformity | conformity |
| Ventral abdomen with longitudinal dark band present | with longitudinal dark band present | with longitudinal dark band present | with longitudinal dark band present | conformity | conformity |
| Dorsal whitish longitudinal stripes on male legs | | | | | |
Table 16. Part B: A comparative analysis of two populations of *Cyriocosmus leetzi* Vol, 1999 and closely related *C. nicholausgordoni* sp. nov.

| Source | *Cyriocosmus leetzi* Vol, 1999 | *Cyriocosmus leetzi* Vol, 1999 | *Cyriocosmus leetzi* Vol, 1999 | Assessment | *Cyriocosmus nicholausgordoni* sp. nov. | Assessment |
|--------|-------------------------------|-------------------------------|-------------------------------|------------|----------------------------------------|------------|
| Females | Cyriocosmus leetzi Vol, 1999 | Cyriocosmus leetzi Vol, 1999 | Cyriocosmus leetzi Vol, 1999 | Assessment | Cyriocosmus nicholausgordoni sp. nov. | Assessment |
| Type/non-type | original description | type examined | examined | female, RKCP 0556 | female, SMFD | female, examined |
| Origin | Colombia: Villavicencio, south of Rio Meta | without data | without data | Venezuela, Táchira, San Cristóbal, Agua Dulce | Venezuela, Amazonas, Puerto Ayacucho, Pozo Crystal | examined |
| Collector | without data | without data | V. Fura & B. Velas | Rick C. West | 15 February 1995 | 21.51 |
| Date | without data | without data | March 2006 | 20.22 | |
| Total length, without chelicerae and spinnerets | | | | | |
| Carapace (L/W/ratio) | 8.5/7.0/1.214 | 7.8/6.4/1.219 | 9.95/7.84/1.269 |
| Fovea | transverse, straight | transverse, straight | transverse, straight |
| Labium (L/W/ratio) | 1.4/1.5/0.933 | 1.12/1.78/0.629 | 1.3/1.846/0.704 |
| Labial cuspules | 60–70 | 48 | 36 |
| Maxillary cuspules | numerous | 169–172 | 159–163 |
| Cheliceral teeth | 8 (from base: vVVVVVVV) | 9 (from base: vVVVVVVV) | right: 9 (from base: vVVVVVVV); left: 10 (from base: vVVVVVVVV) |
| Tarsal scopulae I | 100%, undivided | 100%, undivided, with only row of thin setae | 100%, undivided |
| Tarsal scopulae II | 100%, undivided | 100%, divided by band of setae | 100%, divided by band of setae |
| Tarsal scopulae III | 100%, divided by band of setae | 100%, divided by band of setae | 100%, divided by band of setae |
| Tarsal scopulae IV | 100%, divided by wide band of setae | 100%, divided by wide band of setae | 100%, divided by a band of setae |
| Metatarsal scopulae I | 65% | 50% | 90% |
| Metatarsal scopulae II | 50% | 60% | 70% |
| Metatarsal scopulae III | 40% | 50% | 60% |

(Continued)
| Source | Cyriocosmus leetzi Vol. 1999 | Cyriocosmus leetzi Vol. 1999 | Cyriocosmus leetzi Vol. 1999 | Assessment | Cyriocosmus nicholausgordoni sp. nov. | Assessment |
|--------|-----------------------------|-----------------------------|-----------------------------|------------|--------------------------------------|------------|
| **Females** | | | | | | |
| **original description** | | | | | | |
| **type examined** | | | | | | |
| **examined** | | | | | | |

**Metatarsal scopulae IV:**
- Distal portion: 10% vs. 30%

**Spermathacae:**
- Two separate seminal receptacles vs. conformity
- Caliciform vs. conformity

**Spermathacae, SBP:**
- Well developed vs. conformity

**Leg pattern IV>II>III:**
- Conformity

**Spination:**
- Femora of palp: 0 vs. 0
- Femora I: 0 vs. 0
- Femora II: 0 vs. 0
- Femora III: 0 vs. 0
- Femora IV: 0 vs. 0
- Patellae: 0 vs. 0
- Tibiae of palp: v 0-0-2 vs. v 0-0-3(a)
- Tibiae I: 0 vs. 0
- Tibiae II: 0 vs. 0
- Tibiae III: v 0-0-2, p 1 vs. v 0-1-2(a), p 1-1-0, r 0-1-0
- Tibiae IV: v 3 vs. v 0-1-2(a)
- Metatarsi I: v 0-0-1 vs. v 0-1-2(a)
- Metatarsi II: v 0-0-1 vs. v 1-0-1
- Metatarsi III: v 0-2-0, p 1-0-2, r 0-0-2 vs. v 0-2-3(a), p 1-1-1, r 0-1-1
- Metatarsi IV: v 0-2-4, p 0-0-1 vs. v 2-1-3(a), p 0-0-1, r 0-1-1
- Tarsi: v 3 vs. v 1-2-3(a), p 1-1-1, r 0-0-1
- UH types: III vs. III
- UH patch (L/W/ratio): U-shaped (1.545) vs. 6.11/3.77/1.620

(Continued)
| Source | Cyriocosmus leetzi Vol, 1999 | Cyriocosmus leetzi Vol, 1999 | Assessment | Cyriocosmus nicholausgordoni sp. nov. | Assessment |
|--------|-----------------------------|-----------------------------|------------|-------------------------------------|------------|
| Females | original description | type examined | examined | examined | examined |
| **Coloration:** | | | | | |
| cephalothorax | reddish-brown with black caput, thoracic area with seven radially arranged black spots | reddish-brown with black caput, thoracic area with seven radially arranged black spots | conformity | redish-brown with black caput, thoracic area with seven radially arranged black spots | conformity |
| coxae | reddish-brown | reddish-brown | conformity | redish-brown | conformity |
| trochanters | reddish-brown | reddish-brown | conformity | redish-brown | conformity |
| femora | black with narrow longitudinal whitish stripe in apical half | black with narrow longitudinal whitish stripe | conformity | black with whitish triangle at apex | discrepancy |
| patellae | black with longitudinal whitish stripe | black with longitudinal whitish stripe | conformity | black with longitudinal whitish stripe | conformity |
| tibiae | black with longitudinal whitish stripe | black with longitudinal whitish stripe | conformity | black with longitudinal whitish stripe | conformity |
| metatarsi | black with longitudinal whitish stripe | black with longitudinal whitish stripe | conformity | black with longitudinal whitish stripe | conformity |
| tarsi | black, with stripes | black, with stripes | conformity | black, with stripes | conformity |
| dorsal abdomen number of lateral stripes | 3, all stripes joined with central patch and joined basally | 3, all stripes joined with central patch and joined basally | conformity | 4 (3+1), 3 clear stripes joined with central patch and joined basally, fourth pair of narrow stripes near spinnerets not joined | discrepancy |
| ventral abdomen dorsal whitish longitudinal stripes on male legs | with longitudinal dark band present | with longitudinal dark band present | conformity | with longitudinal dark band present | conformity |

Abbreviations: PL = prolateral; RL = retrolateral; V = ventral; SBP = sclerotized basal plates.
obviously isolated by the Orinoco River. Further research of both species is necessary to understand the process of speciation inside the lineage of *Cyriocosmus leetzi + Cyriocosmus nicholausgordoni* sp. nov.

*Cyriocosmus peruvianus* sp. nov. and *C. itayensis* sp. nov. are very closely related species that can be distinguished only by the shape of spermathecae, the size of adults (*C. peruvianus* sp. nov. < *C. itayensis* sp. nov.; see Table 3) and the morphology of the male palpal bulb, of which conglomerate of PS keel with PA is much more pronounced in *C. itayensis* sp. nov. The coloration is almost congruent, as well as the terrestrial lifestyle and geographical affinity. I believe that the two species had a common ancestor and the process of speciation started when the population was split by any natural barrier in the past, e.g. by the Nanay River. *C. peruvianus* sp. nov. evolved on the left bank of the Nanay River, unlike *C. itayensis* sp. nov., which evolved on the right bank along the Itaya River. Intrinsic reproductive isolation was not tested. Both species were strictly established according to the phylogenetic species concept (sensu De Queiroz 2007). Further research of neighbouring populations is necessary, just as in the case of *Cyriocosmus leetzi* and *Cyriocosmus hoeferi* sp. nov.

Both genders of *Cyriocosmus rita* from the Peruvian population near Iquitos are described here, the female specimen being described for the first time. Males from the population near Iquitos that fit into the diagnoses of *C. rita* established by Pérez-Miles (1998) and confirmed by Fukushima et al. (2005) were compared with the data from both of the cited papers. The only differences recorded in the material from Iquitos involved the absence of the whitish longitudinal stripes on the dorsal face of the legs that were mentioned as present in the data matrix made by Fukushima et al. (2005), but not included in the original description, as well as the different number of lateral stripes on the abdomen, where only four are mentioned in the original description and five (three basally joined and two short separate stripes near spinnerets) included in the paper of Fukushima et al. (2005, figure 48) and in the material from Iquitos. This discrepancy was solved by re-examining the male holotype. The whitish longitudinal stripes on the dorsal face of male legs were not found, and only patellae and distal halves of metatarsi were covered with short whitish setae.

**Key to *Cyriocosmus* species**

**Females**

(Females of *Cyriocosmus bertae*, *C. blenginii* and *C. giganteus* sp. nov. are unknown)

1. Without striped abdominal pattern (Figures 3d, 6d, 11d) .......................................................... 2
- With striped abdominal pattern (Figures 14c, 16c, 19c, 23c) .......................................................... 7
2. Cephalic area of the same colour as the rest of carapace (Figures 3a, 6a, 11a)................................. 3
- Cephalic area black (Fukushima et al. 2005, figure 40) ................................................................. 6
3. Seminal receptacles with globular extension (Figure 29b, c, e) ......................................................... 4
- Seminal receptacles with caliciform extension (Figures 29a, 33a–d), carapace reddish-brown, legs black........................................................... *C. peruvianus* sp. nov.
4. Basal plates in seminal receptacles absent (Figure 29e) ................................................................. *C. pribiki*
- Basal plates in seminal receptacles present (Figure 29b, c) ............................................................... 5
5. Basal plates convex (Figure 29c), carapace and femora black, patellae, tibiae, metatarsi and tarsi light brown................................................................. C. aueri sp. nov.
   – Basal plates flat (Figure 29b), carapace reddish-brown, legs black C. itayensis sp. nov.
6. Longitudinal stripes on the dorsal face of the legs present (yellowish), thoracic area black except two lateral whitish stripes on each side........................................... C. sellatus
   – Longitudinal stripes on the dorsal face of the legs absent, only cephalic area black......
5. Basal plates convex (Figure 29c), carapace and femora black, patellae, tibiae, metatarsi and tarsi light brown................................................................. C. aueri sp. nov.
   – Basal plates flat (Figure 29b), carapace reddish-brown, legs black C. itayensis sp. nov.
6. Longitudinal stripes on the dorsal face of the legs present (yellowish), thoracic area black except two lateral whitish stripes on each side........................................... C. sellatus
   – Longitudinal stripes on the dorsal face of the legs absent, only cephalic area black......
7. Four lateral stripes on each side of abdomen (Figures 14c, 16c, 19c).......................... 8
   – Five lateral stripes on each side of abdomen, cephalic area black (Fukushima et al. 2005, figures 45, 47, 48)................................................................................................. 16
8. Cephalic area of the same colour as the rest of carapace ........................................ 9
   – Cephalic area black........................................................................................................ 10
9. Seminal receptacles with flat basal plates, abdomen ventrally without a dark longitudinal band, femora reddish-brown, apically black................................. C. perezmileisi
   – Seminal receptacles with convex basal plates (Kaderka 2010, figure 6), abdomen ventrally with the longitudinal dark band....................................................... C. venezuelensis
10. Only cephalic area black .............................................................................................. 11
   – Cephalic area and part of thoracic area black............................................................... 14
11. Abdomen ventrally without a longitudinal dark band (Fukushima et al. 2005, figures 43, 44, 46).............................................................................................. 12
   – Abdomen ventrally with the longitudinal dark band (Figure 16e)............................. 12
5. Basal plates convex (Figure 29c), carapace and femora black, patellae, tibiae, metatarsi and tarsi light brown................................................................. C. aueri sp. nov.
   – Basal plates flat (Figure 29b), carapace reddish-brown, legs black C. itayensis sp. nov.
6. Longitudinal stripes on the dorsal face of the legs present (yellowish), thoracic area black except two lateral whitish stripes on each side........................................... C. sellatus
   – Longitudinal stripes on the dorsal face of the legs absent, only cephalic area black......
7. Four lateral stripes on each side of abdomen (Figures 14c, 16c, 19c).......................... 8
   – Five lateral stripes on each side of abdomen, cephalic area black (Fukushima et al. 2005, figures 45, 47, 48)................................................................................................. 16
8. Cephalic area of the same colour as the rest of carapace ........................................ 9
   – Cephalic area black........................................................................................................ 10
9. Seminal receptacles with flat basal plates, abdomen ventrally without a dark longitudinal band, femora reddish-brown, apically black................................. C. perezmileisi
   – Seminal receptacles with convex basal plates (Kaderka 2010, figure 6), abdomen ventrally with the longitudinal dark band....................................................... C. venezuelensis
10. Only cephalic area black .............................................................................................. 11
   – Cephalic area and part of thoracic area black............................................................... 14
11. Abdomen ventrally without a longitudinal dark band (Fukushima et al. 2005, figures 43, 44, 46).............................................................................................. 12
   – Abdomen ventrally with the longitudinal dark band (Figure 16e)............................. 12
12. Four clear lateral stripes on each side of abdomen, basally joined............................ 13
   – Three clear lateral stripes on each side of abdomen, basally joined......................... C. elegans
13. Ratio length/width of urticating setae patch more than 1.4 (Fukushima et al. 2005, figure 44)................................................................................................. C. fasciatus
   – Ratio length/width of urticating setae patch less than 1.4 (Fukushima et al. 2005, figure 46)................................................................................................. C. fernandoi
14. Thoracic area with seven radial black spots (Figures 17b, 34).................................. 15
   – Thoracic area black except whitish lateral stripes on each side (Figure 12b).......... 15
5. Basal plates convex (Figure 29c), carapace and femora black, patellae, tibiae, metatarsi and tarsi light brown................................................................. C. aueri sp. nov.
6. Longitudinal stripes on the dorsal face of the legs present (yellowish), thoracic area black except two lateral whitish stripes on each side........................................... C. sellatus
7. Four lateral stripes on each side of abdomen (Figures 14c, 16c, 19c).......................... 8
8. Cephalic area of the same colour as the rest of carapace ........................................ 9
9. Seminal receptacles with flat basal plates, abdomen ventrally without a dark longitudinal band, femora reddish-brown, apically black................................. C. perezmileisi
10. Only cephalic area black .............................................................................................. 11
11. Abdomen ventrally without a longitudinal dark band (Fukushima et al. 2005, figures 43, 44, 46).............................................................................................. 12
12. Four clear lateral stripes on each side of abdomen, basally joined............................ 13
13. Ratio length/width of urticating setae patch more than 1.4 (Fukushima et al. 2005, figure 44)................................................................................................. C. fasciatus
14. Thoracic area with seven radial black spots (Figures 17b, 34).................................. 15
15. Femora with whitish longitudinal stripes on the dorsal face (Figure 34).............. C. leetzi
   – Femora without whitish longitudinal stripes on the dorsal face (Figure 17b)............ C. leetzi
16. Only cephalic area black, seminal receptacles with sinuous neck (Fukushima et al. 2005, figure 34)......................................................................................... C. nogueiraneto
   – Cephalic and foveal area black (Figure 23a)................................................................. 17
17. Abdomen ventrally with the longitudinal dark band (Figure 23d)......................... C. ritae
   – Abdomen ventrally without a longitudinal dark band (Fukushima et al. 2005, figure 47)................................................................................................. C. chicoi

Males

(Male of Cyriocosmus williamlamari sp. nov. is unknown)
1. Without striped abdominal pattern (Figures 10d, 20d, 21c)................................. 2
   – With striped abdominal pattern (Figures 13c, 17a, 22a)........................................ 9
2. Paraembolic apophysis short (Figures 25a–h, 26e, f, 32a–d)................................. 3
   – Paraembolic apophysis long (Figures 21f, 26c, d, 32e, f), longitudinal stripes on the
dorsal face of the legs present (yellowish), carapace black with two lateral stripes
(Figure 21a) **C. sellatus**
3. Cephalic area of the same colour as the rest of carapace........................................ 4
   – Cephalic area black, PS keel serrated, A keel present (Fukushima et al. 2005, figures 1,
2).................................................................................................................................................. **C. versicolor**
4. Retrolateral process on male palpal tibia present (Figures 2e, 5e).............................. 7
   – Retrolateral process on male palpal tibia absent (Figure 20f)................................. 5
5. PS keel present (Figure 25e, f)..................................................................................... 6
   – PS keel absent (Figure 25g, h)...................................................................................... **C. giganteus** sp. nov.
6. PS keel serrated, more quadrangle than half-oval (Fukushima et al. 2005, figures 3, 4)
............................................................................................................................................................................. **C. bertae**
   – PS keel smooth, more half-oval than quadrangle (Figure 25e, f), carapace and femora
black, patellae, tibiae, metatarsi and tarsi light brown................. **C. aueri** sp. nov.
7. Retrolateral cymbium with a field of spiniform setae, metatarsus I flexion between
both branches............................................................................................................................................. 8
   – Retrolateral cymbium without field of spiniform setae, metatarsus I flexion on the apex
of retrolateral branch, PS keel smooth, half-oval.......................................................... **C. pribiki**
8. Carapace reddish-brown, legs black, male palpal bulb as in Figures 25a, b, 30a–h.....
............................................................................................................................................................................. **C. peruvianus** sp. nov.
   – Carapace reddish-brown, legs black, male palpal bulb as in Figures 25c, d, 31e, h....... 11
   ........................................................................................................................................................................... **C. itayensis** sp. nov.
9. Four lateral abdominal stripes on each side.............................................................. 10
   – Five lateral abdominal stripes on each side, paraembolic apophysis long (Fukushima
et al. 2005, figures 11, 12, 15–18, 21, 22).................................................................................. 17
10. Cephalic area black............................................................................................................. 12
   – Cephalic area of the same colour as the rest of carapace, paraembolic apophysis short
(Figure 32g, h) ............................................................................................................................................... 11
11. Abdomen ventrally with the longitudinal dark band (Kaderka, 2010, figure 7).........
............................................................................................................................................................................. **C. venezuelensis**
   – Abdomen ventrally without a longitudinal dark band (Kaderka, 2007, figure 5), reddish-
brown femora, apically black......................................................... **C. perezmilesi**
12. Only cephalic area black ................................................................................................ 13
   – Cephalic area and a part of thoracic area black, paraembolic apophysis short (Figures
26e–h, 32a–d)............................................................................................................................................. 15
13. Paraembolic apophysis short (Fukushima et al. 2005, figures 7–10)..................... 14
   – Paraembolic apophysis long (Fukushima et al. 2005, figures 13, 14)............. **C. fernandoi**
14. Three clear lateral stripes on abdomen, basally joined................................. **C. elegans**
   – Four clear lateral stripes on abdomen, basally joined........................................ **C. fasciatus**
15. Thoracic area with seven radial black spots (Figure 17a)........................................ 16
   – Thoracic area black except whitish lateral stripes on each side of carapace
(Figure 12a)............................................................................................................................................ **C. hoeferi** sp. nov.
16. Femora with whitish longitudinal stripes on the dorsal face, retrolateral process on
palpal tibia is present (Figure 18e) ............................................................................................... **C. leetzi**
– Femora without whitish longitudinal stripes on the dorsal face (Figure 17a), retrolateral process on palpal tibia is absent (Figure 18c)................................. C. nicholausgordoni sp. nov.
17. Cephalic area black............................................................................................................................. 18
– Cephalic area of the same colour as the rest of carapace................................................................. C. blenginii
18. Cephalic and foveal area black........................................................................................................ 19
– Only cephalic area black, oval central abdominal patch with anterior T-shaped lobe (Fukushima et al. 2005, figure 45)......................................................... C. nogueiranetoi
19. Abdomen ventrally with the longitudinal dark band (Fukushima et al. 2005, figure 48), metatarsus I with median protuberance (Figure 24b), tibia I incrasate (Figure 24b)........
.................................................................................................................................................................... C. ritae
– Abdomen ventrally without a longitudinal dark band................................................................. C. chicoi

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