

Review of the Brazilian Atlantic Rainforest harvestman *Longiperna* (Opiliones: Gonyleptidae: Mitobatinae)

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ABSTRACT. *Longiperna* Roewer, 1929 is revised and new records of distribution are presented for the Brazilian Coastal Atlantic Rain Forest (from Rio de Janeiro to Santa Catarina states). The following new synonymies are established: *Longiperna concolor* (Mello-Leitão, 1923) = *L. zonata* Mello-Leitão, 1935 and *L. heliaca* B. Soares, 1942; *Longiperna coxalis* (Roewer, 1943) = *L. areolata* B. Soares, 1944; *Longiperna insperata* (Soares & Soares, 1947) = *L. paranensis* Soares & Soares, 1947 and *L. curitibana* Kury, 2003. Two new species are described: *Longiperna kuryi* sp. nov. (type-locality: Brazil, Rio de Janeiro, Parati); *Longiperna trembao* sp. nov. (type-locality: Brazil, Minas Gerais, Belo Horizonte).

KEY WORDS. Harvestmen; taxonomy; geographic distribution.

Gonyleptidae comprises nearly 800 species divided in 16 subfamilies. It is the dominant harvestman group in the Brazilian Atlantic Rain Forest (PINTO-DA-ROCHA & GIRIBET 2007). One of its best-characterized subfamilies is the Mitobatinae, due to the work of Kury, who properly diagnosed most of its genera and presented several synonymies (see a complete list of publications in KURY 2003). Mitobatines are easily recognized, as males have a straight and elongate fourth leg, with the femur being extremely longer than body (ROEWER 1913), possessing a penis truncus surpassing ventral plate base in lateral view as a subfamily level synapomorphy (C. BRAGAGNOLO unpubl.). This subfamily is endemic to the Atlantic Rain Forest with the majority of species recorded in the coastal mountains from Santa Catarina to Rio de Janeiro states and a few species in the Interior Atlantic Rain Forest (MORELLATO & HADDAD 2000). Presently, 45 species and 11 genera have been described (KURY 2003).

Longiperna was proposed by ROEWER (1929) to accommodate *Discocyrtoides concolor* Mello-Leitão, 1923 under Bourguiiinae, and remained monotypic until ROEWER (1943) described *L. cancellata*. However, in the same year, SOARES (1943) considered *Longiperna* as synonym of *Discocyrtoides* Mello-Leitão, 1923, restoring the original combination of its type-species. During the 1940's, several related species were described under *Discocyrtoides*, or transferred to the genus, including *D. areolatus* B. Soares, 1944; *D. heliacus* (B. Soares, 1942); *D. paranaensis* Soares & Soares, 1947; *D. zonatus* (Mello-Leitão, 1935).

KURY (2003) published the catalogue of the Laniatores of the Americas and included a large number of taxonomic acts. Among them was the resurrection and redescription of *Longiperna*. Moreover, he transferred six species to *Longiperna* (including *Ancistrotellus paranaensis* Soares & Soares, 1947) and

proposed the new name *L. curitibana* for *L. cancellata* Roewer, 1943 (preoccupied by the congeneric *Neomitobates cancellatus* Roewer, 1913).

Some species of the genus present very impressive elongated legs, such as *Longiperna concolor* with leg IV longer than 150 mm, being among the largest opilionids of the world.

The purpose of this paper is to present a revision of *Longiperna*, along with additional records of geographic distribution.

MATERIAL AND METHODS

This revision is based on 165 specimens from five arachnological collection (curators in parenthesis): IBSP, Instituto Butantan (A.D. Brescovit); MHNC, Museu de História Natural “Capão da Imbuia” (J.C. Moura-Leite); MNRJ, Museu Nacional, Universidade Federal do Rio de Janeiro (A.B. Kury); MZSP, Museu de Zoologia, Universidade de São Paulo (R. Pinto-da-Rocha); SMF, Naturmuseum Senckenberg, Frankfurt (P. Jaeger).

Abbreviations in synonymy listing as follows: (biol) biology, (cat) catalog, (cit) citation, (diag) diagnosis, (dist) distribution, (mis) misidentification, (rdesc) redescription, (reva) revalidation.

Color photos were obtained in the field from living specimens or from specimens recently sacrificed using acetone. Drawings were made using a Leica MZAPO stereomicroscope. Material for scanning electron microscopy was prepared according to PINTO-DA-ROCHA (2002).

The term ‘drymark’ (DASILVA & GNASPINI 2010) indicates the patch, in the more external serose layer of the cuticle, which appears in the form of white markings after an ethanol stored

specimen dries. On the dorsal scute, it is generally associated with the unpigmented lines.

All measurements are given in millimeters. Terminology for morphological structures follows ACOSTA *et al.* (2007), in which apophyses are high projections, either sharp or blunt tipped, emerging from the integument without a well defined limit and tubercles are short projections, also without a well defined limit with the cuticle, roughly as wide as high, either round or acute.

TAXONOMY

Key for males of *Longiperna*

1. Area IV divided by a longitudinal groove (Figs 4 and 6) ... 2
- 1'. Area IV undivided (Fig. 1) 3
2. Area I-II divided, area I densely tuberculated (more than 15), apical apophyses on coxa IV of similar size (Fig. 6)
..... *L. trembao* **sp. nov.**
- 2'. Areas I-II undivided, area I with a few tubercles (less than 5), external apophyses about 2 times smaller than internal (Fig. 4) *L. insperata*
3. Tibia and metatarsus IV with ventral spines (Figs 13-15) ...
..... *L. kuryi* **sp. nov.**
- 3'. Tibia and metatarsus IV without spines (Fig. 15) 4
4. Posterior margin and free tergites with one pair of tubercles, femur IV blackish (Fig. 3) *L. coxalis*
- 4'. Posterior margin and free tergites without one pair of tubercles, femur IV brownish 5
5. Drymarks (only seen in dried specimens) covering most of the lateral region, all of the area II and the area between spines of area III (Fig. 37) *L. concolor*
- 5'. Drymarks (only seen in dried specimens) only on sulci of mesotergal areas (Figs 34 and 35) *L. cancellata*

Longiperna Roewer, 1929

Neomitobates [part]: Roewer, 1913: 289.

Longiperna Roewer, 1929: 272; Mello-Leitão, 1932: 227 (rdesc); Kury, 2003: 147 (cat, diag, reva) (type-species: *Discocyrtoides concolor* Mello-Leitão, 1923 by monotypy)

Despirus [part]; B. Soares, 1943: 225.

Discocyrtoides [part]: B. Soares, 1943: 225; Soares & Soares, 1948: 559 (cat).

Diagnosis. Body pyriform-shaped. Posterior margin of dorsal scutum with a yellow stripe. Ocularium with two pointed apophyses. Areas III-IV completely separated; III with two high pointed apophyses, much longer on females; other areas without apophyses. Male coxa IV enlarged, apex reaching posterior margin. External and internal apophyses of coxa IV bifurcated. Trochanter IV much longer than wide; with prolateral and retrolateral large basal tubercle. Free tergites with tubercles of

same size or one longer pair (never longer than tergite length). Pedipalp short and robust. Basitarsus I 3-segmented, slightly swollen in males. Penis with ventral plate slightly widened, to very widened, at base; distal margin straight or slightly concave; with distal group of setae in subapical region; ventral process cochleariform.

Relationships. This genus is closely related to *Discocyrtoides* based on apophyses of male coxa IV and large basal tubercles on trochanter. However, *Longiperna* can be distinguished from *Discocyrtoides* by the longer trochanter IV along with longer legs and body. The rectangular ventral plate of penis of three species (*L. coxalis*, *L. insperata* and *L. trembao* **sp. nov.**) and ventral process of glans are almost identical to that of *D. nigricans* and probably symplesiomorphic (C. BRAGAGNOLO unpubl.).

Longiperna cancellata (Roewer, 1913)

Figs 1, 7, 16-18, 34, 35, 41

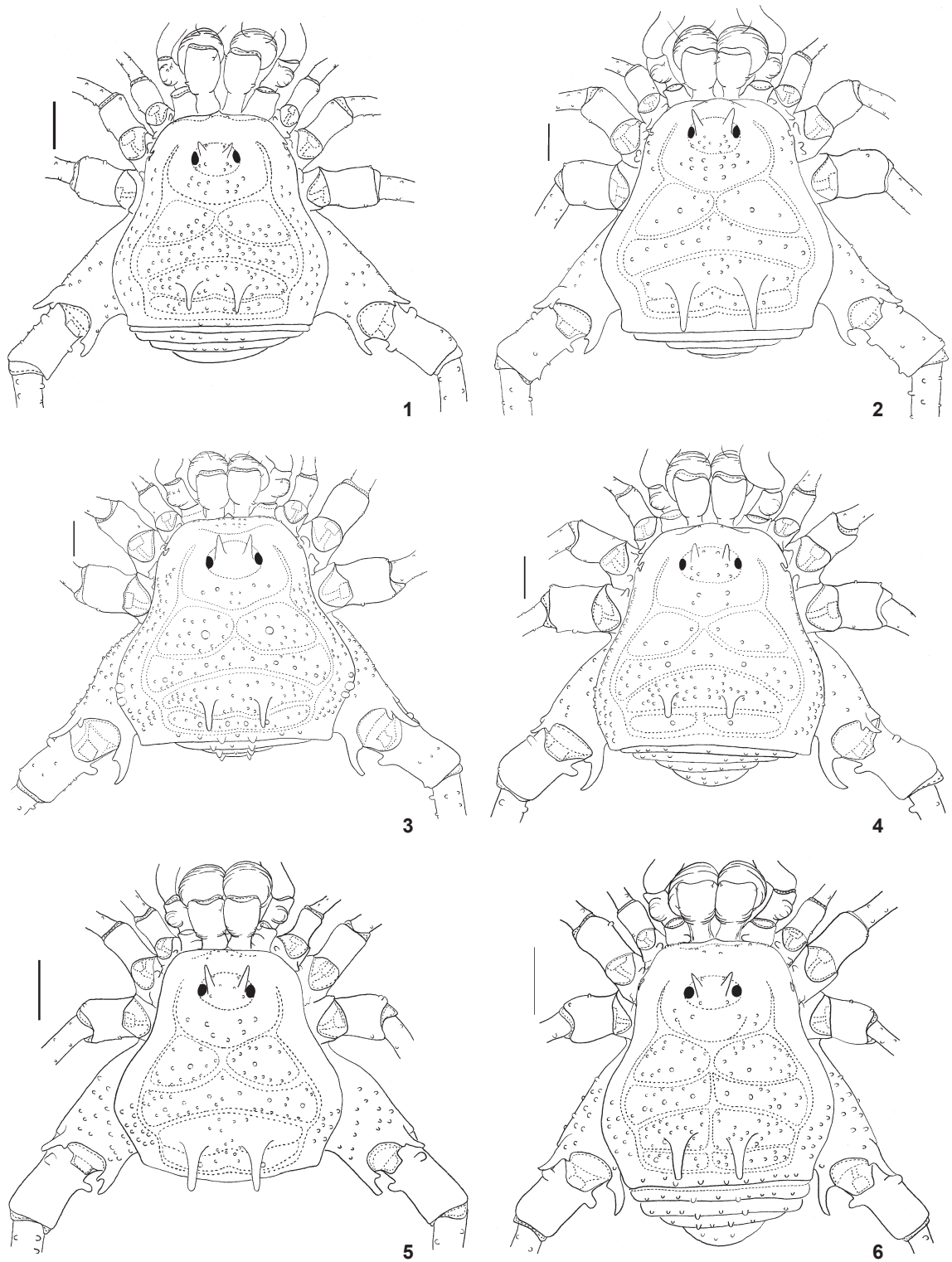
Neomitobates cancellatus Roewer, 1913: 291, fig. 116; 1923: 512, fig. 639 (rdesc); Mello-Leitão, 1923: 164 (cit), 193 (key); 1932: 399, fig. 264 (rdesc); 1933: 148 (cit); Kury, 2003: 152 (cat). [BRASIL, São Paulo (SMF 865, holotype female, examined)].

Metomitobates cancellatus: Soares & Soares, 1949b: 233 (cat).

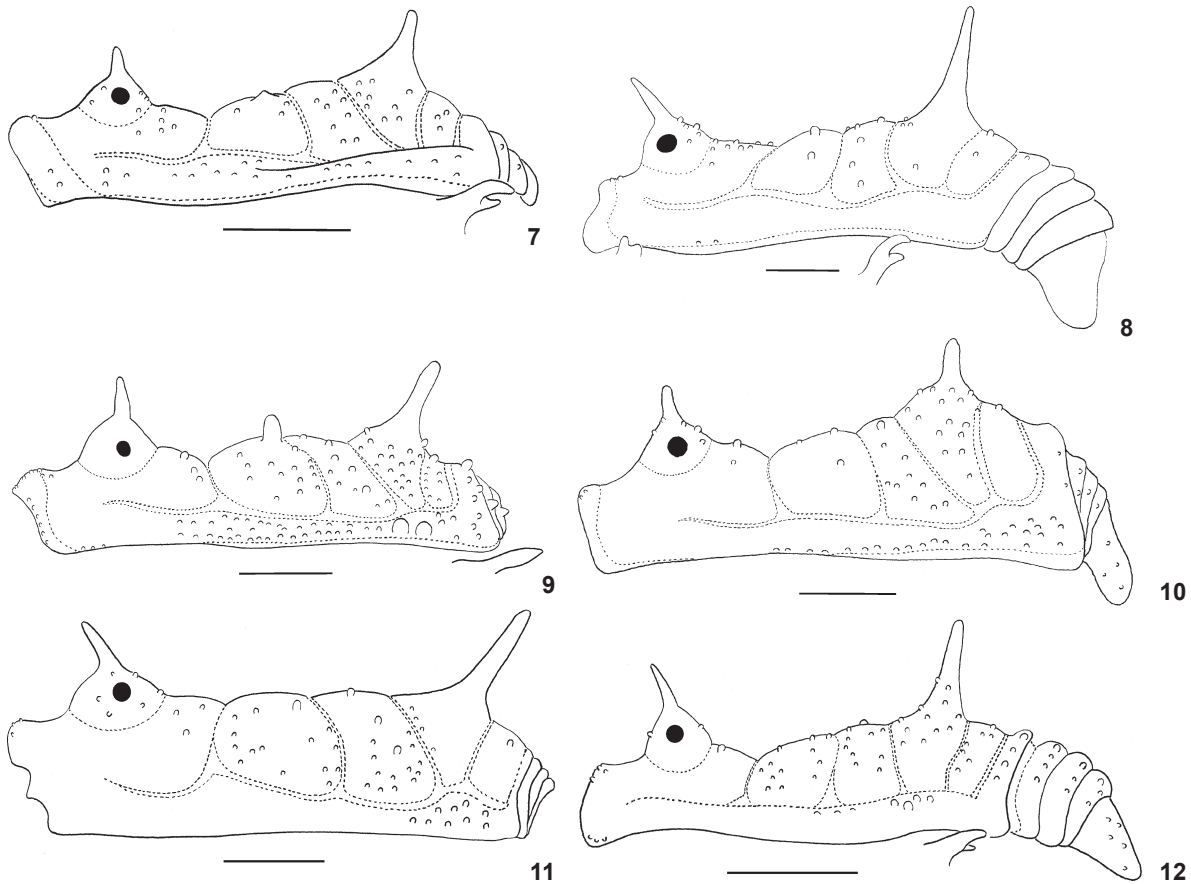
Longiperna cancellata: Kury, 2003: 148 (cat); Hara & Gnaspini, 2003: 263 (biol); DaSilva & Gnaspini, 2010: 535 (cit).

Diagnosis. Resembles *L. concolor* and *L. kuryi* **sp. nov.** by having area II-IV undivided, external and internal apophyses of male coxa IV of the same size and smooth free tergites. It can be distinguished by the density of tubercles on dorsal scutum (less tuberculated in *L. concolor* and *L. kuryi* **sp. nov.**), by the drymark (surrounding tubercles of area II in *L. concolor* and *L. kuryi* **sp. nov.** and only on the mesotergal areas in *L. cancellata*) and by the absence of acute tubercles on tibia-metatarsus IV, present in *L. kuryi* **sp. nov.**

Male description (MZSP-27374). **Measurements.** dorsal scutum; maximum width: 4.9; total length: 4.8; prosoma length: 2.2; width 3.3. Femur IV length: 39. **Dorsum** (Figs 1 and 7). anterior margin of prosoma with three tubercles on median elevation. Ocularium with four anterior and nine posterior tubercles, along with two pointed apophyses (smaller than ocularium height), divergent and directed upwards. Prosoma with 10 tubercles behind ocularium. Lateral margin with scattered tubercles from ozopore to posterior margin. Area I with 18-20 tubercles on each side; II with 21 tubercles on each side; III with two parallel pointed apophyses, slightly directed backwards (apex rounded), with 18-19 tubercles on each side; IV with nine tubercles. Posterior margin with two tubercles. Free tergite I with 10; II with nine; III with eight minute tubercles. Anal operculum with minute tubercles. **Chelicera.** Segment I with four-five tubercles on lateral margin of bulla; movable finger with three teeth; III with five teeth. **Pedipalp.** Trochanter with two dorsal and two ventral tubercles. Femur with a large ventrobasal tubercle, two small ventral tubercles and one large subapical prolateral tubercle. Tibia



Figures 1-6. Dorsal view of *Longiperna* males: (1) *L. cancellata* (MZSP 27374); (2) *L. concolor* (MZSP 32412); (3) *L. coxalis* (IBSP 4810); (4) *L. insperata* (MZSP 27388); (5) *L. kuryi* sp. nov. (MZSP 27375); (6) *L. trembao* sp. nov. (MNRJ 05336). Scale bar = 1 mm.



Figures 7-12. Lateral view of *Longiperna* males: (7) *L. cancellata* (MZSP 27374); (8) *L. concolor* (MZSP 32412); (9) *L. coxalis* (IBSP 4810); (10) *L. insperata* (MZSP 27388); (11) *L. kuryi* sp. nov. (MZSP 27375); (12) *L. trembao* sp. nov. (MNRJ 05336). Scale bar = 1 mm.

ectal lili, mesal liili/lili. Tarsus mesal III, ectal lili, with two internal rows of small setae. **Venter.** Coxa I with median row of seven tubercles each, four anterior, six to seven posterior and four apical scattered tubercles; II with a median row of eight, one anterior, seven to nine posterior and five apical scattered tubercles; III-IV with scattered tubercles. **Legs.** Coxa I with one anterior and one posterior tubercle; II with one bifid anterior tubercle and one bifid posterior tubercle; III with one anterior directed to II and one posterior tubercle directed to IV; IV with external apophyses slightly larger than internal apophyses and smaller than trochanter width, slightly curved prolaterally, with a basal internal tubercle, internal apophysis slightly curved downwards, with a prolateral tubercle. Trochanters I-III with small scattered tubercles; IV with subbasal tubercles on prolateral and retrolateral (larger and directed frontwards), on retrolateral apical (half size subbasal). Femur IV with minute tubercles, eight times longer than dorsal scutum. Tarsal formula: 6(3); 13(3); 7; 7. Basitarsus slightly swollen. **Coloration** (ethanol). Body and legs brown. Drymark (Fig. 34) on median-posterior of ocularium to area I (from posterior tubercle to median sulcus, except most of the

ocularium). Coxa IV with dorso-internal and trochanter IV with dorsal drymark. Tibiae I-IV and metatarsi III-IV with white rings. **Penis** (Figs 25-27). Ventral plate slightly concave on 2/3 distal sides, where it is wider in lateral view, basal part 50% wider than distal, three distal pairs of long setae, one intermediate pair of short setae close to distal group, three long basal setae (longer on the widest part basal of ventral plate). Stylus straight densely setose around the opening. Ventral process similar sized as stylus, with straight shaft, apex with setae on lateral and dorsal view.

Female redescription (Fig. 35, MZSP 31949): **Measurements.** Dorsal scutum; maximum width: 5.4; total length: 5.8; prosoma length: 2.3; width 3.2. Femur IV length: 7.6. Anterior margin with two tubercles on each side and seven tubercles on bossa. Margin of dorsal scute and tergites with yellow strip. Drymark on lateral side of sulci I. Area I with 27 tubercles on each side; II with 55 tubercles; III with 58 tubercles; and IV with 11 scattered tubercles. Posterior margin with 11 tubercles. Free tergite I with 19; II with 20; and III with 18 tubercles. Coxa IV with single-branched short external apophysis, without internal apophysis. Trochanter IV with shorter tubercles.

Intraspecific variation. In males, the anterior margin may have as many as 13 small tubercles. There is one median dry line from middle elevation of anterior margin to sulci I (interrupted over ocularium), absent in some specimens (Fig. 35). Measurements variation in tables I-II.

Material examined. BRASIL, *São Paulo*: Picinguaba (Morro do Cuscuzeiro), G. Machado leg. 24.VII.1996, 1 male (MZSP 16322); idem, 20.XII.1995, 1 male (MZSP 16321); Salesópolis (E.B. Boracéia), J.P.L. Guadanucci leg. VII.2003. 1 male (MZSP 29472); Monteiro Lobato, 6.I.2001, E. Vasconcelos leg., male (MNRJ4517); *Rio de Janeiro*: Parati (Estrada Parati-Cunha, 1300 m), 23°10'37"S-44°49'54"W, M.B. DaSilva & H.Y. Yamaguti leg. XI.2005, 2 males (MZSP 27377); idem (Estrada Parati-Cunha, 700 m), 23°11'27"S-44°49'48"W, M.B. DaSilva & H.Y. Yamaguti leg. XI.2005, 7 males (MZSP 27374); Terezópolis (Fazenda Vale da Revolta), 11.II.1989, R. Sachsse leg., male (MNRJ6421).

Geographic distribution. (Fig. 41). BRASIL: Coastal Atlantic Rain Forest of the São Paulo and Rio de Janeiro states.

Longiperna concolor (Mello-Leitão, 1923)

Figs 2, 8, 15, 19-21, 37, 40

Discocyrtoides concolor Mello-Leitão, 1923: 131, fig. 12; B. Soares, 1944a: 225, fig. 3 (desc female); 1944b: 279 (dist); 1946: 490 (cat); Soares & Soares, 1948: 560 (cat). [BRASIL, *São Paulo*: Alto da Serra (MZUSP 520, holotype male, examined)].

Longiperna concolor; Roewer, 1929: 273 (rdesc), fig. 41; Mello-Leitão, 1932: 227 (rdesc); Kury, 2003: 148; Bragagnolo, 2008: 167 (dist), fig. 13.

Longiperna zonata Mello-Leitão, 1935a: 29, fig. 22; 1935b: 102 (cit); Gnaspini 1996: 433 (cit); Kury, 2003: 150 (cat); Cokendolpher & Mitov, 2007: 360, fig. 9.3B (biol); Machado & Macías-Ordóñez, 2007: 463 (biol); Requena *et al.* 2009: 1172 (biol). [BRASIL, *São Paulo*: Ribeira do Iguape (MNRJ 41807, 2 syntypes males, examined)]. **Syn. nov.**

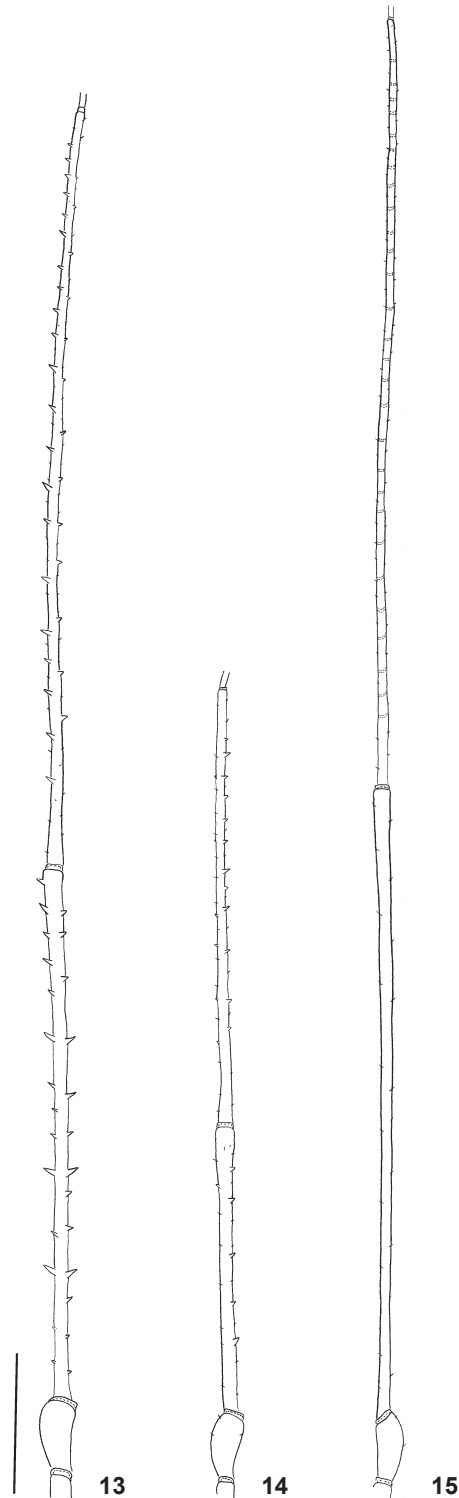
Despirus heliacus B. Soares, 1942: 2, fig. 1 [BRASIL, *São Paulo*: Salesópolis, Boracéia (MZSP 118, holotype and paratype males; examined)]. **Syn. nov.**

Discocyrtoides heliacus; B. Soares, 1944a: 185 (sist); 1945: 230 (cit); 1946: 491 (cat); Soares & Soares, 1948: 560 (cat).

Longiperna heliaca; Kury, 2003: 148 (cat).

Diagnosis. This species is closely related to *L. kuryi* **sp. nov.** based on the presence of tubercles on the dorsal scutum. It can be distinguished by absence of acute tubercles on tibia-metatarsus IV. It also resembles *L. cancellata* by having area II-IV undivided, external and internal apophyses of male coxa IV of the same size and smooth free tergites. It can be distinguished by the density of tubercles on dorsal scutum (less tuberculated in *L. concolor*) and the drymark (surrounding tubercles of area II in *L. concolor* and only on the sulci areas in *L. cancellata*).

Male redescription (MZSP 32412). **Measurements.** Dorsal scutum; maximum width: 5.8; total length: 6.2; prosoma length: 2.6; width 3.7. Femur IV length: 53.5. **Dorsum** (Figs 2



Figures 13-15. Patella-metatarsus IV of *Longiperna*: (13) *L. kuryi* alfa male (MZSP 27375); (14) beta male (MZSP 31951); (15) *L. concolor* (MZSP 17157). Scale bar = 5 mm.

Table I. Measurements of *Longiperna* males. (DSMW) Dorsal scutum maximum width, (TL) total length, (PL) prosoma length, taken at ocularium, (PW) prosoma width, (FeIVL) femur IV length.

| | DSTL | DSMW | PL | PW | FeIVL |
|------------------------------------|---------|---------|---------|---------|-----------|
| <i>L. cancellata</i> (n = 13) | 5.1-5.2 | 5.4-5.5 | 2.1-2.2 | 3.2-3.5 | 28.5-45.0 |
| <i>L. concolor</i> (n = 45) | 5.2-6.7 | 4.7-6.7 | 2.1-2.7 | 3.3-4.4 | 19.0-65.0 |
| <i>L. coxalis</i> (n = 10) | 5.2-5.4 | 4.2-5.4 | 1.8-2.4 | 2.9-3.5 | 16.5-37.0 |
| <i>L. insperata</i> (n = 6) | 4.6-4.9 | 4.8-4.9 | 1.9-2.1 | 3-3.2.0 | 18.5-37.5 |
| <i>L. kuryi</i> sp. nov. (n = 19) | 5.6-5.9 | 5.3-6.1 | 2.4-2.5 | 3.4-3.6 | 18.0-51.5 |
| <i>L. trembao</i> sp. nov. (n = 3) | 4.6-5.0 | 4.4-4.5 | 2.0-2.1 | 2.9-3.0 | 18.5-23.0 |

Table II. Measurements of *Longiperna* females. (DSMW) dorsal scutum maximum width, (TL) total length, (PL) prosoma length, taken at ocularium, (PW) prosoma width, (FeIVL) femur IV length.

| | DSTL | DSMW | PL | PW | FeIVL |
|-----------------------------------|-----------|-----------|-----------|-----------|-------------|
| <i>L. cancellata</i> (n = 2) | 5.7 - 5.8 | 5.2 - 5.4 | 2.3 - 2.4 | 3.2 - 3.3 | 7.8 - 9.1 |
| <i>L. concolor</i> (n = 38) | 5.1 - 6.6 | 5.3 - 5.9 | 2.2 - 2.5 | 3.4 - 4.0 | 8.0 - 14.5 |
| <i>L. coxalis</i> (n = 3) | 5.1 - 5.2 | 4.6 - 4.7 | 2.1 | 2.9 - 3.0 | 10.0 - 11.0 |
| <i>L. insperata</i> (n = 6) | 5.6 - 6.1 | 5.0 - 5.8 | 2.1 - 2.4 | 3.1 - 3.4 | 13.5 - 16.0 |
| <i>L. kuryi</i> sp. nov. (n = 20) | 5.7 - 5.8 | 5.1 - 5.2 | 2.3 - 2.4 | 3.2 - 3.3 | 7.2 - 3.5 |

and 8). Anterior margin of prosoma with five tubercles on each side, two on median region. Ocularium with seven anterior, eight posterior tubercles, and two pointed divergent apophyses slightly directed frontwards. Prosoma with six tubercles on each side behind ocularium. Area I with four to five tubercles on each side; II with 12 tubercles on each side; III with two parallel apophyses (apex rounded), with 12 tubercles; IV with seven tubercles on each side. Posterior margin smooth. Free tergite I with four tubercles; II-III with six tubercles. Anal operculum with minute tubercles. **Chelicera.** Segment I with four tubercles on bulla; movable finger with three teeth; fixed finger with four teeth. **Pedipalp.** Trochanter with three dorsal and two ventral tubercles. Femur with one ventrobasal, two minute ventral tubercles and one subapical prolateral tubercle. Tibia ectal/mesal Ilii. Tarsus mesal Ilii, ectal Ilii, with two internal rows of small setae. **Venter.** Coxa I with median row of six tubercles, three to four anterior, four posterior and four apical scattered tubercles; II with median row of five, two anterior, five posterior and four apical scattered tubercles; III-IV with scattered tubercles, base of internal apophysis with a few tubercles. **Legs.** Coxa I with one anterior and one posterior bifid tubercle; II with one bifid anterior and one bifid posterior tubercle; III with one anterior tubercle directed to II and one posterior tubercle directed to IV; IV with few scattered tubercles, external apophysis shorter than internal apophysis, slightly curved prolaterally and downward, with basal internal tubercle, and internal apophysis slightly curved downwards, with

prolateral tubercle. Trochanters I-III with small scattered tubercles; IV with subbasal tubercles on prolateral and retrolateral (larger and directed frontwards). Femur IV with minute tubercles, 8.9 times longer than dorsal scutum. Tarsal formula: 6(3); 13(3); 7; 7. **Coloration** (Fig. 36, ethanol). Body and legs brown, surrounding ocularium and areas darker, except around tubercles. Drymark on lateral margin to sulcus II, narrow stripe from anterior margin to over ocularium, and on sulci I-V, surrounding tubercles of area II. Metatarsi I-IV with clear rings. **Penis** (Figs 19-21). Ventral plate with parallel sides on distal 2/3, 2.2 times wider than distal, two to four distal pairs of long setae, one intermediate pair of short, and three long basal setae. Stylus straight without small setae on ventral side, curved apically. Ventral process similar-sized as stylus, with sinuous shaft, apex cochlear with serrate sides.

Female redescription (MZSP 32412). **Measurements.** Dorsal scutum; maximum width: 5.8; total length: 6.5; prosoma length: 2.5; width 3.4. Femur IV length: 13.7. Anterior margin with two tubercles on each side and two tubercles on anterior margin elevation. Prosoma with six tubercles behind ocularium. Area I with 14-16 tubercles on each side, one higher; II with 48; III with 29; and IV with six tubercles. External apophyses of coxa IV single-branched, internal very reduced. Free tergite I with six; II with eight; and III with 10 tubercles. Tarsal formula: 6(3); 14(3); 7; 7.

Intraspecific variation. There is a large variation in tubercle density on dorsal scutum of males, but an area of dorsal scutum

is never absolutely smooth or totally full of tubercles, like *L. cancellata* (Fig. 34). Measurements variation in tables I-II.

Material examined: BRASIL, *São Paulo*: Barra do Turvo (mata da cachoeira do 1° ribeirão, Vêu da Noiva), 24°43'19"S-48°27'14"W, 31.I.2006, M.B. DaSilva *et al leg.* 2 males (MZSP 27382); idem, (pé da Serra do Cadeado), 24°54'49"S-48°14'45"W, 1.II.2006, M.B. DaSilva *et al leg.* 1 male (MZSP 27383); Ribeirão Grande (Sumidouro), R. Bérnils & F. Stender *leg.*, 30.IV.2002, 1 male, 1 female (MNRJ 16207); Atibaia (P.E. do Itapetinga), G. Machado *leg.* III.2002, 1 female (MZSP 29416); Cocaia (Represa Nova), H. Urban *leg.* XI. 1949, 1 female (MZSP 22147); Miracatu (Serra de Itimirim), R. Pinto-da-Rocha & S. Bérnils *leg.* 20.XII.1998, 1 male, 1 female (MZSP 17248); idem (Fazenda Itereí), O. Oyakawa *leg.* 05.XII.1998, 1 male (MZSP 21585); idem (Morro do Fau), R.S. Bérnils *et al. leg.* 19.XII.1998, 2 males, 1 female (17050); idem, 1 male, 3 females (MZSP 17244); Santo André (Paranapiacaba), G. Machado *leg.* 2.V.1999, 1 male (MZSP 27188); idem, R. Pinto-da-Rocha & S.A. Casari *leg.* 13.XII.1996 1 male, 1 female (MZSP 17630) idem, C. D'Andretta *leg.* V.1947 (MZSP 30706); Iguape (Núcleo Despraiado), R. Pinto-da-Rocha *et al. leg.* 3.X.1997, 5 males, 4 females (MZSP 30911); São Paulo (Pico do Jaraguá), Exp. MZUSP *leg.* 21.X.1980, 1 male, 2 females (MZSP 30906); idem, R. Baptista *leg.* 11.XII.1990, 1 male, 3 females (MNRJ 06694); Iporanga (Fazenda Intervalles, Cachoeira do Mirante), P. Gnaspini & R. Pinto-da-Rocha *leg.* 02.XII.1992, 1 male, 1 female (MZSP 17099); idem (Gruta da Água Sumida), N. Morachioli *leg.* 4.III.1992, 1 female (MZSP 17167); idem, (Fazenda Intervalles), R.L.C. Baptista *leg.* 03.II.1990, 5 males, 3 females (MNRJ 06622); idem (P.E. Intervalles), G. Machado *leg.* 21.V.2003, 1 male (MZSP 29483); São Vicente (Horto Municipal), G. Machado *leg.* 17.X.1996, 3 males, 3 females (MZSP 16763); idem (Japuí), M.B. DaSilva *et al. leg.* 7.III.2004, 1 female (MZSP 29466); Peruíbe, Exp. MZUSP *leg.* 28-30.VI.1982, 1 female (MZSP 9954); idem (Estação Ecológica da Juréia), A.D. Brescovit *et al. leg.* 10.XII.1998, 1 female (IBSP 1416); Ubatuba (Picinguaba), V. Bonato *leg.* 14.IV.1999, 1 male (MZSP 29407); Guarujá (Praia de Iporanga), M.B. DaSilva *leg.* 6.III.2006, 10 males, 6 females (MZSP 22887); Capão Bonito (Fazenda Intervalles), A. Kury & P. Gnaspini *leg.* 18.X.1991, 2 males (MZSP 30907); idem, P. Gnaspini *leg.* V. 1992, 2 males (MZSP 17090); Iporanga (Cachoeira do Mirante), P. Gnaspini *leg.* 3.VI.1992, 2 males (MZSP 30908); idem (Caverna Morro Preto) E. Trajano *leg.* 24.IX.1989, 1 female (MHNCI 6580); idem (Fazenda Intervalles), Exp. MZUSP *leg.* 13.XI.1992, 5 males, 3 females (MZSP 17098); idem, P. Gnaspini & R. Pinto-da-Rocha *leg.* 2.XII.1992, 2 males (MZSP 17163); Bertioga (R.E. de Itatinga), C. Magenta *leg.* 3.I.1999, 1 female (MZSP 16972); idem, M.B. DaSilva *et al. leg.* 08.III.2004, 2 females (MZSP 22884). *Rio de Janeiro*: Nova Friburgo, 6.VIII.1989, A. Kury *leg.*, male (MNRJ-4536).

Geographic distribution. (Fig. 40). BRASIL: Coastal and Interior Atlantic Rain Forest of the São Paulo and Rio de Janeiro states.

Longiperna coxalis (Roewer, 1943)

Figs 3, 9, 22-24, 36, 41

Mitobatula coxalis Roewer, 1943: 50, pl 7, fig. 56; Soares & Soares, 1949b: 235 (cat) [BRASIL, *Santa Catarina*: Nova Teutônia (SMF RII 6433/6 holotype male examined)].

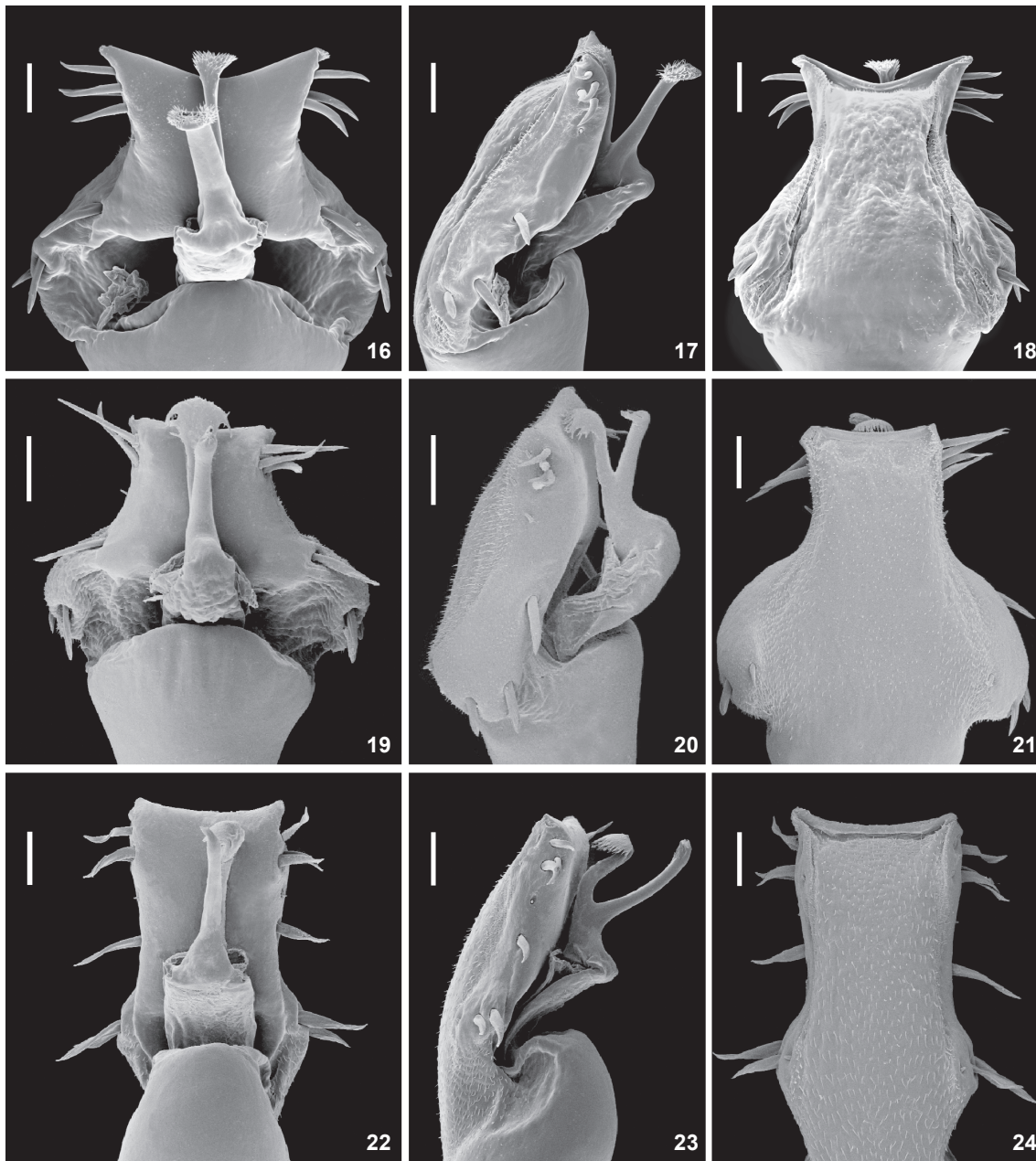
Longiperna coxalis: Kury, 2003: 148.

Discocyrtoides areolatus B. Soares, 1944a: 222, figs 1-2; 1944b: 278 (dist); 1946: 489 (cat); Soares & Soares, 1948: 560 (cat). [BRASIL, *São Paulo*: Alto da Serra (MZSP 427, holotype male examined)]. **Syn. nov.**

Longiperna areolata: Kury, 2003: 147 (cat); Almeida-Neto *et al.* 2006: 369 (biol).

Diagnosis. Resembles *L. cancellata*, *L. concolor* and *L. kuryi* **sp. nov.** by having areas II-IV undivided and external and internal apophyses of male coxa IV of the same size. It can be easily distinguished from the other species by the presence of two higher tubercles on posterior margin and on free tergites I-III and one larger tubercle in each side of area I.

Male redescription (IBSP 4810). **Measurements.** Dorsal scutum; maximum width: 5.6; total length: 5.4; prosoma length: 2.3; width 3.5. Femur IV length: 34.5. **Dorsum** (Figs 3 and 9). Anterior margin of prosoma with 21 tubercles, higher on median region. Ocularium with two directed upwards and parallel pointed apophyses. Prosoma with eight tubercles behind ocularium. Area I with 16-18 tubercles on each half, one larger (near median sulcus); II with 14-15 tubercles (four forming a transversal median line of larger tubercles) on each side; III with two parallel apophyses (apex rounded) and with 16-18 tubercles on each side; IV with seven tubercles on each side. Lateral margin with tubercles from sulcus I to posterior margin. Posterior margin with seven tubercles, two median larger). Free tergite I with eight; II with six; and III with seven tubercles; two median higher on tergites I-III. Anal operculum with minute tubercles. **Chelicera.** Segment I with four tubercles on bulla; movable finger and segment III with four teeth decreasing in size distally. **Pedipalpus.** Trochanter with two dorsal and two ventral tubercles. Femur with one ventrobasal, two minute ventral and one subapical prolateral tubercle. Tibia ectal/mesal Ili. Tarsus mesal Ili, ectal Ili, with two internal rows of small setae. **Venter.** Coxa I with one median row of seven tubercles, eight anterior, seven posterior, and five apical scattered tubercles; II with median row of 13, eight anterior, 18-19 posterior, and seven apical scattered tubercles; III-IV with scattered tubercles. **Legs.** Coxa I with one anterior and one posterior tubercle; II with one very enlarged apophysis (square apex) with one posteriad branch and one posterior enlarged apophysis with two dorsal and one posteriad branch; III with one anterior tubercle directed to II; and IV with few scattered tubercles, external apophysis about same size as trochanter IV width, slightly curved prolaterally, with basal internal tubercle, internal apophysis slightly curved downwards (same size as external), with prolateral tubercle. Trochanters I-III with small scattered tu-



Figures 16-24. Distal part of *Longiperna* penis: (16-18) *L. cancellata* (MZSP 16322); (19-21) *L. concolor* (MZSP 17630); (22-24) *L. coxalis* (MZSP17655). Scale bar = 0.05 mm.

bercles; IV with equal sized subbasal tubercles on prolateral and retrolateral. Femur IV with minute tubercles, 6.2 times longer than dorsal scutum. Tarsal formula: 6(3); 13-14(3); 8; 8-9. First two articles of basitarsus slightly swollen. **Coloration** (ethanol). Body and legs dark-brown. Drymark on anterior margin, lateral margin, sulcus I, on median region of ocularium, and on areas I-III (except on corners); apex of coxa IV and apo-

physes of area III black. Tubercles of legs I-III and three median higher tubercles of free tergites yellowish; leg IV blackish.

Female redescription (MZSP 31950): **Measurements.** Dorsal scutum; maximum width: 4.6; total length: 5.1; prosoma length: 2.1; width: 2.9. Femur IV length: 10.0. Anterior margin with three tubercles on each side, and eight tubercles on bossa. Prosoma with four tubercles behind ocularium. Area I with 25-

27 tubercles on each side, one median tubercle higher; II with 49; III with 68; and IV with 18 tubercles (four forming a larger transversal median line). Free tergite I with 15 (two median ones higher); II with 14 (two median ones higher); and III with five tubercles (two ones median higher). External apophysis of coxa IV single-branched, internal apophysis very reduced. Trochanter IV with shorter tubercles. Tarsal formula: 6(3); 13(3); 8; 9. Measurements variation in tables I-II.

Material examined: BRASIL, *São Paulo*: Bertioga (Guaratuba), F.A.G. Mello *leg.* 28.IX-10.X.1995, 1 male (MZSP 17166); Santo André (E.B. Paranapiacaba), R. Pinto-da-Rocha *leg.* 17.V.1999, 1 male (MZSP 16434); idem, R. Pinto-da-Rocha, D. Caetano, R. Mungía-Steyer & C. Bragagnolo *leg.*, 16-17.XI.2009, 2 males, 1 female (MZSP 31950); idem, C. Rheims & R. Indicatti *leg.* 14-165.XII.2003, 4 males (IBSP 4810); idem, 1943, 1 female (MZSP 1538); idem, 1 male (MZSP 1830).

Geographic distribution. (Fig. 41). Recorded in only two localities of the Atlantic Rain Forest of São Paulo state. The record for Nova Teutonia (type-locality of *L. coxalis*) is incorrect; see a detailed discussion of this locality in PINTO-DA-ROCHA (2002).

Longiperna insperata Soares & Soares

Figs 4, 9, 25-27, 38, 40

Ancistrotellus insperatus Soares & Soares, 1947a: 77, fig. 9 (desc male); 1949a: 55, fig. 5 (desc female); 1949b: 228 (cat) [BRASIL, *Paraná*: Piraquara, Banhado, (MNRJ 04535 holotype male examined)].

Longiperna insperata Kury, 2003: 148 (cat).

Longiperna cancellata Roewer, 1943: 29, pl 2, fig. 25; 1959: 87 (mis); Kury, 2003: 148 (cat). [BRASIL, *Paraná*: Curitiba (SMF RII 1390/2, #♂ holotype male examined)]. **Syn. nov.**

Longiperna curitibana Kury, 2003: 148 (cat, replaced name to *Longiperna cancellata* Roewer, 1943, junior secondary homonym of *Neomitobates cancellatus* Roewer, 1913). **Syn. nov.**

Discocyrtoides paranensis Soares & Soares, 1947b: 251, fig. 1; 1948: 562 (cat). [BRASIL, *Paraná*: Piraquara, Banhado (MNRJ 04543#♂ holotype male examined)]. **Syn. nov.**

Longiperna paranensis: Kury, 2003: 148 (cat).

Diagnosis. Resembles *L. trembao* sp. nov. based on area IV divided by a longitudinal groove. It can be easily distinguished by internal apophysis of coxa IV being two times longer than external apophyses and area III with two short and parallel apophyses directed upwards.

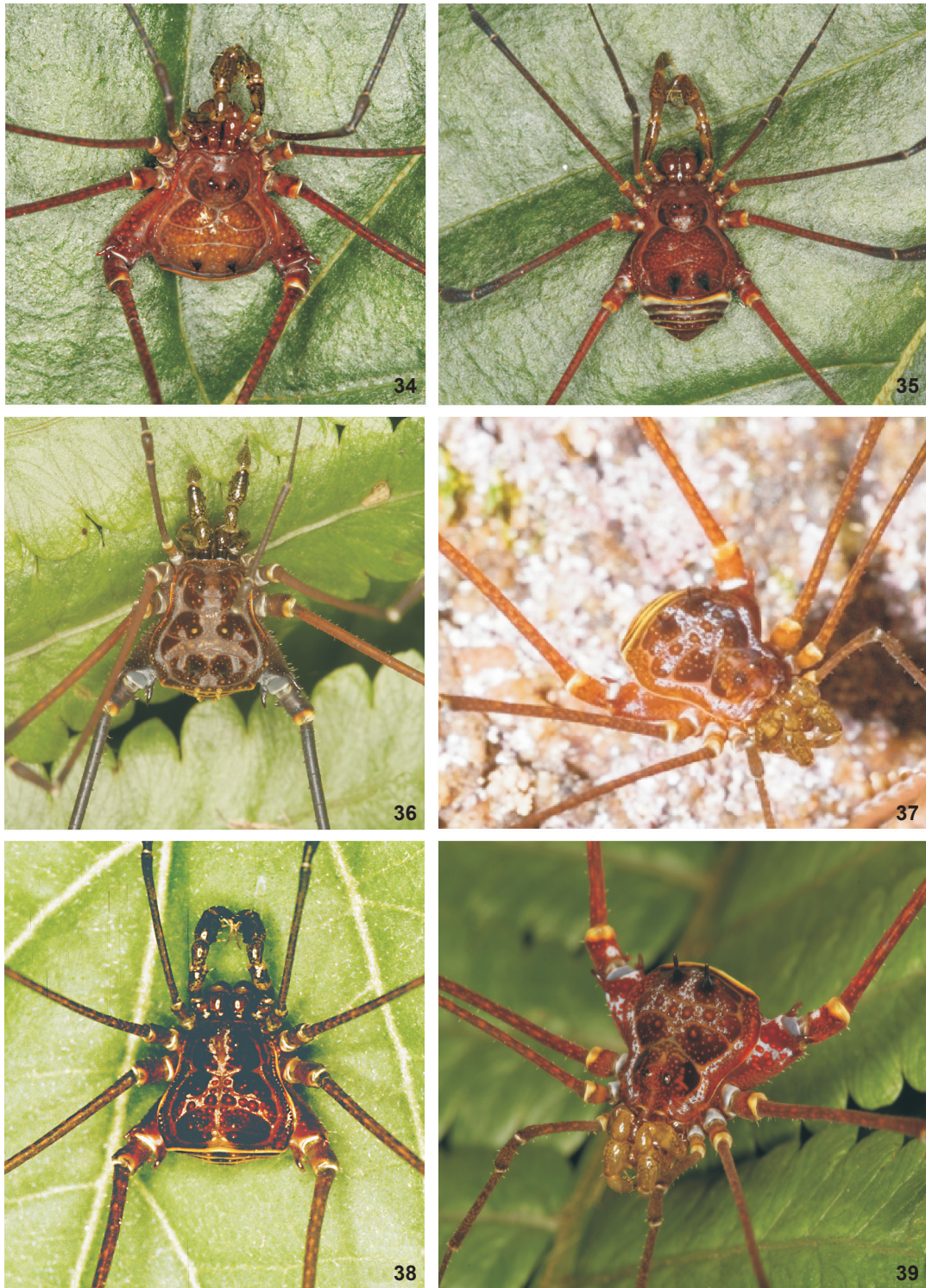
Male redescription (MZSP 27388). **Measurements.** Dorsal scutum; maximum width: 4.7; total length: 4.9; prosoma length: 2.1; width 3.3. Femur IV length: 33. **Dorsum** (Figs 4 and 10). Anterior margin of prosoma with four tubercles. Ocularium with four anterior and seven posterior tubercles, two pointed apophyses parallel and directed upwards, as high as ocularium. Prosoma with four tubercles behind ocularium. Area I with three tubercles on each half side; II with 7-10 tubercles on each side; III with two short, parallel apophyses directed upwards (apex

rounded), and with 36 tubercles (some surrounding spine base); and IV with five tubercles. Lateral margin with two rows of tubercles (on external side of sulcus and close to lateral margin) from ocularium to posterior margin. Posterior margin smooth. Free tergite I with eight; II with six; and III with seven tubercles. Anal operculum with minute tubercles. **Chelicera.** Segment I with two tubercles on bulla; movable finger with three teeth and segment III with four teeth decreasing in size distally. **Pedipalpus.** Trochanter with two dorsal and two ventral tubercles (internal much larger). Femur with one ventrobasal, two minute ventral and one subapical prolateral tubercle. Tibia ectal/mesal liii. Tarsus mesal Iii, ectal Iiii, with two internal rows of small setae. **Venter.** Coxa I with one median row of nine tubercles each, six anterior minute tubercles, one posterior row of eight, and three apical tubercles; II with median row of six, eight anterior, two posterior, and three apical tubercles; III-IV with scattered tubercles. **Legs.** Coxa I with one anterior and one posterior tubercle; II with one acute anterior tubercle, one posterior directed to III and two tubercles between them; III with one anterior tubercle directed to II and one posterior directed to IV; IV with few scattered tubercles, external apophysis shorter than internal and trochanter width, slightly curved prolaterally, with basal internal tubercle, internal apophyses slightly curved downwards, with prolateral tubercle. Trochanters I-III with small scattered tubercles; IV with subbasal tubercles on prolateral and retrolateral (larger and directed frontwards). Femur IV with minute tubercles, seven times longer than dorsal scutum. Tarsal formula: 6(3); 13-14(3); 7; 7. First two articles of basitarsus slightly swollen. **Coloration** (Fig. 38, ethanol). Body and legs dark-brown, anterior half of coxa IV darker. Drymark on sulci, I-III and V, anterior margin, lateral margin (over mesotergal sulci), on median region of prosoma from anterior margin, over ocularium until sulcus I, areas I-IV with a cross formed by dry patch (except surrounding tubercles). Dry patch between internal and external apophyses of coxa IV. Tubercles and legs I-III yellowish. Posterior margin with yellow external border. **Penis** (Figs 25-27). Ventral plate with parallel sides on distal 2/3, basal part 15% wider than distal, three distal pairs of long setae, one intermediate pair of short, and three long basal setae. Stylus straight with few very small setae on ventral side. Ventral process similar sized as stylus, with sinuous shaft, apex cochlear with serrate sides.

Female redescription (MNRJ 06610): **Measurements.** Dorsal scutum; maximum width: 5.5; total length: 5.8; prosoma length: 2.2; width: 3.2. Femur IV length: 14.0. Anterior margin with four tubercles on bossa. Prosoma with six tubercles behind ocularium. Area I with 13-15 tubercles on each side, one median higher; II with 17 on each side; III with 20-22 on each side (some surrounding spine base); and IV with four tubercles on each side. Free tergite I with five; II with eight; and III with six tubercles. External apophysis of coxa IV single-branched, internal very reduced. Trochanter IV with shorter tubercles. Tarsal formula: 6(3); 12(3); 7; 7.



Figures 25-33. Distal part of *Longiperna* penis: (25-27) *L. insperata* (MZSP 18666); (28-30) *L. kuryi* sp. nov. (HS 1058); (31-33) *L. trembao* sp. nov. (MNRJ 05336). Scale bar = 0.05 mm.



Figures 34-39. (34-35) *L. cancellata*, EB Paranapiacaba, São Paulo: (34) male; (35) female; (36) *L. coxalis*, EB Paranapiacaba, São Paulo; (37) *L. concolor*, Cubatão, São Paulo; (38) *L. insperata*, Marumbi, Paraná; (39) *L. kuryi* EB Paranapiacaba, São Paulo. Photos: (34-36, 38-39) Ricardo Pinto da Rocha, (37) Martha Lange.

Intraspecific variation. Some females show a reduction of the apophysis size in area III, usually much longer on females than males. Measurements variation in tables I-II.

Material examined: BRASIL, *Paraná*: Guaratuba (Rio Bonito, Km680 of BR101), 25°56'32"S-48°54'34"W, M.B. DaSilva *et al. leg.* XII.2005, 4 males (MZSP 27388); idem (Vila Cubatão), 7.II.1989, R.Pinto-da-Rocha *leg.*, 1 female (MHNC 6111); Piraquara (Banhado), Goffergé *leg.* V.1946, 1 male, 1 female (MNRJ 4992); idem, 25°26'S-48°58'W, R. Pinto-da-Rocha and A. Chagas *leg.* 5.IV.1999, 2 males, 1 female (MZSP18666); Morretes (P.E. Marumbi), R.L.C. Baptista *leg.* 27.I.1997, 1 male, 2 females (MNRJ 6610); *Santa Catarina*: Joinville (Serra Dona Francisca), M.B. DaSilva *et al. leg.* 13.XII.2005, 1 female (MZSP 27394); Luís Alves (Alto Máximo), M.B. DaSilva *et al. leg.* 12.XII.2005, 1 male (MZSP 27395).

Geographic distribution. (Fig. 40). BRAZIL: lowlands to adjacent mountains of Atlantic Rain Forest of Paraná and Santa Catarina states.

Longiperna kuryi sp. nov.

Figs 5, 11, 13-14, 28-30, 39, 40

Type material: BRASIL, *Rio de Janeiro*: Parati, Estrada Parati-Cunha (MZSP 27375, holotype male and 3 paratypes females).

Diagnosis. This species is closed related to *L. concolor* and *L. cancellata* by having an undivided area II-IV, external and internal apophyses of male coxa IV of the same size and free tergites smooth. It can be easily distinguished by presence of acute tubercles on tibia-metatarsus IV.

Male description. **Measurements.** Dorsal scutum; maximum width: 5.5; total length: 5.7; prosoma length: 2.3; width 3.4. Femur IV length: 29. **Dorsum** (Figs 5 and 11). Anterior margin of prosoma with small tubercles on median region. Ocularium tuberculate, with two pointed apophyses slightly divergent and directed frontwards. Prosoma with seven tubercles behind ocularium. Area I with 12-13 tubercles on each side, one larger (near median sulcus); II with 27 tubercles (eight larger tubercles forming a transversal line on middle of area); III with two parallel pointed apophyses directed backwards (apex rounded), with eight tubercles between apophyses; and IV with six tubercles between and behind apophyses of area III. Lateral margin with tubercles clustered between area II-III. Posterior margin smooth. Free tergites I-III smooth. Anal operculum tuberculate. **Chelicera.** Segment I with four tubercles on lateral side of bulla; movable finger with three teeth; and III with four teeth. **Pedipalpus.** Trochanter with two dorsal (one larger) and two ventral tubercles (one larger). Femur with one ventrobasal, one ventral and one subapical prolateral tubercle. Tibia ectal/mesal Ilii. Tarsus mesal Ilii, ectal Ilii, with two internal rows of small setae. **Venter.** Coxa I with one median row of eight tubercles, three anterior, four posterior, and three apical tubercles; II with median row of five, smooth anteriorly, four posterior, and three apical tubercles; III with median row of seven, one anterior, and seven posterior tubercles; IV with scat-

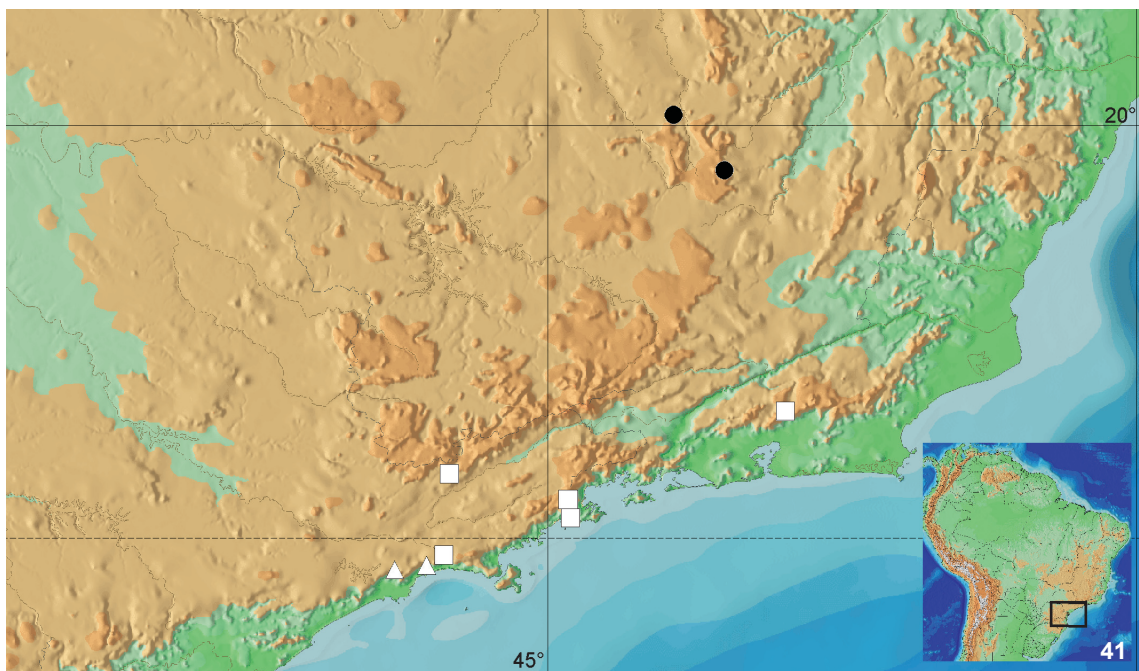
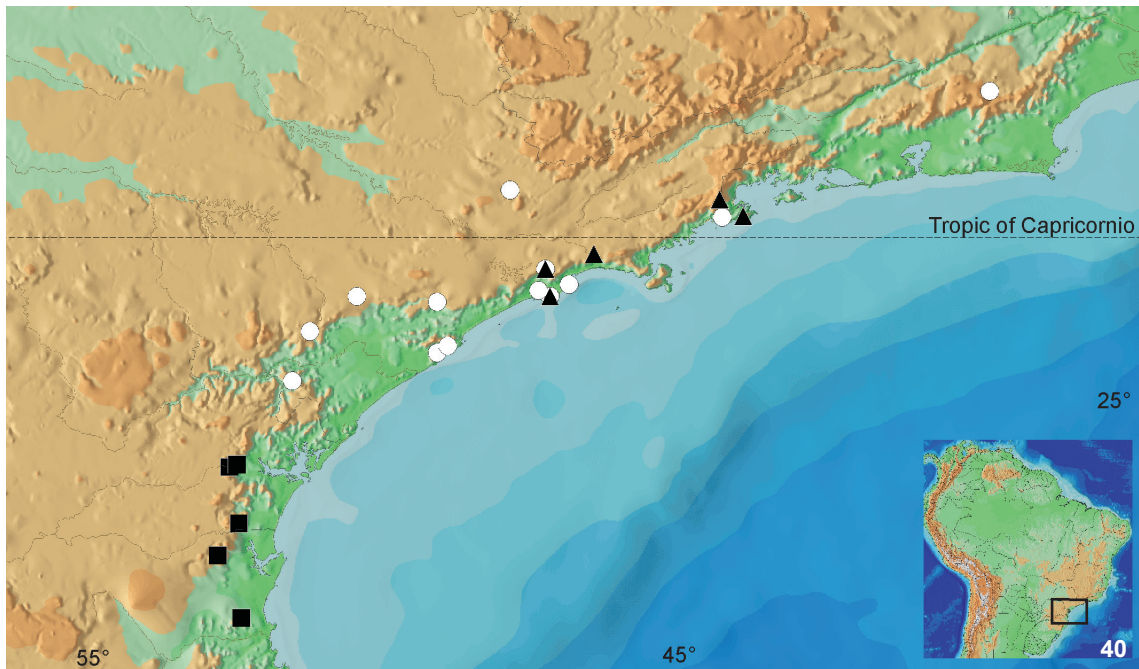
tered tubercles. **Legs.** Coxa I with one anterior trifold and one posterior bifid tubercle; II with one bifid anterior and one bifid posterior tubercle; III with one anterior directed to II and one posterior tubercle directed to IV; IV with scattered tubercles on posterior half, anterior smooth, external and internal apophyses similar-sized (length almost the width of trochanter IV), slightly curved downwards, with sub-basal internal tubercle. Trochanters I-III with small scattered tubercles; IV with one subbasal tubercle on prolateral and retrolateral tubercles (larger and directed frontwards). Femur IV with minute tubercles, 4.6 times longer than dorsal scutum. Tibia-metatarsus IV (Fig. 13) covered with acute tubercles (length almost as wide as tibia-metatarsus IV). Tarsal formula: 6(3); 13(3); 7; 7. Basitarsus I swollen. **Coloration** (Fig. 39, live animal). Body and legs brown, latero-posterior of prosoma and areas I-IV darker, tubercles light-brown. Drymarks on lateral area from anterior margin to middle area II, on median posterior of area I, with area II covered with exception of lateral, between apophyses of area III and invading area IV, one on median and another on posterior region of coxa IV, on dorsal side of trochanter IV. Tubercles of dorsal scutum without drymarks over or surrounding them. Coxa IV with reddish tubercles (yellowish in preserved specimens). Posterior margin almost entirely yellowish. **Penis.** (Figs 28-30). Ventral plate with parallel sides on distal 1/3, basal part twice wider than distal, four pairs of distal long setae, three basal (one smaller on ventral side) and two intermediate (one very small and one larger than basal one). Stylus straight without setae on ventral side. Ventral process with almost straight shaft, apex cochlear with serrate sides.

Female description: **Measurements.** Dorsal scutum; maximum width: 5.2; total length: 5.9; prosoma length: 2.3; width 3.3. Femur IV length: 12.2. Area I-IV with more and smaller tubercles than male; I with 21-25; II with 49; III with 32 (apophyses with tuberculate base); and IV with 17 tubercles. Free tergite I with 20; II with 18; III with 11 tubercles. Coxa IV with short external unique apophysis. Trochanter IV normal. Tibia-metatarsus IV without long acute tubercles. Basitarsus I not swollen.

Intraspecific variation. Two males from Paranapiacaba (MZSP-31951) show an incredible reduction in the length of leg IV, the relation femur IV/dorsal scute length is less than usually diagnostic for Mitobatinae males. However, the external morphology is identical to "long-legged" forms, even the diagnostic features on tibia-metatarsus IV (see figs 13 and 14).

Measurements variation in tables I-II.

Material examined. BRASIL, *Rio de Janeiro*: Parati (Estrada Parati-Cunha), 23°11'57"S-44°49'48"W, MB DaSilva *et al. leg.* XI.2005, holotype male, 3 paratypes females (MZSP 27375); idem (Parati-Mirim), AB Kury *leg.*, 10.VI.1989, 1 male, 4 females (MNRJ 06559). *São Paulo*: Guarujá (Morro da Praia de Iporanga), MB DaSilva *et al. leg.*, XI.2002, 6 males, 7 females (MZSP 22887); Santo André (E.B. Paranapiacaba) R. Pinto-da-Rocha, D. Caetano, R. Mugia & C. Bragagnolo *leg.*, 16-17.XI.2009, 4 males, 1 female (MZSP 31951); R. Pinto-da-Rocha *et al. leg.* 17.V.1998, 1 male, 1



Figures 40-41. Geographical distribution records of *Longiperna* species: (■) *L. insperata*, (▲) *L. kuryi* sp.n., (○) *L. concolor*, (□) *L. cancellata*, (△) *L. coxalis*, (●) *L. trembao* sp.n.

female (MZSP 16438); idem, R. Pinto-da-Rocha, D. Caetano, R. Mugia & C. Bragagnolo *leg.*, 16-17.XI.2009, 1 female (MZSP 31949); idem, W. Bokermam *leg.* 1951, 1 female (MZSP 22140); Salesópolis (E.E. Boracéia), Rabello *leg.*, 14.XII.1964, 1 male, 2

females (MZSP 10008); idem, R. Pinto-da-Rocha *leg.* 30.X.1991, 1 male (MZSP 17189); idem, S. Ide & J. Genier *leg.* 01.V.1997, 1 female (MZSP 16510); idem, F.A.G. Mello *leg.* 19.XI.1991, 2 females (MZSP-29414); idem, S.A. Casari *leg.* 15.VIII.1995, 1 male

(MZSP 17157); idem E. Rabello *leg.* XII.1947, 1 female (MZSP 25123); idem, II.1963, 1 male, 1 female (MZSP 9999).

Geographic distribution. (Fig. 40). BRAZIL: coastal Atlantic Rain Forest from Paranapiacaba (São Paulo state) to Parati (Rio de Janeiro state).

Etymology. In honor to Adriano B. Kury, who conducted his Master's Thesis on the subfamily Mitobatinae and has been the expert on this group for the last 20 years.

Longiperna trembao sp. nov.

Figs 6, 12, 31-33, 41

Type material, BRASIL, Minas Gerais: Belo Horizonte, Parque das Mangabeiras (MNRJ 05336 holotype male, 2 paratypes males); Ouro Preto (Tripuí), C. Valle *leg.*, I.1965, 1 paratype male (MZSP 9988).

Diagnosis. Resembles *L. insperata* based on having area IV divided by a longitudinal groove. It can be easily distinguished by the area II-III divided by a longitudinal groove and same size of internal and external apophyses of coxa IV.

Male description. **Measurements.** Dorsal scutum; maximum width: 4.4; total length: 4.9; prosoma length: 2.1; width 3. Femur IV length: 22.5. **Dorsum** (Figs 6 and 12). Anterior margin of prosoma with three tubercles on each side and six on median region. Ocularium with two anterior, two posterior tubercles, and two pointed apophyses divergent and slightly directed frontwards. Prosoma with six tubercles behind ocularium. Area I with 15-18 tubercles on each side; II with 12 tubercles on each side; III with two parallel apophyses (apex rounded, with 15-17 tubercles on each side; and IV with seven tubercles on each side. Posterior margin with 10 tubercles. Free tergite I with 10; II with seven; and III with five tubercles. Anal operculum with minute tubercles. **Chelicera.** Segment I with four tubercles on bulla; movable finger with three teeth; and III with four teeth. **Pedipalpus.** Trochanter with two dorsal and two ventral tubercles. Femur with one ventrobasal, two minute ventral and one subapical prolateral tubercle. Tibia ectal/mesal lili. Tarsus mesal lili, ectal lili, with two internal rows of small setae. **Venter.** Coxa I with two median rows of four to five tubercles each, along with four anterior, four posterior, and four apical scattered tubercles; II with median row of nine tubercles, along with eight anterior, eight to nine posterior, and four apical scattered tubercles; III-IV with scattered tubercles, and base of internal apophyses IV with tubercles. **Legs.** Coxa I with one anterior and one posterior tubercle; II with one bifid anterior and one bifid posterior tubercle; III with one anterior directed to II and one posterior tubercle directed to IV; IV with few scattered tubercles, external apophysis shorter than internal and trochanter width, slightly curved prolaterally, with basal internal tubercle, internal apophysis slightly curved downwards, with prolateral tubercle. Trochanters I-III with small scattered tubercles; IV with subbasal tubercles on prolateral and retrolateral (larger and directed frontwards). Femur IV with minute tubercles, 4.6 times longer than dorsal scutum. Tarsal formula: 6(3); 13(3); 7; 7. Col-

oration (ethanol, discolored). Body and legs brown. Drymark on median-posterior part of ocularium to area I (from tubercle to median sulcus), area II almost totally covered by drymark (except surrounding tubercles). **Penis** (Figs 31-33). Ventral plate with parallel laterals sides, basal half 28% wider than distal, apex straight; three to four short distal setae; two intermediate (one very short and other longer than other setae); three basal short setae (slightly large than distal ones). Stylus straight with few very small setae on ventral side. Ventral process with sinuous shaft, apex cochlear with serrate sides.

Female unknown.

Measurements variation in table I.

Geographic distribution. (Fig. 41). BRAZIL: Interior Atlantic Rain Forest of the Minas Gerais.

Etymology. In reference to a local slang expression of Minas Gerais state "trem bão" indicating something nice, good or suitable.

ACKNOWLEDGMENTS

We are grateful to the curators who loaned material and to Peter Jaeger and Julia Altmann (SMF) for helping RPR during several visits to the Senckenberg Museum. Adriano B. Kury (MNRJ) and Glauco Machado (IBUSP) kindly reviewed an early draft of the manuscript. Martha Lange kindly sends us a nice photo of *L. concolor*. Financial support from FAPESP (2008/006604-7) and CNPq (PhD scholarship to CB, 472960/2008-3 to RPR).

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Submitted: 22.IV.2010; Accepted: 08.X.2010.

Editorial responsibility: Walter A.P. Boeger