

The Veliidae (Hemiptera: Heteroptera: Gerromorpha) from São Paulo State, Brazil: new species, description of the male of *Microvelia ioana* Drake & Hottes, 1952, and synonymical and distributional notes

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Abstract – *Microvelia picinguaba* sp. nov., *Microvelia ubatuba* sp. nov., *Paravelia gabrielae* sp. nov. and *Rhagovelia pseudotijuca* sp. nov. are described. The male of *Microvelia ioana* is described. *Microvelia mimula* and *Microvelia aemulana* are synonymized. *Microvelia hinei*, *M. ioana*, *Microvelia longipes*, *Microvelia pulchella*, *Microvelia venustatis*, *Oiovelia brasiliensis*, *Oiovelia cunucunumana*, *Paravelia basalis*, *Paravelia itatiayana*, *Rhagovelia denticulata*, *Rhagovelia hambletoni*, *Rhagovelia janeira*, *Rhagovelia robusta*, *Rhagovelia tenuipes*, *Rhagovelia zela* and *Stridulivelia ayacucho* are recorded for the first time from São Paulo State. New locality records are given for *Husseyella diffidens*, *Rhagovelia accedens*, *Rhagovelia aiuruoca*, *Rhagovelia henryi*, *Rhagovelia lucida*, *Rhagovelia modesta*, *Rhagovelia occulcata*, *Rhagovelia trepida* and *Rhagovelia triangula*.

Key words: Aquatic insects / Hemiptera / Neotropics / southeastern Brazil / taxonomy

Introduction

The family Veliidae comprises a globally distributed group of predatory semiaquatic bugs (Insecta: Hemiptera: Heteroptera) (Andersen, 1982). Currently, about 60 genera and more than 960 species of veliids are known, and the Neotropical fauna corresponds to approximately 30% of the total species (Polhemus and Polhemus, 2008).

Some recent studies have dealt with the veliids from southeastern Brazil, including the descriptions of new species (Polhemus, 1997; Nieser and Polhemus, 1999; Moreira and Ribeiro, 2009; Moreira *et al.*, 2010). Despite this fact, the fauna from São Paulo State lacks taxonomic or faunistic studies, and some of the species recorded from the state are known only from the type-series.

Twenty-one Veliidae species have so far been recorded from São Paulo: *Husseyella diffidens* (Drake & Harris, 1933), *Microvelia aemulana* Drake & Plaumann, 1955, *Microvelia sarpta* Drake & Harris, 1936, *Rhagovelia accedens* Drake, 1957, *Rhagovelia aiuruoca* Moreira & Ribeiro, 2009, *Rhagovelia baconi* Polhemus, 1997, *Rhagovelia bocaina* Moreira & Ribeiro, 2009, *Rhagovelia henryi* Polhemus, 1997, *Rhagovelia lucida* Gould, 1931,

Rhagovelia modesta Bacon, 1956, *Rhagovelia novana* Drake, 1953, *Rhagovelia occulcata* Drake, 1959, *Rhagovelia paulana* Drake, 1953, *Rhagovelia plaumanni* Polhemus, 1997, *Rhagovelia relictata* Gould, 1931, *Rhagovelia scitula* Bacon, 1956, *Rhagovelia tijuca* Polhemus, 1997, *Rhagovelia trepida* Bacon, 1948, *Rhagovelia triangula* Drake, 1953, *Platyvelia verdica* (Drake, 1951) and *Steinovelina vinnula* (Drake, 1951)¹.

In a recent survey (Moreira *et al.*, 2010), 29 Veliidae species have been recorded from Espírito Santo, Brazil, a state with an area corresponding to only 19% of São Paulo territory, and with a lower diversity of environments. Considering this fact, a clear deficiency of Veliidae knowledge from São Paulo becomes evident.

Herein, four new species are described, 16 species are recorded for the first time from São Paulo State, and other synonymical and distributional notes are presented. In addition, the previously unknown male of *Microvelia ioana* Drake & Hottes, 1952 is described.

¹*Rhagovelia sabrina* Drake, 1958 was incorrectly recorded from São Paulo by Moreira and Ribeiro (2009) due to misidentification. The same occurred with *Microvelia costaiana* and *R. agra*, mistakenly recorded by Henriques-Oliveira and Nessimian (2010).

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Material and methods

Measurements have been taken from five males and five females whenever possible and are presented in millimetres. Measurements of *Paravelia* Breddin, 1898 antennomeres include intersegmental pieces for comparison with older descriptions, in which these pieces were included in measurements. In quotations of label data, a comma separates different information, a period separates information on different specimens, and a semicolon separates different specimens with same information. All the localities are organized in north-to-south order. Names of collectors or deposition institutes appear inside parenthesis.

Material from the following institutions have been examined: Coleção Entomológica José Alfredo Pinheiro Dutra, Laboratório de Entomologia, Departamento de Zoologia, Instituto de Biologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil (DZRJ); Faculdade de Ciências e Letras, Universidade Estadual Paulista, Assis, Brazil (FCL); Instituto de Biociências, Letras e Ciências Exatas, Universidade Estadual Paulista, São José do Rio Preto, Brazil (IBILCE); Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil (MNRJ); Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil (MZSP); Laboratório de Entomologia Aquática, Departamento de Hidrobiologia, Universidade Federal de São Carlos, São Carlos, Brazil (UFSCAR). Specimens have been identified based on original descriptions or available redescrptions, and keys from Polhemus and Spangler (1995), Polhemus (1997) and Nieser and Polhemus (1999).

Abbreviations used for measurements are as follows: body length (BL), head length (HL), head width through eyes (HW), length of antennomeres I–IV (ANT I, ANT II, ANT III, ANT IV), minimum interocular distance (INT), maximum eye width (EYE), pronotum length on midline (PL), pronotum width (PW), length of foreleg segments (FORELEG), length of middle leg segments (MIDLEG), length of hind leg segments (HINDLEG), femoral length (FEM), tibial length (TIB), length of tarsomeres I–III (TAR I, TAR II, TAR III).

Descriptions

Microvelia (Microvelia) picinguaba sp. nov.

Macropterous male. BL: 1.84–1.90; HL: 0.26–0.29; HW: 0.44–0.46; ANT I: 0.18, ANT II: 0.13–0.14, ANT III: 0.16–0.18, ANT IV: 0.24–0.26; INT: 0.21–0.23; EYE: 0.10–0.13; PL: 0.59–0.65; PW: 0.73–0.78; FORELEG: FEM: 0.39–0.43, TIB: 0.35–0.38, TAR I: 0.21–0.23; MIDLEG: FEM: 0.49–0.50, TIB: 0.39–0.40, TAR I: 0.10–0.13, TAR II: 0.15; HINDLEG: FEM: 0.54–0.60, TIB: 0.56–0.60, TAR I: 0.11–0.13, TAR II: 0.15.

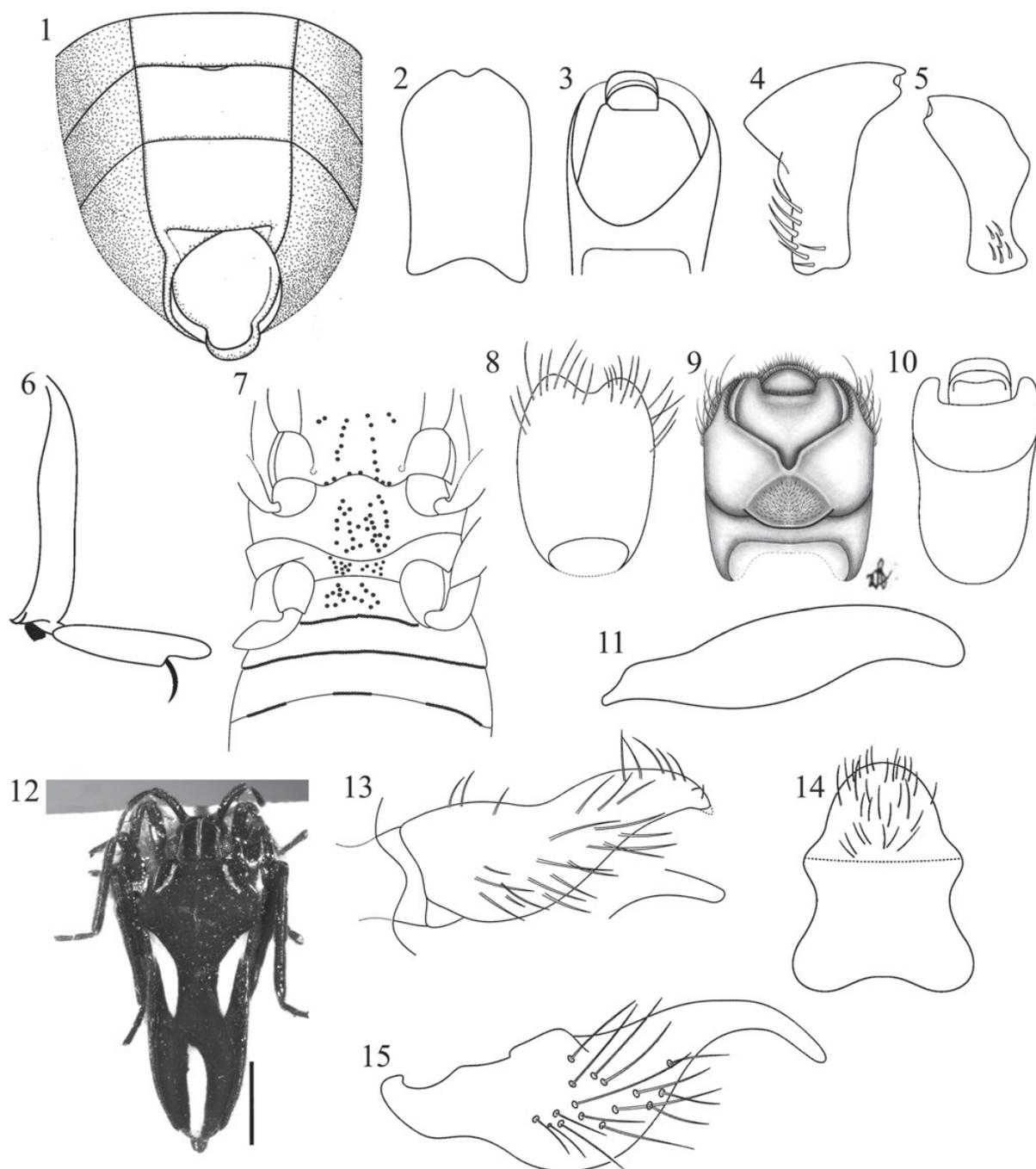
Head dorsally brown, with narrow transverse yellow stripe at base, and darker bright longitudinal midline.

Antenna light brown to brown, except for proximal half of antennomere I and intersegmental pieces between antennomeres II–III and III–IV, yellow. Eyes black. Venter of head light brown. Rostrum light brown, with last article black. Pronotum brown to dark brown, with orange yellow transverse band on anterior fifth, and many dark punctations on posterior lobe. Sides and venter of prothorax orange yellow. Sides and venter of meso- and metathorax orange brown. Venter of abdomen orange brown to dark brown, darker on first three segments. Narrow longitudinal midline on last four sternites silvery. Genital segments light brown. Forewings brown, with a pair of elongated white maculae extending from wing base to apex of pronotum, a pair of central rounded white maculae, and an apical median elongated white macula. Inner margin of exposed wing whitish. Coxae, trochanters, base of femora and internal surface of fore femur pale yellow; remainder of legs brown.

Head short, with impressed midline, covered by short brown setae and longer thin setae along internal eye margin and near rostrum insertion. Antenna covered by short brown setae, with few longer setae on dorsal surface of all antennomeres. Antennomere I wider than others, thickened towards apex, curved outward; II wider than III, thicker on apex; III cylindrical, thinner than IV; IV fusiform, on middle slightly narrower than II. Eyes well separated from pronotum, with posterior surface flattened. Rostrum slightly passing anterior margin of mesosternum.

Pronotum subpentagonal, with weak median carina, divided into short anterior lobe and longer posterior lobe. Incomplete transverse row of circular punctations present on anterior lobe, near head; another row between anterior and posterior lobes; several punctations on posterior lobe. Humeri slightly elevated, with outer margin straight. Posterior angle of pronotum narrowly rounded. Side of prothorax with two anterior circular punctations and a short transverse row on posterior part. A pair of punctations present on base of proacetabula; a wider, deeper pair on inner portion of proacetabula; an even wider pair on mesosternum, below fore coxae; a narrow pair on inner portion of mesoacetabula.

Abdomen with sides sinuous, narrower on half of tergite II, the sides bowed outward towards tergite VI, and convergent along tergite VII. Posterior margin of abdominal tergite VII with a wide rounded concavity. Abdominal sternites I–II laterally compressed; IV–VII centrally flattened. Abdominal sternites V–VII with a longitudinal carina on each side of the flattened area (Fig. 1); VII also depressed towards apex. Posterior margin of abdominal sternite VII straight. Dorsum of genital segment I with parallel lateral margins, and posterior margin rounded, with an evident central notch (Fig. 2). Most of the venter of genital segment I inserted on abdomen; the posterior margin strongly excavated, especially on left side. Genital segments II–III slightly turned left; segment II slightly swollen centrally, with posterior margin weakly concave (Fig. 3); segment III (proctiger) without lateral horns (Fig. 3). Parameres asymmetrical, the left much bigger



Figs. 1–15. 1. *M. pinguaba* sp. nov., apex of abdomen, male, ventral view. 2. *M. pinguaba* sp. nov., genital segment I, male, dorsal view. 3. *M. pinguaba* sp. nov., genital segments, male, ventral view. 4. *M. pinguaba* sp. nov., left paramere, male, dorsal view. 5. *M. pinguaba* sp. nov., right paramere, male, dorsal view. 6. *M. pinguaba* sp. nov., fore tibia, male. 7. *M. ubatuba* sp. nov., part of thorax and abdomen, male, ventral view. 8. *M. ubatuba* sp. nov., genital segment I, male, dorsal view. 9. *M. ubatuba* sp. nov., genital segments, male, ventral view. 10. *M. ubatuba* sp. nov., genital segments (I removed), male, ventral view. 11. *M. ubatuba* sp. nov., paramere, male, lateral view. 12. *P. gabrielae* sp. nov., macropterous specimen, dorsal view, scale bar = 1.00 mm. 13. *P. gabrielae* sp. nov., paramere, male, lateral view and detail of apex. 14. *R. pseudotijuca* sp. nov., proctiger, male. 15. *R. pseudotijuca* sp. nov., paramere, male, lateral view.

than the right, both sinuous and with emarginated apex (Figs. 4 and 5).

Wings slightly passing apex of genital segments. Forewing with short brown setae on anterior portion and

on outer vein. Legs covered by short brown setae, without enlargements or spines. Fore tibia sinuous, with well-developed grasping comb; this curved, extending beyond apex of tibia (Fig. 6). Apex of middle tibia with a row

of long thin setae decreasing in size posteriorly. Hind femur slightly wider than middle, not curved, slightly flattened near apex. Hind tibia straight.

Macropterous female. BL: 1.86–1.88; HL: 0.25–0.29; HW: 0.43–0.44; ANT I: 0.19, ANT II: 0.14, ANT III: 0.16–0.18, ANT IV: 0.24; INT: 0.21–0.23; EYE: 0.10–0.13; PL: 0.61–0.63; PW: 0.76–0.79; FORELEG: FEM: 0.40–0.41, TIB: 0.33–0.34, TAR I: 0.21–0.23; MIDLEG: FEM: 0.49–0.51, TIB: 0.39–0.40, TAR I: 0.11, TAR II: 0.15–0.16; HINDLEG: FEM: 0.60–0.61, TIB: 0.61–0.64, TAR I: 0.10–0.11, TAR II: 0.13–0.15.

Very similar to macropterous male in colour and structure. Abdomen less sinuous, wider, slightly darker ventrally. Posterior abdominal sternites with silvery midline, without other modifications found on males. Posterior margin of abdominal sternite VII slightly concave. Genital segments in horizontal position. Wings may leave a small portion of genital segments exposed. Legs without spines. Fore tibia straight, without grasping comb. Middle tibia with apical row of long setae decreasing in size posteriorly.

Type-material. BRAZIL: São Paulo – Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, Rio da Fazenda, 05.III.2004 (F.F.F. Moreira): 1 macropterous male [HOLOTYPE], 1 macropterous female [ALLOTYPE], 2 macropterous males, 1 macropterous female [PARATYPES] (DZRJ).

Distribution. Known only from the type-locality, a river located on a protected area of Atlantic Forest in northern coastal São Paulo State.

Etymology. This species is named after the locality of Picinguaba, where the type-series was collected.

Comments. This species is described as new based on the above-mentioned modifications found on male abdomen and genitalia. The pair of ventral abdominal carinae and the flattened central area of abdominal sternites (Fig. 1) present on males of *M. picinguaba* sp. nov. is not known from any other Neotropical species of the genus.

Besides that, the asymmetry of genital segments is reported for only a few *Microvelia* Westwood, 1834 species from the Americas, and is different from that found in *M. picinguaba* sp. nov. In the new species, the excavation of the posterior margin of genital segment I, found in several species of the genus, is more developed on left than on right side (Fig. 3). Moreover, left paramere is much bigger than the right one (Figs. 4 and 5), and genital segments II–III are slightly turned left (Fig. 3).

In *Microvelia tateiana* Drake, 1951, genital segment II, not segment I, is ventrally asymmetrical, being strongly expanded on left side, and bearing a transversal protuberance on right side. In the case of *Microvelia peruviana* McKinstry, 1937, similarly to the new species, male left paramere is much bigger than right paramere, but no asymmetry of genital segment I is mentioned. Also, the male of *M. peruviana* bears spines on hind femur, absent in *M. picinguaba* sp. nov.

The male of *Microvelia ayacuchana* Drake & Maldonado-Capriles, 1952, by its turn, possesses genital segment I slightly asymmetrical, expanded and turned

right, an inclination opposed to that found on segments II–III of *M. picinguaba* sp. nov. Finally, male genital segment I of *M. picinguaba* sp. nov. is dorsally symmetrical, and has rounded posterior margin, with an evident central notch (Fig. 2), much similar to that described for *Microvelia argentata* Nieser & Alkins-Koo, 1991. Both species are, however, easily distinguishable by colouration predominantly black in *M. argentata*, this being brown in *M. picinguaba*, sp. nov., and by symmetrical male parameres in *M. argentata*.

***Microvelia (Kirkaldya) ubatuba* sp. nov.**

Macropterous male. BL: 2.22–2.32; HL: 0.36–0.38; HW: 0.56–0.61; ANT I: 0.28–0.30, ANT II: 0.14–0.18, ANT III: 0.26–0.29, ANT IV: 0.36–0.39; INT: 0.25–0.26; EYE: 0.15–0.16; PL: 0.65–0.71; PW: 0.86–0.90; FORELEG: FEM: 0.60–0.68, TIB: 0.48–0.51, TAR I: 0.26–0.28; MIDLEG: FEM: 0.69–0.78, TIB: 0.58–0.64, TAR I: 0.15, TAR II: 0.18–0.19; HINDLEG: FEM: 0.78–0.85, TIB: 0.78–0.81, TAR I: 0.14–0.16, TAR II: 0.18–0.20.

Head orange brown to dark brown, with longitudinal midline shining black, and a pair of deep dark punctations at base. Base of antennomere I yellow, remaining of article brown; other antennomeres brown, lighter than I. Eyes dark reddish brown. Rostrum yellow, except for last article dark brown. Pronotum yellow or orange yellow, lighter on anterior lobe and longitudinal midline of posterior lobe. Sides of prothorax orange yellow to orange. Sides of meso- and metathorax orange brown. Venter of thorax orange to dark brown, darker posteriorly. Abdominal connexiva dark yellow, covered by golden pubescence (visible in dried specimens), with an irregular longitudinal black stripe on inner portion. Venter of abdomen orange to orange brown, black on intersegmental sutures. Genital segments orange brown. Wings light brown, with concolorous veins, and a pair of short maculae at base, a small macula at each closed cell, and a subtriangular apical macula white. Coxae, trochanters and proximal half of femora yellow; remainder of legs light brown.

Head relatively short, with light long thin setae along inner eye margin and near rostrum insertion. Antenna covered by short brown setae, with longer thinner setae on dorsal surface of all articles. Antennomere I wider than others, curved outward; II wider than III and IV, thickened towards apex; III cylindrical; IV fusiform, on middle subequal to III in thickness. Eyes almost touching pronotum. Rostrum slightly surpassing base of mesosternum.

Pronotum subpentagonal, divided into short anterior and longer posterior lobe, with weak longitudinal carina on midline, this fading posteriorly. Anterior lobe of pronotum with a centrally incomplete transversal row of circular punctations near head; another centrally incomplete, irregular row between anterior and posterior lobes; posterior lobe with numerous punctations, absent on anterior 4/5 of longitudinal midline. Sides and venter

of thorax, acetabula and first two abdominal sternites with several punctations, these forming two oblique rows on mesosternum and an almost complete circle on metasternum (Fig. 7).

Abdominal connexiva divergent, bowed outward, for three segments; convergent posteriorly. Posterior margin of abdominal tergite VII widely concave. Abdominal sternites I–II laterally compressed; IV–VII centrally depressed. Intersegmental area between abdominal sternites expanded, deeply pitted (Fig. 7). Dorsum of genital segment I with lateral margins convergent and posterior margin concave centrally (Fig. 8). Venter of genital segment I with a rounded central depression, from which numerous setae arise; the posterior margin with an evident central notch (Fig. 9). Genital segment II caudally flattened, posterior margin centrally concave, with a pair of lateral projections (Fig. 10). Parameres symmetrical, shape as in Figure 11. Genital segment III (proctiger) without lateral projections.

Wings exposing most of abdominal connexiva and genital segments. Forewing with several short brown setae on outer vein. Legs without spines, covered by short brown setae, with some longer setae on dorsal surfaces of femora and tibiae. Fore tibia straight, flattened on inner distal surface, with short grasping comb slightly passing apex of segment. Apex of middle tibia with a ventral decreasing row of light long setae near apex. Hind femur slightly wider than middle, not curved, weakly flattened near apex. Hind tibia straight.

Type-material. BRAZIL: São Paulo – Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, poças à esquerda da Trilha do Tronco, 16.XII.1992 (E. Calil & M. E. Felix): 1 macropterous male [HOLOTYPE], 2 macropterous males [PARATYPES] (DZRJ); Núcleo Picinguaba, folhço mata, 04.X.1999 (Equipe Entomologia): 1 macropterous male [PARATYPES].

Distribution. Known from temporary pools found on the same conservation unit where the type-specimens of *M. picinguaba* sp. nov. were collected.

Etymology. This species is named after Ubatuba municipality, where the type-series was collected.

Comments. As mentioned above for *M. picinguaba* sp. nov., *M. ubatuba* sp. nov. is described as new based on modifications found on male abdomen and genitalia. In the latter species, however, no asymmetry was observed. The genital segments, as the parameres, are symmetrical both dorsally and ventrally.

In *M. ubatuba* sp. nov., abdominal sternites I–II are densely covered by punctations (Fig. 7) and sternites IV–VII are distinctly depressed centrally. The dorsum of genital segment I displays concave posterior margin (Fig. 8) and parameres are symmetrical (Fig. 11), as seen in many species of the genus. The venter of genital segment I, however, presents a strong rounded depression and a notch on posterior margin (Fig. 9), which allows distinguishing this species from its congeners.

The general shape of genital segment I in *M. ubatuba* sp. nov. is similar to that drawn by Polhemus (1977) for *Microvelia circumcincta* Champion, 1898. In the latter

species, a ventral depression, from which setae arise, is also visible at the segment. However, a posterior notch is not present in the drawing, neither is it mentioned by Polhemus (1977). Besides that, antennomere IV of *M. circumcincta* is shorter than III, the opposite occurring in *M. ubatuba* sp. nov., and the wing maculae of *M. circumcincta* are pale brown, whereas in *M. ubatuba* sp. nov. they are white.

Another *Microvelia* species that bears ventral depressions on genital segment I is *Microvelia braziliensis* McKinstry, 1937. In this case, the depression is longitudinal and there is a pair of lateral triangular projections, absent in *M. ubatuba* sp. nov. Genital segment II of the new species also seems to be uniquely modified, being caudally flattened, with a pair of lateral projections on posterior margin. Such modifications have not been described so far for any other *Microvelia* from the Americas.

***Paravelia gabrielae* sp. nov.**

Macropterous male. BL: 4.10–4.32; HL: 0.60–0.68; HW: 0.79–0.84; ANT I: 0.65–0.75, ANT II: 0.33–0.35, ANT III: 0.38–0.40, ANT IV: 0.36–0.38; INT: 0.41–0.44; EYE: 0.16–0.20; PL: 1.44–1.60; PW: 1.38–1.58; FORELEG: FEM: 1.08–1.23, TIB: 0.94–1.04, TAR I: 0.06–0.08, TAR II: 0.13–0.14, TAR III: 0.24–0.26; MIDLEG: FEM: 1.25–1.28, TIB: 1.28–1.35, TAR I: 0.08–0.10, TAR II: 0.16–0.19, TAR III: 0.26–0.29; HINDLEG: FEM: 1.60–1.69, TIB: 1.75–1.88, TAR I: 0.09–0.10, TAR II: 0.21–0.24, TAR III: 0.30–0.33.

Head reddish brown, with longitudinal midline and two pairs of punctations on base depressed and shining; the sides of the midline and head itself marked by silvery frosting. Antennae and legs dark brown to black; the legs lighter on venter and sometimes with reddish areas. Eyes red and shining. Rostrum brown, except for article IV dark brown. Pronotum dark red, with a pair of longitudinal silvery frosting stripes on anterior lobe (Fig. 12); the area on sides of the stripes dark brown. Sides and venter of body entirely orange red, lighter than pronotum. Forewings dark brown with veins concolorous and, when in rest, with three pale yellow maculae – a basal pair of elongated maculae extending almost to middle of wings, the maculae not touching outer margins of wings for most of their lengths, and a distal longer elongated maculae, which reaches the apex of the wings (Fig. 12).

Head and body dorsally covered by dark setae, slightly longer on sides of prothorax. Antennae and legs more densely covered by short brown setae, especially on venter of femora; dorsum of tibiae also with dense covering of short silvery setae. Antennomere I wider than others, slightly thicker on apex, bowed outward; II–III cylindrical; II wider than III and IV; IV fusiform, slightly wider than III. Rostrum reaching about the middle of mesosternum.

Pronotum subpentagonal, with longitudinal median carina well developed; humeri elevated, with outer margin

rounded; a row of circular punctations next to anterior margin, a few scattered punctations on anterior lobe, a row between anterior and posterior lobes, and several wider and deeper punctations on posterior lobe; margins thickened on posterior lobe; and posterior angle slightly sinuous. Venter of thorax and abdomen covered by thin light setae. Area between meso- and metasternum with two pairs of tubercles. Metasternum swollen, with posterior margin rounded.

Abdominal connexiva elevated, slightly exposed, weakly folding the wings laterally. Abdominal sternite I laterally compressed. Remaining sternites unmodified. Last sternite without posterior projections. Genital segment I with dorsal posterior margin slightly rounded; with a longitudinal elevation on venter. Parameres symmetrical, curved, strongly tapering towards apex (Fig. 13).

Trochanters unarmed. Fore tibia with a weak pre-apical concavity on inner surface, and well-developed grasping comb, extending beyond apex of segment. Fore and middle femora and tibiae with approximately same width. Venter of middle femur with one or two short- or medium-sized spines near centre, absent in some cases. Hind femur wider than others, sinuous, with a row of spines occupying most of its length, except for basal- and distalmost areas. Hind femur spines short and wide, except for distalmost two, which are longer and posteriorly curved; these spines also placed slightly more ventrally in relation to others.

Macropterous female. BL: 4.19–4.26; HL: 0.65–0.68; HW: 0.81–0.85; ANT I: 0.63, ANT II: 0.35–0.36, ANT III: 0.40–0.43, ANT IV: 0.35–0.38; INT: 0.43–0.48; EYE: 0.20; PL: 1.52–1.56; PW: 1.46–1.56; FORELEG: FEM: 1.00–1.18, TIB: 1.96–1.05, TAR I: 0.08, TAR II: 0.13, TAR III: 0.26; MIDLEG: FEM: 1.29–1.40, TIB: 1.25–1.36, TAR I: 0.08–0.10, TAR II: 0.16, TAR III: 0.28; HINDLEG: FEM: 1.54–1.65, TIB: 1.79–1.89, TAR I: 0.11, TAR II: 0.21–0.23, TAR III: 0.29–0.33.

Colour and general structure as in males, except for: body slightly more robust; fore tibia without concavity or grasping comb; middle femur without spines; and hind femur thinner, with at most a single spine located just after middle.

Type-material. BRAZIL: São Paulo – Parque Nacional da Serra da Bocaina, em bromélia, V.1980 (L. F. Reys): 1 macropterous male [HOLOTYPE], 1 macropterous female [ALLOTYPE] 5 macropterous males, 2 macropterous females [PARATYPES] (MNRJ). Espírito Santo – Aracruz, Santa Cruz, I.1975 (L. F. Reys): 1 macropterous male [PARATYPE] (MNRJ).

Distribution. This new species is described from material collected on bromeliads on Serra da Bocaina National Park, northeast São Paulo State. Material was also obtained from Espírito Santo State, which demonstrates that future collections on bromeliads from Minas Gerais and Rio de Janeiro states might eventually reveal new records of this newly described species.

Etymology. The species is named in honour of Gabriela Moreira, daughter of the first author of the present work.

Comments. Only four bromeliad-inhabiting *Paravelia* have been described so far: *Paravelia helenae* (Hungerford, 1929), *Paravelia manausana* Polhemus & Polhemus, 1984, *Paravelia paolettii* Polhemus & Polhemus, 1991 and *Paravelia recens* (Drake & Harris, 1935). *P. helenae* and *P. gabrielae* sp. nov. present respectively orange red and dark red pronotum, which differentiates them from their congeners found in bromeliads, that bear orange brown, brown or black pronotum. In the case of *P. helenae*, the orange red colour also occurs on head, whereas in *P. gabrielae* sp. nov. the head is reddish brown.

Other characteristics useful for distinguishing these species are the colour and shape of forewing maculae. In *P. helenae* and *P. recens* they are white, whereas *P. paolettii*, *P. manausana* and *P. gabrielae* sp. nov. have pale yellow or yellow maculae. Individuals of all these species bear three maculae on forewing, they being rounded in *P. helenae*, the basal two elongated and the distal one rounded or oval in *P. recens* and *P. paolettii*, and all elongated in *P. manausana* and *P. gabrielae* sp. nov.

The basal maculae of *P. manausana*, however, touch the outer margin of the wings, opposite to that found in *P. gabrielae* sp. nov. These last two species can also be distinguished by the presence of two yellow marks on the anterior pronotal lobe of *P. manausana*, whereas two longitudinal silvery stripes are found in *P. gabrielae* sp. nov.

***Rhagovalia pseudotijuca* sp. nov.**

Apterous male. BL: 3.75–3.85; HL: 0.53–0.54; HW: 0.93–0.94; ANT I: 0.96–1.00, ANT II: 0.46–0.48, ANT III: 0.64, ANT IV: 0.56–0.58; INT: 0.23–0.24; EYE: 0.35–0.36; PL: 1.02–1.04; PW: 1.20–1.24; FORELEG: FEM: 1.20–1.24, TIB: 1.24–1.26, TAR I: 0.03–0.05, TAR II: 0.03–0.04, TAR III: 0.26–0.29; MIDLEG: FEM: 1.90–1.94, TIB: 1.64–1.72, TAR I: 0.11, TAR II: 0.66–0.68, TAR III: 0.78–0.82; HINDLEG: FEM: 1.58–1.64, TIB: 1.74–1.78, TAR I: 0.09–0.10, TAR II: 0.15–0.18, TAR III: 0.38–0.40.

Head dark brown to black, with longitudinal midline and two oblique impressions on base shining. Antennomere I with base dark yellow, middle portion brown and apex dark brown; remaining antennomeres dark brown. Eyes dark red. Bucculae and rostral articles I, II and base of III yellowish brown; rest of III brown; IV dark brown. Anterior fourth of pronotum orange brown, rest of dorsum of thorax black. Proacetabula and sides of thorax orange brown; prosternum dark brown to black. Sides and venter of meso- and metathorax black. Mesoacetabula orange brown; metacetabula light brown. Abdominal tergites I–VI black; connexiva black on inner portion, orange brown on outer portion. Abdominal tergite VII black, with an anteriorly directed subtriangular orange brown spot. Male paratype also bears an irregular indistinct orange brown spot on middle of tergite VI. Abdominal sternites black; central portion of VII orange brown. Genital segments orange brown. Coxae and trochanters yellow to light brown. Femora and base

of tibiae dorsally orange brown; ventrally yellow to light brown. Tarsi and remainder of tibiae brown.

Head and thorax densely covered by short shining setae; longer, thicker, black setae on anterior area of head, along inner margin of eye, and on sides of thorax; long light setae on posterior margin of abdominal tergites and sternites. Head short, velvety, with big eyes. Antenna covered by short brown setae, with black spine-like setae on dorsum of antennomeres I–II. Antennomere I wider than others, slightly thickened on apex, bowed outward; II–III cylindrical, II being slightly wider than III; IV fusiform, sub-equal on centre to III. Rostrum reaching about middle of mesosternum. Jugum and adjacent portion of proepisternum without black denticles.

Pronotum completely covering mesonotum, with some circular punctations adjacent to anterior margin, and several indistinct punctations on posterior 3/4. Exposed portion of metasternum short. A short row of punctations on posterior margin of propleura. Mesosternum with two oblique rows of very long brown setae.

Abdominal tergites slightly elevated centrally. Abdominal tergite VII subquadrate, with posterior margin slightly rounded. Abdominal connexiva horizontal or slightly elevated, bowed outward until sides of tergite III, then progressively convergent. Abdominal sternite I (visible) compressed laterally, but not forming an expressive longitudinal carina. Other sternites unmodified. Last sternite without black denticles on sides or on posterolateral margins surrounding genital cavity. Proctiger as in Figure 14. Parameres symmetrical, curved, wider on base, then strongly tapering to apex (Fig. 15).

Legs covered by short brown setae, with rows of longer thicker black setae on femora and tibiae. Fore femur thickened, after middle as wide as middle femur (Fig. 16). Fore tibia bowed posteriorly, with inner apical concavity weakly developed, and grasping comb distinctly extended beyond apex of segment (Figs. 16). Hind trochanter with six or seven sub-equal black spinules (Fig. 17). Hind femur slightly incrassate, with a decreasing row of eight to twelve spinules on proximal half, and two spine rows on distal half – dorsal most decreasing, with seven spines, ventral most with four to six sub-equal spines (Fig. 17). Hind tibia straight, with subequal spinules throughout its length, plus apical spur (Fig. 17).

Apterous female (Fig. 18). BL: 4.50–4.80; HL: 0.51–0.53; HW: 1.03; ANT I: 1.10–1.14, ANT II: 0.56, ANT III: 0.72–0.76, ANT IV: 0.62–0.64; INT: 0.24–0.25; EYE: 0.36–0.39; PL: 1.18–1.22; PW: 1.44–1.50; FORELEG: FEM: 1.42–1.46, TIB: 1.52, TAR I: 0.04–0.05, TAR II: 0.03, TAR III: 0.36; MIDLEG: FEM: 2.20–2.22, TIB: 1.98–2.00, TAR I: 0.11–0.13, TAR II: 0.76–0.82, TAR III: 0.90–0.98; HINDLEG: FEM: 1.84, TIB: 2.04–2.10, TAR I: 0.10–0.11, TAR II: 0.23, TAR III: 0.45.

Larger and more robust than males. Pronotal and connexival marks yellowish brown instead of orange brown in one of the specimens. Remainder of body, antennae and legs coloured as in males, except for spot on abdominal tergite VII, more rounded and central. Like in males, a small orange brown spot might occur on

abdominal tergite VI. Base of abdominal tergite VIII black; rest of tergite VIII and genital segments orange brown. Jugum, proepisternum and abdominal segment without black denticles. Dorsum of abdomen without longitudinal carina. Margins of abdominal connexiva not thickened. Fore femur less thickened, and fore tibia less bowed than in males. Hind trochanter without spines. Hind femur less incrassate than in males, with a decreasing row of four or five small spines near apex.

Type-material. BRAZIL: São Paulo – São José do Barreiro, Parque Nacional da Serra da Bocaina, PT03G, 23.IV.2006 (F.F.F. Moreira): 1 apterous male [HOLOTYPE], 1 apterous female [ALLOTYPE] (DZRJ); tributário do Rio Mambucaba, P3, 07.VII.2003 (A.L. Henriques-Oliveira): 1 apterous female [PARATYPE] (DZRJ); Fazenda Barreirinha, tributário do Rio Mambucaba, P6, 05.VII.2004: 1 apterous male [PARATYPE] (DZRJ).

Additional material. BRAZIL: São Paulo – Campos do Jordão, 1906 (Lünderwaldt): 1 apterous male, 3 apterous females (MZSP).

Distribution. The species occurs at medium to high altitude streams on Serra da Bocaina National Park, and on Campos do Jordão Municipality.

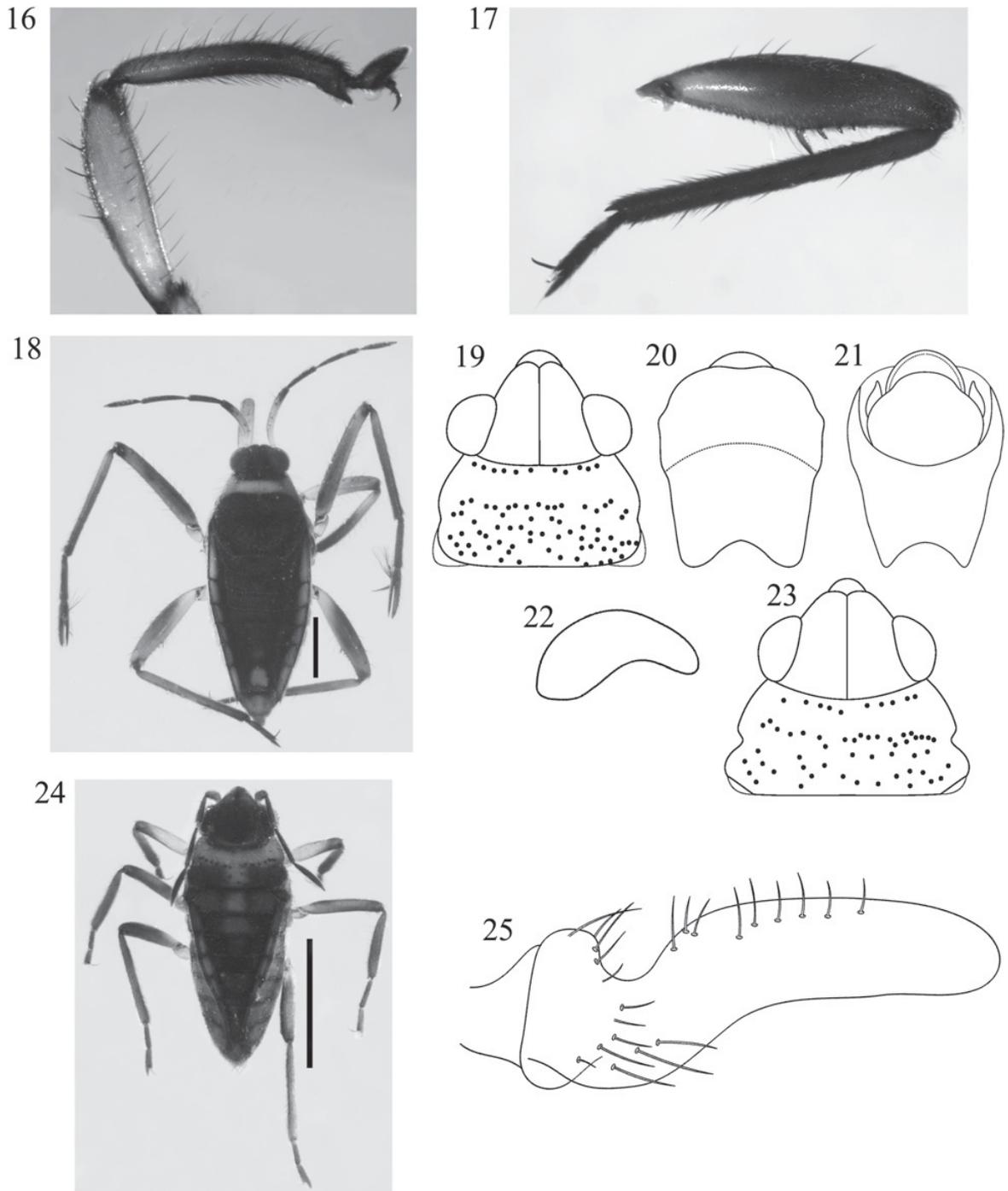
Etymology. The name of the species is derived from its striking resemblance with *R. tijuca*.

Comments. *R. pseudotijuca* sp. nov. is part of the *robusta* group *sensu* Polhemus (1997), based on the following features: pronotum completely covering mesonotum, absence of black denticles on posterolateral region of abdominal segment VII, abdomen of apterous female without longitudinal carina, female connexiva of normal width throughout its length, and apical spur of hind tibia straight.

The general appearance of the specimens is very similar to that of *R. tijuca*, a member of the *hirtipes* group *sensu* Polhemus (1997). Such resemblance leads to the identification of the type-specimens cited above as *R. tijuca* by Henriques-Oliveira and Nessimian (2010). Both species, and their respective groups, can be differentiated by the longitudinal abdominal carina and thickened connexiva, found only in females of the *hirtipes* group.

The shape of male paramere in *R. pseudotijuca* sp. nov. (Fig. 15) easily separates the species from others of the *robusta* group, being more similar to the general pattern found in species of the *itaitaiana* group *sensu* Polhemus (1997) occurring in southeastern Brazil, like *R. itaitaiana* Drake, 1953 and *R. trepida* Bacon, 1948.

The males of *R. pseudotijuca* sp. nov. were tested on Polhemus' (1997) identification key to the *robusta* group, resulting in *Rhagovelia torreyana* Bacon, 1956, if the large conical spine is considered to be really absent from hind tibia. If it is considered that this large spine can be found on males of the species, but is absent from specimens examined, there is no logical result, and the closest options are *Rhagovelia equatoria* Polhemus, 1997, *Rhagovelia boliviana* Polhemus, 1995, *Rhagovelia ornata* Bacon, 1956 and *Rhagovelia caribbeana* Polhemus, 1997.



Figs. 16–25. 16. *R. pseudotijuca* sp. nov., fore leg, male. 17. *R. pseudotijuca* sp. nov., hind leg, male. 18. *R. pseudotijuca*, apterous female, dorsal view, scale bar = 1.00 mm. 19. *M. ioana*, head and thorax, male, dorsal view. 20. *M. ioana*, genital segments, male, dorsal view. 21. *M. ioana*, genital segments, male, ventral view. 22. *M. ioana*, paramere, male, lateral view. 23. *M. ioana*, head and thorax, female, dorsal view. 24. *M. ioana*, apterous female, dorsal view, scale bar = 1.00 mm. 25. *P. itatiayana*, paramere, male, lateral view.

The last three species, unlike *R. pseudotijuca* sp. nov., display general colouration orange brown, without contrasting marks. On the case of *R. equatoria*, contrasting marks are present on pronotum and connexiva, but a single spine is found on hind trochanter, being often absent. Males of *R. pseudotijuca* sp. nov. bear four to six spines on hind trochanter. The base of the paramere of

R. equatoria is similar to that of *R. pseudotijuca* sp. nov., but is not strongly thinned towards apex.

Representatives of *R. pseudotijuca* sp. nov. have the same general colouration pattern of *R. torreyana*, being predominantly black, with contrasting marks on anterior portion of pronotum and along abdominal connexiva. The hind trochanter and femur spination

of *R. pseudotijuca* sp. nov. agree in general with those described for *R. torreyana*; however, male parameres are sufficiently different to permit the description of the new species. Besides that, *R. torreyana* was described from Florida, United States, and was posteriorly collected in a few localities in the same state, not at all near the known distribution of *R. pseudotijuca* sp. nov.

***Microvelia (Microvelia) ioana* Drake & Hottes, 1952**

Apterous male. BL: 1.80–1.92; HL: 0.36–0.41; HW: 0.54–0.58; ANT I: 0.23–0.24, ANT II: 0.20–0.23, ANT III: 0.26–0.28, ANT IV: 0.28–0.29; INT: 0.26–0.28; EYE: 0.13–0.14; PL: 0.29–0.34; PW: 0.63; FORELEG: FEM: 0.51–0.58, TIB: 0.44–0.49, TAR I: 0.23–0.24; MIDLEG: FEM: 0.56–0.64, TIB: 0.49–0.53, TAR I: 0.21–0.24, TAR II: 0.21–0.24; HINDLEG: FEM: 0.61–0.66, TIB: 0.64–0.73, TAR I: 0.15–0.19, TAR II: 0.19–0.20.

Head dorsally brown to dark brown, with shining longitudinal midline, a narrow transversal yellow stripe at base, and a pair of yellow marks on the sides of midline between eyes. Antennomere I yellow, except for light brown apex; remaining of antenna brown. Eyes dark brown. Rostrum dark yellow, with terminal article dark brown. Anterior transversal area of pronotum yellow to dark yellow, brownish on sides; posterior region brown with central longitudinal stripe yellow to dark yellow. Sides and venter of prothorax yellow to dark yellow; region below rostrum orange. Sides of meso- and metathorax yellow to orange yellow. Mesosternum orange brown. Metasternum dark brown. Acetabula yellow. Abdominal tergites brown to dark brown, with central area yellow; the yellow area wide on tergites I–II, narrower on III–IV and widening again towards VII. Abdominal connexiva yellow to dark yellow, with inner and outer margins brown. Abdominal sternite I dark brown; II–IV dark brown or yellow with central brown mark; V–VII dark yellow with central brown mark. Genital segment I dorsally brown, with yellow base; ventrally yellow, with central portion brown. Genital segment II light brown. Proctiger yellow. Coxae, trochanters, most of fore femur, and base of middle and hind femora light yellow; apex of fore femur, most of middle and hind femur, and tibiae brown; part of dorsal surface of middle and hind femora yellow; tarsi brown, darker than tibiae.

Pronotum long, covered by short brown setae, completely covering mesonotum, and leaving only lateral triangles of metanotum exposed. Lateral margins of pronotum slightly constricted after middle; posterior margin slightly rounded (Fig. 19). Anterior area of pronotum with centrally incomplete transverse row of circular punctations near head; remainder of anterior area unpunctured. Posterior area of pronotum with numerous punctations, scarce on central yellow portion. Sides of thorax and base of acetabula with a few circular punctations. Area of mesosternum below fore coxae depressed.

Abdomen wider on tergite III, with connexiva slightly bowed outward. Posterior margin of abdominal

tergite VII almost straight. Intersegmental area of abdominal sternites weakly widened; the posterior margin of the sternites with a fringe of short light setae. Abdominal sternites I–IV laterally compressed; V–VII slightly depressed centrally. Dorsum of genital segment I with lateral margins convergent and posterior margin straight (Fig. 20); venter with posterior margin widely excavated (Fig. 21). Genital segment II slightly swollen centrally, with posterior margin rounded. Genital segment III (proctiger) without lateral projections. Parameres symmetrical, short, with acute apex (Fig. 22).

Legs without spines, covered by short brown setae, with longer stout setae on dorsal surface of tibiae. Fore femur wider on base than others. Fore tibia straight, with well-developed grasping comb extending beyond apex. Middle and hind femora ventrally flattened near apex. Middle tibia with a ventral row of long thin setae on proximal 2/3. Hind femur not curved. Hind tibia straight.

Examined material. BRAZIL: São Paulo – Campos do Jordão, 1600 m, III.1945 (Wygodzinsky): 6 apterous males, 9 apterous females (MNRJ). São José do Barreiro, Parque Nacional da Serra da Bocaina, tributário do Rio Mambucaba, P2, 06.VIII.2003 (A.L. Henriques-Oliveira): 3 apterous males, 1 apterous female (DZRJ); PT03A, 21.IV.2006 (F.F.F. Moreira): 3 apterous males (DZRJ); Córrego da Barra Branca, P7, 05.VII.2004 (A.L. Henriques-Oliveira): 1 apterous male (DZRJ).

Comments. Based on the above-mentioned material, the species is recorded for the first time from São Paulo State. Specimens collected on Serra da Bocaina have been previously identified as *Microvelia costaiana* Drake & Hussey (1951) by Henriques-Oliveira and Nessimian (2010).

No records of *M. ioana* have been made since 1952, and the female holotype was the only known representative of the species so far. The description provided by Drake and Hottes (1952) is relatively short, but the following characteristics permitted the identification of the females examined for the present study: general colour brownish, marked by testaceous on pronotum, abdominal tergites, and sides of body; body length about 2 mm; antenna brown with article I largely testaceous; pronotum large, subrectangular, covering the dorsal surface of thorax, with an irregular transversal row of pits dividing it in two parts, the hind part larger and coarsely pitted, the front part not pitted, except for anterior margin (collar) (Fig. 23); sides of pronotum constricted at the level of the wavy transverse pit line (Fig. 23); legs unarmed; abdomen narrowed towards apex, with connexiva strongly reflexed posteriorly (Fig. 24).

The males observed are similar to females in general structure, but lack the narrowed abdomen with reflexed connexiva. The pronotum is long as in females, with posterior margin slightly more curved (Fig. 19). Also as described for females, no pits are found on anterior portion of pronotum (except for collar) and the sides are constricted near middle. Legs are unarmed, and there are no strong modifications of abdominal sternites or genital segments.

Synonymical and distributional notes

Husseyella diffidens (Drake & Harris, 1933)

Representatives of this species are found in mangroves and estuaries in Espírito Santo and São Paulo states, Brazil (Moreira *et al.*, 2010). Herein a new record for Ubatuba municipality, São Paulo, is presented.

Two specimens were also found on the MNRJ collection with the label “Campinas, S. Paulo, Brasil”, without any indication of the collector or the date. One of them also had an identification label written as “*Xiphovelia diffidentis* D. & H. Drake”, the name proposed by Drake and Harris (1936) for the previous *Microvelia diffidentis*. Those authors mentioned to have seen several males and females of the species collected in Santos, São Paulo, in a river flowing into the ocean.

If the specimens from MNRJ are part of this series, there is a labelling error, because Campinas Municipality lies several kilometres from Santos and from the coast. Another possibility is that the “Campinas” on the label actually corresponds to another locality in São Paulo, not the homonymous municipality, and that the specimens are not part of the series mentioned by Drake and Harris (1936).

Examined material. BRAZIL: São Paulo – Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, Rio da Fazenda, Manguezal, 10.VI.2005 (M.R. de Souza): 1 apterous male, 15 nymphs (DZRJ). “Campinas”, no date or collector: 2 apterous males (MNRJ).

Microvelia hinei Drake, 1920

Species with wide geographical distribution, occurring from southern Canada to Argentina. Herein recorded for the first time from São Paulo State.

Examined material. BRAZIL: São Paulo – Itirapina, Broa, 12.VIII.1986: 1 apterous male (UFSCAR).

Microvelia longipes Uhler, 1894

Representatives of *M. longipes* have been collected in the Antilles and in most of South America (Moreira *et al.*, 2010), being herein recorded for the first time from São Paulo State.

Examined material. BRAZIL: São Paulo – Américo de Campos, represa, 03.V.2009 (M.M. Itoyama): several apterous and macropterous males and females (IBILCE); 24.V.2009: several apterous and macropterous males (IBILCE); 25.X.2009: several females (IBILCE). São Carlos, UFSCAR, IV.1980 (A. de Paula): 1 macropterous female (UFSCAR). Marília [22°16' S/49°56' W], 650 m, V.1947 (F. Plaumann): 2 macropterous males, 4 macropterous females (MZSP). Assis, Água Paulista, poça na estrada, 10.III.2010 (F.F.F. Moreira & E. Yokoyama): 2 macropterous males, 2 macropterous females, 1 apterous female (DZRJ). São Paulo, X.1947

(F. Plaumann): 2 apterous males, 6 macropterous males, 2 apterous females, 3 macropterous females (MZSP).

Microvelia mimula White, 1879

M. aemulana (Drake & Plaumann, 1955) (NEW SYNONYMY)

M. aemulana was described based on specimens from São Paulo and Nova Teutônia, and was recorded posteriorly only from Buenos Aires by Bachmann (1998). The differences presented by Drake and Plaumann (1955) between *M. aemulana* and *M. mimula* are the absence of spines on posterior femur and absence of a tubercle on penultimate male abdominal sternite of the first species, both features being present on the second.

The spines of *M. mimula* are very fragile and easily breakable with specimen handling, and the tubercle on the penultimate sternite varies considerably in size, sometimes being reduced to a small elevation near the posterior margin of the segment. Such findings were made after examining a great number of specimens, much of which were collected on the Amazonas State, from where the species was described.

On the MNRJ collection two paratypes of *M. aemulana* were found, one male from São Paulo and one female from Nova Teutônia, both with red labels mentioning “Paratype *M. aemulana* D. & H.”. The male was observed and a distinct row of spines is not present on posterior femur; however, it is possible to see the bases of three broken spines on the proximal portion of the segment. Besides that, the venter of the abdomen of the specimen is partially smashed and covered by glue, but it is possible to observe a small elevation on the posterior part of the penultimate sternite.

Considering, therefore, that this specimen originally bore spines on posterior femur, and the variation on the size of the ventral tubercle of males of *M. mimula*, it is reasonable to consider that *M. aemulana* is a synonym of *M. mimula*. The genitalia of the male examined in MNRJ corresponds, as cited by Drake and Plaumann (1955), exactly to that described for *M. mimula*, in which the segment I is widely excavated ventrally, and the proctiger bears a pair of long lateral horns. Such a feature strongly contributes to corroborate the synonymy between the two species.

Examined material. BRAZIL: São Paulo – Américo de Campos, represa, 25.X.2009 (M.M. Itoyama): 1 macropterous male (IBILCE). Assis, Centro Social Urbano, Lago, 10.III.2010 (F.F.F. Moreira, E. Yokoyama & R.S. Gandolfo): 6 apterous males, 2 apterous females (DZRJ). Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, brejo, 29.V.2006 (F.F.F. Moreira): 1 apterous male (DZRJ). São Paulo, 22.VII.1934 (E.J. Hambleton): 1 apterous male [paratype of *M. aemulana*] (MNRJ). São Paulo, Cidade Universitária, Raia Olímpica, 12.VI.1970: 2 apterous males (MZSP).

Santa Catarina – Nova Teutônia, XI.1953 (F. Plaumann): 1 apterous female (MNRJ) [paratype of *M. aemulana*].

***Microvelia pulchella* Westwood, 1834**

This is the most widely distributed species of *Microvelia* on the Neotropics (Moreira *et al.*, 2010), being herein recorded for the first time from São Paulo State.

Examined material. BRAZIL: São Paulo – Américo de Campos, represa, 03.V.2009 (M.M. Itoyama): several apterous and macropterous males (IBILCE); 24.V.2009: several apterous and macropterous males (IBILCE); 25.X.2009: several apterous and macropterous males (IBILCE). São Carlos, UFSCAR, IV.1980 (A. de Paula): 1 apterous female, 1 macropterous female (UFSCAR). Pirassununga, CEPTA, 23.VII.1999: 1 apterous female (UFSCAR). Marília [22°16' S/49°56' W], 650 m, V.1947 (F. Plaumann): 4 apterous males, 4 apterous females (MZSP). Assis, Centro Social Urbano, Lago, 10.III.2010 (F.F.F. Moreira, E. Yokoyama & R.S. Gandolfo): 1 apterous male, 1 apterous female (DZRJ). Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, brejo, 29.X.2004 (F.F.F. Moreira): 1 apterous male (DZRJ); 09.VI.2005: 2 apterous males, 5 apterous females (DZRJ); 02-06.XI.2005: 1 apterous male, 1 macropterous male, 7 apterous females (DZRJ); 29.V.2006: 9 apterous males, 1 macropterous male, 6 apterous females, 3 macropterous females (DZRJ). São Paulo, Cidade Universitária, Raia Olímpica, 12.VI.1970: 7 apterous males (MZSP).

***Microvelia venustatis* Drake & Harris, 1933**

Representatives of *M. venustatis* have been collected in Peru, Paraguay and Argentina, and were recorded from Amazonas State, and part of Southeastern and Southern Brazil (Moreira *et al.*, 2010). The species is herein recorded for the first time from São Paulo State.

Examined material. BRAZIL: São Paulo – Itirapina, Broa, 12.VIII.1986: 1 apterous male, 1 apterous female (UFSCAR). Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, Rio da Fazenda, 21.X.2001 (J.R.I. Ribeiro): 1 apterous male (DZRJ).

***Oiovelia brasiliensis* Moreira, Nessimian & Rúdio, 2010**

This species has been recently described from Espírito Santo, Brazil, and was the first species of the genus recorded from Southeastern Brazil (Moreira *et al.*, 2010). Its occurrence on São Paulo State is herein presented for the first time.

Examined material. BRAZIL: São Paulo – Iporanga, Parque Estadual Intervales, Córrego Água Comprida [S 24°17'38", W 48°25'4"], 22.VI.2000 (P.C. Bispo & V.L. Crisci-Bispo): 1 apterous male (FCL).

***Oiovelia cunucunumana* Drake & Maldonado-Capriles, 1952**

Type-species of the genus *Oiovelia*, originally described from Venezuela, and at the moment known to occur from that country southward to Argentina. First record from São Paulo and Southeastern Brazil.

Examined material. BRAZIL: São Paulo – Pirassununga, 08.II.1940 (Schubart): 1 macropterous male, 3 macropterous females (MZSP). Marília [22°16' S/49°56' W], 650 m, V.1947 (F. Plaumann): 1 macropterous male (MZSP). Salesópolis, E.B. Boracéia, Ribeirão Venerando, 27–28.V.1965 (C.G. Froehlich): 1 apterous male (MZSP).

***Paravelia basalis* (Spinola, 1837)**

Species mentioned in few taxonomic studies, but relatively common in entomological collections. Individuals are usually collected in acclivitous areas, on moist moss adhered to rocks on margins of water bodies. First record from São Paulo State.

Examined material. BRAZIL: São Paulo – Campos do Jordão, 1906 (Lünderwaldt): 1 macropterous male, 2 macropterous females (MZSP).

***Paravelia itatiayana* (Drake, 1951)**

This species was described based on specimens collected at “Mt. Itatiaya, Brasil”, without definition of the habitat where they were found. The description provided by Drake (1951) is not very complete, but the following features are useful for the identification of the species: body length of 3.85 mm; antennomeres I–II distinctly wider than III–IV, with a length ratio of 28:19:20:21; pronotum solid dark chocolate in colour; forewing with a pair of orange yellow stripes on base, extending for approximately half of their length distally to apex of pronotum; middle femur unarmed; hind femur slightly thicker than middle, with a ventral row of spines, the last two or three spines being longer than others.

Such characteristics have been observed on specimens collected in bromeliads from the municipalities of Itatiaia, Rio de Janeiro and Ubatuba. *P. itatiayana* is herein recorded from São Paulo for the first time, and the interior of bromeliads is defined as the habitat occupied by the species. A variation of the colour and number of forewing stripes was noted on the examined series, they being from orange yellow as described by Drake (1951) to light yellow, with an additional distal stripe occurring in some specimens. The existence of this additional stripe was observed by Drake (1951) on a specimen from Rio de Janeiro, which agreed with the type-series in other aspects.

Male paramere of *P. itatiayana* was not drawn in the original description, but was defined as curved, slender and amber in colour. In the series examined for the present

study, a variation of paramere size is noted, but shape is constant as shown in [Figure 25](#).

Examined material. BRAZIL: São Paulo – Ubatuba, Codó, restinga, bromélia, 12.X.1977 (C. Pantoja): 1 macropterous female (MNRJ); II.1978: 2 macropterous males, 2 macropterous females (MNRJ); 08.IV.1978: 1 macropterous male (MNRJ). Rio de Janeiro – Itatiaia, Parque Nacional do Itatiaia, bromélia, I.1953 (A.L. Castro): 1 macropterous male, 1 macropterous female (MNRJ). Rio de Janeiro, Recreio dos Bandeirantes, bromélia, V.1966 (J.C.M. Carvalho): 1 macropterous male, 1 macropterous female (MNRJ).

***Rhagovelia accedens* Drake, 1957**

Representatives of this species are common in medium to high altitude streams from the four states from Southeastern Brazil ([Moreira et al., 2010](#)). The species is herein recorded for the first time from Campos do Jordão municipality. Part of the specimens cited below display mesonotum at least partially orange, opposite to the usual black colour found on other individuals. Structural characteristics, such as body length, leg spination and shape of male paramere, lead to their identification as *R. accedens*.

Examined material. BRAZIL: São Paulo – Campos do Jordão, 1906 (Lüderwaldt): 5 apterous males, 6 apterous females (MZSP). Campos do Jordão, Parque Estadual de Campos do Jordão, [S 22°41'33", W 45°27'42"], 17.V.2005: 1 apterous female (UFSCAR); Fazenda da Guarda, afluyente Sapucaí [S 22°41'53", W 45°29'02"], 18.V.2005: 1 apterous male, 2 apterous females (UFSCAR).

***Rhagovelia aiuruoca* Moreira & Ribeiro, 2009**

R. aiuruoca has so far been recorded from localities in Minas Gerais, Rio de Janeiro and on the northeastern portion of São Paulo State ([Moreira et al., 2010](#)). Additional records from São Paulo are presented here, including sites on southern and southeastern areas of the state.

Examined material. BRAZIL: São Paulo – São José do Barreiro, Parque Nacional da Serra da Bocaina, Ribeirão do Boqueirão [S 22°45'18.39", W 44°37'6.93"], 23.IV.2006 (A.P.M. Santos): 2 apterous males (DZRJ); 05.X.2007 (A.L. Henriques-Oliveira, D. Baptista, R. Mugnai & J.L. Nessimian): 16 apterous males, 8 apterous females (DZRJ). Serra dos Agudos [24°08' S/47°59' W], Rio Taquaral, XI.1963 (F. Plaumann): 1 apterous male (MZSP). Iporanga, Parque Estadual Intervalles, Córrego Roda D'Água [S 24°16'17", W 48°25'20"], 14.IX.1999 (P.C. Bispo & V.L. Crisci-Bispo): 2 apterous females (FCL); 18.II.2000: 4 apterous males, 4 apterous females (FCL); Ribeirão Lajeado [S 24°17'38", W 48°25'4"], 25.III.2000 (P.C. Bispo & V.L. Crisci-Bispo): 1 apterous female (FCL); Córrego Água Comprida [S 24°17'38", W 48°25'4"], 25.III.2000 (P.C. Bispo & V.L. Crisci-Bispo):

1 apterous male (FCL); 22.VI.2000: 1 apterous male (FCL). Cananéia, Ilha do Cardoso, Rio Pedro Luiz, 27.IV.1993 (T. Moulton): 1 apterous male (DZRJ).

***Rhagovelia bocaina* Moreira & Ribeiro, 2009**

Species described based on specimens collected in Serra da Bocaina National Park, São Paulo and more recently recorded from Espírito Santo State ([Moreira et al., 2010](#)). A new record from Ipeúna municipality is herein presented.

Examined material. BRAZIL: São Paulo – Ipeúna, Córrego Simo, 1985 (S. Trivinho-Strixino): 1 apterous male (UFSCAR).

***Rhagovelia denticulata* Moreira, Nessimian & Rúdio, 2010**

R. denticulata was recently described based on material collected on Espírito Santo. It is herein recorded for the first time from São Paulo State. Specimens cited below display general colouration much darker than those of the type-series, which makes the visualization of the black denticles typical of the species difficult. Despite the colouration difference, individuals are structurally identical to those originally described, including the shape of male parameres.

Examined material. BRAZIL: São Paulo – Mirassol, Estância Santo Antônio, 05.III.2010 (M.M.U. Castanhole & L.L.V. Pereira): 5 males, 9 females (IBILCE). São Carlos, Fazenda Canchim, riacho da represa, 02.IV.1986: 1 apterous male (UFSCAR); 04.VIII.1986: 1 apterous male (UFSCAR). São Carlos, Nascente Monjolinho, 19.IX.2001: 1 apterous male, 1 apterous female (UFSCAR).

***Rhagovelia hambletoni* Drake & Harris, 1933**

This species is known from Minas Gerais and Rio de Janeiro, Brazil ([Moreira and Ribeiro 2009](#)), and is herein recorded for the first time from São Paulo State.

Examined material. BRAZIL: São Paulo – Jales, Fazenda Furnas, 12.III.2010 (M.M.U. Castanhole & L.L.V. Pereira): 2 females (IBILCE). Pirassununga, Rio Roque (Schubart): 1 apterous male, 2 apterous females (MZSP). Ipeúna, Córrego Simo, 1985 (S. Trivinho-Strixino): 7 apterous males, 3 apterous females (UFSCAR).

***Rhagovelia henryi* Polhemus, 1997**

Two of the paratypes mentioned in the description of *R. henryi* were collected on São Paulo State. The species is also known from Rio de Janeiro, and there is a doubtful record from Panama, probably caused by mislabelling

(Polhemus, 1997). The species is here recorded for the first time from Cunha, São Luís do Paraitinga, Santo André and Iporanga municipalities, and from Serra dos Agudos and Serra do Descanso mountain ranges.

Examined material. BRAZIL: São Paulo – Cunha, Parque Estadual da Serra do Mar, Núcleo Santa Virgínia, Ribeirão do Barracão [S 23°14'21", W 45°00'54"], 17.X.2006 (G. Vilardi): 2 apterous males, 2 apterous females (FCL). São Luís do Paraitinga, Parque Estadual da Serra do Mar, Núcleo Santa Virgínia, riacho [S 23°20'46.2", W 45°08'48.2"], 20.I.2006 (P.C. Bispo, E. Yokoyama, I.V. Takebe & P. Corredatto): 5 apterous males (FCL). Santo André, Paranapiacaba, 06.IX.1968 (C.G. Froehlich): 2 apterous males, 1 apterous female (MZSP); 07.V.1977 (Vanin & Jorge): 3 apterous males, 1 apterous female (MZSP). Serra dos Agudos, Rio Quilombo [24°16'S/47°57' W], XI.1963 (F. Plaumann): 3 apterous males, 1 apterous female (MZSP). Iporanga, Parque Estadual Intervales, Córrego Roda D'Água [S 24°16'17", W 48°25'20"], 31.V.1999 (P.C. Bispo & V.L. Crisci-Bispo): 1 apterous male, 2 apterous females (DZRJ); 16.VIII.1999: 2 apterous males, 1 apterous female (FCL); 14.IX.1999: 1 apterous female (FCL); 23.XI.1999: 1 apterous female (FCL); 15.XII.1999: 1 apterous female (FCL); 06.I.2000: 1 apterous male (FCL); 18.II.2000: 1 apterous male (FCL); 15.IV.2000: 1 apterous female (FCL). [Iporanga] Serra do Descanso, Rio Braço de Pedra [24°44' S/48°44' W], XI.1963 (F. Plaumann): 1 apterous female (MZSP).

***Rhagovelia janeira* Drake, 1953**

R. janeira is distributed from Southeastern Brazil to Argentina, but has not yet been recorded from São Paulo State.

Examined material. BRAZIL: São Paulo – Porto Ferreira (Schubart): 1 apterous male (MZSP).

***Rhagovelia lucida* Gould, 1931**

R. lucida was recorded from São Paulo State by Polhemus (1997), and Moreira and Ribeiro (2009) presented new records from São José do Barreiro and Ubatuba municipalities. New records from Cunha, São Luís do Paraitinga, Salesópolis, Santo André and Iporanga municipalities are now reported.

Examined material. BRAZIL: São Paulo – Cunha, Parque Estadual da Serra do Mar, Núcleo Santa Virgínia, Rio Bonito [S 23°16'53", W 45°02'35"], 17.X.2006 (G. Vilardi): 4 apterous males, 1 apterous female (FCL); riacho [S 23°18'47.3", W 45°07'13"], 24.V.2005 (P.C. Bispo, E. Yokoyama, I.V. Takebe & P. Corredatto): 1 apterous female (FCL). São Luís do Paraitinga, Parque Estadual da Serra do Mar, Núcleo Santa Virgínia, Ribeirão Posto do Pito [S 23°18'46", W 45°0.7'13"], 11.X.2009 (G. Vilardi): 11 apterous males, 6 apterous females (FCL); Ribeirão Barro Branco

[S 23°20'37", W 45°7'44"], 11.X.2006 (G. Vilardi): 4 apterous females, 2 apterous females (FCL); riacho [S 23°20'37.2", W 45°7'45.1"] (P.C. Bispo, E. Yokoyama, I.V. Takebe & P. Corredatto): 2 apterous males, 1 apterous female (FCL). Salesópolis, E.B. Boracéia, Córrego Venerando, 30.IX.1966: 4 apterous males, 12 apterous females (MZSP); 03.XI.1969: 1 apterous male, 1 apterous female (MZSP); 06.XII.1999: 62 apterous males, 44 apterous females (MZSP). Santo André, Paranapiacaba, 06.IX.1968 (C.G. Froehlich): 5 apterous males, 3 apterous females (MZSP); 07.V.1977 (Vanin & Jorge): 3 apterous males, 1 apterous female (MZSP). Iporanga, Parque Estadual Intervales, Ribeirão Bocaina [S 24°16'13", W 48°27'9"], 23.VI.2000 (P.C. Bispo & V.L. Crisci-Bispo): 1 apterous male, 1 apterous female (FCL); Ribeirão Lajeado [S 24°17'38", W 48°25'4"], 19.VII.1999 (P.C. Bispo & V.L. Crisci-Bispo): 2 apterous males (FCL); 25.III.2000: 2 apterous males (FCL); Córrego Água Comprida [S 24°17'38", W 48°25'4"], 19.IX.1999 (P.C. Bispo & V.L. Crisci-Bispo): 1 apterous male (FCL); 22.VI.2000: 1 apterous male (FCL). Iporanga, Parque Estadual Turístico do Alto Ribeira, Rio Betari [S 24°31'57.9", W 48°42'14.4"], 15.IX.2006 (P.C. Bispo, E. Yokoyama, I.V. Takebe, P. Corredatto, G.P. Paciencia): 2 apterous males, 3 apterous females (FCL); riacho sem nome [S 24°32'2.4", W 48°42'6"], 15.IX.2006: 1 apterous female (FCL). Iporanga, riacho sem nome fora do parque [S 24°36'23.4", W 48°37'59"], 15.IX.2006 (P.C. Bispo, E. Yokoyama, I.V. Takebe, P. Corredatto, G.P. Paciencia): 2 apterous females (FCL).

***Rhagovelia modesta* Bacon, 1956**

This species was described from Rio de Janeiro, Brazil, and was later recorded from São Paulo State, São José do Barreiro Municipality, by Moreira and Ribeiro (2009). Here new municipality records are presented from Campos do Jordão, Guaratinguetá, Cunha, São Luís do Paraitinga, São Roque, Salesópolis and Caraguatatuba municipalities, besides new localities on São José do Barreiro.

Examined material. BRAZIL: São Paulo – Campos do Jordão, 1906 (Lüderwaldt): 1 apterous female (MZSP). Campos do Jordão, Bairro Dois Tabacos, Rio Sapucaí, 06.I.2002 (P.A. Buckup, A. Aranda, C.A. Figueiredo & F.P. Silva): 1 apterous female (DZRJ). Guaratinguetá, Rib. Dos VEME, 06.I.2002 (P.A. Buckup, A. Aranda, C.A. Figueiredo & F.P. Silva): 8 apterous males, 4 apterous females (DZRJ). Serra da Bocaina, 15.IV.1961 (O. Roppa): 2 apterous females (MNRJ). São José do Barreiro, Parque Nacional da Serra da Bocaina, Rio Mambucaba [S 22°44'34.67", W 44°36'59.27"], 05.X.2007 (A.L. Henriques-Oliveira, D. Baptista, R. Mugnai & J.L. Nessimian): 1 apterous male (DZRJ); Ribeirão do Boqueirão [S 22°45'18.39", W 44°37'6.93"], 4 apterous males (DZRJ). Cunha, Parque Estadual da Serra do Mar, Núcleo Santa Virgínia, Cunha II [S 23°11'42", W 44°59'08"], 15.X.2006 (G. Vilardi): 7 apterous males,

5 apterous females (FCL). São Luís do Paraitinga, Parque Estadual da Serra do Mar, Núcleo Santa Virgínia, ribeirão na estrada para Catuçaba [S 23°19'46", W 45°11'14"], 09.X.2006 (G. Vilaridi): 1 apterous male (FCL); Rio Vargem Grande II [S 23°26'22", W 45°14'53"], 12.X.2006 (G. Vilaridi): 4 apterous males, 2 apterous females (FCL). São Roque, Mato Dentro, VII.1961 (N. Papavero): 8 apterous males, 5 apterous females (MZSP). Salesópolis, E.B. Boracéia, Rio Guaratuba, 14.XII.1993 (A. Jerolimski): 3 apterous males, 4 apterous females (MZSP). Caraguatatuba, Reserva Florestal, 40 m, V.1962 (Exp. DZ): 13 apterous males, 1 macropterous male, 3 apterous females (MZSP).

***Rhagovelia occulcata* Drake, 1959**

Species described from Morretes, Paraná, and subsequently recorded, without details, from São Paulo State by [Nieser and Polhemus \(1999\)](#). Herein recorded from Campos do Jordão and São Miguel Arcanjo municipalities for the first time.

Examined material. BRAZIL: São Paulo – Campos do Jordão, 1906 (Lüderwaldt): 1 apterous female (MZSP). São Miguel [Arcanjo], Rio Turvo [24°01' S/48°00' W], XI.1963 (F. Plaumann): 1 apterous male, 1 apterous female (MZSP).

***Rhagovelia robusta* Gould, 1931**

R. robusta specimens have been collected in Goiás State, part of Southeastern and Southern Brazil, Paraguay and Argentina ([Moreira et al., 2010](#)). Its occurrence on São Paulo State is here presented for the first time.

Examined material. BRAZIL: São Paulo – Jales, Fazenda Furnas, 12.III.2010 (M.M.U. Castanhole & L.L.V. Pereira): 7 males, 13 females (IBILCE). São José do Rio Preto, Fazenda Canadá [S 20°55'57.82", W 50°21'2.6"], 14.VIII.2007 (P.C. Bispo): 2 apterous males (FCL). Descalvado, 07.III.1941 (Schubart): 1 apterous male (MZSP). Pirassununga, Córrego Funil, 08.II.1940 (Schubart): 4 apterous males, 1 apterous female (MZSP). Assis, Água Paulista, riacho, 10.III.2010 (F.F.F. Moreira, E. Yokoyama & R.S. Gandolfo): 2 apterous males, 2 macropterous males, 8 apterous females, 1 macropterous female (DZRJ). Santo André, Paranapiacaba, X.1952 (Werner): 4 apterous males, 4 apterous females (MNRJ).

***Rhagovelia tenuipes* Champion, 1898**

The species has a wide distribution in the neotropical region, and has been recorded from three states in Southeastern Brazil (Minas Gerais, Espírito Santo and Rio de Janeiro) ([Moreira et al., 2010](#)). Here, the first record of the species from São Paulo State is presented.

Examined material. BRAZIL: São Paulo – Jales, Fazenda Furnas, 12.III.2010 (M.M.U. Castanhole & L.L.V. Pereira): several males and females (IBILCE). Américo de Campos, Rio Piedade, 03.V.2009

(M.M. Itoyama): several apterous males and females (IBILCE). Pirassununga, Rio Roque (Schubart): 1 apterous male, 2 apterous females (MZSP). Mogi Guaçu, Córrego Pires, (Schubart): 4 apterous males, 4 apterous females (MZSP).

***Rhagovelia trepida* Bacon, 1948**

R. trepida was described from São Paulo, and subsequently recorded from Rio de Janeiro and from the three states in Southern Brazil ([Polhemus, 1997](#)). New locality records from São Paulo are presented here.

Examined material. BRAZIL: São Paulo – São Luís do Paraitinga, Parque Estadual da Serra do Mar, Núcleo Santa Virgínia, riacho [S 23°20'37.2", W 45°7'45.1"], (P.C. Bispo, E. Yokoyama, I.V. Takebe & P. Corredatto): 1 apterous male (FCL). Serra dos Agudos [24°08' S/47°59' W], brook, 950 m, XI.1953 (F. Plaumann): 1 apterous male, 1 apterous female (MZSP). Serra dos Agudos [24°08' S/47°59' W], Rio Taquaral, 1000 m, XI.1953 (F. Plaumann): 2 apterous males, 1 apterous female (MZSP). Iporanga, Parque Estadual Intervalles, Ribeirão Bocaina [S 24°16'13", W 48°27'9"], 25.XI.1999 (P.C. Bispo & V.L. Crisci-Bispo): 1 apterous male (DZRJ); 19.VIII.2000: 1 apterous female (DZRJ). Iporanga, Parque Estadual Turístico do Alto Ribeira, riacho afluente do Rio Betari [S 24°31'27.6", W 48°42'30.8"], 13.IX.2006 (P.C. Bispo, E. Yokoyama, I.V. Takebe, P. Corredatto & G.P. Paciencia): 1 apterous female (FCL). Iporanga, riacho sem nome fora do parque [S 24°32'44.1", W 48°40'51.3"], 15.IX.2006 (P.C. Bispo, E. Yokoyama, I.V. Takebe, P. Corredatto & G.P. Paciencia): 1 apterous male (FCL). Cananéia, Ilha do Cardoso, Rio Pedro Luiz, 27.IV.1993 (T. Moulton): 1 apterous female (DZRJ).

***Rhagovelia triangula* Drake, 1953**

This species was known only from Minas Gerais and Rio de Janeiro, Brazil, until [Moreira and Ribeiro \(2009\)](#) recorded it from São Paulo State. New records from Guaratinguetá, São José do Barreiro, Cunha, São Luís do Paraitinga and São Roque municipalities are presented here. Specimens mentioned below from Serra da Bocaina have been previously identified as *Rhagovelia agra* Drake (1957) by Henriques [Oliveira and Nessimian \(2010\)](#).

Examined material. BRAZIL: São Paulo – Guaratinguetá, Rib. Dos VEME, 06.I.2002 (P.A. Buckup, A. Aranda, C.A. Figueiredo & F.P. Silva): 1 apterous male, 1 apterous female (DZRJ). Serra da Bocaina, 15.IV.1961 (O. Roppa): 2 apterous females, 1 apterous male (MNRJ). São José do Barreiro, Parque Nacional da Serra da Bocaina, Ribeirão do Boqueirão [S 22°45'18.39", W 44°37'6.93"], 23.IV.2006 (A.P.M. Santos): 1 apterous male (DZRJ); 05.X.2007 (A.L. Henriques-Oliveira, D. Baptista, R. Mugnai & J.L. Nessimian): 35 apterous males, 20 apterous females

(DZRJ). Cunha, Parque Estadual da Serra do Mar, Núcleo Santa Virgínia, Rio Vale das Cachoeiras [S 23°06'12", W 44°52'05"], 31.X.2008 (G. Vilardi): 2 apterous females (FCL); Rio Jericó [S 23°09'16", W 45°01'07"], X.2008 (G. Vilardi): 1 apterous male, 2 apterous females (FCL); Rio Bonito [S 23°16'53", W 45°02'35"], 17.X.2006 (G. Vilardi): 2 apterous males, 4 apterous females (FCL). São Luís do Paraitinga, Parque Estadual da Serra do Mar, Núcleo Santa Virgínia, Ribeirão Posto do Pito [S 23°18'46", W 45°0.7'13"], 11.X.2009 (G. Vilardi): 1 apterous female (FCL); Rio Geraldo [S 23°19'31", W 45°01'38"], 10.X.2006 (G. Vilardi): 1 apterous female (FCL); Rio Ipiranga [S 23°20'59", W 45°01'13"], 08.X.2006 (G. Vilardi): 1 apterous female (FCL). São Roque, Mato Dentro, VII.1961 (N. Papavero): 2 apterous males, 1 apterous female (MZSP).

***Rhagovelia zela* Drake, 1959**

Representatives of this species have been collected in Espírito Santo, Rio de Janeiro and Santa Catarina, Brazil (Moreira *et al.*, 2010), being recorded for the first time from São Paulo State.

Examined material. BRAZIL: São Paulo – Américo de Campos, Rio Piedade, 22.IV.2009 (M.M. Itoyama): several apterous males and females (IBILCE); 03.V.2009: several apterous males and females (IBILCE); 18.X.2009: several apterous males and females (IBILCE).

***Stridulivelia ayacucho* Polhemus & Spangler, 1995**

South-American species with known geographical distribution extending from Venezuela to Argentina (Polhemus and Spangler, 1995). First record from São Paulo State.

Examined material. BRAZIL: São Paulo – Pirassununga, CEPTA, 23.VII.1999: 1 macropterous male (UFSCAR).

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