

GENUS *MEROCORIS* PERTY (HEMIPTERA: COREIDAE: MEROPACHYINAE) PRESENT IN THE SOUTHERN CONE

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ABSTRACT: Meropachyinae Stål, restricted to the western hemisphere, is a relatively small group of Heteroptera, the subfamily include 3 tribes, the tribe Merocorini is represented by a single genus *Merocoris* Perty with 2 subgenera and 6 species, Subgenus *Merocoris* Perty with 3 South American species: *M. (M.) bergi* Mayr, *M. (M.) elevatus* (Spinola), and *M. (M.) tristis* Perty. The purposes of this contribution is to redescribe the species *M. (M.) bergi*, *M. (M.) elevatus* and *M. (M.) tristis*, give a key for the identification of species *Merocoris* in Argentina and including new contributions of geographical distribution are provided for Argentina (Neotropical region).

KEY WORDS: *Merocoris bergi*, *Merocoris tristis*, *Merocoris elevatus*, Argentina, distribution, key

The subfamily Meropachyinae Stål, restricted to the western hemisphere, is a relatively small group of Heteroptera characterized by having the distal end of hind tibiae ending beneath in a short projecting spine, the hind femur curved and usually strongly innervate, and the hind coxae widely separated (Brailovsky & Barrera, 2009; Fernandez et al., 2015).

The subfamily include 26 genera divided into 3 tribes: Merocorini, Meropachyini, and Spathophorini, and its knowledge has been summarized recently by Brailovsky (1999), and Brailovsky & Barrera (1998, 2001).

The tribe Merocorini Stål 1870 is recognized by having the scutellum triangular, short, reaching onto the base of claval commissure, with the commissure visible for virtually full length, the apex of scutellum elevated as a small knob, and the abdominal spiracles circular, tiny, and positioned between the anterior and middle third of each sternite (Kormilev, 1954; Froeschner, 1981). The tribe is represented by a single genus *Merocoris* Perty with 2 subgenera and 6 species. The subgenus *Merocoris* (Perty, 1830) is characterized by having the antenniferous tubercles unarmed, the anterolateral borders of pronotum smooth or with single tubercle, and the scutellar disk conically raised. The subgenus includes 3 South American species: *M. (M.) bergi* Mayr, *M. (M.) elevatus* (Spinola), and *M. (M.) tristis* Perty (Kormilev, 1954; Packauskas, 2010; Pall & Coscarón, 2016; Coscarón In Press).

The purposes of this contribution are to give redescrptions of the species *M. (M.) bergi*, *M. (M.) elevatus* and *M. (M.) tristis*, present a key for the

identification of *Merocoris* (*Merocoris*) species, and new distributional records from Argentina.

MATERIALS AND METHODS

The material was collected by sweeping in the province of La Pampa (35° a 39° south; 63° a 68° West), in the central region of Argentina (Map 1), during the years 2010-2014. Details of the method of dissection of male and female genitalia, and terminology were extracted from Dupuis (1955), the measurements are expressed in mm.

The images were taken by a digital camera (Kodak EasyShare 4X WIDE), the drawings were made by COREL X5. For the geographical distribution we used the program DIVA-GIS 7.1.7 (<http://www.diva-gis.org/>). The material was deposited in the entomological collection of the Museum of La Plata (MLP), Argentina.

Abbreviations: Museo de La Plata, Buenos Aires, Argentina (**MLP**); Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina (**MACN**); Museo Miguel Lillo, San Miguel de Tucumán, Argentina (**FML**); Museo de Historia Natural de La Pampa (**MPHN**); British Museum (Natural History), Londres, England (**BMNH**).

RESULTS

Were studied 26 specimens of the genus *Merocoris*, 8 *M. (M.) bergi*, 15 *M. (M.) elevatus* and 3 *M. (M.) tristis*.

A redescription of the three species and a key to species of *Merocoris* is provided.

Key to the identification of species of the genus *Merocoris* in the Southern Cone

(adapted from Kormilev, 1954 and Brailovsky & Barrera, 2009)

- 1a.** Antenniferous tubercles unarmed (fig. 1); anterolateral borders of pronotum smooth or with only one tubercle (fig. 2); scutellar disk with high conical tubercle directed upward and eventually backward (fig. 3).....*Merocoris (Merocoris)* Perty **2**
- 1b.** Antenniferous tubercles armed; anterolateral borders of pronotum with two or more tubercles; scutellar disk almost flat.....*Merocoris (Corynocoris)* Mayr
- 2a.** Hind femur strongly clavate, swollen distally, with proximal half slender; interocular space unarmed (fig. 4).....**3**
- 2b.** Hind femur gradually incrassate from base toward apex (fig. 5); interocular space with short tubercle near the inner border of each eye (fig. 6); humeral angles with short spine (fig. 7).....*M. (M.) bergi* Mayr (figs. 12-16)
- 3a.** Antennal segment IV longer than segments II and III (fig. 8); pronotal disk with 2 to 6 transversal ridges; anterolateral borders of pronotum with large tubercle near the middle region; acute humeral angles with a spine (figs. 9).....*M. (M.) elevatus* (Spinola) (figs. 17-21)
- 3b.** Antennal segment IV shorter or longer than segments II and III (fig. 10); pronotal disk smooth; anterolateral borders of pronotum without tubercle near the middle region; less acute humeral angles with short and obtuse spine (fig. 11).....*M. (M.) tristis* Perty (figs. 22-24)

Genus *Merocoris* Perty, 1830

1830 *Merocoris* Perty, 170. Type species: *Merocoris tristis* Perty, monotypic.

Subgenus *Merocoris* (Perty 1830)

***Merocoris (M.) bergi* Mayr** (Figs. 12-16)

1865 *Merocoris bergi* Mayr. Berg 1879, 281. Berg 1883, 242. Pennington 1920, 12. Pennington 1921, 30.

1954 *Merocoris bergi*: Kormilev, 158.

Redescription: Male. n = 1 (Figs. 12-14). Total length: 7; head length: 1; head width: 1.3; eye width: 0.2; interocular space: 0.76; preocellar distance: 0.15; interocellar space: 0.3; rostrum: I 0.5, II-, III-, IV-; antennal segments: I 0.50 II 0.52 III 0.52 IV 0.67; pronotum length: 1.5; pronotum width: 2.93; scutellum length: 1.16; scutellum width: 1; hemelytra length: 5; abdominal length?: 4.6; abdominal width: 2.3.

Dorsal coloration: Head dark brown with clear hairs, ocelli and compound eyes reddish; antennal segments of the same color as the head, with abundant pilosity, segment I shorter than the rest, thin at the base of antenniferous, thickened toward the apical region, II and III equal size, IV larger than segments II or III. Pronotum dark brown, with abundant pilosity, pilosity has lobulations with two light-colored spots on the back middle region; presence of two lobes of black color in the basal region close to the collar, they have a reduced pilosity compared to the rest of pronotum, it is surrounded by a line of clear hairs abundant. Scutellum small dark brown, with hair, it has two black dots, without mincing its base. *Corium* and *clavus* dark, pilose, hemelytra dark brown with three small dots without pilosity in the region next hemelytra the termination of *clavus* and *corium*, forming a triangle. Membrane and veins brown. Connexival segments bicolored, dark and light brown, with reduced pilosity, and only found in abundance at the junction of each segment connexival segment forming a hair comb. Ventral coloration: dark brown densely covered with hairs; mesosterno dark brown pilose; abdominal segments, dark brown, pilose thick; legs dark, with areas of clear color, hairy. Structure: Pronotum triangular, slightly declivent, with lobulations and a small necklace with two short spines, robust; humerals angles terminated in a spine thick short, rearwardly facing, straight pronotal basal region with four short spines, robust, two on either side of the scutellum. Scutellum with a spine rounded, short, thick at the apex, a prominent spine on the central region and two small spines, conspicuous, on each side of the basal region. Coxa highly developed, robust, they have in the dorsal region of metathorax a spine on both sides of the body; metafemora with two rows of four prominent spines, spine located in the distal region of the femur III larger than the other, femurs possess a thickening, the basal region is narrow and then enlarged toward the distal end forming a clava. Tibiae thin unarmed, semicircular, hairy, legs have a pilosity homogeneous, and clear areas with hairs. Hemelytra longer than the abdomen. Paramere like a hook, short and broad basal region, fine distal region ending in a small lobulation; Middle furrow pronounced, pilosity present in the middle region (Fig. 25).

Redescription: Female. n = 2 (Figs. 15-16). Total length: 8-8.7 (mean: 8.35); head length: 1.9-2 (mean: 1.95); head width: 2.7-2.8 (mean: 2.75); eye width: 0.5; interocular space: 1.7; preocellar distance: 0.3; interocellar space: 0.8-0.9; rostrum: I 1, II 1.6, III 1.3, IV 1.5; antennal segments: I 1-1.1 (mean: 1.05) II 1.5 III 1.1-1.3 (mean: 1.1) IV 1.7-1.8 (mean: 1.75); pronotum length: 3; pronotum width: 5.6-6 (mean: 5.8); scutellum length: 2.6-3.1 (mean: 2.85); scutellum width: 2.1-2.5 (mean: 2.3); hemelytra length: 5-6.5 (mean: 5.75); abdominal length: 4.5-6 (mean: 5.25); abdominal width: 3.1-3.2 (mean: 3.15).

Color and structure similar to male, with reduced pilosity. Ovipositor formed by the first and second valvifer, second valvifer as in fig. 29; spermatheca formed by a short, robust duct, apical region formed by 2-3 homogeneous lobulations (Figs. 28, 29).

Merocoris (M.) bergi (Map 1): **Argentina: Buenos Aires:** Buenos Aires (1♀) 24-X-1896, Venturi col. (MACN), Chacabuco (34°38'09.58"S 60°27'42.71"W) (1♂) Lynch col. (MLP), Rosas (35°57'55.54"S 58°50'23.54"W) (1♂) (MACN); **Chaco:** (2♀) Brailovsky det. (MACN); **La Pampa:** Casa de Piedra (38°09'27.77"S 67°03'56.14"W) (1♂) 30-XI-2011, Pall J.L. & Coscarón M.C. col., Pall J.L. det. (MLP), Santa Rosa (36°37'23.31"S 64°17'24.74"W) (1♀) 20-XII-2016, Pall J.L. col., Pall J.L. det. (MPHN), Santa Isabel (36°17'25.59"S 66°49'48.13"W) (1♀) 20-XII-2016, Diez F. col., Pall J.L. det. (MPHN); **Santa Fe:** Piquete (31°34'18.29"S 60°43'16.99"W) (1♀), (Kormilev).

Distribution in Argentina of *M. (M.) bergi*: Buenos Aires, Chaco, La Pampa, Santa Fe.

***Merocoris (M.) elevatus* (Spinola)** (Figs. 17-21)

1837 *Corynomerus elevatus* Spinola, 128.

1954 *Merocoris elevatus*: Kormilev, 157.

Redescription: Male. n = 4 (Figs. 17-19). Total length: 7.4-8.4 (mean: 7.9); head length: 1.2-1.9 (mean: 1.5); head width: 2.2-2.6 (mean: 2.4); eye width: 0.4-0.6 (mean: 0.5); interocular space: 1.4-1.6 (mean: 1.5); preocellar distance: 0.3; interocellar space: 0.6-0.7 (mean: 0.65); rostrum: I 1.1, II 1-1.1 (mean: 1.05), III-, IV-; antennal segments: I 1-1.5 (mean: 1.25) II 1.2-1.5 (mean: 1.35) III 1.2-1.5 (mean: 1.35) IV 2.9-3.6 (mean: 3.25); pronotum length: 2.4-3.4 (mean: 2.9); pronotum width: 4.6-6.3 (mean: 5.45); scutellum length: 2-2.6 (mean: 2.3); scutellum width: 1.9-3 (mean: 4.9); hemelytra length: 5-5.8 (mean: 5.4); abdominal length: 4.5-5.5 (mean: 5); abdominal width: 4-4.7 (mean: 4.35).

Dorsal coloration: Head of dark color with light brown spots, one on each base of antenniferous and another in the region of *tylus*, head pilosity; antennal segments light brown, with reduced pilosity, segment I shorter than the other, segments II and III equal size, IV larger than segments II and III together. Pronotum light brown with a light brown band on the back middle region surrounded on each side by a dark line; pilosity present. Scutellum brown, pilose, with two triangular spots in the basal region dark color without pilosity. *Corium* and *clavus* light brown, pilose. Hemelytra light brown with three small dark spots in the middle region of each wing, and light brown spot on the apical end of hemelytra, membrane and veins dark; connexival segments dark brown and light brown arranged alternately with reduced pilosity. Ventral coloration: light brown, densely pilose, legs dark brown with light brown spots. Structure: Pronotum triangular, slightly, declivent necklace unarmed, humeral angles ending in a prominent spine, directed outwards, basal region of pronotum straight with four spines, two on each side of the scutellum, two very small and almost inconspicuous, and two thick, robust. Scutellum with a spine in the central region, thick, prominent and a short spine at apex. Coxa highly developed, robust, the dorsal region of metapleura with spine on both sides of the body, second and third abdominal segment with a shaped protrusion spine towards the dorsal region on

both sides; metafemora with two rows of prominent spines, the outer row with four spines, the inner row with two spines toward the distal end; the spine located on the inner side of distal femur is greater than the rest, the femur has a thickening toward the apical region, forming a petiole; tibiae thin, unarmend, semicircular, they have hairy legs. Hemelytra extending beyond the abdomen. Paramere bilobate, basal region thick, broad, distal region with two thick projections, one longer, or medium pronounced groove; Pilosity present between the two lobulations (Fig. 26).

Redescription: Female. n = 1 (Figs. 20-21). Total length: 7.5; head length: 1.5; head width: 2.2; eye width: 0.4; interocular space: 1.4; preocellar distance: 0.3; interocellar space: 0.6; rostrum: I 1.1, II 1, III-, IV-; antennal segments: I 1 II 1.2 III 1.2 IV 3; pronotum length: 3.4; pronotum width: 4.8; scutellum length: 2; scutellum width: 3; hemelytra length: 5; abdominal length: 4.5; abdominal width: 4.

Coloration of the body dark, reduced hairs; dark head with light spots poorly defined, other characteristics similar to the male. Ovipositor formed by the first and second valvifer, second valvifer with fig. 30, spermatheca formed by a short, robust duct, apical region formed by 2 lobulations, one of them much larger than the other (Figs. 28, 30).

Merocoris (M.) elevatus (Map 1): **Argentina: Catamarca:** Rodeo (28°42'46.59"S 65°51'55.49"W) (6♀) 20-2 58, R. Golbach col. (FML); **Corrientes:** Santo Tomé (28°33'06.76"S 56°02'44.75"W) (1♂) 1957, Kormilev det. (MACN); **Chaco:** Puerto Tirol Tirol (27°22'53.09"S 59°05'10.88"W) (1♂ 1♀) 6-2-1936 (MLP), Resistencia (27°27'07.72"S 58°58'52.79"W) (2♂ 1♀) X-XII-935, J.B. Dagurre col., Kormilev det. (MACN), Roque Saenz Peña (26°47'09.20"S 60°23'19.69"W), 1932, K.J. Hayward col. B.M. 1933-58, T.R. Yonke det. (BMNH); **Misiones:** Pindapoy (26°25'54.60"S 54°36'36.22"W) (1♂) 14-XII-1941 (MLP); **Salta:** (1♀) (MLP); **Santa Fe:** Crespo (31°40'19.05"S 60°46'25.08"W) (1♀) 22-XI-1939, Kormilev det. (MLP).

Distribution in Argentina of *M. (M.) elevatus*: Catamarca, Corrientes, Chaco, Misiones, Salta, Santa Fe.

***Merocoris (M.) tristis* Perty (Figs. 22-24)**

1830 *Merocoris tristis* Perty, 171.

1954 *Merocoris tristis* Kormilev, 58.

Redescription: Male. n = 2 (Figs. 22-24). Total length: 9.1; head length: 1.8; head width: 2.7; eye width: 0.6; interocular space: 1.5; preocellar distance: 0.7; interocellar space: 0.5; rostrum: I 1.9, II 1.5, III 1.5, IV 1; antennal segments: I 1.7 II 2.1 III 2.1 IV 2.7; pronotum length: 3.4; pronotum width: 6.5; scutellum length: 2.8; scutellum width: 2.8; hemelytra length: 6.6; abdominal length: 6; abdominal width: 5.1.

Dorsal coloration: head dark color with hairs; ocelli and compound eyes reddish; each antennal segments proximally light color and distally dark; segment I shorter than the rest, segments II and III equal size, IV longer segments II and III. Pronotum dark, hairy, with spots light brown on the back midregion. scutellum dark, pilose, basally with two areas without hairs. *Clavus* and *corium* pilose and dark. Hemelytra dark with the middle region glabrous, veins light brown,

membrane and veins dark; connexival segments dark brown and light brown alternately arranged with little hairs. Ventral coloration: dark color densely pilose, it covers the entire ventral region. Legs dark with light spots. Structure: Pronotal triangular, slightly declivent without lobulations on the sides; collar without spines on the sides; humeral angles ending in a short, robust spine facing out, basal region of pronotum straight with four spines two on either side of the scutellum, two very small and almost inconspicuous two thick, robust. Scutellum with a spine in the central region, thick, prominent and a short spine at apex. Coxa highly developed, robust, things have in the dorsal region of metapleura a spine on both sides. Metafemora with two rows of prominent spines, a row with four spines on the outer side of the femur and a row of two spines on the inner side toward the distal end, the spine located on the inner side, distal femur is greater than the rest, the femur has a thickening from the middle region towards the apex, forming a petiole; tibiae thin, boneless, semicircular, they have hairs legs. Hemelytra longer than the abdomen. Paramere in the shape of a hook, long and fine basal region, fine and short distal region terminating in a small flattened lobule similar to a spoon; Middle furrow present; Pilosity present in the middle region (Figs. 27).

Of the three species of the genus *Merocoris* present in Argentina, according Packasukas (2010), we have only been able to examine material *M.(M.) bergi* and *M. (M.) elevatus* with distribution in the country. The examined material deposited in museums in Argentina Museo Miguel Lillo (FML) and Museo Argentino de Ciencias Naturales (MACN) of Species *M.(M.) tristis*, presents distribution outside of Argentina, in the countries of Bolivia and Perú. According Kormilev (1954) *Merocoris tristis* could eventually be found in Argentina, but he not found: "...*Merocoris tristis* Perty, genotypic species, described in Brazil, is also found in tropical Bolivia and probably will be in Salta and Misiones".

Merocoris (M.) tristis (Map 1): **Bolivia:** Santa Cruz: Buena Vista (17°27'27.45"S 63°40'11.60"W) (2♂) 1951, A. Martinez col. (MACN); **Perú:** Valle Chanchamayo (12°02'29.90"S 76°56'45.08"W), 800m, (♂ ♀?), (FML).

Distribution in Argentina of *M. (M.) tristis*: Material was not found with distribution in Argentina.

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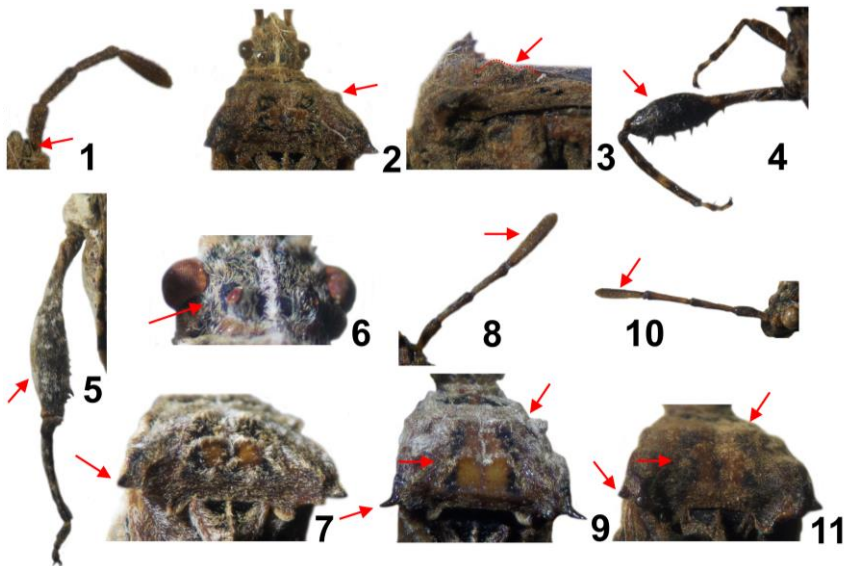


Figure 1-11. 1. antenniferous tubercles unarmed, 2. anterolateral borders of pronotum with only one tubercle, 3. scutellar disk with high conical tubercle, 4. hind femur strongly clavate, 5. hind femur gradually incrassate, 6. interocelar space with short tubercle, 7. humeral angles with short spine, 8. antennal segment IV longer than the same II and III, 9. anterolateral borders of pronotum with large tubercle near the middle region and acute humeral angles with a spine, 10. Antennal segment IV shorter or longer than the same II and III, 11. pronotal disk smooth and anterolateral borders of pronotum without tubercle near the middle region.

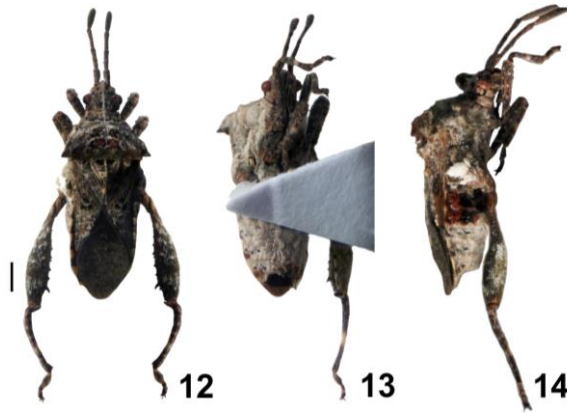


Figure 12-16. *Merocoris (M.) bergi* Mayr: 12-14. male: 12. dorsal view, 13. ventral view, 14. lateral view.

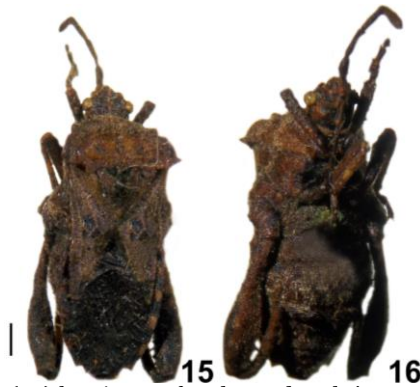


Figure 15-16. *Merocoris (M.) bergi* Mayr: female: 15. dorsal view, 16. ventral view.



Figure 17-19. *Merocoris (M.) elevatus* (Spinola): 17-19. male: 17. dorsal view, 18. lateral view, 19. ventral view.



Figure 20-21. *Merocoris (M.) elevatus* (Spinola): female: 20. dorsal view, 21. lateral view.



Figure 22-24. *Merocoris (M.) tristis* Perty: male: 22. dorsal view, 23. lateral view, 24. ventral view.

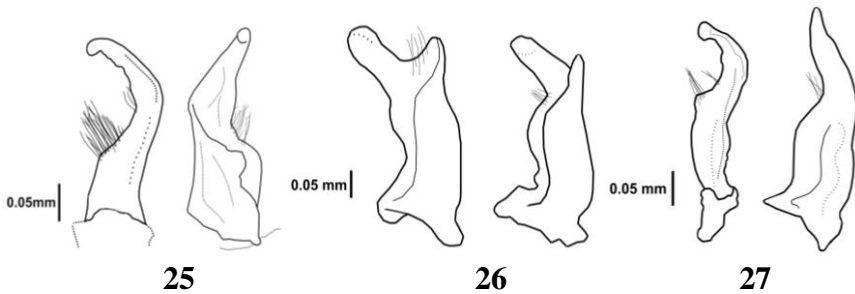


Figure 25-27. Male genitalia of Genus *Merocoris* Perty: 25. left paramere of *Merocoris (M.) bergi*; 26. left paramere of *Merocoris (M.) elevatus*; 27. left paramere of *Merocoris (M.) tristis*.

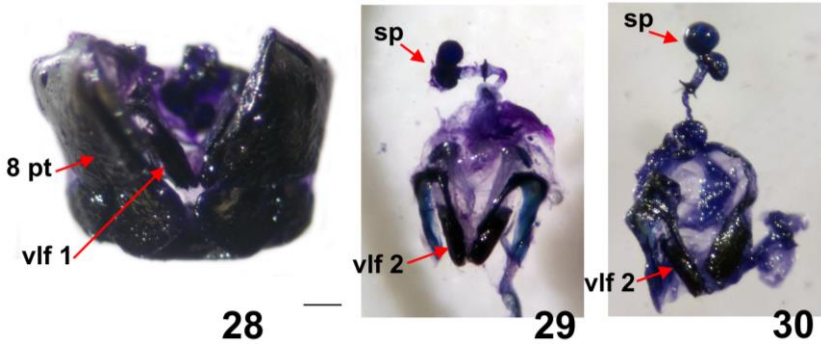
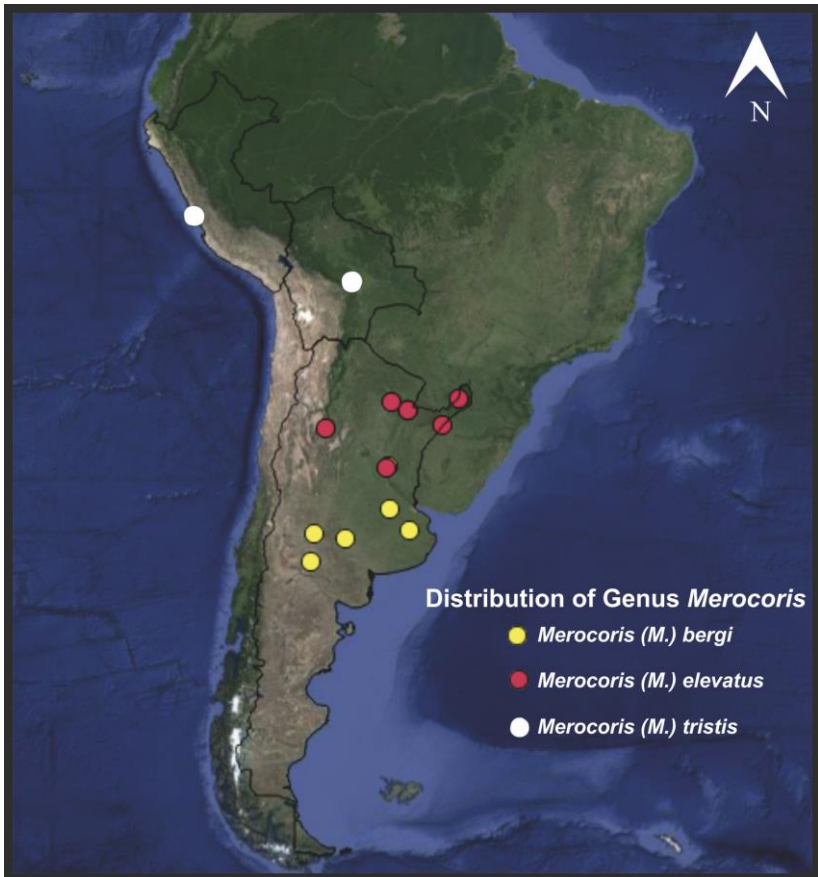


Figure 28-30. Female genitalia of Genus *Merocoris* Perty: 28. ovipositor: vlf1: first valvifer, 8Pt: paratergite eight; 29. vlf2: second valvifer, Sp: spermatheca of *Merocoris* (*M.*) *bergi*; 30. vlf2: second valvifer; Sp: spermatheca of *Merocoris* (*M.*) *elevatus*.



Map 1. Distribution of *Merocoris* species in Argentina and the southern cone: red spots: *Merocoris* (*M.*) *bergi*, yellow spots: *Merocoris* (*M.*) *elevatus* and black spots: *Merocoris* (*M.*) *tristis*.