

Diversity of true bugs (Insecta: Hemiptera: Heteroptera) from the El Impenetrable National Park, Argentina

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Abstract

The study of the Heteroptera (Hemiptera) fauna of the El Impenetrable National Park, resulted in an inventory composed of: Alydidae (2 spp.), Aradidae (1 sp.), Belostomatidae (5 spp.), Berytidae (1 sp.), Blissidae (1 sp.), Coreidae (11 spp.), Corixidae (2 spp.), Geocoridae (1 sp.), Gerridae (1 sp.), Hebridae (1 sp.), Largidae (4 spp.), Lygaeidae (5 spp.), Miridae (17 spp.), Nabidae (1 sp.), Notonectidae (1 sp.), Oxycarenidae (1 sp.), Pachygronthidae (1 sp.), Pachynomidae (2 spp.), Pentatomidae (16 spp.), Pleidae (1 sp.), Pyrrhocoridae (1 sp.), Reduviidae (30 spp.), Rhopalidae (5 spp.), Rhyparochromidae (12 spp.), Saldidae (1 sp.), Scutelleridae (2 spp.), Tingidae (1 sp.), and Veliidae (1 sp.). These findings include six new records for the Argentinean fauna: *Prytanes foedus* (Stål), *Saldula pallipes* (Fabricius), *Camirus brevilinea* (Walker), *Atopozelus opsimus* Elkins, *Doldina bicarinata* Stål, *Rocconota sextuberculata* Stål; and 39 new records for Chaco Province.

Key words: New records, Chaco Grasslands, protected areas, conservation, insects

Introduction

Insects underpin the functioning of the biosphere, mediating pollination, herbivory, detritivory, plant architecture, and nutrient cycling among many other vital ecosystem processes (Chowdhury *et al.* 2023b). Even though insects have colonized almost every niche and are the most important group in terms of specific diversity they have been largely ignored in studies dealing with conservation strategies (Melo *et al.* 2017; Chowdhury *et al.* 2023a). Averaging estimates suggest there might be 5.5 million species of insects worldwide, yet insect richness and abundance are collapsing (Stork 2018; Harvey *et al.* 2020; Wagner *et al.* 2021). There is now a strong scientific consensus that the decline of insects and biodiversity as a whole, is a serious threat that society must urgently address (Harvey *et al.* 2020), and that a large part of the species will become extinct in the current and coming decades due to anthropogenic actions (Engel *et al.* 2021; Cowie *et al.* 2022). Given the importance of insects in many ecosystems, halting and reversing these trends is among the most important tasks of conservation globally (Harvey *et al.* 2020; Chowdhury *et al.* 2023a).

There are relatively few studies worldwide exploring insect representation in protected areas, especially when compared to the literature on other taxa (Chowdhury *et al.* 2023a). In Argentina, there are a few comprehensive inventories of true bugs from National Parks, mostly dealing only with aquatic taxa, and a few also including or exclusively dealing with terrestrial groups (e.g. Carpintero 1999; Dellapé *et al.* 2018; Melo *et al.* 2011, 2017).

Argentina shows a diverse geography that includes 18 ecoregions (Burkart *et al.* 1999). The country has 53 national protected areas (ca. 17,554,869 ha, 3.32 % of total area), that are designed to preserve the vast diversity of ecosystems (SIB 2023).

The South American Grasslands subrealm includes three large subtropical grassland and savanna bioregions, covering a majority of the southern continent (One Earth 2023). The Chaco Grasslands covers 108,294,000 ha, mostly in Paraguay and northern Argentina, and it comprises several habitats, although savannahs, characterized by an abundance of grasses, and thorn forests—or a transition of these two—predominate. A transitional area of Quebracho woodland is more open than the spiny forests, and is characterized by shrubs, cacti, thorn bushes, white hardwood tree, and the conservation dependent *Bulnesia sarmientoi* Lorentz ex Griseb. tree. The thick spiny forests are often covered with an understory of bromeliads and cacti, which makes it very difficult to cross, and gives the common name of “impenetrable” to part of the dry Chaco in Argentina. The Chaco includes two ecoregions: Dry Chaco and Humid Chaco (One Earth 2023). This latter ecoregion spans more than 87 million hectares across northwestern Paraguay, and east of the Andes in southeastern Bolivia and northwestern Argentina (de la Sancha *et al.* 2021). This area suffered one of the highest global deforestation rates in the last two decades and only has 12% of the area protected (Grau *et al.* 2005; Fernández *et al.* 2020; de la Sancha *et al.* 2021).

The National Park El Impenetrable (Fig. 1) was created in 2014 to protect part of the Dry Chaco. It comprises 128,000 ha of forests of quebrachos (*Schinopsis balansae* Engl., *S. lorentzii* Engl., and *Aspidosperma quebracho* Schltl.), algarrobos (*Prosopis* sp.), palo santos (*Bulnesia sarmientoi*), and itín (*Prosopis kuntzei* Harms ex Kuntze); the shrub layer is dominated by species of *Acacia* Mill., *Mimosa* L., *Prosopis* L. and *Celtis* L., while the presence of cacti, grasses and bromeliads is frequent (Prado 1993). The area includes gallery forests, grasslands, swamps, and simbolares (*Cenchrus nervosus* (Nees) Kuntze)—which were believed to be extinct—and lagoons formed by the flooding of the Teuco River (also known as Bermejo). The Park concentrates a high diversity of species, as it is a corridor between the interior Atlantic forest and the Andean cloud forest, through the Bermejo River.

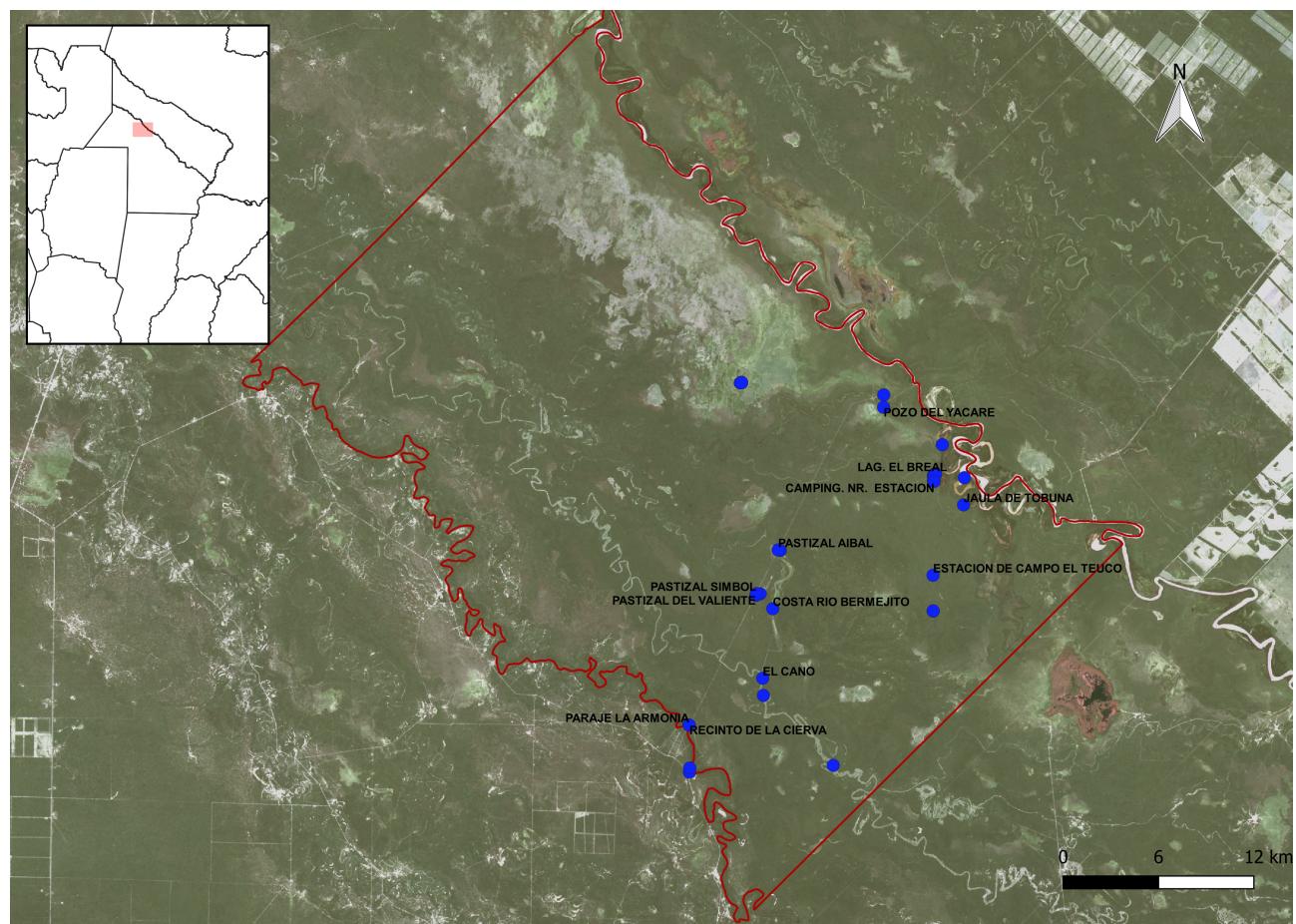


FIGURE 1. Map of the study area. P. N. El Impenetrable, Chaco, Argentina. Blue dots indicate collection sites.

Rewilding Argentina Foundation works, together with the National Parks Administration, to reverse the extinction of species and the resulting environmental degradation, recovering the functionality of ecosystems and promoting the well-being of local communities. They have developed the baseline of the diversity of flora and fauna species inhabiting the Park. Up to now, they have registered 328 arthropods, with only 11 species in seven families belonging to the suborder Heteroptera (Hemiptera) (Rewilding Argentina 2020). Recently, Melo and Dellapé (2022) reported the presence of the subfamily Pachynominae in Argentina from specimens collected in the Park.

Through the joint work of the Rewilding Argentina team, we have developed the first inventory of the species of Heteroptera (Hemiptera) living in this protected area.

Materials and methods

The National Park El Impenetrable is located in the General Güemes Department in Chaco Province, Argentina [25° 0' 16.848" S, 61° 6' 20.304" W] (Fig. 1). Specimens of Heteroptera were captured and/or registered by photographs by AS, and a field trip was performed by MCM in December 2021. Some records of species were taken from the citizen science platform ArgentiNat (<https://www.argentinat.org/home>), previous confident identification of the photographed specimens.

Permits to collect material were provided by the National Parks Administration (IF-2019-108859233-APN-DNC%AONAC). Most of the specimens were collected using sweeping and beating nets, and complementary collections were done by hand in the field and by visual inspection of light traps. Specimens were preserved in 96% ethanol, then mounted in the lab, and examined under stereomicroscope.

To confirm the identification of some specimens, the genital capsule of males and genital segments of females were dissected and cleared with a saturated potassium hydroxide solution for observation; dissected genitalia were preserved in microvials with glycerin. The specimens are deposited in the Museo de La Plata, Buenos Aires, Argentina (MLP). Each species in this inventory includes the link to the catalogs of Argentinean Heteroptera published in BiodAr (Cigliano *et al.* 2023); Melo *et al.* (2023), Dellapé *et al.* (2023), and Melo & Dellapé (2023). These catalogs include information about each species recorded in Argentina and Uruguay, such as distribution, host plants, type specimens, synonyms, sanitary or economic importance, and main bibliography, together with images of the species.

Color images of all genera recorded from El Impenetrable National Park are provided, except for *Doldina bicarinata* Stål, 1866 that was recorded by low quality images. Images taken in the field were provided by AS. Dorsal habitus of the specimens were captured using a Canon EOS Rebel T7i with a Professional Grade Raynox DCR 150 DSLR Objective Tube Lens and an Objective PLAN Achromatic LWD infinity 5X, mounted on a WeMacro's automatic focus stacking rail. Multiple focal planes were taken with HELICON REMOTE software and merged using HELICON FOCUS software. Image editing was done in Adobe Photoshop CS6 v13.1.2. Scale bar in all figures are 1 mm.

The organization of the species follows the classification proposed by Schuh & Weirauch (2020). New records are indicated following the species name.

Results

Infraorder NEPOMORPHA

Family BELOSTOMATIDAE

Subfamily Belostomatinae

Belostoma candidulum Montandon, 1903

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/es/info/21239.html>
(Fig. 3A)

Material studied: 1♀, 25.007381 S- 60.946272 W, 2-9/XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP).

***Belostoma dentatum* (Mayr, 1863)**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/es/info/21242.html>

Material studied: 1♂ 3♀, 25.007381 S- 60.946272 W, 2-9/XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP); 1♂ 2♀, 25.007381 S- 60.946272 W, 6/XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP).

***Belostoma elegans* Mayr, 1871**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/es/info/21245.html>

Material studied: 2♂ 2♀, 25.007381 S- 60.946272 W, XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP); 2♂ 1♀, 25.007381 S- 60.946272 W, 2-9/XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP); 2♂, 25.007381 S- 60.946272 W, 6/XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP).

***Belostoma micantulum* Stål, 1860a**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/es/info/21251.html>

Material studied: 2♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903, t. de luz, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 7♂ 7♀, 25.007381 S- 60.946272 W, 2-9/XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP); 9♂ 13♀, 25.007470 S- 60.946675 W, XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP).

Subfamily Lethocerinae

***Lethocerus annulipes* (Herrick-Schaeffer, 1845)**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/es/info/21260.html>
(Fig. 3B)

Material studied: 1♂, 25.007381 S- 60.946272 W, 6/XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP); 1♀, 25.007381 S- 60.946272 W, 2-9/XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP).

Family PLEIDAE

***Neoplea (Neoplea) maculosa* (Berg, 1879a)**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/es/info/21550.html>
(Fig. 3C)

Material studied: 1♀, 25.007470 S- 60.946675 W, XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP).

Superfamily Corixoidea

Family CORIXIDAE

Subfamily Corixinae

Tribe Corixini

***Sigara (Tropocorixa) denseconscripta* Breddin, 1879**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/en/info/21325.html>

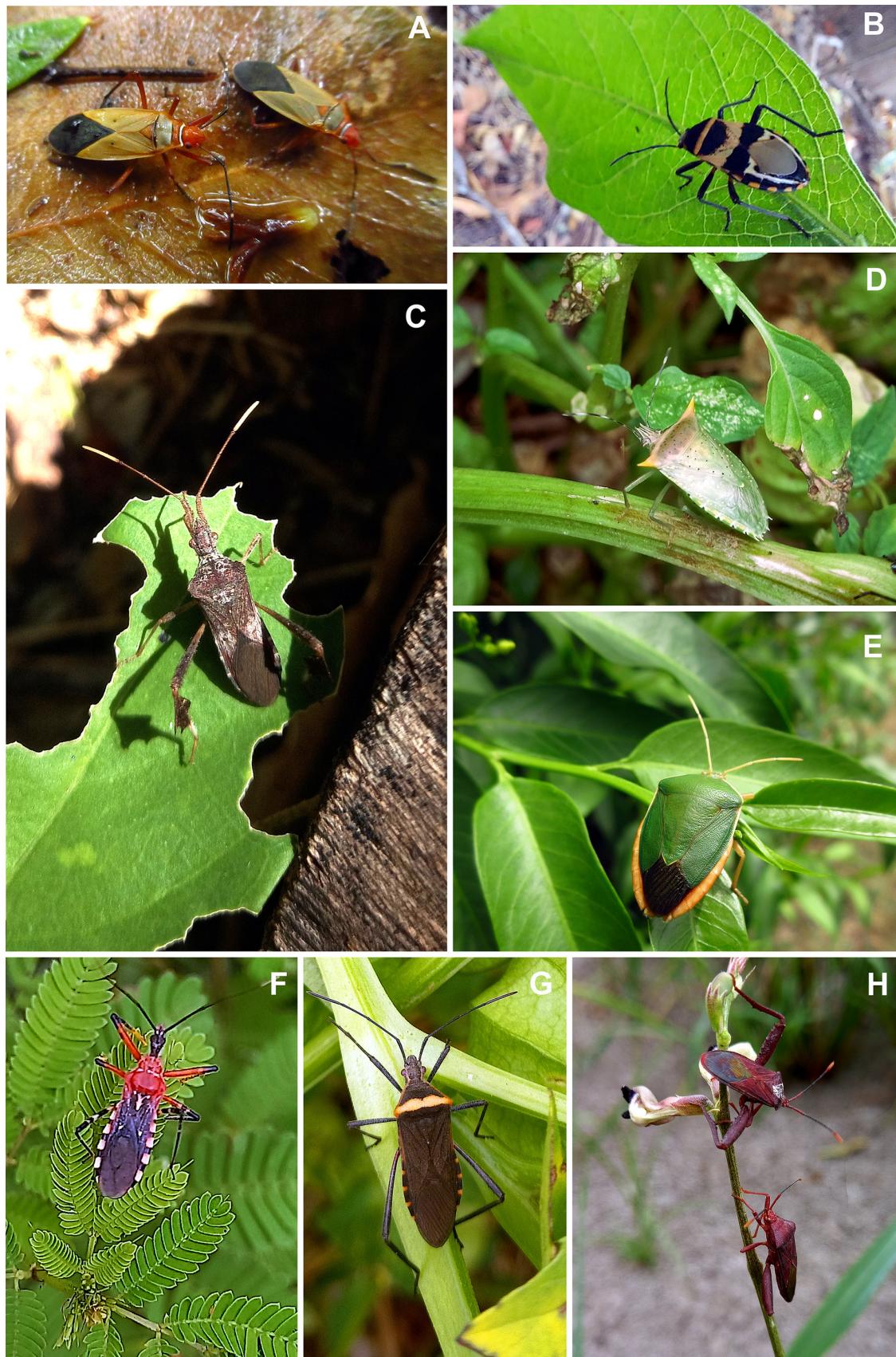


FIGURE 2. Heteroptera recorded in the field in the P. N. El Impenetrable. A. *Dysdercus chaquensis* (Pyrrhocoridae). B. *Largus fasciatus* (Largidae). C. *Leptoglossus dentatus* (Coreidae). D. *Arvelius albopunctatus* (Pentatomidae). E. *Edessa rufomarginata* (Pentatomidae). F. *Cosmoclopius poecilus* (Reduviidae). G. *Phthiacnemia picta* (Coreidae). H. *Athaumastus haematicus* (Coreidae).

Material studied: 8♂ 9♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP).

***Sigara (Tropocorixa) platensis* Bachmann, 1962**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/en/info/21333.html>
(Fig. 3D)

Material studied: 1♂ 7♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP).

Family NOTONECTIDAE

Subfamily Notonectinae

Tribe Notonectini

***Notonecta (Paranecta) sellata* Fieber, 1851**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/en/info/21538.html>
(Fig. 3E)

Material studied: 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, light trap, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

Infraorder GERROMORPHA

Superfamilia Gerroidea

Family Veliidae

Subfamily Veliinae

***Steinovelia virgata* (White, 1879) First record from Chaco Province**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/en/info/21613.html>
(Fig. 3F)

Material studied: 1♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP).

Superfamilia Hebroidea

Family Hebridae

Subfamily Hebrinae

***Lipogomphus lacuniferus* Berg, 1879b First record from Chaco Province**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/es/info/21773.html>
(Fig. 3G)

Material studied: 1♂, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP).

Infraorder LEPTOPODOMORPHA

Family SALDIDAE

Saldula pallipes (Fabricius, 1794) First record from Argentina
(Fig. 3H)

Material studied: 1♀, 25.007470 S- 60.946675 W, XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP).

Known distribution: Known from the Oriental, Nearctic and Neotropical regions (Lindskog 1995).

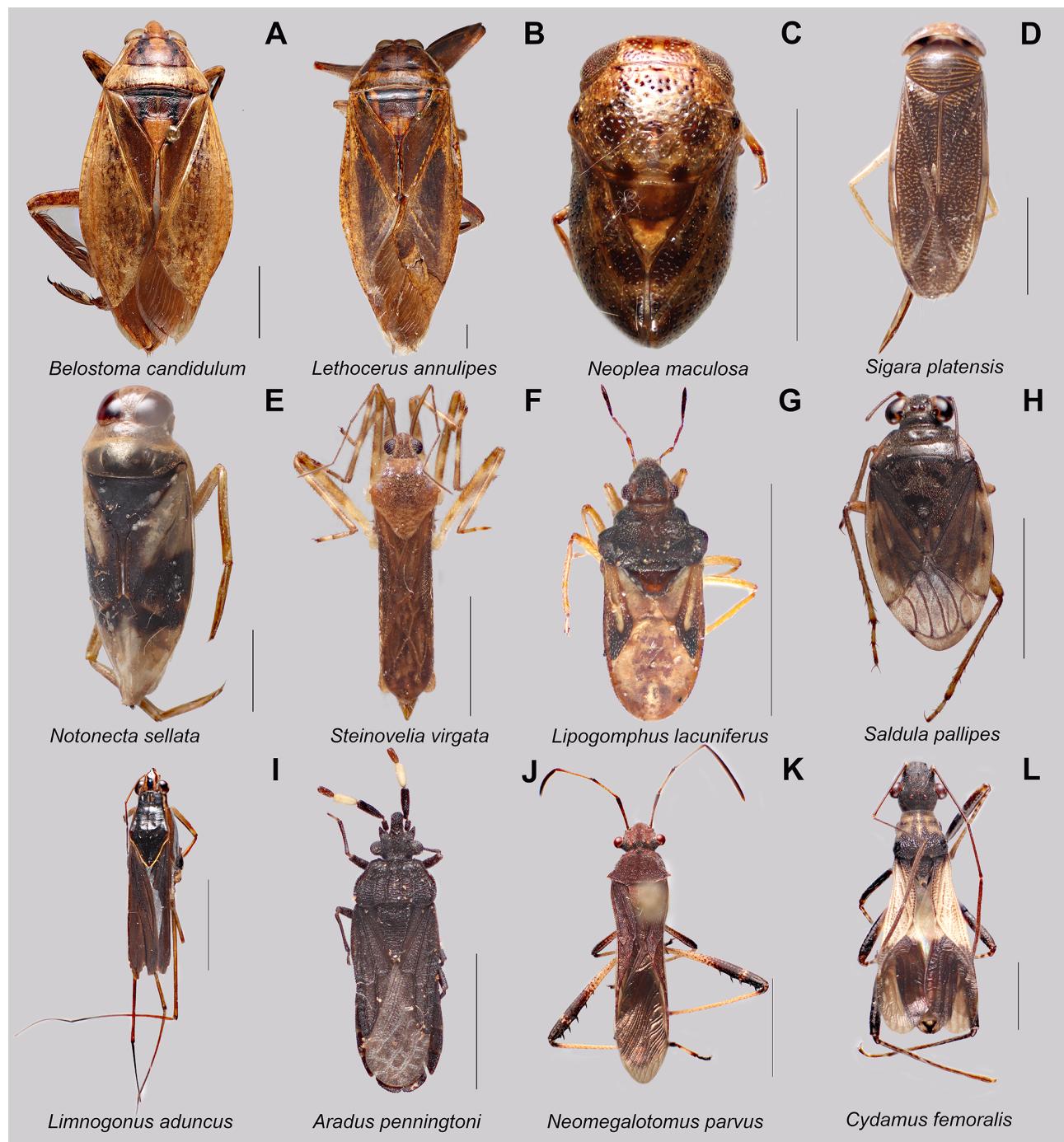


FIGURE 3. Dorsal habitus of Heteroptera recorded from the P. N. El Impenetrable. A–B Belostomatidae. C. Pleidae. D. Corixidae. E. Notonectidae. F. Veliidae. G. Hebridae. H. Saldidae. I. Gerridae. J. Aradidae. K–L. Alydidae.

Infraorder GERROMORPHA

Superfamilia Gerroidea

Family GERRIDAE

Subfamily Gerrinae

Tribe Gerrini

***Limnogonus aduncus aduncus* Drake & Harris, 1933 First record from Chaco Province**

<https://biodar.unlp.edu.ar/gerro-nepo-lepto/en/info/21570.html>

(Fig. 3I)

Material studied: 4♀, 25.007961 S- 60.947266 W, light trap, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols. (MLP).

Infraorder PENTATOMOMORPHA

Superfamilia Aradoidea

Family ARADIDAE

Subfamilia Aradinae

***Aradus penningtoni* Drake, 1942**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/21717.html>

(Fig. 3J)

Material studied: 1♂, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, light trap, M.C. Melo col., M.C. Melo det. (MLP).

Superfamily Coreoidea

Family ALYDIDAE

Subfamily Alydinae

***Neomegalotomus parvus* (Westwood, 1842)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/21841.html>

(Fig. 3K)

Material studied: 1♂ 1♀, Paraje La Armonía, 25.177920 S- 61.095320 W, 1/XI/2021, light trap, A. Serrano col. (MLP); 1♂, 25.076496 S- 61.054050 W, VI/2021, light trap, A. Serrano & A. Frederich cols. (MLP); 1♀, recinto de la cierva, 25.151553 S- 61.097375 W, 9/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

Subfamily Micrelytrinae

Tribe Micrelytrini

***Cydamus femoralis* (Stål, 1860a) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/21856.html>

(Fig. 3L)

Material studied: 1♂, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, light trap, M.C. Melo col., L. Olivera det. (MLP).

Family COREIDAE

Subfamily Coreinae

Tribe Acanthocerini

***Athaumastus haematicus* (Stål, 1860b)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20538.html>

(Fig. 2H)

Material studied: 2♂ Recinto de La Cierva, 25.151553 S- 61.097375 W, 9-10/XII/2021, M.C. Melo col., L. Olivera det. (MLP); 1♂, Pastizal del Valiente, 25.077469 S- 61.056790 W, 12/XII/2021, M.C. Melo col., L. Olivera det. (MLP); 1♂, Paraje La Armonía, 25.151553 S- 61.097375 W, M.C. Melo col., L. Olivera det. (MLP);

Observation: <https://www.argentinat.org/observations/69954343>

***Dersagrena subfoveolata* (Berg, 1892)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20550.html>

(Fig. 4A)

Material studied: 1♂, Estación de Campo El Teuco, 19/XI/2021, A. Serrano col., L. Olivera det. (MLP).

Tribe Anisoscelini

***Dalmatomammurius vandoesburgi* (Brailovsky, 1982a) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20557.html>

(Fig. 4B)

Material studied: 1♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, light trap, 10/XII/2021, M.C. Melo col., L. Olivera det. (MLP).

***Leptoglossus dentatus* Berg, 1892**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20566.html>

(Fig. 2C)

Material studied: 3♂, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., L. Olivera det. (MLP); 1♂, 25.007460 S- 60.9464903 W, 2-9/XI/2019, L. Damer col., L. Olivera det. (MLP); 8♂, 25.007961 S- 60.947266 W, light trap, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., L. Olivera det. (MLP); 1♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, light trap, 10/XII/2021, M.C. Melo col., L. Olivera det. (MLP).

Observation: <https://www.inaturalist.org/observations/111003343>

***Phthiacnemia picta* (Drury, 1770)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20578.html>
(Fig. 2G)

Observation: <https://www.argentinat.org/observations/69935143>

Tribe Chariesterini

***Chariesterus armatus* (Thunberg, 1825) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20580.html>
(Fig. 4C)

Material studied: 1♂ 1♀, Costa del Bermejito, 25.084886 S- 61.046105 W, 09/XII/2021, M.C. Melo col., L. Olivera det. (MLP).

Tribe Hydarini

***Madura fuscoclavata fuscoclavata* Stål, 1860a First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20589.html>
(Fig. 4D)

Material studied: 3♂ 2♀, camping nr. Estación de Campo El Teuco, 25.0111981 S- 60.9466928 W, 11/XII/2021, M.C. Melo col., L. Olivera det. (MLP).

***Maduranoides chemsaki* Brailovsky, 1988**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20591.html>
(Fig. 4E)

Material studied: 1♂ 1♀, Pozo del Yacaré, 09/XII/2021, M.C. Melo col., L. Olivera det. (MLP); 1♀, El Caño, 25.124462 S- 61.051742 W, 10/XII/ 2021, M.C. Melo col., L. Olivera det. (MLP).

Tribe Hypselonotini

***Cebrenis cauta* Brailovsky, 1995 First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20615.html>
(Fig. 4F)

Material studied: 1♂, 25.051712 S- 61.041909 W, VI/2021, A. Serrano & A. Friedrich cols., L. Olivera det. (MLP).

Tribe Spartocerini

***Eubule glyphica* Berg, 1878**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20645.html>
(Fig. 4G)

Material studied: 1♀, Caso de Estancia, XI/2021, A. Serrano col., L. Olivera det. (MLP).

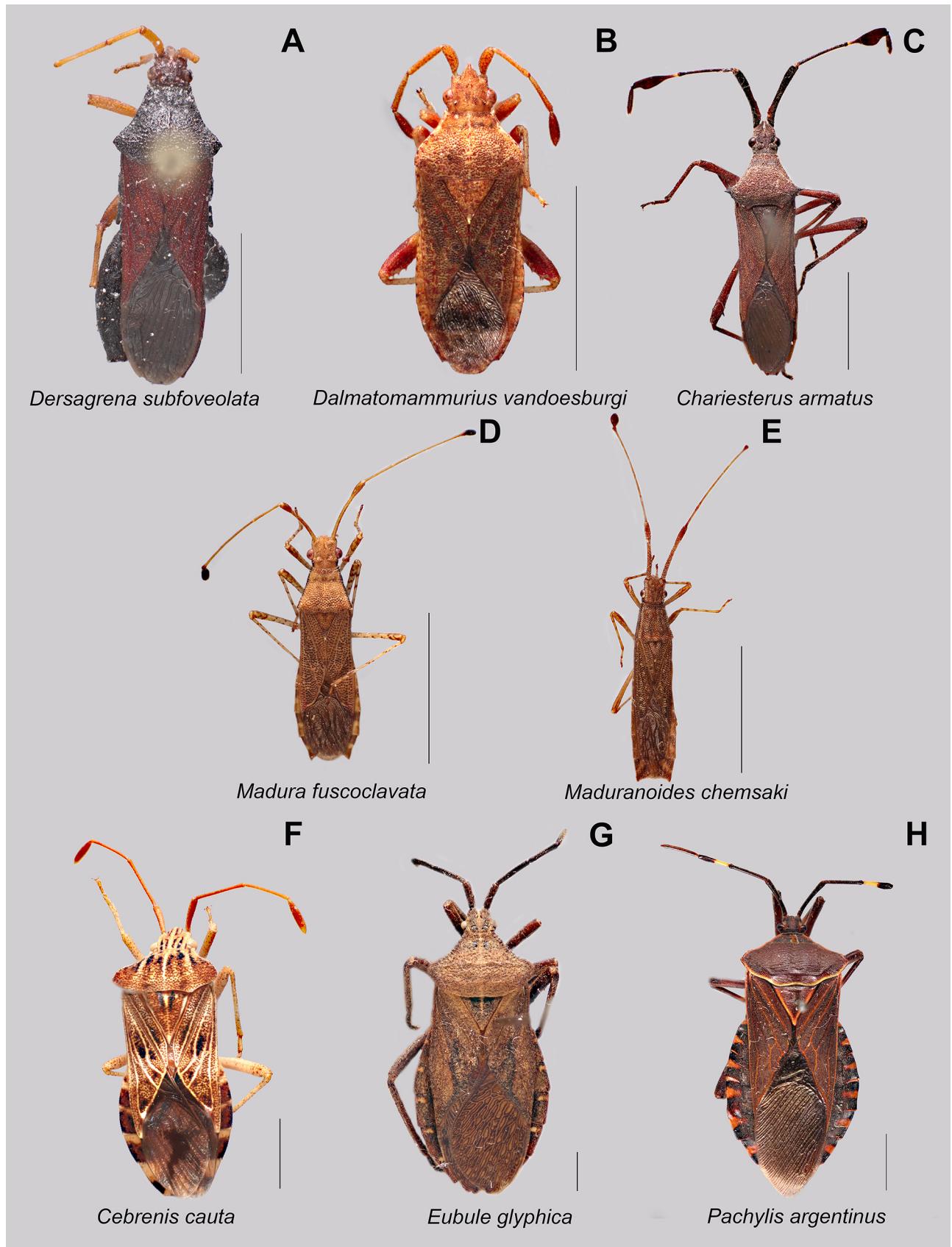


FIGURE 4. Dorsal habitus of Coreidae recorded from the P. N. El Impenetrable.

Tribe Nematopodini

***Pachylis argentinus* Berg, 1878**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20636.html>
(Fig. 4H)

Observation: Gral Güemes, P. N. El Impenetrable, 25.007004 S- 60.945791 W, Lag. El Breal, Serrano, A. obs., Melo, M.C. det.

Family RHOPALIDAE

Subfamily Rhopalinae

Tribe Chorosomini

***Xenogenus picturatum* Berg, 1883**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20011.html>
(Fig. 5A)

Material studied: 1♂, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP).

Tribe Harmostini

***Harmostes (Harmostes) prolixus* Stål, 1860a**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20018.html>

Material studied: 3♀, 25.124462 S- 61.051742 W, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

***Harmostes (Harmostes) serratus* (Fabricius, 1775)**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20020.html>
(Fig. 5B)

Material studied: 1♂ 5♀, El Caño, 25.124462 S- 61.051742 W, 10-XII-2021, M.C. Melo col., M.C. Melo det. (MLP); 1♂ 1♀, Costa del Bermejito, 25.084886 S- 61.046105 W, 9/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

***Harmostes (Neoharmostes) apicatus* Stål, 1859a First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20023.html>

Material studied: 3♀, Pozo del Yacaré, 9/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 1♀, 25.173337 S- 61.006975 W, 8/IX/2021, A. Serrano col., M.C. Melo det. (MLP).

Subfamily Serinethinae

***Jadera coturnix* (Burmeister, 1835)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20034.html>
(Fig. 4C)

Material studied: 3♂ 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, light trap, 10/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP); 1♂, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP).

Superfamily Pyrrhocoroidea

Family LARGIDAE

Subfamily Larginae

Acinocoris lunaris (Gmelin, 1790)

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20048.html>

(Fig. 4D)

Material studied: 1♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP).

Observation: <https://www.argentinat.org/observations/54494697>

Largus fasciatus Blanchard, 1843

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20042.html>

(Fig. 2B)

Material studied: 1♀, recinto de la cierva, 25.151553 S- 61.097375 W, 9/XII-2021, M.C. Melo col., M.C. Melo det. (MLP); 2♀, Jaula de Tobuna, 25.024331 S- 60.928141 W, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 1♀, camping nr. Estación, 25.0111981 S- 60.9466928 W, 11/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

Observation: <https://www.argentinat.org/observations/97057240>

Largus trochanterus Signoret, 1862 First record from Chaco Province

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20047.html>

Observation: <https://www.inaturalist.org/observations/168285280>

Parvacinocoris khuru Melo & Dellapé, 2019 First record from Chaco Province

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/21911.html>

(Fig. 5E)

Observation: <https://www.argentinat.org/observations/70052684>

Family PYRRHOCORIDAE

Dysdercus chaquensis Freiberg, 1948

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20054.html>

(Fig. 2A)

Material studied: 3♂ 1♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP); 2♂ 2♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP); 1♂, 25.007381 S- 60.946272 W, 6/XI/2019, L. Damer & A. Serrano col., M.C. Melo det.

(MLP); 1♀, Pastizal de Simbol, 25.076460 S- 61.056435 W, 4/XI/2021, A. Serrano col., M.C. Melo det. (MLP); 1♂, Pozo del Yacaré, 9/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 4♂ 5♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 1♀, same data 10/XII/2019 (MLP).

Observation: <https://www.argentinat.org/observations/19950593>

Superfamily Pentatomoidea

Family PENTATOMIDAE

Subfamily Edessinae

***Edessa rufomarginata* (De Geer, 1773) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/21069.html>
(Fig. 2E)

Observation: <https://www.argentinat.org/observations/19947795>

Subfamily Pentatominae

Tribe Carpocorini

***Diceraeus melacanthus* Dallas, 1851**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22026.html>
(Fig. 5F)

Material studied: 1♂ 3♀, Pastizal Aibal, 25.251470 S- 61.043291 W, 12/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 1♂ 3♀, Pastizal del Valiente, 25.077469 S- 61.056790 W, 12/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 5♂ 7♀, El Caño, 25.124462 S- 61.051742 W, 10-XII-2021, M.C. Melo col., M.C. Melo det. (MLP); 1♂ 1♀ 2 nymphs, recinto de la cierva, 25.151553 S- 61.097375 W, 9/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

***Hypatropis inermis* (Stål, 1872a) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22011.html>
(Fig. 5G)

Material studied: 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII.2021, M.C. Melo col., V. Castro-Huertas det. (MLP).

***Mormidea v-luteum* (Lichtenstein, 1796)**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/22070.html>
(Fig. 5H)

Material studied: 4♂ 3♀, camping nr. Estación, 25.0111981 S- 60.9466928 W, 11/XII/2021, M.C. Melo col., V. Castro- Huertas det. (MLP).

Observation: <https://www.argentinat.org/observations/104679179>

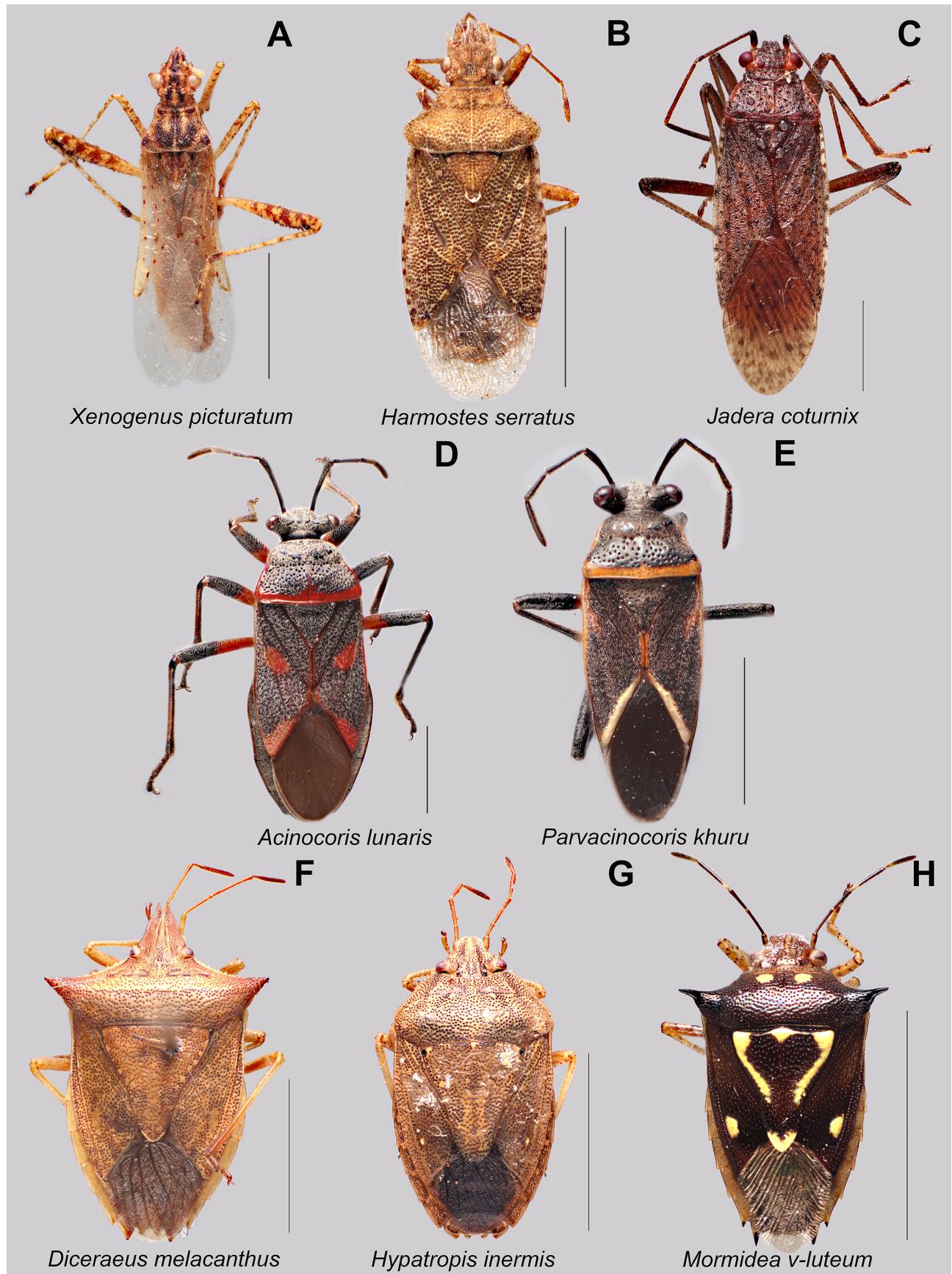


FIGURE 5. Dorsal habitus of Heteroptera species recorded from the P. N. El Impenetrable. A–C. Rhopalidae. D–E. Largidae. F–H. Pentatomidae.

***Oebalus poecilus* (Dallas, 1851) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/22073.html>

(Fig. 6A)

Material studied: 2♂ 6♀, 25.007381 S- 60.946272 W, XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP); 2♂ 2♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP).

Tribe Chlorocorini

***Loxa deducta* Walker, 1867**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/22162.html>

(Fig. 6B)

Material studied: 2♂ 2♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII.2021, M.C. Melo col., V. Castro-Huertas det. (MLP); 1♂, camping nr. Estación, 25.0111981 S- 60.9466928 W, 11/XII/2021, M.C. Melo col., V. Castro-Huertas det. (MLP); 1♂, Paraje La Armonía, 25.177920 S- 61.095320 W, 1/XI/2021, A. Serrano col., V. Castro-Huertas det. (MLP).

Observation: <https://www.inaturalist.org/observations/73242221>

Tribe Nezarini

***Chinavia apicicornis* (Spinola, 1852)**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/22230.html>

Material studied: 1♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., V. Castro-Huertas det. (MLP).

***Chinavia callosa* (Rolston, 1983)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22234.html>

Material studied: 2♂ 1♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., V. Castro- Huertas det. (MLP); 1♀, 25.007381 S- 60.946272 W, 6/XII/2019, L. Damer & A. Serrano cols., V. Castro- Huertas det. (MLP); 1♀, Casco de la Estancia, XI/2021, A. Serrano col., V. Castro- Huertas det. (MLP).

***Chinavia musiva* (Berg, 1878)**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/22239.html>

(Fig. 6C)

Material studied: 1♂ 3♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

***Cytocephala cogitabunda* Berg, 1883 First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22217.html>

(Fig. 6D)

Material studied: 10♂ 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

***Thyanta (Argosoma) acuminata* Ruckes, 1956**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22221.html>

(Fig. 6E)

Material studied: 3♀, El Caño, 25.124462 S- 61.051742 W, 10-XII-2021, M.C. Melo col., M.C. Melo det. (MLP); 2♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t de luz, M.C. Melo col., M.C. Melo det. (MLP); 2♀, Pastizal del Valiente, 25.077469 S- 61.056790 W, 12/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 1♀, Pastizal de Simbol, 25.076460 S- 61.056435 W, 4/XI/2021, A. Serrano col., M.C. Melo det. (MLP).

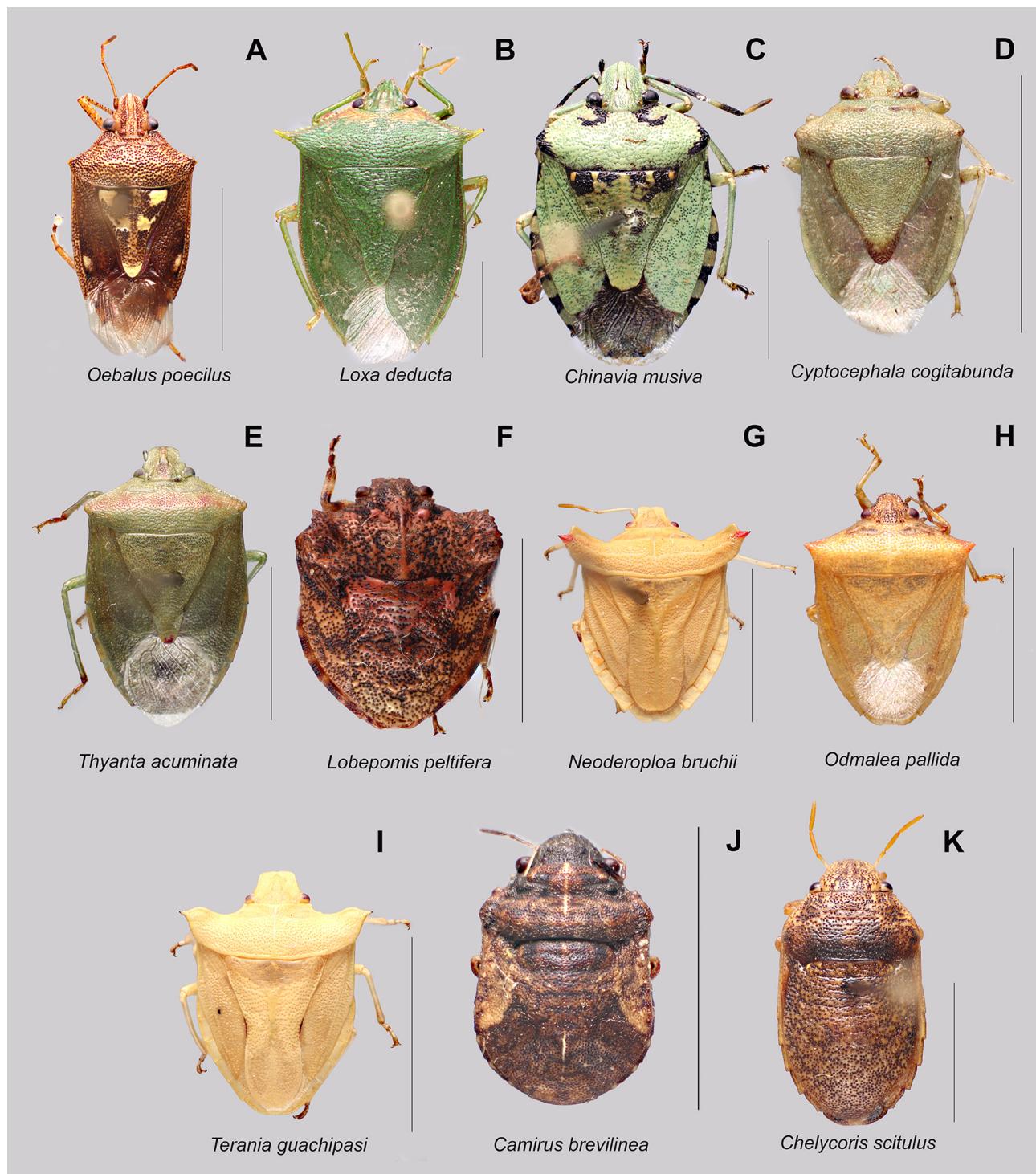


FIGURE 6. Dorsal habitus species of Pentatomoidae recorded from the P. N. El Impenetrable. A–L. Pentatomidae. J–K. Scutelleridae.

Tribe Pentatomini

Arvelius albopunctatus (De Geer, 1773)

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/22180.html>
(Fig. 2D)

Material studied: 1♂, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., V. Castro-Huertas det. (MLP).

Observation: <https://www.argentinat.org/observations/69958314>

Tribe Proclericini

Lobepomis peltifera Berg, 1891 First record from Chaco Province

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22170.html>
(Fig. 6F)

Material studied: 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., V. Castro-Huertas det. (MLP).

Neoderoploa bruchii Pennington, 1923 First record from Chaco Province

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22171.html>
(Fig. 6G)

Material studied: 1♀, El Caño, 25.124462 S- 61.051742 W, 10/XII/2021, M.C. Melo col., V. Castro-Huertas det. (MLP).

Odmalea pallida (Jensen-Haarup, 1931)

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22173.html>
(Fig. 6H)

Material studied: 1♂ 2♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., V. Castro-Huertas det. (MLP).

Terania guachipasi Pirán, 1963 First record from Chaco Province

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22175.html>
(Fig. 6I)

Material examined: 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., V. Castro-Huertas det. (MLP); 1♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t de luz, M.C. Melo col., V. Castro- Huertas det. (MLP); 1♀, same locality, 1/XI/2021, T. de luz, A. Serrano col. (MLP).

Family SCUTELLERIDAE

Subfamily Pachycorinae

Camirus brevilinea (Walker, 1867) First record from Argentina

(Fig. 6J)

Material studied: 1♀, Pozo del Yacaré, 9/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

Known distribution: This species was recorded only from Brazil (Eger *et al.* 2015).

***Chelycoris scitulus* (Walker, 1867) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20940.html>

(Fig. 6K)

Material studied: 2♂, el caño, 25.124462 S- 61.251742 W, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 1♂, Pastizal Aibal, 25.251470 S- 61.043291 W, 12/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

Superfamily Lygaeoidea

Family BERYTIDAE

***Jalysus sobrinus* Stål, 1862a**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20067.html>

(Fig. 7A)

Material studied: 1♀, Jaula de Tobuna, 25.024331 S- 60.928141 W, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

Family BLISSIDAE

***Ischnodemus lactipennis* Slater & Wilcox, 1969 First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20083.html>

(Fig. 7B)

Material studied: 1♀, El Caño, 25.124462 S- 61.051742 W, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

Family GEOCORIDAE

***Geocoris ventralis* (Fieber, 1861a) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20111.html>

(Fig. 7C)

Material studied: 1♂, Pozo del Yacaré, 9/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

Family LYGAEIDAE

Subfamily Lygaeinae

***Lygaeus alboornatus* Blanchard, 1852**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20120.html>

(Fig. 7D)

Material studied: 1♂, 25.084874 S- 60.046090 W, 27/II/2022, A. Serrano col., P.M. Dellapé det. (MLP); 1♂, Pastizal Aibal, 25.051470 S- 61.043291 W, 12/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

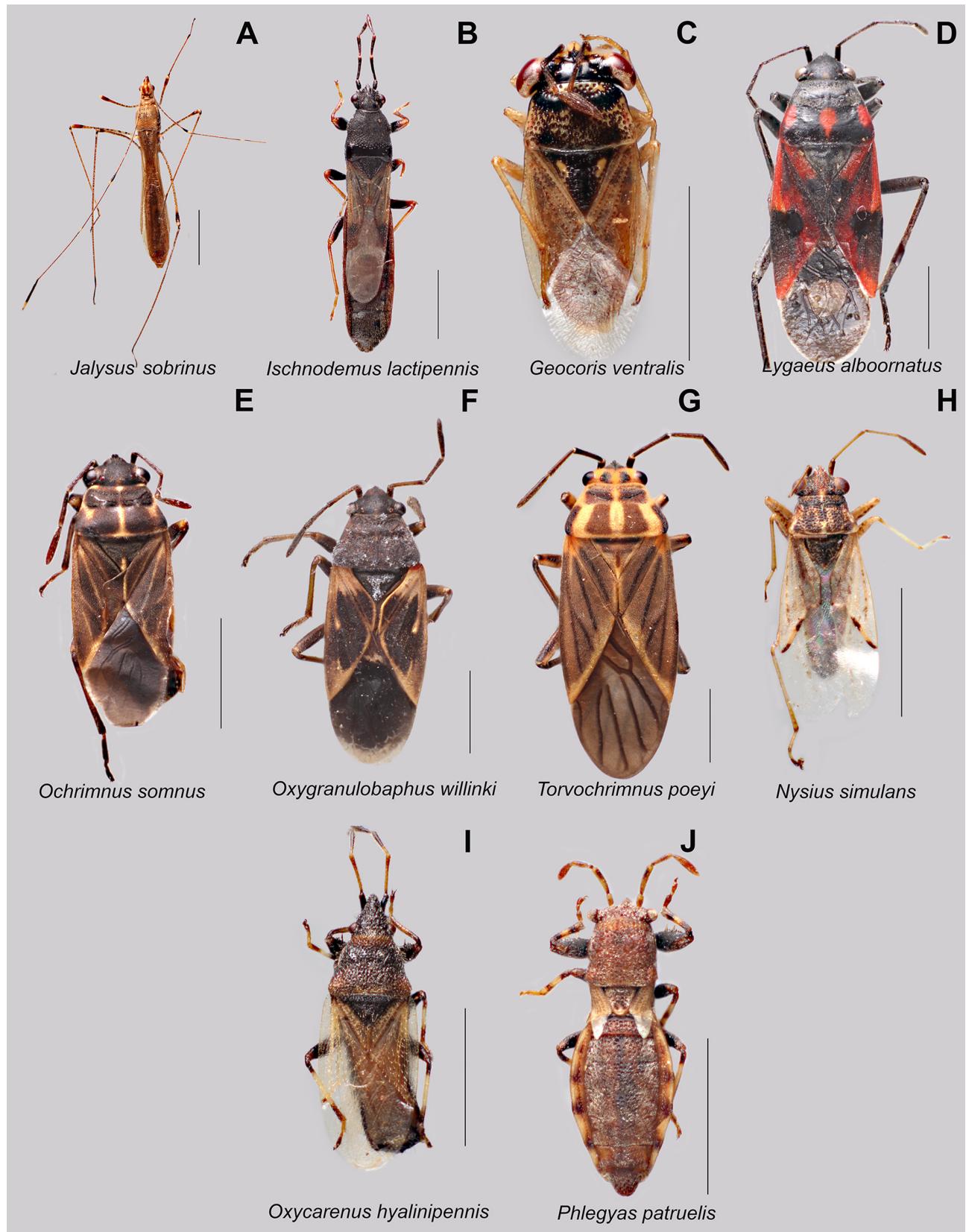


FIGURE 7. Dorsal habitus of Lygaeoidea recorded from the P. N. El Impenetrable. A. Berytidae. B. Blissidae. C. Geocoridae. D–H. Lygaeidae. I. Oxycarenidae. J. Pachygronthidae.

***Ochrimnus somnus* Brailovsky, 1982b First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20124.html>

(Fig. 7E)

Material studied: 1♀, Pozo del Yacaré, 9/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

***Oxygranulobaphus willinki* Brailovsky, 1982c**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20136.html>

(Fig. 7F)

Material studied: 1♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., P.M. Dellapé det. (MLP); 1♂ 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 4♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t de luz, M.C. Melo col., P.M. Dellapé det. (MLP).

***Torvochrimnus poeyi* (Guérin- Méneville, 1838)**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20129.html>

(Fig. 7G)

Material studied: 1♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., P.M. Dellapé det. (MLP); 1♂ 1♀, Jaula de Tobuna, 25.024331 S- 60.928414 W, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 2♀, Pozo del Yacaré, 9/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 2♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, t de luz, M.C. Melo col., P.M. Dellapé det. (MLP).

Subfamily Orsillinae

***Nysius simulans* Stål, 1859a**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20149.html>

(Fig. 7H)

Material studied: 1♂ 2♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., P.M. Dellapé det. (MLP); 8♂ 2♀, Paraje La Armonía, 25.151553 S- 61.097375 W, 11/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 9♂ 10♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

Family OXYCARENIDAE

***Oxycarenus hyalinipennis* (Costa, 1847)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20156.html>

(Fig. 7I)

Material studied: 4♂ 5♀, Estación de Campo El Teuco 25.064561 S- 60.9464903 W, 8/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 1♂, Pastizal del Valiente, 25.077469 S- 61.056790 W, 12/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 1♂, Pozo del Yacaré, 9/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

Family PACHYGRONTHIDAE

Subfamilia Teraciinae

Phlegyas patruelis Berg, 1883

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20163.html>
(Fig. 7J)

Material studied: 2♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, 8/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 1♀, El Caño, 25.124462 S- 61.051742 W, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

Family RHYPAROCHROMIDAE

Subfamily Rhyparochrominae

Tribe Lethaeini

Cistalia alboanulata (Stål, 1860a)

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20171.html>
(Fig. 8A)

Material studied: 1♀, 25.007381 S- 60.946272 W, 6/XI/2019, L. Damer & A. Serrano cols., P.M. Dellapé det. (MLP).

Cryphula affinis (Distant, 1901)

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20174.html>
(Fig. 8B)

Material studied: 1♂, Paraje La Armonía, 25.151553 S- 61.097375 W, t. de luz, 11/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

Lipostemmata scutellata Ashlock, 1970

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20178.html>
(Fig. 8C)

Material studied: 6♂ 14♀, Paraje La Armonía, 25.151553 S- 61.097375 W, t. de luz, 11/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 2♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 1♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., t. de luz (MLP).

Tribe Myodochini

Baranowskiobiussimulans Dellapé, Melo & Henry, 2016

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20229.html>
(Fig. 8D)

Material studied: 8♂ 6♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., P.M. Dellapé det. (MLP);

***Froeschneria multisepia* (Stål, 1874) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/en/info/20195.html>
(Fig. 8E)

Material studied: 3♀, 25.007460 S- 60.946675 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., P.M. Dellapé det. (MLP).

***Neopamera albocincta* (Barber, 1953) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20198.html>

Material studied: 2♀, Paraje La Armonía, 25.151553 S- 61.097375 W, t. de luz, 11/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

***Neopamera bilobata* (Say, 1831) First record from Chaco Province**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20199.html>
(Fig. 8F)

Material studied: 1♂, 25.007381 S- 60.946272 W, 6/XI/2019, L. Damer & A. Serrano cols., P.M. Dellapé det. (MLP).

***Paromius procerulus* (Berg, 1892)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20206.html>
(Fig. 8G)

Material studied: 4♂ 1♀, Pastizal del Valiente, 25.077469 S- 61.056790 W, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

***Prytanes foedus* (Stål, 1860a) First record from Argentina**

(Fig. 8H)

Material studied: 1♀, 25.007961 S- 60.947266 W, 2/9-XI-2019, L. Damer, N. Bustos & A. Serrano cols., Melo & Dellapé det. (MLP); 1♀, Paraje La Armonía, 25.151553 S- 61.097375 W, t. de luz, 11/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

***Prytanes formosus* (Distant, 1882)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/22740.html>

Material studied: 1♂, 25.007961 S- 60.947266 W, 2/9-XI-2019, L. Damer, N. Bustos & A. Serrano cols., Melo & Dellapé det. (MLP); 4♂ 5♀, Paraje La Armonía, 25.151553 S- 61.097375 W, t. de luz, 11/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 3♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 1♀, Pastizal de Simbol, 25.076460 S- 61.056435 W, 4/XI/2021, A. Serrano col., Melo & Dellapé det. (MLP).

***Pseudopachybrachius vinctus* (Say, 1831)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20208.html>

(Fig. 8I)

Material studied: 2♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 1♂, Costa del Bermejito, 25.084886 S- 61.046105 W, 9/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP); 1♂ 1♀, Paraje La Armonía, 25.151553 S- 61.097375 W, t. de luz, 11/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

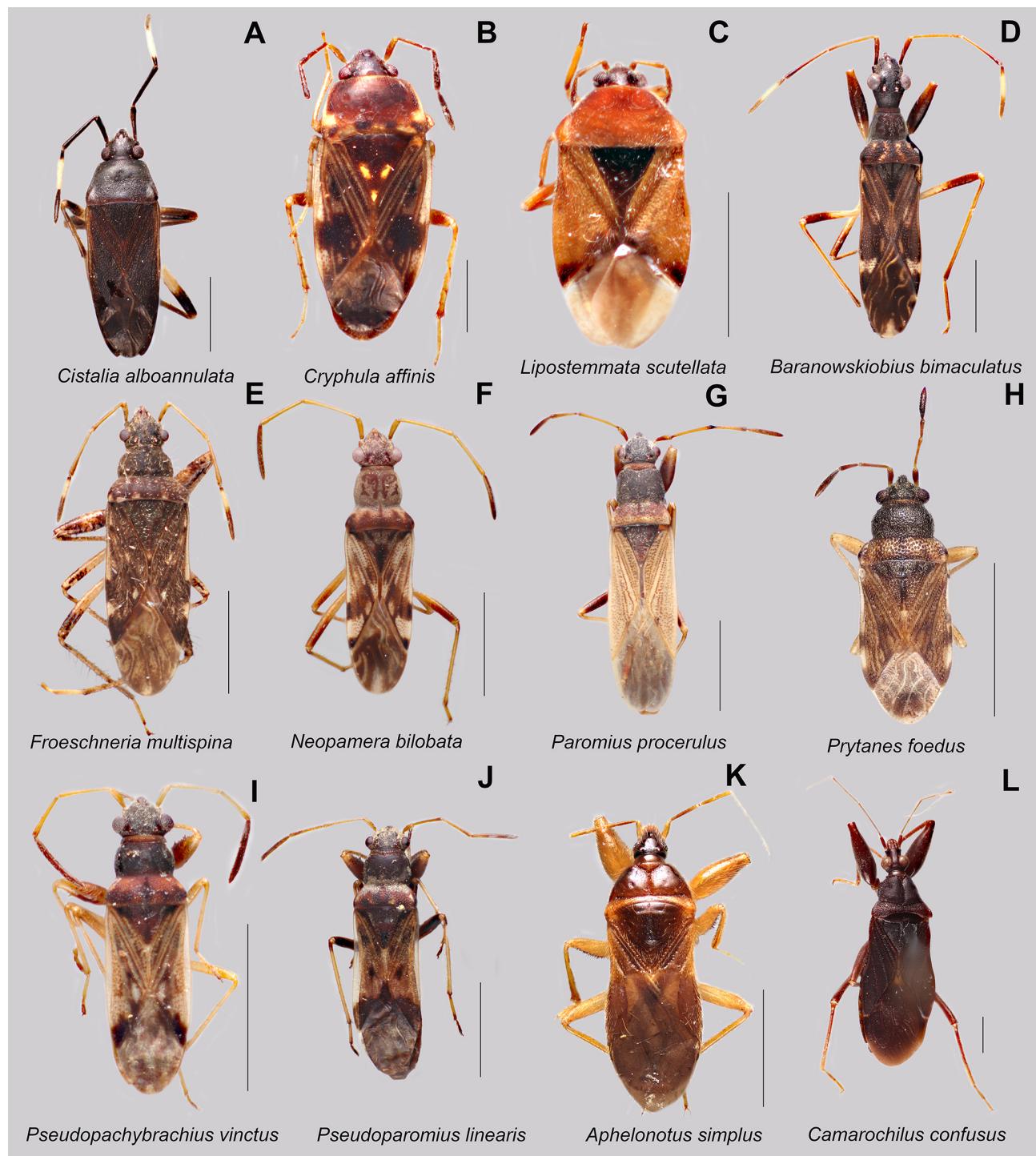


FIGURE 8. Dorsal habitus of Rhyparochromidae and Pachynomidae recorded from the P. N. El Impenetrable. A–J. Rhyparochromidae. K–L. Pachynomidae.

***Pseudoparomius linearis* (Stål, 1874)**

<https://biodar.unlp.edu.ar/pentatomomorpha/es/info/20210.html>

(Fig. 8J)

Material studied: 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, t. de luz, 10/XII/2021, M.C. Melo col., P.M. Dellapé det. (MLP).

Infraorder CIMICOMORPHA

Family PACHYNOMIDAE

Subfamily Aphelonotinae

***Aphelonotus simplus* Uhler, 1894**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/21433.html>

(Fig. 8K)

Material studied: 2♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, trampa de luz, 10/XII/2021, M.C. Melo col., Melo & Dellapé det. (MLP).

Subfamily Pachynominae

***Camarochilus confusus* Harris, 1930**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/22808.html>

(Fig. 8L)

Material studied: 1♂, Pastizal de Simbol, 25.076460 S- 61.056435 W, 4/XI/2021, A. Serrano col., Melo & Dellapé det. (MLP).

Superfamilia Miroidea

Family MIRIDAE

Subfamily Bryocorinae

Tribus Eccritotarsini

***Spartacus entrerrianus* Carvalho & Carpintero, 1986**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/21201.html>

(Fig. 9A)

Material studied: 2♀, Paraje La Armonía, 25.151553 S- 61.097375 W, T. de luz, 11/XII/2021, M.C. Melo col., E. Minghetti det. (MLP).

Tribus Dicyphini

***Campyloneuropsis infumatus* (Carvalho, 1947)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/21123.html>

(Fig. 9B)

Material studied: 1♂, Pozo del Yacaré, 09/XII/2021, M.C. Melo col., E. Minghetti det. (MLP).

***Macrolophus praeclarus* (Distant, 1884)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/21127.html>
(Fig. 9C)

Material studied: 1♂, Pozo del Yacaré, 09/XII/2021, M.C. Melo col., L. Olivera det. (MLP).

Subfamily Mirinae

Tribe Mirini

***Dagbertus bonariensis* (Stål, 1859a)**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/22428.html>
(Fig. 9D)

Material studied: 3♂ 23♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, T. de luz, 10/XII/2021, M.C. Melo col., E. Minghetti det. (MLP); 22♂ 4♀, Paraje La Armonía, 25.151553 S- 61.097375 W, T. de luz, 11/XII/2021, M.C. Melo col., E. Minghetti det. (MLP); 1♂, Pastizal del Valiente, 25.077469 S- 61.056790 W, 12/XII/2021, M.C. Melo col., E. Minghetti det. (MLP).

***Phytocoris cylapinus* Carvalho & Gomes, 1970**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22487.html>
(Fig. 9E)

Material studied: 1♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, 10/XII/2021, T. de luz, M.C. Melo col., E. Minghetti det. (MLP).

***Polymerus testaceipes* (Stål, 1860a)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22510.html>
(Fig. 9F)

Material studied: 5♂ 11♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, T. de luz, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

***Taylorilygus apicalis* (Fieber, 1861b)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22536.html>
(Fig. 9G)

Material studied: 1♀, El Caño 25.124462 S- 61.051742 W, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

Tribe Resthenini

***Carpinteroa notabilis* (Carvalho & Fontes, 1968)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22582.html>
(Fig. 9H)

Material studied: 7♂ 12♀, Pastizal del Valiente, 25.077469 S- 61.056790 W, 12/XII/2021, M.C. Melo, E. Minghetti det. (MLP); 2♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, 8/XII/2021, M.C. Melo, E. Minghetti det. (MLP); 1♂ 2♀, Pastizal Aibal, 25.051470 S- 61.043291 W, 12/XII/2021, M.C. Melo, E. Minghetti det. (MLP); 1♂, Paraje La Armonía, 25.151553 S- 61.097375 W, T. de luz, 11/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

***Nanniresthenia golbachi* Carvalho & Carpintero, 1991 First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22626.html>

(Fig. 9I)

Material studied: 18♂ 12♀, Paraje La Armonía, 25.151553 S- 61.097375 W, T. de luz, 11/XII/2021, M.C. Melo, E. Minghetti det. (MLP); 2♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, T. de luz, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

***Preops circummaculatus* (Stål, 1854)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22644.html>

Material studied: 2♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, T. de luz, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

***Preops cruciferus* (Berg, 1878)**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/22647.html>

Observation: <https://www.argentinat.org/observations/32812651>

***Preops nitidipennis* (Reuter, 1910)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22659.html>

(Fig. 9J)

Material studied: 2♀, Pastizal del Valiente, 25.077469 S- 61.056790 W, 12/XII/2021, M.C. Melo, E. Minghetti det. (MLP); 3♂ 5♀, Paraje La Armonía, 25.151553 S- 61.097375 W, T. de luz, 11/XII/2021, M.C. Melo, E. Minghetti det. (MLP); 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, 8/XII/2021, M.C. Melo, E. Minghetti det. (MLP); 1♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, T. de luz, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

***Preops platensis* (Berg, 1878)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22637.html>

Material studied: 1♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, T. de luz, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

***Preops procorrentinus* Carvalho & Carpintero, 1992**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22662.html>

Material studied: 1♂ 4♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, T. de luz, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

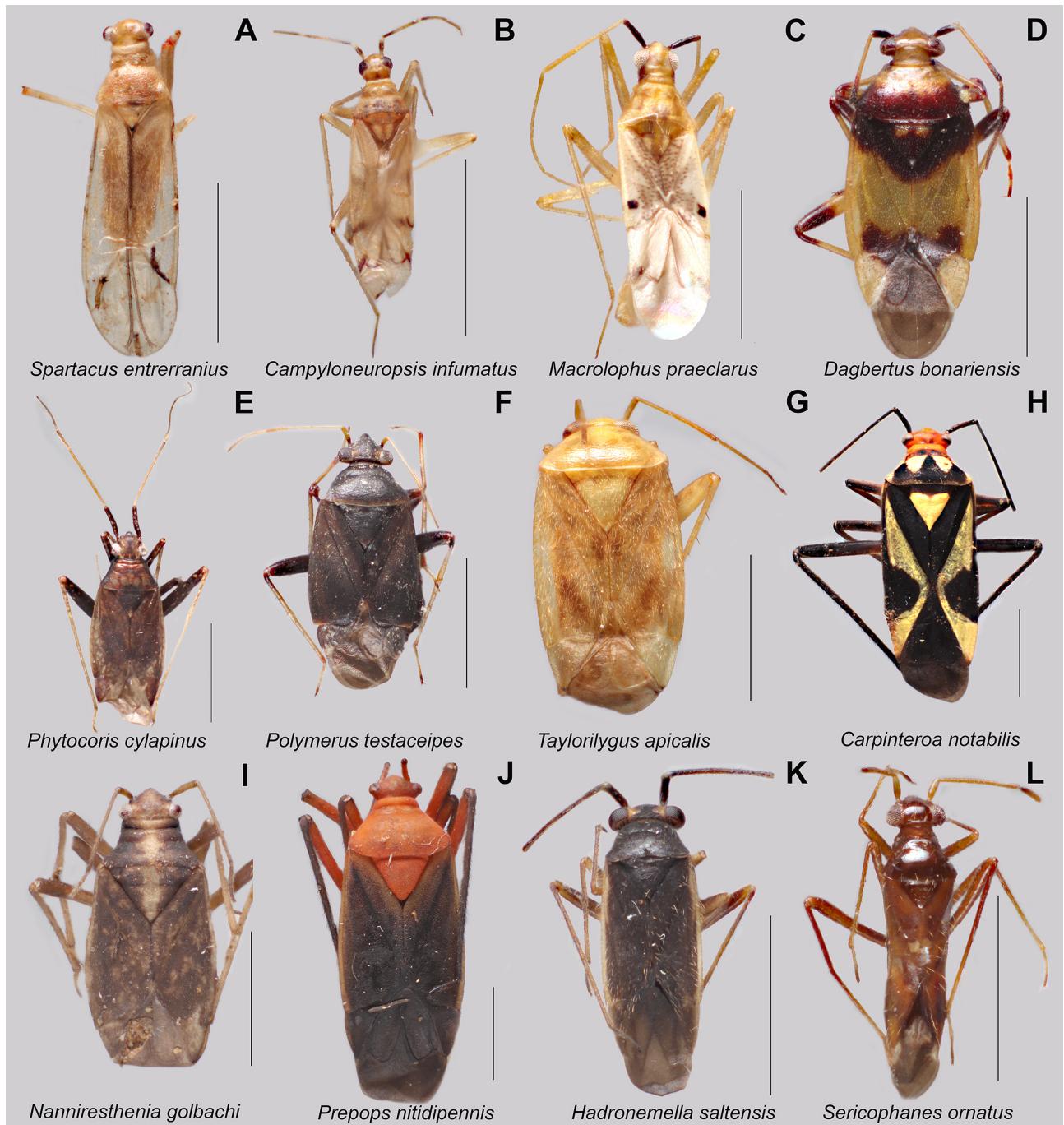


FIGURE 9. Dorsal habitus of Miridae recorded from the P. N. El Impenetrable.

Subfamily Orthotylinae

Tribe Orthotylini

***Hadronemella saltensis* (Carvalho & Wallerstein, 1978) First record from Chaco Province**
<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22373.html>
 (Fig. 9K)

Material studied: 2♂ 1♀, Jaula de Tobuna, 25.024331 S- 60.928141 W, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

***Hadronemella tucumana* Carvalho, 1984 First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22376.html>

Material studied: 1♀, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, T. de luz, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP); 2♂, Paraje La Armonía, 25.151553 S- 61.097375 W, T. de luz, 11/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

***Sericophanes ornatus* (Berg, 1878)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/22337.html>

(Fig. 9L)

Material studied: 2♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, T. de luz, 10/XII/2021, M.C. Melo, E. Minghetti det. (MLP).

Family TINGIDAE

Subfamily Tinginae

***Teleonemia carmelana* (Berg, 1892) First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/20296.html>

(Fig. 10A)

Material studied: 4♂ 3♀, el caño, 25.124462 S- 61.051742 W, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 4♂, Pastizal Aibal, 25.051470 S- 61.043291 W, 12/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 1♂, Paraje La Armonía, 25.151553 S- 61.097675 W, 11/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

Superfamily Naboidea

Family NABIDAE

Subfamily Prostemmatinae

***Pagasa (Pagasa) signatipennis* Reuter, 1909**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/21819.html>

(Fig. 10B)

Material studied: 1♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, 9/XII/2021, M.C. Melo col., Melo & Dellapé det. (MLP).

Family REDUVIIDAE

Subfamily Ectrichodiinae

***Brontostoma colossus* (Distant, 1902)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20319.html>

(Fig. 10C)

Material studied: 2♂, 25.007460 S- 60.946675 W, 2-9/XI/2019, L. Damer col., M.C. Melo det. (MLP).

Observation: <https://www.argentinat.org/observations/98292549>

***Brontostoma oglobini* Wygodzinsky, 1951**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20325.html>

Observation: <https://www.argentinat.org/observations/68671503>.

***Cricetopareis tucumana* (Berg, 1884) First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20328.html>

(Fig. 10D)

Observation: <https://www.argentinat.org/observations/19102121>

***Rhiginia guttata* Carpintero, 1980 First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20352.html>

(Fig. 10E)

Material studied: 1♂, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP).

Subfamily Harpactorinae

Tribe Apiomerini

***Apiomerus bosqi* Costa Lima, Campos Seabra & Hathaway, 1952 First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/20385.html>

(Fig. 10F)

Material studied: 1♀, El Caño, 25.124462 S- 61.051742 W, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

Tribe Harpactorini

***Atopozelus omalus* Elkins, 1954**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20397.html>

Material studied: 1♂, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP).

***Atopozelus opsimus* Elkins, 1954 First record from Argentina**

(Fig. 10G)

Material studied: 3♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP).

Known distribution: This species have been recorded from Bolivia, Brazil, Paraguay, and Peru (Elkins, 1954).

***Atrachelus (Atrachelus) cinereus* (Fabricius, 1798)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20398.html>

(Fig. 10H)

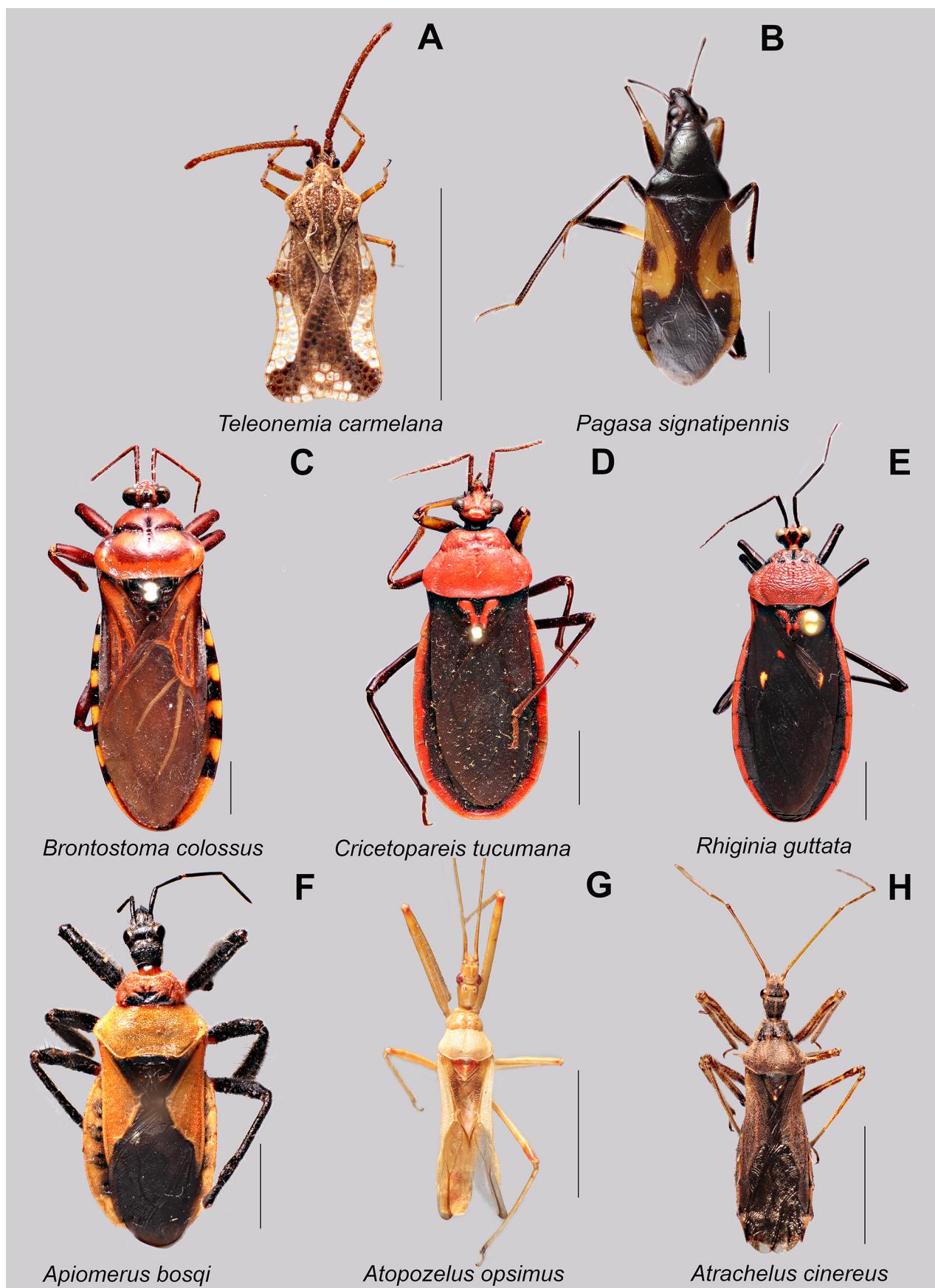


FIGURE 10. Dorsal habitus of Heteroptera recorded from the P. N. El Impenetrable. A. Tingidae. B. Nabidae. C–H. Reduviidae.

Material studied: 2♂ 1♀, El Caño, 25.124462 S- 61.051742 W, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP); 1♀, Recinto de la Cierva, 25.151553 S- 61.097375 W, 9-XII-2021, M.C. Melo col., M.C. Melo det. (MLP); 1♀, Costa del Bermejito, 25.084886 S- 61.046105 W, 9-XII-2021, M.C. Melo col., M.C. Melo det. (MLP);

***Cosmoclopius poecilus* (Herrick-Schaeffer, 1848) First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20699.html>

(Fig. 2F)

Observation: <https://www.argentinat.org/observations/70051913>

***Doldina bicarinata* Stål, 1866 First record from Argentina**

Observation: <https://www.argentinat.org/observations/71317321>

Known distribution: This species have been registered from Brazil, Colombia, Panama, Paraguay, and Peru (Hussey & Elkins 1955).

***Graptocleptes sanguineiventris* (Stål, 1862b) First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20712.html>

(Fig. 11A)

Material studied: 1♂, 25.007460 S- 60.946675 W, 2-9/XI/2019, L. Damer col., M.C. Melo det. (MLP).

***Harpactor tuberculatus* Stål, 1872b First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20661.html>

(Fig. 11B)

Observation: <https://www.argentinat.org/observations/95396417>

***Rocconota sextuberculata* Stål, 1859b First record from Argentina**

(Fig. 11C)

Material studied: 1♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, 10/XII/2021, t. de luz, M.C. Melo col., M.C. Melo & V. Castro- Huertas det. (MLP); 1♂, Jaula de Tobuna, 25.024331 S- 60.928141 W, 10/XII/2021, M.C. Melo col., M.C. Melo & V. Castro-Huertas det. (MLP).

Known distribution: Previously known from Bolivia and Brazil (Maldonado Capriles 1990).

***Zelus longipes* (Linné, 1767) First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20410.html>

(Fig. 11D)

Observation: <https://www.argentinat.org/observations/69959582>

Subfamily Peiratinae

***Melanolestes minutus* Coscarón & Carpintero, 1993**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20415.html>

(Fig. 11E)

Material studied: 1♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, 10/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP).

***Rasahus limai* Pinto, 1935**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/20423.html>
(Fig. 11F)

Material studied: 1♂, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP);

Observation: <https://www.argentinat.org/observations/36346871>

Subfamily Phymatinae

***Phymata (Phymata) riojana* Pennington, 1919**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/20759.html>
(Fig. 11G)

Material studied: 1♂, Jaula de Tobuna, 25.024331 S- 60.928141 W, 10/XII/2021, M.C. Melo col., M.C. Melo det. (MLP).

***Phymata (Phymatispa) fortificata* (Herrick-Schaeffer, 1844)**

<https://biodar.unlp.edu.ar/cimicomorpha/es/info/20772.html>

Material studied: 1♂ 1♀, El Caño, 25.124462 S- 61.051742 W, 10/XII/ 2021, M.C. Melo col., M.C. Melo det. (MLP).

Subfamily Reduviinae

***Leogorras litura* (Fabricius, 1787)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20001.html>
(Fig. 11H)

Material studied: 1♀, 25.084780 S- 60.046057 W, 4/III/2022, L. Moli col., M.C. Melo det. (MLP).

***Opisthacidius pertinax* (Breddin, 1903)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20440.html>
(Fig. 11I)

Material studied: 1♂, 25.007460 S- 60.946675 W, 2/9-XI-2019, L. Damer col., M.C. Melo det. (MLP); 2♂, same data, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP).

***Pantopsis bosqi* Lent & Wygodzinsky, 1947 First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20441.html>
(Fig. 12A)

Material studied: 1♀, 25.007460 S- 60.946675 W, 2-9/XI/2019, L. Damer col., M.C. Melo det. (MLP).

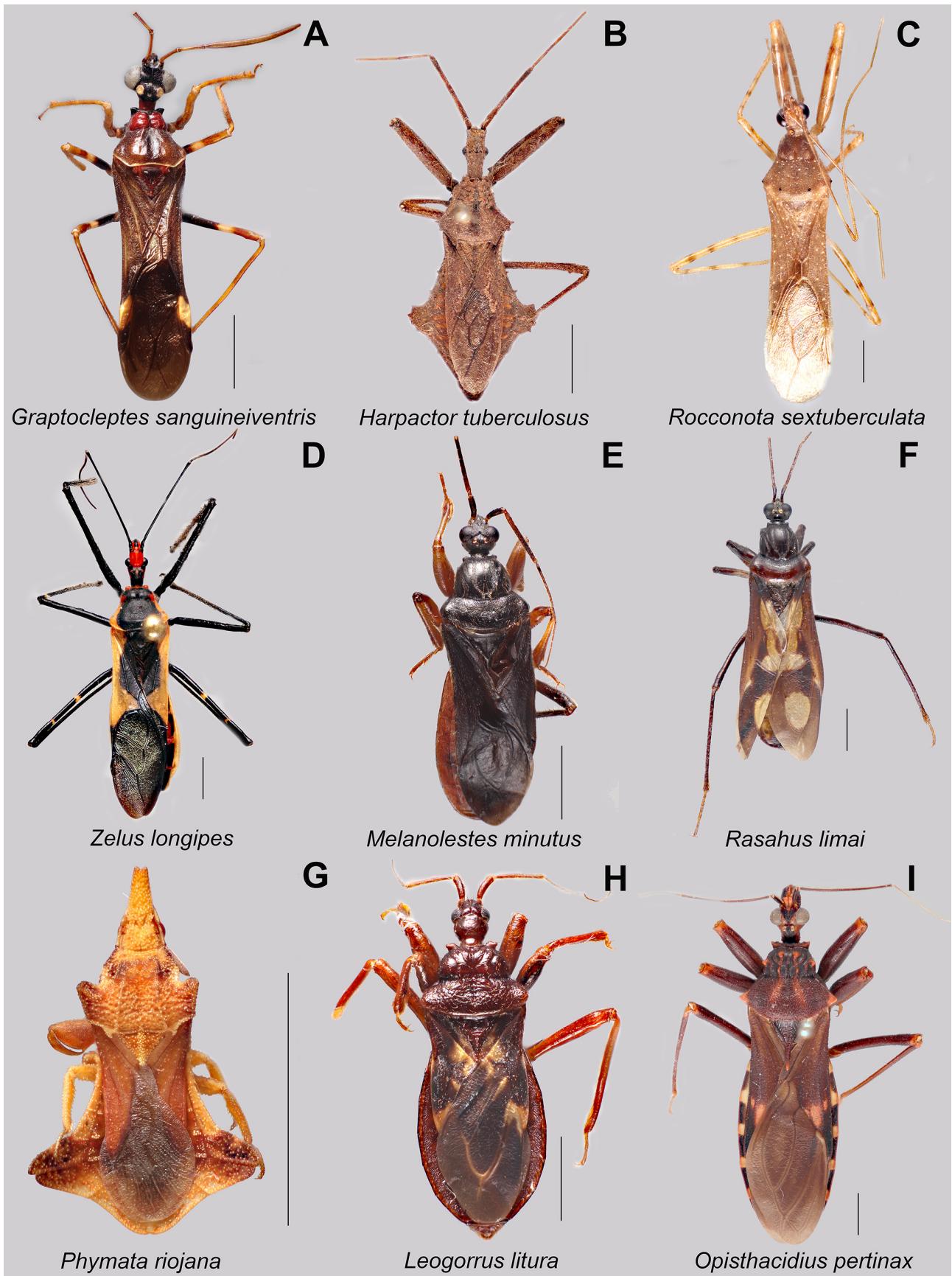


FIGURE 11. Dorsal habitus of Reduviidae recorded from the P. N. El Impenetrable.

***Zelurus femoralis longispinis* Lent & Wygodzinsky, 1954**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20454.html>

Material studied: 1♂ 1♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP);

Observation: <https://www.argentinat.org/observations/71157623>

***Zelurus mazzai* (Costa Lima, 1941) First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20458.html>

(Fig. 12B)

Material studied: 1♀, Pastizal de Simbol, 25.076460 S- 61.156435 W, 4/XI/2021, A. Serrano col., M.C. Melo det. (MLP); 1♀, Paraje La Armonía, 31-X-2021, A. Serrano col., M.C. Melo det. (MLP).

***Zelurus riojanus* (Pennington, 1921)**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20463.html>

Material studied: 1♂ 1♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP).

Subfamily Stenopodainae

***Narvesus minor* Barber, 1930 First record from Chaco Province**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20479.html>

(Fig. 12C)

Material studied: 1♂, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP).

***Pnohirmus violentus* Stål, 1859b**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20487.html>

(Fig. 12D)

Material studied: 7♂ 5♀, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP); 1♂, same data, 25.007381 S- 60.946272 W, 6/XI/2019, L. Damer & A. Serrano cols., M.C. Melo det. (MLP); 1♂, Estación de Campo El Teuco, 25.064561 S- 60.9464903 W, 10/XII/2021, t. de luz, M.C. Melo col., M.C. Melo det. (MLP).

***Stenopoda guaranitica* Giacchi, 1969**

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20489.html>

(Fig. 12E)

Material studied: 1♂, 25.007961 S- 60.947266 W, 2-9/XI/2019, L. Damer, N. Bustos & A. Serrano cols., M.C. Melo det. (MLP).

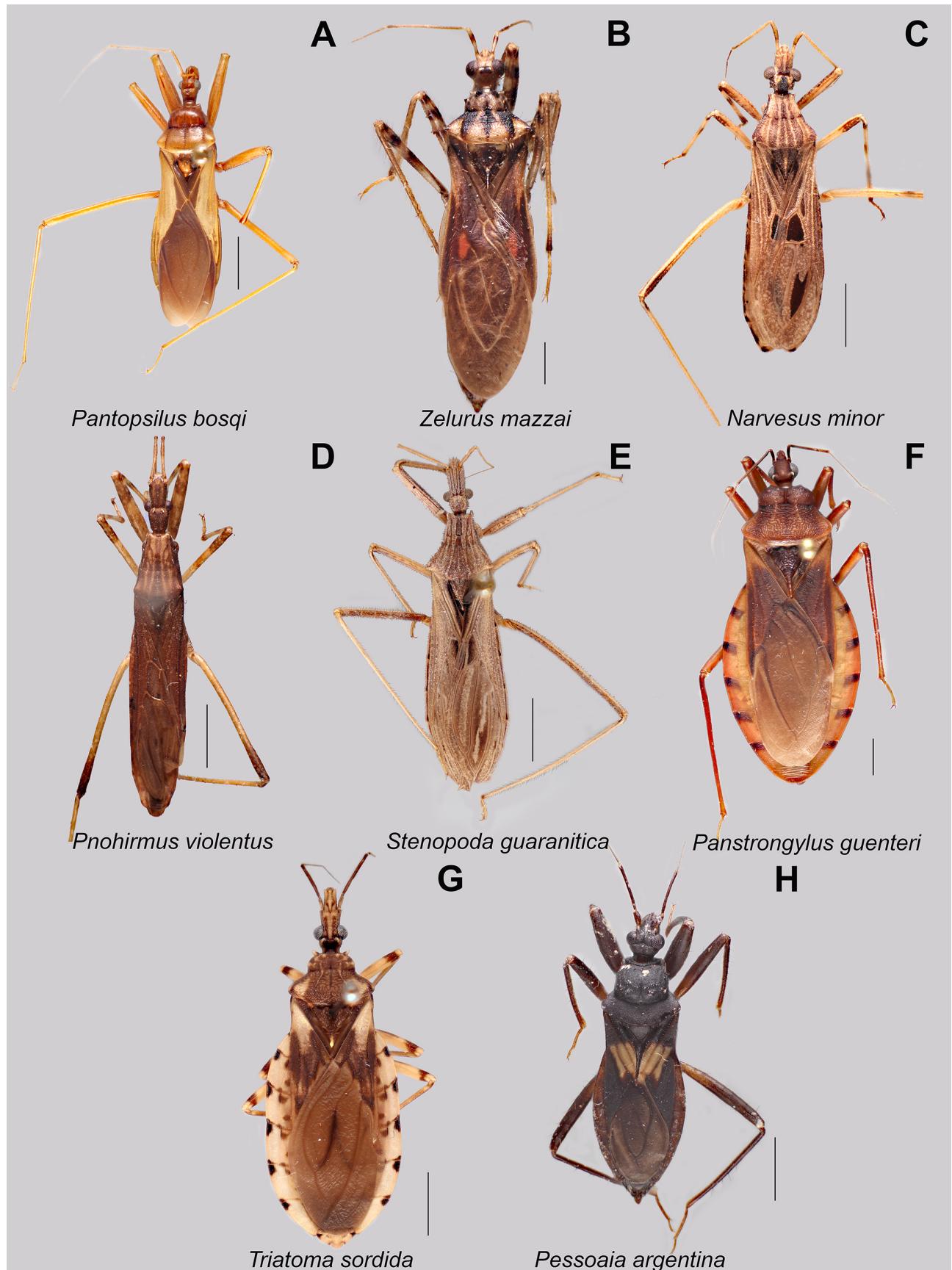


FIGURE 12. Dorsal habitus of Reduviidae recorded from the P. N. El Impenetrable.

Subfamily Triatominae

Panstrongylus guenteri Berg, 1879a

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20491.html>

(Fig. 12F)

Material studied: 1♂, Pastizal de Simbol, 25.076460 S- 61.056435 W, t. de luz, 4/XI/2021, A. Serrano col., M.C. Melo det. (MLP).

Triatoma sordida (Stål, 1859c)

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20504.html>

(Fig. 12G)

Material studied: 1♀, 2021, A. Serrano col., M.C. Melo det. (MLP); 2♀, 25.007460 S- 60.946675 W, 2-9/XII/2019, L. Damer col., M.C. Melo det. (MLP).

Subfamily Vesciinae

Pessoaria argentina Wygodzinsky, 1943

<https://biodar.unlp.edu.ar/cimicomorpha/en/info/20505.html>

(Fig. 12H)

Material studied: 1♂, La Armonía, 25.177920 S- 61.095320 W, algarrobal, t. de luz, 1/XI/2021, A. Serrano col., M.C. Melo det. (MLP).

Discussion

As result, we recorded 128 species, in 107 genera and 28 families in El Impenetrable National Park. Six species are recorded for the first time from Argentina, and 39 species are recorded for the first time from Chaco Province. Considering the total record of 2,115 Heteroptera species from Argentina and Uruguay (Cigliano *et al.* 2023), excluding Enicocephalomorpha and Dipsocoromorpha, the P. N. El Impenetrable hosts ca. 6% of the species diversity known from both countries. We did not include in the list about 15 species because their identity was problematic and 10 undescribed species that raises this percentage to almost 7%. These results show the high diversity of Heteroptera that the Park is protecting.

From the comparison with the Heteroptera fauna reported from the Chaco National Park (Melo *et al.* 2011), in the Wet Chaco, we can see that the composition is quite different as only 16.6% of the species between the two protected areas are shared. Although the sampling procedures and efforts to build both inventories were different, we interpret the difference in the faunal composition between both parks as mainly due of the different ecosystems that they protect. The total amount of species recorded from Chaco Province is 397 (Cigliano *et al.* 2023), and according to our results, the two National Parks (P. N. Chaco and P. N. El Impenetrable) protect almost half (50.2%) of the species reported from this province.

Insects face major types of threat inside protected areas, of which natural system alterations (such as habitat fragmentation and land-cover changes) and climate change have been the most widely discussed (Chowdhury *et al.* 2023a). Climatic variability such as drought appears to be driving the decline of tropical insects, a threat that protected areas cannot abate (Janzen & Hallwachs 2021). Considering the severe droughts the Chaco grasslands have been suffering during the last decades (Minetti *et al.* 2019) it is possible that the true bugs populations inhabiting this ecoregion have been negatively affected, but without previous inventories it is not possibly to quantify the actual effects.

Targeted field surveys, biodiversity assessments, and long-term systematic surveys on insect taxa could improve the conservation efforts of protected areas (Chowdhury *et al.* 2023a). The citizen science platforms can help on these tasks, widening the geographic and taxonomic coverage of biodiversity occurrence datasets and rapidly improve the delimitation of species distributions. From the 128 species recorded in the P. N. El Impenetrable, 10 were recorded only from ArgentiNat the Argentinean portal of the iNaturalist citizen science platform (<https://www.argentinat.org/projects/p-n-el-impenetrable>).

Two species with importance for public health were recorded from the Park, the commonly known kissing bugs: *Panstrongylus guenteri* and *Triatoma sordida*. These species are vectors of *Trypanosoma cruzi* (Chagas), the etiological agent of the Chagas' disease. Lent & Wygodzinsky (1979) indicated that *P. guenteri* is usually a wild species with a few peridomestic and domestic records; unlike from *T. sordida* that is mainly associated to houses and domestic animals pens but with also records in the wild such as under bark of decaying trees and birds' nests (GeoVin 2020).

This species inventory, despite including new records at country and province levels, probably reflects an underestimate of the real diversity of the P. N. El Impenetrable. The first aspect to take into account is the insufficient collecting effort focused on Heteroptera. This is the first fieldwork made emphasized in true bugs, and probably with consistent collecting activities, the diversity values will increase considerably. A second aspect is that the specific identification of some taxa of true bugs is difficult because the lack of adequate taxonomic studies. About 15 species we found in the Park belong to taxa with complex taxonomies, such as species of the genus *Edessa*, a large and complex group of pentatomids with no clear definition of the species or group of species; thus we were not able to include some species of this genus in our results. In addition, nearly 10 species collected are new to science and are yet undescribed, showing that many taxa are still to be discovered.

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