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ON A COLLECTION OF MIRIDAE (HEMIPTERA) FROM
PARAGUAY, WITH DESCRIPTIONS OF THREE
NEW SPECIES*BY JOSÉ C. M. CARVALHO¹ AND ROLAND F. HUSSEY²

ALTHOUGH the literature contains scattered records from Paraguay for individual species, no list of Miridae collected there has been published heretofore. This paper is based almost wholly upon a collection made by the junior author in the east central part of Paraguay during the summer of 1931-32. Unfortunately, many years elapsed before this material was mounted, and it suffered severe damage in the meantime from dermestid infestation. Identifiable specimens of about fifty species remain, three of which are here described as new. Unless otherwise stated, this material is now in the collection of the junior author and will eventually be deposited in the University of Michigan Museum of Zoology.

This collection was made principally at Colonia Independencia and at the Estancia Primera. The former is in the Department of Guairá, on the boundary between the districts of Villarrica and Mbocayati, about 15 km. north and east of the city of Villarrica, at approximately latitude 25° 40' S. and longitude 56° 20' W.³ The rather flat terrain is broken by wooded hills, and drainage is into the Arroyo Tacuara, the waters of which flow westward by way of the Río Tebicuari into the Río Paraguay. This area was a homestead colony where, in 1931, small farms and *chácaras* were operated largely by emigrants from Germany and from the former German colonies in Africa, with corn (maize) and tobacco as the principal crops. It was visited frequently by F. Schade, the well-known entomological collector residing at Villarrica, who

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³ Distances and co-ordinates are taken from the Asunción sheet, No. 20, edition of 1927, of the 1:500,000 maps published by the Instituto Geográfico Militar in Buenos Aires.

published an article on it in 1928.⁴ Almost three weeks were spent by the junior author at Colonia Independencia, in late October and early November, 1931; he very briefly revisited it late in January, 1932.

The Estancia Primera, comprising "about 20 square leagues of land," was owned by Señor Pedro Guggiari, to whom sincere thanks are due for his most cordial hospitality. This *estancia*, in the District of Caaguazú, Department of Yhú, was some 14 km. north of the town of Caaguazú on the road to Yhú, at approximately latitude 25° 15' S. and longitude 56° 2' W. It was situated on the higher land at the east of the Cordillera de Caaguazú, whose sandy ridges form the watershed between the Paraguay and the Paraná river systems. Here there was an open *campo*, used for grazing, of broad rolling plains dotted with *yataí* palms (*Cocos yataí*) and occasional *curupí-cahú* trees (*Sapium haematospermum*, fam. Euphorbiaceae). The red sandy soil supported a rather scanty growth of grasses, particularly of the bunchgrass type, and in places there were rather thick growths of woody Compositae, Mimosa, and a few other shrubs. On the higher ground there was generally a luxuriant subtropical forest, from which small areas had been cleared near the *estancia* buildings to provide space for small fields of maize, tobacco, and mandioca and for a small *yerbal* where cultivated yerba maté trees (*Ilex paraguayensis*) stood six to ten meters tall. On this *estancia*, the lands of which extended southeast more than halfway to the village of Pastoreo, were several springs and small marshes forming the headwaters of arroyos which join the Río Monday, a tributary of the Paraná. Collecting was done here from late November, 1931, until the last week of January, 1932. Even in late November the season was obviously much further advanced than it had been at Colonia Independencia only a week before. It is quite possible that a number of mirid species had already made their seasonal appearance and had disappeared.

Besides the material collected in these two areas, some specimens are listed that were taken in mid-November along the road through the forest on the Cordillera de Caaguazú. A few are also included that were collected elsewhere in Paraguay by Pedro Jorgensen, of Villarrica. Except for these last, all the specimens reported were taken by the junior author, and all the identifications were made by the senior author. Such plants as are named were identified by Pedro Jorgensen.

In the list which follows the abbreviation CI is used for Colonia Independencia, and EP for Estancia Primera.

⁴"Die Kolonie Independencia als Sammelgebiet," *Entomol. Rundschau*, Vol. 45.

LIST OF SPECIES

Fulvius quadristillatus (Stål, 1860).—EP; at light, Dec. 14 and Jan. 2.

Fulvius brunneiceps Poppius, 1909.—EP; Jan. 11, at lighted sheet on *campo*.

Peritropis saldaeformis Uhler, 1891.—EP; Jan. 11, at light in the *corredor* of the main building. (This specimen in the Carvalho collection.)

Hyaliodes wygodzinskyi Carvalho, 1945.—CI; Nov. 3, beaten from bushes beside the Arroyo Tacuara.

Hyaliodes glabratus (Distant, 1888).—EP; Jan. 3, at light.

Hyaliodomiris insignis (Stål, 1860).—EP; Nov. 24, from bushes by the *yerbal*.

Monalocoris pallidiceps (Reuter, 1907), NEW COMB.; formerly *Bryocoris pallidiceps* Reut.—EP; Jan. 16, swept from grasses beside a corn field.

Neoneella zikani Costa Lima, 1942.—Trinidad, Paraguay, Oct. 18, 1920 (Jorgensen).

Neoneella bosqi Carvalho, 1946.—This species, in company with the next two, was found abundantly in late November, inside the flowers of some *güembé* (*Philodendron* sp.) that had been set out as ornamental plants in front of the main building at Estancia Primera. Commonly, the *Philodendron* is an epiphyte, growing high on the trunks and larger branches of the forest trees. The *Neoneella* occurred principally on the inner side of the spathe rather than on the spadix of the flower, and nymphs of older stages were found together with the adults. The spadix and the inner surface of the spathe were thickly covered with sticky drops of a yellowish exudate, possibly resulting from the punctures in the plant tissues made by the multitude of bugs, but these insects seemed not to become entangled in it. Sometimes melolonthine beetles were also attracted to these flowers and worked their way into the deepest part of the corolla, becoming thoroughly smeared with the sticky exudate; when these beetles were present the *Neoneella* were usually found only in the upper part of the flower and on its outer surface. All three species of *Neoneella* seen here are very agile insects.

Neoneella paranaensis Carvalho, 1946.—EP; taken with the preceding, but much less numerous.

Neoneella milzae Carvalho, 1946.—EP; taken in company with the two preceding species, but relatively scarce.

Sysinas pallidipes (Stål, 1860).—EP; Jan. 9, rather common on *Sapium*

haematospermum trees. Also taken on the same plant at Pastoreo, Jan. 13.

Aspidobothrus flavicosta Carvalho, 1949.—EP; Jan. 9–10, not uncommon on *Sapium haematospermum*.

Pycnoderes sixeonotoides, new species

(Figs. 1, 6, 7, 8)

Differs from the other species of *Pycnoderes* by its coloration, the pronotal structure, and the male genitalia.

MALE.—Length to tip of membrane 3.4 mm., width 1.5 mm. *Head*: length 0.1 mm., width 0.6 mm., vertex 0.37 mm.; rostrum reaching middle of mesosternum. *Antennae*: segment I, length 0.2 mm.; II, 0.5 mm.; III, 0.5 mm.; IV, 0.5 mm. *Pronotum*: length 0.8 mm., width at base 1.2 mm.; strongly and coarsely punctate, strongly shining, uniformly convex, without median furrow or gibbae; scutellum largely covered by the pronotum.

COLOR.—Black, with pale translucent spots and silvery areas on the hemelytra; pronotum and scutellum shining black; head black, the part around the eyes yellowish; antennae yellowish to whitish (except base and apex of second segment and apex of third and fourth segments, which are fuscous to black); eyes reddish brown; clavus and corium black, with silvery areas; embolium black, its basal third and a rounded spot on the apex pale translucent, the spot extending onto the corium external to the radial vein; cuneus pale translucent, the extreme apex and base (sometimes also extreme inner and outer margins) black; membrane infuscated, the veins thick and black, the areolae darker on basal part; pubescence of hemelytra adpressed, short, and sulfurescent. Underside black; legs pale yellowish to whitish, the apices of posterior femora and third segments of tarsi black.

GENITALIA.—Aedeagus of the Bryocorini type. Left clasper (Figs. 6, 8) thick and large, curved and excavated on internal margin, provided with a few superficial teeth and dorsal setae, the teeth mainly on the internal surface. Right clasper (Fig. 7) broad, also curved inward, with many dorsal setae; when seen from the ventral side it has the aspect of a short thumb and an index finger which is curved near the tip, the thumblike part with small teeth on the inner side.

FEMALE.—Similar to the male in color and dimensions.

HOLOTYPE (male) AND ALLOTYPE (female).—Carmo do Rio Claro, Minas Gerais, Brasil, 1947 (J. C. M. Carvalho coll.), in Carvalho collection. *Paratypes*: 12 males and 47 females; some taken with the types,

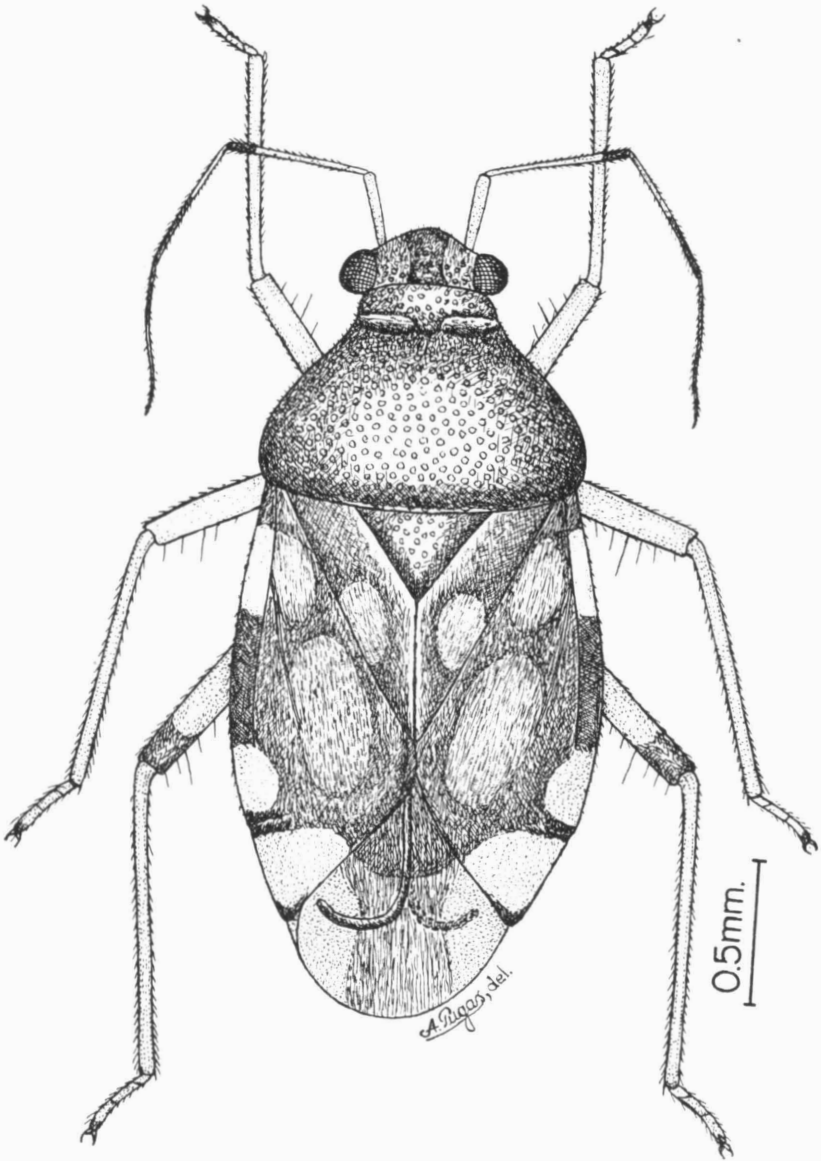


FIG. 1. *Pynoderes sixeonotoides*, new species.

others from Nova Teutonia, Santa Catarina, Brasil (F. Plaumann coll.), and from Colonia Independencia, Villarrica District, Paraguay, November 3, 1931 (R. F. Hussey coll.), in the collections of the authors, of the Museu Nacional at Rio de Janeiro, and of the University of Michigan Museum of Zoology. The specimens from Colonia Independencia were swept from low emergent vegetation growing in shallow water on a sand bar in the Arroyo Tacuara; the females taken here outnumber the males by more than ten to one.

Rhinacloa subpallicornis Knight, 1925.—CI; Oct. 31, from grasses at edge of maize field. EP; at light, Dec. 28 to Jan. 3.

Rhinacloa carmelitana Carvalho, 1948.—EP; Jan. 15, at light.

Cyrtopeltis (Engytatus) modesta (Distant, 1893).—EP; Nov. 22 to Jan. 11, on tobacco and at light.

Ceratopsus pilosus Reuter, 1905.—EP; Nov. 24 to Jan. 11, swept from vegetation on open *campo* and from short grasses in corral, also taken at light on at least four dates.

Sericophanes ornatus (Berg, 1879).—EP; at light on five dates, Dec. 10 to Jan. 11.

Sericophanes dispersus Carvalho, 1944.—EP; Dec. 27 to Jan. 11, common in short grass in pasture and also taken at light.

Sericophanes obscuricornis Poppius, 1921.—EP; Jan. 3, at light.

Dolichomiris linearis Reuter, 1882.—EP; Nov. 24 to Jan. 16. Fairly common in roadside grasses, especially in shady places; often seen at night feeding on seeds of tall grasses.

Trigonotylus ruficornis (Geoffroy, 1785).—EP; Nov. 28, at light.

Collaria oleosa (Distant, 1883).—CI; Nov 2 to 14, from herbage and grasses in damp situations. EP; Nov. 24 to Jan. 16, rather frequent in roadside grasses. Also taken at Angra dos Reis, Brasil, Feb. 28, 1932 (R. F. Hussey).

Lygus apicalis Fieber, 1861.—CI; Oct. 28 to Nov. 14. EP; Nov. 28 to Jan. 11. Common everywhere in grasses; taken also on ragweed, on *Bidens gardneri*, and on other herbaceous plants; taken occasionally at light.

Proba vittiscutis (Stål, 1860).—EP; at light, Dec. 28 and Jan. 3.

Polymerus testaceipes (Stål, 1860).—Probably the most common mirid both at CI and at EP; abundant in short grass in pasture, common in herbage at roadsides; taken frequently at light.

Horcias signoreti (Stål, 1860).—CI and EP; also Cordillera de Caaguazú (Hussey) and Villarrica (Jorgensen). Another very common

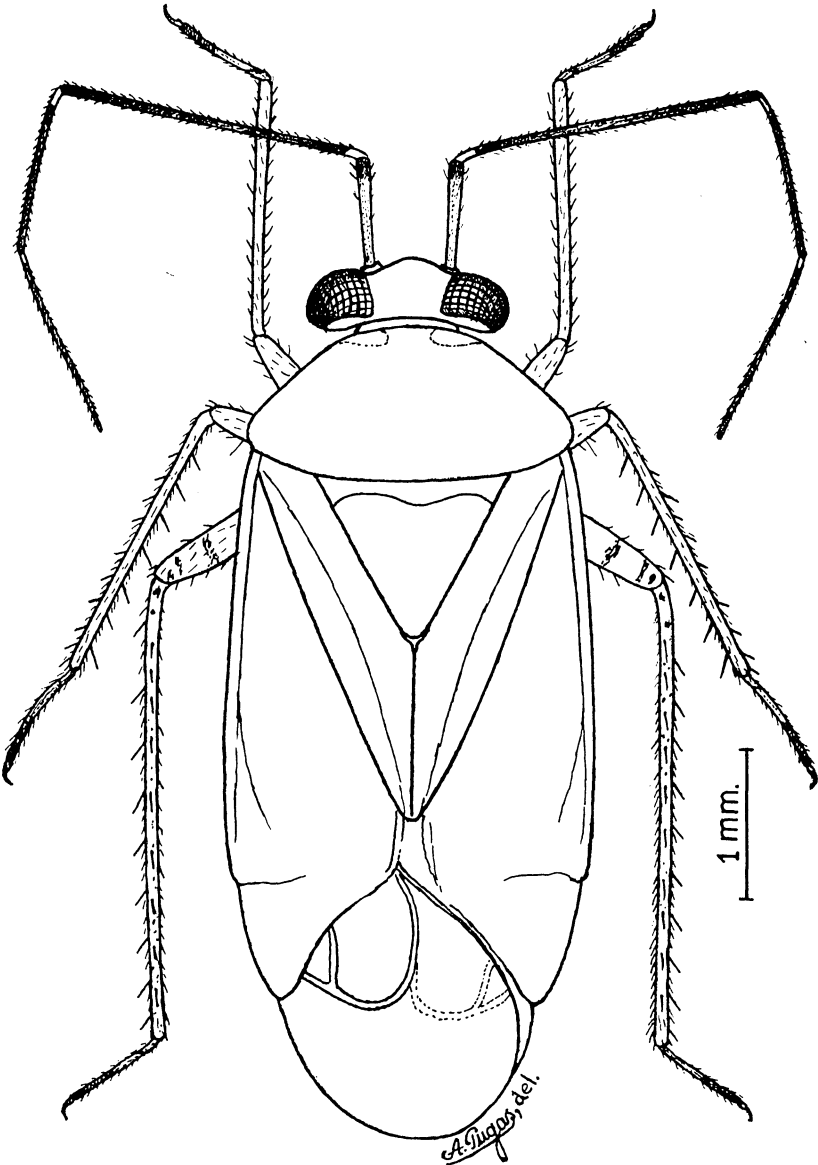


FIG. 2. *Poecilopsus citrinis*, new species.

species, found on roadside grasses in the forests, occasionally beaten from trees, sometimes taken at light.

Horcias pentheri Reuter, 1907.—EP; at light, Nov. 24 and Nov. 28.

***Poecilocapsus citrinus*, new species**

(Figs. 2, 3, 4, 5)

Differs from the other species of the genus in its color, length of rostrum, and male genitalia.

MALE.—Length to tip of membrane 5.6 mm., width 2.5 mm.; body glabrous and shining above, the hemelytra very faintly rugose under high magnification. *Head*: length 0.3 mm., width 1.3 mm., vertex 0.43 mm. *Rostrum*: length 1.7 mm., reaching the middle coxae. *Antennae*: segment I, length 0.6 mm.; II, 2.0 mm.; III, 0.8 mm.; IV, 0.9 mm.; antennal pubescence very short. *Pronotum*: length 0.9 mm., width at base 2.2 mm.

COLOR.—Flavescent to citrine; antennae and membrane infuscated, except the extreme base of second, third, and fourth antennal segments (in some specimens the basal half of the second segment), whose color varies from pallid to milky white; apical part of the femora, bases of posterior tibiae, and sides of abdomen irrorate with red; eyes, clypeus, and apex of rostrum reddish brown; tibial spines dark, as long as the thickness of the tibia, intermixed with fine, short pubescence.

GENITALIA.—Left clasper as shown in Figures 3 and 4. Right clasper (Fig. 5) simple, with an apical tooth and with areas of small toothlike protuberances, the surface provided with a few scattered setae. Aedeagus of the Mirini type, with a field of spines or teeth on the vesica.

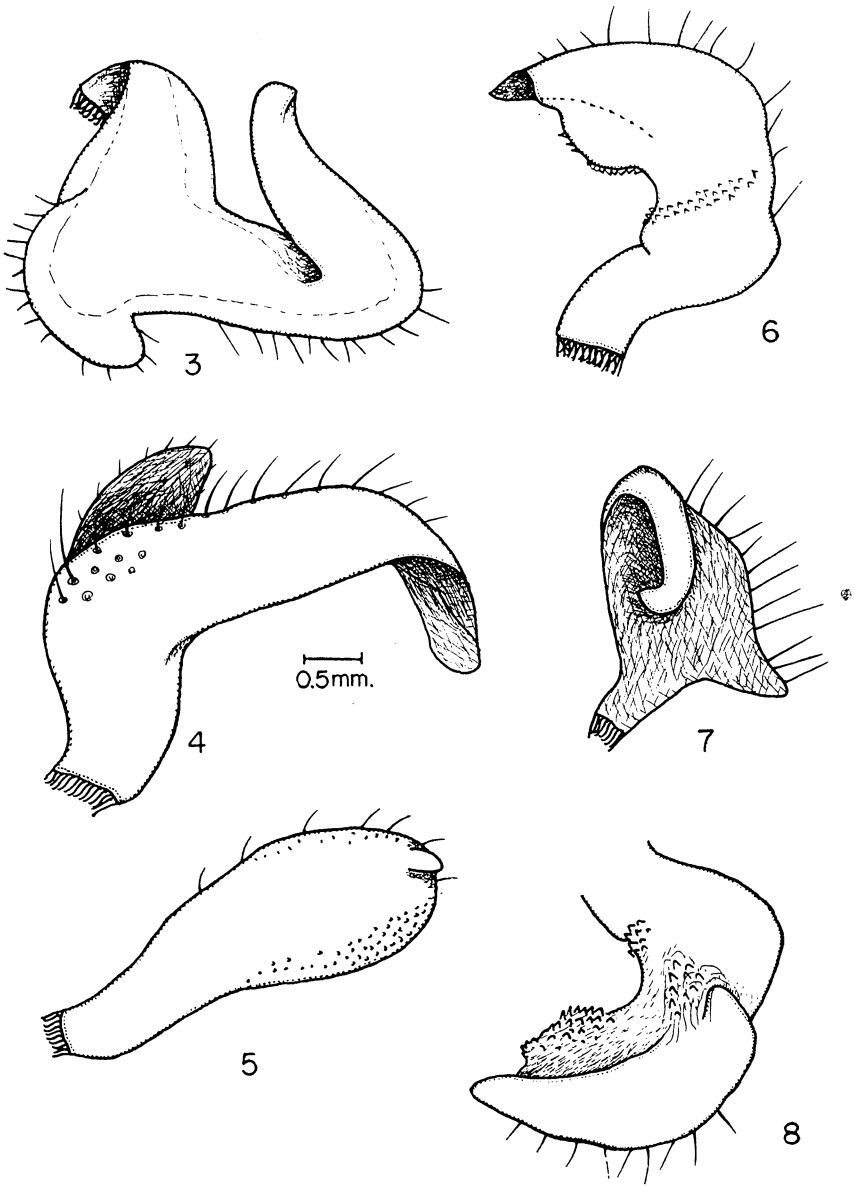
FEMALE.—Identical with the male in color and dimensions, except that the second antennal segment is slightly shorter (1.5 mm.).

HOLOTYPE (male), ALLOTYPE (female), AND PARATYPES.—Two males and eight females. Estancia Primera, Caaguazú District, Paraguay, December 23, 1931 (R. F. Hussey coll.), taken on *Mimosa daleoides* growing on the open *campo*; one female, same locality, Jan. 2, 1932, at light. Holotype, allotype, and paratypes in the University of Michigan Museum of Zoology; other paratypes in the collections of the authors and of the Museu Nacional at Rio de Janeiro.

Lampethusa collaris Reuter, 1909.—EP; Dec. 9, from undergrowth in forest, and Jan. 16, beaten from a tree in the same locality.

Taedia stigmosa (Berg, 1879).—EP; Dec. 31, from short grass in pasture, also Dec. 29 and Jan. 9, at light.

Poegas reuteri Distant, 1893.—EP; Dec. 23, on *Mimosa daleoides*.



FIGS. 3-5. *P. citrinus*, new species. Fig. 3, left clasper, ventral view. Fig. 4, left clasper, lateral view. Fig. 5, right clasper, dorsal view.

FIGS. 6-8. *P. sixeonotoides*, new species. Fig. 6, left clasper, dorsal view. Fig. 7, right clasper, ventral view. Fig. 8, left clasper, ventral view.

Creontiades rubrinervis (Stål, 1862).—EP; Nov. 26 and Jan. 16, beaten from a tree in thinned-out woods on the latter date.

Phytocoris bergrothi Reuter, 1892.—CI; Oct. 28 to 31, from herbaceous vegetation at the edge of a maize field beside the Arroyo Tacuara.

Garganus gracilentus (Stål, 1860).—Quite common. CI; Oct. 28 to Nov. 3, from grasses beside the Arroyo Tacuara. EP; Nov. 24, from grass growing in the yerbal, and Jan. 10 to 15, rather frequent at light.

Platytylhellus cruciferus (Berg, 1879).—EP; Jan. 11, two specimens at light.

Platytylhellus circummaculatus (Stål, 1854).—EP; Jan. 2, at light.

Platytylhellus flavoniger (Stål, 1860).—Cordillera de Caaguazú; Nov. 18, from roadside vegetation in heavy forest.

Platytylhellus nitidipennis Reuter, 1910.—EP; Nov. 24 to Dec. 28, from roadside grasses and from vegetation on open campo.

Platytylhellus pyrrhomelaenus (Stål, 1860).—EP; Jan. 16, beaten from orange tree.

Platytylhellus platensis (Berg, 1879).—EP; Dec. 28, at light.

• *Platytylhellus seminiger* (Stål, 1860).—CI; Oct. 29.

Platytylus pyrrhulus (Burmeister, 1835).—CI; Nov. 2, in flight over corn field.

Callichila grandis (Blanchard, 1843).—Trinidad, Paraguay, Oct. 11, 1920 (Jorgensen).

Lepidoxenetus unicolor Poppius, 1921.—EP; Dec. 8 to Jan. 4, at light.

Herdonius armatus Stål, 1860.—EP; Nov. 28, from grass in pasture.

Xenetus petiolatus (Stål, 1860).—EP; Nov. 30, swept from herbage at edge of woods.

Guarania paraguayensis, new species

Differs from the genotype *Guarania myrmecomorpha* Carvalho and China, 1951, by its dimensions and by having the tip of the fore wing marked with white.

FEMALE.—*Body*: length 4.0 mm., width across abdomen 2.0 mm.; covered with long, fine, erect pilosity, the upper surface smooth, finely shagreened. *Head*: width 1.2 mm., height 1.3 mm., vertex 0.62 mm.; genae very large and high, thickly pilose. *Rostrum*: length 1.7 mm., reaching the middle coxae. *Antennae*: segment I, length 0.4 mm.; II, 1.1 mm.; III, 0.8 mm.; IV, 0.7 mm. *Pronotum*: length 1.0 mm., width at base 1.25 mm. Middle and hind tibiae compressed. Hemelytra without

membrane, reaching only to about the middle of the abdominal peduncle.

COLOR.—Black; first antennal segment, basal half of second and third segments, and apical half of front and middle tibiae pale; apex of hemelytra with a small, triangular white mark, or the whole apex white; trochanters of middle and hind legs and a small spot on anterior margin of hind coxae, white.

MALE.—Unknown.

HOLOTYPE (female).—Estancia Primera, Caaguazú District, Paraguay, December 29, 1931 (R. F. Hussey), in the University of Michigan Museum of Zoology. *Paratype*: female, same data, in the Carvalho collection. These specimens were swept from grass at night.

SUMMARY

This paper lists 49 species of Miridae from Paraguay, most of which were collected by the junior author in 1931–32. Three new species are described, *Pycnoderes sixeonotoides*, *Poecilocapsus citrinus*, and *Guarania paraguayensis*; *Bryocoris pallidiceps* Reuter, 1907, is transferred to the genus *Monalocoris*.

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