



A new species of *Rhabdotalebra* Young (Hemiptera: Cicadellidae: Typhlocybinae) associated with the guaran-guaran (Bignoniaceae: *Tecoma stans* L.) in Argentina

SUSANA PARADELL^{1,4}, MARÍA INÉS CATALANO² & JULIÁN PETRULEVIČIUS³

¹Investigador CIC. Universidad Nacional de La Plata. División Entomología. Facultad de Ciencias Naturales y Museo. La Plata, Buenos Aires, Argentina. E-mail: paradell@fcnym.unlp.edu.ar

²Investigador CIC. Universidad Nacional del Noroeste de la Provincia de Buenos Aires, Centro de Bioinvestigaciones, Pergamino, Buenos Aires, Argentina. E-mail: mariainescatalano@gmail.com

³Investigador CONICET. Universidad Nacional de La Plata. División Paleozoología Invertebrados. Facultad de Ciencias Naturales y Museo, La Plata, Buenos Aires, Argentina. E-mail: levicius@fcnym.unlp.edu.ar

⁴Corresponding author. E-mail: paradell@fcnym.unlp.edu.ar

Abstract

The genus *Rhabdotalebra* Young is reviewed, including description of a new species, *R. albinoi* n. sp., from Buenos Aires province, Argentina. A detailed morphological description and illustrations of the new species are provided. A key of all known *Rhabdotalebra* species is provided to facilitate the comparison of the new species with those previously known, based on pattern coloration and male and female genitalia, is given. Some field observations on its biology are also provided.

Key words: Auchenorrhyncha, morphology, taxonomy, distribution

Introduction

The cicadellid subfamily Typhlocybinae is a large group comprising 450 genera and >5000 species of mostly small, delicate leafhoppers Dietrich (2013). Approximately, 900 species are recorded from the Neotropical region (Oman *et al.* 1990), including 14 genera and 69 species in Argentina Catalano (2011).

The Neotropical genus *Rhabdotalebra* (Alebrini) established by Young (1952) with *Protalebra octolineata* Baker, 1903 as type also includes the following ten species: *R. brunnea* (Oman, 1937); *R. hambletoni* Young, 1957; *R. signata* (McAtee, 1926); *R. jamaicensis* Young, 1957; *R. monrosi* Young, 1957; *R. ornata* Young, 1957; *R. plummeri* (Ruppel & DeLong, 1953); *R. pikna* Dworakowska, 1994; *R. litoralensis* Catalano, 2010 and *R. flava* Catalano, 2010. The latter two were described and illustrated by Catalano *et al.* (2010). The species from Argentina are mainly distributed in the northern areas, Northeast Argentina NEA and Northwest Argentina NOA (Jujuy, Tucumán and Entre Ríos provinces), associated with “lapachos” trees: *Tabebuia pulcherrima* Sandw. (“lapacho amarillo”); *Tabebuia impetiginosa* (Mart. ex DC.) Standley and *Tabebuia ipe* (Mart.) Standley (“lapachillo”). The genus *Tabebuia* Gomes ex DC. (Bignoniaceae) comprises one hundred native species in tropical America, extending from Mexico and the Caribbean to Argentina (Misiones, Corrientes, Chaco, Formosa, Entre Ríos and Tucumán), Brazil from South Central to Amazon, and also in low-lying areas in southern Paraguay, Bolivia and Peru in some mountain areas Alonso (2000).

Here we describe and illustrate a new species, *R. albinoi* n. sp., from Argentina, associated with *Tecoma stans* (Linnaeus) Juss. ex Kunth (Bignoniaceae) (“Guarán-Guarán” or yellow trumpetbush). “Guarán-Guarán” is distributed from southern United States to Argentina and is an ornamental tree. Discovery of the new species extends the known range of the genus to Buenos Aires province, La Plata and Temperley cities, the southernmost records of *Rhabdotalebra*.

Geographical distribution, host plants and some field observations on its biology are recorded. In addition, a

key to identify *Rhabdotalebra* species is given, modified from Young (1957) and Catalano *et al.* (2010) based on color pattern and male and female genitalia.

Materials and methods

Adults of the new species were collected on leaves of *Tecoma stans* with manual aspirators during autumn and spring of 2012, 2014 and 2016, in Temperley (S 34° 46' W 58° 23') and La Plata (S 34° 55' W 57° 57') cities in Buenos Aires province, Argentina. Adults were present throughout the year. For morphological study of the genital structures, clearing was accomplished by immersion of the entire abdomen in a solution of 10% KOH at room temperature. Specimens were prepared for microscopic examination according to standard techniques, were drawn using a stereoscopic microscope with a camera lucida. The colour pattern here described is the post-mortem coloration. Photographs were taken with a digital camera attached to a Zeiss microscope and digital images were assembled using Combine ZM open software (Hadley 2011). Damaged recent leaves of *T. stans* and the leafhoppers producing the stippling were collected on May 15, 2012 at La Plata. The photograph of the whole leaf (Fig. 3A) was taken just after collection with a Nikon D5000 camera (Petrulevičius *et al.* 2014). The morphological terminology follows Balduf (1934), Young (1952), Southern (1982), Dietrich (2005) and Catalano *et al.* (2010). A check list of all Argentinian species of the genus with information about distribution and host plants is included. Some field observations on biology are given. The type of the described species and other specimens examined are housed in the entomological collection of the Museo de Ciencias Naturales de La Plata (MLP) La Plata, Argentina.

Results

Rhabdotalebra Young 1952

Type species: *Protalebra octolineata* Baker, 1903, by original designation.

Morphological diagnoses of *Rhabdotalebra* were provided by Young (1957) and Catalano *et al.* (2010).

Host plants: (Bignoniaceae) *Tabebuia pulcherrima* Sandw; *Tabebuia impetiginosa* (Mart. ex DC.) Standley (“lapachos”), *Tabebuia ipe* (Mart.) Standley (“lapachillo”) (Catalano *et al.* 2010), *Tecoma stans* (Linnaeus) Juss. ex Kunth (Guarán-Guarán).

Geographical distribution: Species of the genus distributed in Argentina were previously recorded from the northern provinces (Young 1957; Catalano 2010). The new finding represents the southernmost distribution of the genus.

Rhabdotalebra species from Argentina

R. flava Catalano, 2010. Distribution: Argentina: Tucumán (Catalano *et al.* 2010).

Host Plants: *Tabebuia pulcherrima* Sandw. (“Lapacho amarillo”) and *T. ipe* (Mart.) Standley (“lapachillo”) (Catalano *et al.* 2010).

R. hambletoni Young, 1957. Distribution: Argentina: Jujuy (Dworakowska 1994)

Host Plants: unknown.

R. litoralensis Catalano, 2010. Distribution: Argentina: Entre Ríos, Concordia Catalano *et al.* (2010).

Host Plants: *Tabebuia impetiginosa* (“Lapacho Rosado”) (Catalano *et al.* 2010).

R. monrosi Young, 1957. Distribution: Argentina: Jujuy, Ledesma (Young 1957).

Hosts Plants: unknown.

***R. albinoi* n. sp.** Distribution: Argentina. Buenos Aires, La Plata, Temperley.

Host Plants: *Tecoma stans* (L.) Juss. ex Kunth (Guarán-Guarán).

Key to the species of the genus *Rhabdotalebra* Young (adapted from Catalano *et al.* 2010 to include *R. albinoi* n.sp.)

1. Aedeagus with processes. 5
- Aedeagus without processes 2
2. Pygofer with ventral processes bifurcate at apex 3
- Pygofer with ventral processes not bifurcate 4
3. Aedeagal shaft with very broad base and narrow apex with two pairs of antepical teeth (Young, 1957: Fig. 29d, p. 234). Sternal abdominal apodemes longer, attaining second conjunctivae. *R. monrosi* (Young)
- Aedeagal shaft slender without teeth (Young, 1957: Fig. 28, p. 230). Sternal abdominal apodemes shorter, not attaining first conjunctiva *R. jamaicensis* (Young)
4. Aedeagal shaft abruptly narrowed in apical third. Sternal abdominal apodemes longer, attaining second conjunctivae (Young, 1957: Fig. 28, p. 230). Female seventh sternum slightly convex *R. signata* (McAtee)
- Aedeagal shaft gradually tapering (Young, 1957: Fig. 28, p. 230). Sternal abdominal apodemes shorter, not attaining first conjunctiva. Female seventh sternum shallowly concave *R. octolineata* (Baker)
5. Aedeagus with single basal or apical process 6
- Aedeagus with more than one subapical and/or apical processes. 7
6. Aedeagus with apical process directed ventrocaudally. Pygofer with shorter ventral process. Connective U-shaped. Sternal abdominal apodemes attaining first conjunctiva. Female seventh sternum with rounded median lobe (Catalano *et al.* 2010: Fig.1 p. 56) *R. litoralensis* Catalano
- Aedeagus with basal process directed dorsally. Pygofer with long ventral process. Connective transverse bar shaped. Sternal abdominal apodemes not attaining first conjunctivae. Female seventh sternum with posterior margin slightly concave (Catalano *et al.* 2010: Fig. 2 p. 58) *R. flava* Catalano
7. Pygofer process absent. Connective U-shaped. Aedeagus processes dorsal and symmetrical (Young, 1957: Fig. 29, p. 234). Forewing with hourglass-shaped white commissural marking. *R. plummeri* (Ruppel & DeLong)
- Pygofer with processes. Aedeagus with processes lateral, ventral or asymmetrical. 8
8. Pygofer with processes (occasionally not differentially sclerotized). Connective bar shaped. Aedeagus processes ventral or lateral. Markings of forewing not as in (Fig. 1B) 9
- Pygofer with subapical processes strongly esclerotized, curved on the ventral margin (Fig. 1D). Conective U-sharped. Aedeagus with subapical and apical processes asymmetrical, directed caudoventrally (Fig. 1G). Color pattern of the forewings as in Fig. 1B. Female seventh sternum with posterior margin with short rounded median lobe (Fig.2A) *R. albinoi* n. sp.
9. Aedeagus processes recurved laterally. Gonopore terminal (Young, 1957: Fig. 29, p. 234). Dorsum marked with inverted "T" extending over pronotum, scutellum and basal half of forewings *R. hambletoni* (Young)
- Aedeagus processes otherwise. Gonopore subapical. Markings of dorsum otherwise. 10
10. Aedeagus processes appressed to shaft (Young, 1957: Fig. 30, p. 239). Sternal abdominal apodemes shorter, attaining first conjunctiva *R. ornata* (Young)
- Aedeagal process extending laterad, not appressed to shaft. Sternal abdominal apodemes longer, attaining second or third conjunctivae (Young, 1957: Fig. 30, p. 239). *R. brunnea* (Oman)

New species

***Rhabdotalebra albinoi* Paradell & Catalano, n. sp.**

(Figs. 1A–G, 2 A–D, 3A)

Description. Length: 2.8–2.9 mm. Coloration yellowish with distinctive brown dark marks on forewings (Fig. 1A). Crown produced with apex rounded; posterior margin regularly concave. Pronotum median length 0,5 times greater than median length of crown; lateral margins divergent posteriorly (Fig. 1A).

Fore and hind wing venation characteristic of genus. Forewings with pattern similar to but darker than in *R. litoralensis*. Brown mark in basal half involving both clavus and corium crossing transversely to commissural vein, reaching costal vein; transverse vitta near base of vein R; rhomboidal mark dark brown from vein R to inner apical cell, darker brown blotch in outer apical cell, apical portions of all apical cells smoky, outer cell darker (Fig.1B).

Male: First sternal complex (1S) (Fig.1C) with sternal bar thin and straight ventrally; dorsal apodeme well developed, medial notch not reaching sternal bar; lateral apodeme well developed, extending dorsally. Second sternal abdominal apodeme (2S) (Fig.1C) short, reaching third segment, medial margins concave, apex rounded. Pygofer (Fig.1D) subtriangular in lateral view, with uniseriate group of four to six macrosetae on dorsoposterior margin, few microsetae dispersed on disk; with ventral strongly sclerotized subapical process (Fig.1E) curved on ventral margin, extended to pygofer apex, apex with bifurcate, divergent, strongly sclerotized and prominent dark spines on posterodorsal margin, one longer than other. Subgenital plate (Fig.1F) elongated, triangular, abruptly

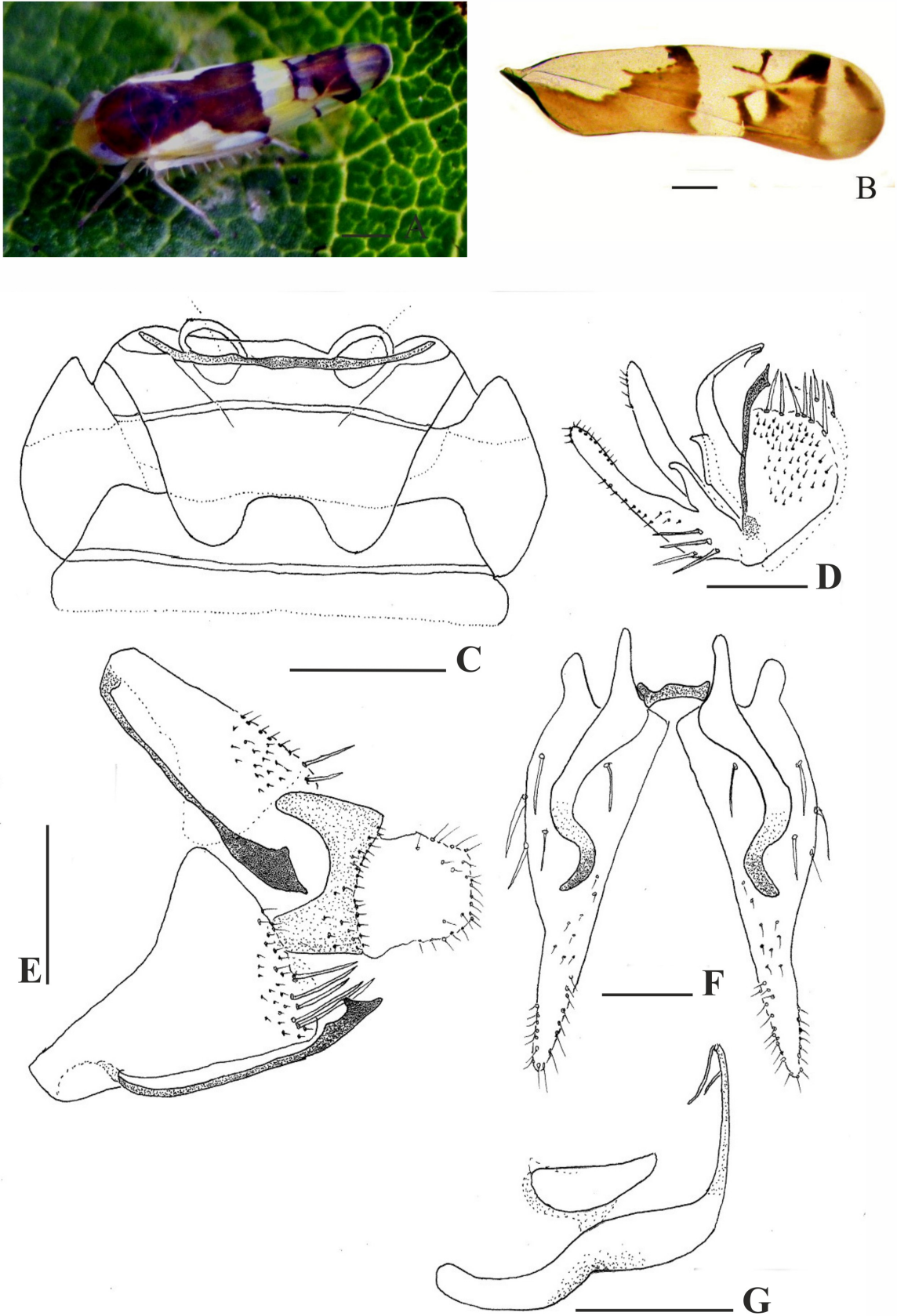


FIGURE 1. A–G. *Rhabdotalebra albinoi* n.sp. A, dorsal habitus; B, forewing. Male: C–G. C, sternal apodeme (1S, 2S); D, genital capsule; E, pygofer, lateral view and anal tube; F, subgenital plate, style, connective; G, aedeagus, lateral view. Scale bar= (Figs. A–B: 3mm; C–G: 0.2mm; F: 0.1mm).

narrowed near midlength, exceeding ventral pygofer process, with three macrosetae confined on disk to half basal, one row of short and strong setae extended from midlength to apex. Style (Fig.1F) short and robust, with conspicuous and rounded preapical lobe; apical extension strongly sclerotized and abruptly curved caudoventrad, apex rounded. Connective (Fig.1F) small, shallowly U-shaped. Aedeagus (Fig.1G) in lateral view with preatrium distinct; dorsal apodeme well developed, saddle-shaped in lateral aspect, bilobed at base; shaft slender, curved dorsad, with one subapical process short, divergent from shaft in lateral view, and one apical processes long and sinuous directed ventrocaudally, reaching shaft midlength, apex acuminate; gonopore apical. Anal tube (Fig.1E) with lateral margins weakly sclerotized.

Female: Length: 3.0–3.1 mm. Shape and general coloration very similar to those of male.

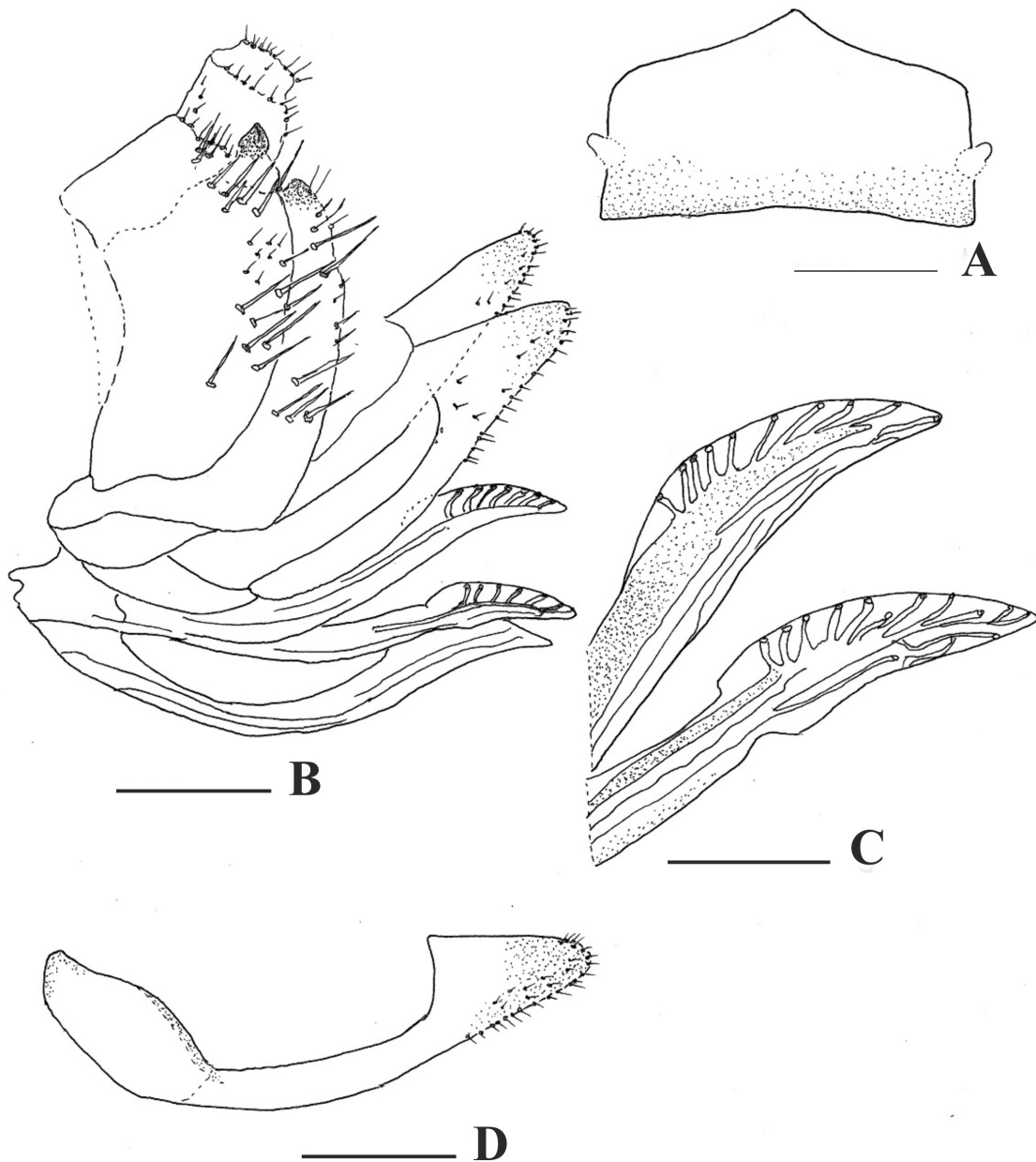


FIGURE 2. A–D. *Rhabdotalebra albinoi* n.sp. Female: A–D. A, sternite VII; B, genital capsule, lateral view; C, large valve, small valve; D, third valve. Scale bar= (Figs. A–D: 0.2mm; B: 0.25mm).



FIGURE 3. A. Damage by *Rhabdotalebra albinoi* n.sp. (Circle indicating the damage in the form of rings and horseshoes on leaves of “Guarán-Guarán”). Scale bar=1mm.

Seventh sternum (Fig.2A) subrectangular, posterior margin with short rounded median lobe. Pygofer (Fig.2B) in lateral view, with group of six or seven macrosetae on medioventral margin and six to eight macrosetae on dorsocaudal margin, dorsocaudal apex with one dark sclerotized and prominent spine. Valves of the ovipositor exceeding pygofer (Fig.2B, D). Second valvulae leaflike in third apical, very similar to *R. litoralensis*, but without teeth. Large valve (Fig.2C) dorsal margin and apex without teeth, with 2–3 sclerotized longitudinal bars of different size on surface, branched towards dorsal margin. Small valve (Fig.2C) similar, without teeth.

Type material. Holotype male, ARGENTINA: Buenos Aires, La Plata S 34° 55' and W 57° 57', 28-xi-16, on *Tecoma stans* (L.) (Guarán-Guarán), Petrulevičius col. Paratypes: 2 male, 2 female, same collection date as the holotype.

Other material examined. 5 males, 4 females, La Plata, S 34° 55' W 57° 57', 14-v-2012, on *Tecoma stans* (L.) Juss. ex Kunth (“Guarán-Guarán”), Petrulevičius col., 1 female, La Plata, S 34° 55' W 57° 57', 10-xi-2014, Petrulevičius col., 3 males, Temperley, S 34° 46' W 58° 23', 8-9-vii-2012, on *Tecoma stans* (L.), Petrulevičius col., 1 female, La Plata, S 34° 55' W 57° 57', 23-ix-2016, on *Tecoma stans* (L.) “Guarán-Guarán”, Petrulevičius col.

Etymology. The new species is named for Prof. Albino M. Sakakibara in recognition of his outstanding contributions to knowledge of the fauna of South America.

Notes. *R. albinoi* n.sp. can be distinguished from the other known species of the genus by the following

combination of features: Male (1) pygofer with ventral strongly sclerotized process, apex with two divergent strongly sclerotized and prominent dark spines, one long and other short, on posterodorsal margin. (2) Aedeagus with asymmetric apical and subapical processes directed caudoventrally. Female (3) pygofer with dorsocaudal apex with one dark sclerotized and prominent spine. Second valvulae leaflike in third apical, similar to *R. litoralensis*, but without teeth on dorsal margin and apex. The coloration pattern of the forewing is similar to that of *R. litoralensis*.

Biological notes (Fig.3A) *R. albinoi* n.sp. causes damage in the form of rings and horseshoes in high concentration, producing stippling on the leaves of “Guarán-Guarán”.

Acknowledgments

Our thanks to Dr. Dietrich and Zootaxa coeditors for the invitation to participate in this special issue in honor of Dr. Sakakibara. This research was supported in part by Grant 11N/723 from UNLP, Argentina, financial support to S. Paradell and M. Inés Catalano from Comisión de Investigaciones Científicas (CIC) and to J. Petrulevičius by Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICET), Argentina.

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