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Contributions to the knowledge of *Elanela*: *Elanela jordi* sp. nov., from Amazonas, Brazil (Hemiptera: Heteroptera: Pentatomidae)

J. GRAZIA[1,2], C. GREVE[1,3]

[1]Departamento de Zoologia; Programa de Pós-Graduação em Biologia Animal; Universidade Federal do Rio Grande do Sul; Av. Bento Gonçalves 9.500; 91501-970 Porto Alegre; Rio Grande do Sul; Brazil
[2]CNPq Fellowship; E-mail: jocelia@ufrgs.br
[3]E-mail: carolinegreve@yahoo.com.br

Abstract

A new species of *Elanela* Rolston, 1980, *E. jordi* **sp. nov.** is described from Amazonas, Brazil. The female genitalia of *E. kerzhneri* Grazia & Silva, 2006 is also described. A key to separate the known species of *Elanela* is provided.

Key words: Pentatominae, Pentatomini, Neotropics, new species, taxonomy.

Resumen

***Contribuciones al conocimiento de* Elanela*: Elanela jordi sp. nov. de Amazonas, Brasil* (*Hemiptera: Heteroptera: Pentatomidae*)**

Se describe una nueva especie de *Elanela* Rolston, 1980, *E. jordi* **sp. nov.**, de Amazonas, Brasil. También se describe la genitalia femenina de *E. kerzhneri* Grazia & Silva, 2006. Se presenta una clave para separar las especies conocidas de *Elanela*.

Palabras clave: Pentatominae, Pentatomini, Neotrópico, nueva especie, taxonomía.

Laburpena

Elanela*ren ezaguerarako ekarpenak:* Elanela jordi *sp. nov., Amazonasekoa, Brasil* (*Hemiptera: Heteroptera: Pentatomidae*)

Elanela Rolston, 1980 generoko espezie berri bat, *E. jordi* **sp. nov.**, deskribatzen da Amazonasekoa, Brasil. *E. kerzhneri*ren Grazia & Silva, 2006 emeen genitalia ere deskribatzen da. *Elanela* espezie ezagunak bereizteko klabea aurkezten da.

Gako-hitzak: Pentatominae, Pentatomini, Neotropikoa, espezie berria, taxonomia.

Introduction

Rolston *et al.* (1980) described *Elanela hevera* Rolston, 1980 based on one female specimen from Peru. Later, Grazia (1989) described the male of *E. hevera*, as well as the internal genitalia of the female, and expanded the known distribution of the genus to Suriname and northern Brazil (Amapá, Pará and Amazonas). Grazia and Silva (2006) added a new species, *E. kerzhneri* Grazia & Silva, 2006, also from northern Brazil (Rondônia), based on the male holotype.

The species included in *Elanela* are characterized by small individuals (6.0 to 7.5 mm total length), matte, or stramineous in color, with numerous dark brown

to black punctures (Rolston *et al.*, 1980; Grazia, 1989; Grazia and Silva, 2006). They have the metasternum produced, flat and bifurcated posteriorly, receiving the median tubercle of the third urosternite. The apices of juga are convergent toward the clypeus; juga and clypeus are subequal in length. The first antennal segment is distinctly stout.

In this paper, a new species of *Elanela* from Amazonas (Brazil) is described. A description and illustration of the external female genitalia of *E. kerzhneri* is also provided.

Material and methods

The description was based on four males and four females belonging to the National Museum of Natural History (Naturalis) (RMNH).

Genitalic morphology was illustrated using stereomicroscope and drawing tube. Illustrations of genitalia of *E. hevera* and *E. kerzhneri* were adapated from Grazia (1989) and Grazia and Silva (2006), respectively. Genitalia were cleared with 10% KOH and stained with Congo Red. The terminology followed Dupuis (1970), Schaefer (1977), Grazia (1989) and Grazia and Silva (2006). Morphometric parameters measured: total length, abdominal width, head length, head width, interocular distance, lengths of antennal segments I to V, lengths of rostral segments I to IV, pronotal length, pronotal width, scutellum length, scutellum width. Measurements (mean ± standard deviation, when available) are given in millimeters (Table 1).

Taxonomy

Key to the species of *Elanela*

(1) General color matte, stramineous, with castaneous to black punctures and markings (Figs. 2b-c). Ventral abdominal surface, in males, with an oblong dark macula along mid line. Gonocoxites 8 not covering gonocoxites 9 (Figs. 1b, 4b) **2**

(1') General color darker. Ventral abdominal surface, in males, completely dark. Gonocoxites 8 covering gonocoxites 9 . . . . . ***Elanela jordi* sp. nov.** (Fig. 2a)

(2) Pygophore globose; parameres spatulate (Fig. 1a). Posterior margins of gonocoxites 8 truncate; laterotergites 9 just surpassing the band uniting dorsally the laterotergites 8 (Fig. 1b). . . . . ***Elanela hevera*** Rolston, 1980 (Fig. 2b)

(2') Pygophore subquadrangular; parameres quadrangular in dorsal view (Fig. 4a). Posterior margins of gonocoxites 8 straight; laterotergites 9 attaining the band uniting dorsally the laterotergites 8 (Fig. 4b) . . . . . ***Elanela kerzhneri*** Grazia & Silva, 2006 (Fig. 2c)

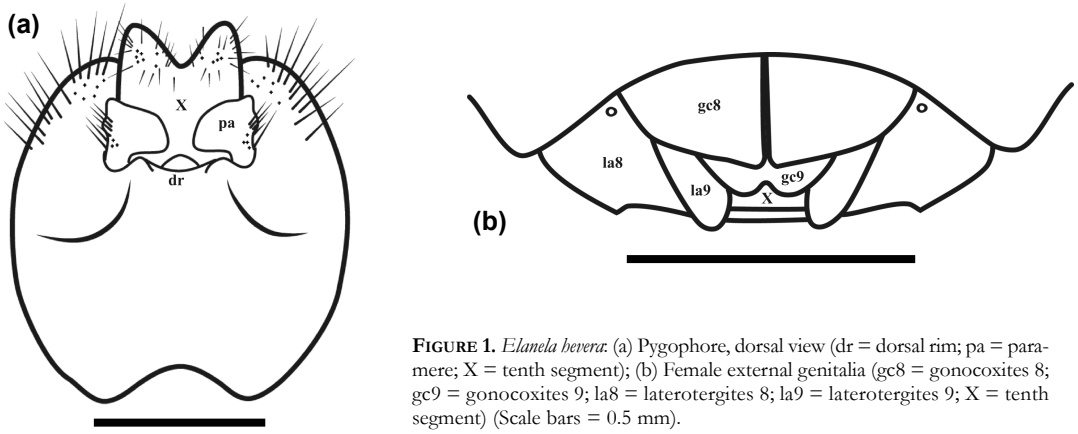

FIGURE 1. *Elanela hevera*: (a) Pygophore, dorsal view (dr = dorsal rim; pa = paramere; X = tenth segment); (b) Female external genitalia (gc8 = gonocoxites 8; gc9 = gonocoxites 9; la8 = laterotergites 8; la9 = laterotergites 9; X = tenth segment) (Scale bars = 0.5 mm).

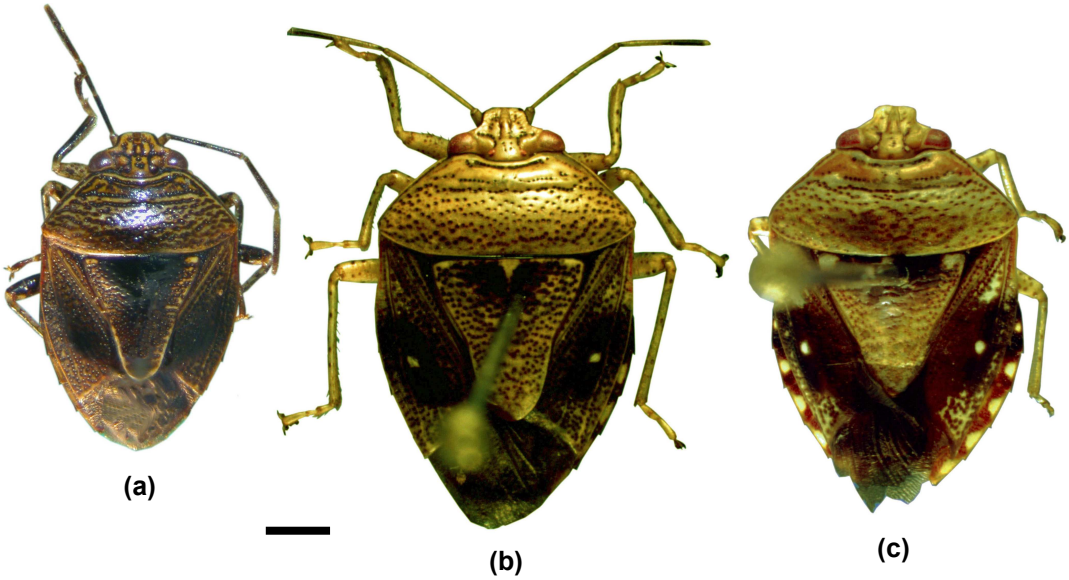

FIGURE 2. Habitus of: (a) *Elanela jordi* **sp. nov.**, male holotype; (b) *Elanela hevera*; (c) *Elanela kerzhneri*, male holotype (Scale bar = 1 mm).

Elanela jordi sp. nov.

(Figs. 2a, 3)

Etymology:

This species is named in honor to Dr. Jordi Ribes for his contribution to the knowledge of the heteropterous Hemiptera of Palaearctic Region. An invariable noun in apposition.

Type material:

HOLOTYPE: ♂, Brazil, Amazonas, Rio Negro, between Ilha Jacari & Airao, 11.x.1971, H. & P. Maas (RMNH).

PARATYPES: 3 ♂♂ and 4 ♀♀, same data (2 ♂♂, 3 ♀♀ deposited at RMNH; 1 ♂, 1 ♀ deposited at Departamento de Zoologia, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil).

Description:

Color (Fig. 2a). Stramineous, with black punctuations irregularly distributed. Head, with punctures forming a «C» laterad of each eye; punctures on the base of head and along the juga; margins of juga outlined by black. Pronotum densely punctured; punctures forming transverse lines on the posterior two thirds; cicatrices lined by punctures. Scutellum uniformly covered by punctures, except for the basal disc, black. Corium uniformly covered by punctures, except for a central callus. Connexivum finely outlined by black. Legs weakly punctured; margins of tibia outlined by black. Ventral abdominal surface densely punctured, completely dark in males and slightly stramineous toward the center, in females.

Head strongly declivent. Jugal apices curved toward clypeus, not surpassing it; margins of juga strongly concave before eyes. Posterior end of each buccula rounded, first rostral segment surpassing the bucculae in 1/3 of its length. First antennal segment stout.

Pronotum trapezoidal; anterolateral margins straight; humeral angles rounded; posterior margin slightly convex, nearly straight. Scutellum apex rounded; shorter than corium. Corium apex rounded, reaching the posterior fourth of the 6th connexival segment. Femora unarmed.

Metasternum produced, flat and bifurcate posteriorly, becoming obtusely carinate anteriorly; mesosternum obtusely carinate. Ostiole elliptical, directed posteriorly; peritreme in shape of a spout, extending one half of distance from the lateral margin of metapleuron. Posterior angle of each connexivum acute.

Male genitalia (Figs. 3a-f). Pygophore ovoid, posterolateral angles slightly developed; lateral thirds of

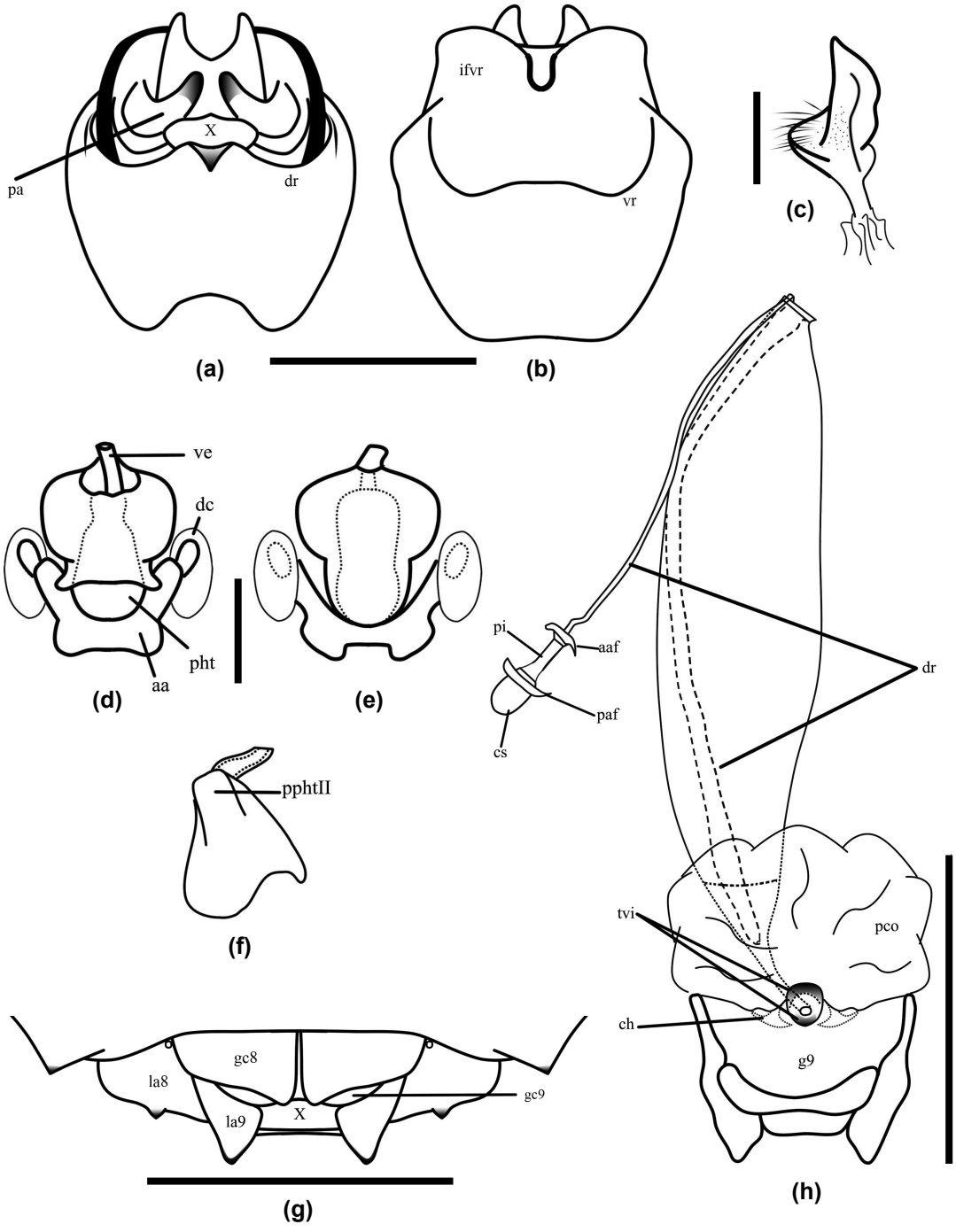

FIGURE 3. *Elanela jordi* **sp. nov.**: (a) Pygophore, dorsal view (dr = dorsal rim; pa = paramere; X = tenth segment); (b) Pygophore, ventral view (ifvr = inferior fold of ventral rim; vr = ventral rim); (c) Left paramere, lateral view; (d) Phallus, posterior view (aa = articulatory apparatus; dc = dorsal connective; pht = phallotheca; ve = vesica); (e) Phallus, anterior view; (f) Phallus, lateral view (pphtII = processus phallothecae II); (g) Female external genitalia (gc8 = gonocoxites 8; gc9 = gonocoxites 9; la8 = laterotergites 8; la9 = laterotergites 9; X = tenth segment); (h) Female internal genitalia (aaf = anterior annular flange; cs = capsula seminalis; ch = chitinellipsen; dr = ductus receptaculi; g9 = gonapophyses 9; paf = posterior annular flange; pco = pars communis; pi = pars intermedialis; tvi = thickening of vaginal intima; X = tenth segment) (Scale bars: (a)-(b) = 0.5 mm; (c)-(f) = 0.2 mm; (g)-(h) = 1 mm).

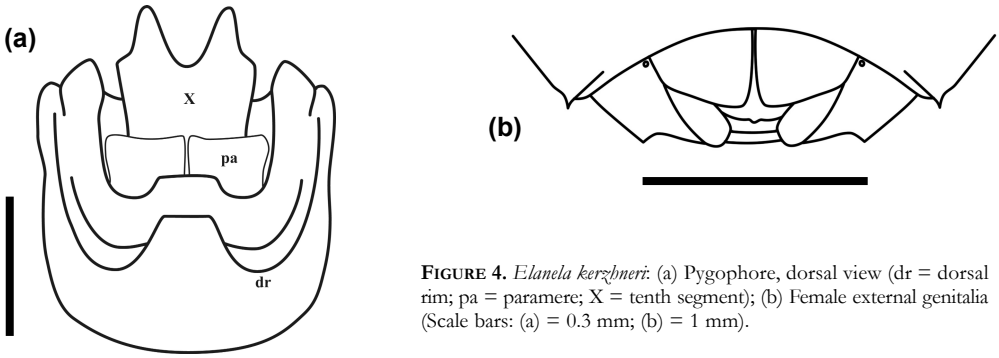

FIGURE 4. *Elanela kerzhneri*: (a) Pygophore, dorsal view (dr = dorsal rim; pa = paramere; X = tenth segment); (b) Female external genitalia (Scale bars: (a) = 0.3 mm; (b) = 1 mm).

dorsal rim excavated, median third slightly projected posteriorly, margin sinuous (Fig. 3a). Inner wall of genital cup together with inferior fold of ventral rim projected posterolaterad forming a single semi-collar structure embracing the segment X, notched at middle (Fig. 3b). Inferior fold of ventral rim of pygophore forming a deep excavation, sinuous at middle. Parameres almost scythe-like in dorsal view, touching each other at middle line and covering the base of segment X (Fig. 3a). Parameres in lateral view with a median projection bearing hairs (Fig. 3c). Surface of segment X concave, apical margin with a deep U-shaped notch (Fig. 3a). Phallus very similar to *E. hevera* except length of vesica longer, surpassing phallotheca aperture in almost half the phallotheca length. Conjuntiva also absent (Figs. 3d-f).

Female genitalia (Figs. 3g-h). Apical margin of segment VII weakly concave, almost straight at gonocoxites 8. Spiracles present on laterotergites 8 (Fig. 3g). Posterior margins of laterotergites 8 with a short projection (Fig. 3g). Posterior margins of gonocoxites 8 slightly sinuate, sutural angles rounded, divergent somewhat projected covering the middle of gonocoxites 9; sutural margins parallel (Fig. 3g). Laterotergites 9 not lanceolate, apical margins triangular, clearly surpassing the band uniting ventrally the laterotergites 8 (Fig. 3g). Posterior margin of gonocoxites 9 slightly concave (Figs. 3g-h). Ectodermical genital ducts very similar to *E. hevera* but the capsula seminalis is oblong, lacking a digitiform process (Fig. 3h). Ductus receptaculi after vesicular area very long, clearly surpassing the middle of this area (Fig. 3h). Vesicular area more sclerotized at base (Fig. 3h). Chitinellipsen present as in *E. hevera* in spite of the mention in Grazia (1989) that the chitinellipsen were absent. Thickening of vaginal intima conical, directed ventrally (in *E. hevera* is directed anteriorly) (Fig. 3h).

Measurements in Table 1.

Differential diagnosis:

Elanela jordi **sp. nov.** differs from the other two species of the genus by being darker in color. Males are easily distinguished by the ventral abdominal surface uniformly colored, apical margin of segment X U-shaped and shape of the parameres which are scythe-like in dorsal view. Females have the gonocoxites 8 covering gonocoxites 9, posterior margins sinuous; laterotergites 9 clearly surpassing the band uniting dorsally the laterotergites 8.

Elanela kerzhneri Grazia & Silva, 2006

(Figs. 2c, 4)

Elanela kerzhneri Grazia & Silva, 2006: 159-160.

Material examined:

1 ♀, Brazil: Rondônia, Linea 10, 5 km S(outh) Caucalandia, ca 2 km W(est) of B-65, Rio Pardo. 5-17.x.1993. L.B. & C.W. O'Brien colls.

Female genitalia (Fig. 4b):

Ventral abdominal surface stramineous, with sparse punctuation on lateral thirds. Apical margin of segment VII uniformly concave (Fig. 4b). Spiracles present on laterotergites 8. Posterior margins of laterotergites 8 each with a short projection (Fig. 4b). Gonocoxites 8 almost rectangular, posterior margins straight, not covering gonocoxites 9 at middle; sutural margins parallel, slightly divergent only at sutural angles, with almost twice the length of laterotergites 9 (Fig. 4b). Laterotergites 9 lanceolate, just attaining the band uniting ventrally the laterotergites 8. Posterior margin of gonocoxites 9 uniformly convex (Fig. 4b).

		Males		Females	
		Mean ± standard deviation	Max–Min	Mean ± standard deviation	Max–Min
Total length		5.1 ± 0.26	5.3 – 4.8	5.9 ± 0.13	6.1 – 5.8
Abdominal width		3.3 ± 0.18	3.6 – 3.1	3.7 ± 0.08	3.8 – 3.6
Interocular distance		0.9 ± 0.04	0.9 – 0.8	0.9 ± 0.02	1.0 – 0.9
Head width		1.1 ± 0.07	1.2 – 1.1	1.2 ± 0.06	1.2 – 1.1
Head length		1.0 ± 0.07	1.1 – 0.9	0.9 ± 0.02	1.0 – 0.9
Antenal segments length	I	0.3 ± 0.02	0.3 – 0.3	0.3 ± 0.02	0.3 – 0.2
	II	0.7 ± 0.04	0.7 – 0.6	0.7 ± 0.10	0.8 – 0.6
	III	0.6 ± 0.06	0.7 – 0.6	0.7 ± 0.04	0.7 – 0.6
	IV	1.1 ± 0.03	1.1 – 1.1	1.2 ± 0.03	1.2 – 1.2
	V	1.2 ± 0.10	1.2 – 1.1	0.7 ± 0.76	1.4 – 1.2
Rostral segments length	RI	0.4 ± 0.03	0.4 – 0.4	0.5 ± 0.05	0.5 – 0.4
	RII	0.8 ± 0.04	0.8 – 0.8	0.8 ± 0.03	0.9 – 0.8
	RIII	0.5 ± 0.03	0.5 – 0.5	0.6 ± 0.03	0.6 – 0.5
	RIV	0.5 ± 0.01	0.5 – 0.4	0.5 ± 0.02	0.5 – 0.5
Pronotum length		1.3 ± 0.04	1.3 – 1.2	1.4 ± 0.04	1.4 – 1.3
Pronotum width		3.4 ± 0.08	3.5 – 3.3	3.7 ± 0.09	3.8 – 3.6
Scutellum length		2.2 ± 0.13	2.4 – 2.1	2.5 ± 0.07	2.6 – 2.4
Scutellum width		2.2 ± 0.13	2.3 – 2.0	2.4 ± 0.06	2.5 – 2.4
Corium width		2.9 ± 0.21	3.1 – 2.6	3.4 ± 0.02	3.4 – 3.4

TABLE 1. Measurements of *Elanela jordi* **sp. nov.** (Max = maximum measurement; Min = minimum measurement).

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