

Pentatomiana beckeræ gen. nov. and sp. nov., a new Neotropical Pentatomini (Hemiptera, Heteroptera, Pentatomidae) ¹

Jocélia Grazia ² & Aline Barcellos ³

¹ Contribution number 440 of Departamento de Zoologia, Universidade Federal do Rio Grande do Sul.

² Departamento de Zoologia, Universidade Federal do Rio Grande do Sul. Avenida Bento Gonçalves 9500, Prédio 43435.2, 91501-970 Porto Alegre, Rio Grande do Sul, Brasil. CNPq fellowship. E-mail: jocelia@ufrgs.br

³ Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul. Caixa Postal 1188, 90001-970 Porto Alegre, Rio Grande do Sul, Brasil. E-mail: alinebar@ig.com.br

ABSTRACT. A new genus, *Pentatomiana*, and a new species, *P. beckeræ*, are described, based on specimens from Rio de Janeiro and Santa Catarina States, Brazil. Brachyptery is present in the males of the new species. *Pentatomiana* **gen. nov.** is compared with *Lojus* McDonald, 1982, which also presents brachyptery in one of the species, but in females. Illustrations of male and female external genitalia are provided.

KEY WORDS. Brachyptery, genitalia, *Lojus*, Pentatominae, taxonomy.

RESUMO. Um novo gênero, *Pentatomiana*, e uma nova espécie, *P. beckeræ*, são descritos, com base em espécimes do Rio de Janeiro e de Santa Catarina, Brasil. Machos da nova espécie apresentam braquiptéria. *Pentatomiana* **gen. nov.** é comparado com *Lojus* McDonald, 1982, o qual também apresenta braquiptéria em uma das espécies, mas em fêmeas. São fornecidas ilustrações da genitália externa masculina e feminina.

PALAVRAS-CHAVE. Braquiptéria, genitália, *Lojus*, Pentatominae, taxonomia.

Brachyptery associated or not to ocelli reduction is rare within Pentatomidae, being generally related to particular habitats and habits. *Lojus* McDonald, 1982, with four species in Central America and Northwestern South America, is the only neotropical pentatomine in which brachyptery is reported. In *Lojus*, hind wings are absent and the female of *Lojus brettlizzorum* Thomas, 1997 is brachypterous, while the male has hemelytra fully developed; in this species, ocelli are lacking, being minute in the remaining species of the genus. According to THOMAS (1997), other pentatomids presenting brachyptery are the Old World species *Tahitocoris cheesmanae* Yang, 1935 (Podopinae) and *Hypsithocus hudsonae* Bergroth, 1927 (Pentatominae), and, in Neotropics, the discocephalines *Alathetus haitiensis* Rolston, 1982 and *Brachelytron angelicus* Ruckes, 1958. The exam of three specimens from Southeastern and Southern Brazil, in which, besides the minute ocelli, the two males present reduction of hemelytral membrane and absence of hind wings, has indicated the existence of a new genus and species of Pentatomini, herein described. The new genus is compared to *Lojus*, with which shares, besides brachyptery, other morphological characters.

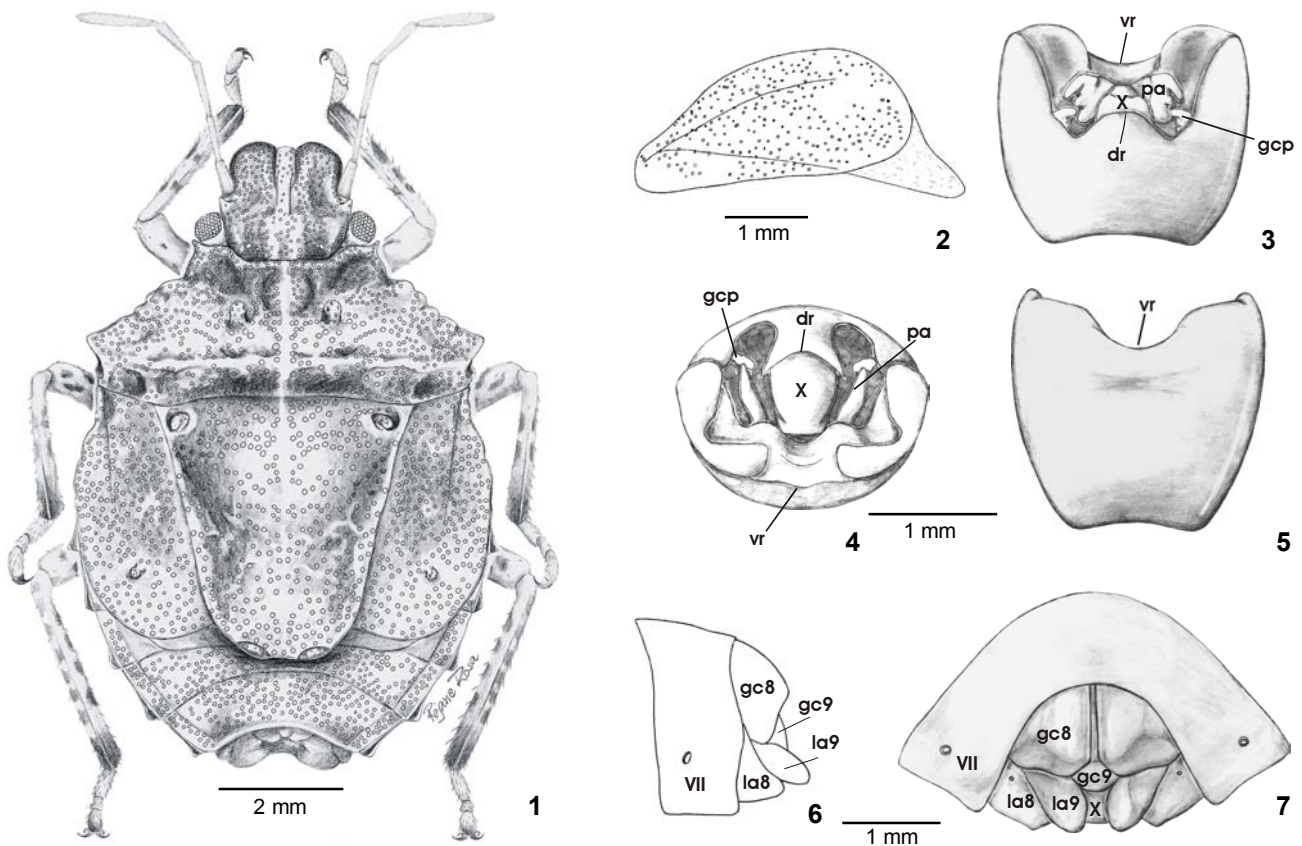
The specimens examined belong to the American Museum of Natural History (AMNH) and Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul

(MCNZ). The external genitalia of both sexes was illustrated by using stereomicroscope and drawing tube. Measurements are given in millimeters. The genitalia of both sexes were not dissected because a single female and a single male with pygophore were available. Nomenclature of genitalia followed DUPUIS (1970) and BARCELLOS & GRAZIA (1998).

Pentatomiana **gen. nov.**

Type species: *P. beckeræ* **sp. nov.**

Diagnosis. Medium size (9.7-11.2 mm), broad-oval outline. Dorsal surface strongly rugose. Head subquadangular; jugae slightly longer than clypeus, parallel, with rounded apex. Antennifer tubercle with a little spine at outer apical angle. First antennal segment not surpassing apex of head. Bucculae anteriorly truncated, lobed posteriorly; first rostral segment entirely lying between them. Eyes small, subpedunculate. Ocelli minute; distance between each ocellus and eye about one-eye length. Rostrum attaining base of fourth sternite. Pronotum transversally divided by a subcallosed carina. Apex of scutellum broad and rounded, reaching about half of sixth tergite. Ostiolar aperture rounded; peritreme obsolete; evaporatory area very reduced, occupying 1/3 to 1/4 of the distance between ostiolar and outer margin of metepisternum, and a small area ante-



Figures 1-7. *Pentatomiana beckeræ* sp. nov.: (1) holotype; (2) right hemelytron of male paratype; (3-5) pygophore, respectively dorsal, caudal and ventral views.; (6-7) genital plates, respectively lateral and ventral views. (dr) Dorsal rim, (gc8) gonocoxite 8, (gc9) gonocoxite 9, (gcp) genital cup process, (la8) laterotergite 8, (la9) laterotergite 9, (pa) paramere, (VII) seventh segment, (vr) ventral rim, (X) tenth segment. Figures 3-5 and 6-7 respectively, in same scale.

riorly to ostiolum, on mesepimeron. Mesosternum with median longitudinal carina, little elevated. Metasternum flat. Tibiae dorsally sulcate. Abdomen mutic. Tricobothria paired, on each side of an imaginary line across the middle of spiracles. Spiracles ovate.

Male genitalia. Pygophore subquadrangular, with posterolateral angles rounded. Genital cup processes present. Parameres well developed, bilobed.

Female genitalia. Genital plates perpendicular to longitudinal axis of body. Spiracles of laterotergites 8 present.

Comments. *Pentatomiana* gen. nov. shares several characters with *Lojus*: brachyptery, dorsal surface strongly rugose, minute ocelli, obsolete ostiolar peritreme, evaporatory area reduced, parameres bilobed and perpendicular position of female genital plates. These similarities suggest a close phylogenetic relationship between these two genera. A cladistic analysis including these genera and others with similar characters will be presented elsewhere. *Pentatomiana* gen. nov. can be easily distinguished from *Lojus* by the brachyptery occurring in

male specimens, less produced humeral angles, rounded ostiolar aperture and pronotum divided by a transversal carina.

Pentatomiana beckeræ sp. nov.

Figs 1-7

Etymology. In honor to Dr. Miriam Becker, for her contribution to the knowledge of Neotropical pentatomids.

Male (Fig. 1). Total length 9.69-9.85; abdominal width 6.35-6.68; head length 2.56, width 2.80-2.88; interocular distance 1.84-2.00; anteocular length 1.36-1.40; ocular width 0.48-0.56; antennal segments I - 0.62-0.70, II - 0.68-0.82, III - 0.95-1.01, IV - 1.05, V - lost; pronotal length 2.16-2.32, width 5.76-6.08; scutellum length 3.68-4.00, width 3.52-3.76.

General color castaneous, with dark-brown to black punctures. Head slightly wider than long; punctures densely distributed, except on 1 + 1 small elliptical areas, parallel and innerly to basal 2/3 of eyes. Antennal segments progressively longer toward apex. Ocelli reddish. Pronotum surface strongly rug-

ose. Pronotal disc with 1 + 1 conspicuous, conical tubercles, just behind cicatrices; basal fourth limited by a transversal, subcalosed, yellowish carina, extending along pronotal width. Longitudinally, a median, less conspicuous carina, evanescent toward the basal third of scutellum. Anterior margin excavated, rectilinear adjacent to interocular area, and strongly elevated toward eyes. Anterior angles acute, toothed. Anterolateral margins concave, with several tubercles; humeral angles moderately projected laterad. Posterior margin subrectilinear, slightly concave. Scutellum surface rugose, with 1 + 1 shallow foveae at basal angles and 1 + 1 inner, conical tubercles. Scutellar disc elevated in a Y-like, slightly tumid area; apical margin with 1 + 1 tubercles. Corium more densely punctured at clavus and along costal margin; a conical tubercle at apex of radius vein; apical angle of corium slightly convex. Brachypterous, membrane of hemelytra, in repose, reduced to a narrow fringe, not surpassing apex of scutellum; in unfolded wing, membrane narrowly projected at inner angle (Fig. 2); hind wings absent. Legs ocraceous, with dark-brown spots and punctures, larger on femora. Apical angles of connexivum obtusely produced. Abdomen ventrally yellowish-castaneous, with dark-castaneous to black punctures coarsely and irregularly distributed at laterals. Medially, a dark-castaneous, shiny area on sternites III to VII, with sparse punctures. Spiracles dark-castaneous to black.

Genitalia (Figs 3-5). Dorsal rim of pygophore (dr) strongly convex on median third. Genital cup (gcp) processes well visible, turned toward parameres (pa). X segment trapezoidal, apex strongly turned ventrad, with about half of base width. Parameres F-like, projections directed to genital cup process. Ventral rim (vr) concave at middle.

Female. Total length 11.19; abdominal width 7.85; head length 2.60, width 3.04; interocular distance 2.12; anteocular length 1.44; ocular width 0.56; antennal segments I – 0.74, II – 0.86, III – 0.97, IV – 1.13, V – 1.40; pronotal length 2.88, width 7.20; scutellar length 4.64, width 4.64.

General morphology as the male, except for: hemelytral membrane and hind wings fully-developed; membrane of hemelytra with a few veins forming one or two cells; shiny area of abdominal venter over median third of sternites III to anterior half of VI.

Genitalia (Figs 6-7). Posterior margin of gonocoxites 8 (gc8) slightly concave in front of laterotergites 9 (la9); sutural margins parallel; sutural angles divergent. Laterotergites 8 (la8) with acute apex. Laterotergites 9 rounded at apex, a little longer than laterotergites 8, surpassing transversal band linking them dorsally.

Distribution: Brazil (Rio de Janeiro, Santa Catarina).

Type material. Holotype male: BRAZIL, *Rio de Janeiro*: Rio de Janeiro (Corcovado), 1954, Zajciv leg. (MCNZ). Paratypes: BRAZIL, *Santa Catarina*: Seara (Nova Teutônia, 27°11'S 52°23' W, 3-500 m), 27.X.1948, Fritz Plaumann leg., 1 male (without pygophore); São Bento do Sul (Rio Natal), II-1945, A. Maller leg., Collection Frank Johnson, 1 female (AMNH).

ACKNOWLEDGMENTS

To the curators of collections, for the loans. To Rejane Rosa, for drawing the dorsal aspect of *P. beckeræ* sp. nov. To CNPq, for financial support (proc. 300570/00-7).

REFERENCES

- BARCELLOS, A. & J. GRAZIA. 1998. Sobre os gêneros *Curatia* e *Copeocoris* (Heteroptera, Pentatomidae, Pentatomini). *Iheringia, Série Zoologia*, Porto Alegre, (85): 27-46.
- DUPUIS, C. 1970. Heteroptera, p. 190-208. In: S.L. TUXEN (Ed.). *Taxonomist's glossary of genitalia of insects*. Copenhagen, Munksgaard, 284p.
- THOMAS, D.B. 1997. The anocellate, flightless genus *Lojus* McDonald (Heteroptera: Pentatomidae). *Annals of the Entomological Society of America*, Washington, 90 (5): 569-574.