A new species of *Lachesilla* in the *pedicularia* group and new records of Psocoptera (Insecta: Psocodea) from Paraguay

Una especie nueva de *Lachesilla* en el grupo *pedicularia* y nuevos registros de Psocoptera (Insecta: Psocodea) de Paraguay

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**Abstract.** A new species of *Lachesilla* in the *pedicularia* group is here described and illustrated. It belongs in an assemblage of species occurring in South America and southern Mexico. The types are deposited in the National Insect Collection (CNIN), Instituto de Biología, UNAM. Records of 9 species of Psocoptera, in 4 genera previously unknown in Paraguay are presented.

Key words: taxonomy, Neotropics, South America, San Bernardino.

**Resumen.** Se describe e ilustra una especie nueva de *Lachesilla* en el grupo de especies *pedicularia*. Pertenece a un conjunto de especies sudamericanas y del sureste de México. Los tipos están depositados en la Colección Nacional de Insectos (CNIN), Instituto de Biología, UNAM. Se presentan 9 registros nuevos de especies de Psocoptera en 4 géneros para Paraguay.

Palabras clave: taxonomía, neotrópico, Sur América, San Bernardino.

**Introduction**

Lienhard and Smithers (2002) listed 19 species of Psocoptera from Paraguay (http://www.ville-ge.ch/mhng/psocoptera/page/ps05par.htm). Twelve of these species were collected by K. Fiebrig in June and August, 1906; July, 1906; and July, 1907 in San Bernardino, on the east margin of Ypacaraí Lake. The specimens collected were made available to Günther Enderlein, leading authority in the taxonomy of the Psocoptera at that time who, in 1910 (a and b), described the genera *Pelmatocoria* (now *Steleops*), *Steleops*, *Lichenomima*, *Phlotodes* (now *Myopsocus*), *Rhaptonere* (now *Myopsocus*), *Euipocania*, *Labocoria* (now *Mesopsocus*), *Colpoeopsis* (now *Syllysis*), *Notolepium*, and *Trigonosceliscus* (now *Embidopsocus*), and described 12 species in the above genera, excluding *Phlotodes* and *Labocoria*, and in the genera *Amphigerontia* (the species described was later transferred to *Metylophorus*), *Clematostigma*, *Caecilius* (now *Valenzuela*), and *Echmepteryx*. Since 1906, almost no psocid collecting was done in the country, and only seven species were added to those described by Enderlein; so the psocid fauna of Paraguay, neighbor to the highly species rich Bolivia, Brazil and Argentina, must be extremely underestimated. In July, 2013, I collected Psocoptera in San Bernardino and neighboring areas, totalling 20 man/hours of collecting effort; some of the results are presented herewith. A new species of *Lachesilla* in the *pedicularia* group is described, and new records for the Paraguayan fauna are presented.

**Materials and methods**

For purposes of this work, 65 specimens were studied; they belong to 4 genera and 10 species previously unrecorded in Paraguay. The 2 specimens of *Lachesilla* here described were dissected in 80% ethanol, and their parts (head, right wings and legs and genitalia) were mounted on slides in Canada balsam. Color was recorded by placing the whole specimens, before dissection, under a stereoscopic microscope, illuminated with cold, white light, and observed at 40-50X. Parts on the slides were measured with a filar micrometer mounted on an optic microscope. Abbreviations of parts measured are the following: FW and HW: lengths of right fore- and hind- wings, F, T, t₁ and t₂: lengths of femur, tibia and tarsomeres 1 and 2 of right hind leg, ctt₁: number of ctenidia on t₁, Mx4: length
of fourth segment of right maxillary palp, f₁, f₂: length of flagellomeres 1.n of right antenna, IO, D and d: minimum distance between compound eyes, antero-posterior diameter and transverse diameter of right compound eye, respectively, in dorsal view of head, PO: d/D. The types and other specimens studied are deposited in the National Insect Collection (CNNI), Departamento de Zoología, Instituto de Biología, UNAM, México, D. F.

Description

*Lachesilla lugoi* García-Aldrete, n. sp. Female (Figs. 1-5)

**Diagnosis.** Belonging in the *pedicularia* species group (García-Aldrete, 1974; Mockford, 1993). Differing from *L. brasiliensis* García-Aldrete, *L. carioca* García-Aldrete, *L. iguazuensis* García-Aldrete, and *L. veneper* García-Aldrete in the shape of the projection of the subgenital plate, in the pigmented area of the subgenital plate, and in the shape of the gonapophyses and pigmentation of the ninth sternum.

**Color** (in 80% ethanol). Body reddish brown. Compound eyes black, ocelli hyaline, with ochre centripetal crescents. Maxillary palps brown. Wings almost hyaline, with a reddish brown hue; R₁ reddish, other veins brown. Legs pale brown. Abdomen creamy, with ochre, transverse subcuticular bands.

**Morphology.** Forewing pterostigma almost rectangular, wider posteriorly; veins Rs and M diverging from a point or fused for a short distance; areola postica broadly triangular, wide based, with apex rounded; hindwing with Rs-M fused for a distance (Fig. 1). Subgenital plate broad, with setae as illustrated, projected posteriorly, with posterior border slightly obtusely concave; pigmented area concave anteriorly (Fig. 5). Gonapophyses elongate, directed posteriorly; ninth sternum wide, with posterior pigmented area, anterior border of pigmented area concave; anterior half unpigmented, spermapore rounded, with slender rim (Fig. 3). Paraprocts semi-elliptic, with setae as illustrated; sensory fields with 10 trichobothria issuing from basal rosettes, and one marginal trichobothrium without basal rosette (Fig. 2). Epiproct (Fig. 2) straight anteriorly, broadly triangular, posteriorly rounded, with setal field on distal third.


**Taxonomic summary**

**Distribution.** Paraguay.


**Etymology.** This species is dedicated to Mr. Isaielino Lugo, from Asunción, Paraguay, for his valuable help and logistic support in the San Bernardino area, that facilitated in much my psocid collecting there, and above all, for his friendship.

**Remarks.** *L. lugoi* sp. n., belongs in a complex of South American species in which the female subgenital plate, gonapophyses and ninth sternum are built on the same plan. An undescribed species, from the state of Chiapas, in southern Mexico, also belongs in that complex. The described species included are *L. brasiliensis* García-Aldrete and *L. carioca* García-Aldrete, from Brazil, *L. iguazuensis* García-Aldrete, from Argentina, and *L. veneper* García-Aldrete, from Venezuela and Peru. The females in this complex differ in the shape of the projection of the subgenital plate, in the pigmented area of the subgenital plate, and in the shape of the gonapophyses and pigmentation of the ninth sternum. In the males of *L. iguazuensis* and *L. veneper* the epiproct has two projections, short in the former and very long in the latter, so it may be predicted that in *L. lugoi* sp. n., *L. brasiliensis* and *L. carioca*, as well as in

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**Figures 1-5.** *Lachesilla lugoi* n. sp. Female. 1, fore- and hind-wings; 2, right paraproct and epiproct; 3, gonapophyses and ninth sternum; 4, front view of head; 5, subgenital plate. Scales in mm. Figures 2 and 5, to scale of Figure 3.
the undescribed Mexican species, the male epiprocts have similar projections.

New records of Pscoptera for Paraguay
Stenopsocidae

*Graphopsocus cruciatus* (Linnaeus)

**Hemerobius cruciatus** Linnaeus, 1768: 225.

Cordillera, San Bernardino, 25.VII.2013, beating branches of shrubs and trees, 1 female.

*Remarks.* In South America this species has been recorded in Argentina, Brazil and Colombia (Lienhard and Smithers, 2002; personal information).

*Lachesillidae*


Cordillera, ca. Caacupé, I. Lugo’s home, 24.VII.2013, beating cut branches with dead leaves, 1 male; San Bernardino, 25.VII.2013, beating cut branches with dead leaves, 1 male.

*Remarks.* This species is widely distributed, extending from southern Mexico to Argentina, it belongs in the *forcepeta* species group (García-Aldrete, 1974; Mockford, 1993). In South America it has been recorded in Trinidad, Brazil, Colombia and Argentina (Lienhard and Smithers, 2002; García-Aldrete, 2004; 2009; García-Aldrete and Mockford, 2009; González et al., 2013).


Cordillera, Ca. Tobátí, 24.VII.2013, beating cut tree branches with dead leaves, 2 females, 2 males; ca. Tobátí, 24.VII.2013, beating cut tree branches with dead leaves, 3 females, 3 males; San Bernardino, 25.VII.2013, on dead leaves of cut tree branches, 7 females, 7 males.

*Remarks.* This species was only known from Campo Grande, Mato Grosso, Brazil (García-Aldrete, 1997). It belongs in the *andrêa* species group (García-Aldrete, 1982; Mockford, 1993).


Cordillera, ca. Hotel Ruta del Sol, 8 km N San Bernardino, 23.VII.2013, beating shrubs and tree branches with dead leaves, 2 females, 2 males; ca. Tobátí, 24.VII.2013, beating cut tree branches with dead leaves, 3 females, 3 males; ca. Caacupé, 24.VII.2013, I. Lugo’s home, beating cut tree branches with dead leaves, 3 females, 3 males; San Bernardino, 25.VII.2013, on dead leaves of cut tree branches, 7 females, 7 males.

*Remarks.* This species is known from Argentina, Brazil, Colombia, Peru and Trinidad (García-Aldrete, 1996; 2004; González et al., 2013). It belongs in the *forcepeta* species group.

*Lacesilla tectorum* Badonnel 1931: 238.

Cordillera, ca. Hotel Ruta del Sol, 8 km N San Bernardino, 23.VII.2013, beating shrubs and tree branches with dead leaves, 3 females.

*Remarks.* This species is widely distributed (see García-Aldrete, 1996; Lienhard and Smithers, 2002). In South America it has been recorded in Argentina, Colombia and Brazil (García-Aldrete, 1996; 2009). It belongs in the pedicularia species group (García-Aldrete, 1974; Mockford, 1993).

Ectopsocidae

*Ectopsocopsis cryptomeriae* (Enderlein) 1907: 100.
Cordillera, ca. Hotel Ruta del Sol, 8 km N San Bernardino, 23.VII.2013, beating shrubs and tree branches with dead leaves, 8 females, 3 males; San Bernardino, 25.VII.2013, 1 female, 1 male.

Remarks. This is a widely distributed species (Lienhard and Smithers, 2002). In South America it is known in Argentina, Brazil and Colombia (García-Aldrete, 2009; García-Aldrete and Mockford, 2009).

Pseudocaeciliidae

Pseudocaecilius citricola (Ashmead)

Psocus citricola Ashmead, 1879: 228.

Cordillera, ca. Tobati, 24.VII.2013, beating shrubs branches, 2 females; San Bernardino, 25.VII.2013, 2 females.

Remarks. A pantropical species, known in South America in Colombia, Ecuador, French Guiana and Venezuela (Lienhard and Smithers, 2002).

Discussion

Little psocid collecting has been conducted in Paraguay since 1906. As a result, the checklist of Psocoptera for the country is rather small, consisting of 29 species, including the 10 species dealt with in this work (see online checklist of Psocoptera for Paraguay, based on Lienhard and Smithers, 2002: http://www.ville-ge.ch/mhng/psocoptera/page/ps05par.htm). Six species seem to be endemic to Paraguay: Notoleptium paraguayense Enderlein, Echmepteryx armillata Enderlein, Syllysis sinipennis (Enderlein), Lachesilla lugoi Garcia-Aldrete, Clematostigma paraguayense Enderlein, and Myopsocus dispar (Enderlein). The other 23 species are also known in other South American countries (Lienhard and Smithers, 2002).

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Literature cited


