



## A NEW *LACHESILLA* FROM THE BOLIVIAN CHIQUITANIA, IN SPECIES GROUP *RIEGELI* (PSOCODEA: PSOCOMORPHA: LACHESILLIDAE)

### NUEVA ESPECIE DE *LACHESILLA* DE LA CHIQUITANIA BOLIVIANA, EN EL GRUPO DE ESPECIES *RIEGELI* (PSOCODEA: PSOCOMORPHA: LACHESILLIDAE)

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**ABSTRACT.** A species of *Lachesilla* in species group *Riegeli*, from the Bolivian Chiquitania, is here described and illustrated. It is the first species in that group to be recorded in Bolivia. It is close to *L. paulista* García Aldrete, from Argentina and Brazil. An identification key to the males of the species in group *Riegeli* is included.

**Key words:** Taxonomy, neotropics, South America.

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**RESUMEN.** Se describe e ilustra una especie de *Lachesilla*, en el grupo de especies *Riegeli*, de la Chiquitania Boliviana. Es la primera especie de ese grupo que se registra en Bolivia. Es cercana a *L. paulista* García Aldrete, de Argentina y Brasil. Se incluye una clave de identificación para los machos de las especies en el grupo *Riegeli*.

**Palabras clave:** Taxonomía, neotrópico, Sud América.

## INTRODUCTION

Species group *Riegeli*, of the genus *Lachesilla*, diagnosed by García-Aldrete (1974, 1982), and by Mockford (1993), is predominantly Neotropical, with three species occurring in the United States, one species occurring in the Galapagos Islands, and three species occurring in the Greater Antilles. It presently includes ten species, five of which have been recorded in South America.

I recently found, in the Bolivian Chiquitania (Eastern Department of Santa Cruz), two males of *Lachesilla* that represent an undescribed species in species group *Riegeli*, constituting the first record of that group in Bolivia. The purpose of this paper is to describe that species, establish its affinities, and present an identification key to the species in the group.

## MATERIAL AND METHODS

Two males were available for study, they were dissected in 80% ethanol, and their parts (head, right wings and legs and genitalia) were mounted in Canada balsam on slides.

Standard measurements were taken on parts on the slides, utilizing a filar micrometer, with a measuring unit of 136 microns for wings and 53 microns for other parts. Abbreviations of parts measured are as follows: FW, HW: lengths of right fore- and hind- wings, F, T, t1 and t2: lengths of femur, tibia and tarsomeres 1 and 2 of right hindleg, Mx4: length of fourth segment of right maxillary palpus, ctt1: number of ctenidobothria on t1, fl...fn: lengths of flagellomeres 1...n of right antenna, IO, D and d respectively: minimum distance between compound eyes, antero-posterior diameter and transverse diameter of right compound eye, all in dorsal view of head, PO: d/D.

The types are deposited in the National Insect Collection (CNIN), Departamento de Zoología, Instituto de Biología, Universidad Nacional Autónoma de México, in Mexico City.

## TAXONOMY

The males of *Lachesilla* in species group *Riegeli* are diagnosed as follows: Hypandrium one or two segmented.



Clasper bases relatively slender, located on the sides of the hypandrium. Claspers single- or double- shafted, the shafts outcurved and distally pointed. Phallosome of single apodeme, dividing either before its middle, immediately beyond its middle, or near distal end, each branch producing an expanded area distally, joined to an outcurved pointed process of variable length. Paraprocts of two pieces, the proximal one bearing a sensory field, and the distal one bearing a mesal, hook tipped prong. Epiproct transverse, with single median, posteriorly directed process (García-Aldrete, 1974, 1982; Mockford, 1993).

***Lachesilla chiquitana* n. sp.** Male

(Figs 1-4)

**Diagnosis.** It is the only species in species group *Riegeli*, in which the distal processes of the phallosome are of two arms, a short, distally rounded inner arm, and an elongate, distally pointed outer arm.

**Color** (in 80% ethanol). Body reddish brown. Compound eyes black, ocelli hyaline, without pigmented centripetal crescents. Maxillary palps dark brown. Antennae and legs pale brown. Wings almost hyaline, with a reddish brown hue. Veins reddish brown. Abdomen pale brown, with reddish brown subcuticular semi-rings on tergum and sides. Hypandrium and proximal halves of claspers reddish brown.

**Morphology.** Forewing Rs-M joined by a crossvein or fused for a distance. Pterostigma almost rectangular, wider distally; areola postica wide, apically rounded (Fig. 1). Hypandrium (Fig. 3) narrow, wider on sides, with postero-lateral corners slightly protruding. Phallosome (Fig. 3) with branches diverging about in the middle, each branch joined distally to a process of two arms, the inner one short, rounded distally, and the outer arm long, outcurved, distally pointed, bearing a field of microspines on distal half. Claspers on sides of hypandrium, proximal halves slender, elongate, each bearing mesally a directed outwards prong; distal halves outcurved, distally pointed, wider mesally (Fig. 3). Paraprocts (Fig. 4) with proximal half strongly sclerotized, sensory fields circular, with ten trichobothria on basal rosettes, and a marginal trichobothrium without basal rosette, distal half also sclerotized, bearing a long mesal prong. Epiproct wide (Fig. 4), with setae as illustrated, posterior process short, glabrous, distally truncate.

**Measurements** (in µm). FW: 1958, HW: 1509, F: 379, T: 708, t1: 226, t2: 89, ctt1: 17, Mx4: 85, f1: 201, f2: 177, f3: 159, f4: 128, f5: 94, IO: 289, D: 201, d: 130, IO/d: 2.22, PO: 0.64.

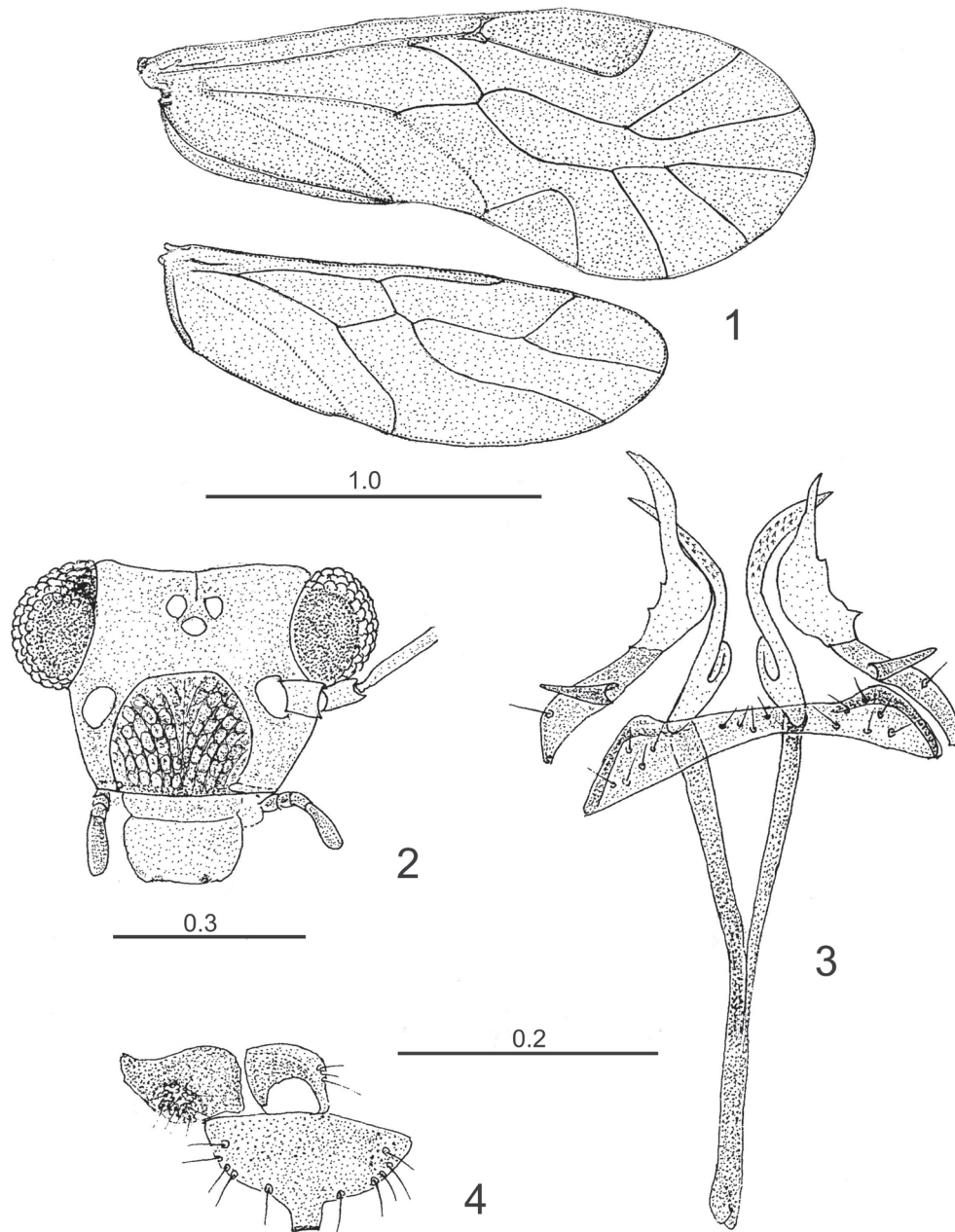
**Material studied.** Holotype male. BOLIVIA. Santa Cruz. 47 km N of San José Chiquitos, 323m., 17°24'11"S: 60°40'34"W, 23.I.2016, on dead leaves of cut down trees, A. N. García Aldrete. Paratype male. BOLIVIA. Santa Cruz. 43 km S of San Rafael, 331m., 17°07'34"S: 60°34'39" W, on dead leaves of shrubs, same date and collector as the holotype.

**Etymology.** The specific name refers to the area of origin of this species: the Chiquitania, in the Department of Santa Cruz, Bolivia.

**Key to the males of *Lachesilla* in species group *Riegeli***

(*L. matogrossensis* García-Aldrete (Brazil), *L. sola* García-Aldrete (Jamaica), and *L. ultima* García-Aldrete (Florida, USA) are not included as the males are unknown).

1. Phallosome a stout rod, slightly divided near distal end. . . . . 2
  - Phallosome proximally fused, divided before or beyond its middle. . . . . 3
  - 2. Distal halves of claspers basally dilated, straight, posteriorly directed, with the apices bent outwards. Processes of the phallosome medium sized, almost straight (cf. García-Aldrete, 1982, Fig. 17) . . . . . *L. riegeli* Sommerman (Colombia, Cuba, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, USA)
    - Distal halves of claspers not as above, outcurved. Processes of the phallosome long, slender and outcurved (cf. García-Aldrete, 1982, Fig. 34) . . . . . *L. tropica* García-Aldrete (Guatemala, Honduras, Jamaica, Mexico, USA)
  - 3. Proximal halves of claspers without processes. . . . . 4
    - Proximal halves of claspers with mesal, pointed process directed outwards . . . . . 5
    - 4. Proximal halves of claspers very slender. Distal halves of claspers basally wide, outcurved, narrowing distally, acuminate. Processes of phallosome branches very wide proximally, curved, directed inwards (cf. García Aldrete, 1997, Fig. 16). . . . . *L. guayaquilensis* García-Aldrete (Ecuador)
      - Proximal halves of claspers not as slender as above. Distal halves of claspers not as above, directed posteriorly, only slightly turned out distally. Processes of phallosome branches smaller than above, not as wide proximally as above, curved and directed inwards (cf. Thornton & Woo, 1973, Fig. 52). . . . . *L. castroi* Thornton & Woo (Galapagos Islands)
    - 5. Distal halves of claspers unbranched. Processes of



Figures 1-4. *Lachesilla chiquitana* García-Aldrete. Male. 1. Fore- and hind- wings. 2. Front view of head. 3. Hypandrium, phallosome and claspers. 4. Left paraproct and epiproct. Scales in mm. Figures 3 and 4 to common scale.

phallosome bearing a field of microspines . . . . . 6  
 -. Distal halves of claspers branched. Processes of phallosome glabrous . . . . . 7  
 6. Processes of phallosome simple. Median process of epiproct obtusely convex posteriorly (cf. García-Aldrete, 1982, Figs. 11, 12. . . . . *L. paulista* García-Aldrete (Argentina, Brazil)  
 -. Processes of phallosome of two arms (Fig. 3). Me-

dian process of epiproct straight posteriorly (Fig. 4) . . . . . *L. chiquitana* n. sp. (Bolivia)  
 7. Process of proximal half of claspers shortest, most curved process directed posteriorly, distally bent outwards. Outer branch of distal half of claspers arising near clasper base (cf. García-Aldrete, 1982, Fig. 6) . . . . . *L. cuna* García Aldrete (Panama)  
 -. Process of proximal half of claspers directed outwards,

straight. Outer branch of distal half of claspers arising near clasper tip (cf. García Aldrete & Silva Neto, 2014, Fig. 3). *L. cladoclaspers* García Aldrete & Silva Neto (Brazil)

## DISCUSSION

*L. chiquitana* is the first species of species group *Riegeli* to be recorded in Bolivia; other species of *Lachesilla* recorded in Bolivia are *L. ariasi* García Aldrete, and *L. falcata* García -Aldrete, in species group *Forcepeta*, and *L. badonneli* Williner, in species group *Pedicularia*. *L. chiquitana* is closest to *L. paulista* García -Aldrete, from Argentina and Brazil, with which it shares having a pointed process directed outwards, mesally in the proximal half of the claspers, and in having a field of microspines in the processes of the phallosome; it differs from it in having the processes of the phallosome of two arms, a short, rounded inner one, and a long, curved, acuminate outer arm, that bears a field of microspines.

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