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A pair of new sister species of *Lachesilla* in species group *Corona* (Psocodea: 'Psocoptera': Lachesillidae), from Mexico

Un par de especies hermanas de *Lachesilla* en el grupo de especies *Corona* (Psocodea: 'Psocoptera': Lachesillidae), de México

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ABSTRACT

Two sister species of *Lachesilla*, in the *Corona* species group, are here described and illustrated. They have the female subgenital plate projected posteriorly, instead of having a mesal flap. They are known only from females, and they are from neotropical Mexico.

Key words: Taxonomy, neotropics, Lachesillidae, species group *Corona*.

RESUMEN

Se describen e ilustran, dos especies hermanas de *Lachesilla*, en el grupo de especies *Corona*. Ambas tienen la placa subgenital de la hembra proyectada posteriormente, en lugar de tener una lengüeta mesial, como el resto de las especies del grupo. Se conoce solo el sexo hembra, y se han encontrado en localidades del México neotropical.

Palabras clave: Taxonomía, neotrópico, Lachesillidae, grupo de especies *Corona*.

The female subgenital plate in most of the species in species group *Corona* (see García Aldrete, 1974; Mockford, 1993), has mesally either a slender, elongate projection, or a variously shaped, posteriorly rounded flap. Upon examination of 79 species in the *Corona* species group on hand (22 described, 57 undescribed), I found a pair of related species, in which the female subgenital plate does not have a flap, but instead, it is posteriorly projected in the middle, to form a short, broad extension, analogous to the flap. García Aldrete & Mockford (2011), on the basis of morphology of the males, noted the close proximity of species groups *Corona* and *Sclera*, and pointed that a major difference between the two groups is that females of most species of group *Corona* have a median, ventral flap on the subgenital plate, while in females of group *Sclera*, the subgenital plate is projected posteriorly. The two species dealt with in this paper, although having the subgenital plate projected, are assigned in group *Corona*, because the projection is clearly different from that of females in group *Sclera*, and the gonapophyses and ninth sternum are more related to those of females in group *Corona*; the fact that, in the absence of females, males can not be assigned unequivocally to groups *Corona* or *Sclera*, opens the possibility for a potential fusion of the two groups, with an augmented diagnosis for the new group. The purpose of this work is to describe and illustrate the two species referred to above.

MATERIAL AND METHODS

The two species here dealt with, are represented by females only. Seven specimens were available for study; six of them were dissected in 80% ethanol, and their parts were mounted on slides in Canada balsam. Standard measurements were taken on parts on the slides with a filar micrometer; the illustrations were made

utilizing a drawing tube. Abbreviations of parts measured are the following: 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 hind leg, ctt1: number of ctenidobothria on t1, fl...fn: lengths of flagellomeres 1..n of right antenna, IO, D and d: minimum distance between compound eyes, antero-posterior and transverse diameter, respectively of right compound eye, in dorsal view of head, Mx4: length of fourth palpomere of right maxillary palpus, PO: d/D. The location of the types is indicated in each description.

RESULTS

Family Lachesillidae

Lachesilla zuninoi García Aldrete, Female
(Figs. 1-4)

Diagnosis. Belonging in species group *Corona*. Posterior projection of the subgenital plate distally rounded. Gonapophyses proximally wide, distally slender, apically blunt, directed posteriorly. Bearing a membranous flap mesally on the ninth sternum, deeply concave anteriorly.

Description. Color (41 years in 80% ethanol). Body pale reddish brown. Compound eyes black, ocelli hyaline, without pigmented centripetal crescents. Antennae and legs pale brown, maxillary palps dark brown. Wings hyaline, with a slight orange hue, R1 (lower border of pterostigma) strongly pigmented. Abdomen whitish, with dark brown, subcuticular transverse rings, less pigmented ventrally.

Morphology. As in diagnosis, plus the following: Epicranial sulcus well defined, forewing pterostigma wider distally, Rs-M joined for a small distance, areola postica broadly triangular, apically rounded (Fig. 1). Subgenital plate (Fig. 2), with pigmented area deeply cleft anteriorly, posterior projection distally

hyaline. Gonapophyses (Fig. 3) wide based, directed posteriorly, with a pigmented band proximally along outer edge and next to clunial end. Ninth sternum (Fig. 3), with spermapore located approximately in the center of it. Paraprocts (Fig. 4) semicircular, setae as illustrated, sensory fields with 12-13 trichobothria in basal rosettes, and a marginal trichobothrium without basal rosette. Epiproct (Fig. 4), slightly concave anteriorly, rounded posteriorly, bearing a field of setae on distal half.

Measurements (in μm). FW: 1847, HW: 1504, F: 435, T: 819, t1: 293, t2: 113, ctt1: 18, f1: 258, f2: 235, f3: 183, f4: 135, Mx4: 107, IO: 331, D: 165, d: 98, IO/D: 3.37, PO: 0.29.

Type material. MÉXICO. Hidalgo. 1 km N Chapulhuacán, Hwy. 85, 21°09'45.91"N: 98°54'12.30"W, 898 m., 24.II.1973, on dead fronds of banana tree, holotype female, A. N. García Aldrete. Holotype deposited in the Colección Nacional de Insectos (CNIN), Departamento de Zoología, Instituto de Biología, Universidad Nacional Autónoma de México, México, D. F., México.

Records. MEXICO. Veracruz. 15 km E Orizaba, Rd. 150, 18°51'11.96"N: 97°02'44.46"W, 1085 m., 7.VII.1962, 1 female, E. L. Mockford, F. Hill & J. M. Campbell. 21 km N Casitas, Rd. 180, 19°18'20.26"N, 96°17'53.57"W, 10 m., 21.VI.1966, beating vegetation, 1 female, E. L. Mockford.

Etymology. It is a pleasure to dedicate this species to Dr. Mario Zunino (Urbino University, Italy), as a recognition to his many and foundational studies on the taxonomy of the Scarabaeoidea, particularly on *Ontophagus* and Geotrupinae; it is also a tribute to his important contributions to the science of biogeography.

Comment. I referred previously to this species as *L. sp. C-28* (García Aldrete, 1974)

Lachesilla zuninooides García Aldrete, Female
(Figs. 5-9)

Diagnosis. Belonging in species group *Corona*. Differing from *L. zuninoi* in having the posterior projection of the subgenital plate slightly concave distally, in having shorter and stouter gonapophyses, in having the ninth sternum anteriorly straight, lacking a membranous flap anterior to the spermapore, and in having two strongly pigmented areas mesally on the ninth sternum, next to the anterior border.

Description. Color (40 years in 80% ethanol). Body dark reddish brown. Compound eyes black, ocelli hyaline, with dark brown centripetal crescents. Antennae and legs pale brown, maxillary palps dark reddish brown. Wings almost hyaline, with an orange hue, veins reddish brown. Abdomen whitish, with ochre, transverse subcuticular rings, less pigmented ventrally.

Morphology. As in diagnosis, plus the following: forewing pterostigma elongate, wider distally, Rs-M joined for a distance, areola postica triangular, with apex rounded (Fig. 5). Subgenital plate (Fig. 6), broad, setose, posterior projection distally hyaline. Gonapophyses (Fig. 9), directed posteriorly, joined basally to ventral ends of clunium, proximally with a sclerotized band along outer border. Ninth sternum (Fig. 9), with spermapore centrally located. Paraprocts (Fig. 8) semicircular, setae as illustrated, sensory fields with 12 trichobothria in basal rosettes, and one marginal trichobothrium without basal rosette. Epiproct (Fig. 8), trapeziform, with setal field on distal third.

Measurements (in μm). FW: 2312, HW: 1817, F: 496, T: 986, t1: 352, t2: 126, ctt1: 19, f1: 284, f2: 251, f3: 206, f4: 150, Mx4: 111, IO: 354, D: 184, d: 106, IO/d: 3.33, PO: 0.57.

Type material. MEXICO. Guerrero. 5 km W Carrizal de Bravos, road from Milpillas to Atoyac de Alvarez, 17°37'43.91"N: 99°50'19.40"W, 2088 m., 3.II.1974, on dead leaves of fallen oak, holotype female, 1 paratype female, A. N. García Aldrete. Deposited in the National Insect Collection (CNIN), Department of Zoology, Instituto de Biología, Universidad Nacional Autónoma de México, México D.F., México.

Records. MEXICO. Hidalgo. 15 km S Jacala, Hwy. 85, 20°56'42.6"N: 99°12'40.6" W, 1873 m., 29.VI.2014, on dead leaves of herbaceous plant, 1 female, A. N. García Aldrete & J. A. Casasola. Michoacán. 24 km E Ciudad Hidalgo, Hwy. 15, 19°41'39.68"N: 100°24'38.94"W, 2450 m., 22.VII.1963, beating *Yucca* sp. 1 female, E. L. Mockford & F. Hill. Oaxaca. Sierra Juárez, 3 km NE Ixtlán de Juárez, Rancho Teja, 17°20'35.45"N: 96°28'54.55"W, 2290 m., on dead shrub branches, 1 female, J. A. Casasola.

Etymology. The specific name refers to the similarity of this species with *L. zuninoi*.

DISCUSSION

The two sister species here described, present the following synapomorphies: subgenital plate projected posteriorly in the middle, gonapophyses joined proximally to the ventral ends of the clunium, having a proximal sclerotized band on outer edge and along base. They differ mostly in the shape of the gonapophyses and in the ninth sternum. All the localities where the two species were found are neotropical. The fact that only females have been found, does not rule out the possibility that these species may actually be sexual.

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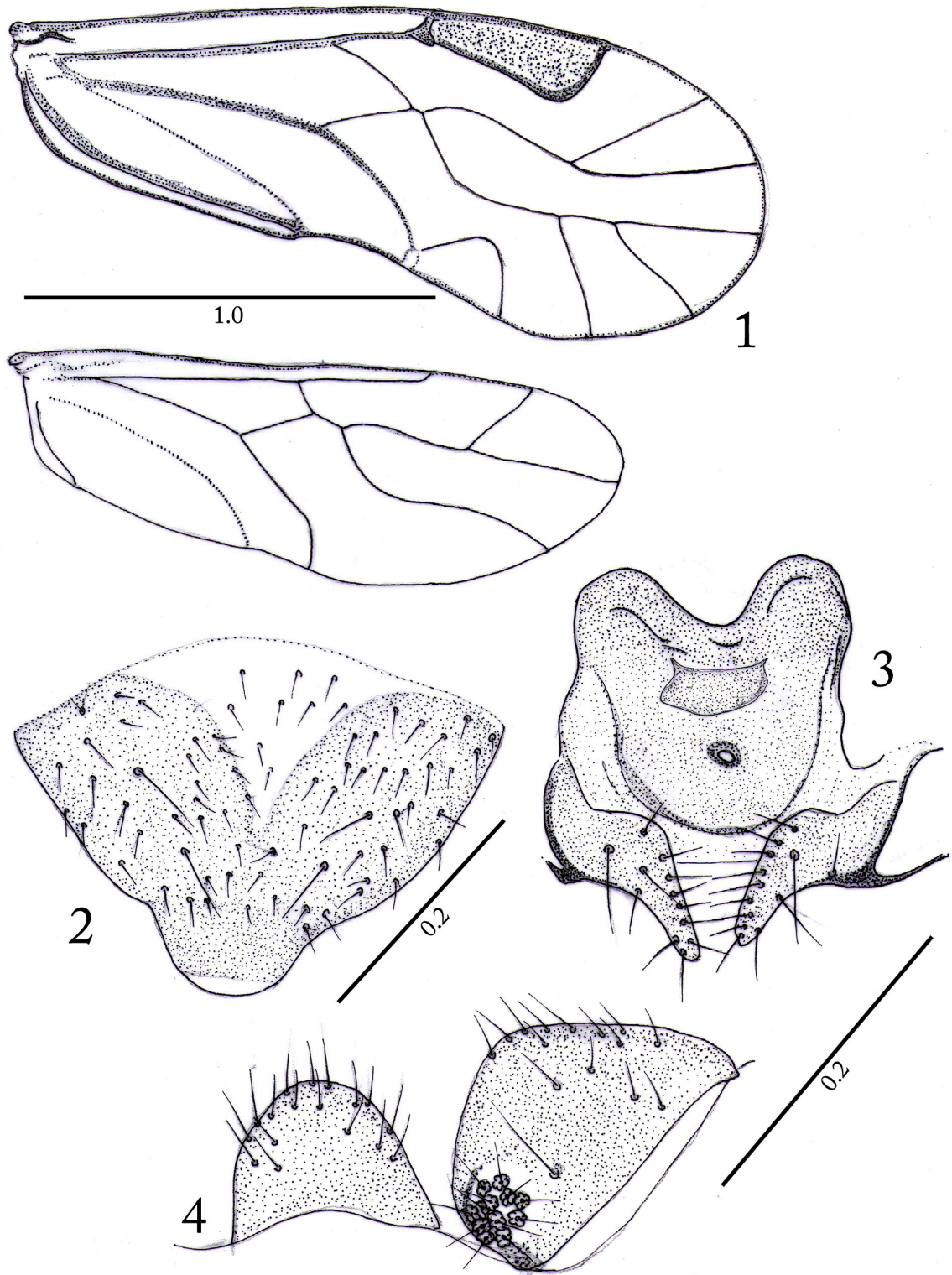
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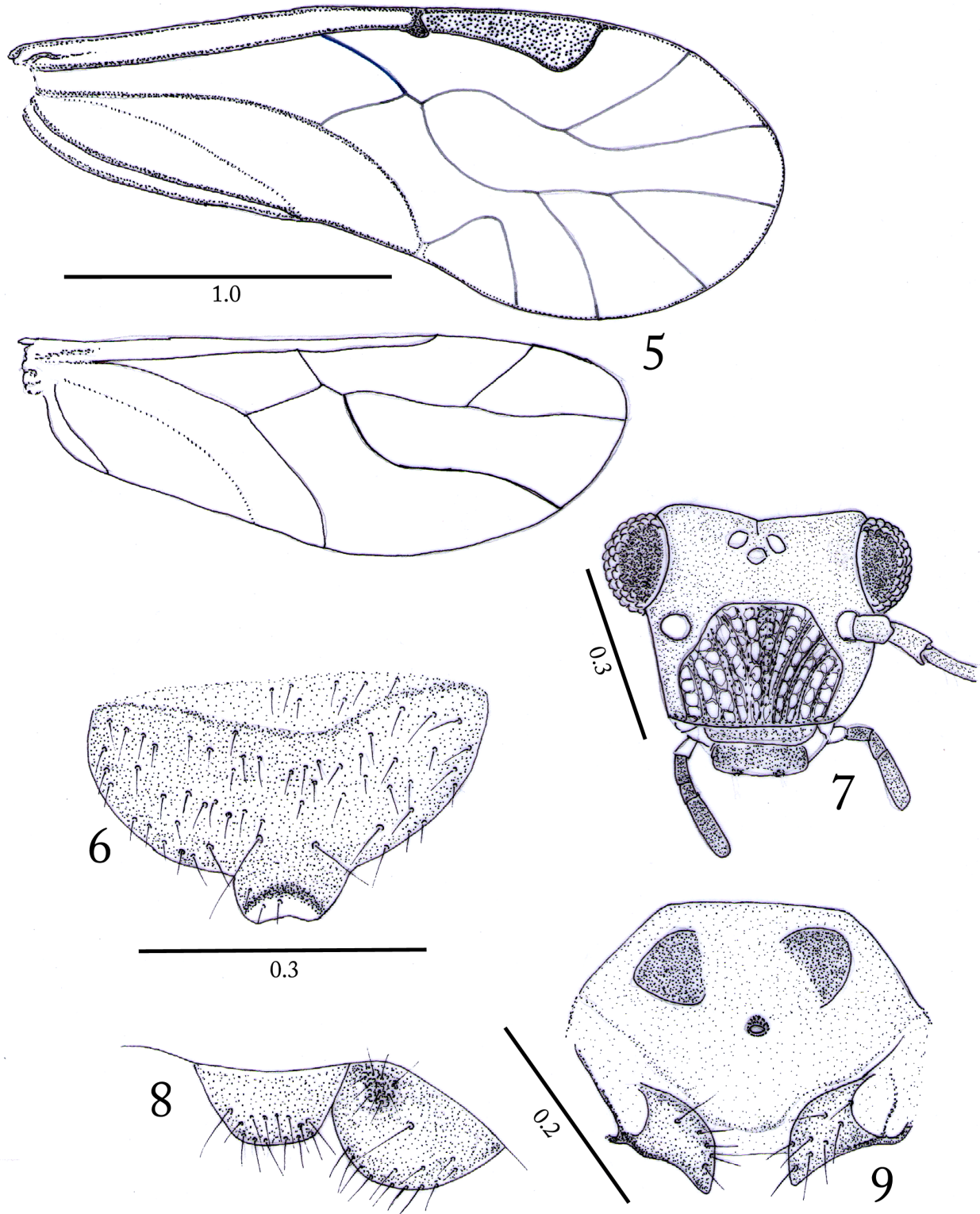
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Figures 1-4. *Lachesilla zuninoi* García Aldrete. Female. 1. Fore- and hind- wings. 2. Subgenital plate. 3. Gonapophyses and ninth sternum. 4. Epiproct and left paraproct. Scales in mm. Figs. 3-4 to common scale.



Figures 5-9. *Lachesilla zuninoides* García Aldrete. Female. 5. Fore- and hind- wings. 6. Subgenital plate. 7. Front view of head. 8. Epiproct and left paraproct. 9. Gonapophyses and ninth sternum. Scales in mm. Figs. 8-9 to common scale.