

A new species of *Lachesilla* in the pedicularia group, from Tlapa, Guerrero, Mexico (Psocoptera: Lachesillidae)

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ABSTRACT

Lachesilla tlapaensis n. sp., is here described and illustrated; it is close to *L. oaxacana* García Aldrete; together with *L. xalapensis* García Aldrete, these species constitute the subgroup *xalapensis*, within species group Pedicularia. The types are deposited in the National Insect Collection, Instituto de Biología, UNAM, Mexico City.

KEY WORDS: *Lachesilla*, Pedicularia species group, Tlapa, Guerrero, Mexico, new species.

RESUMEN

Lachesilla tlapaensis n. sp., es aquí descrita e ilustrada; es cercana a *L. oaxacana* García Aldrete, y junto con *L. xalapensis* García Aldrete, constituyen el subgrupo *xalapensis* dentro del grupo de especies Pedicularia. Los tipos están depositados en la Colección Nacional de Insectos, en el Instituto de Biología de la UNAM., en México, D. F., México.

PALABRAS CLAVE: *Lachesilla*, grupo de especies Pedicularia, Tlapa, Guerrero, México, nueva especie.

INTRODUCTION

Lachesilla oaxacana García Aldrete and *L. xalapensis* García Aldrete, constitute a distinct subgroup in species group Pedicularia of *Lachesilla* (García Aldrete 1972, Mockford 1993), characterized by having an elongate, slender, spinose process medially on each clasper (García Aldrete 2001); the claspers of *L. paulista* García Aldrete (species group Riegeli) from southern Brazil and northeastern Argentina have, in homologous position, one stout, glabrous, acuminate apophysis (García Aldrete 1982) and five European species, *L. bernardi* Badonnel, *L. merzi* Lienhard, *L. rossica* Roesler, *L. sauteri* Lienhard (species group Pedicularia), and *L. tanaidana* Roesler (species group Andra), have each clasper medially projected posteriorly to form a slender, elongate, sclerotized extension, not homologous to the clasper process mentioned above for *L. oaxacana*, *L. xalapensis*, and *L. paulista*. Recently, several specimens of a third species belonging in that subgroup were collected near Tlapa, Guerrero, Mexico, in the Southern Sierra Madre, and the purpose of this paper is to describe it, illustrate it, and to establish its position with respect to the other two species in the subgroup.

MATERIAL AND METHODS

Two males and three females were available for study. Two males and two females were dissected in 80 % ethyl alcohol, and the head, right wings and legs and the genitalia of each were mounted on slides in Canada Balsam. Color was recorded by placing the specimens in 80 % alcohol, under a dissecting microscope, illuminated with white, cold light at 100 X. Measurements of parts mounted on the slides were taken with an AO filar micrometer, whose measuring unit is 1.36 μm for wings and 0.55 μm for other parts. Abbreviations of parts measured, or counted, are as follows. FW and HW: lengths of right fore- and hind- wings, F, T, t1 and t2: lengths of femur, tibia and tarsomeres of right hind leg, ctt1: number of ctenidobothria on t1, Mx4: length of fourth segment of right maxillary palp, fl...fn: length of flagellomeres fl...fn of right antenna, IO, D, and d respectively: minimum distance between compound eyes, antero-posterior and transverse diameter of right compound eye in dorsal view of head, PO: d/D. The types are deposited in the National Insect Collection, Instituto de Biología, Universidad Nacional Autónoma de México, Mexico City, México (coden: CNIN).

Lachesilla tlapaensis n. sp.

(Figures 1-9)

Female. Color (in 80 % ethyl alcohol.). Body pale yellowish brown, with ochre spots as indicated below. Compound eyes black, ocelli hyaline, with ochre centripetal crescents. Scape, pedicel and flagellomeres 2-11 brown; flagellomere 1 pale brown, with distal end dark brown. An ochre band from each compound eye to antennal fossa, and on each lower gena. Maxillary palps pale brown. Postclypeus with ochre pigmented bands as illustrated (Fig. 2). Legs pale brown. Tergal lobes of meso- and metathorax more pigmented than rest of the thorax. Thoracic pleura with irregular bands next to coxae and below wing insertions. Abdomen whitish, with transverse subcuticular rings, less pigmented ventrally. Wings hyaline, veins brown.

Morphology. Forewing pterostigma long, wider distally; veins Rs and M fused for a distance; areola postica broad, apically rounded (Fig. 1). Veins Rs and M of hindwing fused for a distance (Fig. 1). Lacinial tip bifid, with outer cusp larger than inner one (Fig. 3). Pretarsal claw with one preapical denticle and pulvillus slender, distally truncate (Fig. 4). Subgenital plate broad, setose, projected posteriorly, distally with a small concavity in the middle, set in a small promontory; mesally with a large sclerotized area next to each side (Fig. 7). Gonapophyses short, broad, with sides almost parallel and distal inner corner slightly projected posteriorly (Fig. 9). Paraprocts (Fig. 8) broad, setose, sensory fields circular, with eight trichobothria issuing from basal rosettes and one marginal trichobothrium without basal rosette. Epiproct (Fig. 8) broad, almost straight anteriorly, rounded posteriorly, with setal field on posterior third.

Measurements (allotype). FW: 2,257, HW: 1,643, F: 433, T: 830, t1: 297, t2: 106, ctt1: 17, Mx4: 106, f1: 313, f2: 281, f3: 239, f4: 160, f5: 100, f6: 90, f7: 77, f8: 74, f9: 69, f10: 71, f11: 74, IO: 305, D: 149, d: 106, IO/D: 2.04, PO: 0.70.

Male. Color. Same as the female.

Morphology. Forewing veins Rs and M meeting in a point. Areola postica, hindwing veins Rs and M, lacinial tip and pretarsal claw as described for the female. Hypandrium (Fig. 6) almost triangular, setose. Each clasper with two processes, a median and a distal; the larger, median process appears to be articulated basally, it is long, slightly curved outward, bearing a row of spines along inner edge (Fig. 6). Claspers each bearing distally an elongate, slender, smooth, posteriorly directed process. Phallosome apodeme long, slender, distally ending in a broad, concave area having on each postero-lateral corner an elliptic sac (Fig. 6). Paraprocts broad, setose, with a mesal, slender prong; sensory fields with ten trichobothria issuing from basal rosettes and one marginal trichobothrium without basal rosette (Fig. 5). Epiproct (Fig. 5) trapeziform, with a field of setae on each side, and a median, long, posteriorly directed forked apophysis. Clunium with a small, conic protuberance posteriorly, next to the epiproct.

Measurements (holotype). FW: 2,461, HW: 1,849, F: 455, T: 928, Mx4: 117, f1: 347, f2: 322, f3: 299, f4: 200, f5: 134, f6: 113, f7: 103, f8: 87, f9: 81, f10: 82, f11: 100, IO: 312, D: 162, d: 122, IO/D: 1.92, PO: 0.74.

Type locality. MEXICO: Guerrero. Km. 39, Tlapa-San Luis Acatlán. 12.XII.2006, 2,344m. 17°19.27'N: 98°37.48'W. Beating vegetation. C. Mayorga & L. Cervantes. Holotype (♂), allotype (♀), 1 paratype (♀). Same locality and collectors, 17.X.2006, 1 paratype (♂).

Etymology. The specific name is an adjective derived from Tlapa, the locality in the Mexican state of Guerrero, where the specimens were found.

Additional records. MEXICO: Guerrero. Km 44, Tlapa-San Luis Acatlán, 2,162 m. 14.VI.2006. H. Brailovsky & L. Cervantes (1♀).

DISCUSSION

L. oaxacana García Aldrete, *L. tlapaensis* García Aldrete, and *L. xalapensis* García Aldrete, constitute the subgroup *xalapensis*, within species group Pedicularia of *Lachesilla*; the subgroup is so named because *L. xalapensis* was the first species described in the subgroup, which is characterized by having, in the males, a long, slender median process on each clasper, and a forked median apophysis on the epiproct. The females have the subgenital plate projected posteriorly, with a distal concavity, and the gonapophyses are short, parallel-sided or lanceolate. In both sexes the body pigmentation and head pattern are similar (García Aldrete 2001). Table 1 shows the character states of eight genital characters in the three species. *L. oaxacana* and *L. tlapaensis* constitute a closely related pair of species that share six character states; *L. xalapensis* stands apart from this pair, differing in the shape of the gonapophyses and subgenital plate, and in the posterior border of the male clunium, in the distal processes of the claspers, and epiproct and median clasper processes (see Table 1). Such distribution of character states in the three species has a sound geographic component, as both *L. oaxacana* and *L. tlapaensis* occur in the Southern Sierra Madre, while *L. xalapensis* occurs along the Eastern Sierra Madre only (Xalapa, Veracruz; Cuetzalan, Puebla, and south of Monterrey, Nuevo León).

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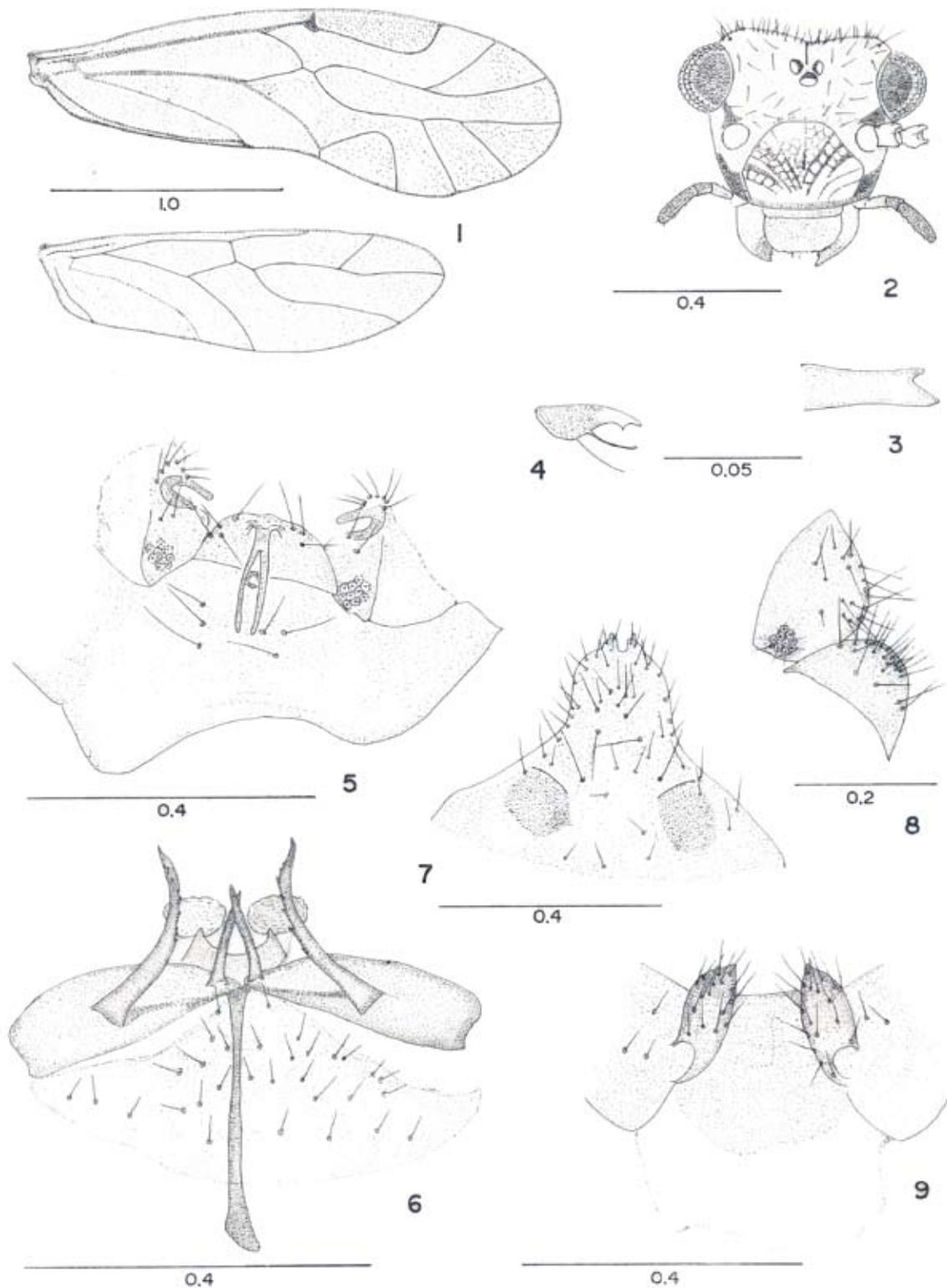
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Table 1. States of eight genital characters in the three species of *Lachesilla* in subgroup *xalapensis*.

Character	Species		
	<i>L. oaxacana</i>	<i>L. tlapaensis</i>	<i>L. xalapensis</i>
Gonapophyses: inner posterior lateral corner projected (0), or decidedly lanceolate (1)	0	0	1
Subgenital plate: posterior border broadly concave (0), or with small concavity in median prominence (1)	1	1	0
Subgenital plate: basal half broad, with well defined columnar projection (0), or with sides converging to posterior border (1)	0	0	1
Subgenital plate: with (0), or without (1), one rounded sclerotized area next to each side	1	0	1
Apophysis of male epiproct: with short, broad, basal stem (0) or long, slender, basal stem(1)	1	1	0
Posterior border of male clunium: smooth (0), with field of spines next epiproct (1), or with small conic prominence next epiproct (2)	1	2	0
Median processes of claspers: with field of spines over surface (0), or with field of spines along inner edge (1)	1	1	0
Distal processes of claspers: smooth (0), or with distal field of spines (1)	0	0	1



Figures 1-9. *Lachesilla tlapaensis* n. sp. 1. Fore- and hind- wings, ♀. 2. Head pattern, ♀. 3. Lacinial tip, ♀. 4. Pretarsal claw, ♀. 5. Clunium, paraproct and epiproct, ♂. 6. Phallosome apodeme, hypandrium and claspers, 7. Subgenital plate, ♀. 8. Right paraproct and epiproct, ♀. 9. ♂. Gonapophyses and ninth sternum, ♀. Scales in mm.