

## New species of *Loneura* (Psocoptera: Ptiloneuridae), from Venezuela and Nicaragua

ALFONSO N. GARCÍA ALDRETE \*

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**Abstract.** One species each of *Loneura*, from Venezuela (Bolívar) and from Nicaragua (Volcán Mombacho), are here described and illustrated. Their relationships with the other species of the genus are discussed; the location of the types is indicated in each description.

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### Introduction

This paper follows up on García Aldrete's (2003), in which one species each of *Loneura*, from Argentina, Nicaragua and México were described. I now describe the first species of the genus recorded in Venezuela, where two other undescribed *Loneura* are known to occur; I here also describe the second Nicaraguan species of the genus; a third, undescribed species occurs in that Central-American country. A recent examination of a Psocoptera collection from the Instituto Nacional de Pesquisas da Amazonia (Manaus, Amazonas, Brazil), made available through the courtesy of Dr. José Albertino Rafael, researcher of that institution, revealed the existence of four additional undescribed *Loneura* species, from the states of Pará and Roraima.

\*Instituto de Biología, UNAM. Departamento de Zoología, Apartado postal 70-153, 04510 México, D. F., México. [anga@servidor.unam.mx](mailto:anga@servidor.unam.mx)

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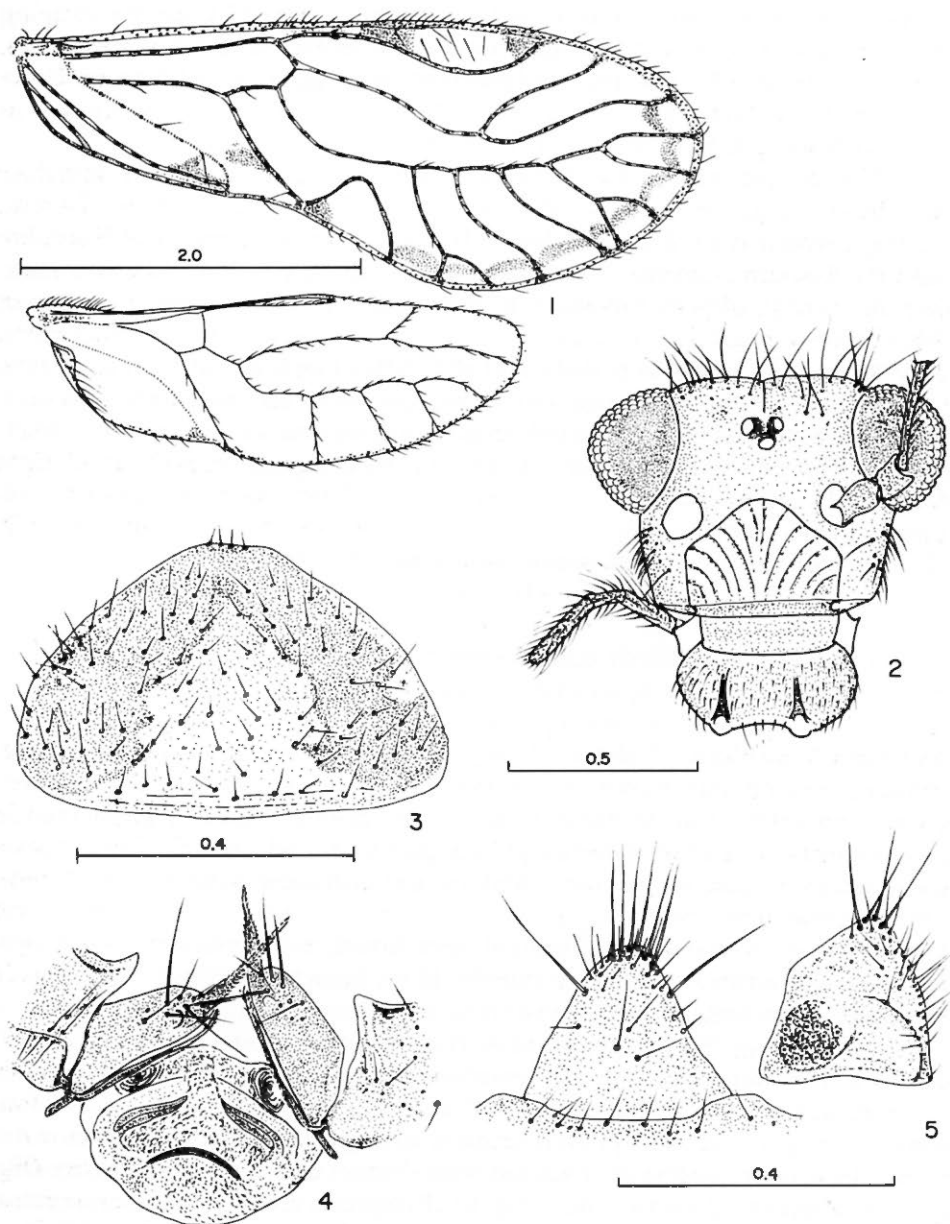
With the above, *Loneura* stands as a mid sized genus of 21 species, ranging from southwestern U. S. A. (Arizona) to northwestern Argentina (Salta and Jujuy), with species recorded in the U. S. A., Mexico, Belize, Guatemala, Nicaragua, Costa Rica, Venezuela, Perú, Bolivia, Brazil and Argentina, being most species rich in Brazil, with six species.

The specimens for microscopic study were dissected in 80% alcohol, and their parts (head, wings, legs, and genitalia) were mounted on slides in Canada Balsam. Color was recorded by observation of the whole specimen placed in 80% alcohol under the dissection microscope, illuminated with cold light at 60X. Measurements, given in microns, of parts mounted on slides, were taken with a filar micrometer, whose measuring unit is 1.36 microns for wings, and 0.53 microns for other parts. Abbreviations of parts measured are as follow: FW: length of right forewing, HW: length of right hindwing, F: length of right hind femur, T: length of right hind tibia, t1, t2, t3: length of right hind leg tarsomeres, ctt1: number of ctenidia on t1, Mx4: length of right fourth palpomere, fl...fn: length of flagellomeres fl...fn of right antenna, IO: minimum distance between compound eyes, D: antero-posterior diameter of right compound eye, d: transverse diameter of right compound eye, PO: d/D. The location of the types is indicated in each description.

*Loneura lienhardi* n. sp. (♀)  
(Figs. 1-5)

*Color* (in 80% alcohol). Body pale brown. Compound eyes black, ocelli hyaline, with ochre centripetal crescents. Head (Fig. 2) without distinct pattern of pigmentation. Maxillary palps, antennae and legs pale brown; femora unpigmented in both extremes, with an unpigmented band near distal end. Tergal lobes of meso- and metathorax more pigmented than rest of the thorax; pleurae dark brown. Wings hyaline, forewings with pattern of pigmentation as illustrated (Fig. 1) with distinct brown areolae on veins around setal insertions. Hindwings mostly hyaline, also with brown areolae around setal insertions. Abdomen whitish, with pale brown, transverse subcuticular rings.

*Morphology*. Outer cusp of lacinial apex broad, with five-six denticles. FW pterostigma wider in the middle, areola postica almost triangular, with apex rounded; M six- branched, with M3 and M6 distally forked (Fig. 1). HW M four branched (Fig. 1). Subgenital plate broad, setose, posteriorly straight, with a row of four setae along posterior edge; pigmented area distinct, deeply concave (Fig. 3). Gonapophyses: V1 long, slender, with field of distal microspines; V2+3 robust, with sides almost parallel, well defined, straight, pilose distal process and field of eight-nine mesal macrosetae (Fig. 4). Ninth sternum broad, irregular in shape, distinctly pigmented, with an area of concentric rings on each postero-lateral "corner", one distinct, pigmented oblique area on each side of longitudinal midline and a concave, transverse, thick line mesally, towards anterior border (Fig. 4).



Figs. 1-5. *Loneura lienhardi* n. sp. ♀. 1. Fore- and hind wings. 2. Front view of head. 3. Subgenital plate. 4. Gonapophyses and ninth sternum. 5. Epiproct and left paraproct. Scales in mm. Figure 4 to scale of figure 3.

Paraprocts broad, approximately conical, setose, with almost circular sensory fields, each with 25-26 trichobothria issuing from basal rosettes (Fig. 5). Epiproct broad, triangular, with group of three mesal macrosetae and field of setae on posterior half, as illustrated (Fig. 5).

*Measurements.* FW: 4108, HW: 2872, F: 1013, T: 1690, t1: 769, t2: 81, t3: 136, ctt1: 23, Mx4: 228, f1: 688, f2: 567, f3: 481, IO: 466, D: 321, d: 204, IO/D: 1.45, PO: 0.63.

*Type locality.* VENEZUELA. Bolívar. 10 km N Luepa, Gran Sabana, 1500m. 26.VI.-11.VII.1987. Malaise flight interception trap in cloud forest. S. & J. Peck, holotype ♀, deposited in the Museum of Natural History, Genève, Switzerland (MHNG).

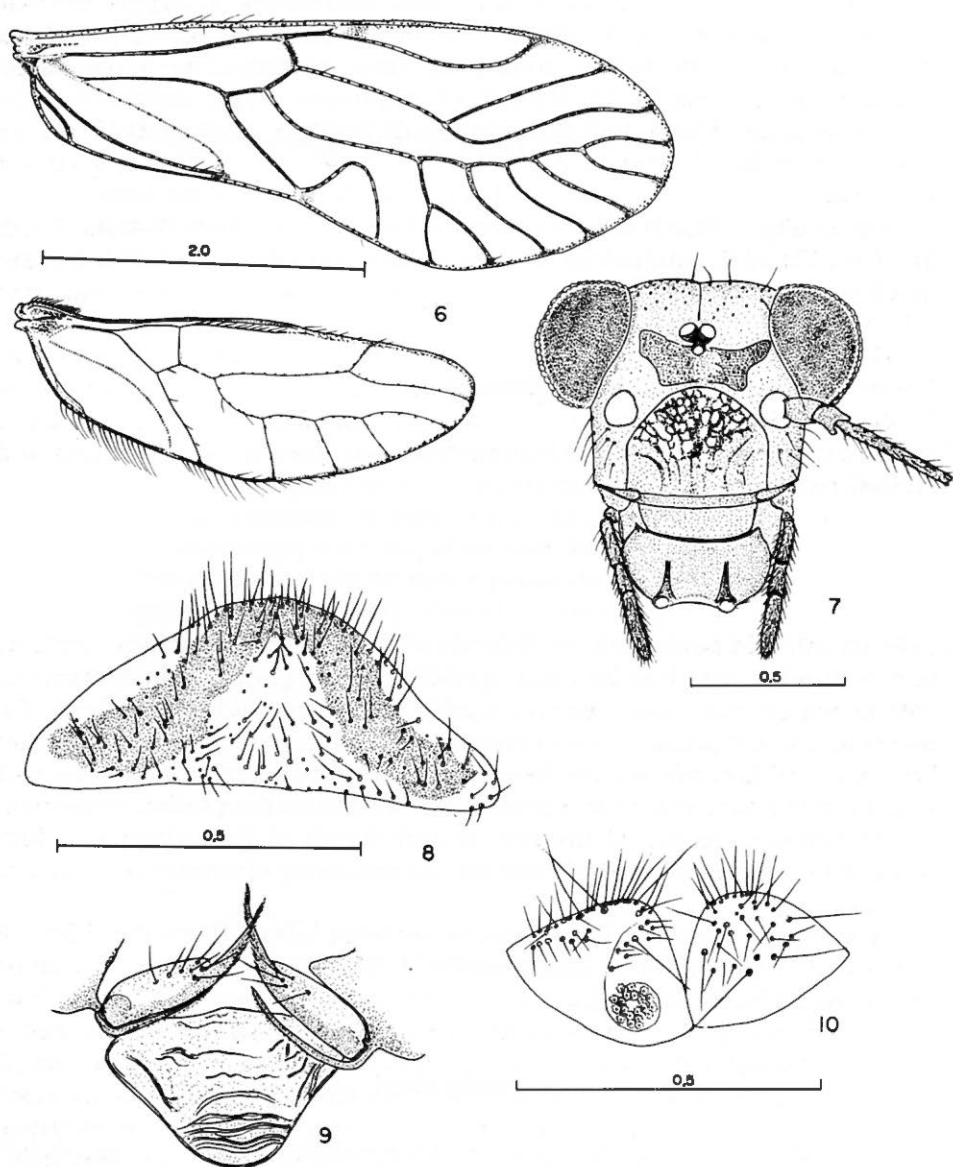
*Etymology.* This species is dedicated to Charles Lienhard, of the Museum of Natural History, Genève, Switzerland, in recognition to his many important contributions to the study of western palearctic Psocoptera, and for his generosity and spirit of collaboration in making available for study species of Psocoptera in the MHNG collections.

*Loneura maesi* n. sp. (♀)  
(Figs. 6-10)

*Color* (in 80% alcohol). Body reddish brown. Compound eyes black, ocelli hyaline, with ochre centripetal crescents. Head pattern (Fig. 7), with a transverse, dark brown irregular band between compound eyes, anteriorly at the level of the third ocellus, and limited posteriorly by the epistomal sulcus. Antennae, maxillary palps and legs pale brown. Femora with an ochre spot distally, and each with a brown irregular band on distal third. Tergal lobes of meso- and metathorax more pigmented than rest of thorax; pleurae pale brown, with irregular dark brown spots. Wings hyaline, veins brown. Abdomen whitish, with transverse, ochre subcuticular rings.

*Morphology.* Outer cusp of lacinial apex broad, with seven denticles. FW pterostigma elongate, wider in the middle; M six branched, with the branch next areola postica forked; areola postica narrow, tall, apically rounded (Fig. 6). HW M four branched (Fig. 6). Subgenital plate (Fig. 8), broad, posteriorly rounded, setose, with well defined concave pigmented area as illustrated. Gonapophyses (Fig. 9): V1 short, slender; V2+3 elongate, with sides almost parallel, four- seven setae along outer edge and distal process straight, strongly sclerotized. Ninth sternum broadly triangular, posteriorly rounded, with distinct creases along sides, mesally and transversely on posterior third (Fig. 9). Paraprocts robust, broadly triangular, with setae as illustrated; sensory fields circular, with 20-22 trichobothria issuing from basal rosettes (Fig. 10). Epiproct wide, posteriorly rounded, with a distinct group of three mesal macrosetae and a setal field posteriorly.

*Measurements.* FW: 4235, HW: 2951, F: 1122, T: 1834, t1: 798, t2: 76, t3: 136, ctt1: 29, Mx4: 216, f1: 847, f2: 750, IO: 439, D: 408, d: 272, IO/D: 1.07, PO: 0.66.



Figs. 6-10. *Loneura maesi* n. sp. ♀. 6. Fore- and hind wings. 7. Front view of head. 8. Subgenital plate. 9. Gonapophyses and ninth sternum. 10. Epiproct and right paraproct. Scales in mm. Figure 9 to scale of figure 8.

**Type locality.** NICARAGUA. Granada. Volcán Mombacho. El Progreso, 700m (11°49.9'N:85°58.66'W), 15.II.1998, Malaise trap, J. M. Maes, holotype ♀. Santa Ana, 700m, 15.II.1998, Malaise trap, J. M. Maes, paratype ♀. Santa Ana 2, 18.II.1999, Malaise trap, J. M. Maes, 2 ♀♀, paratypes. Types deposited in the National Insect Collection (CNIN), Instituto de Biología, Universidad Nacional Autónoma de México, México City.

**Etymology.** This species is dedicated to Jean Michel Maes, of the León, Nicaragua, Entomological Museum, in recognition to his many contributions to the knowledge of Nicaraguan entomology, and for making available for study important collections of Psocoptera.

## Discussion

It is unfortunate that the species here described are known only from the female sex, which makes difficult the assessment of relationships. The following can be said, however, on basis of wing and female genital characters: *L. lienhardi* differs from all other *Loneura* species with similar FW pattern of pigmentation [*L. amazonica* (New) and *L. erwini* (New & Thornton)] in that, in the former, the setae of FW and HW veins are set on a brown areola, besides, characters of the subgenital plate, gonapophyses and ninth sternum distinctly separate the three species.

*L. maesi* differs from all other species of *Loneura* with hyaline wings (*L. boliviana* Williner, *L. brasiliensis* Roesler, *L. meridionalis* García Aldrete and *L. raramuri* García Aldrete), by its distinct head pigmentation pattern, number of branches of FW M and in distinctness of the subgenital plate, gonapophyses and ninth sternum. When the number of branches of the FW M is the same, as with *L. meridionalis*, the number of branches of the HW M and details of the subgenital plate, gonapophyses and ninth sternum rule out the possibility of conspecificity.

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