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New North American *Lachesilla* in the *Forcepeta* group (Psocoptera: Lachesillidae)

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Abstract: Ten species of *Lachesilla*, belonging in species group *Forcepeta*, are here described and illustrated; three of them occur exclusively in the United States, six are exclusive to México and one occurs mostly in Mexico, extending also to Guatemala. They differ among themselves, and are separated from other species in the group, mostly on genital characters. The location of the types is indicated in each description.

Key words: *Lachesilla, Forcepeta* group, new species, U.S.A., Mexico.

Lachesilla is one of the most speciose psocid genera, in which, to the present, some 360 species can be recognized, represented in the National Insect Collection (Instituto de Biología, UNAM., Mexico City, and in the E. L. Mockford's Collection (Illinois State University, Normal, Illinois). Of those, 204 species have been described and 156 are new to science. In such a large assemblage of species, distributed worldwide, 15 species groups have been phenetically recognized, these are the groups *Andra, Centralis, Corona, Forcepeta, Fuscipalpis, Intermedia, Magnifica, Mexica, Palmicola, Patzunensis, Pedicularia, Q,, Riegeli, Rufa and Texcocana.* A phylogenetic study of the genus remains to be attempted, although Mockford (unpublished), utilizing *Nadleria* Badonnel & García Aldrete (1979) as outgroup, presented a proposal, based on genital and paragenital characters of males, that recognizes five lines, three of which include exclusively *Pedicularia* group species, one line includes 11 groups of species, and another one includes species in the groups *Andra, Forcepeta, Intermedia* and *Pedicularia.*

The group *Forcepeta* is a large assemblage of 102 species, most of them undescribed, morphologically well defined within the genus, that occur in the Neotropical (85 species), Nearctic (13 species), and Ethiopian (seven species) regions. The group was recognized and diagnosed by García Aldrete (1974, in press) and Mockford (1993), included it in a key to the North American subfamilies, genera and species of the family Lachesillidae. A brief diagnosis, based on genital characters, follows:

FEMALE. Subgenital simple, without a median tongue or process, with posterolateral shoulders or short processes. Ninth sternum usually without pair of short projections on anterior margin. Ovipositor valvulae broad, round or blunt tipped, directed mesally.

MALE. Phallosome apodemes fused to form a single rod or baculum, branching once

distally into a pair of rounded or triangular membranous extensions. Claspers lateral to hypandrium, with proximal and distal ends distinct, well defined, moderately long, frequently recurved, not approaching midline. Paraproct without process or extremely short one.

In this paper, I present descriptions of ten species that occur in the United States (three species), and in Mexico (seven species).

MATERIALS AND METHODS

The material studied consists of 720 specimens, preserved in 80% alcohol, or dissected and mounted on slides, either in Euparal or in Balsam of Canada. Color was recorded by examination of the specimen in 80% alcohol, under a dissecting microscope at 100X. Standard measurements (FW = right fore wing length, HW = right hind wing length, F = hind femur length, T = hind tibia length, t_1, t_2 = lengths of hind tarsomeres 1 and 2, ctt_1 = number of ctenidia on t_1, Mx_4 = length of fourth segment of maxillary palp, $f_1...f_n$ = length of flagellomeres 1...n, IO = minimum distance between compound eyes, D = antero-posterior diameter of compound eye, d = transverse diameter of compound eye, PO = d/D) are given in microns, and were taken from parts mounted on slides, under the compound microscope, utilizing a filar micrometer whose measuring unit is 1.36 microns for wings and 0.53 microns for other parts. The scales of the illustrations are in mm.

The names of the collectors are abbreviated as follows: AC, Alex Cadena; AMN, Aaron M. Nadler; ANGA, Alfonso N. García Aldrete; CWOB, Charles W. O'Brien; EB, Ernesto Barrera; ELM, Edward L Mockford; GBM, George B. Marshall; GEE, Gary E. Eertmoed; GO, Guillermina Ortega; HB, Harry Brailovsky; JAC, J. Arturo Casasola; JL, Joe López; LBM, Leticia B. Menchaca; LBOB, Lois B. O'Brien; LC, Luis Cervantes; OR, Omar Rilett; RC, Rosamond Coates and RS, Ron Sloan.

The types are deposited in the National Insect Collection, Instituto de Biología, UNAM, Mexico City (CNI-IBUNAM), or in the E.L. Mockford Collection, housed in the Department of Biological Sciences, Illinois State University, Normal, IL (ISU).

Lachesilla carinata n. sp.
(Figs. 1-6)

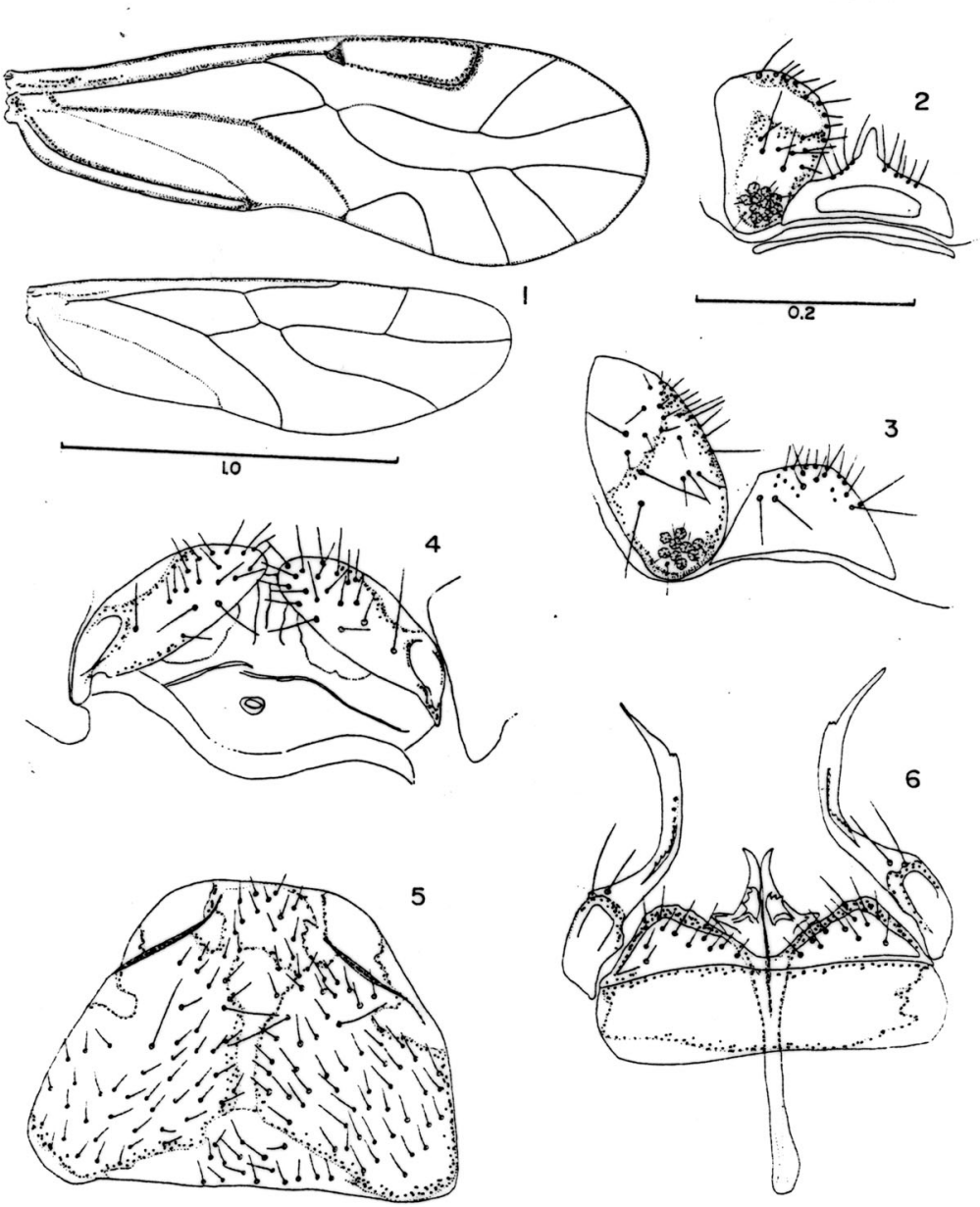
Female. COLOR. Body dark reddish brown. Compound eyes black, ocelli hyaline, without pigmented centripetal crescents. Two dark brown bands from each compound eye to epistomal sulcus, enclosing antennal fossae. Maxillary palps dark brown. Antennae and legs brown. Wings opaque, fumose, veins reddish brown. Abdomen with reddish brown subcuticular rings, less pigmented ventrally.

Morphology. Forewing (Fig. 1) with pterostigma almost rectangular, R1 deeply pigmented. Rs-M fused basally for a short length. Areola postica wide basally, almost triangular. Hind wing (Fig. 1) with Rs-M joined basally for a length. Subgenital plate (Fig. 5) broad, straight posteriorly, with a long, slender, pigmented band, diagonally on each postero-lateral corner. Gonapophyses (Fig. 4), large, robust, setose as illustrated. Spermapore small, surrounded by a slender, pigmented ring, slightly towards anterior border of ninth sternum. Paraprocts (Fig. 3) large, almost elliptic, setose as illustrated; sensory fields with 10 trichobothria, a marginal one without basal rosette, distal half of paraproct distinctly less pigmented than proximal one, bearing the sensory field. Epiproct (Fig. 3) trapecial, setal field on posterior half, as illustrated.

Measurements. FW: 1906, HW: 1470, F: 382, T: 754, t1: 223, t_2: 75, ctt_1: 18, Mx4: 84, f_1: 247, f_2: 200, f_3: 172, f_4: 119, f_5: 80, f_6: 72, f_7: 61, f_8: 64, f_9: 58, f_{10}: 55, f_{11}: 66, IO: 289, D: 152, d: 106, IO/D: 1.89, PO: 0.69.

Male. COLOR. Same as the female.

Morphology. Hypandrium (Fig. 6) deeply concave posteriorly, with a strongly pigmented



Figures 1- 6. *Lachesilla carinata* n. sp. 1. Fore and hind wings, female. 2. Right paraproct and epiproct, male. 3. Right paraproct and epiproct, female. 4. Gonapophyses and ninth sternum, female. 5. Subgenital plate, female. 6. Phallosome apodemes, hypandrium and claspers, male. Scales in mm. Figures 3- 6 to scale of Fig. 2.

band along posterior border; setae as illustrated. Phallosome apodemes fused to form a long, stout baculum (Fig. 6), wider posteriorly and divided posteriorly, each arm forming a basally wide, curved prong, bearing on inner side a small, denticulate extension. Claspers (Fig. 6) with short, rounded, proximal portion, bearing two large setae, and long, acuminate shaft, bearing mesally a long, denticulate ridge, that ends much before the apex of the shaft, as illustrated. Paraprocts (Fig. 2) broad, setose, mesally with a lightly pigmented area; sensory fields with 11 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 2) strongly pigmented, anterior margin flat, with a stout, pointed extension posteriorly, and an elongate, mesal, less pigmented area. Setae as illustrated.

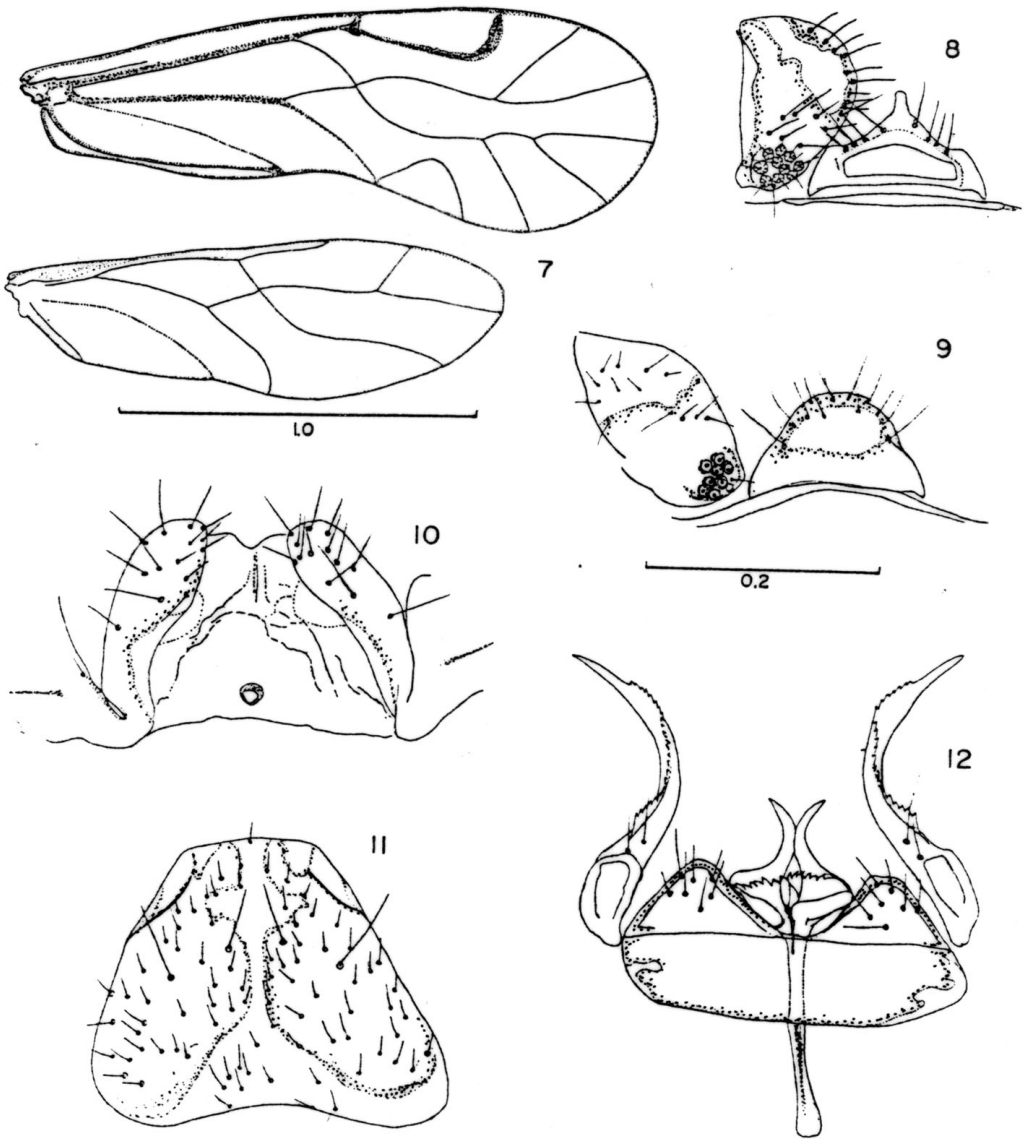
Measurements. FW: 1713, HW: 1326, F: 371, T: 708, t_1: 258, t_2: 137, ctt_1: 17, Mx4: 86, f_1: 240, f_2: 212, f_3: 200, f_4: 141, f_5: 98, f_6: 83, f_7: 76, f_8: 70, f_9: 76, f_{10}: 66, f_{11}: 79, IO: 248, D: 154, d: 108, IO/D: 1.61, PO: 0.70.

Type Locality. México. Chiapas. 4 Km S Simojovel, 880 m., 13.VIII.1975, on dead, hanging leaves of herbaceous plants, ANGA, holotype ♂, allotype ♀, 2 paratypes ♂, 11 paratypes ♀ (CNI-IBUNAM).

Records. MEXICO. **Campeche.** Km. 178 Hwy. Escárcega-Chetumal, 23.VI.1989, beating vegetation, LC & AC, 1♀. Calakmul Biosphere Reserve, Hormiguero Archaeologial Zone, 6.V.1997, beating shrubs, ANGA, 2♂, 2♀. Ejido Colón, 7.V.1997, beating herbaceous plants with dead leaves. JAC, 3♀. **Chiapas.** 4 Km N Tuxtla Gutiérrez, 15.VII.1962, beating vegetation on secondary growth forest, edge of Sumidero Canyon. ELM, 1♀. Chinkultik Archaeological Zone, 51 Km SE Comitán, 1,500 m., 11.VIII.1975, on dead hanging leaves of Compositae, ANGA, 1♀. 2 Km S Ixtapa, Hwy. 195, 1,100 m., 12.VIII.1975, on dead banana fronds, ANGA, 1♂. 42 Km NW Ocozocoautla, 1.VII.1981, beating branches with dead leaves of fallen shrubs, forest edge, ANGA, 1♀. El Ocote Biosphere Reserve, 700 m., 1.V.1993, beating branches with dead leaves, ANGA & EB, 1♀. **Hidalgo.** Omitlán, ca. Real del Monte, Hwy. 105, 21.VIII.1980, beating oaks, ANGA, 1♀. **Morelos**. Ticumán, 17.X.1971, on dead hanging leaves of Compositae, ANGA, 1♂, 1♀. **Oaxaca.** Toltepec, 1.XI.1987, EB, 1♂. Km 16, Rd. Jalapa de Díaz – Tuxtepec, 18.III.1989, beating vegetation, LC & AC, 1♂. Km 5, Rd. Mogoñé – San Juan Guichicovi, 70 m., 22.XI.1990, EB, 1♂. **San Luis Potosí**. 6 Km N Tamazunchale, 25-II.1973, on dead leaves of miscelaneous vegetation on mountain slope, ANGA, 1♂. 20 Km N Jct. Hwy. 85 and Rd to Xilitla, ca. Tamuín. 25.II.1973, on dead leaves of Convolvulaceae, ANGA, 3♀. **Tabasco.** Villahermosa, Agua Blanca, 17.VI.1989, beating vegetation, LC & AC, 1♂. **Tamaulipas.** 1.6 Km S Rd. to Xicoténcatl, on Hwy. 85, 30.III.1961, beating cattails, ELM, 1♂, 1♀. **Veracruz.** 8 Km S Tecolutla, 26.VI.1962, ELM, 1♀. 3 Km N Santiago Tuxtla, Hwy. 180, 9.VII.1962, beating vegetation, upland rain forest, ELM, 1♀. Rd. To Cerro El Vigía, ca. Santiago Tuxtla, 12.VII.1973, beating branches with dead leaves in forest ANGA, 1♂. 6 Km NE San Andrés Tuxtla, rd. to San Martín Volcano, 15.VII.1973, beating vegetation, semi-arid scrub on lava flow, ANGA, 1♂. Ca. Tuxpan, 2.VIII.1978, on dead, hanging leaves of herbaceous plants, N edge of Tuxpan River, ANGA, 1♀, 6♂.

Lachesilla carinatoides n. sp.
(Figs. 7-12)

Female. COLOR. Body reddish brown. Compound eyes black, ocelli hyaline, without pigmented centripetal crescents. Two dark brown bands from each compound eye to epistomal sulcus, enclosing antennal fossae. Maxillary palps and antennae dark brown. Wings slightly fumose, veins reddish brown. Stigmasac and R1 of fore wing ochre. Legs



Figures 7- 12. *Lachesilla carinatoides* n. sp. 7. Fore and hind wings, female. 8. Right paraproct and epiproct, male. 9. Right paraproct and epiproct, female. 10. Gonapophyses and ninth sternum, female. 11. Subgenital plate, female. 12. Phallosome apodemes, hypandrium and claspers, male. Scales in mm. Figures 8, and 10- 12, to scale of Fig. 9.

pale brown. Abdomen with reddish brown subcuticular rings, less pigmented ventrally.

Morphology. Fore wing pterostigma (Fig. 7) about 3.5 times as long as wide in the middle, R1 wide. Rs-M diverging from a point, areola postica wide basally, almost triangular. Hind wing with Rs-M diverging from a point (Fig. 7). Subgenital plate narrow (Fig. 11), setae as illustrated, with one slender pigmented band diagonally on each postero-lateral corner. Gonapophyses (Fig. 10) very robust, setose. Spermapore (Fig. 10) towards anterior border of ninth sternum, surrounded by a slender, pigmented ring. Paraprocts semi-elliptic (Fig. 9), setae as illustrated; sensory fields with 10-11 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 9) almost trapezial, setae as illustrated.

Measurements. FW: 1705, HW: 1297, F: 347, T: 689, t_1: 222, t_2: 85, ctt_1: 19, Mx4: 71, f_1: 220, f_2: 167, f_3: 160, f_4: 113, f_5: 62, f_6: 66, f_7: 64, f_8: 62, f_9: 61, f_{10}: 57, f_{11}: 76, IO: 271, D: 138, IO/D: 1.9, PO: 0.68.

Male. COLOR. Same as the female.

Morphology. Hypandrium (Fig. 12), deeply concave posteriorly, with a strongly pigmented band along posterior border. Phallosome apodemes fused to form a long, stout, baculum (Fig. 12), divided posteriorly, each arm forming a basally wide, stout, curved prong, bearing on inner side a wide extension limited posteriorly by a row of 6-7 posterior denticles. Claspers (Fig. 12), basally rounded, elongate; shaft long , slender, acuminate, with two basal large setae, and bearing a long, denticulate ridge from anterior end to the apex. Paraprocts (Fig. 8), robust, almost semicircular, setae as illustrated, mesally with a clear, elongate area; sensory fields with 11-12 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 8), with hind margin flat, with a process directed posteriorly from te hind margin, mesally with a transverse, almost rectangular pale area; setae as illustrated.

Measurements. FW: 1762, HW: 1346, F: 363, T: 693, t_1: 243, t_2: 87, ctt_1: 20, Mx4: 94, f_1: 239, f_2: 220, f_3: 201, f_4: 156, f_5: 98, f_6: 84, f_7: 78, f_8: 73, f_9: 69, f_{10}: 66, IO: 267, D: 166, d: 105, IO/D: 1.6, PO: 0.63.

Type Locality. MEXICO**. Nayarit.** María Madre Island, rd. from Port Balleto to La Antena, 210 m., 226.III.1984, beating branches in low deciduous forest, ANGA, holotype ♂, allotype ♀, one paratype of each sex (CNI-IBUNAM).

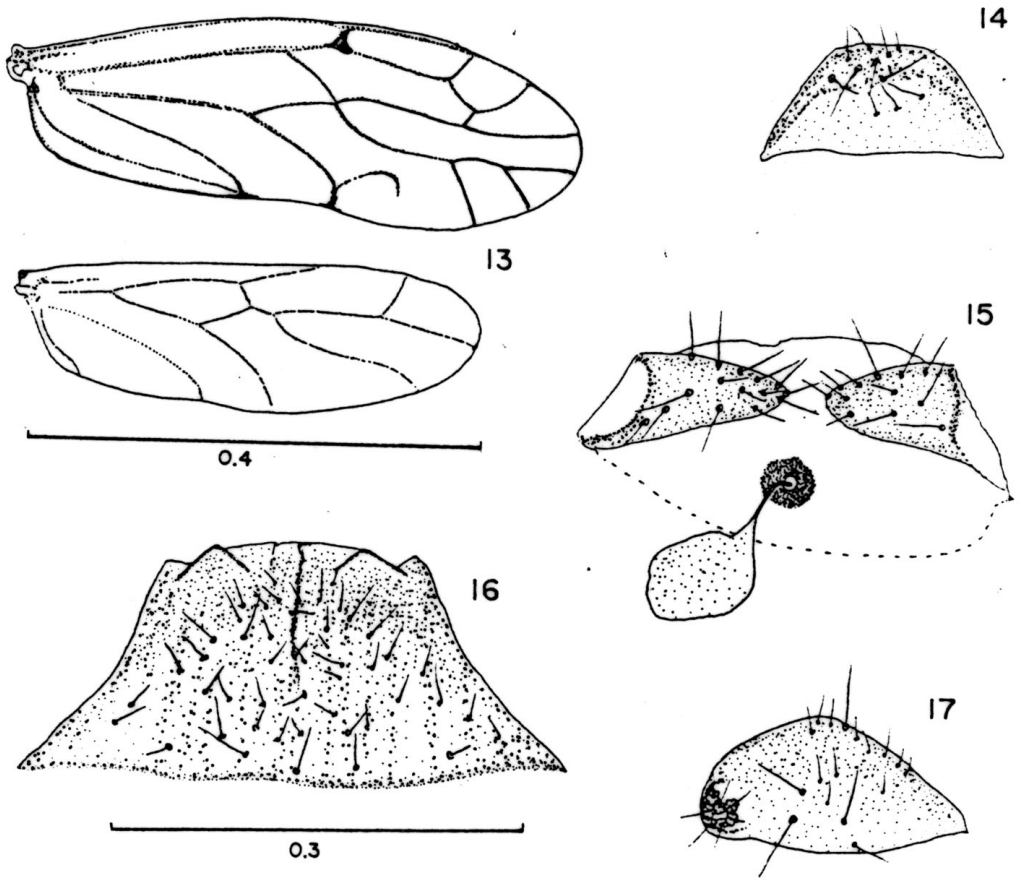
Records. MEXICO. **Guerrero.** 22 Km SW Carrizal de Bravo, rd. Milpillas-Atoyac, 5.II.1974, beating shrubs, ANGA, 1♂. **Oaxaca**. 20 Km NW Pochutla, 9.III.1995, beating vegetation, GO, 1♂.

Comments. This species presumably constitutes the sister species of *L. carinata.* This assertion is based on a male synapomorphous character: presence of a denticulate ridge on the clasper shaft, relatively short in *L. carinata,* and distinctly longer in *L. carinatoides.* Other differences are the narrow denticulate lamellae of the distal prongs of the phallosome apodemes and relatively broader subgenital plate in *L. carinata*, as compared to the distinctly wider lamellae of the distal prongs of the phallosome apodemes, and narrower subgenital plate in *L. carinatoides.*

L. carinata is much more widely distributed than *L. carinatoides*, this being restricted to María Madre Island and two points near the Pacific coast, in the states of Guerrero and Oaxaca. The two species are allopatric.

Lachesilla cladiumicola n. sp. (♀)
(Figs. 13-17)

Color. Body light brown. Compound eyes black, ocelli clear, without pigmented centripetal crescents. A reddish brown band



Figures 13- 17. *Lachesilla cladiumicola* n. sp., female. 13. Fore and hind wings. 14. Epiproct. 15. Gonapophyses and ninth sternum. 16. Subgenital plate. 17. Right paraproct. Scales in mm. Figures 14, 15 and 17 to scale of Fig. 16.

from each compound eye to epistomal sulcus, enclosing antennal fossae. Antennae and maxillary palps light brown. Legs light brown. Wings hyaline, veins brown. A slender, brown band on each side of thorax, running above the coxae. Abdomen with brown subcuticular rings, more conspicuous on the sides.

Morphology. Fore wings (Fig. 13) small, narrow, with crossvein from lower posterior angle of pterostigma to R_{2+3}, Rs-M diverging from a point. Areola postica anomalous, incomplete (Fig. 13). HW with Rs-M fused for a length. Subgenital plate (Fig. 16), broad, setose, almost trapezial, with distinctly prominent postero-lateral corners and a triangular, sclerotized prominence next to each corner. Gonapophyses wide based, narrowing to blunt apex, setose as illustrated (Fig. 15). Spermapore round, almost in center of ninth sternum, surrounded by a wide, pigmented ring. Paraprocts (Fig. 17) almost semi circular, sensory fields with eight trichobothria, one without basal rosette. Epiproct (Fig. 14) trapezial, setal field on posterior half.

Measurements. FW: 1400, F: 401, T: 562, t_1: 179, t_2: 77, ctt_1: 9, Mx4: 76, f_1: 256, f_2: 244, f_3: 194, f_4: 145, f_5: 92, f_6: 88, f_7: 77, f_8: 77, f_9: 72, f_{10}: 72, f_{11}: 76, IO: 285, D: 150, d: 106, IO/D: 1.89, PO: 0.70.

Type Locality. U.S.A. **Florida.** Levy Co., East side of causeway to Cedar key, 12.IIIV.1965, on dried sawgrass leaves, holotype ♀, ELM (ISU).

Comments. This species is close to *L. typhicola* n. sp., with which it shares the crossvein between the pterostigma and R_{2+3}. It differs from it in its smaller size, and in the subgenital plate, lacking pointed protuberances in *L. typhicola*.

Lachesilla estradaorum n. sp.
(Figs. 18- 23)

Female. COLOR. Body reddish brown. Compound eyes black, ocelli hyaline, without centripetal pigmented crescents. Maxillary palps, antennae and legs brown. Wings hyaline, veins brown. Abdomen with reddish brown subcuticular rings, less pigmented ventrally.

Morphology. Fore wing (Fig. 18), with pterostigma about three times as long as wide in the middle. Rs-M diverging from a point. Areola postica low, wide basally, about two times as wide as tall. Hind wing (Fig. 18) with Rs-M basally fused for a length. Subgenital plate (Fig. 20), broad, setose, with distinct, prominent, rounded postero-lateral corners, hind margin almost flat, bordered by a hyaline band. Gonapophyses (Fig. 22), widest in the middle, narrowing to apex, setae as illustrated. Spermapore (Fig. 22), large, almost in the center of ninth sternum, with a wide, irregular ring surrounding it. Paraprocts (Fig. 23), semi-elliptic, setae as illustrated, sensory fields with 9-10 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 23), wide, setae as illustrated.

Measurements. FW: 1516, HW: 1180, F: 318, T: 552, t_1: 178, t_2: 71, ctt_1: 15, Mx4: 72, f_1: 212, f_2: 169, f_3: 155, f_4: 113, f_5: 68, f_6: 73, f_7: 58, f_8: 61, f_9: 60, f_{10}: 61, f_{11}: 61, IO: 265, D: 150, d: 95, IO/D: 1.76, PO: 0.63.

Male. COLOR. Same as the female.

Morphology. Hypandrium wide transversely, narrow antero-posteriorly (Fig. 21). Phallosome apodemes fused to form a slender rod or baculum, membranous extensions of each distal arm contiguous. Basal portion of claspers (Fig. 21) almost rectangular, each with two large setae and 3-5 additional, smaller ones, shafts curved, very stout, with the apices dilated. Paraprocts (Fig. 19), large, semi-elliptic, setae as illustrated, with a small mesal prominence, sensory fields with 10-11 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 19), large, with anterior margin nearly flat, rounded posteriorly, setae as illustrated.

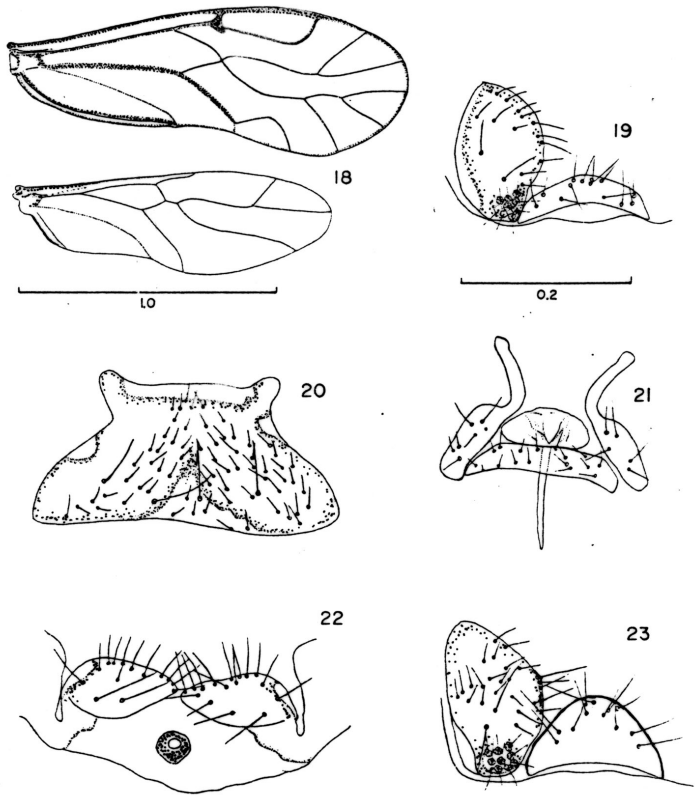
Measurements. FW: 1426, HW: 1076, F: 303, T: 546, t_1: 180, t_2: 70, ctt_1: 16, Mx4: 81, f_1: 200, f_2: 167, f_3: 153, f_4: 123, f_5: 90, f_6: 80, f_7: 74, f_8: 71, f_9: 71, f_{10}: 69, f_{11}: 85, IO: 252, D: 150, d: 101, IO/D: 1.67, PO: 0.66.

Type Locality. MEXICO. **Veracruz**. Los Tuxtlas, UNAM Biology Station. 8.VII.1988, beating branches with dead leaves in forest, ANGA, holotype ♂, allotype ♀, (CNI-IBUNAM).

Comments. This species is similar to *L. cuala* García Aldrete (1988), widely distributed from Mexico to South America, and to several others, undescribed South American species, from which it differs mostly by the prominent postero- lateral corners of the subgenital plate, and by the stout clasper shafts, unique among the species of the group.

Lachesilla filicicola n. sp. (♂)
(Figs. 24- 26)

Male. COLOR. Brown. Compound eyes black, ocelli hyaline, with ochre centripetal crescents. Maxillary palps and antennae



Figures 18- 23. *Lachesilla estradaorum* n. sp. 18. Fore and hind wings, female. 19. Right paraproct and epiproct, male. 20. Subgenital plate, female. 21. Phallosome apodemes, hypandrium and claspers, male. 22. Gonapophyses and ninth sternum, female. 23. Right paraproct and epiproct, female. Scales in mm. Figures 20- 23 to scale of Fig. 19.

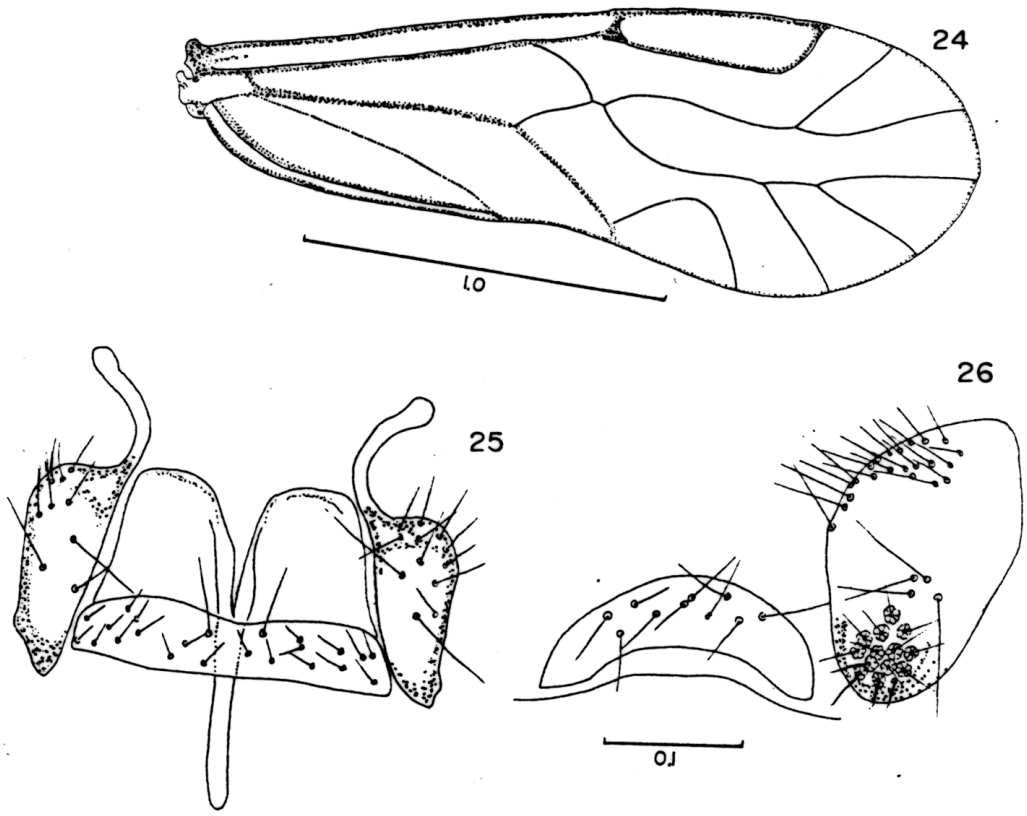
brown. Legs pale brown. Wings hyaline, veins brown. Thoracic pleurae with a reddish brown band above the coxae. Abdomen with reddish brown subcuticular rings, less pigmented ventrally.

Morphology. Fore wing (Fig. 24). Hypandrium (Fig. 25), narrow antero-posteriorly, slightly concave posteriorly. Phallosome apodemes fused to form a short, stout rod or baculum (Fig. 25), with distal membranous extensions very large. Claspers (Fig. 25), with shafts curved, apically dilated; basal portions robust, wider posteriorly, each with two large setae and 7-10 smaller setae, as illustrated. Paraprocts (Fig. 26), almost elliptic, with setae as illustrated and sensory fields with 14 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 26), wide, concave anteriorly, rounded posteriorly; setae as illustrated.

Measurements. FW: 2189, F: 472, T: 832, t_1: 299, t_2: 94, ctt_1: 22, Mx4: 106, f_1: 311, f_2: 162, f_3: 133.

Type Locality. MEXICO. **Tabasco.** Río Tonalá & Hwy. 180, 17.III.1964, beating dried fern leaves, ELM, 1♂, holotype (CNI-IBUNAM).

Comments. This species is unique in the group by having large, stout basal portions of the claspers, with short, curved, apically dilated shafts. The extremely large, distal



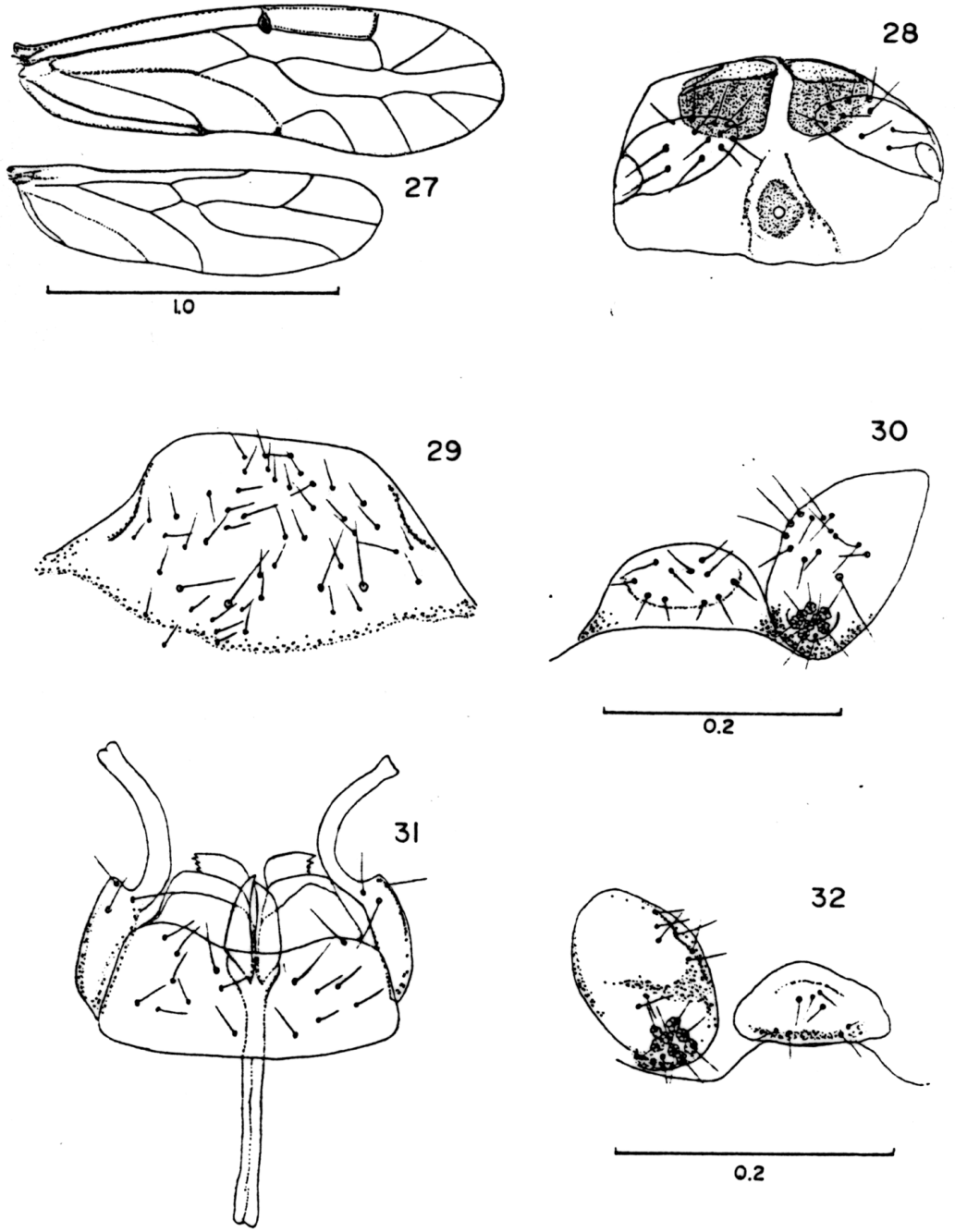
Figures 24- 26. *Lachesilla filicicola* n. sp., male. 24. Fore wing. 25. Phallosome apodemes, hypandrium and claspers. 26. Left paraproct and epiproct. Scales in mm. Fig. 25 to scale of Fig. 26.

extensions of the baculum are also unique in the group. Several undescribed Central and South American species also have apically dilated clasper shafts.

Lachesilla floridana n. sp.
(Figs. 27- 32)

Female. COLOR. Pale brown. Compound eyes black, ocelli hyaline, with ochre centripetal crescents. Two brown bands from each compound eye to epistomal sulcus, enclosing antennal fossae. Antennae and maxillary palps light brown. Legs pale brown. Wings hyaline, veins brown. A brown band on each side of thorax, running above coxae. Abdomen with ochre subcuticular rings, more conspicuous laterally.

Morphology. Fore wings (Fig. 27), slender, with a crossvein from the lower posterior angle of pterostigma to Rs, before junction of R_{2+3} - R_{4+5} (some specimens with crossvein between pterostigma and proximal end of R_{2+3}). Rs-M joined basally for a length (Fig. 27). Areola postica wide basally, almost triangular. Hind wing Rs-M joined basally for a length (Fig. 27). Subgenital plate (Fig. 29), broad, setose, posteriorly straight. Gonapophyses (Fig. 28) narrow basally, widest in the middle, and narrowing distally to blunt apices. Ninth sternum with two semi-circular pigmented areas posteriorly (Fig. 28). Spermapore towards anterior border of ninth sternum, surrounded by an elliptic, pigmented area (Fig. 28). Paraprocts (Fig. 30) broad, elongate, setose as illustrated, sensory fields



Figures 27- 32. *Lachesilla floridana* n. sp. 27. Fore and hind wings, female. 28. Gonapophyses and ninth sternum, female. 29. Subgenital plate, female. 30. Left paraproct and epiproct, female. 31. Phallosome apodemes, hypandrium and claspers, male. 32. Right paraproct and epiproct, male. Scales in mm. Figures 28, 29 and 31 to scale of Fig. 30.

with 9-10 trichobothria, one without basal rosette. Epiproct (Fig. 30), almost trapezial, wide basally, posteriorly rounded; setal field on distal half.

Measurements. FW: 1733, HW: 1327, F: 344, T: 614, t_1: 187, t_2: 85, ctt_1: 11, Mx4: 74, f_1: 265, f_2: 242, f_3: 207, f_4: 143, f_5: 88, f_6: 80, f_7: 68, f_8: 73, f_9: 64, f_{10}: 73, f_{11}: 81, IO: 265, D: 137, d: 117, IO/D: 1.93, PO: 0.86.

Male. COLOR. Same as the female.

Morphology. Hypandrium wide, posteriorly concave (Fig. 31), claspers with three setae on distal end of short basal portion (Fig. 31). Clasper shafts stout, curved, distally dilated as illustrated (Fig. 31). Phallosome apodemes fused to form a long baculum, distally with two pointed prongs and two broad lamellae with outer edge jagged, in addition to the two broad membranous extensions (Fig. 31). Paraprocts (Fig. 32), almost elliptical, setose as illustrated, sensory fields with 9-10 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 32), with anterior margin flat, rounded posteriorly, setae as illustrated.

Measurements. FW: 1556, HW: 1175, F: 286, T: 540, t_1: 172, ctt_1: 11, Mx4: 70, f_1: 248, f_2: 232, f_3: 201, f_4: 162, f_5: 106, f_6: 95, f_7: 86, f_8: 88, f_9: 90, f_{10}: 84, f_{11}: 108, IO: 232, D: 132, d: 106, IO/D: 1.76, PO: 0.80.

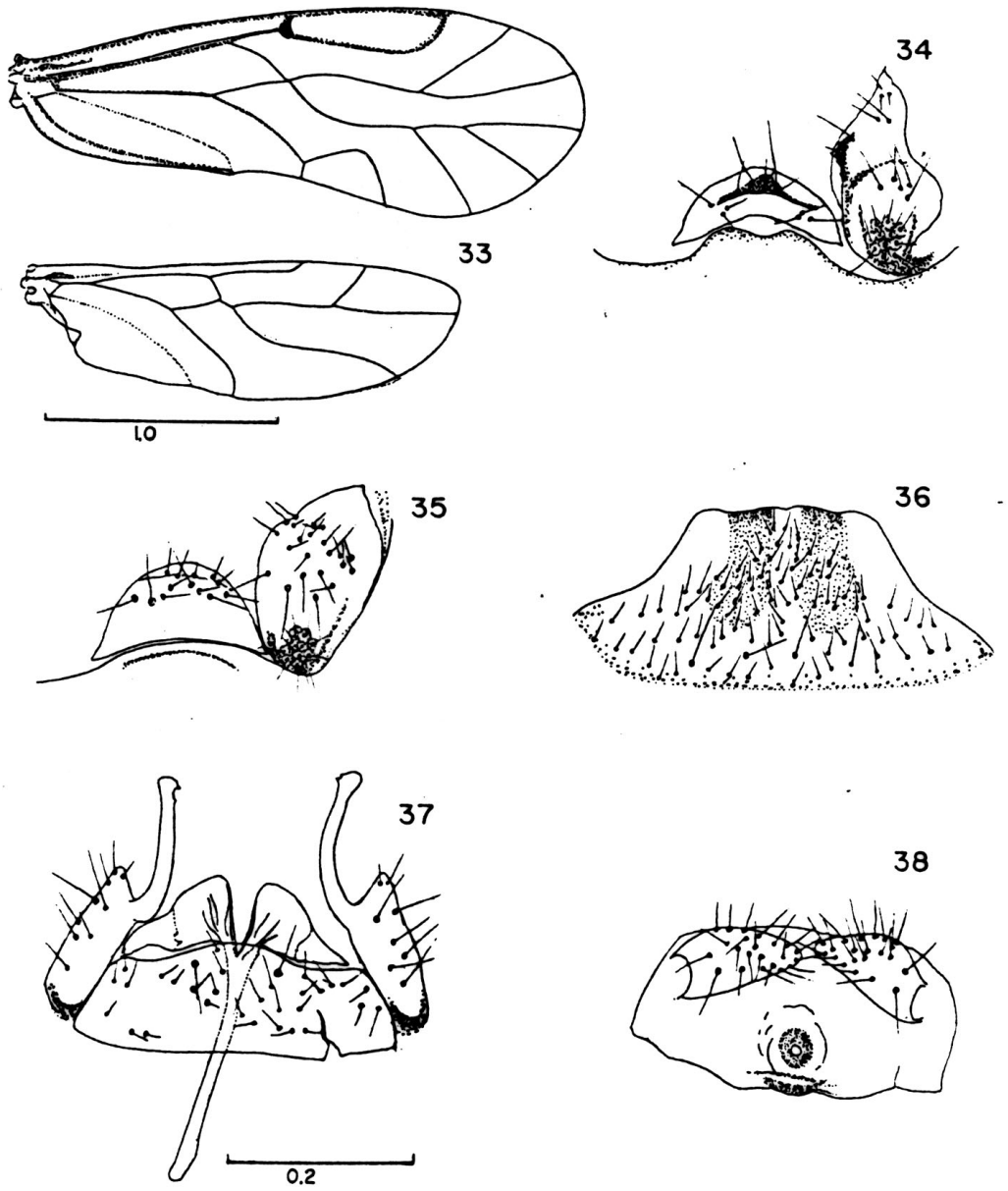
Type Locality. USA. **Florida.** Collier Co., State Hwy. 846, ca. 2 mi. W Hwy. 41, between Bonita Springs and Naples, 29.XI.1970, beating vegetation (dried palm fronds, pine branches, etc.), holotype ♂, allotype ♀, 10♀ and 7♂ paratypes (ISU), ELM.

Records. USA. **Florida.** Okaloosa Co., 17 mi. E Niceville, 22.VIII.1951, 1♂, 1♀, ELM. Monroe Co., Lower Matecumbe Key, 29.VIII.1951, 2♀, 1♂, ELM. Big Pine Key, 28-29.VIII.1951, beating *Pinus caribbea*, 1♀, ELM. 16.II.1954, on dry palm fronds, 7♀, 5♂, ELM. 21.II.1956, beating silver palm leaves, 6♀, 4♂, ELM. Marathon, 16.II.1954, on dead palm fronds, 2♀, ELM. Highlands Co., Lake Placid, Archbold Biological Station, 7.II.1951, 3♀, AMN. Polk Co., 2 mi. N Lake Wales on US Hwy. 27, 25.XI.1961, beating dead, saw palmetto leaves, 6♀, ELM & OR. Taylor Co., at Taylor – Dixie county line on US Hwy. 24.XI.1961, beating *Sabal palmetto* and *Serenoa repens* dry leaves, 1♀, 1♂, ELM. Manatee Co., US Hwy. 301, 3 mi. S Parrish, 4.XII.1970, beating *Serenoa repens*, 4♀, 5♂, ELM. Marion Co., on road between Sparr and Kerr City, Ocala National Forest, 19.III.1953, beating dry saw palmetto leaves, 1♂, 1♀, ELM. Levy Co., E side of causeway to Cedar Key, 12.IV.1965, on dried sawgrass leaves, 1♀, ELM. Palm Beach Co., Hwy. 441, 8 mi. S Hwy. 98, Jct. (to Palm Beach) 3.XII.1970, beating *Serenoa* palm with blue pruinosity, 7♀, 3♂, ELM. Hernando Co., Bayport, 28.XI.1970, beating dried fronds of *Serenoa repens*, 9♀, 7♂, ELM. Alachua Co., 1 mi. W Newnan's Lake, on road from Gainesville, 20.VIII.1952, in dried saw palmetto leaves, 1♂, 1♀, ELM. Hendry Co., La Belle, 4.II.1953, on small bromeliad on oak in hammock, 1♀, 1♂, ELM.

Comments. The pigmented areas of the female ninth sternum, and the apices of the clasper shafts, make this species unique in the species group. The acuminate distal extensions of the baculum, and its denticulate projections, are similar to the corresponding structures of the males of *L. carinata* and *L. carinatoides.*

Lachesilla laciniosiforceps n. sp.
(Figs. 33- 38)

Female. COLOR. Light yellowish brown. Compound eyes black, ocelli hyaline, without centripetal crescents. Two brown bands from each compound eye to epistomal sulcus, enclosing antennal fossae. Antennae and legs pale brown. A brown, irregular band on each side of thorax, above the coxae. Wings hyaline,



Figures 33- 38. *Lachesilla laciniosiforceps* n. sp. 33. Fore and hind wings, female. 34. Left paraproct and epiproct, male. 35. Left paraproct and epiproct, female. 36. Subgenital plate, female. 37. Phallosome apodemes, hypandrium and claspers, male. 38. Gonapophyses and ninth sternum, female. Scales in mm. Figures 34 – 36, and 38 to scale of Fig. 37.

veins brown. Abdomen with reddish brown subcuticular rings, more conspicuous dorsally.

Morphology. Fore wing (Fig. 33), with pterostigma elongate, almost rectangular; Rs-M diverging from a point; areola postica almost triangular. Hind wing (Fig. 33), with Rs-M fused basally for a short length. Subgenital plate (Fig. 36), broad, setae as illustrated, postero-lateral corners rounded; one elongate pigmented area on each side of longitudinal midline. Gonapophyses (Fig. 38), widest in the middle and narrowing to both ends, blunt distally, setae as illustrated. Spermapore small, towards anterior border of ninth sternum, surrounded by wide, pigmented ring (Fig. 38). Ninth sternum anteriorly with a pigmented band in the middle. Paraprocts (Fig. 35), semi-elliptic, setae as illustrated, sensory fields with 12 trichobothria set on basal rosettes, except a marginal one. Epiproct (Fig. 35), almost semi-circular, setal field on posterior half.

Measurements. FW: 2524, HW: 1935, F: 492, T: 909, t_1: 321, t_2: 98, ctt_1: 19, Mx4: 107, f_1: 348, f_2: 298, f_3: 229, f_4: 176, f_5: 110, f_6: 102, f_7: 91, f_8: 82, f_9: 74, f_{10}: 73, f_{11}: 103, IO: 319, D: 180, d: 131, IO/D: 1.77, PO: 0.72.

Male. COLOR. Same as the female.

Morphology. Hypandrium (Fig. 37), almost trapezial, with posterior border concave, setae as illustrated. Base of claspers with two macrosetae and 6-7 smaller setae, distributed as illustrated, sides parallel, outer corner extended posteriorly to form a cone; clasper shafts stout, almost straight, apically dilated, with row of small denticles on inner edge of apical bulge. Phallosome apodemes fused to form a long, slender baculum; distal membranous extensions almost triangular (Fig. 37). Paraprocts (Fig. 34), elongate, setae as illustrated, with a small, triangular mesal prong, sensory fields with 10 trichobothria on basal rosettes and one marginal without basal rosette. Epiproct (Fig. 34), slightly concave anteriorly, rounded posteriorly, with a sclerotized, mesal, triangular dorsal process, setae as illustrated.

Measurements. FW: 2458, HW: 1845, F: 490, T: 911, t_1: 305, t_2: 80, ctt_1: 19, Mx4: 113, f_1: 407, f_2: 338, f_3: 272, f_4: 200, f_5: 128, f_6: 112, f_7: 93, f_8: 98, f_9: 85, f_{10}: 83, f_{11}: 110, IO: 318, D: 196, d: 143, IO/D: 1.61, PO: 0.72.

Type Locality. MEXICO. **Chiapas.** Parque Nacional Lagunas de Montebello, 60 Km SE Comitán, 1,500 m., 11.VIII.1975, beating branches with dead leaves of fallen tree, ANGA, holotype ♂, allotype ♀, 3♂ and 11♀ paratypes (CNI-IBUNAM).

Records. USA. **Florida.** Sarasota Co., Myakka Park, 12.IV.1952, 1♀, 1♂, ELM. Monroe Co., Big Pine Key, 21.II.1956, 1♀, ELM**. Louisiana**. New Orleans, Audubon Park, 1.XII.1965, beating vegetation, 2♂, 1♀, ELM. MEXICO. **Coahuila.** Zaragoza, 23.VIII.1970, on dead leaves of *Fraxinus* sp, 1♀, ANGA. **Chiapas.** 5 Km N Ocozocoautla, on rd. To Malpaso, 1.VII.1981, beating oak branches with dead leaves, 3♀, 1♂, ANGA, LBM. Nachig, 15 Km W San Cristóbal de las Casas, 2.VII.1981, beating branches of *Cupressus,* 1♂, ANGA. 46 Km SW San Cristóbal de las Casas, Hwy, 190, 1,100 m., 10.VIII.1975, beating oaks, 2♂, 4♀, ANGA. 45 Km E Tuxtla Gutiérrez, Hwy. 190, 15.VII.1962, beating vegetation, ELM. Lagunas de Montebello, 3.VII.1981 beating *Liquidambar*, 2♀, ANGA. 10 Km NE Comitán, 2.VII.1981, beating oaks and miscellaneous shrubs, 4♀, ANGA. 6 Km Rd. to Pueblo Nuevo, 53 Km N Hwy. 190, 17.VII.1962, 1♀, 1♂, ELM. 40 Km N Hwy. 190, 17.VII.1962, beating oaks and pines, 2♀, 1♂, ELM. 14 Km N Tuxtla Gutiérrez, 14.VII.1962, 2♀, 1♂, ELM. 46 Km SW San Cristóbal de las Casas, Hwy. 190, 1,100 m., 10.VIII.1975, beating branches with dead leaves of mango, 3♀, 2♂, ANGA. 2 Km S Ixtapa, Hwy. 195, 10 Km N Junction with Hwy. 190, 1,100 m., 12.VIII.1975, beating dry

banana leaves and shrubs, 2♀, 2♂, ANGA. 5 Km N Ocozocoautla, rd. To Malpaso, 1.VII.1981, beating oak branches with dry leaves, 1♀, 1♂, ANGA. 26 Km E Tapanatepec, Oaxaca, Hwy. 190, 12.VII.1962, 1♂, ELM. **Guerrero.** 94 Km N Acapulco, 29.VII.1969, beating oak branches with dry leaves, 2♂, ANGA. **Hidalgo.** Omitlán, ca. Real del Monte, Hwy. 105, 21.VII.1980, beating oaks, 2♀, 4♂, ANGA. 16. Km S Jacala, Hwy. 85, 23.VI.1962, beating broad leaved trees and shrubs, 1♀, 1♂, ELM. 18 Km. NE Rancho Viejo, Hwy. 85, 22.VI.1962, 36♀, 20♂, ELM. 38 Km NE Rancho Viejo, Hwy. 85, 22.VI.1962, beating vegetation in forest, mostly oaks, 2♀, 3♂, ELM. 35 Km E Pachuca, Hwy. 130, 24.VI.1962, sifting ground litter, 1♀, 1♂, ELM. **Jalisco.** Ca. El Tuito, Rd. to El Cuale, 890 m., 18.IX.1988, on boulder covered with lichens, 1♂, ANGA. **Nuevo León.** Guadalupe, Rancho Alamillos, NE slope Cerro de la Silla, 600 m., 13.VIII.1972, on dried hanging leaves of *Sechium edule*, 1♀, 1♂, ANGA. 20.VIII.1978, beating vegetation, 3♀, 5♂, ANGA. 27.VIII.1978, beating branches with dead leaves of vegetation, including *Quercus, Musa* and Rutaceae, 2♀, 1♂, ANGA. 22.XII.1978, beating vegetation, 4♀, 1♂, ANGA. 31.VII.1979, beating branches of miscellaneous trees, 2♂, ANGA. 11.IV.1976, beating branches with dead leaves of avocado trees, *Quercus* and shrubs 25♀, 20♂, ANGA. 31.VII.1979, beating branches of trees, 1, ANGA. 22.X.1978, on dead banana leaves, 9♀, 3♂, ANGA. 26.VIII.1984, beating pear trees and miscellaneous shrubs, 1♀, 1♂, ANGA. 23.VII.1979, sifting oak litter, 1♂, ANGA. 23.VIII.1981, beating *Quercus* and miscellaneous shrubs, 2♀, 1♂, ANGA. 17.IV.1982, beating vegetation with dried leaves, 3♀, 2♂, under loose bark of tree trunk, 1♀, ANGA. 30.III.1988, beating vegetation, 1♀, ANGA. 22.V.1967, beating vegetation, 2♀, 4♂, ANGA. Ca. Monterrey, W slope Cerro de la Silla, Col. Contry, 22.V.1975, on dead *Dasylirion* inflorescence, 1♀, ANGA. Trail to N Peak, beating vegetation, 300 m., 18.IX.1977, 5♀, 4♂, sifting litter, 1♀, ANGA. Trail to the Arch, 900 m., 28.VIII.1982, beating vegetation, thorny scrub, 2♀, 1♂, ANGA. 12.VIII.1989, 800 m., beating vegetation, 1♀, 1♂, ANGA. 16 Km E Iturbide, Hwy. 60, 13.VI.1962, beating cycads on hillside, 3♀, beating vegetation, 1♀, 1♂, ELM. Santiago, Horsetail Fall, 14.IX.1963, beating branches with dry leaves at park entrance, 2♀, 2♂, ELM. 21.VIII.1978, beating vegetation, 10♀, 4♂, ANGA. 18.VII.1980, on dried leaves of broad leaved trees, 1♂, ANGA. La Boca Dam, 27.XII.1973, beating vegetation on mountain slope, 3♂, ANGA. 4.IV.1988, beating *Cyperus* and *Senecio*, stream edge, 1♀, 2♂, ANGA. Santiago, 3 Km N El Alamo, 23.II.1977, on dried *Seloa* and banana leaves, 2♀, ANGA. Ca. Santiago, El Cerrito, 30.VIII.1985, on dried leaves of Convolvulaceae vine, 1♀, ANGA. 26 Km SW Linares, 680 m., Hwy. 60 Santa Rosa Canyon, 24.VIII.1975, beating oaks, 13♀, 5♂, ANGA. 11 Km. W La Ciénega, towards Laguna de Sánchez, 18.VII.1980, on dried leaves of broad leaves trees, 1♀, ANGA. 9 Km. SE Monterrey, 12.VI.1962, beating oaks, 1♀, 1♂, ELM. Garza García, 28.XII.1969, beating hanging dry banana leaves, 2♀, 2♂, ANGA. 17 Km S La Ascención, Hwy. NL-63, 1,900 m., 24.VIII.1975, beating oaks and shrubs, 3♀, 1♂, ANGA. 8 Km N Allende, 650 m., 23.II.1977, beating herbaceous plants, stream edge, 1♀, 1♂, ANGA. Lazarillos, ca. Allende 370 m., 30.VIII.1985, on dead leaves of *Salix*, 2♀, 1♂, ANGA. 3 Km SE Aramberri, 1,000 M., 12.XI.1976, beating branches with dead leaves of avocado trees and shrubs, 5♀, 6♂, ANGA. 9 Km S Villaldama, 440 m., 27.V.1976, beating branches with dead leaves of *Ehretia elliptica*, 3♀, ANGA. El Encadenado Creek, 29 Km N Hualahuises, 24.V.1977, beating vegetation, 1♀, ANGA. 32 Km NE Rayones, 640 m., 24.II.1977, beating shrubs on stream edge, 1♀, ANGA. Ca. Monterrey, Chipinque, 9.VIII.1970, beating oak branches with dried leaves and abundant lichens, 4♀, 3♂, ANGA. 17.V.1976, 1,200

m., beating *Seloa* with dead, hanging leaves, 1♂, ANGA. rd. to Chipinque, 950 m., 23.V.1976, beating oaks, 9♀, 3♂, ANGA. **Puebla.** Finca Lourdes, La Unión, ca. Xicotepec de Juárez, 2.XI.1963, beating coffee trees, 1♀, JL. Ca. Xicotepec de Juárez, rd. to La Unión, 1,150 m., 16.X.1982, beating vegetation, 8♀, 2♂, ANGA. Ca. Hotel Mi Ranchito 1,200 m., 17.X.1982, on dead, hanging *Yucca* leaves, 1♀, ANGA. Hwy. 130, Jct. to Nuevo Necaxa, 1,300 m., 16.XI.1974, beating vegetation, 1♀, ANGA, 13 km. NE Teziutlán, Hwy. 131, 1,200 m., 11.VI.1983, beating vegetation, 1♀, CWOB & LBOB. **San Luis Potosí.** El Salto, 13.VIII.1958, beating vegetation, 1♀, 1♂, ELM. 18.VI.1962, beating lemon tree, 1♂, ELM. 19.VI.1962, beating vegetation near falls, 14♀, 13♂, ELM. 13 Km W Naranjo, 20.VI.1962, beating palms and understory vegetation in oak forest, 6♀, 10♂, ELM. **Tamaulipas.** 15 km W Gómez Farías, 16.VI.1962, beating vegetation along road, forest edge, 1♀, ELM. **Veracruz.** 9 Km. E Las Trancas, Hwy. 140, 29.VI.1962, beating vegetation, 3♀, ELM. 15 km E Orizaba, Hwy. 150, 7.VII.1962, 1♀, ELM. Ca. Maltrata, 1,875 m., 31.V.1976, beating oaks, 2♂, HB. 2km SW Fortín, Hwy. 150, 11.VII.1973, beating dead banana leaves on mountain slope, 1♀, 1♂, ANGA. Las Minas, ca. 30 km N Perote, 6.IX.1977, beating vegetation, 3♀, HB. **Yucatán.** 19 km SE Tekax, 25.III.1964, beating dried fronds of Queen Palm, 1♀, 1♂, ELM. GUATEMALA. Naciones Unidas National Park, ca. Amatitlán, 24.VIII.1968, beating shrubs, 1♀, ANGA. 13 km NE Guatemala City, Hwy. to Puerto Barrios, 27.VIII.1968, beating oaks, 1♂, ANGA.

Comments. This species shares with *L. gracilis* García Aldrete, the conical extension of the epiproct, but the claspers are not apically dilated in the former, and the row of denticles extends more towards the base of the shafts; the subgenital plates and gonapophyses are distinct in both species. *L. yanomamioides* García Aldrete, also has a mesal projection in the male epiproct, transverse and elongated, not conical, the clasper shafts are slender, with a row of denticles along the inner edge, and the apices are not as swollen as in *L. laciniosiforceps*. Also the female subgenital plate and the gonapophyses are distinct in both species.

Lachesilla maculata n. sp.
(Figs. 39- 44)

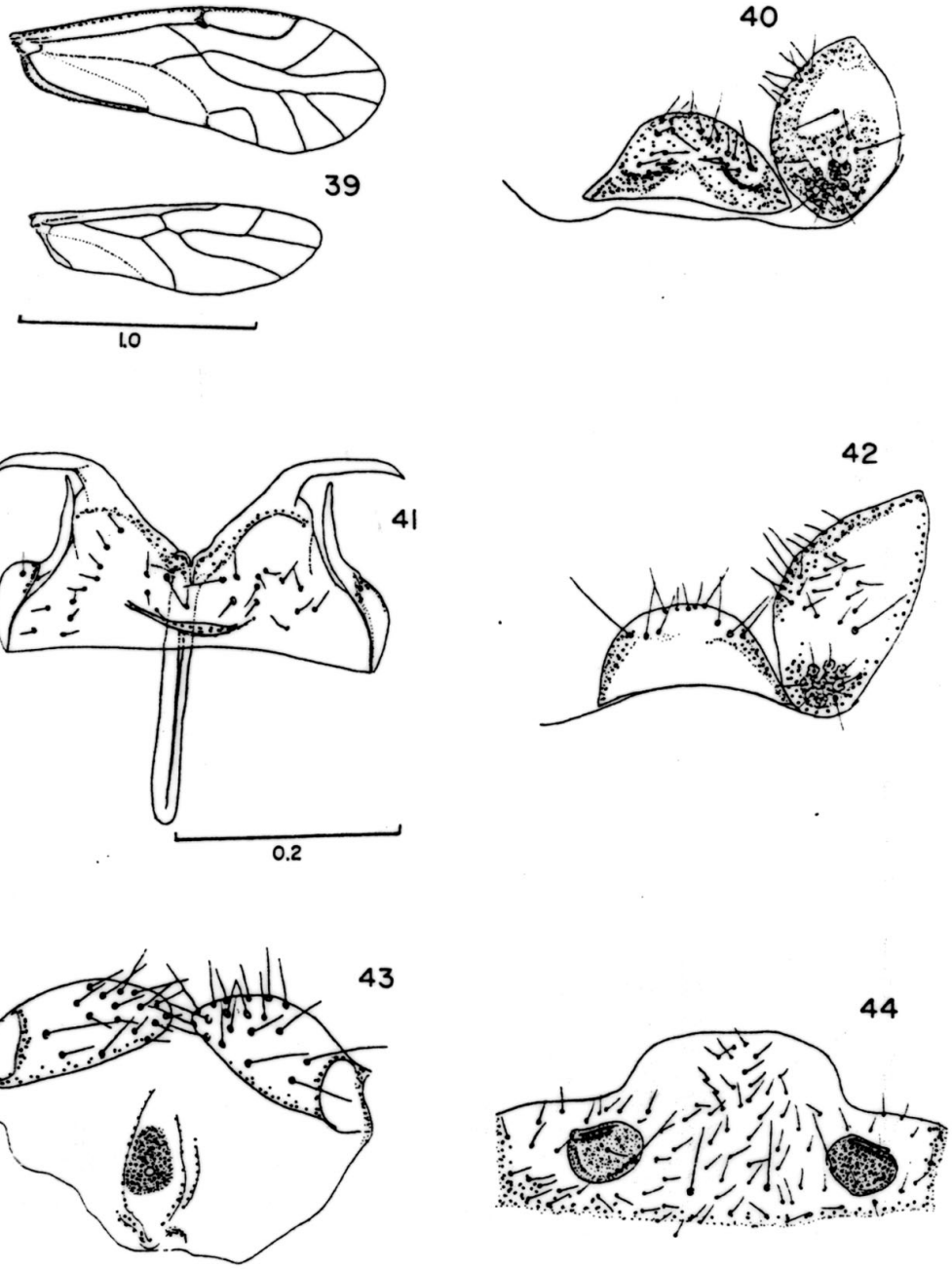
Female. COLOR. Light brown. Compound eyes black, ocelli hyaline, without pigmented centripetal crescents. Two brown bands from each compound eye to epistomal sulcus, enclosing antennal fossae. Antennae and legs pale brown. Wings hyaline, veins brown. Abdomen with dark brown subcuticular rings, more conspicuous ventrally.

Morphology. Pterostigma elongate, almost rectangular. Fore wing Rs-M diverging from a point; areola postica almost triangular. Hind wing Rs-M fused for a length (Fig. 39). Subgenital plate (Fig. 44), wide, extended posteriorly, setae as illustrated; one almost circular, deeply pigmented area mesally on each side. Gonapophyses (Fig. 43), stout, widest in the middle, blunt ended, setae as illustrated. Spermapore small, surrounded by large, elliptic, pigmented area (Fig. 43). Paraprocts (Fig. 42), almost elliptic, sensory fields with 11 trichobothria, a marginal one without basal rosette, setae as illustrated. Epiproct (Fig. 42), wide basally, rounded posteriorly, setal field on posterior half.

Measurements. FW: 1653, HW: 1251, F: 312, T: 622, t_1: 190, t_2: 77, ctt_1: 17, Mx4: 92.7, f_1: 236, f_2: 191, f_3: 178, f_4: 127, f_5: 85, f_6: 75, f_7: 72, f_8: 56, f_9: 68, f_{10}: 64, IO: 267, D: 153, d: 106, IO/D: 1.73, PO: 0.68.

Male. COLOR. Same as the female.

Morphology. Hypandrium (Fig. 41) wide, with flat anterior margin; bilobed posteriorly, each lobe terminating posteriorly as an



Figures 39- 44. *Lachesilla maculata* n. sp. 39. Fore and hind wings, female. 40. Left paraproct and epiproct, male. 41. Phallosome apodemes, hypandrium and claspers, male. 42. Left paraproct and epiproct, female. 43. Gonapophyses and ninth sternum, female. 44. Subgenital plate, female. Scales in mm. Figures 40, and 42- 44 to scale of Fig. 41.

acuminate apophysis abruptly bent laterally. Claspers (Fig. 41), slender, with one or two setae on basal half, shaft distally blunt. Baculum (Fig. 41), stout, straight. Paraprocts (Fig. 40) ovoid, setae as illustrated, sensory fields with 12 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 40), broad, almost trapezial, with setal fields on each side, as illustrated.

Measurements. FW: 1616, HW: 1252, F: 297, T: 572, t_1: 165, t_2: 72, ctt_1: 15, Mx4: 74, f_1: 220, f_2: 196, f_3: 168, f_4: 136, f_5: 91, f_6: 95, f_7: 73, f_8: 74, f_9: 68, IO: 241, D: 175, d: 106, IO/D: 1.37, PO: 0.60.

Type Locality. MEXICO. **Chiapas.** Palenque Archaeological Zone, 5.VII.1996, beating foliage in rain forest, holotype ♂, allotype 1♀, paratype ♂, ELM and RS (ISU).

Records. MEXICO. **Chiapas.** Chimalapa, 29 km N Malpaso, 8.IV.1964, beating palms in selva, 1♀, ELM. **Tabasco.** Ejido Libertad, 2 km SW Frontera, Hwy. 180, 1.IV.1964, beating palm fronds in selva, 1♀, ELM. Ejido Libertad, 6 km. W Frontera, 27.VI.1966, beating palms in lowland rain forest, 2♂, ELM. **Veracruz.** 13 km N Santiago Tuxtla, 7-8VII.1967, beating branches with dried leaves and dried *Heliconia* leaves in selva, 4♀, 3♂, ELM. Coyame, 9.VII.1967, beating dried banana leaves in plantation, 1♂, 1♀, ELM. 32 km. E Coatzacoalcos, 10.VII.1967, beating vegetation in acahual, 1♀, 1♂, ELM, Los Tuxtlas, UNAM Biology Station, 26.VI.1979, beating branches with dead leaves and palms in selva, 7♀, 7♂, ANGA and ELM. 21.V.1983, beating vegetation, 1♂, CWOB, LBOB, and GBM. 20.XII.1984, beating branches with dead leaves, fallen tree, 5♀, 1♂, ANGA. 16.I.1985, beating vegetation, 1♀, RC. 8.VII.1988, beating branches with dead leaves, forest edge, 3♀, 1♂, ANGA. BELIZE, Toledo District, Columbia Forestry Station, ca. San Antonio 9-10.VII.1971, beating cohune palms, 5♀, 1♂, ELM.

Comments. The slender claspers, the acuminate projections of the phallosome apodemes, and the well defined pigmented spots of the subgenital plate, make this species unique in the group.

Lachesilla rectiforceps n. sp.
(Figs. 45- 51)

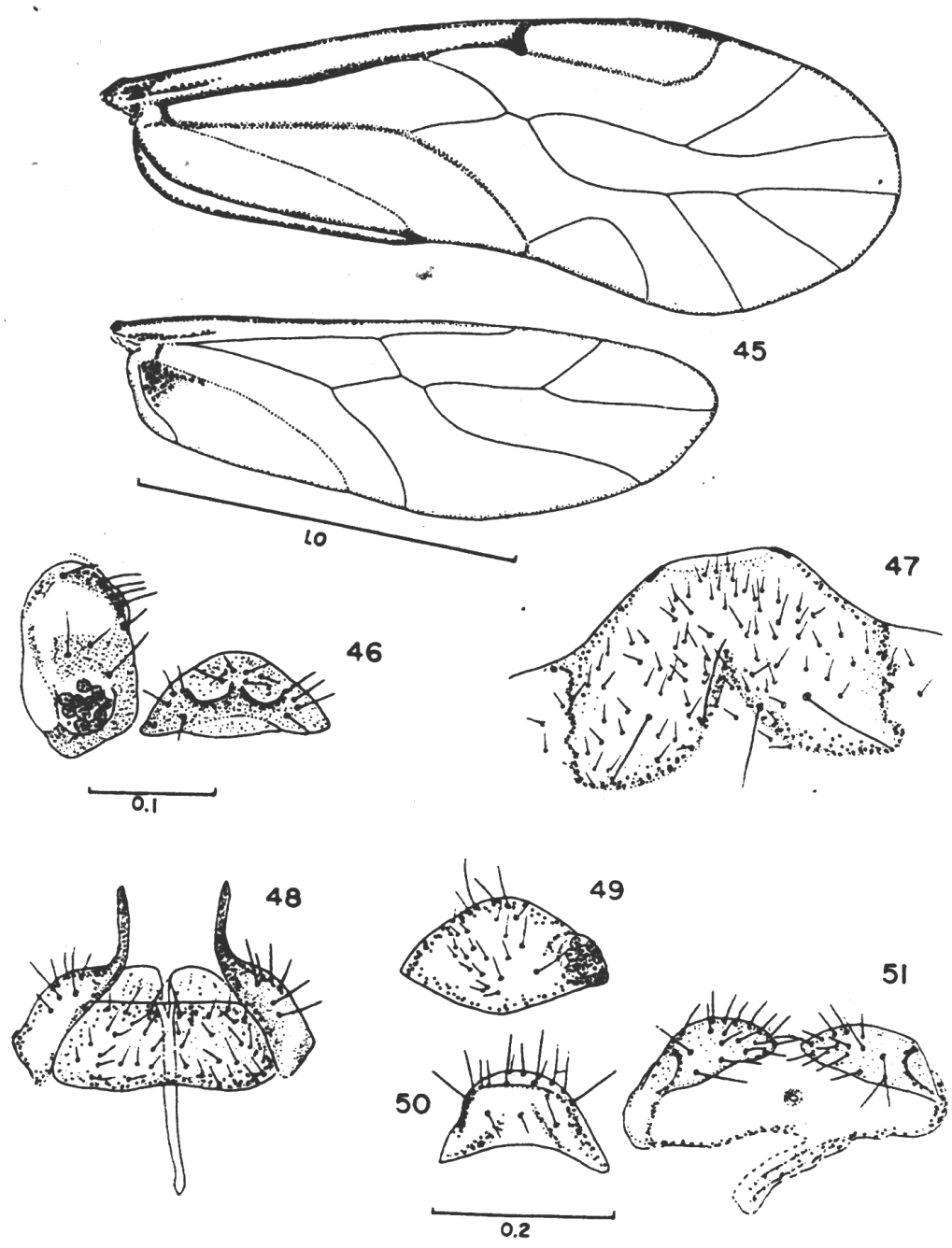
Female. COLOR. Pale brown. Compound eyes black, ocelli hyaline, without pigmented centripetal crescents. Two brown bands from each compound eye to epistomal sulcus, enclosing antennal fossae. Maxillary palps and antennae brown. Legs pale brown. Wings hyaline, veins brown.

Morphology. Fore wing (Fig. 45), with pterostigma elongate, about four times as long as wide. Rs-M fused for a length basally, diverging from a point or connected by a short crossvein. Areola postica wide basally, with wide, rounded apex. Hind wing (Fig. 45), with Rs-M basally fused for a length. Subgenital plate (Fig. 47), with setae as illustrated, hind margin flat, with a hyaline band along its length. Gonapophyses (Fig. 51), widest in the middle, blunt ended, setae as illustrated. Spermapore (Fig. 51), small, almost in center of ninth sternum, surrounded by a slender pigmented ring. Paraprocts (Fig. 49), almost elliptic, setae as illustrated, sensory fields with 10 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 50), almost trapezial, setal field on posterior half.

Measurements. FW: 2011, HW: 1543, F: 402, T: 732, t_1: 243, t_2: 89, ctt_1: 19, Mx4: 98, f_1: 268, f_2: 235, f_3: 182, f_4: 147, f_5: 96, f_6: 86, f_7: 73, f_8: 82, f_9: 75, f_{10}: 68, f_{11}: 97, IO: 265, D: 177, d: 118, IO/D: 1.49, PO: 0.66.

Male. COLOR. Same as the female.

Morphology. Hypandrium (Fig. 48), wide, setose, trapezial. Baculum (Fig. 48), long, slender, distal membranous extensions small, rounded. Claspers (Fig. 48), with shafts



Figures 45- 51. *Lachesilla rectiforceps* n. sp. 45. Fore and hind wings, female. 46. Right paraproct and epiproct, male. 47. Subgenital plate, female. 48. Phallosome apodemes, hypandrium and claspers, male. 49. Right paraproct, female. 50. Epiproct, female. 51. Gonapophyses and ninth sternum, female. Scales in mm. Figures 47- 49 and 51 to scale of Fig. 50.

slender, straight, directed posteriorly; basal portions stout, with sides almost paralled, setae as illustrated, base with two large setae and 3-4 smaller ones. Paraprocts (Fig. 46), long, quadrate, setae as illustrated, sensory fields with 12 trichobothria, a marginal one without basal rosette. Epiproct (Fig. 46), almost semi-circular, with a setal field on each antero-lateral corner, and one posteriorly; a concave band on each side of longitudinal midline.

Measurements. FW: 1537, HW: 1202, F: 323, T: 595, t1: 197, t2: 78, ctt1: 15, Mx4: 73, f1: 226, f2: 197, f3: 177, f4: 131, f5: 89, f6: 83, f7: 70, f8: 73.6, IO: 258, D: 153, d: 106, IO/D: 1.67, PO: 0.68.

Type Locality. MEXICO. **Veracruz.** Los Tuxtlas, ca. Balzapote, 3.VIII.1989, on dead fronds of coconut palm and on dried guava leaves, holotype ♂, allotype ♀, paratype ♂, ANGA (CNI-IBUNAM).

Records. MEXICO. **Chiapas.** Biosphere Reserve El Ocote, 700 m., 1.V.1993, La Reina, beating branches with dried leaves, 1♂, ANGA. 2.V.1993, beating branches with dead leaves, ca. Mayan ruins, 1♀, ANGA. 10 km SW Jaltenango, 700 m., 4.V.1993, beating branches with dried leaves, 1♀, ANGA. **Oaxaca.** Chiltepec, 17.III.1990, 1♂, AC. **Veracruz.** 23 km N Nautla, Hwy, 180, 27.VI.1962, beating broad leaved trees, shrubs and vines, lowland rain forest, 1♂, ELM. Los Tuxtlas, UNAM Biology Station, 26.VI.1979, beating foliage in forest, 1♀, 1♂, ANGA. 17.VIII.1987, on dead leaves of fallen trees, 24♀, 4♂, ANGA. 8.VII.1988, beating branches with dried leaves, forest edge, 2♀, 1♂, ANGA. ca. UNAM Biology Station, 9.VII.1988, beating citrus branches, 1♂, ANGA. 23 km NW Alvarado, 13.III.1984, beating vegetation in hammock, 3♀, 1♂, ANGA.

Comments. The characteristis shape of the claspers in this species makes it unique among the other species in the group.

Lachesilla typhicola n. sp.
(Figs. 52- 58)

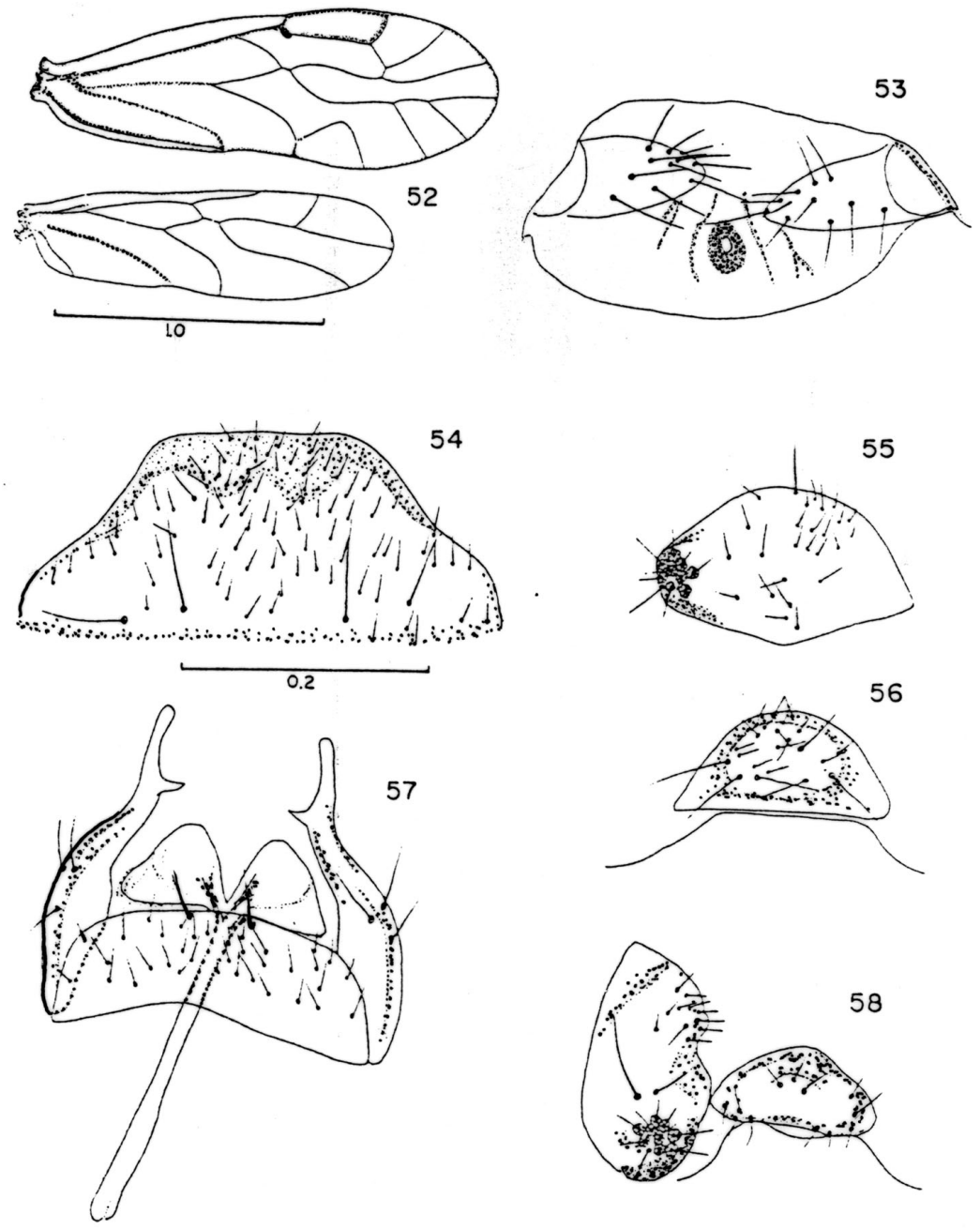
Female. COLOR. Pale yellowish brown. Compound eyes black, ocelli hyaline, without pigmented centripetal crescents. Antennae and maxillary palps pale brown. Legs pale brown, wings hyaline, veins pale brown. A slender, brown, irregular band on each side of thorax, running above the coxae. Abdomen pale brown, with brown subcuticular rings, more conspicuous on the sides.

Morphology. Fore wings with a crossvein between lower posterior angle of pterostigma to the base of R_{2+3}. Rs-M joined for a short length; areola postica almost triangular (Fig. 52). Hw Rs-M joined for a length (Fig. 52). Subgenital plate trapezial, wide, setose as illustrated (Fig. 54). Gonapophyses (Fig. 53) wide basally, narrowing to blunt apex, setae as illustrated. Spermapore near the center of the ninth sternum, surrounded by a wide, pigmented ring. Paraprocts broad, setose, sensory fields with 10-11 trichobothria, one, on inner edge, without basal rosette (Fig. 55). Epiproct (Fig. 56), rounded posteriorly, setal field as illustrated.

Measurements. FW: 1651, HW: 1348, F: 385, T: 701, t1: 249, t2: 97, ctt1: 14, Mx4: 84, f1: 301, f2: 265, f3: 219, f4: 190, f5: 102, f6: 102, f7: 78, f8: 84, f9: 74, f10: 77, f11: 83, IO: 289, D: 138, d: 132, IO/D: 2.08, PO: 0.95.

Male. COLOR. Same as the female.

Morphology. Hypandrium broad, setose, slightly convex posteriorly; basal half of claspers continuous with shaft, bearing three large setae. Shaft stout, with apex rounded, bearing a large tooth on inner edge (Fig. 57). Baculum long, slender, distal lamellae broad, almost triangular. Paraprocts (Fig. 58), broad, elongate, setae as illustrated; sensory field with ten trichobothria, one marginal without basal rosette. Epiproct (Fig. 58), wide basally, almost triangular, setae as illustrated.



Figures 52- 58. *Lachesilla typhicola* n. sp. 52. Fore and hind wings, female. 53. Gonapophyses and ninth sternum, female. 54. Subgenital plate, female. 55. Right paraproct, female. 56. Epiproct, female. 57. Phallosome apodemes, hypandrium and claspers, male. 58. Right paraproct and epiproct, male. Scales in mm. Figures 53, and 55- 58, to scale of Fig. 54.

Measurements. FW: 1766, HW: 1345, F: 378, T: 645, t_1: 212, t_2: 84, ctt_1: 15, Mx4: 117, f_1: 300, f_2: 279, f_3: 226, f_4: 185, f_5: 107, f_6: 106, f_7: 78, f_8: 81, f_9: 76, f_{10}: 75, f_{11}: 93, IO: 260, D: 144, d: 106, IO/D: 1.81, PO: 0.73.

Type Locality. USA**. Illinois.** Lake Co. 1 mi E Waukonda, 26.VII.1959, beating cattails, holotype ♂, allotype ♀, 3 paratypes of each sex, ELM (ISU).

Records. USA. **Illinois.** Lake Co. Illinois Toll Rd. and State Rd. 176, 26.VII.1959, beating cattails, 2♂, 3♀, ELM. Makanda, 5.IX.1967, beating *Typha latifolia*, 2♂, 6♀, ELM. Mason Co., Mason State Forest, 23..X.1965, beating tree branches, 2♂, GEE. **Florida.** Liberty Co., Torreya State Park, 23.VIII. 1962, 3♀, ELM. 3-4.VI.1952, 12♂, 5♀, ELM. **Indiana.** Steuben Co., State Rd. 120 at Fawn River, 31.VII.1956, beating cattails, 6♂, 9♀, ELM. Parke Co., Turkey Run State Park, 27.VI.1964, beating oaks, 2♂, 8♀, GEE. **Michigan.** Livingston Co., E.S. George Reserve, 26.VII.1956, beating dead clumps of *Typha angustifolia* in cattail marsh, 3♂, 2♀, ELM. 7.IX.1952, 10♂, 9♀, ELM. **Minnesota.** St. Paul, State Hwy. 49 at 500 Line tracks. 30.VIII.1956, beating cattails at marsh edge, 8♂, 16♀, ELM.

Comments. This species is very close to *L. anna* Sommerman, which occurs throughout eastern United States and southeastern Canada. The clasper shafts of *L. anna* are straight, much more slender, and the inner distal tooth is smaller than in *L. typhicola*. The female of the latter lacks the two yellow, ovoid sclerotized areas underlying the subgenital plate of *L. anna.*

Key to the North American species of *Lachesilla* in the group *Forcepeta*.

1. Fore wing with a crossvein between lower angle of pterostigma and Rs or R_{2+3} 2
1'. Fore wing without a crossvein between lower angle of pterostigma and Rs or R_{2+3} 4

2. Female subgenital plate with postero-lateral corners pointed, slightly protruding, and with a conical projection next to each one (Fig. 16). Males unknown ..... *L. cladiumicola* n.sp.
2'. Female subgenital plate without posterior pointed projections 3

3. Female ninth sternum with a distinct, almost circular pigmented area on posterior margin, on each side of longitudinal midline (Fig. 30). Male claspers slightly dilated apically and slightly divided apically; phallosome apodemes posteriorly with two stout prongs, and a wide, denticulate lamella associated with each (Fig. 31) ..... *L. floridana* n.sp.
3'. Female ninth sternum not as above (Fig. 53). Claspers with a strong, acuminate projection distally on inner edge; phallosome apodemes divided posteriorly to form two almost triangular membranous pads (Fig. 57) ..... *L. typhicola* n. sp.

4. Hypandrium projected posteriorly to form a long, stout, acuminate extension; phallosome apodemes undivided posteriorly. Female gonapophyses broad, distally blunt, ninth sternum with a distinct, almost elliptical pigmented area posterior to spermapore, with transverse striae (García Aldrete, 1976) ..... *L. aculeata* García Aldrete
4'. Hypandrium not as above. Phallosome apodemes clearly divided posteriorly or extended into a membranous area. Female gonapophyses and ninth sternum not as above 5

5. Phallosome apodemes posteriorly extended into a broad, membranous area 6
5'. Phallosome apodemes posteriorly divided in two membranous pads or in two acuminate prongs 9

6. Clasper shaft with an acuminate projection on inner edge 7
6'. Clasper shaft smooth, without projections 8

7. Male epiproct with well defined, stout prong posteriorly; male paraproct with small mesal prong. Female subgenital plate without pigmented areas (García Aldrete, 1996) ..... *L. denticuliforceps* GarcíaAldrete
7'. Male epiproct with wide posterior projection; paraproct without mesal prong. Female subgenital plate with two mesal, well defined pigmented areas, one to each side of longitudinal midline (García Aldrete, 1988) ..... *L. denticulata* García Aldrete

8. Clasper shaft curved inwards, distally acuminate. Female ninth sternum limited anteriorly by wide pigmented band; postero-lateral corners of subgenital plate, protruding, almost square (GarcíaAldrete, 1988) ..... *L.alpejia* García Aldrete
8'. Clasper shaft curved outwards, distally blunt (Fig. 21). Female ninth sternum without pigmented band anteriorly (Fig. 22); postero-lateral corners of subgenital plate rounded, protruding (Fig. 20) ..... *L. estradaorum* n. sp.

9. Phallosome apodemes posteriorly with two distinct acuminate prongs 10
9'. Phallosome apodemes posteriorly with two membranous pads 13

10. Claspers slender, distally blunt; prongs of phallosome apodemes large, fused to posterior border of hypandrium, directed laterally (Fig. 41). Female subgenital plate with two mesal, rounded, distinct pigmented areas (Fig. 44) ..... *L. maculata* n. sp.
10'. Claspers large, distally acuminate; prongs of phallosome not as above. Female subgenital plate without mesal pigmented areas 11

11. Prongs of phallosome apodemes curved inwards; clasper shaft with stout projection on outer edge, near apex. Female subgenital plate with two large, weakly pigmented areas mesally, one to each side of longitudinal midline; ninth sternum with large, elongate, tear-shaped, longitudinal pigmented area, enclosing spermapore (García Aldrete, 1988) ..... *L .disjuncta* García Aldrete
11'. Prongs of phallosome apodemes curved outwards; clasper shaft without projection on outer edge. Female subgenital plate and ninth sternum not as above 12

12. Prongs of phallosome apodemes each with a narrow, denticulate lamella; clasper shaft with a short, denticulate carina (Fig. 6). Female subgenital plate broad (Fig. 5) ..... *L. carinata* García Aldrete
12'. Prongs of phallosome apodemes each with a wide, denticulate lamella; clasper shaft with a long, denticulate carina (Fig. 12). Female subgenital plate narrow (Fig. 11) ..... *L. carinatoides* García Aldrete

13. Male epiproct simple, without projections or protuberances, at most with mesal field of papillae 19
13'. Male epiproct projected posteriorly, or with one or two mesal protuberances 14

14. Male epiproct projected posteriorly in the middle 15
14'. Male epiproct not projected posteriorly; mesally with one or two protuberances 16

15. Clasper shaft stout, dilated near the apex; female subgenital plate broad, posterior margin wide (Mockford & Gurney, 1956) ..... *L. kathrynae* Mockford &Gurney
15'. Clasper shaft slender, acuminate; female subgenital plate with sides converging to a narrow posterior margin (Sommerman, 1946) ..... *L. chapmani* Sommerman

16. Clasper shaft with row of denticles on inner edge 17
16'. Clasper shaft not as above 18

17. Clasper shaft slender; male epiproct with a slender, transverse, mesal protuberance (García Aldrete, 1996) ..... *L. yanomamioides* García Aldrete
17'. Clasper shaft stout; male epiproct with a mesal triangular protuberance, posterior to two fields of papillae (García Aldrete, 1988) ..... *L. gracilis* García Aldrete

18. Clasper shaft slightly dilated distally, apically with 2-3 denticles on inner edge (Fig. 37); male epiproct with a basally wide, mesal, triangular protuberance ..... *L .laciniosiforceps* García Aldrete
18'. Clasper shaft distally acuminate, with an acuminate projection on inner edge; male epiproct with two mesal, rounded protuberances (García Aldrete, 1996) ..... *L. acuminiforceps* García Aldrete

19. Hypandrium extended posteriorly in the middle; clasper shaft almost straight, directed posteriorly, distally with a slender, acuminate projection; epiproct robust, trapecial, with postero-lateral corners prominent, rounded (Sommerman, 1946; Mockford, 1993) ..... *L. penta* Sommerman
19'. Hypandrium, claspers and epiproct not as above 20

20. Clasper shaft distally divided, with outer arm longer than inner one; female subgenital plate with two distinct, pigmented oval areas, one to each side of longitudinal midline (Sommerman, 1946; Mockford, 1993) ..... *L.anna* Sommerman
20'. Claspers and female subgenital plate not as above 21

21. Clasper shaft distally acuminate 22
21'. Clasper shaft distally blunt 25

22. Base of clasper shaft with field of spines on outer edge; male epiproct with field of papillae near anterior border 23
22'. Base of clasper shaft and male epiproct not as above 24

23. Spines on base of clasper shaft stout, strongly sclerotized; male epiproct with broad field of large papillae (Mockford,1993) ..... *L.forcepeta* Sommerman
23'. Spines on base of clasper shaft slender, weakly sclerotized; male epiproct with transverse, slender field of small papillae (Mockford, 1993) ..... *L. major* Sommerman

24. Clasper shaft stout, curved, apices pointing inwards; male epiproct subquadrate (Mockford & Gurney, 1956) ..... *L. bottimeri* Mockford & Gurney
24'. Clasper shaft slender, almost straight, directed posteriorly (Fig. 48); male epiproct broadly triangular (Fig. 46) ..... *L. rectiforceps* n. sp.

25. Clasper shaft distinctly bulged apically; membranous pads distal to phallosome apodemes large, almost square (Fig. 25) ..... *L. filicicola* n. sp.
25'. Clasper shafts and pads of phallosome apodemes not as above 26

26. Hypandrium narrow antero-posteriorly; outer border of clasper base straight (García Aldrete, 1988) ..... *L. cuala* García Aldrete
26'. Hypandrium wide antero-posteriorly; outer border of clasper base convex 27
27. Clasper base longer than clasper shaft, phallosome apodemes stout, distal pads large; spermapore large, a small pore posteriorly on pigmented area surrounding spermapore (Mockford, 1974; García Aldrete, 1996) ..... *L. sandersoni* Mockford
27'. Clasper base about as long as clasper shaft, phallosome apodemes slender, distal pads small; spermapore small; lacking a posterior pore on pigmented ring surrounding spermapore(Sommerman, 1946; Mockford, 1993) ..... *L. contraforcepeta* Sommerman

RESUMEN

Se describen e ilustran, diez especies de *Lachesilla* en el grupo *Forcepeta*. Tres de ellas han sido recolectadas exclusivamente en los Estados Unidos, seis son exclusivas de México, y una se ha registrado en el suroeste de los Estados Unidos, en México y en Guatemala. Las especies descritas son: *L. carinata* n. sp., de Chiapas, Campeche, Hidalgo, Morelos, Oaxaca, San Luis Potosí, Tabasco, Tamaulipas y Veracruz; *L. carinatoides* n. sp., de la Isla María Madre, Guerrero y Oaxaca; *L. cladiumicola* n. sp., de una sola localidad en Levy County, Florida; *L. estradaorum* n. sp., de una sola localidad en Los Tuxtlas, Veracruz; *L. filicicola* n. sp., de una sola localidad en Tabasco; *L. floridana* n. sp., de varias localidades en Florida; *L. laciniosiforceps* n. sp., de Florida, Louisiana, Chiapas, Coahuila, Guerrero, Hidalgo, Jalisco, Nuevo León, Puebla, San Luis Potosí, Tamaulipas, Veracruz, Yucatán y Guatemala; *L. maculata* n. sp., de Chiapas, Tabasco y Veracruz; *L. rectiforceps* n. sp., de Veracruz, Chiapas y Oaxaca, y *L. typhicola* n. sp., de Florida, Illinois, Indiana, Michigan y Minnesota. Todas ellas difieren entre sí, y de las otras especies del grupo, en caracteres de venación y, principalmente, en caracteres genitales de los dos sexos. La localización de los tipos se indica en las descripciones respectivas.

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APPENDIX

Described North American species of *Lachesilla* in the group *Forcepeta*

1.	*L. aculeata* García Aldrete	México
2.	*L. acumini forceps* García Aldrete	Florida, Dominican Republic, México, Puerto Rico.
3.	*L. alpejia* García Aldrete	México
4.	*L. anna* Chapman	Canada, U.S.A.
5.	*L. bottimeri* Mockford and Gurney	México, U.S.A.
6.	*L. carinata* García Aldrete	México
7.	*L. carinatoides* García Aldrete	México
8.	*L. contraforcepeta* Chapman	Canada, U.S.A.
9.	*L. cuala* García Aldrete	México, Panamá, Perú, Brazil, Trinidad.
10.	*L. chapmani* Sommerman	U.S.A.
11.	*L. cladiumicola* García Aldrete	U.S.A.
12.	*L. denticulata* García Aldrete	Belize, Ecuador, Guatemala, Honduras, Jamaica, México, Panama, Trinidad.
13.	*L. denticuliforceps* García Aldrete	Cuba, México
14.	*L. disjuncta* García Aldrete	Belize, México
15.	*L. estradaorum* García Aldrete	México
16.	*L. filicicola* García Aldrete	México
17.	*L. floridana* García Aldrete	U.S.A.
18.	*L. forcepeta* Chapman	Canada, U.S.A.
19.	*L. gracilis* García Aldrete	Belize, Guatemala, México, U.S.A.
20.	*L. kathrynae* Mockford and Gurney	México, U.S.A.
21.	*L. laciniosiforceps* García Aldrete	México
22.	*L. maculata* García Aldrete	México
23.	*L. major* Chapman	U.S.A.
24.	*L. penta* Sommerman	Belize, Guatemala, México
25.	*L. rectiforceps* García Aldrete	México
26.	*L. sandersoni* Mockford	Cuba, Dominican Republic, French Guiana, Guatemala, Jamaica, México.
27.	*L. typhicola* García Aldrete	U.S.A.
28.	*L. yanomamioides* García Aldrete	Guatemala, México, Trinidad.