

NOTES ON MEXICAN AND CENTRAL AMERICAN PSYLLIDAE
(HOMOPTERA)

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All species in this report, unless noted otherwise, were taken by Dr. D. M. DeLong, Dr. C. C. Plummer, Mr. Gene Good, and the writer the fall of 1941. Deposition of type material is in the writer's collection.

***Livia mexicana* n. sp.**

(Fig. 1)

Length to tip of forewing 3.1 mm., forewing 2.3 mm.

General color orange-brown over all, entire venter and tips of antennae black.

Vertex one and a half times as long as broad, not deeply notched cephalad; eyes flattened. Forewings twice as long as broad, ovate, rugose, translucent. Forceps of male almost as long as proctiger, caudal margins evenly lunate, apices diagonally truncate, cephalic margins suddenly expanded basally at midlength.

This species somewhat resembles *vernalis* Fitch but is smaller with a more shallow notched vertex and distinct genitalia.

Male holotype near Orizaba, near Vera Cruz, October 17, 1941, from sedge and grass in an oak-pine association.

***Aphalara simila* Cald.**

Two specimens from Uruapan, Michoacan, October 1, 1941, from roadside weeds.

***Heteropsylla texana* Crawford**

A few specimens from Tehuacan, Puebla, October 17, 1941, and very common at Tehuantepec, Oaxaca, October 13, 1941, on "Huasache."

***Heteropsylla mexicana* Crawford**

Specimens taken from semi-desert vegetation between Jacala and Zimapan, Hidalgo, and near Zamora, Michoacan.

***Heteropsylla forcipata* Crawford**

(Figs. 2 and 2A)

One male specimen recognized from Tehuantepec, Oaxaca, October 13, 1941, taken along with many specimens of *mexicana* Crawford. The genitalia of this specimen is not exactly as Crawford¹ has illustrated, but it is structurally the same, the difference in appearance probably being due to treatment with caustic.

***Heteropsylla huasachae* Cald.**

This species was very abundant at Tehuantepec, Oaxaca, on "Huasache." Dr. Plummer also took this species at Popaya, in Guatemala, March 9, 1942.

***Heteropsylla didubiata* n. sp.**

(Fig. 3)

Length to tip of forewing 2.6 mm., forewing 2.2 mm.

General color light yellow green over all.

Head as broad as thorax; genae greatly swollen; clypeus very prominent. Thorax strongly

¹1914. Crawford, D. L. U. S. N. M. Bull. 85, pl. 8, figs. 116-118.

arched, robust. Forewings almost two and a half times as long as broad; pterostigma very broad and long. Female genital segment as long as rest of abdomen; dorsal valve abruptly styliform in apical half; ventral valve almost as long as dorsal, acute apically.

Female holotype and paratype from Tamazunchale, San Luis Potosi, November 15, 1938 (Caldwell).²

This may be the female of *forcipata* Crawford but the writer believes not because this species is much larger than the specimens of *mexicana* or *forcipata* and the color is definitely green and not brown or black as in those species; furthermore this species was taken while sweeping lush tropical vegetation while the former mentioned species were found on plants in a semi-desert habitat.

Carsidara dugesii Loew

One female from Carapan, Michoacan, October 2, 1941, Km. 432, and numerous specimens of both sexes from Popaya in Guatemala, Km. 99, March 9, 1942, by Dr. Plummer.

Rhinopsylla nigra Laing

(Fig. 17)

1923. *Rhinopsylla nigra* Laing, Ann. & Mag. Nat. Hist. (9) 11: 697.

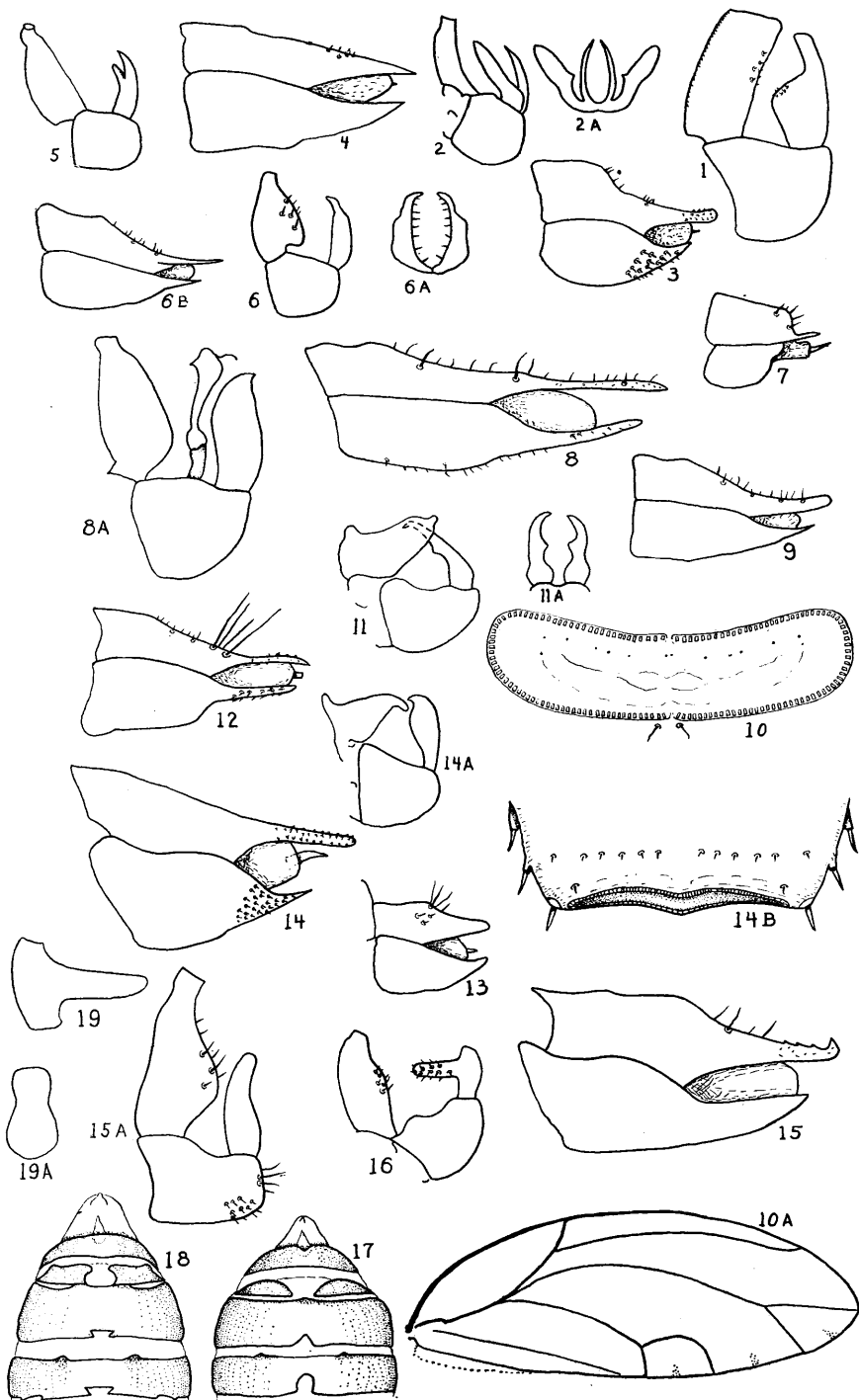
This collection contains thirty specimens from Tuxpan, Carapan, Uraupan, and Zitacurao, Michoacan, Orizaba, Veracruz, and Puebla, Puebla. The female exhibits the sexual dimorphism typical of the *Rhinopsylla*. Though the ground color is black, the vertex, pronotum, and praescutum are pink to light tan and the scutum has four light stripes. The female is a good deal larger than the male, measuring 3.4 mm. to tip of forewing, with a forewing of 2.9 mm. The ventral valve of the genital segment is scarcely shaped, appearing just like a last ventral segment.

Holotype female from Orizaba, Veracruz, October 5, 1941, paratypes from the above mentioned localities. This species is closely related to *rubrafacia* Caldwell. (Fig. 18.)

²1941. Caldwell, J. S., Ohio Jr. Sci. 41: 420. (Under *H. forcipata*.)

EXPLANATION OF PLATE I

1. *Livia mexicana*. Profile of male genitalia.
2. *Heteropsylla forcipata* Crawf. Profile of male genitalia.
- 2 A. Caudal view of male forceps.
3. *Heteropsylla didubiata*. Profile of female genitalia.
4. *Paratrioza plummeri*. Profile of female genitalia.
5. *Trioza rugosata*. Profile of male genitalia.
6. *Trioza stroma*. Profile of male genitalia.
- 6 A. Caudal view of male forceps.
- 6 B. Profile of female genitalia.
7. *Trioza zogoda*. Profile of female genitalia.
8. *Trioza apartata*. Profile of female genitalia.
- 8 A. Profile of male genitalia.
9. *Trioza hidalgoensis*. Profile of female genitalia.
10. *Trioza epiphitata*. Circum-anal ring of immature.
- 10 A. Forewing of adult.
11. *Trioza albanigra*. Profile of male genitalia.
- 11 A. Caudal view of male forceps.
12. *Trioza rugosata*. Profile of female genitalia.
13. *Arytaina virgna*. Profile of female genitalia.
14. *Mitropsylla deserata*. Profile of female genitalia.
- 14 A. Profile of male genitalia.
- 14 B. Abdominal apex of immature.
15. *Caradocia delongi*. Profile of female genitalia.
- 15 A. Profile of male genitalia.
16. *Psylla minutiforma*. Profile of male genitalia.
17. *Rhinopsylla nigra* Laing. Sclerite formation on ventral side of female abdomen.
18. *Rhinopsylla rubrafacia* Cald. Sclerite formation on ventral side of female abdomen.
19. *Paratrioza simla*. Profile of male proctiger.
- 19 A. Circum-anal ring of female.



Paratrioza plummeri n. sp.

(Fig. 4)

Length to tip of forewing 3.5 mm., forewing 3.1 mm.

General color light brown with legs and venter of abdomen yellow.

Vertex twice as broad as long, foveal impressions elongate, deep. Genae swollen sub-spherically; antennae over one and a half times as long as width of head; clypeus small. Pronotum small, greatly depressed; praescutum as broad as long. Vertex and thorax finely pubescent. Forewings over three times as long as broad, acute apically; humeral angles darkened; radial sector very long. Hind tibiae with apical spur ratio of 2-1. Female genital segment as long as rest of abdomen, both valves gradually acute apically.

Female holotype and paratype from Tehuacan, Puebla, October 17, 1941.

The writer names this species in honor of Dr. Charles C. Plummer.

Paratrioza simila n. sp.

(Figs. 19 and 19A)

Length, male 3.4 mm., female 3.8 mm.; forewing, male 2.8 mm., female 3. mm.

Color and markings of male identical to *cockerelli* Sulc except concentric macula in center of vertex is much more prominent and the thorax is possibly less black with more red background. Female predominantly red-orange with a black spot in either half of the vertex and a few black dashes laterally on either side of the notum. Both sexes have the abdomen black above and the forewings yellowish.

Vertex not especially emarginate. Genal cones short, blunt, divergent. Clypeus large. Antennae one and a half times as long as width of head. Pronotum greatly depressed. Forewings three times as long as broad, acute apically. Proctiger of male with very long, slender, lateral flaps, much longer than in *cockerelli*. Forceps long, slender, siculate apically. Dorsal valve of female genital segment short, blunt; anal opening shape of an "hourglass." Ventral valve one-third as long as dorsal, not acute apically.

Male holotype, female allotype, and paratypes of both sexes from San Cristobol in Guatemala, March 30, 1943 (Plummer). Two male and two female paratypes from Carapan, Michoacan, October 4, 1941, and two male and one female paratypes from Rio Frio, Puebla, October 7, 1941.

Where this species and *cockerelli* Sulc. occur together *simila* may be easily recognized by its larger size.

Paratrioza cockerelli Sulc.

Taken as far south as Km. 55, Rio Frio, Puebla, October 7, 1941. The Rio Frio specimen was taken from fir and pine at an elevation of about 10,000 ft. along with specimens of *simila*.

Trioza rugosata n. sp.

(Figs. 5 and 12)

Length to tip of forewing, male 2.9 mm., female 3.4 mm.; forewing, male 2.5 mm., female 2.6 mm.

General color dark brown; genal cones, antennae, and legs light brown.

Vertex about one and a half times as broad as long, swollen on either side of median line. Genal cones as long as vertex, slender, acute. Antennae scarcely longer than width of head. Vertex and thorax finely and evenly pitted. Forewings over twice as long as broad, not acute. Metacoxae with caudal spurs. Hind tibiae with apical spur ratio of 3-1. Forceps of male with deeply bifid apices projecting cephalad. Female genital segment shorter than rest of abdomen; both valves abruptly stylate in caudal half.

Male holotype from Zimapan, Hidalgo, September 26, 1941; female allotype from Carapan, Michoacan, October 2, 1941.

Trioza thoracia Cald.

One male of this unique humpbacked species from Puebla, Puebla, October 18, 1941, on an unidentified roadside weed.

***Trioza stroma* n. sp.**

(Figs. 6 and 6A)

Length to tip of forewing, male 2.8 mm., female 3. mm.; forewing, male 2.4 mm., female 2.5 mm.

General color yellow with apical half of antennae and dorsum of thorax black; apical angles of forewings yellowish.

Vertex only one-fourth broader than long. Genal cones as long as vertex, slender, acute. Antennae one and a half times as long as width of head. Head about as broad as thorax. Thorax short. Forewings almost three times as long as broad, rather broadly rounded; cubital and medial cells small. Hind tibiae with apical spur ratio of 3-1. Forceps of male short, stout, acute apically. Dorsal valve of female with extremely fine styliform apex for apical fourth.

Female holotype, male allotype, five male and five female paratypes from Cuernavaca, Morelos, Km. 57, October 21, 1941.

This species resembles *chlora* Tuthill and *nicaraguensis* Crawford.

***Trioza zogoda* n. sp.**

(Fig. 7)

Length to tip of forewing 3. mm.; forewing 2.5 mm.

General color brown with head and legs yellow.

Vertex almost as long as broad, almost vertical. Genal cones three-fourths as long as vertex, acute, divergent. Head almost as broad as thorax. Thorax rather flat; prothoracic dorsum suddenly depressed, vertical. Forewings rather broadly rounded. Hind tibiae with apical spur ratio of 3-1. Female genital segment with both valves appearing short, chubby; dorsal valve with needle-like apex.

Female holotype from Orizaba-Puebla road, Km. 277, October 17, 1941.

***Trioza apartata* n. sp.**

(Figs. 8 and 8A)

Length to tip of forewing, male 4.2 mm., female 5. mm.; forewing, male 3.5 mm., female 4.1 mm.

General color brown; antennal joints, apical tarsi, abdomen, genital segment, and basal angles of forewings blackish.

Vertex one and a fourth times as broad as long; foveal impressions very deep, broad, making lateral and basal margins of vertex appear raised and ridged. Genal cones as long as vertex, appressed for full length. Antennae twice as long as width of head. Pronotum depressed almost vertical; mesoscutum as long as broad, rather acute cephalad. Forewings almost three times as long as broad, broadly rounded apically. Metacoxae with caudal spurs. Hind tibiae with apical spur ratio of 3-1. Female genital segment as long as rest of abdomen, narrow, styliform for full length. Forceps of male stout, bearing short chubby spurs at apex.

Female holotype and seven paratypes from Zimapan, Hidalgo, September 26, 1941; one paratype from Jacala, Hidalgo, September 26, 1941, and one from Orizaba, Veracruz October 17, 1941; male allotype and four paratypes from Jacala, and one from Zimapan, Hidalgo, September 26, 1941.

***Trioza hidalgoensis* n. sp.**

(Fig. 9)

Length to tip of forewing 3.5 mm.; forewing 2.8 mm.

General color black with entire praescutum and a broad stripe on scutum red; margins and center of vertex orange, making a black U on the vertex.

Vertex twice as broad as long. Eyes prominent. Genal cones three-fourths as long as vertex, acute. Antennae one and a fourth times as long as width of head. Head as broad as thorax. Forewings little over twice as long as broad, rounded apically.

Metacoxae with caudal spurs. Hind tibiae with apical spur ratio of 3-1. Female genital segment not quite as long as rest of abdomen; dorsal valve styliform, elevated in apical third.

Holotype and paratype female from Zimapan, Hidalgo, September 26, 1941, on Moctezuma pine. This species is related to the *frontalis* Crawford group.

***Trioza epiphitatae* n. sp.**

(Fig. 10)

Length to tip of forewing 2.4 mm., forewing 2. mm.

General color green-yellow over all.

Vertex almost twice as broad as long; foveae deep, broad. Genal cones as long as vertex, divergent. Antennae one and a half times as long as width of head. Forewings two and a half times as long as broad, acute apically; membrane somewhat rugose; cubitus separating from main stem a little before radius and medius. Metacoxae with very small caudal spurs. Hind tibiae with apical spur ratio of 3-1. Male forceps short, stout, ending apically in prominent spines.

Male holotype near Morelia, Michoacan, October 4, 1941, on an epiphite. This plant seemed to be scattered from the mountains just south of Monterrey, N. L., to Tamazunchale, S. L. P., and west of Mexico City from Morelia, Mich., to the state of Jalisco.

Whereas the forewing of this species is strictly neither Triozinae nor Cerophyllinae, the sectasetae on the immature are elongate like those on the Triozinae, therefore this species is placed in *Trioza*.

***Trioza arizonae* Aulmann**

Specimens were taken from Orizaba, Veracruz, and Zamora, Michoacan, on different species of willow. Dr. Tuthill has suggested to the writer that this species may be nothing more than a color variety of *minuta* Crawford. The immatures of this species and those of the dark form of *minuta* seem to differ only in size and segmentation of the antennae. One specimen collected by Dr. Plummer at San Miguel in El Salvador, March 19, 1942, has a very narrow and elongate cubital cell in the forewing and may not be specific with the Mexican forms.

***Trioza mexicana* Crawford**

Numerous specimens were taken at Mt. "El Popocateptl," September 28, 1941, at 11,500 ft. elevation. This species seems to be confined to the higher altitudes.

***Trioza albanigra* n. sp.**

(Fig. 11)

Length to tip of forewing 3.1 mm., forewing 2.7 mm.

General color shining black except extremities of legs and segments III-IV-V of antennae white.

Vertex with broad shallow foveae. Genal cones half as long as vertex, acute, divergent. Antennae less than twice as long as width of head. Praescutum acute cephalad. Forewings almost two and a half times as long as broad, acute apically, yellowish. Hind tibiae with apical spur ratio of 2-1. Forceps of male strongly curved cephalad, acute apically, with a blunt spur located at midlength on inner margin.

Holotype male from Mt. "El Popocateptl," September 28, 1941, 10,800 ft. Paratype from Rio Frio, Puebla, October 22, 1941, 10,000 ft.

***Trioza albanigra* var. *aurodorsa* n. var.**

Structurally similar to *albanigra albanigra*. Gold to orange over all except for black eyes and two black lines on scutum. Females with dorsal valve almost as broad as long; anal opening shape of "hourglass." Ventral valve broader than long in ventral aspect, not acute apically.

Male holotype, female allotype, and two paratypes from Rio Frio, Puebla, October 22, 1941, 10,000 ft.

***Trioza koebelei* Kirkaldy**

Galls formed by the immature stages of this species were seen at Uruapan, Michoacan, and Cordoba, Veracruz. This species has been recorded from the State of Morelos by G. R. Valencia,³ the State of Queretaro by D. S. Ibarra,⁴ and the State of Tamaulipas by N. Stahler.⁵

³1912. Valencia, Gabriel Ruiz. "Cultivo y Explotacion del Aguacate." Boletin numero 71 de la Estacion Agricola Central., pp. 50-51, (three plates).

⁴1929. Ibarra, David S. "El Aguacate" Secretaria de Agr. y Formento.

⁵1941. Stahler, N. Calif. Dept. Agr. Bull. No. 2, 39: 217.

***Pachypsylla tropicala* n. sp.**

Length to tip of forewing 3. mm., forewing 2.6 mm.

General color black, vertex brownish. Forewing very clear, glass-like; a broken subapical black band present; apex brokenly maculate; pterostigma a black spot; black spot present on sutural margin half distance to claval apex; and a slightly darkened area present across cubital petiole.

Vertex twice as broad as long, roughened. Genal cones very short, twice as broad as long. Thorax not especially arched; covered with dense, short, white pubescence. Forewings over two and a half times as long as broad, ovate; pterostigma short, small. Forceps of male narrow, short.

Male holotype from Tepotzlan, Morelos, (collector and date unknown).

***Arytaina virgina* n. sp.**

(Fig. 13)

Length to tip of forewing 2.4 mm., forewing 1.9 mm.

General color orange over all with indications of white stripes on thoracic dorsum, white spots around ocelli, and genal cones white with black tips.

Vertex twice as broad as long, very deep foveae on either side of median line. Genal cones very short, rounded. Head almost vertical with thorax strongly descending. Forewings two and a half times as long as broad; pterostigma very broad, long; cubital cell twice as large as medial. Female genital segment little over half as long as rest of abdomen; dorsal valve slender with apical third styliform; ventral valve thick, heavy.

Female holotype and two paratypes, Puebla, Puebla, October 18, 1941.

***Mitrapsylla albalineata* Crawford**

This species was taken at Tehuacan, Puebla, October 17, 1941, on a shrub belonging to the Fabaceae. The specimens fit the variation that Crawford described from Oaxaca except that the female genitalia is not deflexed.

***Mitrapsylla deserata* n. sp.**

(Figs. 14, 14A, and 14B.)

Length to tip of forewing, male, 2.2 mm., female 2.9 mm.; forewing, male 1.8 mm., female, 2.3 mm.

General color deep orange with a prominent median line for full length of thoracic dorsum white to yellow. Raised ridges on vertex light. Eyes, apices of antennae, and four marginal spots on forewings black.

Vertex almost twice as broad as long, central ridges very prominent. Genal cones very short, blunt. Antennae as long as entire insect. Head almost as broad as thorax. Forewings twice as long as broad; pterostigma very short; Cu_2 highly arched. Forceps of male with apical hooks projecting cephalad. Proctiger with long caudal flaps. Female genital segment as long as rest of abdomen; dorsal valve straight, flat dorsad; ventral valve acute, styliform in apical third.

Male holotype, female allotype, and many male and female paratypes from Tehuantepec, Oaxaca, October 13, 1941; one male paratype from Jesus Carranza, Veracruz, October 14, 1941; and two female paratypes from Iguala, Guerrero, October 25, 1941.

The immatures resemble those of psylla, especially the group with the anal opening located on the apex of the abdomen. The circum-anal ring appears to be a single ring of slit-like pores. The host plant is "Hausache."

***Caradocia delongi* n. sp.**

(Figs. 15 and 15A.)

Length to tip of forewing, male 4.2 mm., female 5. mm.; forewing, male, 3.7 mm., female 4. mm.

General color bright blue-green with large golden spots on center of mesoscutum and laterally on metascutum; antennae beyond third segment black.

Vertex over twice as broad as long, pubescent, somewhat rolled roundedly forward. Caudal ocelli raised. Eyes stalked; postocular area large. Genae fused into vertex, separated basally

and contiguous apically; apices slender, acute. Antennae longer than entire insect. Thorax robust, arched. Forewings over twice longer than broad; costal margin greatly curved; medial and cubital cells very elongate. Forceps of male of even width throughout, curved cephalad. Proctiger with caudal flaps. Female genital segment as long as rest of abdomen; dorsal valve styliform in apical third, minutely serrate dorsad; ventral valve of equal length as dorsal, of heavy build throughout.

Male holotype and female allotype from Fortin, Veracruz, October 9, 1941.

This species may be separated from *godmani* Laing by the more prominent eyes, more slender genal cones, deeper cells in the forewings, and differently proportioned genitalia.

The writer takes great pleasure in naming this species in honor of Dr. Dwight M. DeLong.

***Psylla minutiforma* n. sp.**

(Fig. 16.)

Length to tip of forewing, male 2. mm., female 2.3 mm.; forewing, male 1.6 mm., female 1.9 mm.

General color golden yellow over all with antennae black or dark apically.

Vertex almost twice as broad as long. Genal cones a third as long as vertex, thick, obtuse. Antennae scarcely longer than width of head. Forewings little over twice longer than broad; pterostigma very long, broad. Forceps of male invert L-shaped with apical arm a third longer than basal stem; there is a slight projection of the basal stem beyond the apical arm. Dorsal valve of female short, greatly narrowed apically.

Male holotype and female allotype from Tuxpan, Michoacan, Km. 168, October 5, 1941, and a male and female paratype from Zamora, Michoacan, Km. 458, October 2, 1941.

***Psylla americana* Crawford**

Two species from Rio Frio, Puebla, October 7, 1941, on pine.

***Psylla minuticonica* Crawford**

Specimens from Chilpancingo, Iguala, and Mexacala, Guerrero, and from San Miguel in El Salvador, March 19, 1941, (Plummer).
