

SEG 795

EndNote
19.05

CONTRIBUTIONS TO THE KNOWLEDGE OF THE PSYLLIDAE OF MEXICO (PART II)¹

LEONARD D. TUTHILL

University of Hawaii, Honolulu.

In Part I of this series, on the Triozinae, the author neglected to include in the discussion any consideration of several of the species recently described by Caldwell which were included in the key. These species are *Trioza* *apartata*, *T. epipliitatae*, *T. stroma*, *T. hidalgoensis*, *T. rugosata*, *T. zogoda* and *T. thoracia*. *Trioza thoracia*, based on one specimen taken near Mexico City, November 24, 1938, was described in the Ohio Journal of Science 41:423, 1941. The other species were all described in the Ohio Journal of Science 44:57-62, 1944. Subsequently several additional new species and a new genus of Triozinae from Mexico have been described by Caldwell in the Journal of the New York Entomological Society 52: 335-341, 1944. These are *Trioza* *rhinosa*, *Kuwayania striata*, *K. hyalina*, *K. mexicana*, *K. lateralis* and *Optomopsylla forniiformis*.

Part II - Subfamily Carsidarinae

1882 Prionocnemidae Scott, Trans. Ent. Soc. London 1882:366.
1886 Prionocnemina Low, Verh. Zool. Bot. Ges. Wien 36:160.
1910 Ciriacreminae Enderlein, [pro parte] Ergeb. Schwed. Exped. Kilimandjaro 2:138.
1911 Carsidarinae Crawford, Pom. Coll. Jour. Ent. 3:481.

The name Prionocneminae which has clear priority may not be used for this group as there is no genus Prionocnemis in the family Psyllidae.

This subfamily is predominantly tropical in distribution. Several genera have been described from the paleotropics which are as yet unknown from the new world.

The principal character on which this subfamily has been based is the deeply excavate anterior margin of the head, usually the vertex, but in some genera the anterior portion of the head is composed of the genae. The genera grouped together on this basis show great variation in other characters and it seems probable that when the tropical fauna is more completely known a realignment of the genera will be necessary.

Key to the genera of Carsidarinae

- 1. M and Cu of forewing with common petiole 2
 M and Cu of forewing without common petiole 4
- 2. Forewings with pseudovein between M and Rs at furcation of M **Carsidara**
 Forewings without pseudovein 3
- 3. M and Rs of forewing separate throughout; perostigma present **Coelocara**
 M of forewing touching Rs about midway; pterostigma lacking..... **Epicarsa**
- 4. Cu of forewing arising separately from the basal vein, Rs and M fused to near the apex of wing; metanotum with a pair of truncate conical processes **Synoza**
 R, M and Cu of forewing all arising from basal vein at same point; metanotum without dorsal processes **Rhinopsylla**

¹Part I. Kans. Ent. Soc., Jour. 17:143-169, 1944 and 18:1-29, 1945.

Genus *Carsidara* Walker

- 1869 *Carsidara* Walker, Linn. Soc. London, Jour. and Proc. 10:329.
 1882 *Carsidara* Scott, Trans. Ent. Soc. London 1882(3):466.
 1911 *Carsidara* Crawford, Pom. Coll. Jour. Ent. 3:484.
 1914 *Carsidara* Crawford, U.S. Nat. Mus., Bull. 85:57.

Head narrower than thorax, short. Vertex very short medially. Medial suture prominent. Genae forming front of head, strongly produced, hence head deeply "cleft" anteriorly. Genae covering frons completely. Median ocellus anterior or on dorsal surface of head. Eyes large, hemispherical. Antennae long, slender. Beak very long. Thorax quite flat. Pronotum scarcely declined anteriorly, with foveae on each side. Forewings long, slender, angulate apically, prominent pterostigma, basal vein short, M and Cu with common petiole, pseudovein between Rs and M at furcation of M, medial cell much larger than cubital. Metatibiae with large basal spur. Metatarsi with I (outer) black claw on proximal segment. Haplotype: *Carsidara marginalis* Walker.

Walker's description of the genus is inadequate. Scott working with Walker's material gives a much more adequate description and several figures. Several specimens in the Bishop Museum and the collection of the Hawaiian Sugar Planters' Experiment Station agree with the descriptions of *C. marginalis* Walker. They are from **Larat** rather than Celebes but I feel certain that they are Walker's species. The principal difference between these specimens and *C. dugesii* is in the position of the median ocellus. In the latter species it is on the dorsal side of the head while in **marginalis** it is anterior. Except for this the species are quite similar and appear to be truly congeneric.

Carsidara dugesii Low

- 1886 *Carsidara dugesii* Low, Verh. Zool. Bot. Ges. Wien 36:160.
 1911 *Carsidara gigantea* Crawford, Pom. Coll. Jour. Ent. 3:486.
 1911 *Carsidara rostrata* Crawford, Pom. Coll. Jour. Ent. 3:486.
 1911 *Carsidara mexicana* Crawford, Pom. Coll. Jour. Ent. 3:487.
 1923 *Carsidara gigantea* Laing, Ann. and Mag. Nat. Hist. IX, 11:698.
 1923 *Carsidara dugesii* Laing, Ann. and Mag. Nat. Hist. IX, 11:698.
 1928 *Carsidara gigantea* Ferris, Can. Ent. 60:244.
 1941 *Carsidara gigantea* Caldwell, Ohio Jour. Sci. 41:421.

Length to tip of folded wings 3.5 to 4.5 mm.

Color: General color yellowish with lines on the thoracic dorsum, sulci on head, apical portion of antennal segments, brown. In very dark specimens general color brown with lines on thoracic dorsum, basal parts of antennal segments, ridges on vertex, tarsi and margins of abdominal segments yellow. Forewings hyaline or slightly fumate especially on pterostigma. Hind wings somewhat milky.

Structure: Head large, narrower than thorax. Vertex narrow with two large, oblique sulci from disc to antero-lateral angles, medial suture very prominent, lateral margins strongly raised, foliaceous anteriorly, lateral ocelli on outer side above base of compound eye. Anteriorly vertex and genae sharply excavate, antennae on obliquely truncate lateral portions. Median ocellus on dorsal side of head. Genae not produced ventrad except for very small conical projections below eyes, extending far dorsad. Eyes large, rounded. Antennae 3.75 times as long as width of head, slender, not as long as body. Thorax arched. Pronotum long, not depressed strongly anteriorly. Mesoscutum flat dorsally. Metanotum with two small but distinct

dorsal processes. Forewings large, 2.66 times as long as wide, bluntly angled apically; basal vein short, M and Cu with common base shorter than R, medial cell much larger than cubital, Rs angled slightly before furcation of M, pseudovein connecting Rs and M at this point, pterostigma prominent. Hind wings large, about 0.7 as long as forewings. Metatibiae with large basal spur, 1 outer and 4 inner apical spines. Metatarsi with 1 outer claw on proximal segment.

Male proctiger of moderate length, strongly produced caudad basally, remainder slender, tubular with several long setae near apex. Forceps somewhat longer than proctiger, slender, slightly twisted, somewhat enlarged before apex then incurved to small blunt tooth. Dorsal margin of subgenital plate produced as falciform process 0.5 as long as forceps. Female genital segment about as long as rest of abdomen, stout, cluster of long setae on apical half; dorsal valve with distinct suture about midway then sharply narrowed, attenuate and somewhat upturned apically, ventral valve slender and upturned apically, slightly longer than dorsal.

Originally described by Low from specimens collected on a malvaceous plant by Alfred Dugés, this species is apparently common throughout the country at all seasons of the year. Specimens are at hand with data as follows: San Jacinto, D. F., swept from luxuriant growth of weeds *Datura*, *Amaranthus*, **Rumex**, **Bidens**, etc. September 10, 1923, swept from *Melilotus* March 18, 1929, swept from alfalfa June 13, 1929, swept from weeds along experimental plots September 24, 1929, on light April 28, and September 28, 1932; Popatla, D. F., swept from a luxuriant growth of weeds July 8, 26, August 7 and 12, 1924; Chapultepec Park, D. F., on *Malva* February 24, 1924 including teneral specimens and nymphs, from deciduous bush over weeds including *Fragaria* and *Vinca* May 19, 1932; Lomas de Chapultepec, swept from flowers of *Schinus molle* May 25, 1938; Mixquic, D. F., swept on weeds along a canal June 18, 1938; Mexico City, D. F., July 2, 1932; Xochimilco, D. F., swept **Salix**, **Urtica**, *Eichornia*, etc. from a boat September 30, 1923; Chimalhuacan on Lake Texcoco east of Mexico City, swept from weeds in a garden, October 21, 1923; Chapingo, swept from alfalfa in bloom, April 30, 1924; Yurecuaro, railway station on the Mexico—Guadalajara line, at light, July 31, 1934; Madereros near Piedras Negras, Veracruz, railway station near the Rio Blanco 55 km. from Veracruz, swept from beans December 18, 1926; Veracruz, Veracruz, La Forestal between the dunes and sea-shore, at light in swampy grassland, December 19, 1926; El Chico, Hidalgo, swept from weeds along road, September 15, 1938; Colima, Colima, swept from weeds along a brook and from beans growing between corn, January 27, 1930; Sentinela, coast of Colima near the border of Jalisco swept from cotton, January 28, 1930; El Dorado, Sinaloa swept from tomatoes, March 22, 1932; Santa Engracia, Tamaulipas, at light, December 13, 1936, C. C. Plummer; Chiltepec, Oaxaca, swept from low vegetation in virgin forest December 10, 1937; Tuxtla Gutierrez, Chiapas, swept from shrubs in dense forest, May 30, 1926; San Cristobal Las Casas, Chiapas, swept from luxuriant growth of weeds June 9 and 27, 1926; Mapastepec, Chiapas, at light, bush and grassland, December 7, 1932; Finca Vergel, Chiapas, on light in virgin forest, June 13, 1935; San Martin, Mexico, May 25, 1932, E. G. Smyth. Additional specimens are at hand from La Ceiba, Honduras, September 24 and 26, 1916

and October 18, 1916. Additional records are: **Teapa**, Tabasco (**Laing**); Mouth of Balsas River, Guerrero and Minatitlan, Vera Cruz (**Ferris**); Iguala, Guerrero (**Caldwell**).

In the large series of specimens examined I find all the variations in color and size recorded by **Crawford** for his species **mexicana** and **gigantea**. At my request Louise M. Russell of the **U.S.** National Museum has compared specimens of **dugesii** with the types of **gigantea** and reports that she can find no differences which in her opinion are of specific significance.

Host: Malva sp.

Genus *Coelocara* Tuthill

- 1899 **Freysuila** Schwarz. Proc. Ent. Soc. Wash. 4(3):195.
 [non] **Freysuila** Aleman. La Naturaleza 1(2):21, 1891.
 1914 **Freysuila** Crawford. U. S. Nat. Mus., Bull. 85:54.
 1944 **Coelocara** Tuthill. Ent. News 55:93 [nomen nudum].
 1945 **Coelocara** Tuthill. Ent. News 56:237.

Large robust species. Head broad, short, narrower than thorax, strongly excavate anteriorly. Lateral ocelli on large protuberances. Genae swollen ventrally, slightly produced as acute or blunt processes. **Frons** entirely visible as long narrow sclerite. Antennae as long as body or longer. Third segment of antennae large, thick, tapering apically, rest of antennae slender. Eyes small, set far forward on head. Thorax large. **Pronotum** broad, not deflexed anteriorly. Mesonotum flat. Metanotum with median protuberance. Forewings large, membranous, broadly rounded apically; pterostigma present, M and Cu with long common base, cubital cell elongate, larger than medial. Hind wings large. Legs large. Metathoracic femora with tuft of slender setae apically. Metatibiae without basal armature. Proximal segment of metathoracic tarsi with 2 black claws. Genitalia varied.

Orthotype: *Coelocara schwarzi* Tuthill

Schwarz described this genus in 1899 (**loc. cit.**) but erroneously thought it to be identical with *Freysuila Aleman*. The latter is a member of the subfamily **Psyllinae**. Three species of *Coelocara* are known, two of which occur in Mexico. All three inhabit species of *Cedrela*. **Ferris** also records *Ficus* sp. as a definite host of *C. schwarzi*. The nymphs and some of the adults are covered with a cottony secretion. As no types were selected by Schwarz lectotypes have been selected for the three species from his cotypic material.

The species *C. cedrelae* (*Freysuila dugesii* var. *cedrelae* Schwarz, **loc cit.**) is based on a series of specimens from Trinidad and has been recorded from Panama by **Laing** (Ann. and Mag. Nat. **Hist.** IX. 11:698, 1923). A male from the type series has been selected as type and is in the United States National Museum—no. 14822. This form differs from the other two species in that the third segment of the antenna is 2.5 times as long as the fourth. The forceps of the male resemble those of *schwarzi* but the lateral lobes scarcely extend caudad. The female genital segment is similar to that of *schwarzi*.

Key to species of *Coelocara*

- Female genital segment nearly as long as rest of abdomen; forceps of male bilobed; segment three of antennae 1.6 times as long as segment four
 *schwarzi*
 Female genital segment very short; forceps of male simple; segment three of antennae scarcely longer than segment four *ernstii*.

Coelocara schwarzi Tuthill

(Fig. 1, 2, 3)

- 1899 *Freysuila dugesii* Schwarz, Proc. Ent. Soc. Wash. 4(3):195.
 [non] *Freysuila dugesii* Aleman, La Naturaleza 1(2):21-26, 1891.
 1914 *Freysuila dugesii* Crawford, U. S. Nat. Mus., Bull. 85:55.
 1928 *Freysuila coahuayanae* Ferris, Can. Ent. 60:111 (pro parte).
 1945 *Coelocara schwarzi* Tuthill, Ent. News 56:237.

Length to tip of folded wings 5 mm.

Color: General color yellowish, more or less marked with dark brown. Antennae, veins of forewings and legs darker. Metanotal process black. In well pigmented specimens four brown stripes on thorax and abdomen mostly brown.

Structure: Body surface finely rugose. Head small. Vertex nearly flat except for protuberances bearing lateral ocelli, deeply excavate anteriorly as far as anterior margin of eyes, smoothly rounded down to elongate frons. Median ocellus ventral. Genae swollen ventrally with slight protuberance. Antennae arising from obliquely truncate lateral portions of vertex, 4 times as long as width of head; three proximal segments thick, remaining seven slender; four basal segments densely pubescent; III 1.6 as long as IV. Eyes small, set far forward, extending forward beyond lateral margin of vertex. Thorax broad, somewhat flattened. Pronotum short, rounded down anteriorly, broadly excavate posteriorly. Forewings large, hyaline, broadly rounded, 2.5 times as long as wide; basal vein very short, M + Cu much shorter than R, pterostigma short and broad (3 times as long as wide), Rs long, curved to costa, M strongly arched before furcation, Cu₂ short, Cu₁ very long, arched. Hind wings 0.66 as long as forewings. Legs pubescent. Metatibiae with 7 apical spines.

Male proctiger stout, caudal margin narrowed apically. Forceps 0.5 as long as proctiger, bipartite; large caudal lobe near apex laterally, top of medial lobe visible in lateral view, medial lobe rounded dorsally, produced caudad to sharp black apex, shorter than lateral lobe. Female genital segment long, nearly as long as rest of abdomen, dorsal valve evenly concave dorsally to blunt apex; ventral valve much shorter than dorsal, acute.

In examining undetermined material from the United States National Museum I encountered several vials containing dried specimens. One of the vials contained the type material of *Freysuila dugesii* Aleman to be discussed under that species. Two others contained adults and nymphs of the species described by Schwarz as *Freysuila dugesii* and *F. dugesii* var. *ernstii*. A male from the former material is designated as the type of *Coelocara schwarzi* and an accompanying female as allotype. The data is as recorded by Schwarz, i. e., "Ptyllid on *Cedrela Dugesii*, Guanajuato, Mexico, collected by Dr. Eugene Dugés." The type is in the United States National Museum—no. 58219.

I have at hand the type specimens of Ferris' species *coahuayanae*. The females are identical with *ernstii* which was originally described from Venezuela. The male which he mentions as dissected from a nymph is a male of *schwarzi*. Although somewhat fragmentary the genitalia are undoubtedly those of *schwarzi*. This male and the accompanying nymphs were not taken with the females which he described in detail but on a different host and at a different locality. Ferris states that they were assigned to *coahuayanae*

because the nymphs are identical. This is not correct. The nymphs although quite similar are distinct. The most obvious difference is in the antennae. The antennal segments of the nymphs show proportions similar to those of the adults. The third antennal segment on *schwarzi* is nearly twice as long as the fourth whereas in the nymphs of *ernstii* the third and fourth segments are nearly equal. The details of the abdominal pore pattern are also different.

In addition to the type material and Ferris' specimens one female is at hand from Tuxtepec, Oaxaca. A series of specimens in the United States National Museum from San Pedro Montes de Oca, Costa Rica, C. H. Ballou, August 5, 1932 and one male from Cuba appear to be this species but show some variations. The wings are shorter and more broadly rounded. The Costa Rican specimens are much more highly colored than any of the others seen, the pterostigma is shining black and opaque.

Hosts: *Cedrela* sp. and *Ficus* sp.

Coelocara ernstii (Schwarz)

(Fig. 4, 5, 6)

1899 *Freysuila dugesii* var. *ernstii* Schwarz, Proc. Ent. Soc. Wash. 4:197.

1914 *Freysuila ernstii* Crawford, U. S. Nat. Mus., Bull. 85:55.

1928 *Freysuila coahuayanae* Ferris, Can. Ent. 60:111-113, figs. [pro parte].

1944 *Coelocara ernstii* Tuthill, Ent. News 55:93.

Length to tip of folded wings 5 mm.

Color: Yellowish green. Antennae, veins of forewings darker. Metanotal process black.

Structure: Similar to *C. schwarzi*. Differing as follows: Anterior excavation of vertex less angular. Vertex swollen each side of medial suture. Basal segments of antennae less pubescent, third segment only slightly longer than fourth. Pronotum not excavate posteriorly. Pterostigma longer, 8 times as long as wide. $M + Cu$ of forewing slightly longer than R .

Male proctiger short, roundly produced caudad. Forceps short; in lateral view nearly straight, broad basally, apical half narrowed; in caudal view broad basally, much enlarged at middle, truncate apically with sharp, black tips touching. Female genital segment short, ventral valve resembling last abdominal sternite, not produced; dorsal valve sharply descending, blunt apically.

Cotypes of *C. ernstii* have been examined and one of the males is here designated holotype — no. 14821 United States National Museum.

I have at hand the type material of *Freysuila coahuayanae* and Ferris find the females to be identical with *ernstii*. The male is referred to *C. schwarzi* as is indicated under the discussion of that species. The nymph figured by Ferris is that of *ernstii*.

This species was originally described from specimens from Venezuela taken on *Cedrela* sp. Mexican specimens are at hand with the following data: Chiltepec, Oaxaca, March 3, 1932 (trap light); Ciudad del Carmen, Campeche, January 26, 1939 (at light); Tuxtepec, Oaxaca; Coahuayana, Michoacan, on *Cedrela* sp., January 11, 1926, G. F. Ferris (*coahuayanae*). I also have specimens from Guatemala and Cuba.

Host: *Cedrela* spp.

Genus *Epicarsa* Crawford

1911 *Epicarsa* Crawford, *Pom. Coll. Jour. Ent.* 3:488.

Only one species of this very distinctive genus is known — *E. corniculata* Crawford. Originally described from Para, Brazil, from one male specimen, it has been recorded from Mexico by Ferris (*Can. Ent.* 60: 244), who collected his specimens from *Ceiba* sp. at Petatlan, Michoacan and the mouth of the Balsas River, Guerrero. As he indicates, there must remain some question as to the identity of these specimens until more is known of the South American insect. No specimens of this genus occur in the material at hand from Mexico.

The most distinctive character of this genus is the peculiar venation of the forewing which is figured by Crawford (*loc. cit.*)

Genus *Synoza* Enderlein

1918 *Synoza* Enderlein, *Zool. Jahr., Abt. f. Syst.* 41:479.

Head narrower than thorax. Vertex with prominent medial suture, very deeply excavate anteriorly, smoothly continuous with genae. Genae not swollen ventrally, covering frons except for small ventral portion bearing median ocellus. Clypeus small. Eyes small, directed anteriorly. Antennae large and long, heavily setate, basal segment very large. Thorax strongly arched. Pronotum small. Mesothoracic prescutum very strongly arched, vertical anteriorly. Mesoscutum flat dorsally. Mesopleurites very strongly developed. Mesocoxae far back against metacoxae. Postscutellum of metathorax with two large dorsal processes, obliquely truncate apically. Forewings large, membranous, broadly rounded apically; clavus very small, basal vein long, R_1 and Cu arising from basal vein at same point, Rs and M fused to near apex, marginal cells large, cubital larger than medial, no pterostigma present. Hind wings moderately large, venation very weak. Legs large, stout. Pro- and mesotibiae with brush of stout setae apically. *Metatibiae* without basal armature, with numerous short, stout, closely set apical spines. Proximal segment of metatarsi with two black claws.

Type of genus: *Synoza cornutiventris* Enderlein.

The peculiar wing venation sets this genus apart from all others known. The metothoracic protuberances and the tibial combs are also distinctive. The antennae of the species at hand appear to be only nine segmented due to the minute size of the tenth segment.

The type species was based on one female from Peru.

Key to the species of *Synoza*

- Base of Cu of forewing arising from principal vein at almost 90° angle, Cu not reaching to furcation of Rs and M **pulchra**
 Base of Cu of forewing arising from principal vein at approximately 45° angle, Cu extending beyond furcation of Rs and M **floccosa**

Synoza pulchra Laing

(Fig. 7)

1923 *Synoza pulchra* Laing, *Ann. and Mag. Nat. Hist.* IX. 11:696.

Described by Laing from a male collected at Chilpancingo, Guerrero. One female from Carrizal, Vera Cruz, August 6, 1932 collected by R. Ruiz Soto appears to be this species. Although it differs considerably in coloration from that recorded by Laing it is the same structurally so far as can be determined.

It is somewhat teneral. The female genital segment is very large, about as long as the rest of the abdomen in the dried specimen. The dorsal valve is very large and bulbous, with two small medial lobes on caudal surface. The ventral valve is flat along the ventral surface, enlarged and upturned somewhat at apex. Anus very small and set far back on dorsal valve, with simple marginal pore ring.

Host: Unknown.

Synozia floccosa Ferris

(Fig. 8)

1928 *Synozia floccosa* Ferris, Can. Ent. 60:109.

Length to tip of folded wings 6 mm.

Color: General color light green shaded with yellow. Antennae dark brown except segments I, II and base of III, IV, V and VII. Wings hyaline.

Structure: Body sparsely covered with long setae, surface very smooth and shiny. Head small. Vertex angularly emarginate behind, lateral ocelli on raised areas, medial anterior excavation very deep, protruding laterally to form part of large antennal base, smoothly continuous with genae. Median ocellus small, ventral. Antennae very large, longer than body, heavily setate, transversely rugose, first segment very large, tenth very small. Eyes small, far forward on head, postocular area as long as eye. Pronotum short, vertical. Prescutum bulbous, perpendicular anteriorly. Mesopleurites very large. Prothoracic legs when drawn up lying in trough of mesothorax. Anterior spiracle large, visible on anterior side of mesopleural prominence. Forewings large, 2.5 times as long as wide, anal margin sharply bent near Cu₁; venation typical of genus, R₁ straight, directed slightly toward base of wing, Cu leaving basal vein at 45° angle, base of Cu very short, cubital cell very large, somewhat elongate, Cu₂ extending far down wing beyond base of R₅. latter straight, branches of M even. Hind wings 0.6 as long as forewings. Pro- and mesothoracic tibiae with several short stout setae at apex. Apical setae of metatibiae short, closely placed. Meracanthi small.

Male proctiger stout, nearly straight, flexed caudad apically. Forceps shorter than proctiger, deeply incised apically, caudal lobe rounded, cephalic sharp, black-tipped. Female genital segment more than 0.5 as long as rest of abdomen, slender, with many long slender setae; dorsal valve evenly rounded down from anus to sharp tip; ventral valve slender, longer than dorsal, truncate apically. Anus very large.

The type series, which includes nymphs, was taken from *Ficus* sp. near Colima by G. F. Ferris. Three females are at hand from Tepic, Nayarit, collected March 14, 1927, swept from bushes along a brook at 950 meters.

Host: *Ficus* sp.

Holotype, male, near Colima, on *Ficus* sp., January 1926, in G. F. Ferris Collection.

Klyver (Can. Ent. 62: 175, 1930) erroneously considered this species a synonym of *S. pulchra* Laing. Both Laing and Ferris gave accurate figures of the forewing which show distinctive characters as indicated above.

Genus *Rhinopsylla* Riley

1885 *Rhinopsylla* Riley, Proc. Biol. Soc. Wash. 2:77.

1911 *Rhinopsylla* Crawford, Pom. Coll. Jour. Ent. 3:440.

Head wide, short, strongly narrowed behind eyes. Vertex with prom-

inent medial suture, more or less prominent discal sulci, angularly emarginate anteriorly. Genae smoothly rounded up to vertex, covering frons, with slight ventral epiphysis. Median ocellus between antennal bases, anterior. Antennae of moderate length, enlarged basally, segments **III**, **IV** and **V** white, remainder dark. Postocular area large. Eyes small, far forward. Thorax moderately arched. Pronotum long, scarcely descending anteriorly, strongly emarginate behind. Proepisterna strongly produced anterolaterally. Forewings triozone in venation, angular apically. Hind wings well developed. Legs large. Frothoracic femora very large in some species, not so in others. Metatibiae with **1** outer and **2** inner apical spines. Basal segment of metatarsi without claws. Meracanthi large. Metacoxae strongly developed anteriorly between legs. Genitalia small. Male proctiger with caudal lobes. Ventral valve of female genital segment scarcely produced.

Haplotype: *Rhinopsylla schwarzi* Riley.'

The species included in this genus show affinities to the members of the genus *Kuwayama* in the Triozinae as discussed under that genus. As more species are studied the distinction between the two genera becomes clearer.

The sharply emarginate head and the enlarged antennae indicate the relationship of this group to the other Carsidarinae. The wings are typical triozone in structure. The genitalia are quite distinct in type from those of *Kuwayama*. Although color is in general a very variable character the white basal portion of the antennae in this genus is very striking and is constant in all the species known to me.

Through the courtesy of J. S. Caldwell I have examined the unique type of *Rhinopsylla elongagena* Caldwell (*Ohio Jour. Sci.* **41**: 424, 1941) and find it to be identical with *Kuwayama sincera* mihi. As it properly belongs in the genus *Kuwayama* it is referred to that genus as *Kuwayama elongagena* (Caldwell).

Rhinopsylla antennata (Crawford)

(Fig. 9, 10, 11)

- 1910 *Paratrioza antennata* Crawford, *Pom. Coll. Jour. Ent.* **2**:229.
 1911 *Rhinopsylla antennata* Crawford, *Pom. Coll. Jour. Ent.* **3**:441.
 1911 *Rhinopsylla antennata proxima* Crawford, *Pom. Coll. Jour. Ent.* **3**:441.
 1923 *Rhinopsylla nigra* Laing, *Ann. and Mag. Nat. Hist.* **IX**: 11:698.
 1938 *Rhinopsylla dimorpha* Caldwell, *Ohio Biol. Surv., Bull.* **34**:246.
 1941 *Rhinopsylla ruhracia* Caldwell, *Ohio Jour. Sci.* **41**:424.
 1942 *Rhinopsylla antennata* Tuthill, *Jour. Kans. Ent. Soc.* **15**:47.
 1944 *Rhinopsylla nigra* Caldwell, *Ohio Jour. Sci.* **44**:58.

Length to tip of folded wings 3 to 3.5 mm.

Color: Male, general color brown to black, venter and medial portion of dorsum of abdomen greenish white to yellow. Tibiae, tarsi, segments **III**, **IV** and **V** of antennae also white. Female, general color red to orange, considerable variation in extent of lighter markings on vertex, and thorax. Legs lighter, segments **III**, **IV** and **V** of antennae white. Abdomen in dark specimens chocolate brown with wide white dorsal stripe usually covered with wax, in lighter specimens red to green except for white dorsal stripe.

Structure: Head stout, slightly over twice as wide as long, cleft anteriorly but not deeply so. Vertex somewhat rounded down anteriorly, a more or less prominent oblique discal sulcus on each side, extending toward base of antenna. Eyes lateral. Genae swollen ventrally. Antennae from slightly over 2 to nearly 3 times as long as width of head, segments **III** and **IV** much

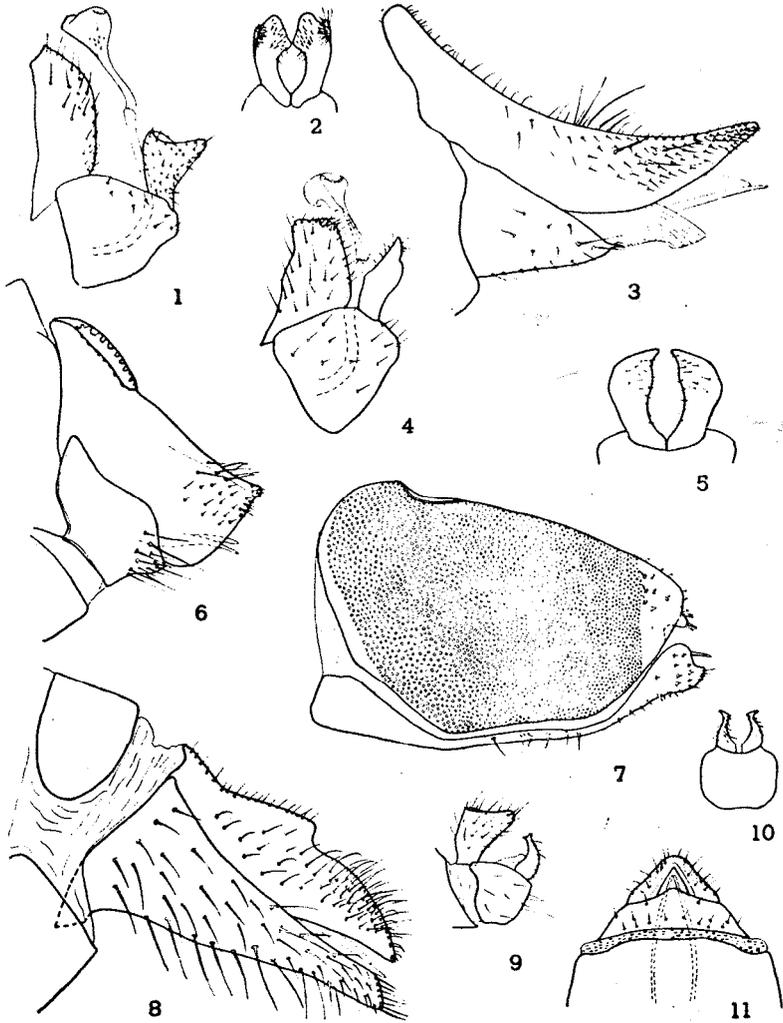


PLATE I

- Fig. 1. *Coelocara schwarzi*—male cauda, lateral aspect.
 Fig. 2. *C. schwarzi*—male forceps, caudal aspect.
 Fig. 3. *C. schwarzi*—female cauda.
 Fig. 4. *Coelocara ernstii*—male cauda, lateral aspect.
 Fig. 5. *C. ernstii*—male forceps, caudal aspect.
 Fig. 6. *C. ernstii*—female cauda.
 Fig. 7. *Synoza pulchra*—female cauda.
 Fig. 8. *Synoza floccosa*—female cauda.
 Fig. 9. *Rhinopsylla antennata*—male cauda, lateral aspect.
 Fig. 10. *R. antennata*—male forceps, caudal aspect.
 Fig. 11. *R. antennata*—female cauda, ventral aspect.

thicker than remainder. Thorax slightly arched. Pronotum broader than vertex. Prothoracic episterna strongly produced. Forewings angulate, almost 3 times as long as broad, costal margin arcuate; Rs variable from short (just equalling Cu,) and arched to costa to long (reaching furcation of media) and more or less sinuate; marginal cells about equal. Fore femora somewhat enlarged, short. Metatibiae with small basal spur, 2 inner apical spines. Metacoxae with anteriorly projecting processes.

Male proctiger short, with bluntly triangular caudal lobes. Forceps shorter than proctiger; in lateral view broad basally, evenly narrowed to apex, strongly curved cephalad; in caudal view slightly arched, tapered from base to truncate apex, apex with short, sharp lateral and medial processes, appearing somewhat T-shaped. Female genital segment short; ventral valve 0.66 as long as preceding sternite, broad, produced medially as small, blunt lobe; dorsal valve exceeding ventral, narrow, overhanging, apex dark, blunt; anus somewhat hourglass shaped, bordered by simple pore ring.

A large series of specimens at hand are undoubtedly *R. nigra* Laing. Dissection and careful examination of several males and females has disclosed no structural differences between them and specimens of *R. antennata* (Crawford). I have examined a female which has been compared with the type of *rubrafacia* by Caldwell and find it indistinguishable from the females of the above series. In none of the specimens examined have I found sclerite formation similar to that shown by Caldwell (1944) although in partially cleared specimens the pigmentation somewhat resembles his figures. If the type of *rubrafacia* has such structure it is probably a distinct species but I think it probable that Caldwell was misled by the pigment pattern and so include *rubrafacia* as a synonym of *antennata* but with some question.

Numerous specimens of this species are before me from all parts of Mexico, bearing data as follows: Swept from grass in open pine forest between Ajusco and Xitle volcanos, north of Mexico City, October 7, 1923; Chapingo, swept from flowering alfalfa, March 31, 1924 and from weeds bordering an irrigation ditch, May 24, 1924; Desierto de los Leones (3000 m.), swept from shrubs and low vegetation in the barranca del Rio **Tepazulco**, July 20, 1924; Chapingo, swept from high vegetation (**Tithonia**, **Brassica campestris**, etc.) in a fallow field, July 28, 1924; Cuichapa, Veracruz, swept from a shrub growing between stones in the bed of the Rio Blanco, November 7, 1924; Desierto de los Leones (2800 m.), on **Senecio salignus**, March 29, 1925; San Cristobal las Casas and vicinity, Chiapas, swept from various weeds and shrubs (2000 to 2700 m.), June 14 and 19, July 2, 12 and 17, 1926; Madereros, near **Piedras Negras**, Veracruz, swept from beans (**Phaseolus**), December 18, 1926; Hacienda **Soledad**, near Irapuato, **Guanajuato**, swept from irrigated alfalfa and from hygrophilous plants (**Scirpus**, etc.) bordering a pond, November 11, 1927; San Jacinto, D. F., swept from alfalfa, June 28, 1929, from turnips, July 17 and November 26, 1929, from weeds along a vegetable field, September 24, 1929, flying near sunset in calm weather November 8, 1929 (autumnal migrations), swept from **Brassica napus** 1929, at light, May 4 and September 28, 1932, swept from alfalfa recently cut, July 4, 1932; Hacienda Nijini, Ixtlahuaca Valley, Mexico, swept from young corn, July 1, 1931; Municipio de Pueblo Viejo, Veracruz, swept on weeds near the shore of Laguna **Anahuac**, at sea level, June 21, 1932, Salvador **Flores** collector;

Cuernavaca, Morelos, swept from low vegetation in an orchard (**Psidium** and **Mangifera**), February 20, 1933; San Pedro Yaneri, Oaxaca, June 19, 1937, Francisco **Reyes** collector; Jojulta, Morelos, swept from weeds growing between irrigated sugar cane plots, October 2, 1937; slopes of Monte Alto, northern part of the Mexican Valley, near **Fernandez Leal**, swept from low oak scrub, November 15, 1938; Mexico City on corn, 1938; **Lagunas de Zempoala**, Morelos, swept from low vegetation near the lake, August 18, 1939, and from grass, June 5, 1941; **Llanos de Salazar**, Mexico, swept from grass, November 12, 1939; Mount Telapon, Mexico, swept from grass on summit (3900 to 4000 m.), September 29, 1940; Chapultepec Park, Mexico City, swept from lawn with scattered trees and shrubs, June 15, August 10, October 28, 1941; Cerro Judio, D. **F.**, swept from low oak bushes and mixed flowering weeds, August 15, 1943.

Host. **Polygonum** sp.

Type of **Rhinopsylla** antennata, male, no. 18082, United States National Museum.
