

UNDESCRIBED CRANE FLIES FROM FORMOSA AND
LUZON (TIPULIDÆ, DIPTERA)

By CHARLES P. ALEXANDER
Of Amherst, Massachusetts

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UNDESCRIBED CRANE FLIES FROM FORMOSA AND LUZON (TIPULIDÆ, DIPTERA)

By CHARLES P. ALEXANDER

Of Amherst, Massachusetts

All but one of the new species of crane flies described in the present paper were collected in Formosa (Taiwan) by Dr. Teiso Esaki during his recent collecting trip (August to October, 1921) to that island. The majority of these species were collected in the high mountains, which support a rich endemic tipulid fauna. The interesting new *Pselliophora* was collected by Dean C. F. Baker in northern Luzon. My thanks are extended to Doctor Esaki and Dean Baker for the privilege of studying these highly important collections. The Formosan types are preserved in my collection through the generosity of Doctor Esaki.

Trichocera flavoides sp. nov.

General coloration pale yellow, the terminal segments of the palpi, the antennal flagellum, and the legs pale brown; wings pale yellow.

Female.—Length, 3.2 millimeters; wing, 3.5 to 3.6. Rostrum and basal segment of palpus yellow, the remainder of the palpi dark brown. Antennal scape light yellow, the flagellum pale brown. Head pale yellow.

Mesonotum almost white, the pleura pale yellow. Halteres pale yellowish white. Legs with the coxæ and trochanters pale yellow; remainder of the legs pale brownish testaceous. Wings with a pale yellow tinge; veins pale. Venation: Sc_1 ending opposite the fork of R_{2+3} ; R_{2+3} about equal to the first section of R_2 ; basal deflection of R_{4+5} very short, oblique; cell 1st M_2 ,

very narrow, the inner end acutely pointed; m-cu longer than m, almost in alignment with M_{3+4} , beyond midlength of cell 1st M_2 ; basal deflection of Cu_1 about one-half its length beyond the fork of M_{3+4} .

Abdomen pale yellow; ovipositor with the valves pale.

Habitat.—Formosa.

Holotype, female, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 17, 1921 (*T. Esaki*). Paratopotypes, 1 female, with the type; 1 female, August 19, 1921.

Trichocera flavoides is perhaps only a variety of *T. flava* Brunetti of northern India, but there are some venational and colorational characters that seem to be of more than subspecific importance. *Trichocera flava* is the same as *Paracladura gracilis* Brunetti, an earlier name, but as there is already a *Trichocera gracilis* Walker, the name *flava* should be used.

Libnotes subopaca sp. nov.

General coloration orange-yellow; femora obscure yellow, the tips broadly dark brown; wings with a strong fulvous tinge, the stigma and a small apical spot darker brown; basal deflection of Cu_1 at two-fifths the length of cell 1st M_2 .

Male.—Length, 10 millimeters, wing, 13.7. Rostrum dark brown; palpi brownish black. Antennæ dark brown, the second scapal segment obscure brownish yellow. Head saturated fulvous yellow; vertex between the eyes narrow.

Mesonotal præscutum orange-yellow, the remainder of the notum and the pleura more yellow. Halteres dark brown, the base of the stem narrowly yellow. Legs with the coxæ and trochanters yellow; femora obscure yellow, the tips broadly dark brown; tibiæ yellow, the tips narrowly darkened; tarsi yellowish brown, the terminal segments dark brown. Wings with a strong fulvous tinge; stigma conspicuous, elongate, brown; extreme tip of the wing in cells 2d R_1 , R_2 , and R_3 narrowly infuscated; veins dark brown. Venation: Sc_2 at tip of Sc_1 ; r long, bent almost at a right angle; m and outer deflection of M_3 subequal in length, the inner ends of the cells in alignment; basal deflection of Cu_1 at two-fifths the length of cell 1st M_2 .

Abdomen orange-yellow, the lateral line narrowly infuscated; hypopygium dark brown.

Habitat.—Formosa.

Holotype, male, Urai, altitude about 1,500 feet (about 450 meters), October 1, 1921 (*T. Esaki*).

Libnotes subopaca is most closely related to *L. opaca* Bezzi, of Luzon.

Dicranomyia tattakæ sp. nov.

General coloration gray, the mesonotal præscutum with three more or less confluent dark brown stripes; pleura with a narrow black longitudinal stripe; wings faintly tinged with gray; brown spots at arculus, at origin of Rs and at the stigma; veins beyond cell 1st M_2 short.

Male.—Length, about 5 millimeters; wing, 7.2. Rostrum and palpi brownish black. Antennæ dark brownish black throughout. Head light gray.

Mesonotal præscutum yellowish gray with three dark brown stripes, the anterior ends of the lateral stripes confluent with the median stripe, restricting the interspaces to linear stripes before the suture; humeral region clearer gray; scutum gray, the lobes dark brown; remainder of the mesonotum dark brown, sparsely pruinose. Pleura dark gray with a very narrow but conspicuous black longitudinal stripe extending from above the fore coxa to the base of the abdomen, passing immediately ventrad of the root of the halteres. Halteres obscure yellow, the knobs a little darker. Legs with the coxæ dark, sparsely pruinose; trochanters brown; femora brown, the extreme bases pale, the tips broadly blackened, the extreme apices indistinctly pale; tibiæ and metatarsi brown, the tips blackened; remainder of the tarsi black. Wings with a faint gray tinge, sparsely spotted with brown; a conspicuous spot at arculus; a second spot at origin of Rs; stigma small, subcircular in outline; narrow brown seams along the cord and outer end of cell 1st M_2 ; anal angle faintly infuscated; veins brown, those in the costal region a little more yellowish. Venation: Sc short, Sc_1 ending opposite the origin of Rs, Sc_2 at its tip; Rs feebly angulate at origin, not quite twice the deflection of R_{4+5} ; cell 1st M_2 long and narrow, longer than any of the veins issuing from it, more than twice the distal section of Cu_1 ; basal deflection of Cu_1 before the fork of M, the distance a little longer than r-m.

Abdomen dark brown. Male hypopygium with the ventral pleural appendage large, produced into a conspicuous rostrum that bears two spines; mesal face of pleurite produced into a conical lobe, the mesal face and apex of which is setiferous.

Habitat.—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 16, 1921 (*T. Esaki*).

Dicranomyia tattakæ is related to *D. basifusca* Alexander, of Japan.

Dicranomyia curvispina sp. nov.

General coloration obscure yellow; head black; wings with a strong brownish tinge, the stigma darker; Sc long, cell 1st M_2 closed; abdominal tergites dark brown, the sternites bicolorous; mesal pleural appendage of male hypopygium bearing a long, curved spine.

Male.—Length, 6 millimeters; wing, 7.5. Rostrum and palpi black. Antennæ dark brown, the flagellar segments elongate. Head dark brown.

Pronotum dark medially, obscure yellow laterally. Mesonotal præscutum shiny yellow, broadly infuscated on the cephalic margin; remainder of the mesonotum obscure yellow. Pleura yellow, the dorsal sclerites a little infuscated. Halteres elongate, brown, a little paler at the extreme base of the stem. Legs with the coxæ and trochanters yellow; femora pale brown, the tips broadly darkened; tibiæ and tarsi dark brown. Wings with a strong brown tinge; stigma oval, darker brown; veins dark brown. Venation: Sc moderately long, Sc_1 ending just before one-third the length of Rs, Sc_2 at its tip; Rs long, almost straight; r at tip of R_1 ; inner end of cell R_3 far proximad of cell R_5 ; cell 1st M_2 pentagonal, gently widened distally; m about two-thirds the outer deflection of M_3 ; distal section of M_{1+2} longer than cell 1st M_2 ; basal deflection of Cu_1 one-half longer than Cu_2 , situated some distance beyond the fork of M.

Abdominal tergites dark brown; sternites obscure yellow, the incisures conspicuously dark brown, increasing in extent on the subterminal segments. Male hypopygium obscure brownish yellow. Mesal pleural appendage bearing a single, very long and conspicuous spine far before the tip, this strongly bent near one-third its length, the apical two-thirds appearing as a long, black spine.

Habitat.—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 18, 1921 (*T. Esaki*).

Molophilus arisanus sp. nov.

General coloration brown; antennæ short; wings uniformly tinged with brown; vein 2d A ending far beyond the basal deflection of Cu_1 ; male hypopygium with the inner pleural appendage bifid.

Male.—Length, 3.1 millimeters; wing, 4.5. Rostrum pale brown, the palpi brownish black. Antennæ short, if bent backward not attaining the wing root, pale brownish testaceous, the basal segment darker. Head grayish brown.

Mesonotum brown, the præscutum darker brown medially, the lateral margins narrowly whitish. Pleura pale brown with indications of a darker brown, longitudinal stripe. Halteres yellow. Legs with the coxæ and trochanters yellow, the posterior coxæ dark; remainder of the legs dark brown. Wings tinged with brown, the macrotrichia dark brown. Venation: Vein 2d A elongate, ending far beyond the basal deflection of Cu_1 .

Abdomen dark brown, the hypopygium only a little paler. Male hypopygium with the outer pleural appendage slender, slightly curved to the long, acute, black tip; inner appendage complex, before the apex split into two long spines.

Habitat.—Formosa.

Holotype, male, Arisan, altitude 7,362 feet (about 2,250 meters), August 24, 1921 (*T. Esaki*).

Erioptera (*Erioptera*) *rogersi* sp. nov.

General coloration pale yellowish white; antennæ yellow, the first scapal segment dark; femora pale fulvous with a snowy white ring before the tips; tibiæ yellow, the bases narrowly white; wings pale fulvous yellow, narrowly darker along the cord.

Male.—Length, 4.5 millimeters; wing, 4.6. Rostrum and palpi pale brown. Antennæ with the basal segment pale brown, the remainder of the organ light yellow. Head pale cream color, covered with a microscopic white bloom; eyes of male large, contiguous beneath.

Pronotum and mesonotum almost white, immaculate. Pleura pale yellowish white. Halteres pale yellow. Legs with the coxæ and trochanters concolorous with the pleura; femora pale fulvous, paler at base, immediately before the tips with a narrow, snow-white band which is provided with snowy white setæ, the extreme apex narrowly darkened; tibiæ yellow, the extreme base snowy white; tarsi yellow. Wings pale fulvous yellow with indications of a broad, paler band before the cord, the latter narrowly seamed with darker; veins yellow with fulvous macrotrichia, darker colored in the infuscated area. Venation: As in the subgenus, vein 2d A strongly sinuous.

Abdomen pale whitish yellow, the sternites beyond the base a little more saturated; a narrow, brown, lateral line on the basal half of the abdomen. Male hypopygium with the pleurites unusually elongate, each pleural appendage very long and slender, the acute tip slightly curved. The gonapophyses appear as two short, curved horns on either side, the tips directed mesad.

Habitat.—Formosa.

Holotype, male, Kanshirei, altitude about 1,000 feet (about 300 meters), September 10, 1921 (*T. Esaki*).

This handsome *Erioptera* is named in honor of my friend Prof. J. Speed Rogers, in appreciation of his critical studies on the Nearctic species of *Erioptera*.

Gnophomyia brevicellula sp. nov.

General coloration dark brown; antennæ of the male elongate, densely pubescent; wings grayish subhyaline; r-m before the fork of Rs; the veins issuing from cell 1st M_2 very long, the shortest two and one-half times the length of the cell; basal deflection of Cu_1 at midlength of the cell.

Male.—Length, 5.5 millimeters; wing, 6. Rostrum and palpi obscure brownish yellow. Antennæ elongate, if bent backward extending nearly to the base of the third abdominal segment, light brown, the elongate flagellar segments densely clothed with an erect white pubescence. Head brown.

Pronotum obscure yellow laterally. Mesonotum dark brown, rather shiny. Pleura brown with a narrow, ventral, gray, longitudinal stripe; sternites testaceous. Halteres dark brown. Legs with the coxæ and trochanters testaceous; remainder of the legs dark brown. Wings grayish subhyaline, the veins dark brown; stigma little evident. Venation: Sc long, Sc_1 ending beyond the fork of R_{2+3} ; Rs gently arcuated, r-m connecting with Rs about one-half its own length before the fork of Rs; basal section of R_2 a little shorter than r-m; cell 1st M_2 small, elongate, widened distally, m a little shorter than the outer deflection of M_3 ; veins issuing from cell 1st M_2 very long, the shortest (distal section of Cu_1) two and one-half times the cell; basal deflection of Cu_1 near midlength of the cell.

Abdominal tergites dark brown, the sternites paler. Male hypopygium with the longest pleural appendage a long, slender, somewhat flattened blade.

Habitat.—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 16, 1921 (*T. Esaki*).

Xipholimnobia formosensis sp. nov.

General coloration pale brown, the mesonotal scutellum and postnotum dark brown, dusted with gray; pleura brown with a narrow, longitudinal, silvery gray stripe; legs brown; wings with a uniform brown tinge; distal section of R_1 entirely atrophied; abdomen dark brown, the valves of the ovipositor a little less than one-half the length of the abdomen.

Female.—Length, about 4 millimeters: wing, 3.5. Rostrum and palpi brown. Antennæ pale brown. Head brown.

Mesonotal præscutum pale brown, the median area of the scutum light gray, the lobes concolorous with the præscutum; scutellum and postnotum dark brown, sparsely dusted with gray. Pleura brown with a narrow, longitudinal, silvery gray stripe extending to the base of the abdomen. Halteres with the sternites obscure yellow, the knobs dark brown. Legs with the coxæ small, testaceous; trochanters testaceous; remainder of the legs brown. Wings with a uniform brownish tinge; stigma lacking; veins pale brown. Venation: Sc long, Sc_1 ending about opposite four-fifths the length of the long Rs, Sc_2 subobsolete, a short distance from the tip of Sc_1 , the latter alone about equal to m; distal section of R_1 entirely atrophied as in the genus, the vein appearing to end in R_2 ; r provided with two macrotrichæ; Rs in alignment with R_{2+3} ; basal section of R_2 perpendicular; inner ends of cells R_3 , R_5 , and 1st M_2 in alignment; cell 1st M_2 gently widened distally, m and the outer deflection of M_3 subequal; basal deflection of Cu_1 near four-fifths the length of the caudal face of cell 1st M_2 .

Abdomen dark brown, the valves of the ovipositor concolorous. Ovipositor with the valves a little less than half the length of the abdomen, long and straight as in the genus.

Habitat.—Formosa.

Holotype, female, Kanshirei, altitude about 1,000 feet (about 300 meters), September 10, 1921 (*T. Esaki*).

Xipholimnobia formosensis agrees closely with the genotype, *X. terebrina* Alexander, of West Africa, and there is no doubt as to the correctness of the generic reference. The chief venational peculiarities of the genus are the atrophy of the distal

section of R_1 with the corresponding appearance of vein R_1 ending in vein R_2 as in most *Cylindrotominae*, and the position of the basal deflection of Cu_1 near the outer end of cell 1st M_2 . The valves of the ovipositor in the present species are very long and slender, but not so excessively so as in the genotype.

Trentepohlia (*Trentepohlia*) *pulchripennis* sp. nov.

Head dark brown, the anterior part of the vertex obscure yellow; antennae dark brown; mesonotum light yellow, the postnotum dark brown; pleura broadly dark brown; wings whitish hyaline with three conspicuous brown crossbands variegated with white spots.

Male.—Length, 5.5 millimeters; wing, 5.6.

Female.—Length, 6 millimeters; wing, 5.3.

Rostrum and palpi dark brown; mouth parts obscure yellow. Antennae dark brown, the basal flagellar segments feebly bicolorous, the bases paler than the remainder of each segment. Head dark brown, the anterior part of the vertex obscure yellow.

Pronotum brownish black. Mesonotal praescutum light yellow, unmarked; scutum and scutellum obscure brownish yellow; postnotum dark brown with a small, obscure yellow, median spot before the caudal margin. Pleura dark brown, the sternum and the dorsal pleurites obscure yellow. Halteres yellow, the knobs dark brown. Legs with the fore coxae brown; hind coxae yellow, brown basally; remainder of the legs obscure yellow; no conspicuous armature on femora or tibiae. Wings whitish hyaline with a very heavy dark brown pattern; base pale; a basal brown band across the wing, from just beyond h , including almost all of cell 2d A ; a very broad brown band at the level of the origin of R_s , extending from before R_s to just beyond the tip of Sc_1 , including cells C , Sc , 1st R_1 (the latter with a pale spot in the male), the outer ends of cells R and M except large white blotches; in cells Cu and 1st A the band is much paler, grayish; remainder of the cord and the base of cell R_3 conspicuously darkened; the apical band is entirely separate from the middle band, including the distal two-thirds of cell 2d R_1 , all of cell R_2 except an oval spot near the tip of R_2 and the extreme apex; the distal two-thirds of cell R_3 except the extreme apex; all of cell R_4 except an oval spot in the base and the extreme apex; outer two-thirds of cell M_2 darkened; outer angle of cell Cu_1 slightly paler brown; veins dark brown in the infuscated areas, yellowish elsewhere.

Venation: r very short, less than the tip of R_{1+2} beyond it; petiole of cell R_3 a little longer than the basal section of M_{1+2} .

Abdomen dark brown, the basal sternites and the hypopygium obscure brownish yellow. Ovipositor with the valves conspicuously yellow.

Habitat.—Formosa.

Holotype, male, Musha, altitude about 3,500 feet (about 1,050 meters), August 15, 1921 (*T. Esaki*). Allotype, female, Sumaän, altitude about 2,500 feet (about 760 meters), August 21, 1921 (*T. Esaki*).

Trentepohlia pulchripennis is related to *T. ornatipennis* Brunetti, of southwestern India, and *T. pictipennis* Bezzi, of Luzon, in the general character of the wing pattern, but is distinct from any described species.

Trentepohlia (*Mongoma*) *esakii* sp. nov.

Female.—Length, 9 millimeters; wing, 7.7. Allied to *T. (M.) pennipes* (Osten Sacken), differing as follows: Head dark gray, the occiput obscure yellow. Mesonotal praescutum brown, the lateral margins and humeral angles narrowly obscure yellow. Legs with the femora pale brown, the tips rather narrowly (1 millimeter) white; tibiae dark brown, the tips broadly white, on the middle legs occupying about the distal third of the segment; tarsi white. The white distal third of the midtibia is distinctly fringed with conspicuous white setae as in the *pennipes* group. Midfemur with about nine stout spines near the base, with other additional spines arranged in a row, these becoming more elongate and more distant from one another toward the outer end of the sclerite, the apical ones appearing bristlelike. Wings whitish subhyaline; veins brown. Venation: Sc_1 about equal to R_2 ; r a little more than its length before the fork of R_{2+3} ; R_2 gently sinuous.

Habitat.—Formosa.

Holotype, female, Musha, altitude about 3,500 feet (about 1,060 meters), August 15, 1921 (*T. Esaki*).

Trentepohlia esakii is named in honor of the collector. It is related to *T. pennipes* (Osten Sacken) and *T. tarsalis* Alexander in the feathered midtibial apices, but is very distinct in the conspicuous white femoral tips.

Ceratocheilus taiwanicola sp. nov.

General coloration dark brown; mesonotal praescutum yellowish gray with three dark brown stripes; legs dark brown; abdomen uniformly dark brown, only the hypopygium paler.

Male.—Length, excluding rostrum, 4.6 millimeters; wing, 5.4. Rostrum elongate, brownish black. Antennæ dark brown. Vertex between the eyes broad, dark brown, the anterior portion and a narrow margin adjoining the eyes light gray.

Mesonotal præscutum yellowish gray with three conspicuous dark brown stripes; scutum dull gray, the lobes brown; remainder of the mesonotum dark gray. Pleura dark gray, the dorsal sclerites indistinctly darker; sternites more plumbeous. Halteres testaceous. Legs with the coxæ and trochanters pale brownish testaceous; remainder of the legs dark brown, only the femoral bases narrowly paler. Wings pale grayish subhyaline; veins pale brown. Venation: Sc_1 ending a short distance beyond the origin of R_s , Sc_2 a slightly greater distance before this origin; basal deflection of Cu_1 about one-fifth its length beyond the fork of M .

Abdomen dark brown, only the hypopygium paler.

Habitat.—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 18, 1921 (*T. Esaki*).

Genus TAIWANOMYIA novum

Antennæ elongate, in the male twice as long as the body, in the female extending to beyond the wing root, 16-segmented. Tuberculate pits elongate-oval, lying close together a short distance back from the cephalic margin of the præscutum. Tibiæ spurred; claws small, simple; empodia distinct. Wings with Sc long, Sc_1 ending a short distance before r-m, Sc_2 a short distance from the tip of Sc_1 ; R_s angulated or spurred at origin; R_{2+3} very long, about equal to or longer than its fork; r close to the fork of R_{2+3} and about twice its length from the tip of R_1 ; deflection of R_{4+5} very long, subequal to R_s ; cell M_1 lacking; outer deflection of M_3 long and arcuated; basal deflection of Cu_1 from one and one-half to nearly twice its length before the fork of M ; vein 2d A ending beyond the level of the origin of R_s ; arculus complete. Ovipositor with all valves long and straight, the sternal valves a little exceeding the stouter tergal valves.

Genotype, *Taseocera fragilicornis* Riedel, of Formosa.

Riedel failed to detect the tibial spurs and placed this fly in the tribe Eriopterini. The genus is a very isolated one, and no immediate relatives can be indicated. The chief venational

peculiarities are the long deflection of R_{4+5} which is approximately as long as R_s and the position of the basal deflection of Cu_1 which is far before the fork of M . *Taseocera* Skuse is well distinguished by the extreme brevity of vein 2d A.

Taiwanomyia fragilicornis (Riedel).

Taseocera fragilicornis RIEDEL Archiv für Naturgeschichte, 82 Jahrg., Abt. A, 5 Heft (1916) 112, 113.

Riedel had only a single male. I have before me seven females from Kuraru, Formosa, August 30 to September 5, 1921, collected by Teiso Esaki, one of which is here designated as allotypic.

Allotype, female, length, 4 millimeters; wing, 3.9 to 4. Differs from the description of the male as follows:

Basal segment of the scape brownish black, the second segment conspicuously cream-yellow; antennæ shorter, the flagellar segments elongate-cylindrical with short verticils. Pleura brown with a narrow, blackish, longitudinal stripe. Legs with the coxæ and trochanters dark brown; femora light brown, gradually passing into dark brown, the extreme tips pale; tibiæ brown, the tips narrowly darkened, the extreme bases white; tarsi pale brown. Wings grayish subhyaline, heavily spotted and clouded with brown, there being from five to eight larger areas in cell C, the more-conspicuous ones extending caudad into cell Sc. Vein Sc long, Sc_1 ending about opposite three-fourths the length of the deflection of R_{4+5} , Sc_2 about one-third Sc_1 ; r about twice its length from the tip of R_1 ; cell 1st M_2 narrow at the proximal end which is only about one-half as long as r-m; m about one-third to one-fourth the outer deflection of M_3 ; cell 1st M_2 approximately as long as the longest vein issuing from it (M_{1+2}); cell Cu_1 very deep, due to the basal recession of the deflection of Cu_1 .

Allotype, female, Kuraru, Formosa, September 1, 1921 (*T. Esaki*).

Limnophila illustris sp. nov.

Related to *L. ochracea* Meigen; mesonotal præscutum pale brown with three yellowish brown stripes; thoracic pleura with a narrow, dark brown, longitudinal stripe; wings with a strong brownish tinge; anterior arculus nearly atrophied; abdominal sternites yellow, ringed with dark brown.

Female.—Length, 7 millimeters; wing, 7.6. Rostrum and palpi brown. Antennæ rather elongate, if bent backward at-

taining the wing root, dark brown, the first flagellar segment pale on the basal third. Head pale yellowish brown.

Pronotum pale. Mesonotal præscutum pale brown, the three usual stripes more yellowish brown; tuberculate pits lacking; remainder of the mesonotum brown. Pleura brownish yellow with a conspicuous dark brown longitudinal stripe extending to the base of the abdomen. Halteres with the stem pale brown, the base narrowly yellow, the knobs dark brown. Legs with the coxæ concolorous with the pleura; trochanters similar, infuscated apically; remainder of the legs brown, the terminal tarsal segments darker brown. Wings with a strong brown tinge; stigma elongate-oval, darker brown; a very faint infuscation along the cord and at the origin of Rs; veins dark brown. Venation: Sc_1 ending opposite the end of Rs, Sc_2 its own length from the tip of Sc_1 ; Rs relatively short, feebly angulated near origin; R_{2+3} moderately elongate, gently arcuate, about equal to the first section of R_2 ; r a little more than its own length from the tip of R_1 ; inner ends of cells R_3 , R_5 , and 1st M_2 about in alignment; cell 1st M_2 rather short-pentagonal; petiole of cell M_1 rather short, about equal to the second section of M_{1+2} ; basal deflection of Cu_1 at three-fifths the length of cell 1st M_2 ; anterior arculus almost obliterated.

Abdominal tergites dark brown; sternites pale yellow, each ringed before midlength with dark brown.

Habitat.—Formosa.

Holotype, female, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 17, 1921 (*T. Esaki*).

Elephantomyia major uniformis subsp. nov.

Male.—Length, excluding rostrum, 9.5 millimeters; wing, 8.5. Differs from typical *E. major* Alexander, of Kotosho Island, as follows: Smaller. Antennæ black throughout. Mesonotal præscutum reddish brown with a conspicuous black median stripe, broadest in front, narrowed behind, becoming obsolete near the suture. Pleura conspicuously light gray pruinose. Legs with the coxæ infuscated on their outer faces. Abdominal tergites dark brown; basal sternites indistinctly bicolorous, the subterminal segment entirely black.

Habitat.—Formosa.

Holotype, male, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 16, 1921 (*T. Esaki*).

Tricyphona symphyletes sp. nov.

In its general appearance close to *T. kuwanai* Alexander, but in the structure of the male hypopygium more like *T. trispinosa* Alexander.

Male.—Length, about 8 millimeters; wing, 9.3. Smaller than *T. kuwanai*. Cephalic lateral portion of scutal lobes with a semilunar dark brown spot, the posterior portion of the lobes less distinctly infuscated; scutellum and postnotum yellow. Legs light yellow, the segments not distinctly darkened at tips. Wings with the costal streaks as in *T. kuwanai*; a conspicuous dark brown seam along the basal fourth of M; a pale brown seam on the basal deflection of Cu_1 , the remainder of the cord nearly clear; the brown oblique cloud extends across the wing to m but does not reach the margin as in *T. trispinosa*. Venation: r-m connecting with Rs nearly its own length before the fork; petiole of cell R_3 short, a little less than one-half m; basal portion of R_{2+3} perpendicular, bent at a strong angle, the free portion of R_2 very short, R_{2+3} being bent close to R_1 at this point widening cell R_3 ; cell R_4 very wide near midlength, correspondingly narrowed at the distal end; m present, transverse, connecting M_2 with M_3 , the latter just beyond midlength; basal deflection of Cu_1 immediately beyond the fork of M.

Male hypopygium with but three black spines on the pleural appendage as in *T. trispinosa*, the notch between these and the apical point circular in outline. Gonapophyses with the lateral margin almost straight to the apex, not bulged outward before the apex as in *T. kuwanai*.

Habitat.—Formosa.

Holotype, male, Musha, altitude about 3,500 feet (about 1,060 meters), August 20, 1921 (*T. Esaki*).

Phalacroceræ formosæ sp. nov.

Head shiny dark brown, the inner margin of the eyes obscure greenish; præscutum shiny obscure yellow with three dark brown stripes, the median stripe split by a pale line; scutal lobes and scutellum brownish black; pleura and sternum pale green; wings with a strong brown tinge; cell 2d A narrow; abdominal tergites brown, the sternites obscure brownish yellow.

Female.—Length, 10 millimeters; wing, 11.2. Frontal prolongation of the head very short; palpi greenish brown. An-

tenal scape pale green, the flagellum dark brown; flagellar segments beyond the fourth cylindrical with conspicuous verticils. Head shiny dark brown, the inner margin of the eyes obscure greenish.

Mesonotal præscutum shiny obscure yellow with three dark brown stripes, the median stripe broadly split by a pale line; scutum obscure brownish yellow, each lobe with a conspicuous dark brownish black blotch; scutellum black; postnotum obscure brownish yellow. Pleura and sternum pale greenish. Halteres elongate, dark brown, the extreme base of the stem greenish. Legs with the coxæ and trochanters pale green; tibiæ and tarsi brown, the tips faintly darkened; tarsi dark brown. Wings with a strong brown tinge; stigma small and narrow, pale brown; veins dark brown, very conspicuous. Venation: Sc_2 not far from the tip of Sc_1 ; tip of R_1 barely indicated; R_2 entirely atrophied; deflection of R_{4+5} longer than r-m; m and outer deflection of M_3 subequal; basal deflection of Cu_1 about two-thirds its length beyond the fork of M; cell 2d A very narrow for a member of this genus.

Abdominal tergites dark brown, the sternites obscure brownish yellow.

Habitat.—Formosa.

Holotype, female, Tattaka, altitude about 7,400 feet (about 2,250 meters), August 19, 1921 (*T. Esaki*).

Pselliophora igorota sp. nov.

General coloration orange; antennal flagellum with only nine segments; tibiæ yellow with about the middle half dark brown; wings yellow, the cells beyond the cord a little darker; abdominal segments orange.

Female.—Length, about 15 millimeters; wing, 15. Frontal prolongation of the head orange; palpi reddish brown, the terminal segment dark brown. Antennæ with only eleven segments as in *P. bicinctifer*, the subterminal flagellar segments almost globular; antennæ orange-yellow throughout. Head obscure orange.

Mesonotal præscutum orange-yellow with three ill-defined reddish stripes, the median stripe broader and better defined; remainder of the mesonotum obscure orange. Pleura obscure orange. Halteres obscure orange. Legs with the coxæ and trochanters obscure orange; femora yellow with the extreme tips indistinctly darker; tibiæ obscure yellow with more than the central half dark brown; metatarsi brownish yellow, the

tips darkened; tarsi dark brown. Wings with a strong yellow tinge, the cells beyond the cord a very little darker; stigma small, oval, dark brown; veins pale brown. Venation: r on R_2 immediately beyond the fork of R_{2+3} ; petiole of cell M_1 very short, about equal to r-m.

Abdominal tergites orange, the basal segments with dark egg masses showing through the chitin.

Habitat.—Luzon.

Holotype, female, Baguio, Benguet, Mountain Province (*C. F. Baker*). Type returned to Dean Baker.

Pselliophora igorota requires comparison only with *P. bicinctifer* Alexander, from the same locality; the latter species has the general coloration black, the first scapal segment brownish black, the tips of the tibiæ dark brown; wings with the apex more conspicuously infuscated.