

by the veins, which are fuscous, flattened basally, rounded conical outwardly, the dark edging forming rounded dentations. The third spot is inside the line, posterior to the last, subquadrate rather large, reaching vein 1. Hindwings yellowish, becoming quite whitish translucent basally, and on middle field cross lines quite distinct, the first near the middle, the outer not far removed, and having at the middle three white spots long oval, divided by the veins, and strongly edged all around with blackish. Wings beneath as above, less sharply determinate in markings, the yellow more whitish and more washed with fuscous. Abdomen yellowish, with a narrow line, more whitish on each segment. In the male the abdomen is slender, extended, the genital armour protruded, and with a long tuft of hair on either side of last segment. Blanco Co., Central Texas. Specimens taken in April, July, September and October. The single specimen taken in April is darker than the rest, and there is some variation among all in the size of the whitish spots. The generic reference is from Dr. Smith's new List of Lepidoptera, and so on Dr. Fernald's authority.

NOTES ON NORTH AMERICAN TACHINIDÆ, WITH DESCRIPTIONS OF NEW GENERA AND SPECIES.—PAPER V.*

BY C. H. TYLER TOWNSEND, LAS CRUCES, NEW MEXICO.

The Tachinidæ herein described and mentioned are from the more northern parts of the U. S.; from Colo., Kan., Dakota, Iowa and Minn. to Ills., Mich., Pa., N. Y., N. H. and D. C.

Blepharipeza bicolor, Mcq

A small specimen from Dixie Landing, Va. (D. C.), Sept. 21, is evidently this species. It measures 9 mm.

Blepharipeza exul, n. sp., ♀.

Eyes light brown; frontal vitta light brown, with a reddish tinge; sides of front cinereous; face and cheeks silvery; facial ridges bristly half way up, sides of front bristly, sides of face bristly below frontal bristles; antennæ blackish, first two joints and base of third rufous, arista blackish; third antennal joint little more than twice as long as the

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elongate second joint; proboscis blackish, labella large, brownish; palpi rufous black bristly, rather stout; occiput silvery-gray, hairy. Thorax blackish, faintly silvery-pollinose, with five narrow black vittæ, the outer pair obsolete in front; scutellum brownish-rufous, as is also the thorax on hind margin and sides posteriorly. Abdomen dark rufous, a median broad vitta and posterior margins of segments black. Legs black, tibiæ rufous, femora silvery on outside, especially front ones; claws and pulvilli somewhat elongate, the pulvilli tawny-whitish. Wings grayish-hyaline, yellowish-brown at base; hind cross-vein strongly sinuate; tegulæ brownish-fuscous, halteres tawny-brownish.

Length of body, nearly 10 mm.; of wing, $9\frac{1}{2}$ mm.

Described from one specimen; New Hampshire (C. W. Johnson).

This species differs from *B. adusta* principally in the rufous basal joints of antennæ, the rufous tibiæ, and the brownish wing bases and tegulæ. Seven specimens from N.Y. (Comstock) are perhaps this species. They are 10–13 $\frac{1}{2}$ mm.; the antennæ are black, inclining to rufous at base; the frontal vitta dark brown; the cheeks, sides of face and front much less bristly. The females have two orbital bristles, and the males have the claws well elongated.

Gonia sagax, n. sp., ♂.

Eyes brown; front almost one-half width of head; sides of face, cheeks and whole front, including frontal vitta, light golden-yellow; facial depression silvery-white and about two-fifths width of face; vibrissæ decussate, inserted a little above oral margin; sides of face, cheeks and front covered with bristly hairs; antennæ nearly as long as face, second joint rather short, third about five times as long as second, first two joints same pale yellow as front, third joint clear orange-rufous; arista brown, second joint distinctly longer than last joint; proboscis black, tip and base brownish; palpi yellow, curved and thickened at tip; occiput blackish, except vertical area yellow, thickly clothed with yellowish-gray hair. Thorax shining metallic-black, posterior corners and margin and scutellum testaceous, scutellum with four pairs of macrochætæ besides a discal pair. Abdomen shining black, bases of segments two to four silvery-white, or slightly golden in some lights, most broadly on anal segment; first and second segments with a lateral macrochæta and a median marginal pair, third with eight or more marginal, anal with several macrochætæ. Legs black, foot-claws and pulvilli nearly as long

as last tarsal joint, pulvilli smoky. Wings grayish-hyaline, costo-basal portions broadly yellowish; tegulæ nearly white, halteres brownish-yellow.

Length of body, $10\frac{1}{2}$ mm.; of wing, $7\frac{1}{2}$ mm.

Described from one specimen; Ames, Iowa (Osborn).

Pseudogonia ruficauda, n. sp., ♂.

Eyes light brownish; front more than one-third width of head, frontal vitta dark brownish; sides of front brassy-golden, face and cheeks silvery-white, epistoma yellowish, antennæ and arista deep black, first two antennal joints rufous; proboscis black, tip and base brownish, palpi pale rufous; occiput cinereous, thickly yellowish-gray, hairy. Thorax black, silvery-pollinose, leaving four black vittæ, humeri and pleuræ silvery with a brassy tinge; scutellum testaceous, somewhat silvery. Abdomen black, first segment slightly silvery behind, second and third segments more or less thinly and anal segment thickly brassy-pollinose, tip of anal segment rufous; first segment with one lateral macrochæta, second with one lateral and a median marginal pair, third with a marginal row of ten or twelve, anal with a marginal row of about as many; hypopygium black, hairy. Legs black, front femora thick silvery on underside, all femora bristly, middle and hind tibiæ with strong macrochæta, claws and pulvilli elongate, pulvilli tawny-fuscous. Wings grayish-hyaline; veins on costo-basal portions, also middle portion of marginal cell, pale yellowish; tegulæ white, halteres fuscous.

Length of body, 11 mm.; of wing, 8 mm.

Described from one specimen; Brookings, So. Dakota (J. M. Aldrich).

I refer this species to *Pseudogonia*, Br. & v. Bgst. The second antennal joint is elongate, third two and a half times as long as second; arista geniculate, second joint elongate; sides of face bristly, as in *Cnephalia* and *Gonia*, but the second arisal joint less than half as long as third; proboscis longer than height of head, slim; palpi long, slender basally, thickened apically.

A ♂ specimen from N. Y. (Comstock) differs chiefly in the anal segment being wholly black at tip, not at all rufous; the third antennal joint blackish, rufous at base, arista brown. If these differences are, as I believe, entitled to specific value, the species may be known as *P. obsoleta*. It is 11 mm. long.

Siphoplagia anomala, Twms., Trans. Am. Ent. Soc., XVIII, p. 350.

This species was described from Southern New Mexico. A ♀ specimen from So. Ills. (Robertson) proves to be the same species. It is 8 mm. long.

Plagia americana, v. d. Wulp, Biol. C.-A. Dipt., II., p. 102, pl. 3, f. 19.

A specimen from N. Y. (Comstock) agrees with v. d. Wulp's description in all except that the third vein of the wing is bristly only to small cross-vein, not beyond it. The wing, however, differs from the figure in the origin of the hind cross-vein being considerably below instead of opposite the small cross-vein. I am unwilling to consider it a distinct species without further proof, as it otherwise agrees so closely with the description, though the difference in venation can hardly be varietal.

Plagia aurifrons, n. sp., ♂.

Eyes light brown; frontal vitta and sides of front golden, insensibly shading on sides of face into the silvery of the face and cheeks; front one-third width of head; three orbital bristles, the hindmost one weaker, frontal bristles descending about half way down sides of face; antennæ and arista black, the second antennal joint silvery, the third twice as long as second; proboscis brownish; palpi yellowish rufous, blackish at base; occiput cinereous, gray-hairy. Thorax black, slightly silvery, with five more or less distinct blackish vittæ, the middle one obsolete anteriorly; scutellum black, more or less silvery. Abdomen shining black, bases of segments two to four broadly but faintly silvery, the silvery becoming most distinct when viewed very obliquely; first segment with a lateral macrochæta and bristles, second with a lateral one and median marginal pair; third with about eight marginal, the median two more removed from margin; anal with a median discal pair, a sub-marginal sub-lateral pair, and a marginal row. Legs black, femora and front tibiæ silvery on outside, claws and pulvilli elongate, the pulvilli smoky whitish. Wings grayish-hyaline, yellowish-fuscous along veins on costal half, first vein bristly its whole length, third bristly to small cross-vein, fourth vein with slight wrinkle at bend; hind cross-vein nearly parallel with inner-margin of wing, but its origin considerably behind the point opposite small cross-vein; tegulæ whitish; halteres pale rufous, blackish in middle.

Length of body, 7 mm.; of wing, $5\frac{2}{3}$ mm.

Described from one specimen; Pennsylvania, June 4 (Johnson).

Trixa gillettei, n. sp., ♂.

Eyes brownish ; frontal vitta brown, narrowed posteriorly ; front very narrow behind, wide before ; face, cheeks and sides of front silvery-pollinose, latter shading to darker, cheeks with a brown area anteriorly ; antennæ and arista blackish, first two antennal joints and base of third rufous ; second antennal joint bristly, with a long bristle on front edge, third joint as long as second ; proboscis as long as height of head, rather slim, blackish ; palpi slender, brownish, rufous at tip, bristly ; occiput silvery, clothed with yellowish hairs. Thorax black, slightly silvery, with four (?) indistinct black vittæ ; scutellum black, slightly silvery. Abdomen black, more or less deeply silvery-pollinose according to lights, except first segment ; first two segments with a lateral pair of macrochætæ, and a median discal and marginal pair ; third with a median discal pair, and a marginal row ; anal with a more or less regular discal and marginal row. Legs black, claws and pulvilli very elongate ; pulvilli tawny-fuscous, claws brown at base, black at tips. Wings grayish-hyaline, tawny at base, without costal spine ; tegulæ nearly white, halteres rufous or brownish.

Length of body, 10 mm. ; of wing, 9 mm.

Described from one specimen ; Colorado (C. P. Gillette).

This species differs from both of Mr. v. d. Wulp's Mexican species described in the *Biologia Centrali-Americana*, *T. obsoleta* and *T. differens*, by having discal macrochætæ on the abdomen.

Miltogramma kansensis, n. sp., ♂.

Eyes light reddish-brown ; frontal vitta nearly obsolete, concolorous with front ; sides of front, face and cheeks silvery white, the front shading to dark, epistoma and facial depression more or less yellowish ; three orbital bristles, continued in front by a row of minute bristles ; antennæ orange rufous, third joint about one and a half times as long as second, arista black ; proboscis elongate, fully as long as height of head, rather slender, black, base and tip brownish, labella developed ; palpi elongate, yellow, filiform, hardly at all thickened ; occiput cinereous, black hairy. Thorax silvery, with three blackish median vittæ placed closely together, the middle one obsolete in front, and two heavier vittæ outside them ; scutellum black, silvery pollinose. Abdomen red, a median triangle on first segment and a large triangle extending from median portion of base of second to posterior lateral corners of third segment black ; anal segment

black; second and third segments silvery-white pollinose basally, anal segment wholly so; first two segments without macrochaetae, third and anal with a marginal row. Legs black, femora silvery on outside, claws and pulvilli quite elongate, latter tawny. Wings almost hyaline, tegulae white, halteres pale yellowish.

Length of body, 8 mm.; of wing, $5\frac{1}{2}$ mm.

Described from one specimen; Kansas, June.

Metopia luggeri, n. sp., ♀.

Eyes light brown; front extremely prominent, frontal vitta obsolete before, blackish behind, the sides of front abruptly black behind and pure silvery-white before; face and cheeks silvery-white; antennae and arista black, third antennal joint very long, fully five times as long as second, nearly reaching epistoma; proboscis blackish, labella brownish, palpi black; occiput cinereous, thinly black-bristly. Thorax black, thinly silvery-white pollinose, with four black vittae; scutellum black, slightly silvery. Abdomen black, almost wholly silvery-white pollinose, except first segment and hind margins of others; first two segments with a median marginal pair of macrochaetae, and some lateral bristles; third segment with a lateral pair and a median marginal pair; anal segment with a marginal row. Legs black, femora more or less silvery-pollinose, claws and pulvilli very short. Wings grayish-hyaline, tegulae whitish, with rust-yellow borders, halteres rufous.

Length of body, $5\frac{1}{2}$ mm.; of wing, $4\frac{1}{2}$ mm.

Described from one specimen; Minn. (Lugger).

Thryptocera americana, n. sp., ♀.

Eyes bare, light brownish; front about one-third width of head, frontal vitta light yellowish; frontal bristles descending a little below base of antennae, four posterior pairs directed backward, two orbital bristles; face, cheeks and sides of front silvery-white, the sides of face extremely narrow, the facial ridges bare except a few bristles next vibrissae, the latter quite strong and inserted exactly on oral margin; antennae as long as face; third joint very wide, rounded, and about two and one-half times as long as second, first two joints light rufous, third joint light brown; arista somewhat rufous, brownish at tip, more or less geniculate, 3-jointed, second joint elongate; proboscis short, fleshy, pale yellowish, labella large; palpi pale yellow, rather long, curved, thickened distally; occiput cinereous above, pale yellowish below, sparsely bristly. Thorax

silvery cinereous, with two narrow concolorous median vittæ reaching scutellum, humeri and pleuræ silvery-white; scutellum pale testaceous. Abdomen pale yellowish rufous, silvery-pollinose, with a median black vitta which widens over most of third segment and all of anal; second segment with a lateral macrochæta and a median marginal pair, third and anal segments with a marginal row; venter pale yellowish at base, darker toward anus. Legs pale yellowish, tarsi blackish, femora and tibiæ hairy and slightly bristly; claws and pulvilli very short. Wings grayish-hyaline; first, third and fifth veins spined their whole length, except tips of two latter; apical cell narrowly open exactly in tip of wing, fourth vein roundly curved at bend, hind cross-vein slightly nearer to small cross-vein than to bend of fourth; tegulæ nearly pure white, halteres yellow.

Length of body, 4 mm.; of wing, $3\frac{1}{2}$ mm.

Described from one specimen; Washington, D. C., August.

Myobia diadema, Wd.

Mr. v. d. Wulp (Biol. C.-A. Dipt., II.) describes this species as having the epistoma "slightly prominent". A ♂ specimen from N. Y. (Comstock), which I refer to this species, has the front golden like the thorax, the face silvery, and the oral margin or epistoma is what I should call "very prominent".

[TO BE CONTINUED.]

GETTING BUTTERFLY EGGS.

BY W. G. WRIGHT, SAN BERNARDINO, CAL.

It is generally understood, I believe, that to get eggs the requisite plant must be also enclosed in the gauze bag with the female insect. Such is often, but not always the fact, and it will lighten the labours of the biologist and simplify his methods if a more correct statement be made. That one genus of butterflies should not use or require living plants to receive their eggs, while others will fret and die without ovipositing if their peculiar plant be withheld, indicates a relationship, or gives a hint as to grouping of genera upon natural lines. But if so, it plays havoc with existing groupings, and will cause the arbitrary to give place to the natural when these things become better understood.

The genera of butterflies, with the living forms of which I am acquainted, and of which the females do not require plants in ovipositing, are as follows:—Parnassius, Argynnis, Euptoieta, Neonympha, Cœ-