

Myzus lycopersici Clarke.—26 antenna of wingless viviparous female; 27 antenna, 28 head, 29 cornicle and 30 cauda of winged viviparous female; 31 antenna of winged male; 32 antenna of oviparous female.

Plate VII. *Myzus lycopersici* Clarke.—33 hind tibia of wingless oviparous female.

Rhopalosiphum howardii Wilson.—34 antenna of wingless viviparous female; 35 head, 36 wing, 37 cornicle, 38 cauda and 39 antenna of winged viviparous female; 40 antenna of winged male.

Eulachnus rileyi Williams.—41 antenna of wingless viviparous female; 42 head, 43 antenna, 44 beak, 45 wing and 46 hind tarsus of winged viviparous female; 47 antenna of winged male, 48 hind tibia of wingless oviparous female.

Plate XVIII. *Symdobius albasiphus* n. sp.—49 antenna, 50 cornicle and 51 cauda and anal plate of wingless viviparous female; 52 head, 53 antenna and 54 cauda and anal plate of winged viviparous female; 55 antenna and 56 wing of winged male; 57 antenna and 58 hind tibia of wingless oviparous female.

REPORT ON A COLLECTION OF JAPANESE CRANE-FLIES (*TIPULIDÆ*, *DIPTERA*).

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(Continued from p. 211.)

***Tipula nipponensis*, sp. n.**

Head yellowish; thorax yellow with brown stripes; abdomen with the caudal margin of the segments broadly brown; wings variegated gray, brown and hyaline.

Male: Length 12.8 mm.; wing 13.6 mm.; antennæ about 4 mm.

Female: Length 13–14.1 mm.; wing 14.2–15.2 mm.

Male: Palpi brown, the terminal segment very long and pale; frontal prolongation of the head very short and stout, yellowish; antennæ, segments 1 and 2 yellow, flagellar segments with the somewhat enlarged base dark brown, the remainder of each segment dull yellow; front, vertex and occiput dull yellow, the sides of the vertex and the genæ dark brown.

Pronotum pale; mesonotum dull yellow with dark brown stripes, the median one bisected by a pale line, lateral stripes short,

very close to the median stripe; scutum with the lobes brown; scutellum and postnotum yellowish medially, the sides dark brown, a narrow indistinct median line. Pleura yellowish with brown blotches as follows: On sides of the propleura; a large blotch on the meso-episternum and mesosternum; a very dark spot on the dorso-cephalic angle of the mesepimerum, a dark blotch at the base of the halteres. Halteres paler. Legs, coxæ dull yellow with the base on the outer side tinged with brown; trochanters yellow; femora yellow, the tip brown; tibiæ light brown, tarsi dark brown. Wings with a light gray suffusion, cells C and Sc a little lighter, yellowish; stigma brown; hyaline spots as follows: In front of and beyond the stigma, cell 1st M₂, a large blotch in the end of cell M and a spot in cell 1st A near the end of vein 2nd A; veins Cu and 2nd A narrowly seamed with brownish. Venation (see plate XVI, figure 2).

Abdominal tergites with the basal third yellowish, apical two-thirds brown; pleural line conspicuously dark brown; sternites light yellow, each segment with a narrow, transverse subbasal brown band. Male hypopygium: 9th tergite from above narrow, not nearly as wide as the 8th tergite, its lateral angles rounded, its caudal margin deeply and broadly notched. Pleural appendages from the side (see plate XIX, fig. 2). A more dorsal and ectal fleshy lobe which is directed backward, this lobe cylindrical, tapering, provided with sparse long hairs; entad and ventrad of this lobe is a large bifid appendage whose caudal arm is feebly chitinized, pale, with abundant hairs, the inner or cephalic arm is chitinized, and with strong teeth which approach the caudal margin of the 9th tergite. Penis with the central vesicle large, its convex side directed dorsad, the penis proper, long and slender.

Female.—Almost as in the ♂, the antennæ shorter; ovipositor with the tergal valves much more slender than the high sternal valves.

Holotype, ♂, Tokyo, Japan; April 26, 1912 (Vial 25).

Allotype, ♀, Tokyo, Japan; April 26, 1912 (Vial 25).

Paratype, ♀; Tokyo, Japan; April 26, 1912 (Vial 25).

***Tipula serricauda*, sp. n.**

Head with a brown median stripe; thorax with three brown stripes; abdomen trivittate with brown; female ovipositor with the

sternal valves exceedingly short, tergal valves long, serrated on the outer margin; wings clouded brown, gray and hyaline.

Female.—Length about 23 mm.; wing 18-18.8 mm.

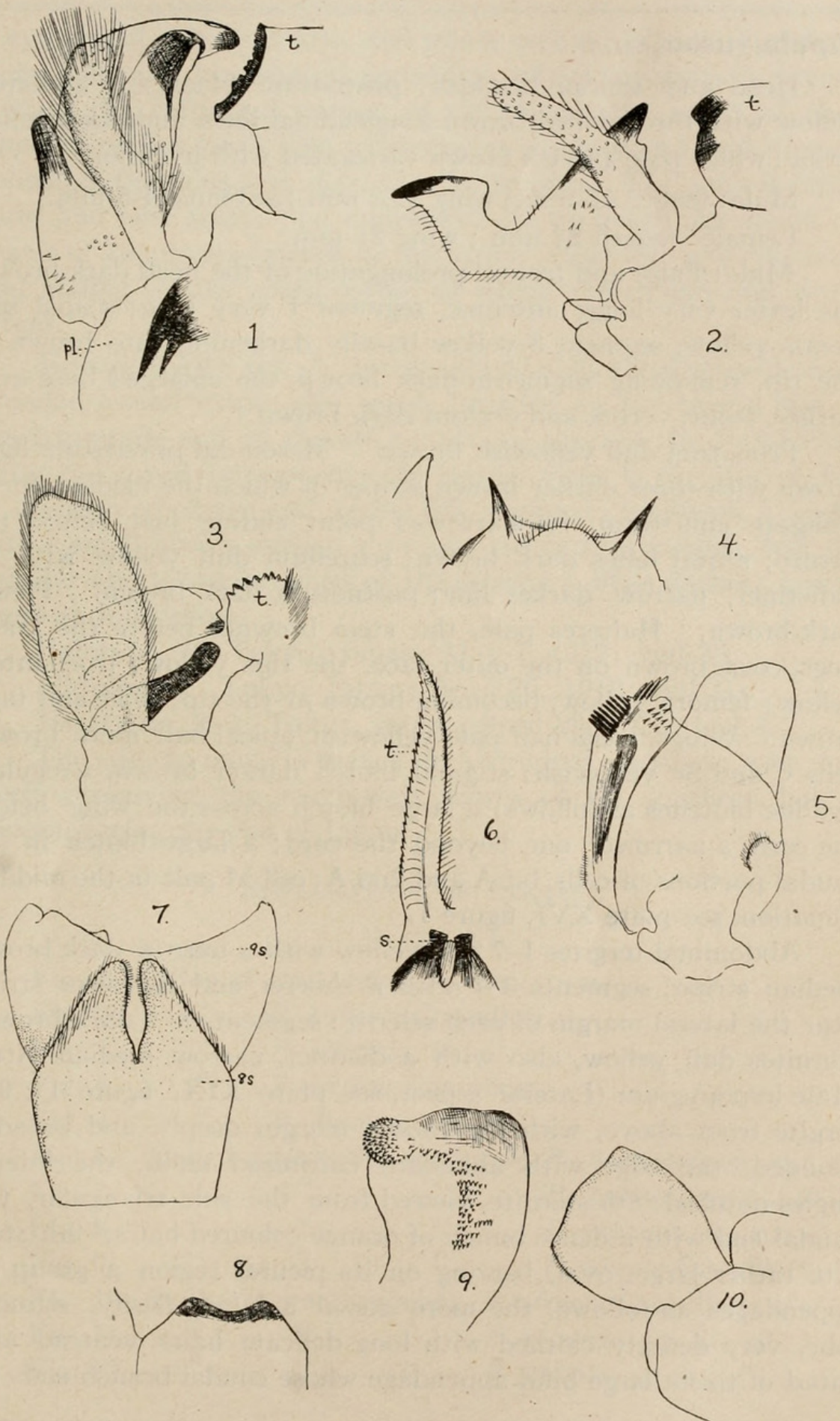
Female.—Palpi with the base dark, the apical segments pale; frontal prolongation of the head rather short, dark above, pale beneath; antennæ, four basal segments light yellow, the remaining segments a little brown at the base, yellow apically; front, vertex and occiput dull yellow, the head with an elongate brown median stripe.

Mesonotal præscutum light brown, with three broad dark brown stripes of which the median one is very broad and is bisected by a pale line, lateral stripes close to the median one; scutum dull brownish yellow, the lobes mostly dark brown; scutellum brownish yellow; postnotum light brown, with three dark brown longitudinal stripes. Pleura brown, much darker on the mesosterna. Halteres rather short, dull yellow, the knob a little brown. Legs, coxæ with the externo-cephalic face brown; trochanters dull yellow, femora and tibiæ yellow, the tips brown; tarsal segment 1 brownish yellow, brown at the tip; segments 2-5 brown. Wings gray, cells C and Sc yellowish brown; dark brown blotches as follows; At base of vein M, in middle of cell M₁ adjoining vein Cu, at origin of Rs, stigmal region including the cephalic portion of the cord. Hyaline blotches scattered over the wing, the largest beyond the stigma, extending obliquely across the wing to cell 1st M₂; a large blotch in cells R and M near the basal third, another in cell M near the tip; others before the stigma and in the anal cells. Venation (see plate XVI, fig. 4).

Abdominal tergites brownish yellow, with three indistinct dark brown longitudinal stripes which extend the length of the abdomen. Ovipositor of a remarkable structure; viewed from beneath (see plate XIX, fig. 6), the sternal valves are remarkably short, not even attaining the base of the upper valves; upper valves parallel on a horizontal plane, slightly curved, the inner margin smooth, the outer margin with numerous saw-like teeth. Sternites dull yellow, a broad brown longitudinal median stripe rather indistinct on segments 1-3 but becoming darker and better defined on the apical segments.

Holotype, ♀, Tokyo, Japan; August, 1912; vial 41.

Paratype, ♀, Tokyo, Japan; August, 1912; vial 41.



***Tipula yusou*, sp. n.**

Head and thorax blackish; postnotum blackish; abdomen yellow with three dorsal brown longitudinal lines and one median stripe; wings pale greyish brown variegated with hyaline.

Male: length 15 mm.; wing 19.2 mm.; antennæ 4-5 mm.

Female: length 23 mm.; wing 21 mm.

Male: Palpi and frontal prolongation of the head dark brown, the latter very long; antennæ, segment 1 very long; scapal segments yellow, segment 3 yellow basally darkening into brown at the tip, remaining segments dark brown, the enlarged base even darker, front, vertex and occiput dark brown.

Pronotum dull yellowish brown. Mesonotal præscutum light brown with three darker brown stripes of which the median one is elongate cuneiform, its narrowed point ending just before the suture; scutal lobes dark brown; scutellum dull yellow with an indistinct, narrow darker line; postnotum dark brown. Pleura dark brown. Halteres pale, the stem browner before the knob. Legs, coxæ brown on the outer face, the tips yellow; trochanters yellow; femora yellow, becoming brown at the tip; tibiæ and tarsi brown. Wings, basal half pale yellowish, apical half more brown, cells C and Sc yellowish; stigmal blotch darker brown, irregular; hyaline blotches as follows: a large blotch across the wing before the cord; a narrower one beyond the cord; a large blotch in the caudal portions of cells 1st A and 2nd A; cell M pale in the middle. Venation, see plate XVI, figure 1.

Abdominal tergites 1-7 dull yellow with a narrow dark brown median stripe; segments 3-7 with a shorter and narrower stripe near the lateral margin of each sclerite; segments 8-9 dark brown; sternites dull yellow, also with a distinct, narrow median vitta. Male hypopygium (Lateral aspect, see plate XIX, figure 1): 9th tergite from above, with the caudal margin deeply and broadly rounded, the edge with abundant chitinized teeth, the lateral angles notched; 8th sternite, viewed from the side triangular, the caudal end with a dense bunch of orange coloured hairs; 9th sternite rather large, oval, bearing on its pleural region a group of appendages as follows: the more dorsal a large, fleshy, sigmoid lobe, very densely clothed with long delicate hairs, ventrad and entad of this a large bifid appendage whose caudal branch ends in

a cylindrical chitinized arm, and whose cephalic branch is produced dorsad into a spoon-shaped appendage whose concavity is directed toward the chitinized portion of the 9th tergite; entad of these appendages is a large lobe whose point is chitinized and directed cephalad, the sides with deep parallel grooves. The penis is rather short and very stout; just underneath its tip inside the pleura are a pair of apophyses (shown in the figure), these strongly chitinized and ending in two sharp spines of which the caudal one is the larger.

Female.—Like the ♂, but the dorsal abdominal stripe is much broader, lateral stripes also much broader; on the caudal half of the 7th tergite and on the 8th tergite, all three of the dorsal vittæ unite and cover the segment; the sternal vitta is very broad, but is interrupted at the end of the 6th segment; segments 7 and 8 with a small brown median spot near the caudal margin, and the anterior and posterior edges of the sclerite a little darker; genital segment dull yellow.

Holotype, ♂, Tokyo, Japan; May 7, 1912; vial 36.

Allotype, ♀, Tokyo, Japan; April 26, 1912; vial 21.

Paratypes, 2 ♀, Tokyo, Japan; April 23, 1912; vial 3.

The specific name is that of an aboriginal Japanese race formerly occupying the north-west shores of the southern half of Nippon facing the Sea of Japan.

EXPLANATION OF PLATES.

PLATE XI.

- Fig. 1. Wing of *Pachyrhina pullata*, sp. n.
- Fig. 2. " *P. palloris* Coquillett.
- Fig. 3. " *P. repanda*, sp. n.
- Fig. 4. " *P. virgata* Coquillett
- Fig. 5. " *P. flavonota*, sp. n.
- Fig. 6. Dorsal aspect, 9th tergite, of *P. flavonota*, sp. n.; ♂.
- Fig. 7. " " " *P. pullata*, sp. n.; ♂.
- Fig. 8. " " " *P. repanda*, sp. n.; ♂
- Fig. 9. " " " *P. virgata* Coquillett; ♂.
- Fig. 10. Sixth antennal segment, *P. virgata* Coquillett; ♂.
- Fig. 11. " " " *P. repanda*, sp. n.; ♂.
- Fig. 12. " " " *P. pullata*, sp. n.; ♂.

Fig. 13. Pleural appendages, ♂ hypopygium, *P. virgata* Coquillett.

Fig. 14. Pleural appendages, ♂ hypopygium, *P. pullata*, sp. n.

Fig. 15. " " " " *P. flavonota*, sp. n.

Fig. 16. " " " " *P. repanda*, sp. n.

PLATE XVI.

Fig. 1. Wing of *Tipula yusou*, sp. n.

Fig. 2. " *T. nipponensis*, sp. n.

Fig. 3. " *T. aino*, sp. n.

Fig. 4. " *T. serricauda*, sp. n.

Fig. 5. " *T. yamata*, sp. n.

Fig. 6. " *T. insulicola*, sp. n.

Fig. 7. " *T. coquilletti* Enderlein.

Fig. 8. " *Dictenidia fasciata* Coquillett

PLATE XIX.

Fig. 1. Hypopygium of *Tipula yusou*, sp. n.

Lateral aspect; t = 9th tergite; pl = pleura.

Fig. 2. Hypopygium of *T. nipponensis*, sp. n.

Lateral aspect; t = 9th tergite.

Fig. 3. Hypopygium of *T. yamata*, sp. n.

Lateral aspect; t = 9th tergite.

Fig. 4. Hypopygium of *T. aino*, sp. n.

Dorsal aspect of the 9th tergite.

Fig. 5. Hypopygium of *T. aino*, sp. n.

Pleural appendages, lateral aspect.

Fig. 6. Ovipositor of *T. serricauda*, sp. n.

Ventral aspect; t = tergal valve; 5 = sternal valve.

Fig. 7. Hypopygium of *T. coquilletti* End.

Ventral aspect; 8s = 8th sternite; 9s = 9th sternite.

Fig. 8. Hypopygium of *T. coquilletti* End.; 9th tergite from above.

Fig. 9. Hypopygium of *T. coquilletti* End.; pleural appendage from the inside.

Fig. 10. Hypopygium of *T. coquilletti* End.; pleura and its appendage from the outside.



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