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DESCRIPTIONS OF NEW TIPULIDÆ.

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In my first article on North American Tipulidæ (JOUR. N. Y. ENT. SOC., Vol. VIII, No. 3) a number of mistakes occurred which were corrected in some of the separates sent out by me. It may be well to note these corrections here. *Dicranoptycha borealis*, should read *Limnobia borealis*; *Cryptolabis bisinuatis* should read *Cryptolabis bisinuata*; *Limnophila flavapila* should read *Limnophila flavipila*; *Phyllolabis obscuris* should read *Phyllolabis obscura*; *Amalopsis disphana* should read *Amalopsis diaphana*; the reference to the plate after *Polyangæus maculatus* should read Pl. VIII, Fig. 20, instead of Pl. VII, Fig. 20.

I am under obligations to Prof. J. M. Aldrich, Univ. of Idaho; Prof. Trevor Kincaid, Univ. of Wash.; Dr. L. O. Howard, U. S. Entomologist and Curator of Insects for the National Museum, for large series of Tipulidæ from their respective collections; also to Prof. V. L. Kellogg, Stanford University; Prof. Jas. Hines, Univ. of Ohio; Mr. G. Chagnon, Montreal, and to others for smaller valuable series; also to those having charge of the insect collections in the National Museum and in the Museum of Comparative Zoölogy in Cambridge for the privilege of studying the Tipulidæ in these collections.

Tipula illustris, sp. nov.

Brown; head yellowish; front and occiput dark brown or blackish; rostrum short, yellowish below, brown above; nasus darker brown; palpi brown; antenna rather long, reaching beyond the base of the wing, dark brown or black, first and second joints sometimes lighter especially below, joints beyond the third incrassate below at base; mesonotum dark brown, with a narrower median black line and two very indistinct lateral lighter lines; scutellum and metanotum yellowish, the brown stripe in the middle bordered by a brownish area varying in width; collare light

brown with three darker spots; dorsopleural membrane yellowish; mesopleura and sternopleura very dark grayish; pteropleura and hypopleura light grayish; metapleura yellowish; halteres yellowish at base, infuscated toward tip, knobs brown; legs brownish-yellow, tarsi and tips of femora and tibia brown; abdomen reddish-brown, sometimes with a faint median brownish line; eighth tergite concealed except laterally; hypopygium very small, a little lighter than the rest of the abdomen, upper lamella with a wide crescent-shaped incision, outer lateral appendages of lower lamella about three times as long as wide, incurved, tip rounded; wings uniformly reddish-brown, coloring sometimes a little less dense in the middle of some of the cells and in the region of the stigma which is not darker than the rest of the wing; veins brown, sometimes those in the region of the discal cell in part whitish. Length, male 9-10 mm., wing 12-13 mm.

Habitat: St. Anthony, Idaho, two males. (Type) Aldrich. Olympia, Wash., two males. Kincaid. Yakama, Wash., one male. Battle Creek, Mich., two males. Aldrich. Type no. 147. Wash. Agric. Coll. & S. of S.

***Tipula dorsolineata*, sp. nov.**

Cinereous; head light yellowish, somewhat cinereous above; rostrum short, somewhat darker, with a fuscous lateral line; palpi fuscous to blackish; antennæ of male reaching beyond the base of the wings, first and second joints light yellowish, others fuscous, cylindrical; antennæ of female hardly reaching the base of the wings; mesonotum cinereous with an indistinct narrow median fuscous stripe and two much broader fuscous stripes on each side, the outer pair not reaching the anterior margin; a rather broad yellowish median line running from the suture to the base of the abdomen; collare brown with three yellow spots; scutellum light yellowish, lateral margin more or less fuscous; metanotum whitish-yellow with two broad lateral fuscous stripes; pleura mostly brown, pteropleura and a few spots along the sutures much lighter brown; halteres brown, yellowish at the base, knobs brown; legs yellowish-brown, the tarsi and the tips of the femora and the tibia darker; abdomen brownish, the anterior margin of each segment lighter, the posterior and lateral margins much darker brown; hypopygium small, concolorous with abdomen; upper lamella with a deep V-shaped incision; lower lamella with a deep Y-shaped incision, the upper pair of lateral appendages is somewhat spatulate and brownish, the lower pair is smaller and brownish-yellow; eighth and ninth terga of abdomen of female yellowish, shining, with three brown spots; ovipositor yellowish, darker at the base, upper valves rounded at the tip, lower valves reaching a little beyond the base of the upper valves; wings hyaline, with a slight grayish tinge; subcostal cell brownish; very faint lighter streaks in nearly all the other cells; stigma brown, surrounded by an indistinct whitish cloud; a small whitish spot in the base of the discal cell incompletely connected with the one around the stigma; discal cell a little more than twice as long as wide; petiole of second posterior cell nearly equal to the width of the discal cell. Length, male 10 mm., female 14 mm., wing 11 mm.

Habitat: Pullman, Wash., five males, ten females. (Type) Keyport, Wash., one female. Doane. Type no. 148. Wash. Agric. Coll. & S. of S.

***Tipula sulphurea*, sp. nov.**

Brownish; head yellowish, brownish to cinereous above, with a faint fuscous streak; rostrum yellowish, rather short; nasus short, with yellowish hairs; palpi brownish to black, yellowish toward the base; first three joints of antennæ yellowish, second somewhat darker, others brownish black; antennæ of male reaching beyond the base of the wings; antennæ of female lighter and shorter, not reaching to the base of the wings; mesonotum brownish with three indistinct darker brown lines, the median one divided by a faint narrow cinereous line; collare brown, lateral margins grayish; scutellum and metanotum light yellow; the posterior half of the pleura sulphur yellow; mesopleura and stenopleura and the base of the first and second coxæ slate colored; dorsopleural membrane light brownish; halteres brownish, extreme base yellowish; legs brown, the tarsi and the tips of the femora and tibia darker; base of the femora somewhat yellowish; abdomen brownish yellow, the posterior margin of each segment lighter; a rather broad, broken brown stripe on each side of the terga and a similar one the sterna; basal half of eighth segment brown, distal half yellow; hypopygium yellow; upper lamella terminating in two short, blunt, black points; lower lamella with a deep incision from the base of which arises a pair of long membranous upward and inward projecting appendages; the brown stripe on the abdomen of the female broader and more complete; eighth and ninth terga short; ovipositor reddish-brown, acute, lower valves reaching beyond the base of the upper valves; wings immaculate with a slight grayish tinge; stigma and veins brown; the subcostal cell and the anterior margin of the anal cell with a slight yellowish or brownish tinge; discal cell more than three times as long as wide; petiole of the second posterior cell about equal to the length of this cell; fifth posterior cell not in contact with the discal cell. Length, male 13 mm., female 15 mm., wing 11 mm.

Habitat: Battle Creek, Mich., sixteen males six females. Aldrich. Type no. 149. Wash. Agric. Coll. & S. of S.

***Tipula fumosa*, sp. nov.**

Grayish brown; head silvery gray pollinose, dark brown above; rostrum short, thick; nasus inconspicuous, with short yellow hairs; palpi and antennæ dark brown, the latter reaching but little beyond the base of the wings in the male; basal segment grayish, last segment very minute; mesonotum light brown with three very broad darker brown stripes which are darker bordered, the median one divided by a narrow, indistinct darker line; collare grayish-brown with three darker spots; scutellum light grayish-brown with a median darker line; metanotum, pleura and coxæ silvery gray pollinose; dorsopleural membrane light brownish; halteres brownish yellow, knobs brown; tarsi and tips of femora and tibia dark brown, femora yellowish, tibia brownish; abdomen dull brown, posterior and lateral margins of each segment grayish; eighth tergite visible only at the sides; hypopygium small, concolorous with rest of abdomen; upper lamella terminating in two short, black, blunt, tooth-like projections; lower lamella with a deep V-shaped incision; ovipositor short, base blackish; valves reddish-brown; upper valves slender, acute; lower valves shorter and much broader; wings immaculate, with a dark tinge which is a little darker anteriorly; an indistinct whitish space in front of the brown stigma;

discal cell more than twice as long as wide; petiole of second posterior cell short. Length, male 10 mm., female 12 mm., wing 12 mm.

Habitat: Columbus, Ohio, seven males, one female. Hines. Type no. 150. Wash. Agric. Coll. & S. of S.

***Tipula rostellata*, sp. nov.**

Black; head blackish, darker above, grayish beneath the antennæ and eyes; rostrum black, rather short and stout; nasus with black or brownish hair; palpi black; antennæ brownish black, the tips of the basal joints of the flagellum somewhat enlarged and produced below, not furnished with verticillate hairs; last joint much more slender than the preceding joint; mesonotum dark slate-color, with three longitudinal grayish stripes, the median one narrow and indistinct, the lateral ones broader; collare dark grayish-brown with two darker spots; scutellum, metanotum, pleura and coxæ blackish-gray; dorso-pleural membrane reddish-brown; halteres brown, knobs darker; legs very dark brown, femora reddish-brown toward the base; abdomen dull blackish-brown; dorsum with a distinct, broad, reddish-brown stripe; posterior margin of each segment grayish; hypopygium small; upper lamella black, posterior margin with a rather broad yellowish lobe on each side leaving a deep incision between; lower lamella black with a deep narrow incision the edges of which are bordered with yellow, with two pairs of broad, yellowish appendages, the upper pair broadly ovate, the lower inner pair drawn out to an acute inward projecting point; base of ovipositor black, valves reddish-yellow; lower valves very short, reaching but little beyond the base of the upper valves, latter not arcuated; wings rather broad, immaculate; subcostal cell, the anterior margin of the anal cell and the stigma faint brownish yellow; discal cell about three times as long as wide; petiole of second posterior cell short; veins brown. Length, male 13 mm., female 15 mm., wing 14 mm.

Habitat: Colorado, two males, two females. Morrison. Type no. 151. Wash. Agric. Coll. & S. of S.

***Tipula cervicula*, sp. nov.**

Black; head velvety black; rostrum black, rather short; nasus indistinct; palpi black or blackish-brown; antennæ velvety black, joints cylindrical, base verticillate with short black hairs, last joint very short; mesonotum velvety black with four rather broad indistinct grayish lines; scutellum, metanotum, pleura and coxa black; dorso-pleural membrane yellow; halteres brownish, lighter toward the base; legs black, base of femora brownish-yellow; abdomen black, posterior and lateral margins of each segment grayish; hypopygium small but rather long; upper lamella black with a deep incision; lower lamella reddish-brown with a very deep, broad incision; base of ovipositor black, valves reddish-yellow, upper valves straight, tips somewhat obtuse; lower valves shorter, broad, flat; wings immaculate, with a grayish tinge; subcostal cell and the anterior margin of the anal cell with a faint yellowish-brown tinge; stigma brown; discal cell hardly twice as long as broad; petiole of the second posterior cell not longer than the discal cell; veins brown except at the base of the discal and second submarginal cell where they are white; the grayish

tinge is less intense in the region of the stigma and in the base of the discal cell sometimes making these parts appear whitish or hyaline. Length, male 11 mm., female 15 mm., wing 12 mm.

Habitat: Mount Rainier, one male, two females, Piper. Type, 152. Wash. Agric. Coll. & S. of S.

***Tipula bituberculata*, sp. nov.**

Brown; head cinereous with a median brown line above, two small tumid processes just above the base of the antennæ, much larger in the female; rostrum short, stout, yellow, cinereous above; palpi brown; antennæ reaching to base of wings, wholly brown, segments of flagellum cylindrical, the first not longer than the succeeding four or five; mesonotum cinereous, with five brown stripes, the lateral ones somewhat indistinct, the median one fusiform; scutellum light yellowish with a median brown line; metanotum dark gray; dorsopleural membrane yellowish; collare grayish; pleura cinereous with an indistinct yellowish broken line running from the base of the anterior coxæ to the base of the halteres; pterostigma yellow spotted; halteres yellow, knobs brownish; legs yellowish brown; tarsi and tips of femora and tibia darker; abdomen yellowish above with three dark brown stripes; slate colored beneath; posterior margin of each segment yellow; hypopygium small; upper lamella with a U-shaped incision; lower lamella with a narrow deep incision, the ventral aspect lighter than the lateral aspect; ovipositor reddish-brown; upper valves arcuated, acute; wings with a grayish tinge somewhat darker along the veins and in the middle of the cells, a little lighter in the region of the stigma which is brown; prefurca short; discal cell more than twice as long as wide. Length, male 10 mm., female 14 mm., wing 11 mm.

Habitat: Calif., two males, one female. Type No. 153. Wash. Agric. Coll. & S. of S.

***Tipula helvocincta*, sp. nov.**

Black; head light gray with a median dark brown stripe above; rostrum dark gray; palpi brown; antennæ of male reaching nearly to base of abdomen, first two segments and the base of the third reddish yellow, others black, cylindrical; mesonotum gray with four brown stripes; scutellum, metanotum, pleura and coxæ gray; dorsopleural membrane light yellowish; collare dark grayish; halteres yellowish, basal half of knobs brown, distal half yellow; legs brown, base of femora reddish-brown, tarsi and tips of femora and tibia black; abdomen black, posterior margin of each segment yellow; hypopygium small, black, posterior margin of the upper lamella depressed with two median longitudinal shining black ridges; lower lamella with a deep broad incision the margins of which are narrowly bordered with yellow; wings grayish-brown; stigma brown; the rhomboidal, discal and fourth posterior cells almost wholly white; the basal half of the marginal cells, a spot in the first posterior cell, a spot before the stigma, a spot beyond the middle of the second basal cell, two spots near the middle of the anal cell and a spot in the anterior margin of the axillary cell whitish; discal cell four times as long as wide. Length, male 14 mm., wing 14 mm.

Habitat: Mount Rainier, Wash., two males. Piper. Type no. 154. Wash. Agric. Coll. & S. of S.

The antennæ of both the specimens before me are deformed, making them appear only eleven or twelve jointed.

***Tipula stalactoides*, sp. nov.**

Brown; head brownish-gray with a median rather broader, short, brown line above; rostrum short, brownish-yellow, darker above; antennæ reaching to base of halteres, brown, first two segments and the base of the third yellow; joints of flagellum cylindrical, very slightly incrassate at the base; mesonotum brownish-gray with six brown stripes, the lateral pairs narrow and converging anteriorly, the median pair broad, parallel, the grayish stripe dividing them suddenly broadened in the middle; collare grayish with three brownish spots; dorsopleural membrane yellowish; scutellum, metanotum, mesopleura and sternopleura dark gray, rest of pleura yellowish-gray; halteres brown, base yellow, knobs darker; legs brownish yellow, tarsi and tips of femora and tibia brown; abdomen yellowish-brown, with three broad black stripes; eighth segment black; eighth sternite with two deep longitudinal folds or depressions which are abundantly supplied with thick yellowish hair; hypopygium black; posterior margin of upper lamella with two very small reddish brown points; lower lamella with a median whitish streak extending its entire length, posterior lateral angles whitish, each with a long, slender, whitish membranous appendage which hangs over the lower lamella; wings hyaline; costal, subcostal and anterior margin of the anal cells tinged with yellow; stigma brown; one or two indistinct whitish spots in the region of the stigma and a fainter spot in the discal cell; discal cell more than four times as long as wide. Length, male 12 mm., wing 12 mm.

Habitat: Unalaska, three males. Kincaid. Type no. 155. Wash. Agric. Coll. & S. of S.

***Tipula tristis*, sp. nov.**

Brown; head grayish-brown with a brown stripe above; rostrum grayish-brown; antennæ reaching a little beyond the base of the wings, wholly brown; joints four to eight rather short, thick, constricted in the middle, incrassate at the tip; those beyond the eighth somewhat longer, also constricted in the middle; mesonotum light brownish with six brown stripes, the median pair broad, parallel, the lateral pairs narrow, converging; collare grayish-brown with five brown spots; dorsopleural membrane yellow; scutellum and metanotum dark brown; pleura blackish with yellowish pollen; coxæ blackish; halteres yellowish, knobs brown; legs yellowish-brown, tarsi and the tips of the femora and tibia darker; abdomen yellowish-brown, posterior and lateral margins of each segment yellowish to grayish; posterior margin of the eighth sternite with a few short yellow hairs and a median short two-lobed appendage which is narrower at its base; hypopygium small, elongate; upper lamella with a deep, broad, V-shaped incision; lower lamella with a narrow very deep incision which almost divides it into two parts; wings grayish or brownish; variegated with whitish hyaline spaces; a band running from in front of the stigma across the discal, fourth, and fifth posterior cells to the margin of the wing, a space beyond the

stigma, the base of both the submarginal cells, nearly all the first posterior cell, and irregular spaces in the basal, anal, axillary and spurious cells whitish hyaline; the stigma and a spot over the origin of the præfurca darker brown; second and third posterior cells not white spotted; discal cell more than twice as long as wide. Length, male 11 mm., wing 14 mm.

Habitat: Palo Alto, Calif., three males. Doane. Type no. 156. Wash. Agric. Coll. & S. of S.

Tipula simplex, sp. nov.

Brown; head grayish-brown with a median darker line above; rostrum grayish-brown; palpi brown; antennæ of male reaching nearly to the base of the abdomen. brown; joints of flagellum darker brown at the base; mesonotum yellowish-brown with four grayish-brown stripes each with a darker brown margin; collare brown with a median darker spot; scutellum and metanotum grayish-brown each with a median brown stripe; dorsopleural membrane brownish-yellow; pleura and coxæ brownish-gray; halteres yellowish, knobs brown; legs lighter brown, tarsi and tips of femora and tibia slightly darker; abdomen brown with three darker brown stripes, the lateral ones incomplete; hypopygium yellowish-brown; upper lamella with a broad crescent-shaped incision; lower lamella with a very broad, deep, V-shaped incision; wings narrow with a grayish tinge; stigma, a spot on the origin of the præfurca, a spot just back of the first vein opposite the end of the seventh vein, and small spots at the tips of all the veins, brown; basal half of the fifth vein with a rather broad brown border on the anterior side, all the other veins with a whitish or grayish border; a spot beyond the stigma, another in the base of the discal cell and the base of the fourth posterior cell, and one or two spots in the posterior margin of the wing, whitish; discal cell more than four times as long as wide. Length, male 10 mm., wing 12 mm.

Habitat: Palo Alto, Calif., two males. Doane. Type no. 157. Wash. Agric. Coll. and S. of S.

The markings on the wings are somewhat similar to those of *T. pubera* Lw., but the small size, the general color of the body, the structure of the hypopygium, etc., will prevent confusion.

Tipula carinata, sp. nov.

Brown; head brown with a faint narrow darker median stripe above; rostrum brownish, yellowish on the sides; palpi brownish, darker toward the tip; antennæ dark brown, nearly reaching to the base of the abdomen; first three joints brownish yellow, joints four to eleven somewhat constricted in the middle; mesonotum brown with the sides cinereous and with a very faint trace of two cinereous lines; collare brown; dorsopleural membrane reddish brown; scutellum; metanotum, pleura and coxæ cinereous; halteres yellowish-brown lighter toward the base; legs brownish, tarsi and tips of femora and tibia darker, base of femora yellowish; abdomen yellowish-brown, darker posteriorly, with a broad, brown, dorsal stripe; posterior margin of each segment gray; hypopygium small; basal half of upper lamella brown, distal half yellow with a broad crescent-shaped incision; base of lower lamella brown with

a prominent median light yellow carina, posterior margin yellowish with a crescent-shaped incision, appendages yellow; the brown on the abdomen of the female is less intense; ovipositor reddish-yellow, base black, upper valves straight, compressed, lower valves rather broad; wings immaculate with a brownish tinge; subcostal cell and stigma slightly darker brown; discal cell about twice as long as wide; petiole of second posterior cell short. Length, male 11 to 15 mm., female 13 to 16 mm., wing 15 to 20 mm.

Habitat: Pullman, Wash., forty-five males, twelve females. Doane. Type no. 158. Wash. Agric. Coll. & S. of S.

***Tipula impudica*, sp. nov.**

Brownish-yellow; head grayish-brown with a distinct narrow blackish line above; rostrum reddish-brown to yellowish; palpi brownish, darker toward the tips; antennæ very dark brown, the basal portion of the third and all of the first and second segments yellowish; joints of the flagellum cylindrical, slightly incrassate at the base, last joint very small; mesonotum brownish-gray with four rather distinct brown lines; scutellum brownish-yellow with a distinct brown line; metanotum grayish-brown; collare brownish-yellow with three darker spots; dorsopleural membrane yellowish; halteres yellowish, knobs brown; legs yellowish-brown, tarsi and tips of femora and tibia darker, basal portion of femora yellowish; abdomen brownish-yellow with three black stripes, the lateral ones sometimes more or less broken; posterior margin of each segment gray; eighth tergite scarcely or not at all visible; posterior margin of eighth sternite with long yellow hair; hypopygium concolorous with rest of abdomen; upper lamella short, leaving the inner accessory organs unusually exposed, divided by a deep median incision, each half with a small crescent-shaped incision near the inner angle; margin of lower lamella whitish with a broad, deep incision, appendages reddish-brown; ovipositor reddish-brown, upper valves straight, acute; wings with a grayish tinge, with white or hyaline spaces bordering some of the veins in the middle portion of the wings; a whitish hyaline space beginning in front of the stigma and extending through the discal cell into the base of the fourth and fifth posterior cells; the base of the rhomboidal cell, the base of the submarginal cells, and one or two indistinct irregular spaces in the anal and axillary cells likewise whitish hyaline; discal cell more than twice as long as wide. Length, male 15 mm., female 25 mm., wing 17 mm.

Habitat: Wawawi, Wash., two males (type), Doane. Almota, Wash., two males. Pullman, Wash., one male, one female (type 159). Wash. Agric. Coll. & S. of S.

***Tipula australis*, sp. nov.**

Brown; head grayish with a narrow brown stripe above; rostrum brownish-gray; palpi brown, darker toward the tip; antennæ very dark brown, first and second joints and the extreme base of the third brownish-yellow; joints of the flagellum slightly constricted in the middle; mesonotum gray with five rather broad brown lines, the two on each side confluent anteriorly; the median one divided by a narrow gray line; collare light brownish with three darker spots; dorsopleural membrane yellowish;

metanotum pleura and coxæ brownish-gray; halteres brown, lighter toward the base, knobs darker; legs yellowish-brown, tarsi and tips of femora and tibia darker; abdomen brownish-yellow, darker toward the base, with three dark brown stripes; eighth sternite large, posterior margin bearing two pairs of yellowish appendages the inner margins of which are provided with rather long yellowish hairs, the inner pair is short broadly spatulate, the outer pair is somewhat triangular the upper angle being drawn out into a more strongly chitinized blackish point; hypopygium large, concolorous with the rest of the abdomen; upper lamella with a deep median incision; lower lamella with a deep median incision in which hangs a pair of rather long, somewhat curved, tumid, pendulous appendages; ovipositor reddish-brown, upper valves straight, acute; wings with a slight brownish tinge; subcostal cell and stigma darker brown; a whitish broken band beginning on the costa in front of the stigma and extending through the discal cell into the base of the fourth posterior cell; discal cell a little more than twice as long as wide. Length, male 14 mm., female 17 mm., wing 14 mm.

Habitat: Georgia, one male, one female. (Type) Morrison. Texas, one male. Type no. 160. Wash. Agric. Coll. & S. of S.

***Tipula barbata*, sp. nov.**

Brownish; head grayish-brown with a median dark brown stripe above; rostrum short, reddish-yellow; palpi brown; antennæ not reaching the base of the wings, first two joints yellow, third yellowish-brown, others uniformly brown; antennæ of female lighter, first to fourth joints yellowish; mesonotum light brown with three darker brown stripes, the median one divided; collare, scutellum and metanotum light brownish, each with a median brown stripe, the latter darker laterally; mesopleura and sternopleura slate colored and rest of pleura yellowish; dorsopleural membrane yellowish; halteres brown, base yellowish, knobs darker brown; abdomen brownish-yellow, darker posteriorly, with three brown stripes the dorsal one entire, the lateral ones interrupted or subobsolete; posterior margin of each segment grayish or yellowish; posterior margin of eighth sternite with a broad shallow incision which is furnished with a fringe of thick, long, light yellow hair; hypopygium concolorous with the abdomen; upper lamella with a narrow median incision; posterior margin of lower lamella whitish with a broad deep median incision on each side of which are two small, yellowish appendages which are fringed with rather long yellowish hair; ovipositor reddish-yellow, upper valves acute, slightly curved at the tip; wings hyaline, with a faint brownish tinge; stigma brown; the indistinct whitish band beginning in front of the stigma running through the discal cell into the base of the fourth posterior cell; a whitish spot beyond the stigma; discal cell four times as long as wide. Length, male 13 mm., female 16 mm., wing 14 mm.

Habitat: Colorado, one male, two females. Morrison. Type no. 161. Wash. Agric. Coll. & S. of S.

***Tipula lamellata*, sp. nov.**

Yellow; head cinereous, yellowish below; rostrum yellow; palpi brown, yellowish toward the base; antennæ brown, first three joints yellow, joints of flagellum

cylindrical; mesonotum reddish-yellow with three very faint brownish stripes; collare yellowish, darker medianly; scutellum and metanotum brownish-yellow; pleura and coxæ bright yellow; halteres yellow, knobs brown; legs yellow or brownish-yellow, tips of femora, tarsi and tibia brown; abdomen reddish-yellow, with three broken brown stripes which are more indistinct anteriorly, the dorsal one somewhat broader posteriorly; the lateral lines are sometimes so broken that they appear as a series of brown dots on the anterior margin of each segment; posterior margin of each segment gray; eighth sternite large, ventral margin somewhat produced posteriorly, and furnished with a fringe of rather long reddish-yellow hair; upper lamella consisting of two lateral elongated processes the bases of which are broadest and connected by a more membranous portion, the distal halves are narrower with the lateral margins and the extreme tips bent in at right angles to the upper surface; lower lamella long, lateral margins with an irregularly triangular appendage, the posterior margin with two small brown tumid processes each bearing a tuft of yellowish hair; base of ovipositor brownish, shining, valves yellowish, upper pair rounded at the tip, lower pair short, reaching but little beyond the base of the upper pair; wings hyaline; costal and subcostal cells slightly tinged with yellow; stigma brown; a scarcely perceptible whitish band running from in front of the stigma across the discal cell into the base of the fourth posterior cell; discal cell a little more than twice as long as wide. Length, male 12 mm., female 13 mm., wing 13 mm.

Habitat: Pullman, Wash., five males, one female. Doane. Type no. 162. Wash. Agric. Coll. & S. of S.

***Tipula subtilis*, sp. nov.**

Brown; head grayish-brown; rostrum yellowish-brown, grayish above; palpi brownish; antennæ yellowish, long, reaching beyond the base of the abdomen; base of each joint of the flagellum except the first slightly incrassate and brownish at the base; mesonotum grayish-brown with three broad darker brown stripes, the median one divided by a gray line; collare light brownish, with three darker spots; scutellum, metanotum, pleura and coxæ silvery gray; halteres yellowish, base of knob brown, tip whitish; legs light yellowish-brown, tips of femora and tibia scarcely darker; abdomen brown with light yellow hair; posterior and lateral margins of each segment gray; median portion of posterior margin of the eighth sternite slightly depressed, brownish with two short acute processes; on each side of this depression is a small irregularly ovate, light colored process which bears a tuft of yellow hair; posterior margin of upper lamella of hypopygium with a narrow median and two broader crescent-shaped incisions; lower lamella with a broad, deep, U-shaped incision in which hangs two tumid pendulous processes; wings almost hyaline with a slight grayish tinge; subcostal cell and stigma light brownish; a scarcely perceptible broken whitish band running from in front of the stigma through the discal cell but not entering the fourth posterior cell; discal cell about twice as long as wide. Length, male 15 mm., wing 16 mm.

Habitat: Calif., one male. Type no. 163. Wash. Agric. Coll. & S. of S.

Tipula splendens, sp. nov.

Yellow; head yellow, grayish-brown above; rostrum and palpi yellow, latter brownish toward the tip; antennæ reaching the base of abdomen, dark brown, first three segments yellow; joints of the flagellum cylindrical, those beyond the first very slightly incrassate at the base; mesonotum yellow with scarcely perceptible brownish shades in place of the usual three stripes; collare, scutellum, metanotum, pleura and coxæ somewhat lighter yellow, halteres yellow, knobs brown; abdomen brownish-yellow, much lighter toward the base, posterior margin of each segment gray; eighth sternite long, narrowed posteriorly, posterior margin with a border of yellow hair; upper lamella of hypopygium with median V-shaped and lateral crescent-shaped incisions, posterior lateral corners produced inwardly into short, narrow two-pointed processes; posterior ventral margin of lower lamella with two small processes each bearing a tuft of hair, lateral margins with two pairs of appendages the outer lower pair being triangular with the apex drawn out into a slender point, the basal portion of the upper inner pair is somewhat quadrate, shining, the distal portion flattened and with a black edge; wings hyaline; subcostal cell and stigma faintly yellowish; a scarcely perceptible whitish broken band running from in front of the stigma through the discal cell into the base of the fourth posterior cell; discal cell more than twice as long as wide. Length, male 12 mm., wing 13 mm.

Habitat: Olympia, Wash., one male. Kincaid. Type no. 164. Wash. Agric. Coll. & S. of S.

Tipula calcarata, sp. nov.

Brown; head yellowish-brown with a narrower indistinct stripe above; rostrum reddish-brown; palpi dark brown, basal segment reddish-brown; antennæ not reaching beyond the base of the wings, brown, first two segments yellow; mesonotum brown with four darker brown stripes, the two median ones slightly diverging anteriorly; collare light brownish with three darker spots; dorsop'neural membrane yellowish; pleura and coxæ brownish-gray; halteres brown, yellowish at the base, knobs brown, tips lighter; legs brownish-yellow, tarsi and tips of the femora and tibia brown; abdomen yellowish-brown with three indistinct yellowish-brown stripes; posterior margin of each segment gray; eighth sternite with a deep U-shaped incision from the base of which arises a broad, blunt process with yellow hairs at the base; lateral margins of the segment ending in a pair of long, slender, reddish, spur-like processes which lie across the base of the incision; upper lamella of hypopygium terminating in two short, median, blunt processes between which is a narrow incision, and two lateral incurving longer, sharper processes; lower lamella with a very deep, U-shaped incision; wings hyaline with a brownish tinge; subcostal cell brownish, stigma darker brown; the distinct whitish band beginning in front of the stigma and running through the discal cell into the base of the fourth posterior cell is interrupted along the præfurca. Length, male 15 mm., wing 17 mm.

Habitat: Mount Rainier, Wash., one male. Piper. Type no. 165. Wash. Agric. Coll. & S. of S.

Tipula clara, sp. nov.

Brown; head yellowish-brown, darker above, with a median brown stripe;

mesonotum light brown with four rather broad darker brown stripes and a very narrow median brown line which ends in a small brown dot on the anterior margin; scutellum and metanotum cinereous with a median brown line; pleura cinereous; dorso-pleural membrane light yellow; halteres yellow, knobs brown; legs brown, tips of femora, tibia, and tarsi darker; abdomen yellowish-brown with three darker brown stripes; posterior margin of each segment grayish or yellowish; eighth sternite with a median rather broad projecting process the sides and rounded ends of which are furnished with long light yellow hair; hypopygium similar to that of *T. impudica*, but the upper lamella is not so deeply incised and the crescent-shape incisions are wanting; lower lamella somewhat larger; base of ovipositor black, upper valves reddish-brown, acute; wings hyaline; costal, subcostal and the anterior margin of the anal cells and the stigma brown; the whitish line running from in front of the stigma across the discal cell into the base of the fourth posterior cell scarcely distinguishable; discal cell three times as long as wide; petiole of second posterior cell short. Length, male 16 mm., female 22 mm., wing 15 mm.

Habitat: Wawawi, Wash., two males, one female. (Type) Pullman, Wash., one female. Doane. Type no. 166. Wash. Agric. Coll. & S. of S.

***Tipula æqualis*, sp. nov.**

Brown; head light brownish-yellow; rostrum and palpi yellowish, latter darker toward the tip; antennæ reaching to base of wings, first three segments yellow, others brown, darker at the base; mesonotum yellowish-brown with four brown stripes; collare yellowish, darker laterally; scutellum yellowish with a median brown line; metanotum yellowish-gray with a median darker yellow line; pleura and coxæ light grayish-yellow; mesopleura and sternopleura darker; halteres yellow, knobs brown, tips lighter; abdomen yellowish-brown, darker posteriorly, with three indistinct, interrupted brown lines which are broader and more distinct posteriorly; posterior and lateral margins of each segment gray; posterior margin of eighth sternite with a broad rather deep incision from the middle of which arise two tufts of thick, long hair reddish or yellowish toward the base, whitish toward the tip, lateral angles with two small triangular projections with a few short yellow hairs; hypopygium darker; upper lamella black, posterior margin reddish with a broad, shallow incision; lower lamella dark reddish-brown with a deep median incision, the edges of which are whitish; outer appendages irregularly triangular; ovipositor reddish, upper valves straight, acute; wings with a slight brownish tinge; costal and subcostal cells slightly darker; stigma brown; the whitish band beginning on the costa in front of the stigma running through the discal cell into the base of the fourth posterior cell; discal cell a little more than twice as long as wide. Length, male 15 to 18 mm., female 21 mm., wing 16 to 18 mm.

Habitat: Pullman, Wash., one male, two females. (Type) Doane. Olympia, Wash., six males, two females. Seattle, Wash., one male. Kincaid. Tokeland, Wash., one male. Keyport, Wash., seven males. Doane. San Francisco, Cal., two males. San Diego, Cal., one male. Type no. 167. Wash. Agric. Coll. & S. of S.

***Tipula retusa*, sp. nov.**

Yellow; head dark brown with a somewhat darker line above; rostrum yellow with an indistinct brown stripe on each side; palpi brown, darker toward the tip, yellow at base; antennæ of male reaching beyond the base of the wings, dark brown, first three joints yellow; joints of the flagellum beyond the first constricted in the middle and darker at the tip; mesonotum brownish-yellow with three somewhat darker yellow stripes, the median one divided by a very narrow, dark line; collare yellow; scutellum, metanotum, pleura and coxæ yellowish with a gray pollen; halteres yellow, knobs brown; legs yellow, tarsi and tips of femora and tibia brown; abdomen yellow, darker posteriorly, sixth, seventh and eighth segments mostly black; posterior margin of each segment gray; posterior margin of eighth sternite with a border of very thick long yellow hair which is usually folded back under this segment; hypopygium brown; upper lamella ending in two broad, blunt, black-tipped processes between which is a wide rather deep incision; lower lamella with a deep incision in which hangs a pair of yellow appendages the points of which are curved towards each other and furnished with yellow hair; ovipositor reddish-brown, upper valves of nearly equal width throughout, extreme tips slightly broader with four short points, a rather deep rounded incision between the lower point and the one above it; wings hyaline; costal and subcostal cells, the stigma and a small faint spot on the origin of the præfurca brown; a broad whitish band beginning in front of the stigma back of the first longitudinal vein and extending through the discal cell into the base of the fourth and the side of the fifth posterior cells; discal cell twice as long as wide. Length, male 15 mm., female 20 mm., wing 16 to 19 mm.

Habitat: Wawawi, Wash., six males, two females. (Type) Pullman, Wash., one male, one female. Doane. Olympia, Wash., one male. Seattle, Wash., two males, one female. Kincaid. Type no. 168. Wash. Agric. Coll. & S. of S.

***Tipula translucida*, sp. nov.**

Yellow; head yellow with a narrow dark line above; rostrum yellow; palpi lighter yellow; antennæ reaching but little beyond the base of the wings, yellow, base of each segment beyond the third slightly incrassate and darker at the base; whole thorax somewhat reddish-yellow; pleura somewhat lighter; halteres yellow, knobs brown; legs yellow, tarsi and extreme tips of femora and tibia darker; abdomen yellow, somewhat darker posteriorly; posterior margin of each segment gray; posterior margin of eighth sternite with a fringe of long yellow hairs, lateral angles with a single long curved reddish bristle; hypopygium brownish-red; upper lamella terminating in two sharp black points between which is a rather deep, V-shaped incision; lower lamella with a rounded incision in which lies a pair of brownish, elongated, tumid, pendulous appendages the tips of which are furnished with rather long, yellow hair; wings hyaline; costal, subcostal, anterior margin of anal cells and stigma yellowish; the whitish stripe running from in front of the stigma across the discal cell not entering the fourth posterior cell; discal cell three times as long as wide. Length, male 15 mm., wing 17 mm.

Habitat: Penn., four males. Dietz. Type no. 169. Wash. Agric. Coll. & S. of S.

Tipula cinctocornis, sp. nov.

Yellow; head yellow, more brownish-yellow above; rostrum, palpi and antennæ yellow; joints of the flagellum beyond the first dark at the base; antennæ not reaching beyond the base of the wings; mesonotum light yellow, with three faint brownish stripes; scutellum and metanotum brownish-yellow; pleura and coxæ lighter yellow; halteres yellow, knobs brown, tips lighter; legs brownish-yellow, tarsi darker; abdomen yellow, darker posteriorly; posterior margin of eighth sternite with a fringe of yellow hair, the lateral angles with a tuft of two or three long, curved reddish bristles; hypopygium darker, similar to *T. transluida* but the outer upper appendages longer and the lower pendulous appendages much shorter and without the blackish tip; wings hyaline; costal, subcostal and the anterior margin of the anal cells with a yellowish tinge; stigma brown; the whitish band running from in front of the stigma not reaching the posterior border of the discal cell; discal cell three times as long as wide. Length, male 16 mm., wing 19 mm.

Habitat: Penn., one male, two females. Dietz. Type no. 170. Wash. Agric. Coll. & S. of S.

Tipula albocincta, sp. nov.

Brownish-yellow; head brownish-yellow with a distinct median stripe above; rostrum and palpi yellow, the latter brownish toward the tips; antennæ hardly reaching base of wings, the first and second joints yellow, third brownish-yellow, others brown, darker at the base; mesonotum brownish-gray with four brown stripes, the median ones broadened anteriorly; collare and scutellum brown, with a median darker brown stripe; metanotum brownish-gray with a narrow median brown line; pleura blackish; pteropleura more yellowish with a silvery grayish bloom; halteres brown, yellowish at the base, knobs darker brown; legs yellowish-brown, tarsi and the tips of the femora and tibia darker brown; abdomen brownish-yellow with three broken brown stripes; posterior margin of segments four to eight white; posterior margin of eighth sternite with a broad tuft of very long yellow hair; hypopygium concolorous with the abdomen; upper lamella with a deep median depression from the end of which projects a rather broad sharp-pointed process which is furnished above with a thin broad keel; on each side of the depression is a small crescent-shaped incision; lower lamella with a deep incision the borders of which are whitish; hanging down into this incision are two reddish-brown pendulous appendages the bases of which are furnished with rather long, reddish-yellow hair; wings hyaline; costal, subcostal and the anterior margin of the anal cells with a yellowish tinge; stigma brown; the whitish band beginning in front of the stigma extends through the discal cell into the base of the fourth and the side of the fifth posterior cells; a whitish spot beyond the stigma and two indistinct whitish streaks just behind the sixth longitudinal vein the first close to the base, the second nearly opposite the origin of the præfurca; discal cell three times as long as wide. Length, male 19 mm., wing 19 mm.

Habitat: Colo., one male. Morrison. Type no. 171. Wash. Agric. Coll. & S. of S.

***Tipula cuspidata*, sp. nov.**

Yellow; head brownish-yellow with a median indistinct darker stripe above; rostrum reddish-yellow; palpi lighter yellow; antennæ of male reaching nearly to base of abdomen, yellow, base of each segment beyond third dark; mesonotum brownish-yellow with three faintly indicated darker stripes; collare, scutellum and metanotum brownish-yellow; pleura and coxæ lighter yellow; halteres yellow, knobs brown, lighter at the tip; legs yellowish, tarsi and tips of femora and tibia darker; abdomen yellow, darker posteriorly, with three faintly indicated interrupted brown bands; posterior margin of eighth sternite with a broad shallow incision from each side of which arises a very long stiff reddish-brown bristle; hypopygium brown; upper lamella darker, produced into two long acute processes between which is a deep, V-shaped incision; lower lamella lighter with a broad deep incision in which lies two rather long whitish tumid pendulous appendages, the tips of which are furnished with rather long yellow hair; sixth, seventh, and eighth abdominal segments of female darker brown above; ovipositor reddish-yellow, upper valves straight, slender, acute; wings hyaline; costal, subcostal, and anterior margin of anal cells tinged with yellow; stigma brown; the whitish band beginning in front of the stigma extending through the discal cell into the base of the fourth posterior cell; a small whitish spot beyond the stigma; discal cell more than twice as long as wide. Length, male 15 mm., female 17 mm., wing 19 mm.

Habitat: Penn., three males, one female. (Type) Dietz. Battle Creek, Mich., one female. Aldrich. Type no. 172. Wash. Agric. Coll. & S. of S.

***Tipula bisetosa*, sp. nov.**

Yellow; head yellow, with a median grayish spot and a narrow brown line above; rostrum and palpi reddish-yellow; antennæ of male not reaching beyond the base of the wings, first and second joint yellow, next two or three yellowish-brown, darker at the base, others brown, darker at the base; mesonotum light yellowish with five brown lines, the median one almost entire, the others interrupted; neck with a brown stripe above; scutellum, metanotum, pleura and coxæ grayish-yellow; mesopleura and sternopleura darker; dorsopleural membrane light yellowish; halteres yellow, knobs brown, lighter at the tip; abdomen yellow, much darker posteriorly with three brown stripes; posterior margin of each segment grayish or yellowish; posterior margin of eighth sternite with a rather broad median depression fringed with yellow hair, lateral margins drawn out into short whitish points from each side of which rise two incurved reddish bristles, the upper one long and stiff, the lower one much smaller; hypopygium concolorous with rest of abdomen; upper lamella with a deep broad crescent-shaped incision; lower lamella with a deep, V-shaped incision below which is a whitish oval tumid process; eighth segment of abdomen of female brown; base of ovipositor reddish-brown, valves reddish-yellow, slightly curved, acute; wings hyaline; costal and subcostal cells slightly tinged with yellow; stigma pale brown; the whitish band beginning in front of the stigma very indistinct but reaching the base of the fourth posterior cell; discal cell a little more than twice as long as wide. Length, male 18 mm., female 20 to 22 mm., wing 20 to 22 mm.

Habitat: Pullman, Wash., nineteen males, fourteen females. Doane. Collins, Idaho, two males. Piper. Type no. 173. Wash. Agric. Coll. & S. of S.

***Tipula inermis*, sp. nov.**

Brown; head light brown with a median brown stripe above; rostrum yellowish-brown; palpi yellow at base, darker toward the tip; antennæ of male reaching to base of wings, yellow, each segment beyond the third dark at the base; mesonotum light brown with three brown stripes, the median one divided by a lighter line; collar brown with a median darker line; scutellum yellowish-brown with a median darker line; metanotum light yellow; pleura and coxæ grayish; halteres yellow, knobs brown; legs brown, femora and tibia yellowish toward the base; abdomen brown, yellowish toward the base, with three darker brown stripes; posterior and lateral margins of each segment gray; posterior margin of eighth sternite with a median reddish-brown, two-pointed process and lateral triangular brownish appendages which terminate in long, stiff, curved, reddish bristles; hypopygium small; upper lamella dark reddish-brown with a deep crescent-shaped incision; lower lamella brownish, lighter toward the margin with a deep U-shaped incision in which hang two long light yellow tumid appendages with yellow hairs toward the tip; ovipositor long, straight, dark reddish-brown; wings hyaline; costal, subcostal and anterior margin of anal cells tinged with yellow; stigma light brown; the whitish band beginning on the costa in front of the stigma reaching only to the extreme base of the fourth posterior cell; discal cell more than twice as long as wide. Length, male 20 mm., female 27 mm., wing 22 m.

Habitat: Battle Creek, Mich., four males, one female. (Type) Aldrich. White Mts., one male. Morrison. N. C., six males. Georgia, one male. Morrison. Type no. 174. Wash. Agric. Coll. & S. of S.

***Tipula megaura*, sp. nov.**

Yellow; head yellow with a dark brown line above; rostrum, palpi and antennæ yellow, the latter reaching a little beyond the base of the wings, base of each segment beyond the third darker; mesonotum yellow with four brownish stripes, the median one divided; collar, scutellum and metanotum yellow; pleura whitish-yellow; halteres yellow, knobs brown, tips lighter; legs brown, femora yellowish toward the base; abdomen yellowish, much darker posteriorly, with three brown stripes, the dorsal one entire and distinct, the lateral ones indistinct, interrupted; posterior margin of eighth sternite with a fringe of yellow hairs and two strong curved reddish bristles; hypopygium reddish-brown; upper lamella tumid, with a short rather broad, two pointed tumid process arising from the dorsal side near the posterior margin; the posterior lateral angles of the process also drawn out into short, blunt points; lower lamella with a median depression in which lie the tips of two short yellow haired appendages; eighth abdominal segment of female and ovipositor reddish-brown, upper valves very short, somewhat quadrate, nearly as broad as long; lower valves broad, leaflike; wings hyaline; costal, subcostal and anterior border of anal cells yellowish;

stigma brown; the whitish band beginning in front of the stigma reaching the posterior border of the discal cell, but not entering the fourth posterior cell; discal cell about twice as long as wide. Length, male 15 mm., female 18 mm., wing 16 mm.

Habitat: Battle Creek, Mich., two males, one female. Aldrich. Type no. 175. Wash. Agric. Coll. & S. of S.

Resembles somewhat *T. bicornis* Lw., but may be easily distinguished by the structure of the tumid processes on the upper lamella of the hypopygium which are black, set much closer together and curved downward instead of upward.

Tipula streptocera, sp. nov.

Brownish-yellow; head brown, darker above; rostrum yellowish; palpi brown; antennæ of male reaching to base of halteres, first two segments and the basal half of the third yellowish-brown; remaining segments wholly brown; mesonotum with three broad dark brown stripes, the median one entire; scutellum light brown; metanotum, pleura and coxæ light yellow; halteres brownish, yellowish at the base, knobs brown; legs yellowish, the tarsi and the tips of the femora and tibia brown; abdomen yellowish, darker posteriorly, with three brown stripes; eighth sternite reddish-brown much produced and narrowed posteriorly, posterior margin truncate; upper lamella of hypopygium very small, posterior margin produced into two blunt processes between which is a small circular incision; lower lamella very large, lateral angles terminating in very long, tapering, twisted, horn-like processes; ovipositor similar to *T. meganura*, but lower lamella not quite as broad; wings hyaline; costal and subcostal cells faintly tinged with yellow; stigma and an inconspicuous spot on the origin of the præfurca brown; the indistinct whitish band fading out before it crosses the discal cell; discal cell more than twice as long as wide. Length, male 13 mm., female 14 mm., wing 15 mm.

Habitat: Collins, Idaho, two males, one female. (Type) Piper. Olympia, Wash., one male. Kincaid. Tokeland, Wash., one male. Doane. Type no. 176. Wash. Agric. Coll. & S. of S.

The specimen from Olympia has the stripes on the mesonotum very faintly indicated.

Tipula hirsuta, sp. nov.

Yellow; head somewhat brownish-yellow; rostrum and palpi yellow; antennæ reaching a little beyond the base of the wings, first three segments yellow, the succeeding four or five yellowish-brown, the remaining segments brown; those beyond the third somewhat incrassate and darker at the base; mesonotum light yellow with three broad somewhat reddish-yellow stripes; scutellum, metanotum, pleura and coxæ light yellow; halteres yellow, knobs brown, lighter at the tips; legs brownish, tarsi and the tips of the femora and tibia darker, femora yellowish toward the base; abdomen yellow, darker posteriorly, with three faintly indicated stripes; eighth sternite somewhat produced and narrowed posteriorly, with a median depression which is abundantly furnished with long yellow hair, lateral angles with a pair of short

rather broad reddish-brown appendages the ends of which are fringed with shorter yellow hairs; hypopygium very dark brown; upper lamella thick, swollen, with a median shallow furrow which is much narrowed anteriorly, posterior margin produced into two short, blunt swollen processes which are widely separated by a deep rounded incision, below these is another pair of flattened, triangular, sharper pointed processes; the posterior half of the suture separating the upper from the lower lamella quite wide, membrane whitish; lower lamella with a rounded incision which is filled with the broad bases of a pair of long triangular upward pointing appendages; outer upper appendages very long and slender; wings hyaline; costal and subcostal cells yellowish; fifth longitudinal vein with a narrow very faint yellowish border; stigma brown; the whitish band beginning in front of the stigma extending through the discal into the base of the fourth posterior cell; a whitish spot beyond the stigma; discal cell hardly twice as long as wide. Length, male 21 mm., wing 22 mm.

Habitat: Battle Creek, Mich., three males. Aldrich. Type no. 177. Wash. Agric. Coll. & S. of S.

***Tipula calva*, sp. nov.**

Yellow; head brownish-yellow with an indistinct darker median stripe; rostrum and palpi yellowish, last joint of latter brownish; antennae reaching nearly to base of abdomen, first three joints yellow, others light brown, much darker at the base which is somewhat incrassate; mesonotum light yellow with three brown stripes, the median one twice as broad as the lateral ones and indistinctly divided by a faint cinereous line; the portion of the lateral lines extending back of the suture broader and much darker brown; collare light yellow with three faint brownish spots; scutellum and metanotum light yellow, each with a very faint median brown line; pleura whitish; halteres yellowish, knobs brown; legs yellow, tarsi and the tips of the femora and tibia slightly darker; abdomen yellowish, darker posteriorly with three brownish lines, lateral lines somewhat sinuate, lateral margin of each segment broadly whitish; eighth sternite dark brown, somewhat lighter posteriorly, posterior margin truncate with a median rather broad, blunt, rectangular reddish process; lateral angles with a pair of long, rather narrow, flattened appendages the inner margins of which are furnished with a few yellowish hairs; hypopygium large, very dark brown; upper lamella thick, swollen, with a median shallow furrow which is not narrowed anteriorly, posterior margin produced into two rather long, blunt, rounded processes which are separated by a deep, V-shaped incision; wings hyaline, faintly darker toward the tip; costal and subcostal cells faintly tinged with yellow; stigma brown; the posterior cross vein and the portion of the fifth longitudinal vein beyond this vein with a faint very narrow brownish border; a broad whitish interrupted line beginning in front of the stigma and extending across the discal cell into the base of the fourth posterior cell; a small whitish spot beyond the stigma; discal cell twice as long as wide. Length, male 21 mm., wing 22 mm.

Habitat: Battle Creek, Mich., two males. Aldrich. Type no. 178. Wash. Agric. Coll. & S. of S.

Very similar to *T. hirsuta*, but easily distinguished by the structure of the eighth abdominal sternite and the upper lamella of the hypopygium.

Tipula concinna, sp. nov.

Brown; head darker brown; rostrum and palpi yellow; antennæ reaching a little beyond the base of the wings, first two segments yellow, third yellowish-brown, those beyond the third brown, somewhat constricted in the middle; mesonotum light brown with four darker brown stripes; scutellum and metanotum brownish-yellow; pleura grayish-yellow; halteres yellowish, knobs brown, tips lighter; legs brown, tips of femora, tibia and tarsi somewhat darker, femora yellowish toward the base; abdomen brownish-yellow with three brown stripes, the lateral ones not complete; sixth and seventh segments darker brown; eighth sternite brown, posterior margin with a fringe of very long reddish-yellow hair; hypopygium brown; upper lamella lighter toward the tip, with short yellow hair, terminating in two short, blunt processes between which is a rather broad, shallow incision; wings with a brownish tinge; subcostal cell and the anterior margin of the anal cell with a yellowish tinge; the stigma, a spot over the base of the second submarginal and the first posterior cells, and a spot over the origin of the præfurca brown; the great cross vein and the distal portion of the fifth longitudinal vein brown bordered; the whitish band beginning in front of the stigma extending across the base of the discal cell into the base of the fourth posterior cell; a whitish spot beyond the stigma; discal a little more than twice as long as wide. Length, male 15 mm., wing 17 mm.

Habitat: Olympia, Wash., one male. Kincaid. Type no. 197. Wash. Agric. Coll. & S. of S.

Tipula uncinata, sp. nov.

Brown; head grayish-brown with a narrow median line above; rostrum reddish-brown, cinereous above; palpi brown; antennæ not reaching the base of the wing, first two segments yellow, others wholly dark brown, slightly darker at the base, cylindrical; mesonotum light brownish-gray with four brown stripes, the lateral ones rather short; the median ones are separated by a rather broad slate-colored line; scutellum and metanotum brownish; pleura more cinerous; halteres brown, yellowish at the base, knobs brown, tips lighter; legs brown, tips of the femora, tibia and tarsi darker; abdomen brown with three rather indistinct somewhat broken brown stripes; tergum of the fourth segment nearly wholly brown; eighth sternite reddish-brown, posterior margin with a small median reddish-brown appendage which is fringed with short reddish-brown hairs; lateral angles provided with a pair of very much larger appendages the bases of each whitish, somewhat triangular, the apex bearing a very long, narrow, flattened, reddish-brown claw-like process and a few short, yellow hairs; hypopygium reddish-brown; upper lamella terminating in two rather long flattened acute points between which is a rather deep, V-shaped or U-shaped incision in the base of which arises a whitish tumid heart-shaped process, posterior lateral angles much lighter than the rest of the lamella; base of ovipositor dark brown, upper valves reddish-brown, rather long, slender, obtuse at tip; wings with a brownish tinge, apical half slightly darker; stigma brown; the broad whitish band beginning in front of the stigma and running across the base of the discal and into the base of the fourth posterior cell and the side of the fifth posterior cell; indistinct whitish streaks in all the posterior cells except the first; similar streaks in the

anal, axillary and spurious cells, one or two of which reach the posterior margin of the wing; an indistinct brownish border along the distal portion of the fifth vein; a brown spot over the basal cross veins; discal cell more than twice as long as wide. Length, male 19 mm., female 22 mm., wing 19 mm.

Habitat: Collins, Idaho, two males. (Type) Moscow Mt., Idaho, one male, one female. Piper. Pullman, Wash., one male. Keyport, Wash., three males, six females. Doane. Type no. 180. Wash. Agric. Coll. & S. of S.

The specimens from Keyport are larger with the general color of the body yellowish instead of brownish in all but two females, where the thorax is grayish, the wings are more yellowish with the white markings more distinct. These may possibly represent a distinct species, but as they show so much variation a larger series will be needed before the constant differences, if any, can be determined.

***Tipula acuta*, sp. nov.**

Brown; head grayish-brown with a faintly indicated brownish line above; rostrum reddish-yellow, grayish-brown above; palpi brown, darker toward the tip; antennæ not reaching the base of the wing, first and second segments and the basal portion of the third yellowish, others brown, those beyond the third slightly incrassate at the base; mesonotum grayish-brown with three broad, brown stripes, the median one divided by a grayish line, the lateral ones interrupted anteriorly and posteriorly; scutellum grayish with a narrow median brown stripe; metanotum and pleura slate colored, the former with a median brown stripe, the latter more yellowish posteriorly; halteres yellow, knobs, brown lighter at the tip; legs brown, tarsi and the tips of the femora and tibia somewhat darker, femora yellowish toward the base; abdomen brown with three brown stripes, the lateral ones much broader posteriorly; posterior margin of the eighth sternite with a rather deep rounded incision from the middle of which arises two tufts of long yellow hair and from the sides of which arises a pair of broad reddish-brown two-pointed appendages which bear a fringe of shorter yellow hair along their inner margins; posterior margin of upper lamella of hypopygium with two small, crescent-shaped incisions; lower lamella divided, the posterior lateral angles furnished with a pair of elongated brownish appendages which in turn are provided with two long, slender, twisted pendulous appendages; ovipositor dark reddish-brown, valves straight, acute; wings with a brownish singe which is somewhat darker in the subcostal cell and in the anterior margin of the anal cell; stigma brown; the whitish band running from in front of the stigma across the discal cell into the base of the fourth posterior cell; discal cell about three times as long as wide. Length, male 19 mm., female, 21 mm., wing 23 mm.

Habitat: Palo Alto, Cal., four males. (Type) Doane, four males, four females. Kellogg. Type no. 181, Wash. Agric. Coll. & S. of S.

Close to *T. præcisa* Lw., but differs in the following points: antennæ beyond the third joint wholly brown in both sexes; stripes on

the mesonotum not saturate margined; upper valves of ovipositor acute. I do not have a male of *præcisa* before me so I cannot compare the hypopygia.

***Tipula diluta*, sp. nov.**

Brown; head brownish-gray with a narrow median line above; rostrum short, stout, yellowish, grayish above; nasus nearly half as long as the rostrum; palpi brown, lighter toward the tip; antennæ reaching nearly to base of abdomen, wholly brown, segments one to five lighter brown, those beyond the third slightly incrassate at base; mesonotum light gray with three very broad brown stripes, the median one divided by a darker line; collare brown; scutellum light yellowish; metanotum yellowish-gray; pleura and coxæ light gray; halteres brown; knobs dark brown; abdomen brownish, lighter toward the base, with a lighter dorsal stripe; posterior and lateral margins of each segment gray; hypopygium small, brown; upper and lower lamella indistinctly separated, posterior margin of the former with a short rectangular process the posterior lateral angles of which are produced into short, black points; ventral side of lower lamella light yellow, with a deep narrow incision, outer appendages yellow, broad, irregularly ovate, overlapping; wings with a brownish tinge except in the middle portion which is somewhat whitish hyaline; costal, subcostal and the anterior margins of the first basal and the anal cells darker; stigma brown; an indistinct whitish spot in front of the stigma. Length, male 12 mm., wing 14 mm.

Habitat: Colo., two males. Morrison. Type no. 182, Wash. Agric. Coll. & S. of S.

***Tipula leucophæa*, sp. nov.**

Cinereous; head cinereous, darker posteriorly with a broad dark brown stripe above; rostrum cinereous, long, stout; palpi brown, darker at the tip; antennæ of female reaching a little more than half way to base of wings, first joint yellowish-brown, second joint yellowish, others brown; metonotum cinereous with three slate-colored fusco-margined stripes, the median one divided by a narrow fuscous line; a broad fuscous line just above the dorsopleura suture; collare rather broad, prominent, cinereous, with a median brown spot; scutellum and metanotum cinereous each with a distinct fuscous line; dorsopleural membrane yellowish; ground color of pleura brown, covered with a silvery bloom; abdomen yellowish with three brown stripes; seventh and eighth segments mostly brown; base of ovipositor broad, light brown, shining, upper valves reddish-brown, broad, apex acute, lower valves reaching only to the base of the upper valves; wings cinereous; a spot in the base of the basal cells, another over the origin of the præfurca and a larger one over the stigma brown; all of the veins except in the basal portion of the wing more or less bordered with brown; faint brownish clouds in all the cells and on the apex of the wing; discal cell three times as long as wide. Length, female 30 mm., wing 25 mm.

Habitat: Colo., one female. Morrison. Type no. 183, Wash. Agric. Coll. & S. of S.

***Tipula incisa*, sp. nov.**

Brown; head cinereous with a median narrow dark brown line above; rostrum and palpi yellowish, last joint of latter brown; antennæ reaching to base of wings, first two segments yellow, third yellowish-brown, remaining segments very dark brown, slightly incrassate at the base; mesonotum cinereous with five brown stripes, the lateral ones broad abbreviated anteriorly, the median ones narrower, reaching the anterior margin; collare, scutellum and metanotum brownish-gray, latter with a faint median brown line; pleura cinereous; halteres yellow, knobs brown; legs brownish-yellow, tarsi brown, tips of femora and tibia slightly darker; abdomen yellowish-brown with three brown stripes, posterior and lateral margins of each segment yellowish; posterior margin of eighth sternite with a fringe of rather long reddish-yellow hair; hypopygium reddish-brown; upper lamella with a deep median furrow, posterior margin with a small V-shaped incision; the lower lamella with a broad, deep incision in which there hangs two rather long tumid appendages the tips of which are furnished with rather long yellowish hair, outer lateral appendages broad, apex rounded; ovipositor long, reddish-brown, upper valves slightly arcuated near the tip; wings grayish with three fuscous spots; the first over the origin of the prefurca the second over the stigma and small cross veins, the third near the middle of the anal cell; costal, subcostal and anterior margin of anal cell with a yellowish tinge, the white band beginning in front of the stigma running through the base of the discal cell and fourth posterior cell interrupted in the fifth posterior cell but usually reaching the posterior margin of the wing; a whitish spot before the stigma and on both ends of the oblong fuscous spot in the anal cell; discal cell a little more than twice as long as wide. Length, male 18 mm., female 23 mm., wing 19 mm.

Habitat: Wawawi, Wash., four males, one female. (Type) Pullman, Wash., two females. Doane. Type no. 184, Wash. Agric. Coll. & S. of S.

***Tipula subcinerea*, sp. nov.**

Brown; head cinereous with a rather broad brown stripe above; rostrum and base of palpi reddish-brown, the latter darker toward the tip; antennæ not reaching the base of the wings, brown, first and second joints yellow; joints of flagellum cylindrical, those beyond the first slightly incrassate at base, with verticles of long yellow hair; mesonotum light brown with six brown stripes, the lateral pairs uniting anteriorly, but suddenly diverging and inclosing a rather broad, short, brown spot; the median pair separated by a fusiform grayish-brown line; scutellum and metanotum brownish-gray, both with an indistinct median brown line; pleura gray, a brown stripe running posteriorly from above the base of the anterior coxæ and ending below the base of the wing; an indistinct brown spot above the base of the middle coxæ; halteres brown, base yellow, tips of knobs much lighter; abdomen brownish-yellow, darker laterally and posteriorly, posterior and lateral margin of each segment whitish; eighth tergite wholly brown; hypopygium very dark reddish-brown; upper and lower lamella completely fused together, the latter with a very deep broad incision and a narrow, shallow median yellowish depression; the upper of the two outer pairs of appendages is yellow, broadly spatulate with long whitish-

yellow hairs at the tip; the second pair is reddish-yellow, more strongly chitinized with the apex black, notched; wings long, with a brownish tinge, apex somewhat darker, with several indistinct fuscous and whitish spots; the fuscous spots at the base of the basal cells, at the origin and tip of the præfurca, along the fifth vein and at the tip of the seventh vein being most distinct; indistinct whitish spots in the margin of all the cells in the posterior part of the wings, stigma brown; discal cell about four times as long as wide. Length, male 20 mm., wing 22 mm.

Habitat: Colo., one male. Morrison. Type no. 185, Wash. Agric. Coll. & S. of S.

Tipula armata, sp. nov.

Yellow; head somewhat cinereous above, with a narrow median brown line above; rostrum and palpi yellow, the latter darker at the apex; antennæ reaching a little beyond the base of the wings, yellow, darker toward the apex, the last five or six segments being brownish; the segments beyond the third black and slightly incrassate at the base; mesonotum yellow with four brown stripes; scutellum, metanotum and pleura light yellow; halteres yellow, knobs brown, tips whitish, legs yellow, tarsi and tips of femora and tibia brown; abdomen yellow with three brown stripes, the lateral ones very faintly indicated; eighth sternite somewhat produced and narrowed posteriorly; posterior margin with very thick, bushy, long, reddish-yellow hair; hypopygium large, reddish-brown; upper lamella produced into two, long, flattened somewhat triangular processes, the ends of which are slightly curved downward and inward; the outer lateral appendages of the lower lamella produced into rather long very acute triangular appendages, posterior margin of lamella with two small reddish-brown appendages which are furnished with rather long yellowish hair; wings of a brownish tinge, somewhat darker toward the apex; a faint oblong spot in the first basal cell midway between the base of this cell and the origin of the præfurca; the origin of the præfurca and the stigma brown; costal, subcostal and the anterior margin of the anal cells yellowish; a whitish spot running from in front of the stigma across the base of the discal cell into the base of the fourth posterior cell and following along the vein separating this cell from the fifth posterior cell to the posterior margin of the wing; a whitish spot beyond the stigma and a very faint whitish spot in the posterior margin of the axillary cell. Length, male 17 mm., wing 20 mm.

Habitat: Seattle, Wash., four males. Kincaid. Type no. 186, Wash. Agric. Coll. & S. of S.

Tipula albovittata, sp. nov.

Cinereous; head cinereous; rostrum yellowish, cinereous above; palpi brown; antennæ not reaching the base of the wings, brown; second segment yellow; mesonotum cinereous, with three broad brown stripes, the median one divided near its anterior end by a short gray line; collare cinereous with a median brown line; scutellum, metanotum and pleura brownish-gray; halteres light yellow, knobs brown; legs brownish-yellow, tips of femora, tibia and tarsi brown; abdomen brownish-yellow, much darker posteriorly, with three brown stripes, the lateral ones broken; fourth segment almost wholly brown above; eighth sternite dark reddish-

brown, posterior margin with a tuft of light yellow hair; upper lamella of hypopygium, with a median depression and a slight incision; posterior margin of the lower lamella with a broad blunt triangular process the middle of which is whitish and tumid, the sides reddish-brown; wings brown with three irregular white bands, the first near the base, the second near the middle and the third toward the apex of the wing; the extreme apex of the second submarginal cell, the apical portion of the first posterior cell and the basal portion of the second, third, and fourth posterior cells also white spotted; a small white spot at the origin of the prefurca; costal cell except a brown cloud opposite the origin of the prefurca, and the extreme base of the wing white; discal cell three times as long as wide. Length, male 17 mm., wing 19 mm.

Habitat: Pullman, Wash., one male. *Piper*. Type no. 187, Wash. Agric. Coll. & S. of S.

***Tipula albonotata*, sp. nov.**

Brown; head grayish-brown with a median brown stripe above; rostrum yellowish, brownish above; palpi brown, yellowish toward the base; antennæ reaching the base of the wings, first three segments yellow, others dark brown and deeply excised below in the male; antennæ of female much shorter, first six or seven segments yellowish, others brown; mesonotum brown, with three broad brown stripes, the median one divided by a narrow grayish line; collare grayish-brown with a median brown spot; scutellum brown with a darker brown median stripe; metanotum cinereous; pleura slate-colored; halteres yellow, knobs brown; legs yellowish-brown, tarsi and tips of femora and tibia darker; abdomen brownish-yellow with three brown stripes, the lateral ones faintly indicated, posterior margin of each segment yellowish; eighth sternite and hypopygium reddish-brown; posterior margin of upper lamella depressed, shining black, with a median short, blunt, black process; lower lamella with a rounded incision in which hangs a pair of rather long, brownish tumid appendages; ovipositor long, dark brownish-red, upper valves straight, acute; wings gray with three conspicuous whitish spots, the first incompletely surrounding the stigma and extending across the base of the discal cell into the base of the fourth posterior cell, the second near the distal end of the second basal cell, the third near the middle of the axillary cell; stigma and a small spot at the base of the prefurca brown; costal, subcostal and the anterior margin of the anal cells with a yellowish tinge; discal cell a little more than twice as long as wide. Length, male 15 mm., female 23 mm., wing 16 mm.

Habitat: Battle Creek, Mich., one male, one female. *Aldrich*. Type no. 188, Wash. Agric. Coll. & S. of S.

***Tipula spectabilis*, sp. nov.**

Yellowish; head cinereous with a narrow median dark line above; rostrum reddish-yellow; palpi yellow, apex brown; antennæ reaching nearly to base of abdomen, the first three segments wholly yellow, the next two or three segments yellowish with a brownish tinge, the remaining segments brown, those beyond the third slightly incrassate and darker at the base; mesonotum light yellowish with

four brown stripes, the median pair separated by a fusiform light yellow line; scutellum reddish-brown; metanotum and pleura brownish-gray; halteres yellowish, knobs brown; legs brownish-yellow, tips of femora, tibia and tarsi brown; abdomen yellowish, darker posteriorly, with three brown stripes the lateral ones faintly indicated anteriorly; eighth sternite produced and narrowed posteriorly with a shallow rounded incision from which arises a tuft of very thick, bushy, long reddish hair; hypopygium large, reddish-brown; posterior margin of upper lamella with a slight depression, with two very small median black points; lower lamella with a shallow rounded incision in which lies a pair of small reddish-brown appendages which are furnished with short yellow hair at the tip; outer lateral appendages produced into two long flattened projections the distal thirds of which are broadened and twisted in such a way that the concave surfaces are toward each other; wings brownish, with darker and lighter spots; an oblong spot in the first basal cell midway between the base of this cell and the origin of the præfurca, the origin of the præfurca, the stigma, a less distinct spot over the small cross veins and at the tip of the posterior branch of the second vein darker brown; an irregular whitish band running from in front of the stigma across the discal into the base of the fourth and fifth posterior cells; a spot beyond the stigma, one in the middle of the first basal cell, another in the posterior margin of the axillary cell, and the basal portion of the wing whitish; nearly all the veins border with whitish. Length, male 17 mm., wing 20 mm.

Habitat: Collins, Idaho, ten males. Piper. Type no. 189, Wash. Agric. Coll. & S. of S.

***Tipula contaminata*, sp. nov.**

Tawny; head light brown, darker above with a median fuscous line; rostrum and palpi light brownish; first four segments of antennæ of female yellowish, the others yellowish-brown; mesonotum tawny, each of the four brown stripes margined with darker brown; collare tawny, with three brown spots; scutellum and metanotum brownish with a narrow median brown stripe; dorsopleural membrane yellowish-white; pleura grayish-brown; mesopleura and sternopleura darker brown; halteres wholly light yellow; legs brownish-yellow, tips of femora, tibia and tarsi brown; abdomen yellowish-brown with three brown stripes, the lateral ones indistinct; posterior margin of each segment light yellow; ninth tergite reddish-brown with a yellow border, posterior margin with a broad deep median incision and lateral narrow sharp incisions; posterior margin of ninth sternite with a deep incision; ovipositor very short reddish-brown, upper valves forcep-like, lower valves shorter, leaf-like, somewhat membranous; wings broad with a light brownish tinge, with several indistinct whitish spots in the middle apical portion of the wing; all of the veins in the posterior portion of the wing with a more or less distinct whitish border; the extreme tips of the veins with a dark spot, leaving a whitish spot in the margin of each of the posterior cells and less distinct spots in the anal, axillary and spurious cells; stigma and a small spot on the origin of the præfurca brown; discal cell less than twice as long as wide. Length, female 20 mm., wing 23 mm.

Habitat: Colo., two females. Morrison. Type no. 190, Wash. Agric. Coll. & S. of S.

Tipula abluta, sp. nov.

Brown; head brown, darker above; rostrum and palpi yellowish-brown, latter darker at the tip; first two segments of antennæ yellow, others brown; mesonotum light brown with four brown stripes, the median pair incompletely separated anteriorly; collare yellowish-brown with three brown spots; scutellum, metanotum, pleura, and coxæ reddish-brown; dorsopleural membrane brown; halteres brown, tips lighter; legs brownish-yellow, tips of femora, tibia and tarsi brown; abdomen yellowish-brown, darker posteriorly, with lateral brown stripes; posterior and lateral margins of each segment yellowish; eighth and ninth segments separated by a deep furrow above; eighth tergite with two very short, blunt points near the median line; lateral margins of the ninth tergite drawn out into a blunt point posteriorly; ninth sternite divided by a deep quadrate incision; base of ovipositor very stout, upper valves rather short, reddish-brown, slightly arcuated, with a deep dorso-lateral groove; lower valves a little stouter than the upper, acute; wings very similar to *T. contaminata*, but narrower and somewhat darker with a faint brownish spot in the middle of the discal cell and a still fainter spot in the posterior margin of the second basal cell opposite the origin of the præfurca. Length, female 22 mm., wing 21 mm.

Habitat: Colo., one female. Morrison. Type no. 191, Wash. Agric. Coll. & S. of S.

Tipula varia, sp. nov.

Yellow; head yellowish-brown with a median brown stripe above; rostrum and palpi yellow, last joint of the latter brown; antennæ of female reaching half way to base of wings, yellow, segments beyond the fifth dark at base; mesonotum light yellow with four brown stripes; scutellum and metanotum reddish-brown; pleura and dorsopleura membrane yellowish; halteres yellow, knobs brown, lighter at the tip; legs yellowish, tips of femora, tibia and tarsi brown; abdomen brownish-yellow with three brown stripes; ninth abdominal tergite almost concealed beneath the eighth; eighth and ninth sterna and the lower base of the ovipositor fused together, light yellow; upper base of ovipositor reddish-brown, somewhat cylindrical from above; valves of ovipositor reddish-brown, the upper ones straight, slender tips rounded; lower valves shorter, broader and more blunt at the tips; wings tinged with brown, apex somewhat darker; a brown spot in the anterior margin of the first basal cell nearly opposite the tip of the seventh longitudinal vein; darker spots over the stigma and the origin of the præfurca and much fainter spots at the tip of the posterior branch of the second vein and over the base of the second submarginal and first posterior cells; an incomplete whitish band beginning in front of the stigma and extending across the base of the discal cell into the base of the fourth posterior cell; a whitish spot beyond the stigma, and a very faint whitish streak just beyond the tip of the seventh vein; discal cell more than three times as long as wide. Length, female 19 mm., wing 19 mm.

Habitat: Seattle, one female. (Type) Olympia, Wash., one female. Kincaid. Type no. 192, Wash. Agric. Coll. & S. of S.

***Tipula albocaudata*, sp. nov.**

Brown; head cinereous with a median brown stripe above; rostrum brownish-yellow; palpi brown; antennæ of male reaching to base of abdomen, dark brown, first two segments and the base of the third yellow; joints of flagellum cylindrical and very slightly incrassate at base; mesonotum light brown or cinereous, with seven brown stripes, the median one very faintly indicated, the outer pairs united anteriorly; collare yellowish with three brown stripes; scutellum yellowish; metanotum grayish-brown; dorsopleural membrane light yellowish; mesopleura and sternopleura and anterior coxæ slate-colored, rest of pleura light yellowish; halteres brown, base yellowish, knobs blackish; legs brown; femora yellowish toward the base; tarsi and tips of femora and tibia darker; abdomen reddish-brown, blackish posteriorly with two broad blackish lateral lines which are broader posteriorly; hypopygium black, elongate; upper and lower lamella closely fused together, the former with two yellow, black-tipped, short, slender appendages; lower lamella with a deep broad incision and a median yellow line, lateral appendages yellow; wings almost hyaline with a very slight brownish tinge; subcostal cell and the anterior margin of the anal cell very slightly tinged with yellow; stigma brown; the posterior cross vein with a very narrow brown border; the indistinct broken whitish band beginning in front of the stigma running across the base of the discal into the base of the fourth posterior cell; discal cell more than twice as long as wide. Length, male 17 mm., wing 17 mm.

Habitat: Pullman, Wash., two males. (Type) Wawawi, Wash., one male. Doane. Colo., two males. Morrison. Type no. 193, Wash. Agric. Coll. & S. of S.

***Tipula cognata*, sp. nov.**

Brown; head brownish cinereous with a median brown line above; rostrum and palpi brown, the latter darker toward the tip; antennæ of female reaching more than half way to the base of the wings, first and second joints yellow, third and fourth yellowish-brown, others wholly dark brown; mesonotum brownish-yellow with four dark brown stripes; the median pair is separated by a broad grayish stripe which is divided by a light brownish line; collare cinereous with three faintly indicated darker spots; scutellum and metanotum cinereous, the former yellowish posteriorly, each with a narrow median brown line; dorsopleura membrane yellow; pleura slate-colored; metapleura and hypopleura with a yellowish tinge; halteres light yellowish, knobs brown; legs brown, femora yellowish toward the base, tarsi and the tips of the femora and tibia darker brown; abdomen brownish-yellow with two broad, dark brown stripes above and sometimes three or four faintly indicated broken brown stripes below; posterior and lateral margin of each segment grayish; eighth and ninth segments wholly very dark brown; the posterior lateral corner of the ninth tergite drawn out into a short blunt process; base of ovipositor blackish; basal half of upper valves rather broad apical half, slender tip rounded; lower valves broader, blunt, reaching way to tip of upper valves; wings almost hyaline with a faint brownish or grayish tinge; costal, subcostal and anterior margin of anal cells and the base of the wing with a yellowish tinge; stigma brown; the great and small cross veins and the fifth longitudinal vein faintly and very narrowly brownish bordered; discal cell more than

three times as long as wide ; petiole of second submarginal cell short. Length, female 19 mm., wing 19 mm.

Habitat: Seattle, Wash., one female. (Type) Olympia, Wash., two females. Kincaid. Moscow Mt., Idaho, three females. Doane. Type no. 194, Wash. Agric. Coll. & S. of S.

I have before me five males from Olympia which evidently belong to this species, although the thorax and head are almost wholly black, and the stripes on the mesonotum faintly distinguishable. The black color is evidently due to desiccation. Antennæ reaching beyond the base of the abdomen ; first and second joint and the base of the third yellow, others dark brown ; joints of the flagellum conspicuously excised below ; hypopygium similar to that of *T. albocaudata*.

***Tipula usitata*, sp. nov.**

Brown ; head yellowish, brownish posteriorly, with a median brown line above ; rostrum yellow, brownish above ; palpi light brown, darker toward the tip ; antennæ of female reaching half way to base of wings, first segment brownish-yellow, second yellow, others brown ; mesonotum cinereous, with five brown stripes, the lateral ones broadest ; collare yellowish with a median brown line ; scutellum and metanotum brownish, both with a faintly indicated median brown line ; dorsopleural membrane yellow ; mesopleura, sternopleura and anterior coxæ slate gray, rest of pleura and other coxæ light yellowish ; halteres brown, yellowish at the base ; legs brown, tibia and tips of femora and tibia darker ; an indistinct lighter band just before the brown band on the stigma ; abdomen yellowish-brown with three brown stripes, the lateral ones broadest ; base of first segment whitish ; posterior margin of each segment grayish or yellowish ; ninth segment black above, yellowish below ; upper base of ovipositor shining black, valves reddish-yellow, darker toward the tips, tips blunt, rounded ; lower valves reaching but little beyond the base of the upper valves ; wings almost hyaline, with a grayish tinge, apical portion slightly darker ; costal, subcostal and anterior margin of anal cells faintly tinged with yellow ; stigma brown ; the whitish broken band beginning in front of the stigma extending across the base of the discal cell through the fourth and fifth posterior cells to the posterior margin of the wing ; a whitish spot beyond the stigma ; discal cell more than three times as long as wide. Length, female 14 mm., wing 14 mm.

Habitat: Tokeland, Wash., one female. (Type) Doane. Corvalis, Ore., one female. Kincaid. Type no. 195, Wash. Agric. Coll. & S. of S.

***Tipula graphica*, sp. nov.**

Brown ; head cinereous with a brown stripe above ; rostrum yellow ; palpi brown ; antennæ of female reaching a little more than half way to the base of the wings, first six segments yellow, others brown ; mesonotum light gray with three broad grayish-brown stripes each brown-bordered, the median one divided by a narrow brown line ;

collare grayish-brown, darker laterally; scutellum and metanotum brownish with a median brown line; dorsopleural membrane whitish; pleura gray, hoary; halteres yellowish, knobs brown; legs yellowish, tarsi and tips of femora and tibia brown; abdomen brown with two broad, interrupted, brown, lateral stripes; posterior and lateral margins of each segment except the last two grayish or yellowish; eighth segment wholly light brown; ninth tergite blackish, lateral margins produced posteriorly into short blunt points; ovipositor dark reddish-brown, upper valves very slightly arcuated, rounded at the tip; lower valves reaching nearly half way to tip of upper valves; wings whitish hyaline with brown markings along the costa and veins; the brown costal border reaching posteriorly to the fourth vein in the middle portion of the wing and to the third vein in the apical portion, interrupted before the stigma by a broad whitish hyaline band; fifth vein and great cross vein broadly, others narrowly, bordered with brown, border of sixth and seventh veins faint; all the posterior cells brown margined, base of first brown; discal cell four times as long as wide, immaculate. Length, male 16 mm., wing 17 mm.

Habitat: Palo Alto, Cal., one female. Doane. Type no. 196, Wash. Agric. Coll. & S. of S.

Tipula decora, sp. nov.

Brown; head cinereous with a median dark brown line above; rostrum and palpi yellow, latter darker toward the apex; antennæ of male reaching beyond the base of the abdomen, first three segments yellow, others dark brown, darker at the base, segments beyond the third very slightly incrassate at base; mesonotum light gray with three very broad brown stripes each divided by a faint narrow grayish line; collare brownish, with three brown spots; scutellum and metanotum yellowish-brown, each with a narrow brown stripe, the latter with two brown spots on the posterior margin; dorsopleural membrane light yellowish; pleura hoary; mesopleura and sternopleura slate-colored, rest lighter gray; halteres yellow, knobs brown; legs brown, base of femora yellowish, tarsi and tips of femora and tibia darker; abdomen brownish-yellow, brown posteriorly, with three brown stripes, the lateral ones indistinct, broken; posterior margin of each segment yellowish; hypopygium small, very dark brown; upper lamella with a very small incision; lower lamella with a deep rather broad incision, appendages lighter brown; wings brownish with whitish spots and a crescent-shaped subapical whitish band, the latter beginning in the costa beyond the stigma and extending through the fourth posterior cell to the margin of the wing; two large whitish spots in the second basal cell, smaller fainter spots in the anal and axillary cells and before the stigma; stigma brown; base of second submarginal and first posterior cells and all that portion of the wing beyond the whitish band brown. Length, male 12 mm., wing 14 mm.

Habitat: Montreal, Can., one male. Chagnon. Type no. 197, Wash. Agric. Coll. & S. of S.

Tipula subtenuicornis, sp. nov.

Brown; head brownish-yellow; rostrum and palpi yellow; antennæ reaching to the base of the third abdominal segment, first two segments and the extreme base

of the third yellow, others brown, cylindrical, very slightly incrassate at the base, bristles of the verticles long, slender; mesonotum brownish-gray with four brown stripes, the median pair slightly broader anteriorly; collare yellowish-brown with three brown stripes; scutellum yellowish-brown; metanotum grayish-brown, sides yellowish; dorsopleural membrane yellowish; mesopleura and the ventral half of the sternopleura blackish-brown, rest of pleura yellowish; halteres yellowish, knobs brown at the base, whitish at the tips; legs yellowish, tarsi and the tips of the femora and tibia darker; abdomen brownish-yellow with lateral narrow brown stripes; posterior border of the second and third segments with a narrow black ring; seventh and eighth and all except the anterior margin of the sixth segments black; hypopygium small, yellow; upper lamella terminating in a median, short rather acute point; wings grayish with faint whitish spots; subcostal cell faintly tinged with yellow; stigma brown, surrounded by whitish; a large whitish spot covering the tips of the basal cells and the base of the discal, fourth and fifth posterior cells; faint whitish streaks in the second basal, anal and axillary cells; first posterior cell lighter than the others; discal cell twice as long as wide. Length, male 14 mm., wing 14 mm.

Habitat: Seattle, Wash., one male. Kincaid. Type no. 198, Wash. Agric. Coll. & S. of S.

***Tipula albofascia*, sp. nov.**

Yellow; head grayish-yellow, darker posteriorly with a very narrow faint black line above; rostrum and palpi yellow, latter darker at the tip; antennæ of female reaching nearly to base of wings, first three segments yellow, others brown, yellowish at the joints; mesonotum light yellowish with three broad reddish-brown stripes; collare yellowish with three darker spots; scutellum and metanotum brownish-yellow; dorsopleural membrane yellow; pleura yellow with a whitish bloom; halteres yellow, knobs brown; legs yellow, tarsi and tips of femora and tibia darker; abdomen yellow with three brown stripes; posterior margin of each segment light yellow; eighth and ninth segments wholly very dark brown; base of ovipositor very dark reddish-brown, shining; upper valves reddish, slender, straight, tips rounded above; lower valves broader, blunt, hardly reaching the middle of the upper valves; wings almost hyaline faintly tinged with yellow, apex slightly darker; costal, subcostal and anterior margin of anal cells slightly tinged with yellow; the whitish band beginning in front of the stigma extending across the base of the discal cell through the fourth and fifth posterior cells to the posterior margin of the wing; discal cell about twice as long as wide. Length, female 20 mm., wing 21 mm.

Habitat: Corvallis, Ore., one female. Kincaid. Type no. 199, Wash. Agric. Coll. & S. of S.

***Tipula lucida*, sp. nov.**

Yellow; head cinereous; rostrum yellow; palpi brownish-yellow, darker toward the tip; antennæ of male reaching a little beyond the base of the wings, first two segments and the base of the third yellow, others brown, cylindrical, very slightly incrassate at the base; antennæ of the female hardly reaching half way to the base of the wing, first three segments yellow, others brown; whole thorax honey yellow,

shining; dorsopleural membrane whitish; halteres yellow, knobs brown; legs yellow, tarsi and the tips of the femora and tibia darker; abdomen honey yellow, darker posteriorly, with black dots on the lateral margin of each segment which are sometimes incompletely connected by brownish stripes; a brownish spot on the first sternite; eighth tergite somewhat produced and narrowed posteriorly, posterior margin with two tufts of long reddish hair; hypopygium large, reddish yellow; posterior margin of upper lamella with a slight median incision, lateral angles produced into short, slender, acute points; lower lamella with a rather deep incision in which lies a pair of short reddish-brown appendages the tips of which are fringed with long yellow hair; base of ovipositor honey yellow, shining, valves reddish, upper valves slightly arcuate, long, slender, acute; lower valves broader, obtuse, reaching beyond the middle of the upper valves; wings hyaline, subcostal cell and stigma with a slight yellowish tinge; a very faint scarcely perceptible whitish streak running from in front of the stigma across the base of the discal cell; discal cell twice as long as wide. Length, male 15 mm., female 18 to 20 mm., wing 17 mm.

Habitat: Moscow Mt., Idaho, one male, one female. (Type) Doane. Collins, Ida., two males. Piper. Type no. 200, Wash. Agric. Coll. & S. of S.

THE SOUTHERN CORN-LEAF BEETLE: A NEW INSECT PEST OF GROWING CORN.

PLATES VII-IX.

BY F. M. WEBSTER.

While investigating the habits of the species of *Simulium*, inhabiting the country adjacent to the Mississippi River in Arkansas and Louisiana, early in April, 1887, I observed in a small field of corn, on the old Perkins Plantation, at Somerset Landing, Tensas Parish, Louisiana, a number of beetles, *Myochrous denticollis* Say, attacking the young corn.

They were found, largely, in the soil about the stems of the plants at or very near the surface of the ground, where they seemed to be engaged in gnawing the bases of the outside leaves, and were not then observed to depredate upon the upper portion of the leaves, nor were they at any time observed running over the plants. At the time, however, the corn plants were very small, not having put forth more than three or at most four leaves. No serious injuries were observed at the time, and more pertinent investigations prevented my giving them further attention. I was not then aware of what has