

UNDESCRIBED SPECIES OF JAPANESE CRANE-FLIES (Tipulidae, Diptera.)

Part III.

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The first two parts under this general title were published in these ANNALS in 1919 and 1921. Virtually all of the species included in the present report were sent to me for determination by Dr. Shiraki and were collected by himself and other entomologists, Messrs. Inamura, Isshiki, Issiki, Miyake, Okuni, Sonan and Yoshino. Additional material was sent by Dr. Machida. The writer's thanks are extended to all of these gentlemen for their co-operation in making known the large and very important Tipuloidean fauna of the Japanese Empire. Where not stated to the contrary, types of the novelties described herein are preserved in the collection of the writer.

Dicranomyia Stephens.

Dicranomyia (Idioglochina) kotoshoensis sp. n.

General coloration brownish yellow; head gray; mesonotal praescutum with three brown stripes; wings pale brown; *Sc* very short; *Rs* shorter than the deflection of R_{4+5} ; veins R_1 , R_{2+3} and R_{4+5} generally parallel to one another, straight.

Male—Length, about 5.5 mm.; wing, 5.6 mm.

Rostrum brown, the palpi dark brown. Antennae dark brown; flagellum with the structure of the species of the subgenus, the verticils being very stout, almost spinous, arranged in a row around the periphery of the segment. Head gray.

Mesonotum yellowish pollinose with three broad, brown stripes, the median stripe becoming indistinct before the suture; scutal lobes brown, the median area paler; scutellum injured in pinning, apparently sparsely pruinose; postnotum brown, paler basally. Pleura brownish yellow with a sparse, microscopic gray pubescence. Halteres pale, the knobs slightly darker. Legs with the coxæ concolorous with the pleura; trochanters obscure yellow; femora obscure brownish yellow; tibiae and tarsi brown; claws toothed. Wings pale brown; stigma barely indicated; veins brown. Venation: *Sc* short, Sc_1 ending far before the origin of *Rs*, this distance longer than the basal deflection of Cu_1 , Sc_2 a short distance from the tip of Sc_1 , the latter about equal to *m*; *Rs* very short, about two-thirds the deflection of R_{4+5} ; R_{2+3} straight,

parallel to R_1 ; r very indistinct, at the tip of R_1 ; deflection of R_{4+5} arcuated, a little shorter than the basal deflection of Cu_1 ; outer section of R_{4+5} generally parallel with R_{2+3} ; cell 1st M_2 long, irregularly pentagonal, longer than any of the veins beyond it; basal deflection of Cu_1 just beyond the fork of M , about equal to Cu_2 . Anal angle of wing conspicuous, as in subgenus.

Abdomen light brownish yellow, the basal tergites darker brown; hypopygium obscure yellow. Male hypopygium (described from the dry type only) with the pleurites comparatively long and slender, the proximal face at the base with a large, subglobular lobe that is provided with abundant, long, erect setae; the two appendages are closely approximated, the outer hook stout, the inner fleshy appendage a little longer than the chitinized hook, terminating in a rather blunt, unarmed beak. Penis-guard conspicuous.

Habitat: Japan (Taiwan). Holotype, ♂, Island of Kotosho, March 15–April 10, 1920 (T. Okuni and J. Sonan). Type in the collection of the Agricultural Experiment Station, Taihoku.

Dicranomyia kotoshoensis is of unusual interest as being the first Oriental species of the subgenus *Idioglochina* Alexander to be described, the three species previously known being from the Australasian region (Waigou to N. Queensland).

(?) *Dicranomyia shirakii* sp. n.

General coloration dark with a marmorate pattern of microscopic gray pubescence; legs yellow, the femoral tips, tibial bases and tips dark brown; wings whitish subhyaline with a heavy brown pattern, including five very extensive costal blotches; Sc ending opposite the origin of Rs , Sc_2 lacking; basal deflection of Cu_1 before the fork of M .

Male—Length, excluding head, 5 mm.; wing, 6.5 mm.

Head lacking.

Pronotum brown, marmorate laterally with gray pruinose. The thoracic pattern is more or less destroyed by verdigris and can be discussed in general terms only; mesonotal praescutum light gray pruinose with a broad, black, median stripe that is sparsely provided with golden yellow pollen; remainder of the mesonotum dark brown with a microscopic, appressed pubescence that appears as a sparse pruinosity. Pleura dark brown, handsomely marmorate with a silvery gray, microscopic pubescence; dorso-pleural membrane obscure yellow. Halteres white, the large knobs conspicuously dark brown. Legs with the coxae brown, sparsely gray pubescent; trochanters obscure yellow; femora slender, bright yellow, the tips rather broadly and conspicuously dark brown; tibiae brownish yellow, the bases and tips narrowly dark brown; tarsi dark brown. Wings whitish subhyaline with a heavy brown pattern; costal region with five very extensive brown blotches, the first at the level of the arculus, including both cells C and Sc and sending a cloud over arculus; second blotch near mid-distance between

arculus and the origin of R_s , sending a quadrangular cloud into cell R ; third blotch above the end of Sc and origin of R_s , sending a rectangular cloud over the base of R_s ; fourth blotch at stigma, sending a large cloud over the fork of R_s , separated from the fifth and apical blotch only by a large, rounded spot of the ground color in the base of cell 2nd R_1 ; apical blotch includes more than the distal half of cell 2nd R_1 and all of R_3 except a series of about six indistinct whitish spots; the white interspaces between the first three blotches do not equal more than one-fifth the blotch in extent; besides the above brown areas, the remainder of the cord and outer end of cell 1st M_2 is broadly seamed with brown; paler brown clouds occupy most of cells 2nd M_2 , M_3 , Cu and M , the base and outer ends of cells Cu_1 , 1st A and 2nd A , there being large hyaline areas in the outer ends of cells Cu , 1st A and 2nd A , the brown clouds confined to the ends of the veins; veins dark brown, pale in the hyaline areas. Venation: Sc_1 ending opposite the origin of R_s , Sc_2 lacking; R_s gently arcuated, about twice the deflection of R_{4+5} ; r at tip of R_1 ; deflection of R_{4+5} longer than the basal deflection of Cu_1 ; cell 1st M_2 rectangular, almost as long as vein M_{1+2} beyond it; basal deflection of Cu_1 about one-half its length before the fork of M ; vein 2nd A gently bisinuous.

Abdomen brown, the hypopygium obscure yellow.

Habitat: Japan (Taiwan). Holotype, ♂, Tappan, altitude about 3,000 feet, June 18, 1917 (T. Shiraki). Type in the collection of the Agricultural Experiment Station, Taihoku.

?*Dicranomyia shirakii* is a very conspicuous crane-fly whose true generic position is rendered somewhat doubtful by the loss of the head of the type. It is almost certainly a *Dicranomyia*, but there is a possibility of its being a *Geranomyia* or a *Rhipidia*. It is named in honor of the collector, Dr. T. Shiraki, to whom I am indebted for many favors.

Dicranomyia subumbrata sp. n.

General coloration obscure yellow; head gray; pleura with a broad, dark brown stripe; wings tinged with brown; stigma, a spot at origin of R_s and conspicuous seams along the cord and outer end of cell 1st M_2 seamed with brown; Sc long, cell 1st M_2 closed; abdominal segments brown, paler basally; male hypopygium large and complex.

Male—Length about 5.5 mm.; wing, 6.2 mm.

Female—Length about 6 mm.; wing, 6.3 mm.

Rostrum and palpi dark brown. Antennæ dark brown, the flagellar segments oval-cylindrical. Head gray.

Mesonotal praescutum obscure yellow, the posterior median area broadly dark brown; lateral stripes obliterated; scutal lobes dark brown, the median area yellowish; remainder of the mesonotum brown. Pleura obscure yellow with a conspicuous, dark brown stripe extending from the cervical sclerites, beneath the halteres, to the abdomen. Halteres

brown, the base of the stem obscure yellow. Legs with the coxæ and trochanters obscure yellow; remainder of the legs dark brown, the femoral bases paler. Wings tinged with brown; stigma conspicuous, dark brown, circular in outline; a large paler brown spot at origin of R_3 ; seams along the cord, outer end of cell 1st M_2 and at the tip of Sc_1 , brown; veins dark brown. Venation: Sc_1 ending just beyond mid-length of R_3 , Sc_2 at its tip; R_3 slightly angulated at origin; r at tip of R_1 and at about one-third the length of R_{2+3} ; cell 1st M_2 closed, the basal deflection of Cu_1 at the fork of M .

Abdomen dark brown, the tergites narrowly pale basally; sternites yellow, ringed caudally with brown. Male hypopygium large and complicated in structure; pleurites short and stout, the meso-caudal angle produced mesad into a long arm, the margin of which is provided with a ledge set with microscopic spinulæ; pleural appendages much smaller than the pleurite, consisting of an outer chitinized hook and two inner, fleshy, curved lobes, the more proximal being bent at a strong angle. Penis-guard large; gonapophyses broad-based, the acute, slender tips directed strongly laterad, before the tip with close parallel ridges. Ovipositor with the tergal valves slender, strongly curved.

Habitat: Japan (Taiwan). Holotype, ♂, Horisha, December 20, 1916 (T. Shiraki). Allotopotype, ♀. Type in the collection of the Agricultural Experiment Station, Taihoku.

Dicranomyia subumbrata is related to the smaller *D. umbrata* de Meijere (Java), differing in the coloration of the abdomen, the hypopygial structure, and other characters.

Limonia Meigen.

Limonia nigronitida sp. n.

Head and thorax shiny black, the thoracic pleura with a microscopic, appressed, gray pubescence; halteres yellow; legs black, fore and hind femora with a narrow, yellow, subterminal ring; wings light yellow, spotted and clouded with brown; stigma large, oval, dark brown; r near the tip of R_1 ; basal deflection of Cu_1 before the fork of M ; abdomen orange on basal half, black on the terminal half.

Male—Length, 11.5 mm.; wing, 12.5 mm.

Rostrum and palpi dark brownish black. Antennæ with the scape black, the flagellum dark brown throughout. Head shiny brownish black, the anterior part of the vertex and a narrow margin along the eyes with an appressed gray pubescence.

Pronotum elongate, black, the scutellum shiny dark brown. Mesonotum shiny black, the median area of the scutum and the scutellum very sparsely gray pubescent. Pleura black with a heavy appressed gray pubescence. Halteres pale yellow. Legs with the fore and middle coxæ dark brown, the posterior coxæ more shiny reddish, brown posteriorly; trochanters obscure yellow; femora black, rather narrowly

obscure yellow basally, before the black tip with a narrow yellow ring, this subobsolete on the mid-femora; remainder of the legs black. Wings light yellow, the base and cells *C* and *Sc* brighter yellow; stigma large, oval, dark brown; conspicuous rounded brown spots at origin of *Rs* and the deflection of R_{4+5} ; an extensive paler brown wash at the wing-apex, occupying the outer ends of cells *2nd R*₁, *R*₃, the middle portion of *R*₅, *2nd M*₂ and *M*₃, the outer ends of these latter being pale; large, triangular pale brown clouds at ends of veins Cu_2 and *1st A*; cord and outer end of cell *1st M*₂ narrowly seamed with dark brown; a pale brown seam along the margin of cell *2nd A*; veins dark brown, paler in the flavous areas. Venation: Sc_1 ending beyond the fork of *Rs*, Sc_1 about twice Sc_2 ; *Rs* angulated at origin; *r* about one and one-half its length from the tip of *R*₁; inner ends of cells *R*₃ and *1st M*₂ lying far proximad of cell *R*₅; basal deflection of Cu_1 before the fork of *M*.

Abdomen with the basal four segments obscure, light orange, unmarked, the remainder of the abdomen, including the hypopygium, shiny black, only the penis-guard and pleural appendages of the hypopygium a little paler.

Habitat: Japan (Hokkaido). Holotype, ♂, Teshio, July 4, 1916 (T. Isshiki). Type in the collection of the Agricultural Experiment Station, Taihoku.

Limonia nigronitida is not closely related to any of the four described European species with shiny black head and thorax (*pannonica* Kowarz, *nitida* Verrall, *splendens* Kuntze and *proxima* Kuntze). No American species of this group have been discovered.

Rhipidia Meigen.

Rhipidia (Rhipidia) rostrifera formosana subsp. n.

Male—Length about 5 mm.; wing, 5.5 mm.

Generally similar to *R. (R.) rostrifera* Edwards of the Malay Peninsula and Sumatra, differing as follows:

Mesonotal praescutum yellowish gray with three conspicuous dark brown stripes; median stripe broad, indistinctly split longitudinally by a pale line; lateral stripes conspicuous; scutal lobes with the centers dark brown; scutellum gray pruinose. Pleura gray with a narrow, longitudinal brown stripe ending beneath the root of the halteres. Mesosternum dark brown, the dorsal margin sharply delimited. Femora brown with a conspicuous, broad, darker brown, subterminal ring, the extreme tip narrowly pale. Wings with the brown pattern extensive, the outer costal blotch including the distal fourth of cell *2nd R*₁ and the distal two-fifths of cell *R*₃; stigmal blotch quadrate, confluent with the oval costal blotch at tip of *Sc*. Venation: Sc_2 lacking, the subcostal cross-vein present and surrounded by a small brown cloud; *Rs* elongate, strongly arcuated at origin; cell *M*₃ comparatively small, about one-half

the length of its petiole; basal deflection of Cu_1 beyond the fork of M , the distance a little shorter than $r-m$, Cu_2 being shorter than the deflection of Cu_1 .

Habitat: Japan (Taiwan). Holotype, ♂, Funkiko, altitude about 6,000 feet, April 29, 1917 (T. Shiraki). Type in the collection of the Agricultural Experiment Station, Taihoku.

Gonomyia Meigen:

Gonomyia (Progonomyia) scutellum-album sp. n.

General coloration black; pronotal and mesonotal scutella whitish yellow; pleura dark brown, the epimeron yellow; knobs of the halteres light yellow; wings faintly tinged; Sc_1 ending about opposite two-thirds Rs ; penis-guard very large and flattened near mid-length, the apex suddenly narrowed, acicular.

Male—Length about 4.5 mm.; wing, 6.6 mm.

Female—Length about 4 mm.; wing, 6.3 mm.

Rostrum and palpi dark brown. Antennæ dark brown, the segments oval. Head black, rather sparsely dusted with light gray.

Pronotum dark brown, the scutellum conspicuously light yellow. Mesonotum black, the scutellum conspicuously and abruptly whitish yellow. Pleura dark brown, the epimeron yellow. Halteres brown, the knobs conspicuously light yellow. Legs with the coxæ and trochanters dark brown; remainder of the legs dark brownish black. Wings with a faint brownish tinge, the stigma barely indicated; veins dark brown. Venation: Sc_1 ending about opposite two-thirds the length of Rs , Sc_2 far from the tip of Sc_1 , closer to origin of Rs than to tip of Sc_1 ; Rs long, straight; r lacking; petiole of cell 2nd M_2 about one-half longer than the basal deflection of Cu_1 , the latter about one-third its length beyond the fork of M .

Abdominal tergites brown, the caudal margins of the segments rather broadly dark brown. Hypopygium paler brown, more nearly concolorous with the sternites. Male hypopygium with the lateral angle of pleurite a little produced; three pleural appendages; outer appendage pale, gradually narrowed apically; middle appendage cylindrical at base, near mid-length dilated into a collar, the lateral margin jutting out into a black lobe, the apical two-fifths very slender, gently curved; inner pleural appendage the shortest, the proximal face with long setæ. Penis-guard very large and highly compressed, slender basally, dilated into a roughly oval blade from the end of which the long, slender, needle-like extension of the guard continues, bent strongly near its origin and lying nearly parallel with the margin of the dilatation.

Habitat: Japan (Taiwan). Holotype, ♂, Funkiko, altitude about 6,000 feet, April 21, 1917 (T. Shiraki). Allotopotype, ♀. Type in the collection of the Agricultural Experiment Station, Taihoku.

Gonomyia scutellum-album is related to *G. strenua* (Brunetti). It would seem better to refer both species to the subgenus *Progonomyia* of *Gonomyia* Meigen, although they differ somewhat from the characteristic form of the group.

Teucholabis Osten Sacken.

Teucholabis aberrans sp. n.

Head dark gray; mesothorax shiny reddish; wings tinged with brown, more saturated along costa; cell *2nd M*₂ with a short petiole; abdomen brownish black.

Male—Length, 7 mm.; wing, 6.5 mm.

Rostrum nearly as long as the remainder of the head, shiny black; palpi dark brownish black. Antennæ dark brownish black throughout. Head dark gray.

Pronotum reddish. Mesothorax entirely shiny reddish. Halteres dark brown. Legs with the fore and middle coxæ obscure reddish, the hind coxæ dark brown; trochanters dark brown; remainder of the legs broken. Wings strongly tinged with brown, darkest along the costal margin to the end of vein *R*₂₊₃; veins dark brown. Venation: *Sc*₁ ending about opposite three-fourths the length of *Rs*, *Sc*₂ at about three-fifths the distance between the origin of *Rs* and the tip of *Sc*₁; *Rs* long, nearly straight; *r* on *R*₂₊₃ about its own length beyond the fork; cell *1st M*₂ elongate, the sides parallel; cell *2nd M*₂ with a short petiole that is a little longer than *r-m*; basal deflection of *Cu*₁ a little less than its own length beyond the fork of *M*.

Abdomen shiny brownish black, only the incisures of the terminal segments narrowly silvery.

Habitat: Japan (Taiwan). Holotype, ♂, Island of Kotosho, March 15–April 10, 1920 (T. Okuni and J. Sonan).

Teucholabis aberrans differs from all other described species by the petiolate cell *2nd M*₂. In its general appearance it suggests *T. inornata* Riedel.

Elephantomyia Osten Sacken.

Elephantomyia (Elephantomyodes) major sp. n.

General coloration light yellowish brown, the thoracic pleura brighter; legs black, the terminal tarsal segments snowy white; wings tinged with brown; cells *Sc*, *Sc*₁ and the outer end of *R*₁ dark brown; abdominal segments indistinctly bicolorous.

Male—Length (excluding rostrum), 11.5 mm.; wing, 10.4 mm.

Rostrum slender, black, if bent backward extending to about mid-length of the abdomen. Antennæ with 14 segments, the basal segment greenish testaceous, the remainder black with elongate flagellar verticils. Front surrounding the insertion of the rostrum with a greenish yellow

tinge. Head brown, narrowed posteriorly; vertex between the eyes about as wide as the first scapal segment.

Mesonotum light yellowish brown without markings, the scutellum slightly more testaceous; postnotum narrowly and indistinctly darker brown medially. Pleura obscure yellow, the propleura darker; mesonotum more pruinulent laterally. Halteres pale, the knobs brown. Legs with the coxæ obscure yellow, the fore coxæ darker; trochanters obscure yellow; femora black, the bases narrowly paler; tibiæ black; metatarsi black, the narrow distal end and the remaining tarsal segments except the last, snowy-white. Wings with a brownish tinge; cells Sc , Sc_1 and the narrow outer end of R_1 dark brown; veins dark brown. Venation: R_s strongly arcuated at origin; veins Cu_2 and $1st A$ widely separated at wing margin, the distance much longer than the basal deflection of Cu_1 ; vein $2nd A$ comparatively short.

Abdomen dark brown, segments three to five with the basal half pale brown; segment six similar but the basal half even brighter, yellowish brown; remainder of abdomen dark brown, the small hypopygium a little brighter.

Habitat: Japan (Taiwan). Holotype, ♂, Island of Kotosho, March 15–April 10, 1920 (T. Okuni and J. Sonan). Type in the collection of the Agricultural Experiment Station, Taihoku.

Elephantomyia major is related to *E. fuscomarginata* Enderlein (Sumatra), from which it is distinguished by its larger size, coloration, and the details of venation, especially the wide separation of veins Cu_2 and $1st A$ at the wing-margin. This section of the genus now includes seven species in the East Indies and North Australia, differing from *Elephantomyia* s. s. by the lack of tibial spurs and the details of venation, R_s being in alignment with the deflection of R_{4+5} , and R_{2+3} arising almost perpendicularly from the end of the sector. This group of *Elephantomyiæ* with spurless tibiæ should receive subgeneric rank and the name *Elephantomyodes* may be used, *E. major* being the type of this section.

Epiphragma Osten Sacken.

Epiphragma divisa sp. n.

Allied to *E. vicina* Brunetti; legs uniformly light yellow; wing-pattern very restricted, the band along the outer end of cell $1st M_2$ isolated from the basal pattern.

Male—Length about 8 mm.; wing, 8.2 mm.

Female—Length, 11 mm.; wing, 10.5 mm.

Rostrum pale, golden-yellow pubescent; palpi dark brown. Antennæ with the scapal segments dark brown, the long first flagellar segment light yellow; second segment yellowish brown; remaining flagellar

segments uniformly brown. Head brown, obscure yellow adjoining the inner margin of the eyes; vertex with a low tubercle.

Pronotum dark brown. Mesonotal praescutum rich fulvous, passing into dark brown behind; remainder of mesonotum dark brown, the base of the scutellum gray pruinose. In the female, the mesonotum is provided with a light gray bloom that almost conceals the fulvous ground color. Pleura dark with patches of pruinescence and yellow pollen, the more dorsal sclerites grayish; ventral and posterior sclerites with a sparse yellow pollen. Halteres pale brown, the apices of the knobs light yellow. Legs with the coxæ obscure yellow, the outer face of each slightly infuscated; remainder of the legs light yellow, the femora immaculate. Wings comparatively narrow, much narrower than in *E. insignis* Wulp or *E. subinsignis* Alexander; subhyaline with a restricted brown pattern arranged somewhat as in *E. vicina* Brunetti, but even more broken, the pale areas more extensive; the large brown oblique band that crosses the outer end of cell 1st M_2 is quite compact and isolated from the other markings, more or less Y-shaped, one arm of the Y reaching the margin at R_2 , the other, broader, at R_{4+5} and M_1 . Venation: R_s strongly angulated at origin; R_{2+3} comparatively short, about one-half longer than the deflection of R_{4+5} ; cell 1st M_2 large, in the female with m long and sinuous; petiole of cell M_1 only about one-half the cell, in the female longer than in the male; basal deflection of Cu_1 before one-fourth the length of the cell.

Abdominal tergites light brown, the margins of the segments darker brown; hypopygium dark brown.

Habitat: Japan (Taiwan). Holotype, ♂, Shinchiku, altitude 500–1,000 feet, July 1–30, 1918 (J. Sonan and K. Miyake). Allotype, ♀, Musha, altitude about 3,700 feet, May 18–June 15, 1919 (J. Sonan, K. Miyake and M. Yoshino). Types in the collection of the Agricultural Experiment Station, Taihoku.

Limnophila Macquart.

Limnophila (*Lasiomastix*) *macrotrichiata* sp. n.

Generally similar to *L. flavella* Alex.; size larger; head light gray; no dark spot at wing-root; wings pale yellow, the stigma conspicuous, oval, pale brown; macrotrichia of wing veins and membrane very long and conspicuous; cell 1st M_2 rectangular.

Male—Length about 6.8 mm.; wing, 8 mm.

Rostrum obscure yellow; palpi brown. Antennæ short, the first scapal segment elongate; scape and basal three flagellar segments obscure yellow, the remainder of the flagellum dark brown. Head light gray with proclinate yellow bristles.

Pronotum dark medially, pale laterally. Mesonotal praescutum shiny, obscure brownish yellow without markings; scutellum and postnotum a little clearer yellow. Pleura pale brown with a sparse, microscopic, gray pubescence to produce the effect of a pruinosity.

Halteres pale, the knobs a little darker. Legs with the coxæ light brown, gray pubescent like the pleura; trochanters yellow; remainder of the legs obscure yellow, the tibial tips a little darkened; tips of the metatarsi and remaining tarsal segments pale brown. Wings with no black spot at base; pale yellow with a conspicuous, oval, pale brown stigma; cord faintly seamed with brown; macrotrichia of both veins and membrane very large, distinctly larger than in the other described Japanese species of the subgenus, conspicuous even with a hand-lens; these trichia occupy all but the bases of cells *2nd R*₁, *R*₂, *R*₃, *R*₅, *M*₁ and *2nd M*₂ and because of their size appear to almost fill the cells; outer ends of cells *Sc*₁, *M*₃ and *Cu*₁ likewise provided with these long seta. Venation: Similar to *L. flavella saitamae* Alex., differing as follows: *Rs* longer and less arcuated at origin; *r* closer to tip of *R*₁ than to origin of *R*₂; cell *M*₁ about twice its petiole; cell *1st M*₂ rectangular, the basal deflection of *Cu*₁ near one-third its length; vein *2nd A* longer, gently sinuous near outer end.

Abdomen brown. Male hypopygium as in *L. f. saitamae*, differing in the details of structure; what seems to be the ninth tergite has a very deep U-shaped notch with the lateral lobes much broader than the notch, their tips very obtusely rounded; inner pleural appendage with the inner arm more than one-half the length of the clavate outer arm and more appressed to it.

Habitat: Japan (Hokkaido). Holotype, ♂, Teshio, July 3, 1916 (T. Isshiki). Type in the collection of the Agricultural Experiment Station, Taihoku.

***Limnophila (Dicranophragma) taiwanensis* sp. n.**

Male—Length, 5.5 mm.; wing, 6.4 mm.

Most closely related to *L. (D.) multipunctipennis* Brunetti (N. India), differing as follows:

Size smaller. Antennæ with the first segment dark brown, the subglobular second segment light brown; first flagellar segment conspicuously yellow; remainder of the flagellum dark brown. No dark median line on head. Mesonotal praescutum obscure yellow pollinose, the space between the median and lateral stripes capillary, brown; a circular brown spot occupying the lateral margin of the praescutum caudad of the pseudosutural foveæ. Wings with the five large costal areas relatively small and insignificant; basal blotch occupies only cells *C* and *Sc*; stigma oval, the extension of it along the cord much paler and more or less interrupted; wing-tip not uniformly darkened; a brown seam at the strongly curved tip of vein *2nd A*; the numerous dots in the cells are not at all dash-like, but subcircular in outline. Venation: Cell *1st M*₂ larger, longer than broad, with the basal deflection of *Cu*₁ at three-fifths its length; petiole of cell *M*₁ longer than the cell. Abdomen dark brown, the bases of the elongate pleurites of the male hypopygium obscure yellow.

Habitat: Japan (Taiwan). Holotype, ♂, Taito, altitude about 500 feet, February 25–March 27, 1919 (S. Inamura, J. Sonan and M. Yoshino). Type in the collection of the Agricultural Experiment Station, Taihoku.

Limnophila taiwanensis is very distinct from the two insular species, *L. (D.) remota* (Meijere) of Java, and *L. (D.) formosa* Alexander, of Formosa.

Eriocera Macquart.

***Eriocera geminata* sp. n.**

Related to *E. hilpa* (Walker); mesonotal praescutum velvety black with three shiny blue-black stripes; femora yellow, the tips narrowly dark brown; wings dark brown with a yellow blotch before and another beyond the origin of *R*_s in cell *R*; a white oval blotch before the cord in cells *R* and *M*; abdominal tergites velvety black, the bases broadly glabrous with pearly blue reflexions.

Male—Length about 11.5 mm.; wing, 9.5 mm.

Rostrum and palpi black. Antennæ black, setaceous, if bent backward, extending about to the base of the abdomen. Head black; vertical tubercle inconspicuous.

Mesonotum opaque, velvety black, the praescutum with three shiny, blue-black stripes; centers of the scutal lobes shiny. Pleura black. Halteres black. Legs with the coxæ and trochanters black; femora yellow, the tips narrowly dark brown; tibiæ and tarsi dark brown. Wings dark brown; cells *C* and *Sc* paler. Anal cells paler grayish brown, broadly suffused along vein *2nd A*; two conspicuous elongate, yellow blotches in cell *R*, one before and one beyond the origin of *R*_s; a conspicuous, white, oval blotch before the cord, lying just before the outer ends of cells *R* and *M*, barely extending across the sector into cell *1st R*₁; veins dark brown. Venation: *r* on *R*₂ about its length beyond the fork of *R*₂₊₃; *R*₂₊₃ a little longer than the deflection of *R*₄₊₅; cell *M*₁ lacking; basal deflection of *Cu*₁ just beyond midlength of cell *1st M*₂.

Abdominal tergites glabrous basally, with pearly bluish reflexions; caudal margins broadly velvety black, this margin on the intermediate segments occupying about the distal third of the segment; sternites velvety black, only the bases narrowly glabrous. Hypopygium black.

Habitat: Japan (Honshiu). Holotype, ♂, Island of Oshima, Tokyo-Fu, July 16, 1918 (T. Shiraki); Collector's No. 6979. Type in the collection of the author; additional specimens in the collection of Dr. Shiraki.

***Eriocera fulvibasis* sp. n.**

General coloration black; antennæ short; mesonotal praescutum light gray with three dark brown stripes, the median stripe broadly split by a plumbeous line; femora fulvous yellow, the tips broadly

blackened; wings yellow, the stigma dark brown; veins broadly seamed with paler brown; abdomen black, the lateral margins of the intermediate tergites rather narrowly buffy fulvous.

Male—Length, 17 mm.; wing, 15.4 mm.

Rostrum and palpi black. Antennæ short, ending a little before the wing-root, brownish black. Head brownish black.

Mesonotal praescutum light gray with three dark brown stripes, the median stripe broadly split by a plumbeous line that ends before the suture; lateral stripes crossing the suture and occupying the centers of the scutal lobes; scutellum sparsely pruinose, the margin fringed with setæ; postnotum black, glabrous. Pleura black, sparsely gray pruinose. Halteres short, brown, the knobs dark brown. Legs with the coxæ and trochanters black, sparsely gray pruinose; femora fulvous yellow, the tips broadly blackened, this occupying approximately the distal fifth; remainder of the legs brownish black. Wings yellow, the stigma dark brown; cells *C* and *Sc* more saturated; cord, outer end of cell *1st M*₂, veins *R*, *Rs*, *Cu* and *2nd A* broadly suffused with brown; veins beyond the cord and the wing-apex more narrowly seamed with brown; veins dark brown. Venation: *Sc*₁ ending beyond the fork of *R*₂₊₃, *Sc*₂ almost exactly opposite this fork; *Rs* about one-half longer than *R*; *R*₂₊₃ shorter than the deflection of *R*₄₊₅; *r* a little before midlength of *R*₂ and about twice its length from the tip of *R*₁; cell *M*₁ lacking; cell *1st M*₂ rectangular, shorter than vein *M*₁₊₂ beyond it, but slightly longer than *M*₃; basal deflection of *Cu*₁ at about one-third the length of the cell.

Abdomen black, the lateral margins of tergites two to five rather narrowly but conspicuously buffy fulvous; abdomen rather densely pubescent; sternites brownish black, sparsely gray pubescent; a narrow median, fulvous line on sternites two and three; hypopygium black. Pleurites elongate, conspicuous, much longer than the slender pleural appendages.

Habitat: Japan (Hokkaido). Holotype, ♂, Teshio, July 12, 1916 (T. Isshiki). Type in the collection of the Agricultural Experiment Station, Taihoku.

Eriocera fulvibasis bears a general resemblance to *E. longifurca* Alexander (Honshiu), differing in the coloration of the body and legs.

Rhaphidolabis Osten Sacken.

Rhaphidolabis consors sp. n.

Antennæ with twelve segments; general coloration buffy, the mesonotal praescutum with two broad, submedian brown stripes that are confluent or nearly so; head gray; wings subhyaline, stigma barely indicated; abdomen dark brown.

Female—Length about 4.5 mm.; wing, 6.2 mm.

Rostrum and palpi brown. Antennæ brown, twelve-segmented, the terminal segment longer than the penultimate. Head gray.

Mesonotum pale buff, the praescutum with two broad, submedian brown stripes that are nearly confluent; postnotum sparsely pruinose. Pleura buffy, sparsely gray pruinose. Halteres pale, the knobs dark brown. Legs with the coxæ and trochanters pale; remainder of the legs brown. Wings subhyaline, the stigma barely indicated; veins pale brown. Venation: Sc_1 ending some distance beyond the fork of R_{2+3} ; R_s gently arcuated; R_{2+3+4} about as long as the basal deflection of Cu_1 ; R_2 very faint, lying close to the tip of R_1 ; cell M_1 present; cell 1st M_2 open; M_{3+4} before the basal deflection of Cu_1 a little shorter than the latter.

Abdomen dark brown; valves of the ovipositor horn-colored.

Habitat: Japan (Honshiu). Holotype, ♀, Tamagawa, Saitama-Ken, November 13, 1920 (H. Machida).

I am indebted to Dr. Machida for this distinct species of *Rhaphidolabis*.

Tricyphona Zetterstedt.

Tricyphona grandior sp. n.

Size large (wing, ♂, 18 mm.); head and thorax dull gray; wings brownish yellow, the cord seamed with brown; abdomen dark brown, the terminal segments still darker.

Male—Length, 18 mm.; wing, 18 mm.

Rostrum dull gray; palpi dark brown. Antennæ very small, the scape dark brown; basal segments of flagellum brownish yellow, the distal segments darkened; flagellar segments becoming greatly crowded and rapidly decreasing in size to the tip; only nine flagellar segments are present, the terminal segment apparently formed by the fusion of two small segments. Head dull gray; on vertex behind antennæ and between the eyes, a conspicuous black, circular depression.

Pronotum dark gray, the scutellum reddish brown. Mesonotal praescutum dull whitish gray with three clearer gray stripes; remainder of the mesonotum dark, light gray pruinose, the postnotum blackened posteriorly. Pleura dark, light gray pruinose; dorso-pleural membrane light brown. Halteres dull yellow, the tips of the knobs a little darkened. Legs with the coxæ obscure yellow, the bases indistinctly pruinose; trochanters dull yellow; legs comparatively stout and hairy; femora brownish yellow, the tips conspicuously dark brown; tibiæ brown, the tips darker brown; tarsi dark brown. Wings with a strong brownish yellow tinge, cells C and Sc more yellowish; central portion of the disk clearer; a brown tinge in cell R from arculus to beyond the origin of R_s ; stigma and a conspicuous seam along the cord dark brown; h and Sc_2 narrowly seamed with brown; veins dark brown. Venation: Sc_2 ending opposite the origin of R_s ; R_s angulated and spurred at origin; $r-m$ connected with R_s about its length before the fork; R_{2+3} a little longer than R_3 ; R_2 about one-half or less R_1 plus R_3 ; R_{4+5} about equal to R_3 , shorter than its branches; cell 1st M_2 closed; m a little shorter than the petiole of cell M_1 ; basal deflection of Cu_1 at fork of M ; fusion of M_3 and Cu_1 extensive, longer than the basal deflection of Cu_1 alone.

Abdomen with the first tergite obscure yellow basally, the posterior two-thirds darkened; tergites two to four obscure brownish yellow with a broad, ill-defined median stripe; remaining tergites dark, gray pruinose; sternites similar but segments two to four without median stripe. Male hypopygium with the pleural appendage a shiny, obtuse arm that is densely set with more than a score of blackened spines, directed mesad, the whole structure resembling a mace, the mesal end more pointed; ventral margin of this appendage armed with a dense brush or comb of spinous bristles.

Habitat: Japan (Honshiu). Holotype, ♂, Mt. Hakuba, Province of Shinano, July 20, 1918 (S. Issiki). Type in the collection of the Agricultural Experiment Station, Taihoku.

Nesopeza Alexander.

Nesopeza taiwania sp. n.

General coloration dark brown, the praescutal stripes paler than the ground-color; antennæ of male comparatively short; abdomen dark brown, the hypopygium paler.

Male—Length, 8.5 mm.; wing, 10 mm.

Generally similar to *N. orientalis* (Brunetti), differing as follows:

Antennæ of male much shorter, if bent backward not extending far beyond the base of the abdomen, provided with conspicuous verticillate setæ; in *orientalis* the male antennæ are long, extending at least to the base of the fourth abdominal segment and the antennal verticals are very small. Head shiny dark brown. Mesonotal praescutum dark brown with three paler brown stripes, the median stripe divided by a capillary darker line; scutal lobes dark brown, the median area pale. Mesepisternum shiny dark brown, the remaining pleurites paler. Halteres pale, the knobs dark brown. The legs are broken in the type, but Edwards describes them as having the white apices less extensive. Wings suffused with darker; stigma oval, dark brown; R_s less arcuated at origin; R_{2+3} longer than the basal deflection of Cu_1 . Abdomen dark brown, the hypopygium brighter.

Habitat: Japan (Taiwan). Holotype, ♂, Ringaurin, Nanto, December 18, 1916 (T. Shiraki). Type in the collection of the Agricultural Experiment Station, Taihoku. An additional male in the collection of the British Museum (Natural History).

Edwards (Ann. Mag. Nat. Hist., ser. 9, vol. 8, p. 106; 1921) records this species from the type-locality. His material was badly damaged and was referred provisionally to *N. orientalis* (Brunetti). A comparison of the type of *N. taiwania* with metatypes of *N. orientalis* kindly sent me by Brunetti shows the two species to be distinct.

Pselliophora Osten Sacken.**Pselliophora vulcan** sp. n.

General coloration obscure yellow and dark brown; mesonotal praescutum dark brownish black; posterior tibiae with a broad white ring; wings dark brown with a conspicuous yellow band before cord; abdomen with the apex broadly blackened.

Male—Length, 16 mm.; wing, 12.8 mm.

Frontal prolongation of the head brown, narrowly yellowish dorso-medially; palpi pale brownish testaceous, the terminal segment dark brown. Antennae with the scape obscure brownish yellow; flagellum dark brown, the branches brownish black. Head brown, more reddish brown posteriorly.

Pronotum brown, the scutellum obscure yellow. Mesonotal praescutum brownish black, only the lateral margins a little paler; a small, yellow, V-shaped mark immediately cephalad of the suture; remainder of mesonotum dark brown. Pleura dark brown, sparsely variegated with yellow; dorso-pleural membrane yellow; an elongate yellow mark on the lateral sclerites of postnotum and the caudal portion of mesepimeron. Sternites dark brown, the dorsal margin of the mesosternum between the mid- and hind-coxae yellow. Halteres brown, the base of the stem narrowly yellow. Legs with the coxae dark brown, the basal margin of the posterior coxae pale; trochanters dark brown; femora brownish black, only the extreme bases paler; tibiae black, posterior tibiae with a broad, yellowish white ring beyond the base, this ring barely indicated on the mid-tibiae; tarsi black. Wings dark brown; cells *Cu*, *1st A* and *2nd A* more brownish gray; a broad yellow crossband extending almost across the wing before the cord, including cells *C*, *1st R*₁ and the outer ends of cells *R* and *M*; a narrower extension follows along vein *Cu*₂ in cells *Cu*₁ and *Cu* to the wing-margin; the proximal half of the stigma lies in this yellow band and is much brighter colored; indistinct paler areas as follows: Cell *C* before *h*; the extreme bases of cells *R*, *M* and *Cu*; an indistinct pale crossband about mid-length of cells *Cu* and *1st A*; wing axil conspicuously dark brown, faintly margined with yellow; an oblitative area before the cord, traversing cell *1st M*₂. Wing-petiole fringed with yellow hairs. Venation: Cell *M*₁ narrowly sessile; *m-cu* distinct.

Abdomen with the basal tergite brown; second tergite yellow on more than the basal half, the apex brown; tergites three to five obscure yellowish brown, the posterior margins darker; remaining tergites black; sternites one to six yellow, the posterior margins darkened; terminal sternites black. Male hypopygium large, black, the ninth segment long and cylindrical. Ninth tergite large with a very deep V-shaped notch, the lateral lobes terminating in subacute shiny points, the ventro-mesal sides of the lobes microscopically punctured. From the region of the ninth sternite there juts dorsad two conspicuous appendages, an inner, cylindrical dark lobe that is covered with a dense, short, golden pubescence and with long bristles on outer face. What is

presumably the gonapophyse appears as an acute, chitinized spine with the base broad, the proximal face with microscopic, longitudinal, parallel ridges, jutting dorsad from the notch of the ninth sternite, from the base of the notch sending ventrad two connate cylindrical arms. Eighth sternite not projecting.

Habitat: Japan (Honshiu). Holotype, ♂, Island of Oshima, Tokyo-Fu, July 16, 1918 (T. Shiraki). Type in the collection of the Agricultural Experiment Station, Taihoku.

Pseliophora vulcan is related to *P. fumiplena* (Walker) and *P. flavibasis* Edwards, but is very distinct from both.

Tipula Linnæus.

Tipula curvicauda sp. n.

General coloration gray; mesonotal praescutum shiny black, only sparsely pruinose; wings brownish yellow, stigma oval, dark brown; abdomen yellow with two sublateral brown stripes, the terminal segments entirely brownish black; male hypopygium massive, subglobular; outer pleural appendage larger than the inner, appearing as a strongly curved, cylindrical arm.

Male—Length, 18 mm.; wing, 22 mm.

Frontal prolongation of the head grayish pruinose; palpi and mouth-parts brown. Antennæ with the scapal segments light yellow, the flagellum broken. Head dark, heavily gray pruinose.

Pronotum gray, narrowly yellowish medially. Mesonotum black, the praescutum only thinly dusted with gray, especially laterally to leave four narrow blackish stripes; scutum and postnotum more heavily pruinose. Pleura light gray pruinose; dorso-pleural membrane light yellow. Halteres obscure brownish yellow. Legs with the coxæ light gray, the apices yellow; trochanters yellow; remainder of the legs broken. Wings with a strong brownish yellow tinge, the base and cells *C* and *Sc* brighter yellow, stigma oval, dark brown; an obliterative area before the stigma, extending from the end of cell *R* across the base of cell 1st *M*₂ into *M*₄, narrowly interrupted by a brown cloud at *r-m* and the deflection of *R*₄₊₅; veins dark brown. Venation: *R*s longer than *R*₂₊₃, but shorter than *R*₃; *R*₂ persistent; petiole of cell *M*₁ shorter than *m*; cell 1st *M*₂ pentagonal; *m-cu* punctiform, at about one-third the length of cell 1st *M*₂.

Abdomen with the basal tergite and proximal half of second tergite yellow; tergites two to five yellow with broad, dark brown, sublateral stripes that gradually obliterate the narrow, pale, median vitta; lateral margins of tergites two to seven broadly pale; caudal margins of tergites five and six more narrowly pale; eighth and ninth segments brownish black. Basal sternites yellow, the terminal segments dark brown. Hypopygium large and conspicuous, subglobular, tilted at an angle to the remainder of the abdomen. Ninth tergite massive, the caudal margin with a very broad U-shaped notch. Outer pleural appendage

very remarkable, a long, powerful arm that is strongly curved before midlength. Eighth sternite unarmed.

Habitat: Japan (Honshiu). Holotype, ♂, Kamikohti, Province of Shinano, July 13, 1918 (S. Issiki). Type in the collection of the Agricultural Experiment Station, Taihoku.

***Tipula microcellula* sp. n.**

General coloration yellowish brown, sparsely pruinose; antennæ of male elongate; wings subhyaline, stigma brown; cell *1st M*₂ very small, pentagonal; abdomen black, only the basal tergites paler sublaterally.

Male—Length about 9 mm.; wing, 10.5 mm.

Frontal prolongation of the head obscure brownish yellow, darker above; nasus long and slender; palpi yellowish brown, the terminal segments dark brown. Antennæ elongate, if bent backward extending about to the base of the third abdominal segment; scape and base of first flagellar segment obscure yellow; remainder of antenna dark brown, the basal enlargements a little darker. Head obscure yellowish brown, darker posteriorly; a capillary, median, brown vitta.

Mesonotal praescutum yellowish gray with three very indistinct brighter brown stripes, the median stripe split by a capillary gray vitta; remainder of the mesonotum reddish brown, dark gray pruinose. Pleura reddish brown, the mesepimeron more testaceous, the pleura sparsely pruinose. Halteres dark brown, the extreme base of the stem yellow. Legs with the coxæ obscure yellow, narrowly darkened basally; trochanters obscure yellow; femora obscure brownish yellow, the tips darkened; tibiae similar, the tips narrowly darkened; tarsi black, the base of the metatarsi paler. Wings subhyaline; stigma conspicuous, brown; veins brownish black, very narrowly and indistinctly margined with darker; an obliterative area before the stigma, crossing cell *1st M*₂. Venation: *Sc*₂ ending about opposite five-sixths the length of the long sector; *R*₂₊₃ a little more than one-half *Rs*; *R*₂ straight, both sections in alignment, the basal section only a little shorter than the terminal section; *R*₂₊₃ and *R*₃ in alignment; cell *1st M*₂ very small, pentagonal, the first and second sections of *M*₁₊₂ long, the second section of *M*₃₊₄ still longer; *m* and the first section of *M*₃₊₄ short; cells *M*₁, *2nd M*₂ and *M*₄ very deep; *m-cu* punctiform; cell *2nd A* moderately wide.

Abdomen brownish black, the five basal tergites with a faintly indicated paler sublateral stripe; hypopygium black. Male hypopygium small. Ninth tergite entirely separate from the sternite, the pleurite incompletely cut off from the sternite by a long dorsal and a shorter ventral suture. Ninth tergite black with a very deep U-shaped notch, the base of which is occupied by a slightly lower, shiny shelf; lateral lobes rather narrow, the tips obtuse. Ninth pleurite triangular, the apex produced caudad into a conical lobe; outer pleural appendage cylindrical with elongate bristles. Ninth sternite with a very deep, parallel-sided incision. Eighth sternite unarmed.

Habitat: Japan (Taiwan). Holotype, ♂, Funkiko, altitude about 6,000 feet, April 25, 1917 (T. Shiraki). Type in the collection of the Agricultural Experiment Station, Taihoku.

In its venation, *T. microcellula* resembles the African *T. dolichopezoides* Alexander.

***Tipula edwardsella* nom. n.**

New name for *Tipula flavicosta* Edwards, Ann. Mag. Nat. Hist., ser. 9, vol. 8, pp. 106, 107; 1921; preoccupied by *T. flavicosta* Alexander, Proc. U. S. Nat. Mus., vol. 49, pp. 187, 188; 1915.

Mr. Edwards has suggested that I rename his species which was found to be preoccupied. It is with pleasure that this handsome crane-fly is dedicated to Mr. Edwards in appreciation of his critical studies on the Tipulidæ of Taiwan.

Tipula edwardsella belongs to the *mutila* group, a Palæartic aggregation that is now known to include the following species: *T. mutila* Wahlgren (N. Europe), *T. flavocostalis* Alexander (Japan, Honshiu to Karafuto), *T. percara* Alexander (China, Kwei-chow) and the present species, which is only known from the highest mountains of Taiwan (altitude 10,000 feet).

Tipulodina Enderlein.

***Tipulodina nipponica* sp. n.**

General coloration brownish plumbeous; femora without a pale subterminal ring; fore tibia with one white ring, posterior tibia with two white rings; metatarsi with more than basal half black; wings yellowish subhyaline with a heavy brown pattern.

Female—Length to base of ovipositor, 25 mm.; wing, 19.5 mm.

Frontal prolongation of the head light gray; nasus and palpi brownish black. Antennæ with first scapal segment light yellow, the tip faintly darkened; second segment brownish yellow; flagellum black. Head silvery gray in front, passing into dull gray on the vertex.

Mesonotal praescutum light brownish gray with three very broad, dark brownish plumbeous stripes, the broad median stripe divided by a capillary, dark brown line; remainder of mesonotum dark brownish plumbeous. Pleura light silvery gray, the dorso-pleural membrane light yellow. Halteres brown. Legs with the coxæ light gray pruinose; trochanters yellow; femora obscure yellow, the tips broadly blackened, narrowest on fore legs, broadest on posterior legs; no pale subterminal ring on femora; tibiæ dark brown, fore tibia with a rather narrow (3.5 mm.) white ring before the subequal black tip; middle legs broken; posterior tibia with two white rings, a narrower ring (3 mm.)

immediately beyond the base, a broader (5 mm.) ring before the narrow (3 mm.) black tips, the intermediate black band being approximately equal in extent to the two white bands combined (8 mm.); metatarsi white with from three-fifths (fore legs) to more than half (hind legs) black; remainder of tarsi white, only the terminal segment a little darkened. Wings yellowish subhyaline, heavily marked with brown; cell *Sc* and the stigma dark brown; a brown seam along the cord, interrupted at the deflection of M_{1+2} ; wing-tip in cells R_2 , R_3 , R_5 and the distal half of M_1 dark brown; a broad brown seam along outer end of vein *M*, basal deflection of M_{3+4} , the basal deflection of Cu_1 and Cu_2 , almost filling cell Cu_1 ; a small, subhyaline droplet in the base of cell Cu_1 and another in the end of cell *M*; cell *Cu* and 1st *A*, except the base, clouded with brown; veins issuing from cell 1st M_2 seamed with brown; veins dark brown. Venation: R_s only a little shorter than R_{2+3} ; petiole of cell M_1 shorter than *m*; cell 2nd *A* very narrow.

Abdominal tergites dark brown, the caudal margins of the segments very narrowly, the lateral margins more broadly, buffy yellow; sternites more uniformly buffy yellow, the terminal segment darkened; ovipositor broken beyond base.

Habitat: Japan (Seikaido). Holotype, ♀, Yabakei, August 6, 1918 (T. Shiraki). Type in the collection of the Agricultural Experiment Station, Taihoku.

Tipulodina brunettiella sp. n.

The specimen determined by Brunetti as *Tipulodina pedata* (Rec. Ind. Mus., vol. 15, pt. 5, p. 272; 1918, description; Fauna Brit. India, Dipt. Nematocera, Pl. 5, fig. 4; 1912, figure) is obviously not this species and represents an undescribed form which is named as above. It is distinguished from all described species of the genus by the black costal cell. Brunetti further characterizes the fly as having only the fore femora with a moderately broad, pale apical ring and the basal half of the fore metatarsi and basal third of the hind metatarsi black. Brunetti has determined this species as being *pedata*, although it lacks the brown blotch near mid-length of cell *M*. Wiedemann's description is very clear on this point and I have no doubt but that the species earlier (Proc. U. S. Nat. Mus., vol. 49, pp. 183-185; 1915) determined as *pedata* by the writer really pertains to the species.

Tipulodina taiwanica sp. n.

Related to *T. magnicornis* Enderlein; posterior femora with a pale subterminal ring; posterior tibiae with a single white ring, subterminal in position; male hypopygium with the pleural appendages not conspicuously projecting.

Male.—Length about 28 mm.; wing, 22 mm.

Frontal prolongation of the head brown, narrowly darker dorso-medially; palpi dark brown. Antennæ much longer than in *T. pedata*, if bent backward extending nearly to the base of the halteres; first scapal segment obscure yellow; remainder of antenna black. Head with the front and anterior part of the vertex light yellow; remainder of the head brown, the median line narrowly darker, the inner margin of the eyes narrowly paler.

Mesonotal praescutum obscure brownish yellow with three brown stripes, the median stripe narrow, the lateral margins fading into a paler brown; lateral stripes broad but ill-defined; remainder of mesonotum brown with a darker capillary brown median line, the lateral margins paler. Pleura pale yellow, the lateral sclerites of the postnotum before the halteres with a brown margin. Halteres dark brown. Legs with the coxæ pale, the posterior coxæ with a large brown basal spot; trochanters yellow; legs broken except one posterior leg; in this the femora have a distinct pale subterminal ring followed by the subequal black apex; tibiæ with only the subterminal white ring, this subequal (3.7 mm.) to the black tips; tarsi broken beyond base. Wings subhyaline; cell *Sc* and the stigma dark brown; a tiny brown cloud at origin of *Rs* and a broad seam along the cord, interrupted on the basal deflection of M_{1+2} ; Cu_2 and the deflection of Cu_1 conspicuously seamed with brown; a conspicuous brown seam in the outer end of cell R_2 and the distal half of R_3 . Venation: Almost as *T. magnicornis* Enderlein (Sumatra); petiole of cell M_1 shorter than m ; basal deflection of Cu_1 at about one-fourth the length of the cell.

Abdomen reddish brown, the bases of the tergites narrowly more yellowish. Male hypopygium very different in structure from *T. pedata* or *T. magnicornis*; shiny reddish, short-cylindrical, tilted at an angle to the remainder of the abdomen. Ninth tergite very broad and tumid, the caudal margin with a very shallow emargination that bears two widely separated knobs that are clothed with dense short bristles. Tergite and pleurite fused; pleural appendage not projecting beyond the genital chamber, a complex flattened blade with the posterior margin shiny and heavily blackened; ventral pleural suture long and straight. Ninth sternite tumid, with a profound and very narrow V-shaped median notch. Eighth sternite not conspicuously produced caudad.

Habitat: Japan (Taiwan). Holotype, ♂, Shinchiku, July 1-30, 1918 (J. Sonan and K. Miyake). Type in the collection of the Agricultural Experiment Station, Taihoku.