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NEW SPECIES OF JAPANESE CRANE-FLIES

PART II

(*Diptera, Tipulidæ*)

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The undescribed species of crane-flies discussed in this paper were included in material sent to the writer for determination by Dr. T. Shiraki. The specimens are mostly from Teshio, northern Hokkaido, and were collected by Mr. T. Isshiki. My sincere thanks are extended to Dr. Shiraki and Mr. Isshiki for the privilege of studying these collections. The types are preserved in the collection of the writer; additional specimens are in the Entomological Collection of the Agricultural Experiment Station of Formosa.

There are a few names of Oriental Tipulidæ that require to be changed since they are primary homonyms of earlier names in the same family. These homonyms were created by Brunetti. The writer had notified Mr. Brunetti of this fact but as he does not consider it necessary to re-name these forms (*Rec. Ind. Mus.*, vol. 15, p. 274, 1918), it devolves upon the

writer to propose these new names. Although Brunetti has failed to subscribe to this principle advocated by the International and other codes, he has inadvertently done so in re-naming *Ctenacroscelis pallidus* (Walker) as *C. borneensis* (Brunetti). The following species are herewith re-named as being primary homonyms of earlier names in the same genus:

Limnobia garoensis new name for *Limnobia longipennis* Brunetti (Rec. Ind. Mus., vol. 15, pp. 292, 293, 1918), nec *L. longipennis* Schummel (Beitr. zur Entomol., vol. 1, p. 104, 1829).

Limnobia brunettii new name for *Limnobia nigra* Brunetti (Fauna Brit. Ind., Dipt. Nemat., p. 404, 1912), nec *L. nigra* Wiedemann (Ausserer. zweifl. Ins., vol. 1, p. 27, 1828).

Erioptera bengalensis new name for *Erioptera flava* Brunetti (l. c., p. 455), nec *E. (Empeda) flava* (Schummel) (Beitr. zur Entomol., vol. 1, p. 148, 1829).

Limnophila (Dicranophragma) venustipennis new name for *L. (D.) pulchripennis* Brunetti (l. c., p. 524), nec *Limnophila pulchripennis* Meunier (Mon. Tipulidæ et Dixidæ de l'Ambre Baltique, p. 379, 1906).

Tipula perelegans new name for *Tipula elegans* Brunetti (l. c., p. 323), nec *T. elegans* Fabricius (Syst. Antl., p. 26, 1805).

Genus LIBNOTES Westwood

Libnotes longistigma, new species.

Male.—Length, 15 mm.; wing, 21.5 mm.

Close to *L. strigivena* (Walker) but much larger.

Rostrum and palpi dark brown. Antennæ with first segment dark brown; flagellar segments oval, pale brownish yellow. Head fawn colored.

Mesonotum fawn colored with greenish tints; lateral margin broadly blackened, these lines passing beneath the root of the halteres to the abdomen, not suffusing anterior end of

praescutum. Pleura yellow; linear brown marks on pro- and mes-episterna. Legs with the coxæ yellow, outer face of fore coxa conspicuously dark brown; femora yellow with the tips conspicuously darkened, the coloration most intense as a narrow dark brown subterminal ring; tips of tibiæ dark brown. Wings as in *L. strigivena*; stigma very elongate.

Abdomen with tergites brownish fawn color, trilineate with dark brown; median stripe interrupted at the posterior margin of the segments and becoming obsolete behind.

Habitat.—Japan.

Holotype, male, Koto sho Islands, Formosa, March 15–April 10, 1920 (T. Okuni).

Genus LIMNOPHILA Macquart

Limnophila (Phylidorea) sapporensis, new species.

Male.—Length, 8.5 mm.; wing, 8.7 mm.

Belongs to the *ferruginea* group; allied to *L. melanommata* Alexander.

Rostrum and palpi dark brown. Antennæ with the first segment dark brown, sparsely pruinose; remainder of antennæ yellow, the terminal segments a little darkened. Head gray.

Pronotum brown. Mesonotum ferruginous, the praescutum with a capillary dark brown median stripe, broadest in front, gradually narrowed posteriorly, becoming obsolete before the suture; posterior margin of scutellum margined with brown. Pleura orange yellow. Halteres yellow, the knobs a little darker. Legs with the coxæ and trochanters yellow; femora dark brown, the bases obscure yellow, broadest on the posterior femora where they include about the basal third; remainder of legs brown. Wings with a faint yellowish tinge, more saturated in the costal and subcostal cells; stigma and wing-apex faintly darkened. Venation: As in the *ferruginea* group; cell *1st M*₂ small, subrectangular; cell *M*₁ a little longer than its petiole.

Abdomen brownish yellow, the seventh to ninth segments dark brown, including the hypopygium.

Habitat.—Japan.

Holotype, male, Sapporo, July 27, 1908 (T. Shiraki).

Genus PSELLIOPHORA Osten Sacken

Pselliophora galeata, new species.

Male.—Length, about 14 mm.; wing, 13.3 mm.

Generally similar to *P. isshikii* (Matsumura), differing as follows: Antennal flagellum uniformly dark brown; first flagellar segment dark brown, the pectination much longer than in *P. isshikii*. Mesonotal praescutum with three conspicuous brownish black stripes; each scutal lobe with two confluent brownish black spots. Legs with the femoral tips narrowly dark brown; tibiae and tarsi dark brown, the bases of the tibiae brighter. Wings yellow, the apex of each dark brown; bases of cells R_2 , R_3 , R_5 , M_1 and 2nd M_2 of the ground-color. R_s much shorter and more strongly arcuated than in *P. isshikii*, feebly spurred at origin; inner end of cell 1st M_2 nearly square. Abdomen orange with a narrow dark brown stripe, expanded on the eighth and ninth tergites to cover the entire sclerites. Male hypopygium with the eighth sternite projecting caudad and ventrad into a conspicuous hood-shaped structure.

Habitat.—Japan.

Holotype, male, Oshima, Honshu, July 16, 1918 (T. Shiraki).

Pselliophora septentrionalis, new species.

Male.—Length, 15 mm.; wing, 14.4 mm.

Generally similar to *P. isshikii* (Matsumura), differing as follows: Antennal flagellum bicolorous, the stem of each segment fulvous, the pectinations and terminal segments black. Body entirely a deep shiny fulvous, without markings. Legs entirely yellow. Wings yellow, the apex of each in cells R_2 , R_3 and R_5 weakly infuscated. R_s long, gently arcuated at origin. Male hypopygium with the eighth sternite not at all projecting.

Habitat.—Japan.

Holotype, male, Teshio, July 12, 1916 (T. Isshiki).

Paratype, male, Chuzenji, July 21, 1910 (Edme. Gallois).

The paratype is in the Paris Museum and was included in material sent me for determination by Mons. Eug. Séguy. It is a large male (length, 20 mm.; wing, 18 mm.) which agrees in all essential details with the type above described.

Genus TIPULA Linnæus

Tipula isshikii, new species.

Male.—Length, 13.5 mm.; wing, 16 mm.; antenna about 9 mm.

Frontal prolongation of head gray pruinose above, light brown laterally; palpi pale brown. Antennæ with the scape yellow; first flagellar segment brownish yellow; remainder of flagellum brownish black; antennæ of male unusually elongate, if bent backward extending to about opposite base of fourth abdominal segment. Head light gray.

Mesonotal praescutum buffy plumbeous with four brown stripes, the intermediate pair split by a capillary pale line, the lateral and intermediate stripes practically confluent; scutum gray, lobes darker gray; scutellum dark testaceous brown; postnotum gray. Pleura dark with a pale, longitudinal, ventral stripe, the entire pleura heavily pruinose; mesosternum dark. Halteres obscure yellow; knobs a little darker. Legs with the coxæ gray pruinose; trochanters yellow; femora brownish yellow, soon passing into the broad, dark brown tips; tibiae brown, the tips darker; tarsi dark brown. Wings brownish subhyaline, the base and cells C and Sc more yellow; stigma dark brown; faint and indistinct brown seams along the cord; an obliterative area before the stigma and a second crossing cell 1st M_2 . Venation: R_s a little longer than R_3 ; R_2 persistent; petiole of cell M_1 longer than m ; $m-cu$ distinct.

Abdomen yellow at base, gradually darkening to the dark brown apex, this latter including segments six to nine; lateral margins of tergites four to seven rather broadly pale, margined internally by a narrow, blackish line that widens out on the posterior segments. Male hypopygium with the ninth

tergite extensive, the caudal margin with a broad U-shaped median notch, the lateral lobes broadly and obtusely rounded; at base of the U-shaped notch beneath are two triangular chitinized lobes that lie parallel and close together, the tips subacute. Pleural suture indicated only beneath; pleural appendages large, blackish. Ninth sternite profoundly incised medially, the caudal margin of each half provided with abundant long, yellowish, decussate setæ. Eighth sternite unarmed.

Habitat.—Japan.

Holotype, male, Teshio, July 12, 1916 (T. Isshiki).

Tipula shogun, new species.

Female.—Length, about 18 mm.; wing, 20.8 mm.

Frontal prolongation of head relatively short, dark brown, nasus distinct; dorsum of prolongation pruinose. Antennæ with scapal segments buffy; flagellum dark brown. Head light gray, more buffy surrounding the antennal bases.

Mesonotum light gray, the praescutum with four narrow brown stripes; scutal lobes with two dark gray spots. Pleura light gray, the dorso-pleural membrane obscure yellow. Halteres yellow. Legs with the coxæ gray; trochanters yellow; remainder of legs dark brown, the femoral bases yellowish, narrowest on the fore legs. Wings yellowish subhyaline, the costal and subcostal cells yellow; stigma dark brown; a faint and sparse gray clouding in the ends of cells R_2 , R_3 , R_5 and in the anal cells; cord narrowly seamed with brownish gray; veins brown, more yellowish in the costal and subcostal cells. Venation: R_s long, straight; cell R_2 comparatively large; cell $1st M_2$ small; first section of M_3+4 shorter than $r-m$.

Abdominal tergites obscure yellow, with a conspicuous dark brown median stripe, beginning on the first segment, on the terminal segments broadening out and suffusing the entire sclerites; on tergites two to four there are indistinct brown sublateral blotches; terminal tergites more or less pruinose; sternites buffy, last segment gray. Ovipositor small, valves fleshy. Tergite terminating in two slightly divergent pale flaps; sternal valves very short.

Habitat.—Japan.

Holotype, female, Teshio, July 3, 1916 (T. Isshiki).

Tipula teshionis, new species.

Male.—Length, about 18 mm.; wing, 22–23 mm.

Frontal prolongation of head brown, gray pruinose dorsally; palpi dark brown. Antennæ short; scapal segments yellowish testaceous; flagellar segments subunicolorous, dark brown, the basal enlargement a little darker than the remainder of each segment. Head gray with a capillary brown median line on the vertex; anterior part of vertex, surrounding the eyes, yellowish.

Mesonotal praescutum obscure brownish yellow with four brown, gray pruinose stripes; scutum gray, each lobe with two darker gray marks; scutellum brownish gray; postnotum gray, the median portion with a brownish gray inverted triangle that is produced into a point to the caudal margin. Pleura dark brown with a whitish gray longitudinal stripe passing above coxæ and beneath halteres; dorso-pleural membranes broadly buffy yellow; mesosternum largely dark. Halteres yellowish brown. Legs with the coxæ gray pruinose; trochanters yellow, the apices beneath with a dark brown spot; femora brownish yellow, the tips broadly brownish black; remainder of legs reddish brown, passing into black on the tarsi. Wings with gray and brown spots and clouds on a subhyaline ground; stigma and a spot at origin of R_s brown; a brown cloud along cord and near midlength of vein $1st A$; subhyaline spots near the ends of cells M_1 , $2nd M_2$, M_4 , Cu_1 , two in cell $1st A$ and one in $2nd A$; an oblique pale line across cell M ; bases of cells R_2 , R_3 , R_5 , M_4 and Cu_1 and most of cell $1st M_2$ pale; apical two-fifths of cell R_5 pale.

Abdominal tergite one brown; segments two to five reddish brown, the lateral margins of the tergites rather narrowly pale, bordered internally by a narrow brown line; remainder of abdomen dark brown; sternites gray pruinose. Male hypopygium with the ninth tergite transverse, not blackened; caudal margin with a very small and shallow median notch, the lateral angles of which are produced ventrad into conspicuous

black spines; the margin of the notch is provided with short inconspicuous yellowish setæ. Pleural appendages conspicuous, appearing as curved paddle-like blades that jut across the genital chamber, each one before its tip on the caudal margin with a prominent spinous lobe.

Habitat.—Japan.

Holotype, male, Teshio, July 5, 1916 (T. Isshiki).

Paratopotype, male, July 4, 1916.