

THE CRANE-FLY FAUNA OF THE SOUTHERN KURILES (Tipulidae, Diptera)

By Charles P. Alexander *

I am greatly indebted to Dr. Satoru Kuwayama for the privilege of studying the important collections of crane-flies, Tipulidae, that were taken in the Southern Kurile islands (Minami-Chishima) during the summer of 1940 by Kuwayama and Mr. Y. Sugihara. Three islands of the southern group were visited, these being Shikotan, Kunashiri (Kunashir) and Etorofu (Iturup). Very little of the crane-fly fauna of these islands had been known and virtually all of the records included in this report represent significant extensions of range. On the basis of phytogeographical survey of the Middle Kuriles, Dr. M. Tatewaki (1932) concluded that the Etorofu Strait between Etorofu and Urup was most important boundary line between the Engler's Temperate East Asiatic Region and the Subarctic Region, and proposed the name of the Miyabe's Line for the strait above mentioned. Dr. K. Miyabe, who died in April 1951 at the age of 92, in his younger years had been a student of botany at Harvard University under Dr. Asa Gray. Dr. Miyabe later discussed for the first time the importance of the Etorofu Strait as a boundary line for the distribution of plants. My examination of the present collection of the crane-flies taken in the Southern Kuriles indicates that the southern group shows a marked affinity with Hokkaido while differing from the middle and northern groups. The identified materials of the present collection will be placed in the Entomological Laboratory of the Hokkaido National Agricultural Experiment Station in Sapporo, in Memory of Kuwayama.

Tipulinae

1. *Ctenophora (Ctenophora) yezoana* Matsumura

Ctenophora yezoana Matsumura; Thous. Ins. Japan, 2: 124, pl. 29, fig. 6; 1905.

Ctenophora (Ctenophora) jezoana, Takahashi; Mushi, 34: 104-105, pl. 17, fig. D (wing), pl. 18, figs. D, M (♂ hyp.); 1960.

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Widely distributed in Hokkaido and Honshu.

SHIKOTAN: 1 ♀, Noto-ro-Shakotan, July 31, 1940 (Kuwayama & Sugihara).

2. ***Nephrotoma minuticornis*** Alexander

Nephrotoma minuticornis Alexander; Ann. Ent. Soc. America, 14: 134; 1921.

The type was from Sapporo, Hokkaido, collected by Satoru Kuwayama.

The species is known from Sachalin south to Shikoku.

KUNASHIRI: 1 ♀, Tôfutsu, August 17-18, 1940 (Kuwayama & Sugihara).

3. ***Nephrotoma parvirostra*** Alexander

Nephrotoma parvirostra Alexander; Philippine Jour. Sci., 24: 600-601; 1924.

The types were from Sapporo, Hokkaido, taken in 1921-1922 by Esaki, Hori and Kuwayama.

KUNASHIRI: 1 ♀, Furukamappu, August 13-14, 1940 (Kuwayama & Sugihara).

SHIKOTAN: 1 ♂, Aimisaki-Kiritôshi, July 29, 1940 (Kuwayama & Sugihara).

4. ***Nephrotoma sachalina*** Alexander

Nephrotoma dorsalis sachalina Alexander; Philippine Jour. Sci., 24: 597; 1924.

The type, a male, was from Toyohara, Sachalin, collected July 16, 1922, by Tei-so Esaki.

KUNASHIRI: 1 broken ♂, Pandomari, August 10, 1940 (Kuwayama & Sugihara); 1 ♀, Chinomiji, August 5-6, 1940 (Kuwayama & Sugihara).

5. ***Tipula (Schummelia) acirostris*** Alexander

Tipula (Schummelia) acirostris Alexander; Trans. Shikoku Ent. Soc., 4: 25-26; 1954.

Tipula (Schummelia) acirostris, Alexander; Philippine Jour. Sci., 83: 268-269, pl. 1, fig. 8 (venation), fig. 9 (♂ hyp.); 1954.

Tipula (Platytipula) acirostris, Savchenko; Fauna USSR, Diptera II, No. 3: 80-81; 1961.

Types from Shikoku (Omogo Valley and Mount Ishizuchi).

SHIKOTAN: 1 ♂, Kiritôshi-Noto-ro, July 30, 1940 (Kuwayama & Sugihara).

6. ***Tipula (Yamatotipula) latemarginata*** Alexander

Tipula latemarginata Alexander; Ann. Ent. Soc. America, 14: 128-129; 1921.

Tipula latemarginata, Kuwayama; Insect pests and diseases of paddy rice; Hokuno Series., 1: 72-74; 1946.

Tipula (Yamatotipula) latemarginata, Ishida; Ann. Rept. Hyogo Agr. Coll., 4: 133; 1954 (issued 1955).

Tipula (Yamatotipula) latemarginata, Savchenko; Fauna USSR, Diptera II, No. 3: 269-270, figs. 157, 158 (♂ hyp.); 1961.

The types were from various stations in Hokkaido, collected in 1916 by Satoru Kuwayama. The species is widely distributed in eastern Asia as far south as Honshu. It is one of several members of the genus that is of economic importance (Kuwayama, 1946).

KUNASHIRI: 1 ♂, Seseke-Nakanokotan, August 16, 1940 (Kuwayama & Sugihara).

7. *Tipula (Acutipula) bipenicillata* Alexander

Tipula bipenicillata Alexander; Philippine Jour. Sci., 24 : 603-604 ; 1924.

Tipula (Acutipula) bipenicillata, Savchenko; Fauna USSR, Diptera II, No. 3 : 404-406, fig. 243 (♂ hyp.); 1961.

The types were from various stations in Sachalin, taken in 1922 by Teiso Esaki. Although only the female sex is available in the present material I believe the identification is correct. The related *Tipula (Acutipula) saitamae* Alexander (1920) is very similar in the female sex. The species ranges as far south as Honshu.

KUNASHIRI: 1 ♀, Chinomiji, August 5-6, 1940 (Kuwayama & Sugihara).

8. *Tipula (Acutipula) kuzuensis* Alexander

Tipula kuzuensis Alexander; Jour. N. Y. Ent. Soc., 26 : 69 ; 1918.

Tipula (Acutipula) kuzuensis, Ishida; Ann. Rept. Hyogo Agr. Coll., 5 : 60 ; 1955.

Tipula (Acutipula) kuzuensis, Savchenko; Fauna USSR, Diptera II, No. 3 ; 391-393, fig. 232 (♂ hyp.); 1961.

The type, a male, was from Kuzu, Shinano, Honshu, collected August 4, 1914 by Akio Nohira. Known also from eastern Siberia, south to Shikoku.

KUNASHIRI: 1 ♂, Chinomiji, August 5-6, 1940 (Kuwayama & Sugihara).

The darkened cloud in cell *Cu* of the wings is more reduced in size and intensity than is usual in the species.

9. *Tipula (Vestiplex) verecunda* Alexander

Tipula verecunda Alexander; Philippine Jour. Sci., 24 : 606-607 ; 1924.

Tipula (Vestiplex) verecunda, Savchenko; Fauna USSR, Diptera II, No. 4 : 152-153, fig. 105 (♂ hyp.); 1964.

The types were from various stations in Sachalin, collected in 1922 by Teiso Esaki. Eastern Asia, south to Honshu.

KUNASHIRI: 1 ♀, Okappu, August 7-8, 1940 (Kuwayama & Sugihara).

SHIKOTAN: 1 ♂, Shakotan-Chiboi, July 27, 1940 (Kuwayama & Sugihara).

10. *Tipula (Pterelachisus) flavocostalis* Alexander

Tipula flavocostalis Alexander; Ann. Ent. Soc. America, 14 : 124-125 ; 1921.

Tipula (Oreomyza) flavocostalis, Ishida; Ann. Rept. Hyogo Agr. Coll., 5 : 65 ; 1955 (issued 1956).

Tipula (Oreomyza) flavocostalis, Savchenko; Fauna USSR, Diptera II, No. 4 : 116-117, fig. 78 (♂ hyp.); 1964.

Described from various stations in Honshu, collected in 1920 by J. Machida and K. Takeuchi. The species is widely distributed in eastern Asia, as far south as Shikoku and Kyushu.

KUNASHIRI: 1 ♂, Okappu, August 7-8, 1940 (Kuwayama & Sugihara); 1 ♀, Seki-Nakanokotan, August 16, 1940 (Kuwayama & Sugihara).

The reasons for synonymizing the name *Oreomyza* Pokorny with the earlier *Pterelachisus* Rondani has been given by the writer in other papers (as in *Pacific Insects*, 1965, in press at this writing).

11. *Tipula* (*Dendrotipula*) *isshikii* Alexander

Tipula isshikii Alexander; Insec. Inscit. Menst., 9 : 183-184 ; 1921.

Tipula (*Oreomyza*) *isshikii*, Ishida; Ann. Rept. Hyogo Agr. Coll., 5 : 66 ; 1955 (issued 1956).

Tipula (*Dendrotipula*) *isshikii*, Savchenko; Fauna USSR, Diptera II, No. 4 : 466 ; 1964.

The type, a male, was from Teshio, Hokkaido, collected by T. Isshiki.

KUNASHIRI : 2 ♂♂, Chinomiji-Pondomari, August 9-10, 1940 (Kuwayama & Sugihara); one retained.

The subgenus *Dendrotipula* Savchenko was only recently (1964) proposed for the European *Tipula flavolineata* Meigen and a small group of species from eastern Asia, chiefly Japanese, including *Tipula curvicauda* Alexander, *T. dichroistigma* Alexander, *T. fortistyla* Alexander, and *T. nigrosignata* Alexander, as well as the species here discussed, all previously being assigned to *Oreomyza* Pokorný. *Tipula curvicauda* still remains insufficiently known to me and more material is desirable. This species was described from Kamikochi, Shinano, Honshu, taken by Issiki.

Cylindrotominae

12. *Cylindrotoma* (*Cylindrotoma*) *japonica* Alexander

Cylindrotoma japonica Alexander; Ann. Ent. Soc. America, 12 : 344-345 ; 1919.

Cylindrotoma japonica, Takahashi; Trans. Shikokn Ent. Soc., 6 : 81 ; 1960.

The types were from Saitama, Honshu, taken by Ryoichi Takahashi. The species is wide-spread in eastern Asia from Sachalin to Kyushu.

KUNASHIRI : 1 ♀, Tōfutsu, August 17-18, 1940 (Kuwayama & Sugihara).

13. *Diogma glabrata megacauda* (Alexander)

Limnobia glabrata Meigen; Syst. Besch. Eur. Dipt., 1 : 142 ; 1818.

Diogma glabrata, Edwards; Trans. Soc. British Ent., 5 : 17 ; 1938.

Phalacrocerca megacauda Alexander; Philippine Jour. Sci., 44 : 349-350, pl. 1, fig. 5 (venation); 1931.

Diogma glabrata megacauda, Alexander; Ann. Mag. Nat. Hist., (12) 2 : 196 ; 1949.

Diogma glabrata megacauda, Takahashi; Trans. Shikoku Ent. Soc., 6 : 82, fig. 1 (venation), fig. 2 (♂ hyp.); 1960.

The type of *megacauda* was from Norikuradake, Shinano, Honshu, taken July 26, 1929 by Jiro Machida. Known from Korea, Hokkaido and Honshu.

KUNASHIRI : 1 ♂, Chinomiji, August 5-6, 1940 (Kuwayama & Sugihara).

Limoniinae

Limoniini

14. *Limonia* (*Limonia*) near *episema* Alexander

Limonia episema Alexander; Philippine Jour. Sci., 24 : 551-552 ; 1924.

The types were from Toyohara, Sachalin, collected July 20-23, 1922 by Teiso Esaki.

KUNASHIRI: 1 ♀, Uennai, August 11-12, 1940 (Kuwayama & Sugihara); 1 ♀, Chinomiji, August 5-6, 1940 (Kuwayama & Sugihara).

The females available agree most nearly with *episema*, but the strict identity must be held in question without the male sex. I cannot identify the specimens with any of the numerous European members of the subgenus.

15. **Limonia** (*Limonia*) near **nigropunctata** (Schummel)

Limnobia nigropunctata Schummel; Beitr. zur Entomol., 1 : 112 ; 1829.

Limonia (*Limonia*) *nigropunctata*, Edwards; Trans. Soc. British Ent., 5 : 27 ; 1938.

ЕТОРОФУ: 1 ♀, Toshimoe, August 29-30, 1940 (Kuwayama & Sugihara).

In the absence of the male sex the exact identity of the present fly must be held in question. While the available specimen agrees fairly well with *nigropunctata*, it disagrees in some other regards. Head light gray. Antennal scape, pedicel and proximal flagellar segments yellow. Thorax yellow, the praescutum with three brown stripes, the lateral pair being narrow and widely removed from the central vitta. Legs with the terminal darkened ring on femora narrowly brown, the other darkenings scarcely evident (a single leg remains). Wings with extreme apical margin not darkened; darkened spots at origin of *Rs* and on *Sc*₂ evident. Abdominal tergites reddish brown, the bases more yellowed; sternites yellow.

16. **Limonia** (*Discobola*) **annulata** (Linnaeus)

Tipula annulata Linnaeus; Syst. Nat., ed. 10 : 586 ; 1758.

Limnobia argus Say; Long's Exped. to St. Peter's River, 2, app. : 358 ; 1824.

Discobola argus, Alexander; Cornell Univ. Agr. Expt. St., Mem. 25 : 892 ; 1919.

Limonia (*Discobola*) *annulata*, Alexander; Bull. Connecticut geol. nat. hist. Survey, 64 : 309-310 ; 1942.

Limonia (*Discobola*) *annulata*, Ishida; Ann. Rept. Hyogo Agr. Coll., 6 ; 133 ; 1957 (includes detailed references).

Widely distributed throughout the Holarctic and Oriental regions, in the latter occurring at high altitudes, including certain of the Malayan islands.

KUNASHIRI: 1 ♂, Uennai, August 11-12, 1940 (Kuwayama & Sugihara).

17. **Limonia** (*Dicranomyia*) **mesosternatoides** (Alexander)

Dicranomyia mesosternatoides Alexander; Ann. Mag. Nat. Hist., (9) 15 : 65 ; 1925.

Limonia (*Dicranomyia*) *mesosternatoides*, Ishida; Ann. Rept. Hyogo Agr. Coll., 6 : 138 ; 1957.

The type was from Akan, Kushiro, Hokkaido, taken September 3, 1922, by Teiso Esaki. Known also from Honshu.

KUNASHIRI: 1 ♂, 1 ♀, Uennai, August 11-12, 1940 (Kuwayama & Sugihara).

18. **Limonia** (*Rhipidia*) **septentrionis** (Alexander)

Rhipidia pulchra septentrionis Alexander; Canad. Ent., 45 : 206-207, pl. 3,

fig. 1 (wing); 1913.

Limonia (Rhipidia) pulchra, Alexander; Philippine Jour. Sci., 82 : 159 ; 1953.

The species originally was described from female specimens that were taken at Tokyo, April 25, 1912, by S. I. Kuwana and assistants. The fly long was considered to represent a more northern race *pulchra* (de Meijere), described from Java in 1904, but later (Alexander, 1953, above) believed to be insufficiently separable from the latter. It now appears to represent a valid species as based on the structure of the male hypopygium, especially the nature of the rostral spines. In the present fly these are three in number, placed in a compact group at near mid-length of the rostral prolongation of the ventral dististyle; they are unusually long and slender, with their tips directed outwardly, considerably exceeding the prolongation beyond the point of their insertion. De Meijere (1911) described and figured the male sex of *pulchra* (from Batavia, Java) showing the species similarly to have three rostral spines but these shorter and placed in a longitudinal row along the prolongation, the outermost not far from the apex of the latter.

KUNASHIRI: 1 fragmentary ♀, Furukamappu-Seseki, August 15, 1940 (Kuwayama & Sugihara).

19. *Antocha (Antocha) brevistyla* Alexander

Antocha (Antocha) brevistyla Alexander; Philippine Jour. Sci., 24 : 567-568, pl. 2, fig. 11 (♂ hyp.); 1924.

Antocha (Antocha) brevistyla, Ishida; Ann. Rept. Hyogo Agr. Coll., 6 : 147; 1957.

The type was from Sapporo, Hokkaido, collected August 17, 1922 by Teiso Esaki.

SHIKOTAN: 1♂, Shakotan, July 25-26, 1940 (Kuwayama & Sugihara).

20. *Dicranoptycha venosa* Alexander

Dicranoptycha venosa Alexander; Philippine Jour. Sci., 24 : 561-562; 1924.

The types were from various stations in Hokkaido and Sachalin, taken in 1922 by Teiso Esaki.

KUNASHIRI: 1♀, Okappu, August 7-8, 1940 (Kuwayama & Sugihara).

Pediciini

21. *Pedicia (Pedicia) kuwayamai* sp. n.

Size small (wing of female 18.5 mm.); darkened pattern of wing pale, the center of the band over the cord and the outer radial cells yellowed; no distinct whitened spot at anterior end of stigma; darkened area at origin of *Rs* unusually extensive, restricting the whitened extension into cell *R*₁.

Female. - Length about 24 mm.; wing 18.5 mm.

Rostrum light gray; palpi brown, basal segment pale. Antennae with scape pale brownish gray, pedicel pale brown, flagellum yellowed, the outer segments passing into brown. Head gray; vertical tubercle prominent.

Pronotum patterned with brown, scutellum and pretergites light yellow. Mesonotal praescutum light gray with four darker brownish gray stripes, the sides paling to yellow; scutum yellowed, the lobes anteriorly dark brown; scutellum and

postnotum yellowed, mediotergite with central part of posterior third weakly darkened. Pleura damaged in pinning, variegated yellow and brown, dorsopleural membrane yellow. Halteres light yellow. Legs with coxae and trochanters grayish white; femora yellow, tips narrowly and vaguely more darkened, especially along the outer surface; tibiae yellow, tips narrowly pale brown; tarsi brownish yellow, outwardly passing into brownish black. Wings with the darkened pattern unusually pale, cells *C* and *Sc* and the distal ends of the outer radial cells yellowed; brown band at cord broad, the central third or more yellowed, including the veins, the outer brown border continued to the wing margin along vein *R*₄; darkened mark on *Rs* unusually long, darker behind *Rs*, not reaching vein *M* behind, restricting the white pattern before the cord to a narrow invasion of cell *R*₁; no distinct pale spot in cell *R* at base of stigma, as is common in the subgenus; darkened seam along vein *Cu* narrow, vaguely attaining the wing margin in cell *Cu*. Venation: *Rs* relatively short, subequal to veins *R*₄ or *R*₅, square and spurred at origin; cord slightly less oblique than in *daimio*.

Basal abdominal tergites cinnamon yellow, the sides broadly light gray, more extensively so on outer segments; centers of tergites with brown marks forming a broken stripe; sternites more uniformly cinnamon yellow, without evident pattern. Valves of the ovipositor broken.

Holotype, a broken ♀, Uennai, Kunashiri, August 11-12, 1940 (S. Kuwayama & Y. Sugihara).

I take unusual pleasure in naming this species for Professor Doctor Satoru Kuwayama, distinguished authority in both the economic and systematic fields of entomology. Professor Kuwayama has been my dear personal friend for more than 45 years and much of our knowledge of the crane-flies of Hokkaido is due to his efforts. Although the present fly is represented only by the unique female type, the appearance is such that it appears certainly to represent a distinct species of the subgenus which is unusually well represented in eastern Asia.

Hexatomini

22. *Elephantomyia* (*Elephantomyia*) *hokkaidensis* Alexander

Elephantomyia (*Elephantomyia*) *hokkaidensis* Alexander; Philippine Jour. Sci., 24 : 580-581 ; 1924.

Elephantomyia (*Elephantomyia*) *hokkaidensis*, Ishida; Science Repts. Hyogo Univ. Agr., ser. Nat. Sci., 4, no. 1 : 11 ; 1959.

The types were from various stations in Hokkaido, collected in 1922 by Teiso Esaki.

ЕГОРОФУ : 1 ♀, Rubetsu-Toshimoe, August 29-30, 1940 (Kuwayama & Sugihara).

Eriopterini

23. *Gnophomyia* (*Gnophomyia*) *tristis* Alexander

Gnophomyia tristis Alexander; Philippine Jour. Sci., 24 : 588 ; 1924.

Gnophomyia (*Gnophomyia*) *tristis*, Ishida; Science Repts. Hyogo Univ. Agr.,