THE CADDIS-FLIES (*TRICHOPTERA*) OF JAPAN. I.—
FAMILY PHRYGANEIDÆ.

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Through the kindness of Mr. Miyake, who has generously permitted the free use of the valuable literature and collections in his possession, and has given me much valuable advice, I have recently had the opportunity of studying Japanese caddis-flies or Trichoptera. The purpose of the present study is to record the species known from Japan, offering such notes as may suggest themselves, and to describe any forms that appear to be unknown.

The present paper deals with the family Phryganeidæ, which includes some of the most beautiful caddis-flies in the world.

FAM. PHRYGANEIDÆ.

Genus *Neuronia* Leach.1. *Neuronia regina* MacLachlan.

Holostomis regina MacLachlan—Journ. Linn. Soc. London, Zool., XI, p. 104 (1871); Matsumura, Thous. Ins. Jap., i, p. 165, Pl. XII, fig. 11, ♀ (1904).

Neuronia regina Ulmer—Cat. Coll. Selys, Fasc. VI (1), p. 6, figs. 1, 2 and 3, Pl. i, fig. 1 (1907); Ulmer, Gen. Insect., Pl. XXIX, fig. 3 (1907).

This magnificent species, which is common in China, as well as in India, is not rare in Japan.

The manner of flight of this species resembles that of a certain moth. Occasionally they are found on the bark of trees closely resembling the colour of the forewings, which always cover the abdomen and beautiful hind wings, when they are at rest.

Already reported from Hokkaido and Honto.

2. *Neuronia reginella* sp. nov.

Head blackish, clothed with brownish hairs, especially on the face; vertex wholly fuscous; ocelli brown; labial palpus consisting of four joints, brown; maxillar palpus four-jointed, the last joint more slender than others and fuscous; all the others mostly brown and each thickened at extremity. Antennæ lost, except two basal joints. Prothorax light brown with a median longitudinal impression, clothed with long, fuscous hairs. Meso- and metathorax

fuscous, the former with stout fuscous hairs, the latter with long and weak gray hairs. Underside of thorax mostly brownish. Legs brownish, tibiae and all the tarsal joints fuscous; spurs on tibiae 2, 4, 4; hind femora somewhat dark, with a brown ring near the extremity. Fore wing light fuscous yellow, with fuscous markings, as shown in figure, with some stout blackish hairs at the base;

Fig. 13.—*Neuronina regiusella* n.sp.
(Male).

Fig. 14.—*Neuronina regiusella* (Male).
genitalia, dorsal view.

veins yellowish. Inner half of hind wing violet black, forming a broad, beautiful orange band between this and the fuscous black apical spot. Abdominal segments blackish, fuscous on both dorsal and ventral sides, each segment with hind margin narrowly brown. Suranal plate in the genitalia of male individuals rather broad and little produced in its hind margin; superior appendage, with two small projections and many hairs on the end; intermediate one separated at the end of a small lobe curving little upward; inferior claspers stout and long, suddenly becoming much more slender near its end.

Length of body 20 mm.; length of fore wing 33 mm.; length of hind wing 28 mm.

The type is a single male specimen in the collection of the Imperial Agricultural Experiment Station at Nishigahara. The specimen was captured by Mr. Murata at Nikko, on July 28th.

This species is closely allied to *Neuronina regina*, which is a little larger, but the differences in the genitalia, mouth parts and wing markings seem to me to warrant the specific separation of the two forms.

3. *Neuronina clathrata* Kolenati.

Anobolia (Oligostomis) clathrata Kolenati, Gen. et spec. Trichoptera, i. p. 82 (1848).

Neuronia clathrata Walker—Cat. Neuropt, Brit. Mus., Pt. I, p. 7 (1852); Matsumura, Journ. Coll. Agr. Tohoku Imp. Univ., IV, p. 16 (1911).

4. *Neuronia phalænoides* Linné.

Phryganea phalænoides Linné—Faun. Succ., p. 378 (1761).

Holostomis phalænoides Walker—Cat. Neuropt. Brit. Mus., Pt. I, p. 6 (1852).

Neuronia phalænoides Matsumura—Journ. Coll. Agr. Tohoku Imp. Univ., IV, p. 15 (1911).

The above two species occur in Europe and Siberia, and have been described by Matsumura (l. c.) from Saghalien. It is said that a few specimens have been obtained at Solowiyofka, Chipsani and Galkinowraskoe, on that island. No specimen before me.

5. *Neuronia apicalis* Matsumura.

Neuronia apicalis Matsumura—Thous. Ins. Jap., I, p. 172, Pl. XII, fig. 11 (1904); Matsumura—Journ. Coll. Agr. Tohoku, Imp. Univ., IV, p. 15-16 (1911).

6. *Neuronia fluviipes* Matsumura.

Neuronia fluviipes Matsumura—Thous. Ins. Jap., I, p. 172, Pl. XII, fig. 12 (1904).

Unfortunately, neither *N. apicalis* nor *N. fluviipes*, both of which were described by Matsumura about ten years ago from Hokkaido and Honto, are represented in the material before me. The same professor recorded the former from Saghalien, also.

7. *Neuronia melaleuca* MacLachlan.

Phryganea melaleuca MacLachlan—Journ. Linn. Soc. Lond., Zool., XI, p. 106 (1871).

Holostomis melaleuca Matsumura—Thous. Ins. Jap., I, p. 166, Pl. XII, fig. 2, ♀ (1904).

Neuronia melaleuca Ulmer—Doutch. Ent. Zeit., p. 339 (1908).

The specimens in hand, which I believe to be true *N. melaleuca*, differ to a certain extent from that species as described and figured by Matsumura in his "Nippon-Senchu-Zukai" (Thousand Insects of Japan), though the too meagre description does not enable me to satisfactorily determine it. It may be doubted whether Matsumura's identification of his specimen with *N. melaleuca* be justified.

In any case it may safely be said that there is another form in Japan besides *N. melaleuca*, closely allied to this species. It is said that the habits of this species resemble those of *N. regina*.

Habitat—Hokkaido, Honto.

Genus *Phryganea* Linne.

8. *Phryganea japonica* MacLachlan.

Phryganea japonica MacLachlan—Trans. Ent. Soc. Lond., (3) V, p. 248 (1866); Matsumura—Thous. Ins. Jap., I, p. 167, Pl. XII, fig. 3, ♂ (1904); Ulmer—Cat. Coll. Selys, Fasc. VI (1), p. 10, figs. 11, 12 and 13, Pl. I, fig. 2 (1907); Ulmer—Gen. Insect., Pl. XXX, fig. 1 (1907).

The markings of the fore wing of this species are subject to variation, and the material before me can be separated into two types:

(i) Those that have conspicuous fuscous lines along the cubital and the fourth apical veins.

(ii) Those that have faint and obscure fuscous lines along the cubital and the fourth apical veins.

Though there are some other minute differences in the markings of the fore wing between types i and ii, I think they are not worthy of specific rank, since I could not recognize any difference in the genitalia, nor in any other respects, that appear to be specific. Until a more comprehensive study of these two forms is published I shall have to include them in one species, *Phryganea japonica*. It would be very interesting if their life-histories were known.

It seems to me that Ulmer's figure in the Selys Catalogue represents type i and his figure in Genera Insectorum type ii Matsumura's figure seems to represent type i.

This is one of the most common caddisflies of the family in the Main Island of Japan, occurring also in Hokkaido.

9. *Phryganea sordida* MacLachlan.

Phryganea sordida MacLachlan—Journ. Linn. Soc. Lond., Zool., XI, p. 106 (1871); Ulmer—Cat. Coll. Selys, Fasc. VI (1), p. 8, figs. 6-10 (1907).

A single female specimen in the collection of the Imperial Agricultural Experiments Station, from Gifu, labeled "Hayafumiyama."

10. *Phryganea latipennis* Banks.

Phryganea latipennis Banks—Proc. Ent. Soc., Wash., VII, p. 107 (1906); Ulmer—Cat. Coll. Selys, Fasc. VI (1), p. 10, figs. 14-20, Pl. I, fig. 3 (1907).

A single male specimen in the collection of the Agricultural Experiments Station from Gifu, where the type specimen of this species was obtained.

The above two species seem to be uncommon.

Genus *Limnoceutropus* Ulmer.

11. *Limnoceutropus insolitus* Ulmer.

Limnoceutropus insolitus Ulmer—Cat. Coll. Selys, Fasc. VI (1), p. 14, figs. 21-23 (1907).

This is the single species of the genus *Limnoceutropus*, and is known only from the female. I have not seen specimens of it.

Taken at "Nikko, 600-2000 m."

Komagome-Higashikatamachi, Tokyo, Japan.

THE OCCURRENCE OF THE MYMARID GENUS
COSMOCOMOIDEA HOWARD IN AUSTRALIA
(HYMENOPTERA).

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The following remarkable mymarid represents the fifteenth genus of the group known to occur in Australia. The original description of the genus is not accessible to me just at present, but I should call attention to the fact that the tarsi are *five-jointed*, not as in *Polynema*, as the name would lead one to infer. I have a specimen of the type of the genus, one of the series on which the species was founded, but not a type.

Genus *Cosmocomoidea* Howard.

1. *Cosmocomoidea renani* new species.

Normal position.

Female.—Length 2.00 mm. Large for the family. Shining black, the bullæ of the scape, cephalic legs, trochanters, knees, proximal four tarsal joints and tips of tibia, rich brown. Wings conspicuously infuscated at tip (about distal fourth), the proximal

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