

MAYFLIES FROM JAPANESE TORRENTS. III
THIRD NOTES ON THE GENUS *AMELETUS* WITH
A LIST OF THE JAPANESE *SIPHONURIDAE**

By

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(With five text-figures)

In the preceding papers I dealt with five species of the genus *Ameletus* from Japan. In this paper I wish to report on nymphs of two additional species, viz., *Ameletus kyotoensis* and *A. costalis*. The latter species has been described as *A. sapporensis* in my second report. In this connection I express my thanks to Prof. S. MATSUMURA of the Hokkaido Imperial University for his kindness in permitting me to examine many type-specimens deposited in the Entomological Museum under his charge. This visit to the same university afforded me an opportunity to compile a list of the Japanese *Siphonuridae*, which is appended to this paper.

I am also grateful to Prof. H. YUASA for his interest and advices in my work and to Mr. M. TOKUNAGA for his suggestions.

In order to discriminate the species of nymphs belonging to the genus *Ameletus* as definitely as possible, I made a comparative study of the morphology of the different nymphs on one hand and tried to obtain imagines by rearing them on the other hand. Their marking and coloration are very convenient characters for determination of the species concerned, especially in the genus where the differences of other structural characters are very obscure.

Nymph of *Ameletus kyotoensis*

General colour pale brownish. Length of body 12.5–13.0 mm., length of cerci 4.5–6.5 mm. in the full grown nymphs. Antennae whitish, not brownish in the middle section as in *A. montanus* and in *A. costalis*. Labrum brownish, paler along its outer margin; outer canine of right mandible serrated into three teeth; number of pectinated hooks of maxillae 20–23. Legs brownish; fore

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femur with a paler round marking on its apical end; each of the middle and hind femur with a paler round marking on each end. Abdomen: above brownish; each of the tergites 2-10 with a pair of darker markings divergent caudad; a distinct paler striation along the median line, which is often enlarged to a bell-shaped marking in the tergites 3 and 4; each of the tergites 1-9 with two pairs of pale round markings, one pair in the middle portion, the other pair in its antero-lateral corners; the former often enlarged in the tergites 2, 6 and 7, then a pair of additional pale markings appearing in its postero-lateral corners; markings of tergite 9 sometimes disappear; tergite 10 usually without the pale markings owing to the paler coloration in most individuals. Sternite pale yellowish to brownish; in the full grown nymphs somewhat diamond-shaped markings shown through the skin on the meson of each of the sternites 6-8, these markings being characteristics of this species. Gill-lamellae: both of the inner and outer chitinous ridges and also trachea brownish. Cerci and median caudal filament including their fringed hairs brownish in their basal halves, whitish to pale yellowish in their apical halves, and somewhat infuscated at their tips.

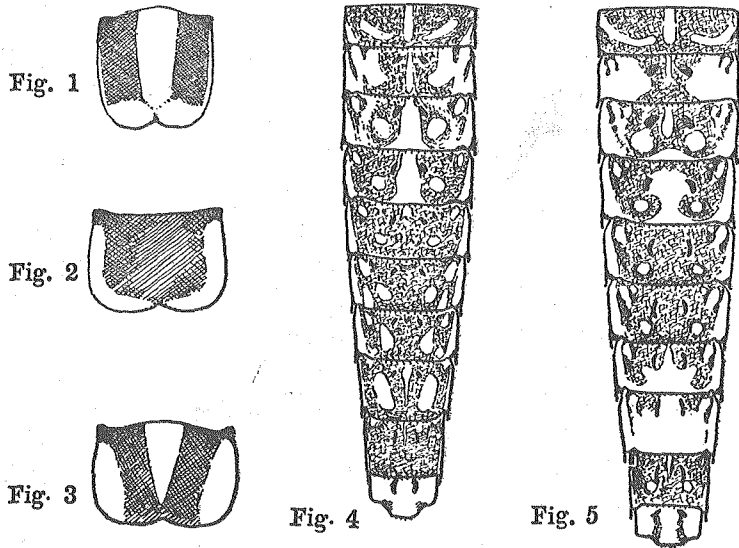
Nymphs of *Ameletus costalis*

Similar to nymphs of *A. montanus*. General colour brownish while in *A. montanus* is greyish. Length of body 13-16 mm., length of cerci 5-7 mm. in the full grown nymphs, larger than those of *A. montanus*, in which length of body is 11.5-14 mm. Antennae brownish in the middle section, the rest pale brownish. Labrum pale brownish with a pair of brownish striation which converge distally; outer canine of right mandible serrated into three teeth, though that in *A. montanus* serrated into two teeth; number of pectinated hooks of maxillae 20-21. The brownish band on the fore femur not conspicuous as in *A. montanus*. Abdomen: tergite 1 with a pair of paler markings; each of the tergites 2-10 with a pair of darker markings on the middle portion; a discontinuous paler striation along the median line which is often enlarged on tergites 3 and 4; each of the tergites 2-9 with 3 pairs of paler round markings, one near the caudal margin, the other two near the antero-lateral corners, the outer one larger than the inner one; those of the tergite 2 often indistinct and paler coloration prevailing over the entire surface excepting the median darker markings; those of the tergites 7 and 8 often enlarged to and fused with each other becoming irregular continuous markings; in some specimens these paler areas almost covering the entire surface except the darker median markings; the hinder paler marking and the inner one of antero-lateral paler

markings sometimes inconspicuous in the tergite 9, but outer one of the anterolateral markings distinct and enlarged; tergite 10 pale, with symmetrical markings on the middle portion. Sternites paler, no distinct markings on them as in *A. kyotoensis* or *A. montanus*, though in some individuals appear two pairs of markings, one on the middle part and the other near the side; broadly brownish on each side of the sternites 2-9. Gill-lamellae: inner chitinous ridge brownish, outer one and trachea generally pale brownish. Cerci and median caudal filament including their fringed hairs pale yellowish, in their middle part and their tips brownish as in *A. montanus*, but the brownish median part being distinctly shorter than one-third of the length of cerci, while in *A. montanus* the brownish median part is usually one-third of the length of cerci.

A Key to the nymphs of three *Ameletus* species common in Kyoto district

1. Outer canine of right mandible serrated into two teeth; labrum brownish with a median paler striation *A. montanus*
- Outer canine of right mandible serrated into three teeth 2
2. Labrums pale brownish with a pair of brownish striations; cerci and median caudal filament pale yellowish with a brownish median section *A. costalis*



Labrum of the nymphs of three *Ameletus* species
Fig. 1. *A. montanus* **Fig. 2.** *A. kyotoensis* **Fig. 3.** *A. costalis*
 Abdomen of the nymphs, dorsal view.
Fig. 4. *A. kyotoensis* **Fig. 5.** *A. costalis*

Labrum brownish, paler along the outer margin; cerci and median caudal filament brownish in their basal halves, whitish to pale yellowish in their apical halves *A. kyotoensis*.

APPENDIX

A list of species of the family Siphonuridae
hitherto known in Japan

Family Siphonuridae

Genus *Siphonurus* EATON, 1868

1. *Siphonurus binotatus* EATON

Siphonurus binotatus EATON: Eaton, 1892, Entom. Month. Mag., p. 302.

Siphonurus (?) *alternatus* SAY: Uéno, 1928, Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, 4, p. 54, pl. xiv.

Siphonurus maculosus TAKAHASHI: Takahashi, 1930, Insect World, 34, p. 114.

Siphonisca grandiosa MATSUMURA: Matsumura, 1931, 6000 Illus. Insects Jap.-Emp., 1475.

Siphonurus binotatus EATON: Uéno, 1931, Ann. Zool. Jap., 13, p. 205.

2. *Siphonurus sanukensis* TAKAHASHI

Siphonurus sanukensis TAKAHASHI: Takahashi, 1929, Lansania, 1, p. 77.

Genus *Dipteromimus* MACLACHLAN, 1875

3. *Dipteromimus tipuliformis* MACLACHLAN

Dipteromimus tipuliformis MACLACHLAN: MacLachlan, 1875, Trans. Ent. Soc. London, p. 170.

Dipteromimus tipuliformis MACLACHLAN: Eaton, 1885, Trans. Linn. Soc. London, Zool., 3, pt. 3, p. 213.

Dipteromimodes suzukii MATSUMURA: Matsumura, 1931, 6000 Illus. Insects Jap.-Emp., p. 1474.

Dipteromimus tipuliformis MACLACHLAN: Uéno, 1931, Ann. Zool. Jap., 13, p. 212.

Genus *Isonychia* EATON, 1871

4. *Isonychia japonica* ULMER

Chironetes japonicus ULMER: Ulmer, 1919, Arch. f. Nat., 85 Jahrg., A, p. 12; Mats., 1931, 6000, Illus. Insects Jap.-Emp. p. 1474.

Chironetes (?) *japonicus* ULMER: Uéno, 1928, Mem. Coll. Sci., Kyoto Imp. Univ., Ser. B, 4, p. 52, pl. xiii.

Sparrea violacea MATSUMURA: Matsumura, 1931, 6000 Illus. Insects Jap.-Emp. p. 1475.

5. *Isonychia formosana* ULMER

Chironetes formosanus ULMER: Ulmer, 1912, Ent. Mitt., 1, p. 371.

6. *Isonychia valida* NAVÁS

Chironetes validus NAVÁS: Navás, 1920, Rev. Ac. Madrid, 18, p. 2.

I have not examined this original description.

Genus *Ameletus* EATON, 1887

7. *Ameletus montanus* IMANISHI

Ameletus montanus IMANISHI: Imanishi, 1930, Trans. Nat. Hist. Formosa, 20, p. 265.

Ameletus montanus IMANISHI: Uéno, 1931, Ann. Zool. Jap., 13, p. 208.

8. ***Ameletus costalis*** MATSUMURA

Chimura costalis MATSUMURA: Matsumura, 1931, 6000 Illus. Insects Jap.-Emp., p. 1474.

Ameletus sapporensis MATSUMURA: Imanishi, 1932, Ann. Zool. Jap., 13, p. 526.

9. ***Ameletus towadensis*** MATSUMURA

Ameletus towadensis MATSUMURA: Matsumura, 1931, 6000 Illus. Insect Jap.-Emp., p. 1473.

There are two female specimens in the Entomological Museum of the Hokkaido Imp. Univ., which are both old and imperfect.

10. ***Ameletus kyotoensis*** IMANISHI

Ameletus kyotoensis IMANISHI: Imanishi, 1932, Ann. Zool. Jap., 13, p. 525.

11. ***Ameletus croceus*** IMANISHI

Ameletus croceus IMANISHI: Imanishi, 1932, Ann. Zool. Jap., 13, p. 527.

12. ***Ameletus subalpinus*** IMANISHI

Ameletus subalpinus IMANISHI, 1932, Ann. Zool. Jap., 13, p. 528.

Genus ***Siphlonisca*** NEEDHAM, 1909

13. ***Siphlonisca jozana*** MATSUMURA

Siphlonisca jozana MATSUMURA: Matsumura, 1931, 6000 Illus. Insects Jap.-Emp., p. 1475.

This is a very distinct species and seems to be very common around Sapporo, although it has not yet been reported from Honshu. It is doubtful whether this species duely belongs to the American genus *Siphlonisca* or not. Therefore it seems desirable to supplement Prof. MATSUMURA's brief report as follows.

Redescription of *Siphlonisca jozana*

♂. General colour yellowish. Pronotum chrome yellow. In the fore leg, femur yellowish, tibia and tarsus brownish; tarsus not longer than tibia; tarsal joints rank 1, 2, 3, 4, 5. Other legs yellowish: in the hind leg, tarsus shorter than tibia; tarsal joints rank 5, 1, 2, 3, 4. All claws similar. Wings hyaline, veins brownish. In the fore wing; 6 or 7 veins between A_1 and A_2 , of which 2 or 3 forked; the one nearest to the wing base is heavier; in some individuals principal veins and also margin of fore wing bordered brownish. Hind wings always margined with a brownish tint. Abdomen yellowish; each tergite with a blackish U-shaped marking near its caudal margin. Each sternite with a pair of brownish markings. Forceps 4 jointed; joint 2 heavy, longer than joints 3 and 4 taken together; last joint slender. Median caudal filament rudimental.

♀. Resembles the male. Fore tibia longer than fore femur; fore tarsus

shorter than fore-tibia. Sternite 10 not notched on its posterior margin.

14. *Siphonisca sukasii* MATSUMURA

Siphonisca sukasii MATSUMURA: Matsumura, 1931, 6000 Illus. Insects Jap.-Emp., p. 1475.

Holotype ♀, Allotype ♂ ♂. More collection of fresh specimens, especially those of males are highly desirable.

Genus *Chimura* NAVÁS, 1915

15. *Chimura aetherea* NAVÁS

Chimura aetherea NAVÁS: Navás, 1915, Ent. Mitt., 4, p. 149.

This monotypic Genus was established for a poor specimen from Kyoto. I have not yet found this curious species in my four years collection in that district. For the confirmation of this genus, therefore, examination of more perfect specimens is needed.

A LIST OF THE LONGICORN-BEETLE
FROM SAGHALIEN, WITH THE DESCRIPTIONS OF
ONE NEW SPECIES, ONE NEW VARIETY
AND ONE NEW ABERRANT FORM

By

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(With one text-figure)

Not more than 59 species of Longicorn-beetle have been recorded from Saghalien by S. MATSUMURA, K. YOKOYAMA, T. KANO, H. KÔNO, K. DOI, K. MURASE, M. MATSUSHITA, G. BLESSIG, G. JACOBSON, N. PLAVILSTSHIKOV, and the author, but, as far as my studies go, 27 more species ought to be added, including one new species, one new variety, and one new aberrant form; thus it is known to us, in total, 86 species, as existing in this island.

I must acknowledge my hearty thanks to Prof. Dr. S. MATSUMURA of the Hokkaido Imperial University, Asist. Prof. Dr. T. UCHIDA, Dr. H. KÔNO, and Mr. C. WATANABE, who gave me many helpful suggestions in this investigation. My gratitude is also due to Prof. Dr. N. PLAVILSTSHIKOV in the Department of Entomology, Zoological Museum, Moscow, for his friendly help. Further I wish