

Notes on the Caddisflies of Niigata Prefecture, with seven New Species.

(Insecta: Trichoptera)

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The caddisfly fauna of Niigata prefecture was reported by Dr. M. Tsuda. But still now, it is only very insufficiently known. I have an opportunity of studying the specimens of this group of insects which collected by Dr. Baba, Mr. R. Sato, Mr. H. Kumamoto, Mr. W. Ito, Mr. M. Honma, Mr. S. Sakurai and Mr. M. Kasai in Niigata Prefecture from 1953 to 1962. In the following pages is given a list of species in these collections including descriptions of seven new species.

The author would like to express to Dr. K. Baba his thanks for giving me an opportunity to work on this material. The types of all new species are deposited in the Kanagawa Prefecture Museum, Yokohama, Japan.

Fam. Rhyacophilidae

Subfam. Rhyacophilinae

1. *Rhyacophila similis* KOBAYASHI

1 ♂ (M. 1772) in alcohol; Mt. Chokai (Alt. 500m), Iwafune-gun; June 11, 1956; K. Baba leg.

2. *R. clemens* TSUDA

1 ♂ (M. 1778) in alcohol; Imakawa, Iwafune-gun; June 24, 1956; 1 ♀ (M. 1756) in alcohol; Kurokawa-mura, Kitakanbara-gun; May 15, 1955; K. Baba legs.

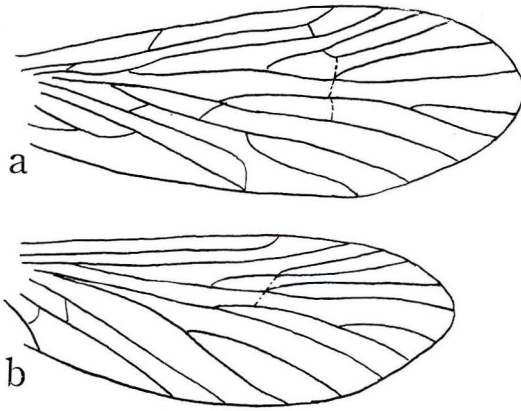
Fam. Philopotamidae

3. *Wormalia kurokawanus* sp. nov. (Fig. 1. Plate 1.)

Head fuscous, vertex with three warts; posterior warts larger than the others, elongate; ocelli present, between anterior warts and ocelli darkish brown; face fulvous, with golden hairs. Antennae fuscous, stout, longer than the anterior wing; basal joint slightly longer than the other joints, basal portion narrow, inner margin dilated at about the middle, the second joint fulvous, shorter than the other ones.

Maxillary palpi fuscous, five jointed; the first joint short; the second joint slightly shorter than the first one; the third joint long, as long as the terminal joint; the fourth joint as long as the third one; terminal joint fuscous, slender, articulated, as long as the length of the first and the second combined.

Thorax fuscous above, pale on the side and beneath: pronotum with four hairy and round warts. Abdomen pale fuscous, clothed with short hairs.



Text-Fig. 1. Wings of *Wormalia kurokawanus* sp. nov.

a. Anterior wing. b. Posterior wing.

Coxa of all legs fuscous, with golden hairs; remaining joints fulvous, clothed with fulvous hairs. Spurs 2,4,4. Each spur fulvous, stout, clothed with fuscous hairs; inner spurs of anterior leg as long as the outer one; inner spurs of the median leg longer than its the outer one; outer and inner apical spurs as long as pre-apical ones; inner spurs of the posterior leg longer than the outer ones, inner and outer spurs as long as pre-apical ones. Each tibia with a few short bristles. Claws very small, embedded in hairs.

Anterior wing elongate; membrane fulvous, clothed with pubescence, posterior margin with long hair. Vein thick, fuscous; apical forks nos. 1,2,3 and 5 present. Discoidal cell present, closed by hyaline cross-vein; *r-m* hyaline; and median and thyridial cell closed by hyaline cross-vein; apical parts of *arc* hyalin. An additional costal cross-vein and additional oblique basal cross-vein between *S.* and *R.*

Posterior wing pale fulvous, clothed with pubescence, as wide as the anterior wing. Vein thick, fuscous; apical forks nos. 1,2,3 and 5 present. Discoidal cell present, closed by hyaline cross-vein; *r-m* and *m-Cu* hyaline.

Seventh sternite produced in a digitale ventral process. Margin of the eighth dorsal segment produced two rounded lobes at its center, with an excision between the two; sternite with a small triangular ventral process. The margin of the ninth segment is produced in a slender, pointed process seen from above. The upper penis-cover is very long, thick and membranous; sternite long and moderately broad from the side. It has a very slender superior appendage at the base, on each side. Penis not apparrent. Inferior appendages two-jointed, long, thick; basal joint twice the length of the second joint; the inner surface of the terminal joint at apex bearing a dense mat of short black setae.

Female is the exactly same as the male in vanation, formula of spurs, wing colour and etc., but body is differently coloured. Body paler than the male in the colour. Abdomen terminated in a pair of narrowly separated slender lobes. The base of the each lobe with long bristles. The penultimate segment membranous; terminal margin produce at its center from above view, long bristly on both side.

Measuremant: Holotype, body 5mm, anterior wing 7mm, posterior wing 6mm.

Holotype: Male (M. 1758) in alcohol; Kurokawa-mura, Kitakanbara-gun, Niigata Prefecture; August 20, 1954; collected by K. Baba.

Alotype: Female (M. 1759) in alcohol; Kurokawa-mura, Kitakanbara-gun, Niigata Prefecture; August 20, 1954; collected by K. Baba.

The species of the genus *Wormalia* has been not hitherto reported from Japan. the

present species is the first record of the genus *Wormalia* from Japan. The specific name *kurokawanana* given to this species was taken from the name of locality.

Fam. Stenopsychidae

4. *Stenospyche griseipennis* McLachlan
1 ♂ (M. 1810) pinned; Kurokawa-mura, Kitakanbara-gun; October 6, 1954; K. Baba leg.
5. *Parastenopsyche sauteri* Martynov
1 ♀ (M. 1812) pinned; Kurokawa-mura; Kitakanbara-gun; October 2, 1954; 1 ♀ (M. 1823) pinned; Mt. Kinpoku, Sado Island; July 17, 1955; K. Baba legs.

Fam. Arctopsychidae

6. *Arctopsyche maculata* Ulmer
2 ♂ (M. 1747, 1790) and 1 ♀ (M. 1840) in alcohol; Kurokawa-mura, Kitakanbara-gun; May 5, 1954; K. Baba leg. 1 ♀ (M. 1784) in alcohol; Kurokawa-mura, Kitakanbara-gun; April 24, 1956; K. Baba leg. 1 ♂ (M. 1473) in alcohol; Miomote, Iwafune-gun; May 30, 1956.
7. *A. spinifera* Ulmer
1 ♂ (M. 1753) in alcohol; Sekigawa-mura, Iwafune-gun; July 10, 1956; K. Baba leg.

Fam. Hydropsychidae

Subfam. Macronematinae

8. *Macronema radiatum* McLachlan
1 ♀ (M. 1796) pinned; Mt. Takamori, Higashikanbara-gun; August 10, 1955; K. Baba leg.

Subfam. Hydropsychinae

9. *Diplectrona japonica* Banks
1 ♂ (M. 1763) in alcohol; Mt. Amakazari, Nishikubeki-gun; June 26, 1955; K. Baba leg.

Fam. Molannidae

10. *Molanna folcata* Ulmer
1 ♂ (M. 1749) in alcohol; Iwafune, Murakamishi; July 31, 1954; K. Baba leg. 1 ♂

(M. 1764) in alcohol; Nagaokashi; March 24, 1955; K. Baba leg. 2 ♂ (M. 1758, 1791) in alcohol, Kurokawa-mura, Kitakanbara-gun; K. Baba legs.

Fam. Phryganeidae

11. *Phryganea letipennis* Banks

1 ♀ (M. 1847) pinned; Kurokawa-mura, Kitakanbara-gun; October 25, 1953; 1 ♀ (M. 1752) in alcohol; May 2, 1954; 1 ♂ (M. 1745) and 1 ♀ (M. 1746) in alcohol; October 22, 1959; K. Baba legs. 1 ♂ (M. 1848) pinned; Kubota, Sado Island; May 4, 1956. H. Kumano leg.

12. *P. japonica* McLachlan

1 ♀ (M. 1813) pinned; Niitsushi; May 21, 1962; R. Sato leg.

13. *P. sordida* McLachlan

1 ♀ (M. 1857) pinned; Kaiji-mura, Kitakanbara-gun; May 15, 1960; K. Baba leg.

14. *Neuronia regina* McLachlan

1 ♂ (M. 1821) pinned; Mt. Donden, Sado Island; July 18, 1955; K. Baba leg. 1 ♂ (M. 1820) pinned; Niitsushi; April 28, 1960; R. Sato leg. 1 ♂ (M. 1818) pinned; Mt. Miyoken, Sado Island; July 15, 1962; M. Kasai leg. 1 ♀ (M. 1817) pinned; Niigatashi; July 1962; 1 ♂ (M. 1815) pinned; Kurokawa-mura, Kitakanbara-gun; June 15, 1962; K. Baba leg.

15. *Oligotricha fluvipes* (Matsumura)

1 ♀ (M. 1844) pinned; Miomote, Iwafune-gun; May 30, 1962; K. Baba leg. 1 ♂ (M. 1850) pinned; Mt. Miyoken, Sado Island; August 7, 1958; W. Ito leg.

16. *O. spicata* Wiggins & Kuwayama

1 ♂ (M. 1849) and 1 ♀ (M. 1851) pinned; Komatsubara, Mt. Naeba, Nakauonuma-gun; June 30, 1956; K. Baba leg.

Fam. Odontoceridae

17. *Perissoneura paradoxa* McLachlan

1 ♀ (M. 1797) pinned; Mt. Naeba, Nakauonuma-gun; June 30, 1956; K. Baba leg.

Fam. Limnophilinae

Subfam. Limnophilinae

18. *Limnophilus correptus* McLachlan

1 ♀ (M. 1825) pinned; Kurokawa-mura, Kitakanbara-gun; October 24, 1953; K. Baba leg. 1 ♀ (M. 1788) in alcohol; Hatano, Sado Island; May 1, 1955; M. Honma leg. 1 ♂ (M. 1784) in alcohol and 1 ♀ (M. 1842) pinned; Kurokawa-mura, Kitakanbara-gun; October 3, 1956; 1 ♂ (M. 1846) pinned; Murakamishi; June 9, 1961; K. Baba

legs. 1 ♂ (M. 1826) pinned; Motohashi, Mikuni, Nakauonuma-gun; June 4, 1963; H. Koike leg.

19. *Limnophilus borealis* Zetterstedt

2 ♂ (M. 1751, 1820) in alcohol; Niitsushi; April 28, 1960; 1 ♀ (M. 1781) in alcohol; Niitsushi; April 13, 1960; 1 ♂ (M. 1787) in alcohol; Niitsushi; R. Sato legs.

20. *Glyphotaleus admorsus* McLachlan

1 ♀ (M. 1795) pinned; Kurokawa-mura, Kitakanbara-gun; May 28, 1958; K. Baba leg. 1 ♂ (M. 1794) pinned; Mt. Yahiko, Nishikanbara-gun; May 24, 1960; R. Sato leg.

21. *Nothopsyche apicalis* Ulmer

1 ♀ (M. 1832) pinned; Kurokawa-mura, Kitakanbara-gun; October 25, 1953; 1 ♂ (M. 1839) pinned; Kurokawa-mura, Kitakanbara-gun; April 11, 1954; K. Baba legs. 2 ♀ (M. 1833, 1845) pinned; Niitsushi; April 13, 1960; R. Sato legs.

22. *Nothopsyche ulmeri* Schmid

1 ♂ (M. 1829) pinned; Kurokawa-mura, Kitakanbara-gun; October 25, 1953; 2 ♀ (M. 1827, 1828) pinned; Kurokawa-mura, Kitakanbara-gun, October 10, 1954; 1 ♂ (M. 1830) pinned; Murakamishi; October 20, 1963; K. Baba legs.

23. *Nothopsyche babai* sp. nov. (Plate 2)

Head blackish brown, broad, with four warts; posterior warts oval, with long blackish bristles; posterior-lateral warts blackish brown, slender, with a few long blackish bristles. Face slightly paler than the upper part of head, with blackish hairs; ocelli present. Antennae blackish brown, stout, slightly longer than the anterior wing; basal joint thicker and longer than the other ones, about half the length of the head, clothed with blackish bristles; second joint shorter than the other ones, clothed with short blackish hair; remaining joint densely covered with blackish short hairs.

Maxillary palpi three-jointed, blackish brown, densely covered with short blackish hairs; basal joint thick, much shorter than the others; second and third joints long, flat, terminal joint as long as the second one, rounded at apex.

Labial palpi three-jointed, blackish brown, densely covered with short blackish hairs; basal joint thick, rounded, much shorter than the other ones; second joint flat, slightly shorter than the terminal one; terminal joint flat, clothed with darkish brown hairs, longer than the other ones; rounded at apex.

Prothorax fulvous, with a pair of warts; warts elongated, with a few long bristles. Meso- and Meta-thorax blackish brown; warts on meso-praescutum small, elongate, with a few long bristles; meso-scutellum with elongate warts which bear long hairs.

Leg blackish brown; spurs 1, 2, 2; each spur fulvous, clothed with short brown hairs; inner spurs as long as the outer spurs; tibia and tarsi with a few blackish spines; terminal joint of tarsi of posterior leg without spines; claws long, brown.

Anterior wing pale brown, translucent, with scanty pubescence, rounded at apex. Veins pale brown, thick, with long dark brown hairs. Venation quite similar to that in *Archaeophylax ochreus* of Tasmaia; Sc and R connected by sectorial vein. Descoidal cell

long and narrow, longer than the foot-stalk. Median cell absent, cellula thyridii long and narrow; apical forks nos. 1, 2, 3 and 5 present.

Posterior wing translucent, broader than the anterior wing, less pubescent, iridescent, apical forks nos. 1, 2, 3 and present. Discoidal cell resembling those in posterior wing.

Abdomen fulvous; the both side of five sternite with a few bristles.

Distal margin of the eight segment strongly produced at its center, somewhat rolled over, rounded at apex. Superior appendage rather broad, clothed with brown hairs, lower posterior margin serrate; intermediate appendages long, narrow, the tip directed upwardly, upper margin sinuous, surface with many short spines. Lower penis cover shorter and broader than the intermediate appendages, densely clothed with short spines, directed upwardly and inwardly above, acute at apex. Inferior appendages long, blackish brown at apex, with brown hairs, triangular seen from the side; it reveals they have inner concave folds.

Measurement: Holotype, body 9mm, anterior wing 11mm, posterior wing 9mm.

Holotype: Male (M. 1760) in alcohol; Kurokawa-mura, Kitakanbara-gun; Niigata Prefecture; November 18, 1955; collected by K. Baba.

Paratype: Male (M. 1766) in alcohol; Yawata, Sado Island, Niigata Prefecture; November 23, 1955; collected by H. Kumano.

The specific name *babai* given to this species was taken from the name of collector.

24. *Nothopsyche pallipes* Ulmer

1 ♀ (M. 1783) in alcohol; Kurokawa-mura, Kitakanbara-gun; October 25, 1953; K. Baba leg.

25. *Nomotaulius brevilinea* McLachlan

1 ♂ (M. 1786) in alcohol; Mt. Yahiko, Nishikanbara-gun; May 24, 1956; S. Sakurai leg. 1 ♀ (M. 1785) in alcohol; Niigatashi; May 4, 1960; K. Baba leg.

Subfam. Apataniinae

26. *Apatania aberrans* Martynov

1 ♂ (M. 1472) in alcohol; Niitsushi; April 20, 1958; 1 ♂ (M. 1754) and 2 ♀ (M. 1754a, 1754b) in alcohol; Niitsushi; April 13, 1960; R. Sato legs.

Subfam. Goerinae

27. *Goera japonica* Banks

1 ♂ (M. 1762) in alcohol; Niitsushi; May 14, 1962; R. Sato leg. 1 ♂ (M. 1769) in alcohol; Murakamishi; June 9, 1961; K. Baba legs.

Subfam. Brachycentrinae

28. *Barachycentrus niigatai* sp. nov. (Plate 3)

Head brownish black above, with a series of warts; almost elliptical, brownish black, hairy warts near the anterior margin, and still another pair of brownish black, slender, hairy warts near the posterior margin. Face with a pair of warts bearing long black hairs on each disc. Antennae stout, brownish black, as long as the wing; basal joint large, about as long as head, clothed with black hairs, remaining joint thinner than the basal one, clothed with short black hairs.

Maxillary palpi brownish black, two-jointed, with upwardly directed long hairs, forming a mask lying close to the face; the first joint short, the second joint rather long.

Labial palpi stout, brownish black, three-jointed, clothed with very short hairs; basal joint short, the second joint long, terminal joint longer than the other, rounded at apex.

Thorax brownish black, pronotum with a series of warts, an almost elliptical, hairy wart at about median of posterior margin. Tergite and sternite brownish black, linked by milkish white, membranous pleurites.

Legs brownish black, with brownish black spines on the tibia and tarsi. Spurs 2, 3, 3. Spurs clothed with short hairs, paler in colour than legs; spurs of anterior leg short, outer spurs as long as the inner ones; spurs of median legs slightly longer than those of posterior legs; apical spurs of median and posterior legs as long as the preapical spurs.

Anterior wing broad, densely clothed with long pubescence, intermingled with many blackish hairs on anterior portion, fringes blackish brown; posterior fringes longer than the anterior ones; membrane and veins pale grayish. Pterostigma hyaline. Apical forks nos. 1, 2, 3 and 5 present. Discoidal cell closed in the center; *r-m* hyaline. Apical portion of A_1 hyaline, strongly curved. Thyridial cell almost triangular.

Posterior wing slightly broader than the anterior, clothed with brown, long, pubescence; fringes of the posterior margin longer than the anterior; anale with very long hairs; membrane and vein pale-grayish. Vein thin, indistinct; apical forks nos. 1 and 5 present. Discoidal cell very narrow.

Distal margin of the eight tergite fringed with long hairs. Ventral process of seventh segment long, rounded at apex. Tergite of the ninth segment short, distal margin of sternite produced at center, with short hairs. Tenth segment long, median lobe membranous, with hairy warts about middle, lateral plate longer than the median, broader and outcurved at apex, outer margin sinous in side view. Lateral plate very broader in lateral view. Penis long, thick, the tip thicker than the basal portion. Inferior appendages long, single-jointed, apical and lower margin with minute spines, upturned seen from the side. Superior appendage long, directed upward, swollen shortly before apex.

Measurement: Holotype, body 6mm, anterior wing 7.5mm, posterior wing 6.5mm.

Holotype: Male (M. 1768) in alcohol; Kurokawa-mura, Kitakanbara-gun, Niigata Prefecture; May 7, 1961; collected by K. Baba.

This species resembles in male genitalia *B. kitayamanus* Tsuda from Japan. It differs in the venation, and in the form of the ninth segment.

The specific name *niigatai* given to this species was taken from the name of locality.

Subfam. Lepidostomatinae

29. *Dinarthodes complicata* sp. nov. (Plate 4)

Head pale brown, short, broad; face clothed with pale brown and fuscous bristles, and two enormous pyriform, slightly covered, densely hairy warts above almost touching posteriorly. Ocelli absent. Antennae stout, slightly longer than the anterior wing. The basal joint fuscous, broad, very long and strong, much hairy, with a large, digitate, thickened branch at the base of basal joint; apical portion narrow, spiral-shaped; second joint slender, nearly as long as the basal one, densely hairy; remaining joints rather longer than the second.

Maxillary palpi two-jointed, fuscous, with upwardly curved hairs and scales, forming a mask lying close to face. The basal joint longer than the terminal.

Labial palpi pale brown, three-jointed, clothed with short hairs; basal joint thick, shorter than the other; terminal joint slender, about two times as long as the second one. Ventral surface of the thorax fuscous, with pale fulvous, hairy warts, beneath pale fulvous.

Coxa of antero- and postero-legs pale fulvous, with a long, pale fulvous tuft of marginal hairs. Coxa of median leg fuscous, long, broader than the width of the anterior. Tibia and tarsus pale fulvous, clothed with short hairs. Femur pale fulvous, with short pale yellow hairs. Each joint of tarsi with a few fuscous bristles. Spurs pale fulvous, clothed with fuscous hairs. Spurs 2, 4, 4. Outer spurs of anterior legs thicker and longer than the inner one, about twice the length of the outer spur. Outer spur of median and posterior legs as long as the inner spurs.

Anterior wing broad, elongate, covered with a few scales and brown pubescence; veins with long brown hairs; posterior margin with hairs longer than those on the anterior margin. The extreme base of anterior margin with conspicuous group of long scale. Discoidal cell long, narrow, shorter than the foot-stalk; apical fork nos. 1 and 2 present. Venation similar to that in *D. japonica* TSUDA

Posterior wing narrower than the anterior, with much fewer scales on the surface, covered with brown pubescence; posterior margin with long hairs. Discoidal cell closed, about one half those of anterior wing; 3A with long hairs.

Apical margin of the ninth segment strongly produced, rounded at apex seen from above. Tenth segment three-lobed, median lobes forming a pair of spine one on each side of superior appendage. Each lobe is dilated at its midway of inner margin, clothed with hairs.

Measurement: Holotype, body 7mm, anterior wing 11mm, posterior wing 9mm.

Holotype: Male (M. 1775) in alcohol; Kurokawa-mura, Kitkanbara-gun; Niigata Prefecture; June 12, 1955; collected by K. Baba.

This species closely resembles *D. japonica* Tsuda in colour, size and venation of both wings, but is distinguished from the latter by the structures of antennae and genitalia in the male.

The specific name *complicata* given to this species was taken from the complicate structure of genitalia in the male.

30. *Dinarthodes satoi* sp. nov. (Plate 5)

Head blackish brown, broad, short; vertex with four warts; each wart blackish brown, thickly clothed with short scales; posterior warts thickly clothed long hairs and short scales, posterior warts pyriform, slightly curved, almost touching; anterior warts oval, smaller than the posterior warts; face with a few scales. Ocelli absent. Antennae stout, slightly longer than the anterior wing; basal joint blackish brown, much thicker than the other joints, slightly longer than the width of head, thickly clothed with long hairs, inner and lower surface with scales; inner margin incurved at the middle, dilated at apex; each one of remaining joints fulvous, thin, short, clothed with short hairs.

Maxillary palpi three-jointed, thickly with upstanding hair, forming a mask lying close to the face; basal joint thick, short; second joint about twice the length of the basal; terminal joint longer than the second, rounded at apex.

Thorax blackish brown above; pronotum with four oval, hairy warts; each wart with a few scales; warts of meta and meso-scutellum fulvous, clothed with long hairs and a few scales; lower surface of prothorax thickly clothed long hairs.

Coxa blackish brown, anterior margin with yellowish white, long hairs. Femur, tibia and tarsus fulvous, densely clothed with fuscous, short hairs. Spurs 2, 4, 4. Each spur fulvous, clothed with fuscous hairs. Inner spur of anterior leg stout, thick, slightly longer than the outer spur. Outer spur of median leg thinner and longer than the inner spurs. Inner one of apical tibial spurs of posterior leg almost as its outer spurs in shape; inner one of apical tibial spurs thinner and longer than the outer one of apical tibial spurs. Tarsus of each leg with a few fulvous bristles. Claws of each leg much smaller, claw of anterior leg hidden with long hairs.

Anterior wings comparatively broad, densely clothed with fulvous, long pubescence. A tuft of long, specialized hairs at near the humeral cross-vein. The center of wing with short, blackish brown specialized hairs. Upper surface of *Cu* densely hairy with long, blackish brown, specialized hairs; posterior margin with long hairs. Vein fuscous, thick, distant; discoidal cell narrow, almost as long as the length of apical cellules 1. Forks nos. 1 and 2 present. 1A curved outwards, connected with 2A.

Posterior wing broad, round at apex; membrane thinly pubescent. Posterior margin with long hairs. Vein fulvous, thin; *Sc* contacted with *R*. at midway. Discoidal cell short, $\frac{1}{2}$ as long as the discoidal cell of anterior wing; *r-m* hyaline whitish colour.

Tergite and sternite of abdomen blackish brown, each tergite thickly long hairy; pleurites membranous, milkish white.

Ninth segment short. Tenth segment fused to it, distal margin produced at its center with round apical margin. Penis long, strongly arched downwards. Inferior appendage one-jointed, strong, incurved, about four times longer than the width; outer surface thickly clothed with long hairs. Each inferior appendage carries two branches; it is stout seen from the above, divided to midway into two lobes, basal lobes narrower than the apical one, rounded at apex; the apical lobes stout, with a deep groove, rounded at apex.

Measurement: Holotype, body 6mm, anterior wing 8mm, posterior wing 6.5mm.

Holotype: Male (M. 1793) in alcohol; Niitsushi, Niigata Prefecture; May 5, 1962; collected by R. Satao

The specific name *satoi* given to this species was taken from the name of collector.

31. *Crunoeciella kanbarana* sp. nov. (Plate 6)

Head fuscous, short, broad, vertex with four warts, covered with long bristles and scales. Anterior warts oval, smaller than the posterior one. Ocelli absent. Antennae stout, fulvous, slightly longer than the anterior wing; first joint thicker, flat, as long as the width of head, clothed with bristles and scales, especially with longer bristles on the inner surface; each of remaining joints thin, almost cylindrical, with short fuscous hairs.

Maxillary palpi three-jointed, upturned in front of the face, a strong tuft of hairs and scales towards the base nearly extending to the apex.

Labial palpi three-jointed, stout, with short fuscous hairs; basal joint short, about one half the length of second one, terminal joint as long as the second one.

Thorax fuscous, pronotum with four warts; warts rounded, fulvous, clothed with long bristles. Mesoscutellum with a pair of rounded warts which are clothed by long hairs.

Coxa and femur fuscous, clothed with short hairs. Tibia and tarsus fulvous, with fuscous short hairs. Each joint of the tibia with a few brown bristles. Sprus 2, 4, 4. Each spur covered with fuscous hairs. Inner apical tibial spurs of anterior leg slender and much shorter than the outer one of the apical tibial spurs. Inner one of apical tibial spurs of median legs as long as the outer one of apical tibial spurs, more slender than the outer one; inner one of preapical tibial spur slender and shorter than the outer one. Each inner spurs of posterior legs longer than the outer one. Claws thin, short, crolium fuscous.

Anterior wing broad, densely clothed with fuscous pubescens, most of the surface of the wing also bearing small fuscous scales, with white spote on *r-m*; marginal hairs long, veins fulvous, thick. Discoidal cell closed, slender; apical forks nos. 1, 2 and 5 present; apical fork 1 sessile; closs-vein of discoidal cell indistinct. Thyridiall cell long, rounded at apex. 3A connected with posterior margin. 1A and 2A fussed at midway, *Cu* curved at apical portion.

Postrior wing shorter and slightly narrower than the anterior one, densely clothed with fucous pubescence; membrane translucent, with a few scales. Veins fulvous, thick. Discoidal cell shorter than those of the anterior wing. *Sc* never conected with R1.

Tergite and sternite of abdomen fuscous; pleura fulvous, membranous, with fuscous hairs. Eighth segment short, with long hairs. Tergite of ninth segment almost triangular in the dorsal view. Tenth segment elongate, trilobed, median lobe membranous, rounded at apex, lateral lobes longer than the median, narrow; lateral margin sinuous, acuted at apex, apical part clothed with bristles, apex with long bristles. Aedegus long, strongly arched downwards, rounded at apex. The base of inferior appendage narrow seen from the side, tapering gradually to a down curved, slender finger, tipped with a few bristles. It is gently incurved, narrowed to the base, gradually dilating at about midway, then constricting to a narrow finger. Inner margin with two branches and also a slender branch arising from

the inner basal margin; apical branch slender, rounded at apex.

Measurement: Holotype, body 4.5mm, anterior wing 7mm, posterior wing 6mm.

Holotype: Male (M. 1767) in alcohol; Kurokawa-mura, Kitakanbara-gun; Niigata Prefecture; May 7, 1961; collected by K. Baba.

Paratype: 2 Males (M. 1767b, 1767c) in alcohol; collected data same as the holotype.

This species closely resembles *C. orientalis*, but differs in the venation of the both wing, and the structure of male genitalia.

The specific name *kanbarana* given to this species was taken from the name of locality.

新潟産トビケラ目について

小林 峯 生

1953年から1962年の10年間に馬場金太郎博士他によって採集された新潟地方の毛翅目31種を記録した。そのうち6種が新種であることが判明したので、*Wormalia kurokawanus*, *Nothopsyche babai*, *Brachycentrus niigatai*, *Dinarthrodes complicata*, *Dinarthrodes satoi*, *Crinoecilla kanbarana* とした。

Explanation of Plates 1

Plate 1. Genitalia of *Wormalia kurokawanus* sp. nov.

- a - c. Genitalia of male.
 - a. Lateral view. b. Dorsal view. c. Ventral view.
- d - e. Genitalia of female.
 - d. Laberal view. e. Dorsal view.

Plate 2. Wings and Genitalia of *Nothopsyche babai* sp. nov.

- a - b. Wings of male.
 - a. Anterior wing. b. Posterior wing.
- c - e. Genitalia of male.
 - c. Ventral view. d. Dorsal view. e. Lateral view.

Plate 3. Wings and Genitalia of *Brachycentrus niigatai* sp. nov.

- a - b. Wing of male.
 - a. Anterior wing. b. Posterior wing.
- c - e. Genitalia of male.
 - c. Dorsal view. d. Ventral view. e. Lateral view.

Plate 4. Head, Wings and Genitalia of *Dinarthodes complicata* sp. nov.

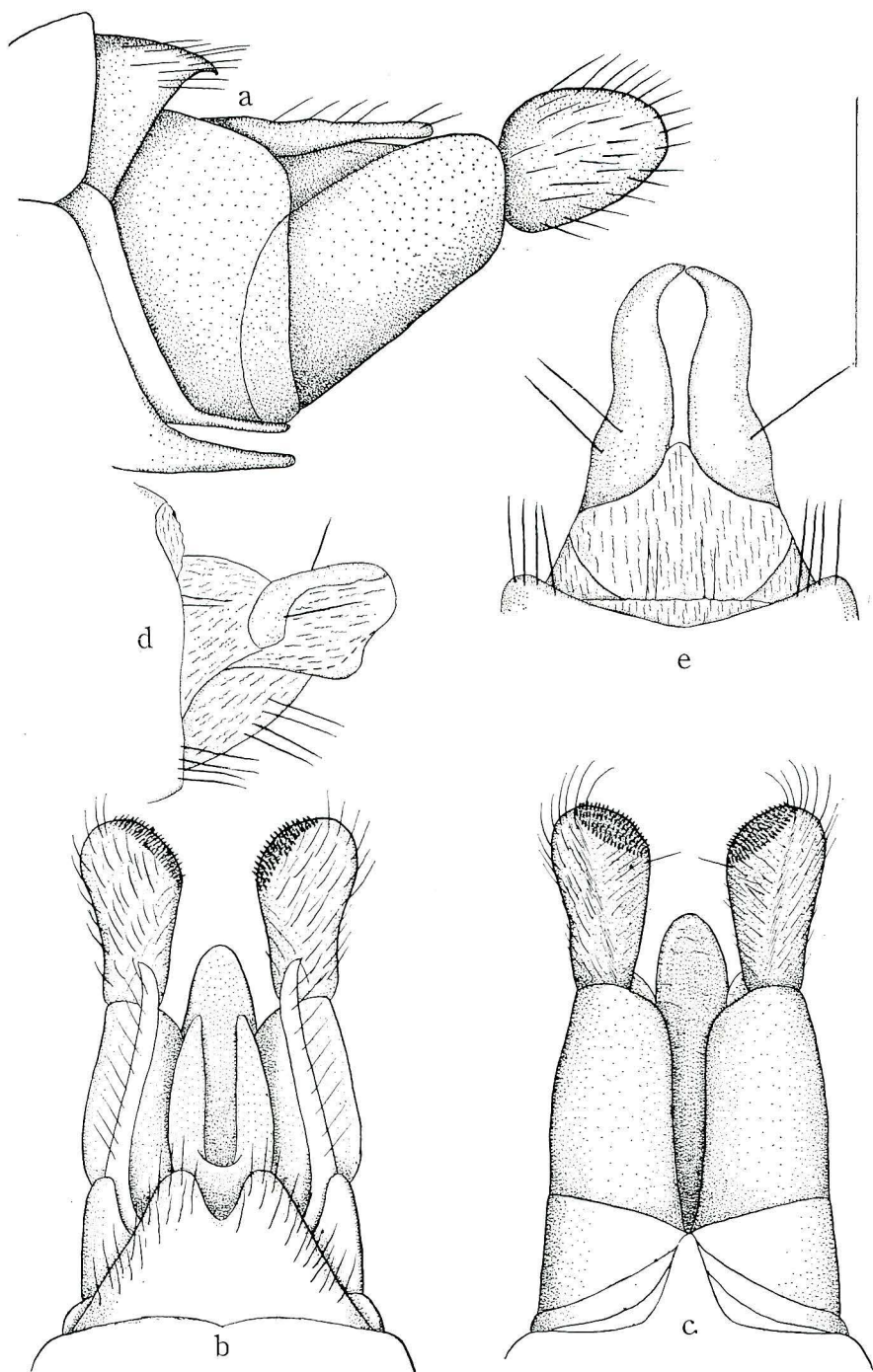
- a. Head of male. Lateral view.
- b - c. Wings of male.
 - b. Anterior wing. c. Posterior wing.
- d - f. Genitalia of male.
 - d. Ventral view. e. Lateral view. f. Dorsal view.

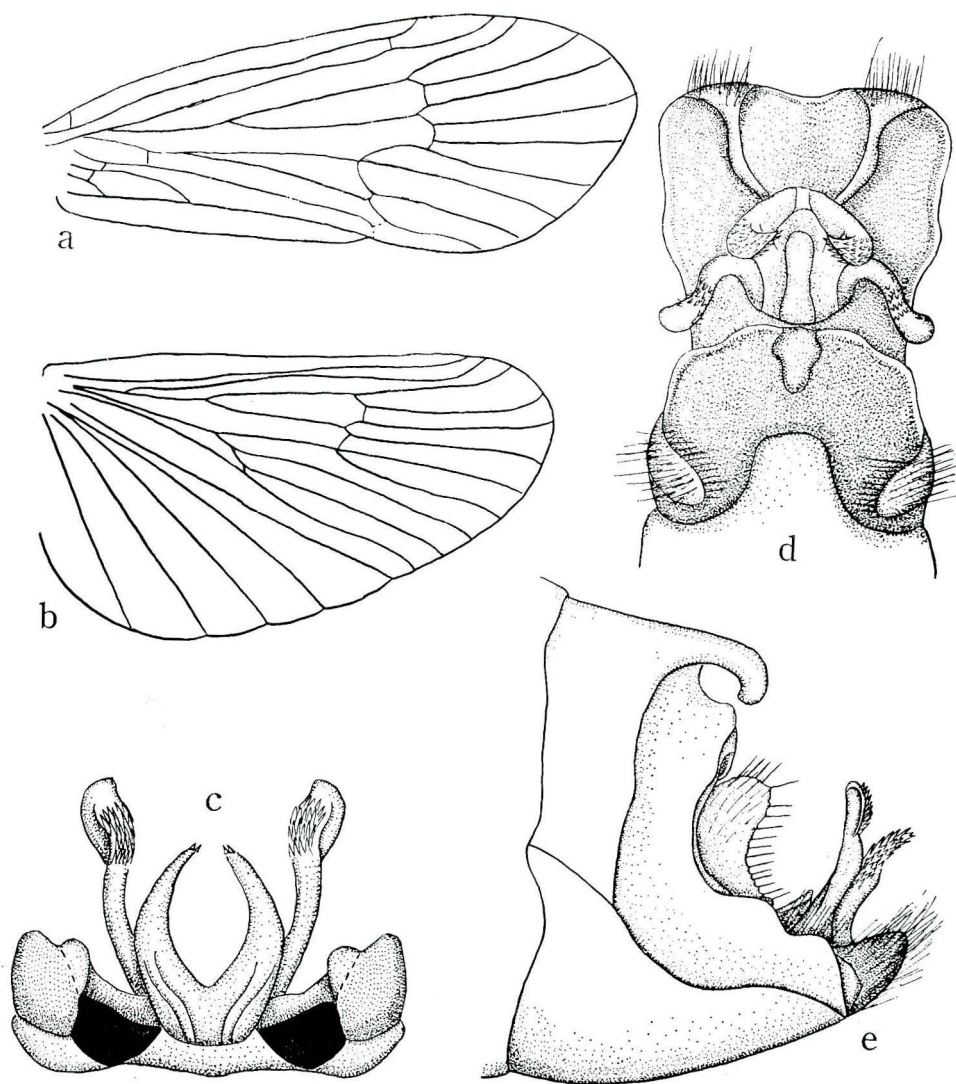
Plate 5. Head, Wings and Genitalia of *Dinarthodes satoi* sp. nov.

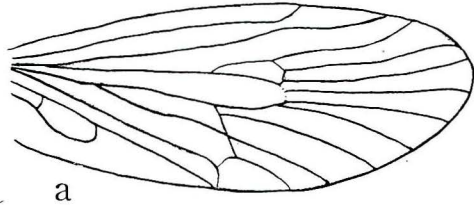
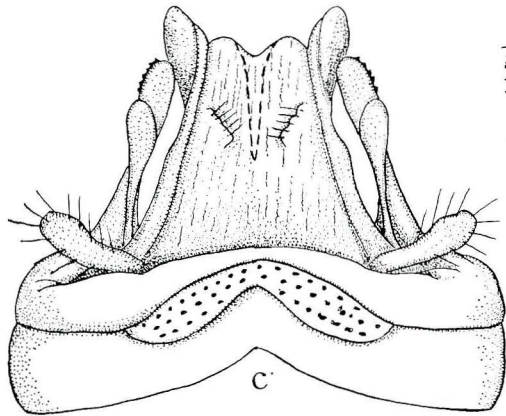
- a - b. Head of male.
 - a. Latral view. b. Dorsal view.
- c - d. Wings of male.
 - c. Anterior wing. d. Posterior wing.
- e - g. Genitalia of male.
 - e. Latral view. f. Dorsal view. g. Ventral view.

Plate 6. Head, Wings and Genitalia of *Crunoteciella kanbarana* sp. nov.

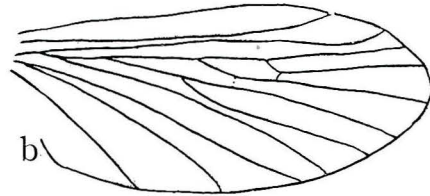
- a. Head of male. Dorsal view.
- b - c. Wings of male.
 - b. Anterior wing. c. Posterior wing.
- d - f. Genitalia of male.
 - d. Lateral view. e. Ventral view. f. Dorsal view.



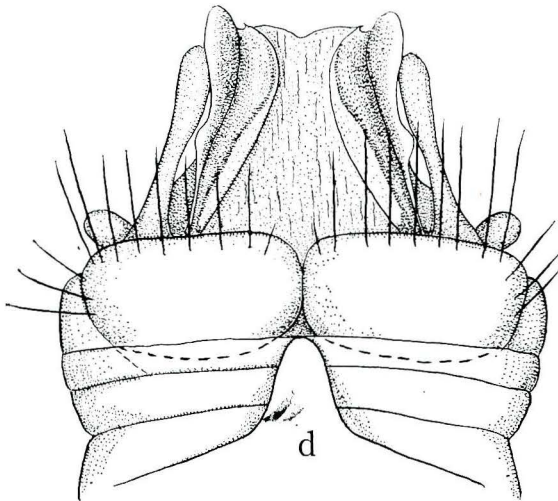




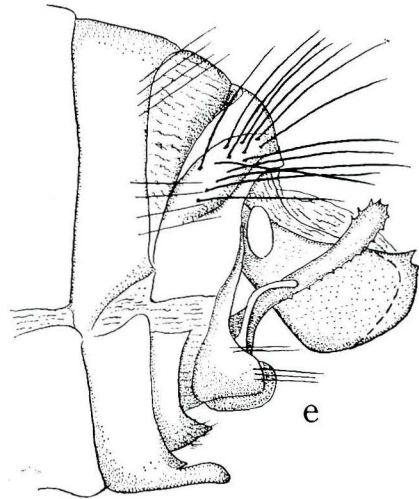
a



b



d



e

