

Identifications and Redescriptions of Some Japanese Gall Midges

(Diptera, Cecidomyiidae)

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This paper is intended to supplement the author's previous revision of the Japanese gall midges.¹⁷⁾ In that paper, over 15 species were left unnamed and the immature stages of gall making species were not described in some cases, owing to the inadequate information of the species or to the insufficient number of materials. After that, Gagné⁸⁾ and Yukawa & Nijveldt¹⁸⁾ identified a predacious midge of grain mites and a non-gall making species of the genus *Holoncurus* respectively. In this paper, these 2 species are mentioned again, and an additional species of the genus *Anarete* is newly identified by examining specimens preserved in the British Museum (Nat. Hist.). On the other hand, larval and pupal stages of 2 gall-makers are also redescribed, based on specimens collected by the author and on those borrowed from National Institute of Agricultural Sciences in Tokyo.

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Anarete johnsoni (Felt)

Microcerata johnsoni Felt, 1908; Felt, 1913.

Anarete johnsoni (Felt): Edwards, 1929; Pritchard, 1951.

Microcerata cockerelli Felt, 1908; Felt, 1913.

Microcerata spinosa Felt, 1913.

Microcerata iridis Cockerell, 1914.

Microcerata aldrichii Felt, 1915.

Anarete heracleana Edwards, 1938.

Anarete sp. Yukawa, 1971.

Distribution: Japan (Kyushu), Europe, N. America.

Remarks: The author has examined the following 7 species of the genus *Anarete* which are preserved in the British Museum (Nat. Hist.): *angustata* Edwards (\Rightarrow *corni* Felt), *candidata* Haliday,? *coracina* (Zett.), *heracleana* Edwards (\Rightarrow *johnsoni*), *lactipennis* Kieffer, *pallida* Edwards and *triarthra* Edwards. Among them, only in *heracleana* several apical spines were observed on the dististylus of the male genitalia. Felt⁸⁾ also stated that *johnsoni* has several short, stout apical and subapical spines on the dististylus. An unnamed Japanese species¹⁷⁾ well agrees with the above mentioned character and is newly identified here as *johnsoni*.

Holoncurus marginatus (de Meijere)

Coccopsis marginata de Meijere, 1901; Möhn, 1955; Panellius, 1965.

Holoncurus marginatus (de Meijere): Mamaev, 1966; Yukawa & Nijveldt, 1975.

Holoncurus obscurus Mamaev, 1964.

Holoncurus sp. Yukawa, 1971.

Distribution: Japan (Kyushu), Europe, USSR.

Remarks: Based on the investigation of de Meijere's type specimens, Yukawa & Nijveldt¹⁸⁾ redescribed 2 Porricondyline gall midges. In that paper, they identified an unnamed Japanese species of the genus *Holoncurus* as *marginatus*, because it was proved that the male genitalia drawn on p. 64 of Panellius' revision did not belong to *marginatus* but to *Holoncurus panelliusi* Yukawa, 1971.

Silvestrina cincta (Felt)

Cecidomyia cincta Felt, 1907.

Arthrocnodax cinctus (Felt): Felt, 1921.

Silvestrina cincta (Felt): Gagné, 1973.

Silvestrina silvestrii (Kieffer, 1912)

Silvestrina apiphila (Felt, 1907)

Silvestrina macrofila (Felt, 1907)

Silvestrina sp. Yukawa, 1971.

Distribution: Japan (Kyushu), Brazil, N. America, S. Africa.

Remarks: Recently, Gagné⁸⁾ stated that an unnamed Japanese species of the genus *Silvestrina* may probably be identical with *cincta*. It is highly probable that *cincta* is occurring in Japan, because this predacious species is polyphagous and widely distributed in the world.

Geromyia nawai (Monzen) (Figs. 1-2)

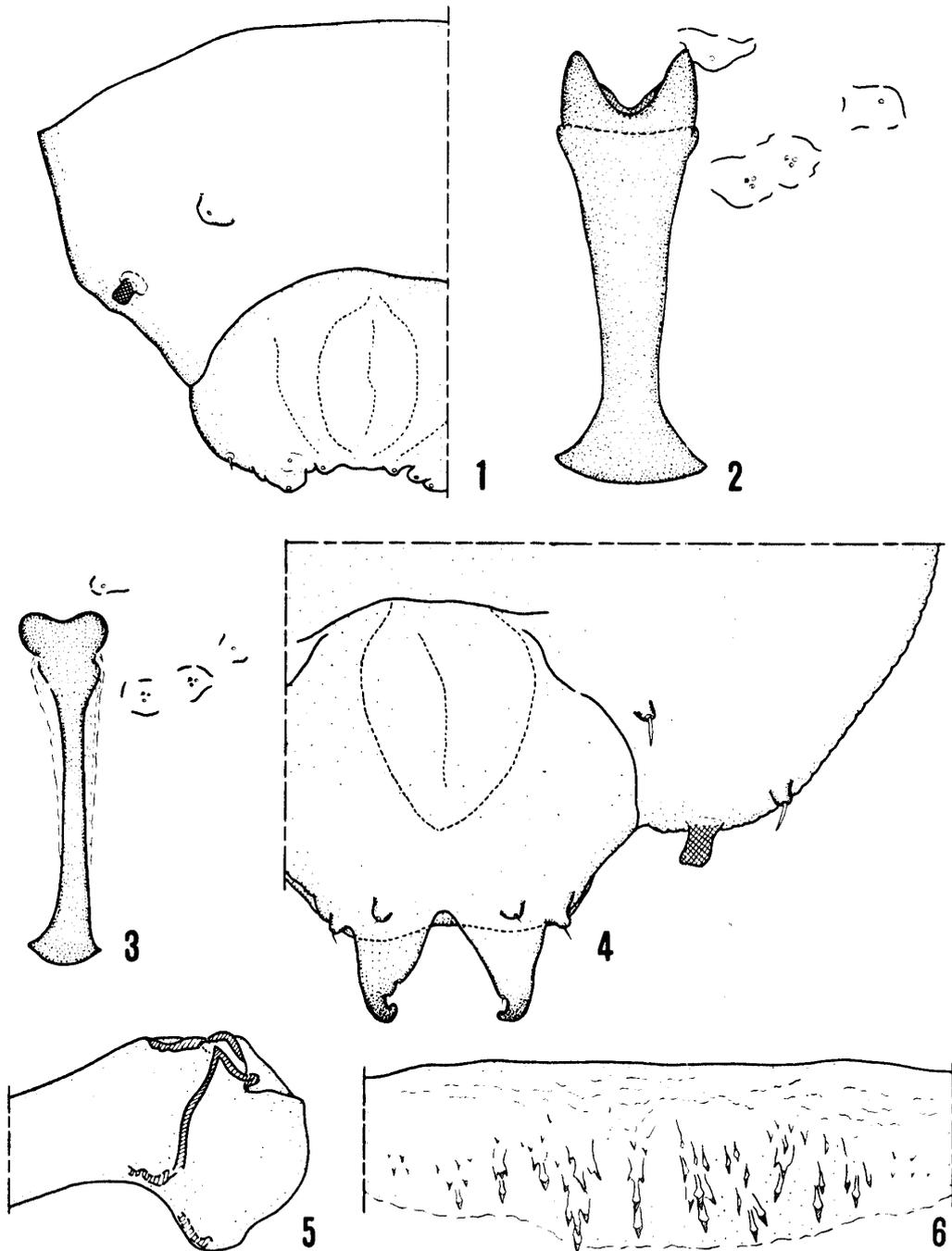
Japanese name: "Medake-tamabae"

Clinodiplosis nawai Monzen, 1937.

Macrodiplosis nawai Monzen: Monzen, 1955.

Geromyia nawai (Monzen): Yukawa, 1971.

Mature larva: Second antennal segment short, conical, 12 to 15 μ in length, about 1.7 times as long as basal width; cervical papillae without seta. Number and position of stigmata normal. Six dorsal papillae all without seta; usually 4 additional elliptical papillae present on dorsal surface, each without seta; eighth abdominal segment with 2 dorsal papillae, without seta; eight terminal papillae present, of which 2 are provided with a short seta, remaining 6 without seta. Sternal spatula 230 to 320 μ in length, distally incised by a U- or V-shaped emargination, forming a pair of triangular lobes; inner and outer lateral papillae normal in number and position (3 in number, respectively); sternal papillae without seta; inner pleural papillae without seta; four anterior and 2 posterior ventral papillae without seta; four ventral papillae on eighth abdominal segment each without seta; at least 2 anal papillae present, without seta. Each thoracic and abdominal segment, except prothorax and ninth abdominal segment, with many transverse rows of minute spines antero-ventrally.



Figs. 1-2. *Geromyia nawai* (Monzen); Figs. 3-6. *Profeltiella soya* (Monzen). 1&4. Eighth and ninth abdominal segments of larva (dorsal view); 2&3. Sternal spatula and papillae of larva (ventral view); 5. Antennal sheath of pupa (basal portion); 6. Sixth abdominal segment of pupa (anterior half of dorsal surface).

Specimens examined: 4 larvae (on slide), 10 larvae (in alcohol), galls collected from Nagayoshi-cho, Kagoshima-shi, Kyushu, 3. I. 1975, J. Yukawa leg. (host plant: *Pleioblastus simonii* Nakai, "Medake").

Distribution: Japan (Honshu, Kyushu).

Remarks: This species is characterized in the following respects: inner and outer lateral papillae normal in number and position; four additional papillae present dorsally; two of 8 terminal papillae each with a short seta.

***Profeltiella soya* (Monzen) (Figs. 3-6)**

Japanese name: "Daizu-kuki-tamabae"

Contarinia soya Monzen, 1936.

Profeltiella soya (Monzen): Yuasa, 1937; Monzen, 1955; Yukawa, 1971.

Mature larva: Second antennal segment short, 7 to 9 μ in length, about 1.7 times as long as basal width; cervical papillae without seta. Number and position of stigmata normal. Two (third and fourth) of 6 dorsal papillae on meso- and metathorax without seta, remaining 4 each with a short seta; six dorsal papillae on first to seventh abdominal segment each with a seta which is 12 to 18 μ ; two pleural papillae present on each side, with a seta which is 13 to 22 μ ; eighth abdominal segment with 2 dorsal papillae, each with a short seta which is about 22 μ ; stigmatal tubercle on eighth abdominal segment rather long, about 25 μ , directed posteriorly; six of 8 terminal papillae each with a short seta; remaining 2 with a rather long spine which is curved upward. Sternal spatula 150 to 190 μ in length, distally incised by a V-shaped emargination rather shallowly, forming a pair of rounded lobes; inner and outer lateral papillae normal in number and position; sternal and inner pleural papillae all without seta; four anterior and 2 posterior ventral papillae all without seta; two ventral papillae visible on eighth abdominal segment, each without seta; at least 2 anal papillae visible, without seta. Each thoracic and abdominal segment, except prothorax and ninth abdominal segment, dorsally and ventrally with many transverse rows of minute spines on anterior half.

Pupa: Apical spine short, smooth, triangularly pointed; apical papillae each with a seta which is 62 to 80 μ ; upper and lower frontal spines absent; usually 2 of 4 lower facial papillae with a seta which is about 20 μ ; one of 3 lateral facial papillae with a seta which is about 12 μ ; prothoracic horn long, 270 to 310 μ ; stigmatal tubercle present on second to sixth abdominal segments, each 7 to 12 μ in length; each abdominal segment rather sparsely with minute spines dorsally, laterally and ventrally; second to eighth abdominal segments each with several longitudinal rows of short spines antero-dorsally; at least 4 dorsal papillae visible, all without seta; two pleural papillae present on each side, with a short seta which is about 7 μ .

Specimens examined: 4 larvae (on slide), many larvae (in alcohol), galls collected from Shimohei, Iwate-ken, Honshu, 2. IX. 1935, ? leg. (host plant: *Glycine max* Merrill, "Daizu"); 2 pupae (on slide), 3 pupae (in alcohol), galls collected from Shimohei, Iwate-ken, Honshu, 14-21. VIII. 1936, H. Yuasa leg. (host plant: *ibid.*).

Distribution: Japan (Hokkaido, Honshu), Korea?

Remarks: This species is hardly distinguishable from its close relative *Profeltiella*

dizygomyza Barnes (1933) on the basis of larval and pupal characters. By examining type specimens of *dizygomyza*, it has also been proved that the two species cannot be separated by the presence or absence of a vertical protuberance in the adult stage (All specimens of *dizygomyza* that the author has examined have a more or less distinct vertical protuberance). However, *soya* is biologically different from *dizygomyza*: larvae of the former live in the petiole of *Glycine max*, the latter in the burrows of the cambium miner of Basket Willows as inquilines.¹⁾

References

- 1) Barnes, H. F.: *Ann. Appl. Biol.*, **20**, 498-519 (1933)
- 2) Edwards, F. W.: *Ent. Mon. Mag.*, **65**, 9-16 (1929)
- 3) : *Proc. R. Ent. Soc. Lond.*, (ser. B), **7**, 25-32 (1938)
- 4) Felt, E. P.: *Bull. N. Y. St. Mus.*, **110**, 97-165 (1907)
- 5) : *ibid.* **124**, 307-422, pls. (1908)
- 6) : *ibid.* **165**, 127-226, pls. (1913)
- 7) : *ibid.* **231**, **232**, 81-240, pls. (1921)
- 8) Gagné, R. J.: *Ann. Ent. Soc. Amer.*, **66**, 857-889 (1973)
- 9) Mamaev, B. M.: *Acta ent. bohém.*, **63**, 213-239 (1966)
- 10) Meijere, J. C. H. de: *Tijdschr. Ent.*, **44**, 1-12, pl. (1901)
- 11) Monzen, K.: *Bull. Sci. Res. Alumni Assoc. Morioka Coll. Agr. Forest.*, **12**, 45-58, pls. (1936)
- 12) : *Kontyû*, **11**, 180-194 (1937)
- 13) : *Annual Rep. Gakugei Fac. Iwate Univ.*, **9**, 34-48, pls. (1955)
- 14) Panelius, S.: *Acta Zool. Fenn.*, **113**, 1-157 (1965)
- 15) Pritchard, A. E.: *Univ. Calif. Publ. Ent.*, **8**, 239-275 (1951)
- 16) Yuasa, H.: *Jap. Jour. Appl. Zool.*, **9**, 266-273 (1937)
- 17) Yukawa, J.: *Mem. Fac. Agric. Kagoshima Univ.*, **8**, 1-203 (1971)
- 18) and Nijveldt, W.: *Bull. Zool. Mus. Univ. Amsterdam*, **4**, 103-109 (1975)