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ON TWO SPECIES OF *APHIDIUS* BRED FROM *CINARA LARICICOLUS* (MATSUMURA)

(TAXONOMIC NOTES ON *APHIDIIDAE* OF JAPAN, II*)

By

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(With one Textfigure)

In the course of studies on *Aphidiidae*, the two species, *Aphidius pini* HALIDAY and *Aphidius laricis* HALIDAY, both of which are new to Japan, have been reared from *Cinara laricicolus* (MATSUMURA), infesting *Larix Kaempferi*, the Japanese larch.

On this occasion the writer's acknowledgment must be expressed to the Foundation for Promotion of Science and Industrial Research of Japan (Nippon Gakujutsu Shinkôkai) for their kind financial assistance.

Key to the Species

Stigma broad, triangular, twice as long as broad; 1st tergite almost smooth, weakly rugulose basally, comparatively flat, linear to beyond the tubercles, from which the lateral sides are gradually widened towards the apex; face fusco-testaceous; fore and middle coxae testaceous; hind coxae fuscous; ovipositor straight, horizontal, the sheath stout, obtuse at the apex. Length, 3.5-4 mm. (♀), 3-3.5 mm. (♂). Empty skin of the victim entirely black. ...

..... *Aphidius pini* HALIDAY

Stigma narrow, thrice as long as broad; 1st tergite convex, slightly widened towards the apex, closely rugulose; face black; all the coxae fuscous; ovipositor curved, ascending, the sheath acute at the apex. Length, 3-3.5 mm. (♀), 2.5-3 mm. (♂). Empty skin of the victim dark brown, with scattered black spots. *Aphidius laricis* HALIDAY

*I.: Ins. Mats., XIII, pp. 81-84 (1939).

Aphidius pini HALIDAY

Aphidius pini HALIDAY, Ent. Magaz., II, p. 96, ♀ ♂ (1834); MARSHALL, Spec. Hymén. Europe, V, p. 566, ♀ ♂, Pl. XVIII, fig. 6, ♀ (1896); DALLA TORRE, Cat. Hymen., IV, p. 10 (1898); MARSHALL, Trans. Ent. Soc. London, p. 40, ♀ ♂, Pl. I, fig. 7, ♀ (1899); SEITNER, Zbl. Forstwes., 62, p. 45 (1936).

Aphidius (*Coelonotus*) *pini* THOMSON, Opusc. ent., p. 2334, ♀ ♂ (1895).

Coelonotus pini SZÉPLIGETI, Gen. Insect., 22-24, p. 185 (1904); FAHRINGER, Festschrift 60. Geburtst. Prof. Dr. E. STRAND, III, pp. 242 & 244, ♀ ♂ (1937).

♀. Black; face, mouth-parts and two basal joints of the antennae fusco-testaceous; prothorax fusco-testaceous beneath; abdomen with the 2nd suture pale brown. Wings slightly infumated towards the apex; tegulae testaceous; stigma and veins dark brown to black. Legs fusco-testaceous; femora and tibiae of the middle legs fuscous; hind legs darker, with the tibiae at the base and the tarsi pale; hind coxae broadly fuscous basally; all the trochanters testaceous.

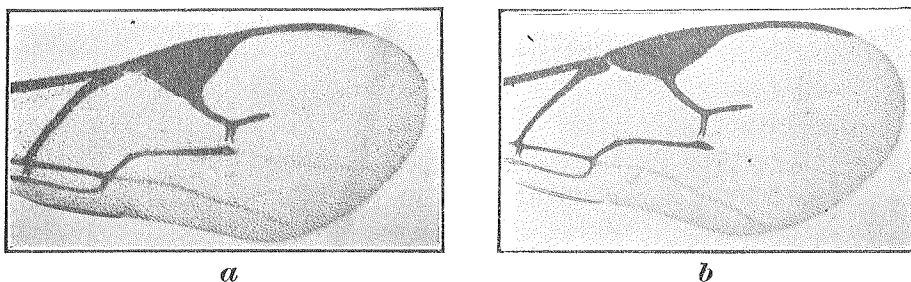


Fig. 1.

- a. Fore wing of *Aphidius pini* HALIDAY (♀).
- b. Fore wing of *Aphidius loricis* HALIDAY (♀).

Head transverse, smooth and shining, with whitish pubescence; antennae shorter than the body, 21- or 22-jointed. Thorax smooth and shining; mesonotum somewhat punctate-rugulose, the parapsidal furrows weakly impressed. Propodeum smooth and shining, somewhat rugulose laterally, declivous at the strong transverse carina, the anterior face with a median longitudinal carina which extends from the anterior margin to the transverse carina, and the posterior face broadly excavated medially, with two widely separated longitudinal carinae extending from the transverse carina to the posterior margin and bordering the excavation. Stigma broad, triangular, twice as long as broad; metacarpus a little shorter than the length of the stigma; 1st abscissa of the radius curved, a little less than 1.5 times the length of the 2nd, which is 1.5 times as long as the intercubitus; nervulus slightly postfurcal. Abdomen longer than the head and thorax united, lanceolate; 1st tergite almost smooth, weakly rugulose

basally, comparatively flat, linear to beyond the tubercles which are situated before the middle, from the tubercles the lateral sides gradually widened towards the apex, so that the extremity is twice as broad as the base; 2nd and following tergites smooth and shining; ovipositor short, straight, horizontal, the sheath stout, obtuse at the apex. Length, 3.5-4 mm.

♂. Closely resembles the female in general structure and colour, but differs from the latter as follows:—

Antennae 23- or 24-jointed, rarely 22- or 25-jointed; prothorax dark brown beneath; wings whitish hyaline; 1st tergite stout, not so widened towards the apex as in the female. Length, 3-3.5 mm.

Described from 37 females and 36 males.

Host: *Cinara laricicolus* (MATSUMURA).*

This species has been reared from *Cinara laricicolus* (MATSUMURA) infesting *Larix Kaempferi*, the Japanese larch, by Dr. H. KÔNO and the writer. The Aphides attacked by the parasite are found frequently on leaves of the host-plant, the empty skins becoming entirely black.

In 1899, A. T. MARSHALL recorded this species as "Parasite of the species of *Lachnus* inhabiting *Pinus sylvestris* and *Abies larix*; bred by BIGNELL out of *Lachnus pini* L. taken on the spruce fir, *Abies excelsa*." Furthermore, M. SEITNER (1936) gave "*Lachnus cembrae* SEITNER" and J. FAHRINGER (1937) gave "*Lachnus (Cinara) pini* L., *pinæ* KOCH u. *piceicola* CHOL." as its hosts.

Habitat: Hokkaido (Sapporo, 2 ♀ ♀, 20. VI, 1937, H. KÔNO leg., 3 ♀ ♀, 2 ♂ ♂, 2. VI, 1938, H. KÔNO leg., 4 ♀ ♀, 5 ♂ ♂, 5. VI, 1938, C. WATANABE leg., 6 ♀ ♀, 27. V, 14 ♀ ♀, 8 ♂ ♂, 29. V, 5 ♀ ♀, 5 ♂ ♂, 5. VI, 2 ♀ ♀, 6 ♂ ♂, 17. VI, 7 ♀ ♀, 5 ♂ ♂, 29. VI, 1940, C. WATANABE leg.).

General Distribution: Japan; Europe.

Remarks: Judging from the original description of *Aphidius lachnivorius* ASHMEAD** which was described from "One specimen labeled from *Lachnus* sp. on Larch", from Nikko, Japan, the species is undoubtedly closely related to the present one, *Aphidius pini*, and may probably be synonymous with the latter, but the description is too short to allow one to come to a definite conclusion.

***Aphidius laricis* HALIDAY**

Aphidius laricis HALIDAY, Ent. Magaz., II, p. 97, ♀ ♂ (1834); MARSHALL, Spec. Hymén. Europe, V, p. 567, ♀ ♂ (1896); DALLA TORRE, Cat. Hymén., IV, p. 9 (1878); MARSHALL, Trans. Ent. Soc. London, p. 41, ♀ ♂ (1899).

*Jour. College Agr., Tohoku Imp. Univ., Sapporo, VII, p. 380 (1917) (as *Lachnus laricicolus*); INOUE, Ins. Mats., XIII, p. 138 (1939) (as *Cinara laricicolus*).

**Proc. U. S. Nat. Mus., XXX, p. 189, ♂ (1906).

Aphidius (Coelonotus) laricis THOMSON, Opusc. ent., p. 2334, ♀ (1895).

Coelonotus laricis SZÉPLIGETI, Gen. Insect., 22-24, p. 185 (1904); FAHRINGER, Festschrift 60. Geburtstagst. Prof. Dr. E. STRAND, III, pp. 243 & 244, ♀ ♂ (1937).

♀. Black; face and antennae at the base somewhat brownish; mandibles and tegulae fusco-testaceous; abdomen with the 2nd suture pale brownish. Wings whitish hyaline, somewhat infumated towards the apex; stigma and veins dark brown. Legs fusco-testaceous, the hind legs still darker; all the coxae dark brown to black.

Head transverse, smooth and shining, with whitish pubescence; antennae shorter than the body, 21- or 22-jointed. Thorax almost smooth and shining, only the mesonotum finely punctate anteriorly; parapsidal furrows faintly impressed. Propodeum much resembles that of the preceding species. Stigma narrow, thrice as long as broad; metacarpus as long as the length of the stigma; 1st abscissa of the radius curved, 1.5 times as long as the stub of the 2nd, which is a little longer than the intercubitus; nervulus slightly postfurcal. Abdomen lanceolate, longer than the head and thorax united; 1st tergite convex, closely reticulate-rugulose, slightly widened towards the apex, 3 times as long as broad, the tubercles situated before the middle; 2nd and following tergites smooth and shining; ovipositor short, curved, ascending, the sheath acute at the apex. Length, 3-3.5 mm.

♂. Similar to the female, but differs from the latter in the following respects:—

Body and legs darker in colour; wings whitish hyaline, not infumated; antennae 23- or 24-jointed; 1st tergite shorter than that of the female. Length, 2.5-3 mm.

Described from 4 females and 4 males.

Host: *Cinara laricicolus* (MATSUMURA).

This species has been also reared from *Cinara laricicolus* (MATSUMURA) by Dr. H. KÔNO and the writer at Sapporo. It is, however, not so common as the preceding species. The Aphides which were parasitized by this species are found on leaves of the host-plant mixed with those parasitized by *Aphidius pini*, and yet they are easily distinguishable from the latter in having the empty skins dark brown, with scattered black spots.

Further, in 1899, A. T. MARSHALL recorded this species as "Reared by HALIDAY out of some puceron inhabiting *Abies larix*", and in 1937, J. FAHRINGER gave "*Lachnus (Cinara) laricis* KOCH?" as its host.

Habitat: Hokkaido (Sapporo, 1 ♀, 21. VI, 1937, H. KÔNO leg., 2 ♀ ♀, 5. VI, 1938, C. WATANABE leg., 1 ♀, 4 ♂ ♂, 17. VI, 1940, C. WATANABE leg.).

General Distribution: Japan; Europe; Siberia.