

**Description of a New Species of *Trichionotus* Cameron
from Japan, with a Note on One Known Species
(Hymenoptera: Ichneumonidae)**

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Introduction

The genus *Trichionotus* Cameron is the largest genus in the subfamily Amonalinae, of worldwide distribution. The members of this genus are parasitic on various Lipidoptera (Hesperidae, Pieridae, Lycaenidae, Pyralididae, Yponomeutidae, Noctuidae, and others). So far as I am aware, twenty-six species belonging to *Trichionotus* have been recorded from Japan. In this paper one new species is added to the fauna of Japan, viz., *Trichionotus leptideae* sp. nov., based on material reared from pierid pupa by Mr. K. Itô. Further, a redescription and another host record of *T. halpee* are given in this paper, based on material reared from hesperid pupae by Mr. Y. Hirahara. This species was originally described by Uchida (1958) as a parasite of *Halpe* (= *Thoressa*) *varia* (Murray) from Hokkaido and Honshu. The type of the new species is preserved in the collection of the Entomological Institute, Hokkaido University, Sapporo.

Trichionotus leptideae sp. nov. (Figs. 1, 3, 4 & 6)

♂. Face about 1.1 times as wide as high at level of clypeal fovea, rather strongly and densely punctate, the punctures weaker and sparser laterally, with dense, rather long, white hairs; clypeus weakly convex, with rather dense, setiferous punctures, bare on apicomedian portion; apical margin of clypeus with a median pointed tooth; inner margins of eyes rather strongly convergent ventrad; eyes without hairs; malar space narrow, 1/3 as long as basal width of mandible; mandible moderately stout, slightly tapering towards apex, with sparse long hairs, the upper tooth about 1.3 times as long as the lower one; distance between lateral ocelli and eyes about 1.8 times as long as diameter of an ocellus; frons (Fig. 1) rather strongly and longitudinally rugose laterally, transversely rugose medially, with a distinct median longitudinal carina, and with a short, lamella-like carina just behind antennal socket; ocellar area (Fig. 1) with a narrow, distinct longitudinal groove; temple weakly swollen, 4/5 as long as eye in lateral view, strongly and rather sparsely punctate on dorsal half, rather strongly rugoso-punctate on ventral half; occipital carina (Fig. 1) strong and complete, the dorsocentral portion weakly arched downwards, and the lower end joining base of mandible. Antennae filiform, with 54 segments; 1st flagellar segment 6.3 times as long as wide at apex; 2nd flagellar segment about 1/2 as long as the 1st and about as long as the 3rd. Pronotum rugose on about lower 2/3, strongly punctate on dorsal 1/3; epomia weak, the upper end curved forward and not reaching to the dorsal margin; mesoscutum strongly and rather densely punctate, the posteromedian portion and base of notaulus rugose or striate, and with 5 transverse striae on

posterior portion; notaulus replaced by rugoso-punctures, reaching to basal 2/3; scutellum polished, finely and sparsely punctate, rather strongly convex, with a shallow, wide, longitudinal sulcus, the lateral carina strong with a few short transverse striae along inner margin; lower corner of propleurum strongly bending backward and separated by a weak transverse carina; mesopleurum rather weakly and rather sparsely punctate, transversely rugose just below subtegular ridge, with short transverse striae along the anterior and posterior margins of mesopleurum and posterior margin of prepectus; speculum polished, with a few fine punctures; upper end of prepectal carina far distant from anterior margin of mesopleurum and ending at lower 2/5 of hind edge of pronotum; postpectal carina strong, interrupted in front of each middle coxa; anterior margin of mesosternum strongly protuberant as a high lamella; metapleurum strongly and coarsely reticulate-rugose. Propodeum reticulate-rugose as in metapleurum, with a shallow, wide median longitudinal groove; propodeal spiracle large, subcircular; apex of propodeum at basal 3/5 of hind coxa; prolongation of propodeum coarsely rugose. Wings (Figs. 4 & 6) with nervulus postfurcal by 2/7 of its own length, slightly inclivous; portion of cubitus between intercubitus and 2nd recurrent vein 7/9 as long as intercubitus; intercubitus basad of 2nd recurrent vein; postnervulus intercepted at upper 1/7, the posterior portion clearly reclivous; nervellus not intercepted, weakly reclivous, and gently curved inwards; discoidiella absent on basal 1/3, present on apical 2/3; brachiella absent. Legs with hind femur 6.1 times as long as wide in lateral view; hind tibia slender, about 8.8 times as long as wide at apex including hairs; inner spur of hind tibia 1.2 times as long as the outer one; 1st to 3rd hind tarsal segments slender (Fig. 3); metatarsus of hind leg 9.5 times as long as wide at apex, 2.5 times as long as 2nd tarsal segment, and about 1.1 times as long as 2nd and following segments together except claws (Fig. 3); hind 2nd tarsal segment 4.9 times as long as wide at apex; front coxa slightly convex, its under side completely marginate by a sharp carina; all tarsal claws weakly pectinate at base. Abdomen with 1st tergite 6.3 times as long as basal width of postpetiole; postpetiole 1.9 times as long as wide at base; 2nd tergite 1.2 times as long as the 1st and 1.9 times as long as the 3rd; epipleurum of 2nd tergite narrow, separated by a crease, and 0.3 times as long as basal width of 2nd tergite.

Black, with legs and abdomen largely reddish brown. Face, clypeus, mandible except blackish teeth, palpi and lower corner of frons yellow; dorsal 1/3 of temple tinged with dark brown; scape yellow on ventral and inner lateral sides, blackish on dorsal and outer lateral sides; pedicel blackish; 1st flagellar segment blackish, reddish brown apicoventrally; 2nd and following segments of flagellum reddish brown to infusate, a little paler basoventrally. Tegula yellowish brown, a little darker basally; humeral angle of pronotum yellowish brown. Front and middle legs with coxae pale yellow, a little darker basally; 1st trochanters pale yellow; femora light ferruginous; tibia pale yellow on outer side, light yellowish brown on inner side; tarsi pale yellow to yellowish brown, a little darker apically. Hind leg reddish brown, the dorsal side of trochanter and basodorsal side of femur blackish. Abdomen reddish brown; dorsal side of 2nd tergite infusate; apical 1/2 of 6th tergite and subsequent tergites black; clasper and cercus black. Wings subhyaline; stigma dirty yellow.

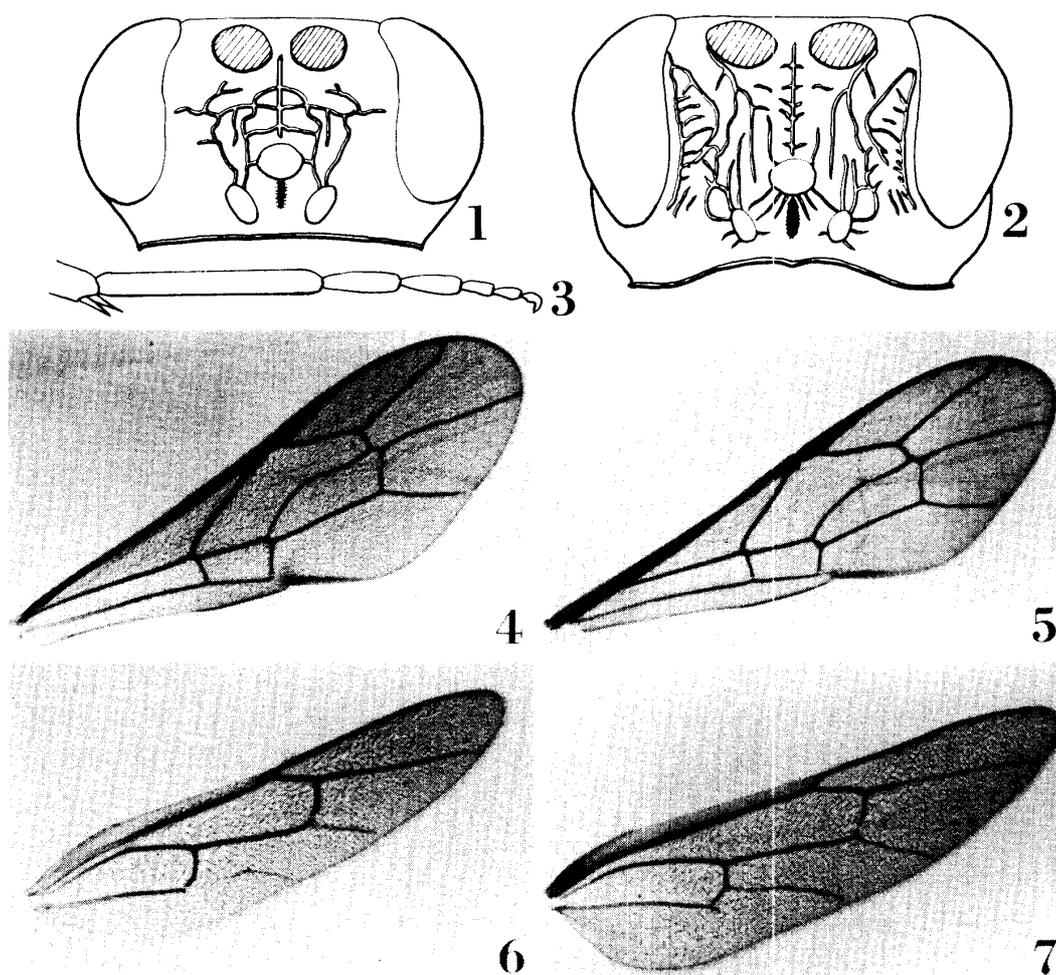
Length: Body 13.1 mm., forewing 6.1 mm.

♀. Unknown.

Holotype (♂): Moiwa-yama, Sapporo, Hokkaido, 25-x-1984, reared from pupa of *Leptidea morsei* Fenton by K. Itô.

Host: *Leptidea morsei* Fenton (Pieridae, Lep.).

Distribution: Japan (Hokkaido).



Figs. 1 & 2. Head in dorsal view: 1, *Trichionotus leptideae* sp. nov., ♂; 2, *T. halpee* (Uchida), ♀.
 Fig. 3. Hind tarsus, *T. leptideae* sp. nov., ♂.
 Figs. 4 & 5. Forewings: 4, *T. leptideae* sp. nov., ♂; 5, *T. halpee* (Uchida), ♀.
 Figs. 6 & 7. Hind wings: 6, *T. leptideae* sp. nov., ♂; 7, *T. halpee* (Uchida), ♀.

This species is most closely related to the Palearctic *T. flexorius* (Thunberg, 1822), but it differs from the latter by the polished scutellum with very fine and sparse punctures, the pointed basal portion of the 2nd discoidal cell, the comparatively slender hind tarsus, the colouration of propodeum and temple. Furthermore, this species is similar to the Japanese species, *T. daisetsuzanus* (Uchida, 1928), from which this is easily distinguished by the occipital carina arched downwards, the punctuation and colouration of temple, the rather weakly and sparsely punctae mesopleurum, and the narrow, polished scutellum with fine sparse punctures.

***Trichionotus halpee* (Uchida) (Figs. 2, 5 & 7)**

Labrorychus (Labrorychus) halpee Uchida, Ins. Mats. 22: 46, 1958.

Labrorychus halpee: Iwata, Acta Hymenopterologica 1: 168, 1960.

This species is characterized by the face with five, weak but distinct vertical grooves, the frons with coarse rugae, the tegula swelling as a ear-lobe, and the top of the eye without a yellow spot. On the basis of the present specimens a redescription is given below:—

♀. Face slightly higher than wide at level of clypeal fovea, moderately strongly and rather

sparsely punctate, the punctures a little weaker laterally, with 5 indistinct vertical groove and rather short, whitish, rather sparse hairs; clypeus slightly convex, with rather sparse, setiferous punctures, bare on apicomedian portion; apical margin of clypeus with a strong median pointed tooth; inner margins of eyes rather strongly convergent ventrad; eyes bare; malar space narrow, $1/3$ – $3/8$ as long as basal width of mandible; mandible moderately stout, slightly tapering toward apex, with sparse, setiferous punctures, the upper tooth about 1.1 times as long as lower one; distance between lateral ocelli and eyes 1.4 times as long as diameter of an ocellus; frons (Fig. 2) coarsely reticulate-rugose mostly, strongly and densely punctate on basolateral corner, with a high median vertical carina; hairs of frons and temple concolorous with its ground colour; ocellar area with a distinct longitudinal groove (Fig. 2); temple slightly swollen, $5/8$ – $2/3$ as long as wide in lateral view, rather strongly and densely punctate, the punctures weaker and sparser ventrally; occipital carina strong and complete, the dorsocentral portion weakly arched upward (Fig. 2), and the lower end joining base of mandible. Antennae filiform, with 54 segments; 1st flagellar segment 5.7–5.9 times as long as wide at apex; 2nd flagellar segment $1/2$ – $5/9$ as long as the 1st and 1.1–1.2 times as long as the 3rd. Pronotum strongly rugoso-punctate, the punctures a little weaker dorsally; epomia very strong, long, the upper end curved forward and reaching to near center of pronotum; mesoscutum rugose, the median portions of median and lateral lobes weakly and rather densely punctate; notaulus indistinct; tegula swollen as a ear-lobe; scutellum moderately strongly convex, reticulate-rugose, with a distinct basal carina, without lateral carinae; lower corner of propleurum strongly bending backward and separated by a weak transverse carina; mesopleurum strongly rugoso-punctate wholly; speculum sparsely striate-punctate; upper end of prepectal carina reaching to anterior ridge of mesopleurum, and ending at lower $1/2$ of hind edge of pronotum; postpectal carina strong and complete; anterior margin of mesosternum strongly protuberant as a lamella; metopleurum coarsely reticulate-rugose. Propodeum reticulate-rugose as in metopleurum, with a shallow, rather narrow median longitudinal groove; propodeal spiracle short elliptic; apex of propodeum at basal $5/8$ – $2/8$ of hind coxa; prolongation of propodeum coarsely reticulate-rugose as in propodeum. Wings (Figs. 5 & 7) with nervulus postfurcal $1/5$ – $1/3$ of its own length, slightly inclivous; portion of cubitus between intercubitus and 2nd recurrent vein $1/2$ – $3/5$ as long as intercubitus; intercubitus basad of 2nd recurrent vein; postnervulus intercepted at upper $1/4$ – $3/7$, the posterior portion reclivous; nervellus intercepted at upper $4/9$, reclivous; brachiella absent; discoidiella extending to hind margin of hind wing. Leg with hind femur slender, 8.0–8.1 times as long as wide in lateral view; hind tibia slender, 10.2–10.5 times as long as wide at apex including hairs; inner spur of hind tibia 1.3–1.4 times as long as the outer one; 1st to 3rd hind tarsal segments slender; metatarsus of hind leg 11.0–11.3 times as long as wide at apex, 2.1–2.2 times as long as the 2nd tarsal one, and about 1.9 times as long as 2nd and following segments together except claws; hind 2nd tarsal segment 5.7–6.0 times as long as wide at apex; front coxa slightly convex, its inner side completely marginate by a distinct carina; front tarsal claws weakly pectinate; middle and hind tarsal claws moderately strongly pectinate. Abdomen with 1st tergite 4.6–4.9 times as long as basal width of postpetiole; postpetiole stout, 0.9 times as long as wide at base; 2nd tergite 1.6–1.8 times as long as the 3rd; epipleurum very narrow, vestigial partly.

Ferruginous to dark reddish brown. Face, clypeus, malar space, lower corner of temple, mandible, lower lateral corner of frons, scutellum, postscutellum, metopleurum, propodeum, front and middle coxae, trochanters, tibiae and tarsi pale yellow to light yellowish brown; mandibular teeth blackish; hind tibia ferruginous, infuscate apically. Ovipositor sheath fuscous. Wings weakly tinged with fluvous; stigma yellowish brown.

Length: Body 18.0–18.1 mm., forewing 8.5–8.7 mm.

♂. Agrees with above-mentioned description of the female, except the following aspects:—

Antennae with 51–56 segments; 1st flagellar segment 5.1–5.4 times as long as wide at apex and 1.7–1.8 times as long as the 2nd; distance between lateral ocelli and eyes 1.3–1.5 times as long as diameter of an ocellus; upper tooth of mandible 1.2–1.4 times as long as lower tooth. Nervulus postfurcal by 1/3–2/5 of its own length; nervellus intercepted at upper 1/3–4/9. Hind femur 7.8–8.1 times as long as wide in lateral view; hind tibia 10.0–10.3 times as long as wide at apex; basitarsus of hind leg 10.8–11.7 times as long as wide at apex and slightly shorter than 2nd and following segments together except claws. Mesoscutum, speculum, mesosternum, mesopleurum, pronotum, temple, vertex and frons except for lower lateral corner sometimes infusate, but partly dull ferruginous. Seventh tergite ferruginous, blackish dorsally, laterally, and ventrally; 8th tergite and clasper entirely blackish; cercus fuscous.

Length: Body 17.4–20.2 mm., forewing 8.6–9.6 mm.

Specimens examined: 1♂ (6–vii–1984), 2♂♂ (9–vii–1984), 1♀ (10–vii–1984), 1♂ (22–vii–1984), Ôno-dake, Ei-chô, Kagoshima-ken, all reared from pupae of *Thoressa varia* (Murray) on *Pleioblastus simonii* Nakai by Y. Hirahara; 1♂ (12–vi–1984), Kakoiyama, Ei-chô, 2♀♀ (29–viii– & 2–ix–1984), Shinmaki, Ei-chô, Kagoshima-ken, all reared from pupae of *Potanthus flavum* Murray on *Miscanthus sinensis* Anderss. by Y. Hirahara.

Distribution: Japan (Hokkaido, Honshu and Kyushu).

Hosts: *Thoressa varia* (Murray) (Hesperiidae, Lep.) (after Uchida, 1958) and *Potanthus flavum* Murray (Hesperiidae, Lep.).

This species is variable in colouration. Judging from the original description of *T. halpee*, specimens from the northern localities are darker, with the temple, thorax except for propodeum, dorsal sides of 5th to 7th tergites and apical part of abdomen in female usually infusate to black.

Summary

Trichionotus leptideae sp. nov. from Japan is described and a redescription of *T. halpee* (Uchida) is given. Host records of these species are also given.

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