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DESCRIPTIONS OF SEVEN NEW ICHNEUMONFLIES OF CALLIDIOTES FROM JAPAN
(Hymenoptera: Ichneumonidae)

Setsuya Momoi

The following descriptions are based on specimens in the collection of Drs. Henry and Marjorie Townes of the American Entomological Institute and in my own collection in the Hyogo University of Agriculture. I am greatly indebted to Drs. Henry and Marjorie Townes for kind encouragement, for critically reading the manuscript and for allowing me the use of their collection.

1. *Callidiotes corniger*, new species

♀. Frons with a median compressed projection which is slightly higher than the diameter of median ocellus and with no median groove. Lateral ocellus distant from eye by about 1.1 its diameter. Malar space about 1.0 as long as basal width of mandible. Flagellum not or barely thickened towards the apex beyond the middle, its segment 3 about 3.0 as long as wide. Scutellum with a lateral carina extending from the base to middle. Mesopleuron, metapleuron and propodeum weakly polished, with distinct dense punctures. Propodeum completely areolated by weak but still distinct carinae. Basal area almost triangular, elongate. Areola a little broader than it is long behind costulae, the costulae joining areola near the middle. Outer hind angle of second lateral area obtuse, rounded, weakly raised. Tergite 1 polished, with some punctures, its dorso-lateral keel obtuse and barely complete, and its dorso-medial keel short, not extending beyond the spiracle. Tergite 2 about 2.0 as long as wide at the base, polished, hairless. Tergite 3 polished, almost hairless. Areolet defined, receiving second recurrent near the base. Nervellus broken at the lower 0.25, vertical. Hind tibia slender, about 1.0 as long as femur. Fore wing ca. 7.2 mm.

♀. Lateral ocellus distant from eye by about 0.9 its diameter. Malar space about 0.5 as long as basal width of mandible. Flagellar segment 3 about 2.0 as long as wide. Mesopleuron, metapleuron and propodeum weakly polished, with fine punctures. Areola slightly longer than it is wide behind costulae. Tergites 2 and 3 with evenly dense hairs. Hind tibia about 1.2 as long as femur. Clasper strongly elongate, slender. Otherwise similar in structure to ♀.

Black. Palpi yellowish white. Mandible and clypeus mostly piceous brown. Tergites 1 and 2 brown at the extreme apex. Fore and middle legs brownish yellow, their coxae except the apex, and parts of their trochanters and femora piceous brown to black, and their tarsal segment 5 fuscous brown. Hind coxa white at the apex. Hind tarsal segments 2 through 4 white. Antenna dark brown, its median five to seven segments white. Wings weakly infumate. Veins dark brown.


2. *Callidiotes montanus*, new species

♀. Froms with a very obtuse, indistinct median projection which has no median groove. Lateral ocellus distant from eye by about 1.1 its diameter. Malar space about 1.0 as long as basal width of mandible. Flagellum not thickened towards the apex beyond the middle, its segment 3 about 2.9 as long as wide. Scutellum with a lateral carina extending from the base to near middle. Mesopleuron, metapleuron and propodeum strongly mat, with weak indistinct punctures. Propodeum with a very feeble incomplete trace of areolation. Areola slightly longer than it is wide behind costulae, the costulae joining areola a little before the middle and incomplete or missing. Outer hind angle of second lateral area sharp, pointed, not raised. Tergite 1 polished, with some punctures, its dorso-lateral keel indistinct and incomplete, and its dorso-medial keel indistinct, not extending beyond the spiracle. Tergite 2 about 2.3 as long as wide at the base, polished, hairless. Tergite 3 polished, almost hairless. Areolet defined,
Fig. 1. Callidiotes canalis, new species (♀).

receiving second recurrent near the base. Nervellus broken at the lower 0.2, vertical. Hind tibia slender, about 1.0 as long as femur. Fore wing ca. 6.5 mm.

In coloration similar to ♂ of corniger.

♂. Lateral ocellus distant from eye by about 1.0 its diameter. Malar space about 0.5 as long as basal width of mandible. Flagellar segment 3 about 2.0 as long as wide. Propodeum a little more strongly areolated than in ♀. Areola about 1.5 as long as it is wide behind costulae. Tergite 2 about 1.6 as long as wide at the base. Tergites 2 and 3 with evenly dense hairs. Hind tibia about 1.1 as long as femur. Clasper strongly elongate, slender. Otherwise similar to ♀ in structure.

Black. Palpi white. Clypeus, mandible except the teeth, and tergites 1 through 4 apically brownish yellow to yellowish white. Face often brownish. Mesosternum, scutellum and postscutellum more or less reddish. Fore and middle legs light brown to white, with a line on the upper side of their femora dark brown, and their tarsi more or less infuscate. Apex of hind coxa, parts of hind trochanter, flexor side of hind tibia basally, bases of hind tarsal segments 1 and 2, and hind tarsal segments 3 and 4, white. Antenna dark brown, with the median five or six segments white, its scape and pedicel yellowish beneath. Wings nearly hyaline. Veins dark brown.

raised. Tergite 1 polished, with dense longitudinal striae on the postpetiole except the apex medially, its dorso-lateral keel indistinct and incomplete, and its dorso-median keel extending to the spiracle. Tergite 2 about 1.4 as long as wide at the base, weakly mat, with fine longitudinal striae laterally and apically, almost hairless. Tergite 3 very feebly mat basally, almost hairless. Areolet defined, receiving second recurrent behind the middle. Nervellus broken at the lower 0.25, vertical. Hind tibia not stout, about 0.87 as long as femur. Fore wing ca. 6 mm.

Black. Palpi, tegula and tergites piceous black. Clypeus and mandible brown. Tergites and posterior sternites more or less reddish at the apex. Ovipositor sheath and subgenital plate brown. Fore and middle legs dark brown, lighter beyond their femora. Hind leg dark brown to black, its trochanter a little lighter. Antenna dark brown to black, lighter beneath basally, its median five segments white. Wings weakly infumate. Veins dark brown.

Type: ♂, Oku-Nikko, Tochigi, Japan, 14–ix–1957, Sigeko and Setsuya MOMOI leg., in MOMOI Collection.

4. Callidiotes kamikochianus, new species

♂. Frons flat, with no median projection nor median longitudinal impression. Lateral ocellus distant from eye by about 1.0 its diameter. Flagellum a little thickened towards the apex beyond the middle, its segment 3 about 2.5 as long as wide. Malar space about 1.0 as long as basal width of mandible. Scutellum with a lateral carina basally. Mesopleurum weakly polished, largely with dense longitudinal striae, sometimes with strong crowded punctures. Metapleurum weakly polished, with strong dense punctures. Propodeum weakly polished, with obsolete punctures on the pleural areas, areolated by weak carinæ, carinae on the basal portion sometimes missing. Basal area defined or not defined, triangular when defined. Areola slightly shorter than it is wide behind costulæ, the costulæ joining areola at about the middle. Outer hind angle of second lateral area sharp, pointed, distinctly but weakly raised. Tergite 1 mat except at the apex, its dorso-lateral keel complete, and its dorso-median keel often distinct and extending beyond the spiracle. Tergite 2 about 1.0 as long as wide at the base, feebly mat except the apex, almost hairless. Tergite 3 polished, almost hairless. Hind tibia stout, about 0.9 as long as femur. Areolet defined, receiving second recurrent at the middle. Nervellus broken at the lower 0.25, weakly inclivous. Fore wing ca. 6–6.5 mm.

Black. Palpi white. Mandible, clypeus, and tegula piceous brown. Tergites beyond the basal one piceous brown, light brownish broadly at the apex. Fore and middle legs light brown to dark brown, beyond their femora lighter. Fore and middle coxae at the apex, greater part of their trochanters and apex of fore femur whitish. Hind leg dark brown to black, its coxa at the apex, its trochanter and bases of its tarsal segments white. Hind tibia light brown subbasally. Hind tarsus brown. Antenna dark brown, lighter towards the base beneath, its median five or six segments white. Wings weakly infumate. Veins dark brown.

♂. Lateral ocellus distant from eye by about 0.8 its diameter. Malar space about 0.5 as long as basal width of mandible. Flagellar segment 3 about 2.1 as long as wide. Mesopleurum largely polished, with traces of fine longitudinal striae. Metapleural and propodeum weakly mat. Tergites 2 and 3 weakly mat except the apical portion, with evenly dense hairs. Tergite 2 about 1.4 as long as wide at the base. Clasper strongly elongate, slender. Hind tibia slender, about 1.1 as long as femur. Otherwise similar in structure to ♂.

Black. Palpi white. Mandible, clypeus and tegula light brown. Tergites dark brown, with tergites 2 through 4 or 5 light brownish apically. Fore and middle legs light brown to white, their femora darkened. Hind leg dark brown, its coxa in front and at the apex, trochanter and tarsus except apical half of tarsal segment 5, light brown to white. Hind femur often with a light brownish line on the front side. Hind tibia light brownish subbasally on the hind side. Wings very weakly infumate. Veins dark brown.


5. Callidiotes norikuranus, new species

♂. Frons flat, with no median projection nor median longitudinal impression. Lateral ocellus distant from eye by about 0.75 its diameter. Malar space about 1.1 as long as basal width of mandible. Flagellum distinctly thickened towards the apex beyond the middle, its segment 3 about 2.0 as long as wide. Scutellum with a lateral carina extending from the base to middle. Mesopleurum strongly mat, with fine longitudinal striae in the upper half and with fine dense punctures in the lower half. Metapleural strongly mat, with fine and dense punctures. Propodeum strongly mat, with a very feeble trace of areolation. Costula nearly lacking. Outer hind angle of second lateral area sharp, pointed, a little raised. Tergite 1 weakly mat except at the apex, its dorso-
Figs. 2 & 3. Apical part of ♀ abdomen of Callidioites corniger (fig. 2) and C. canalis (fig. 3), showing slender or stout clasper. Figs. 4 & 5. Arolet of right wing of Callidioites montanus (fig. 4) and C. obtusus (fig. 5), showing basally or medially situated second recurrent. Figs. 6 & 7. Part of ♀ hind leg of Callidioites corniger (fig. 6) and C. norikuranus (fig. 7), showing slender or stout hind tibia.

lateral keel incomplete and weak, and its dorso-median keel indistinct. Tergite 2 about 1.1 as long as wide at the base, weakly mat basally, almost hairless. Tergite 3 very feebly mat basally, almost hairless. Arolet defined, receiving second recurrent at the middle. Nervellus broken at the lower 0.25, vertical. Hind tibia stout, about 0.83 as long as femur. Fore wing ca. 5.3 mm.


♀. Lateral ocellus distant from eye by about 1.0 its diameter. Malar space about 0.7 as long as basal width of mandible. Flagellar segment 3 about 2.4 as long as wide. Mesopleurum largely polished or weakly mat, with fine punctures. Metapleurum and propodeum rather strongly mat. Tergite 1 strongly mat except at the apex. Tergite 2 about 1.3 as long as wide at the base, most of it weakly mat, with evenly dense hairs. Tergite 3 very weakly mat, with evenly dense hairs. Hind tibia slender, about 1.1 as long as femur. Clasper strongly elongate, slender. Otherwise similar to ♀ in structure.

Black. Palpi white. Mandible, clypeus and tegula brownish yellow. Mesosternum yellowish just before middle coxae. Face, pronotum and mesopleurum light piceous brown. Tergite 2 and following tergites brown, with the apical half of tergites 2 through 4 light brown. Antenna brown, with no white ring. Fore and middle legs light brown. Hind leg dark brown, with its coxa except a line on the hind side, trochanter and tarsus light brown. Hind
6. **Callidiotes canalis**, new species

♀. Frons with a distinct median projection which is usually divided into two sections by a median longitudinal groove beginning just below median ocellus, sometimes the groove present only on the dorsal half of the projection. Lateral ocellus distant from eye by about 1.0 its diameter. Malar space about 2.0 as long as basal width of mandible. Flagellum not thickened towards the apex beyond the middle, its segment 3 about 2.9 as long as wide. Scutellum with a lateral carina at the extreme base. Mesopleurum polished, with dense strong rugae in the upper half and a mixture of dense rugae and punctures in the lower half. Metapleurum strongly mat, with dense strong punctures. Propodeum mat, finely transversely rugulate in the petiolar area, obscurely rugulose in the pleural and second lateral areas and in the areola, the rest strongly mat with some obscure punctures. Propodeum clearly areolated by distinct carinae except the basal portion. Basal area not or scarcely defined. Areola broader than it is long behind costulae, the costulae joining areola near the middle or vestigial. Outer hind angle of second lateral area sharp, pointed, moderately strongly raised. Tergite 1 strongly mat except the apex, its dorso-lateral and dorso-median keels indistinct and incomplete. Tergite 2 about 1.4 as long as wide at the base, weakly mat except the apex, hairy basally and laterally. Tergite 3 weakly mat except the apex, largely with sparse hairs. Areolet defined, receiving second recurrent near the middle. Nervellus broken at the lower 0.25, vertical. Hind tibia somewhat lighter basally. Wings very weakly infumate. Veins light brown.

Type: ♀, Mt. Norikura, Nagano, Japan, 30-vii-1954, H. Townes' Family leg., in Townes' Collection. Paratypes: 1♂, 12♀, same as the type.

7. **Callidiotes obtusus**, new species

♀. Frons with an obtuse median projection which has no median longitudinal groove. Lateral ocellus distant from eye by about 1.0 its diameter. Malar space about 0.8 as long as basal width of mandible. Flagellar segment 3 about 2.0 as long as wide. Scutellum with a lateral carina at the base. Mesopleurum weakly polished, with dense fine striae except the front and hind portions, with fine and sparse punctures. Metapleurum weakly polished, with fine dense punctures. Propodeum mat, with fine punctures, the petiolar area obscurely rugulose. Propodeum areolated by weak carinae except for the basal area and areola before costulae. Areola about as long as it is wide behind costulae. Outer hind angle of second lateral area sharp, pointed, not raised. Tergite 1 weakly polished, its dorso-lateral keel strong and complete, and its dorso-median keel extending onto the postpetiole. Tergite 2 about 0.8 as long as wide at the base, largely feebly mat except at the apex, almost hairless. Tergite 3 largely feebly mat, almost hairless. Areolet defined, receiving second recurrent near the middle. Nervellus broken at the lower 0.1, vertical. Hind tibia stout, about 0.8 as long femur. Fore wing ca. 5.5 mm.

Black. Palpi piceous brown. Mandible and clypeus reddish brown. Tegula yellowish brown. Tergite 1 at the extreme apex and tergites 2 through 8 are yellow with red. Ovipositor sheath brownish black. Fore and middle legs piceous brown to black, their tibiae, tarsi and trochanters light brown, and fore femur at the apex light brownish. Hind leg dark brown to black, its coxa at the apex, trochanter and base of tarsal segment 1 light brown to white. Antenna dark brown, somewhat yellowish beneath towards the base except the scape, its median four or five segments white. Wings weakly infumate. Veins dark brown.

♂. Malar space about 1.0 as long as basal width of mandible. Flagellar segment 3 about 2.0 as long as wide. Tergite 2 about 1.3 as long as wide at the base. Tergites 2 and 3 each with a large median hairless area. Hind tibia slender, about 1.1 as long as femur. Clasper short, not very slender. Otherwise similar to ♀ in structure.

Black. Mandible and clypeus largely reddish brown. Tergites tinged with red at the apex. Fore and middle legs light brown, their coxae and greater part of their femora dark brown. Hind leg dark brown to black, its coxa at the extreme apex, trochanter and extreme bases of its tarsal segments light brown. Antenna dark brown, its scape and pedicel light brownish at the apex, and its median four or five segments obscurely light brownish except at their apices. Wings weakly infumate. Veins light brown.

middle legs light brown, their femora somewhat darkened. Hind leg dark brown, its coxa at the apex, trochanter, femur at the extreme base, tibia except the extreme base and apex, tarsal segments 1 and 2, and greater part of tarsal segments 3 and 4, light brown. Hind tibia infuscate apically and at the extreme base. Antenna dark brown to black, its scape somewhat lighter beneath, its median five segments white. Wings weakly infumate. Veins dark brown.

\[ \sigma' \] Malar space about 0.5 as long as basal width of mandible. Flagellar segment 3 about 2.0 as long as wide. Mesopleurum and metapleurum polished, with fine sparse punctures. Propodeum weakly polished. Tergite 2 about 1.2 as long as wide at the base, with sparse hairs. Tergite 3 largely with dense hairs. Hind tibia about 1.0 as long as femur. Clasper short, not very slender. Otherwise similar in structure to \[ \varphi' \].

Black. Palpi white. Clypeus and mandible light brown. Tegula dark brown. Tergites 2 through 4 light brown apically, the light brown portion on tergites 3 and 4 broadened medially. Fore and middle legs light brown, their coxae and femora darkened in part. Hind leg dark brown to black, its coxa at the apex, trochanter, base of femur, tibia basally except the extreme base, base of tarsal segment 2, and tarsal segments 3 and 4, light brown to white. Antenna brown, its scape light brown beneath. Wings nearly hyaline. Veins dark brown.

Type: \[ \varphi' \], Sapporo, Hokkaido, Japan, 9-ix-1958, S. MOMOI leg., in MOMOI Collection. Paratypes: \[ \sigma' \], with the same data as the type. \[ \sigma' \], Sapporo, Hokkaido, Japan, 12-viii-1958, \[ \sigma' \], Sapporo, Hokkaido, Japan, 22-viii-1958, S. MOMOI leg.

Below is a key to the species of *Callidiotes* occurring in the Palearctic Region, to show the affinities of the Japanese species described above.

**Key to the Palearctic species of Callidiotes**

1. Areolet not defined. (Europe) ..............................
   - Areolet defined. ...................................... 2
2. Areolet receiving second recurrent near the base. Tergite 2 polished. Hind tibia of \[ \varphi' \] about as long as femur. Hind trochanter dark brown to black................................. 3
   - Areolet receiving second recurrent at or near the middle. Tergite 2 more or less mat. Hind tibia of \[ \varphi' \] shorter than femur. Hind trochanter light brown to white except in *nikkoensis* ........ 4
3. Frons with a distinct median projection which is higher than the diameter of median ocellus. (Japan) ................. *corniger*, new species
   - Frons with a very obtuse and indistinct median projection. (Japan) ............ *montanus*, new species
4. Frons with a more or less distinct median projection. ........................................... 5
   - Frons with no median projection............. 6
5. Frons with a median projection which is divided into two sections by a median longitudinal groove. (Japan) .................. *canalis*, new species
   - Frons with a median projection which is not divided into two sections by a median longitudinal groove. (Japan) ........... *obtusus*, new species
6. Trochanters dark brown. (Japan)........................
   - Trochanters light brown to white................ 7
7. Frons with a median longitudinal impression just below median ocellus. Propodeum sharply areolated by strong carinae. Outer hind angle of second lateral area strongly raised and forming a strong apophysis. (Europe) ...... *armatus* THOMSON
   - Frons with no median longitudinal impression. Propodeum more or less areolated by weak or vestigial carinae. Outer hind angle of second lateral area not or barely raised and not forming a distinct apophysis........................................ 8
8. Flagellum with its segment 3 about 2.0 as long as wide in \[ \varphi' \], with no median white ring in \[ \sigma' \]. Nervellus vertical. (Japan) ....................... *norikuranus*, new species
   - Flagellum with its segment 3 about 2.5 as long as wide in \[ \varphi' \], with a more or less distinct median white ring in \[ \sigma' \]. Nervellus inclivos. (Japan) ......... *kamikochianus*, new species

(Laboratory of Entomology, Received Aug. 31, 1965)