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ON THE JAPANESE SPECIES OF THE GENUS  
**CHORINAEUS HOLMGREN, WITH**  
**DESCRIPTIONS OF FIVE NEW SPECIES**  
 (HYMENOPTERA : ICHNEUMONIDAE)

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The genus *Chorinaeus* Holmgren is a moderate group of the Metopiinae, having been represented by about 20 known species in the Holarctic region, while the members of this genus are probably distributed over the world. So far as I am aware, no species of this genus has hitherto been known to occur in Japan. In the course of the present study I have found eight species in Japan, of which five are new to science and the rest new to Japan. It is said that most of the species of *Chorinaeus* are solitary internal parasites of the larvae of Microlepidoptera. No host record is, however, given in the Japanese species.

I would like to express my sincere appreciation to Prof. C. Watanabe for his kind guidance and constant encouragement. I wish to thank Dr. S. Momoi, Hyogo University of Agriculture, and Mr. A. Nakanishi, Biological Laboratory, General Education Department, Kyushu University, for the loan of specimens.

Genus *Chorinaeus* Holmgren

*Chorinaeus* Holmgren, Svenska Vetensk. Akad. Handl. 1: 320, 1856 [type-species: *Exochus funebris* Gravenhorst].

*Polyrhabdus* Walsh, Trans. Acad. Sci. St. Louis 3: 98, 1873 [type-species: *Polyrhabdus cariniger* Walsh].

Key to the Japanese species of *Chorinaeus* (♀♀)

1. Metapleurum with fine setiferous punctures mostly. Propodeal spiracle nearer to lateral carina than to pleural carina. Hind femur 3.5 times as long as deep, and entirely ferruginous. . . . . *longicalcar* Thomson
- Metapleurum with very fine setiferous punctures on upper 1/2-1/4. Propodeal spiracle not nearer to lateral carina than to pleural carina. Hind femur 2.4-3.0 times as long as deep, and more or less blackish. . . . . 2
2. Second tergite with sublateral longitudinal carinae. . . . . 3
- Second tergite without sublateral longitudinal carinae. . . . . 6
3. Face as wide as high. Lateral carina of scutellum obsolete. Middle coxa and femur, and hind tibia yellow. . . . . *aizanensis*, sp. nov.
- Face wider than high. Lateral carina of scutellum distinct. Middle coxa and femur, and hind tibia dark brown to black. . . . . 4
4. Face strongly and closely punctured. Fused areola and basal area of propodeum ovate (fig.

- 14). Basal segment of middle tarsus as long as the remaining segments together except claw. Hind tarsal claw pectinate. Face black, yellow on the lateral side (fig. 1). Clypeus blackish. . . . . *pectinatus*, sp. nov.
- Face finely and sparsely punctured. Fused areola and basal area of propodeum parallel-sided (figs. 11 and 13). Basal segment of middle tarsus shorter than the remaining segments together except claw. Hind tarsal claw simple. Face and clypeus yellowish. . . . . 5
5. Face 1.2 times as wide as high. Pronotum without longitudinal striae at lower hind corner. Second tergite strongly and closely rugose-punctured. Face, clypeus, malar space and lower corner of frons yellow (fig. 3). . . . . *eniwanus*, sp. nov.
- Face 1.4 times as wide as high. Pronotum with fine longitudinal striae at lower hind corner. Second tergite weakly wrinkled. Face yellow, black medially and dorsally (fig. 2). Frons entirely black. . . . . *funebri* (Gravenhorst)
6. Malar space longer than basal width of mandible. Mandible 1.6 times as long as basal width. Fused areola and basal area of propodeum parallel-sided (fig. 10). Hind tarsal claw pectinate. Front and middle legs and hind tibia pale yellow. . . . . *flavipes* Bridgman
- Malar space shorter than basal width of mandible. Mandible 2.0-2.3 times as long as basal width. Fused areola and basal area of propodeum widened towards apex (figs. 15 and 16). Hind tarsal claw simple. Legs dark brown to black. . . . . 7
7. Face strongly convex and flattened centro-ventrally (fig. 9). Clypeus flat, with a very broad margin. Lateral carina of scutellum obsolete. Face black, yellow on the lateral side (fig. 5). . . . . *clypeatus*, sp. nov.
- Face and clypeus normal. Lateral carina of scutellum distinct. Face, clypeus and malar space entirely yellow (fig. 6). . . . . *parvus*, sp. nov.

***Chorinaeus pectinatus*, sp. nov.**

♀. Face about 1.2 times as wide as high, strongly and closely punctured. Clypeus more sparsely punctured than face, the apical margin being very weakly concave medially (fig. 1). Malar space about as long as basal width of mandible. Mandible rather strongly tapering towards apex, 1.9-2.1 times as long as basal width, the upper tooth being longer and larger than the lower. Distance between posterior ocelli and eyes as long as diameter of an ocellus. Temple almost flat, densely hairy, and about 3/5 as long as eye in lateral view. Antennae filiform, with 36 or 37 segments; 1st flagellar segment 1.8 times as long as wide. Pronotum with 2-4 very short, longitudinal striae at lower hind corner. Scutellum weakly convex with sparse hairs, the lateral carina being very strong. Metapleurum shiny, weakly convex, with sparse hairs on upper 2/5. Fused areola and basal area of propodeum ovate (fig. 14). Propodeal spiracle elliptic, nearer to pleural carina than to lateral carina. Nervulus postfurcal by about 2/5 of its own length. Nervellus slightly bent near its lower 1/3. Hind femur 2.8-3.0 times as long as deep. Front spur of middle tibia about 4/5 as long as hind spur. Basal segment of middle tarsus about as long as the remaining segments together except claw. Front and middle tarsal claws moderately pectinate, and hind one weakly pectinate basally. Abdomen rather clavate; 1st tergite loosely and longitudinally rugulose; 2nd tergite 2/3 as long as wide and slightly shorter than the 3rd, with sublateral longitudinal carinae on basal 2/5, and very strongly and closely punctured; 3rd tergite also strongly, but a little more closely punctured, with a median longitudinal carina on basal 4/5.

Black. Inner orbit and interantennal process yellow to yellowish brown, the interantennal process sometimes dark brown to black (fig. 1). Clypeus often tinged with dark brown. Mandible ferruginous, blackish basally. Palpi pale yellow. Scape and pedicel dark brown to black; flagellum dark brown, darker dorsally. Tegula dark

brown, paler posteriorly. Legs dark brown to black, the apex of coxae, all trochanters, apex of femora, front tibia, middle and hind tibiae on basal  $2/5$  pale yellow to yellowish brown, and tarsi piceous. Front tibia often with a dark brown spot apico-laterally. Wings hyaline; stigma and veins yellowish brown to dark brown.

Length: body 7.2-8.5 mm.; forewing 5.1-5.5 mm.

♂. Unknown.

Holotype (♀): Nakawa, Nagano, Honshu, 8-x-58, K. Kamijo leg. Paratypes: 1♀, 13-x-35, Nambarakyo, Hiroshima, Honshu, K. Egawa leg.; 1♀, 6-viii-40, Hikosan, Kyushu, K. Yasumatsu leg.; 1♀, 5-xi-54, Sasayama, Hyogo, Honshu, K. Iwata leg. The holotype is deposited in the collection of the Entomological Institute, Hokkaido University.

This species is very similar to *C. longicalcar* Thomson, particularly in the colour pattern of the face, but may be readily distinguished by the propodeal spiracle which is nearer to pleural carina than to lateral carina, by the pectinated claw of hind tarsus, by the proportional length of hind femur and by the blackish legs.

Distribution: Japan.

#### ***Chorinaeus longicalcar* Thomson**

*Chorinaeus longicalcar* Thomson, Deut. Ent. Zeit. 31: 201, 1887.

*Chorinaeus longicalcar*: Uchida, Jour. Faculty Agr. Hokkaido Imp. Univ. 25: 266, 1930.

*Chorinaeus longicalcar*: Townes et Townes, U.S. Nat. Mus. Bull. 216: 16, 1959.

This species is new to Japan. On the basis of the present single female a redescription will be given below:—

♀. Face about 1.4 times as wide as high, strongly and closely punctured. Clypeus strongly and closely punctured as in face, the apical margin being rather truncate. Malar space about as long as basal width of mandible. Mandible slightly tapering towards apex, 2.2 times as long as basal width, the upper tooth being much longer and larger than the lower. Distance between posterior ocelli and eyes a little longer than diameter of an ocellus. Temple weakly swollen, about as long as eye in lateral view. Antennae with 37 segments; 1st flagellar segment 2.2 times as long as wide. Pronotum with 3 or 4 short oblique striae at lower hind corner. Scutellum weakly convex, with rather sparse hairs, the lateral carina being moderately strong. Metapleurum except for the impunctate centro-ventral portion sparsely hairy. Fused areola and basal area of propodeum almost parallel-sided, sometimes the former incompletely confluent with petiolar area. Propodeal spiracle elliptic, nearer to lateral carina than to pleural carina. Nervulus postfurcal by  $3/7$  of its own length. Nervellus moderately bent near its lower  $3/7$ . Hind femur somewhat slender, about 3.5 times as long as deep. Front spur of middle tibia  $2/3$  as long as hind spur. Basal segment of middle tarsus about as long as the remaining segments together except claw. Front and middle tarsal claw moderately pectinate, and hind one apparently simple. Abdomen rather parallel-sided; 1st tergite weakly and longitudinally rugose; 2nd tergite  $4/5$  as long as wide and  $6/7$  as long as the 3rd, the sublateral longitudinal carinae obsolete, and strongly and closely punctured; 3rd tergite also strongly punctured, the median longitudinal carina very weak or obsolete.

Black. Inner orbit, malar space on anterior half and apical margin of clypeus yellow to yellowish brown. Interantennal process tinged with dirty yellowish brown.

Palpi yellowish brown; basal two segments of maxillary palpus except at apex and basal segment of labial palpus except at apex dark brown. Scape blackish brown, yellowish apically and ventrally; pedicel blackish brown; flagellum reddish brown. Mandible ferruginous, blackish basally. Tegula yellowish brown, paler anteriorly. Subtegular ridge blackish brown. Legs ferruginous; coxae blackish with apex yellowish; front tibia, middle and hind tibiae at base, yellowish brown. Wings hyaline; stigma and veins yellowish brown to dark brown.

Length: body 8.5 mm.; forewing 6.5 mm.

♂. Unknown.

Specimen examined: 1♀, 17-vi-67, Mt. Soranuma, Hokkaido, K. Kusigemati leg.

Townes and Townes (1959) give *Choristoneura fumiferana* Clemens as host in North America.

Distribution: Japan, Korea, Europe and North America.

***Chorinaeus funebris*** (Gravenhorst)

*Exochus funebris* Gravenhorst, Ichneumonologia Europaea 1: 695, 1829.

*Chorinaeus funebris*: Morley, Ichneumonologia Britannica 4: 17, 1911.

*Chorinaeus funebris*: Townes et Townes, U. S. Nat. Mus. Bull. 216: 26, 1959.

This species is new to Japan. On the basis of the present specimens a redescription will be given below:—

♀. Face about 1.4 times as wide as high, finely and rather sparsely punctured. Clypeus a little more distinctly and closely punctured than face, the apical margin being somewhat concave medially (fig. 2). Malar space about as long as basal width of mandible. Mandible rather slender, hardly tapering towards apex, 2.3 times as long as basal width, and the upper tooth being very longer and larger than the lower. Distance between posterior ocelli and eyes 1.2–1.5 times as long as diameter of an ocellus. Temple moderately swollen, as long as eye in lateral view. Antennae filiform, with 28 or 29 segments; 1st flagellar segment 1.8 times as long as wide. Pronotum with 2 or 3 very short, longitudinal striae at lower hind corner. Scutellum rather flat, with sparse hairs, and the lateral carina moderately strong. Metapleurum with sparse hairs on upper 1/3. Fused areola and basal area of propodeum almost parallel-sided (fig. 13). Propodeal spiracle elliptic or circular, nearer to pleural carina than to lateral carina. Nervulus postfurcal by 1/3 of its own length. Nervellus slightly bent near its lower 1/3. Hind femur about 2.6 times as long as deep. Front spur of middle tibia 4/5 as long as hind spur. Basal segment of middle tarsus 4/5 as long as the following segments together except claw. Front and middle tarsal claws weakly pectinate, and hind one apparently simple. Abdomen almost parallel-sided; 1st tergite indistinctly and sparsely punctured; 2nd tergite 7/10 as long as wide and a little shorter than the 3rd, with sublateral longitudinal carinae on basal half, and finely and longitudinally wrinkled; 3rd tergite with a median longitudinal carina on basal 3/5, finely and longitudinally wrinkled on the baso-central part, elsewhere rather strongly and closely punctured.

Black. Face almost entirely black, except for yellow ventro-lateral part (fig. 2). Clypeus, interantennal process, malar space and palpi yellow, sometimes the malar space blackish (fig. 2). Mandible ferruginous. Scape and pedicel dark brown to black; flagellum yellowish brown, darker dorsally. Tegula dark brown. Legs yellowish brown to dark brown; coxae except at apex, 1st trochanters except at extreme apex and hind

femur except at both ends blackish brown to black, and tibiae pale yellow basally. Wings hyaline; stigma and veins yellowish brown to dark brown.

Length: body 5.0–5.5 mm.; forewing 3.9–4.2 mm.

♂. Differs from the female, apart from usual sexual difference, in the following characters:—

Malar space 1.7 times as long as basal width of mandible; antennae with 31 or 32 segments; 1st flagellar segment about 2.2 times as long as wide; longitudinal wrinkles on 2nd tergite stronger than in female; basal segment of middle tarsus  $\frac{3}{5}$  as long as the remaining segments together except claw; apex of penis without setae; face yellow, dark brown to black on the upper and lower lateral corner (fig. 4); malar space entirely black; all trochanters paler than in female.

Length: body 5.5–5.9 mm.; forewing 3.8 mm.

Specimens examined; 1♂, 12–viii–59, Akan, Hokkaido, Y. Maeta leg.; 1♀, 16–vi–61, Shikotsu-ko, Hokkaido, 1♂, 13–vii–61, Shikaribetsu-ko, Hokkaido, H. Takada leg.; 1♂, 14–viii–65, Toikambetsu, Hokkaido, 1♀, 9–viii–65, Sounkyo, Hokkaido, 1♀, 19–vii–66, Aizankei, Hokkaido, K. Kusigemati leg.

According to the literature the following host records are given in Europe and North America:— *Depressaria heracleana* Linné, *Euxanthis angustana* Hübner (after Morley, 1911); *Ancylis comptana* Fröhlich, *Strepsicrates smithiana* Walsingham, *Argyrotaenia lutosana* Clemens, *Tetralopha asperatella* Clemens, *Acrobasis betulella* Hulst, *Anacampsis rhoifrutella* Clemens (after Townes and Townes, 1959).

Distribution: Japan, Europe and North America.

#### *Chorinaeus enivanus*, sp. nov.

♀. Face about 1.2 times as wide as high, finely and rather closely punctured. Clypeus more distinctly and closely punctured than face, separated from face by a very weak and shallow groove, the apical margin being very weakly concave medially (fig. 3). Malar space  $\frac{4}{5}$  as long as basal width of mandible. Mandible tapering towards apex, 2.2–2.5 times as long as basal width, and the upper tooth being longer and larger than the lower. Distance between posterior ocelli and eyes about as long as diameter of an ocellus. Temple weakly swollen,  $\frac{2}{3}$  as long as eye in lateral view. Antennae filiform, with 27–32 segments; 1st flagellar segment 2.0–2.4 times as long as wide. Pronotum without longitudinal striae at lower hind corner. Scutellum weakly convex, with rather sparse hairs, the lateral carina being strong. Metapleurum with sparse hairs on upper  $\frac{1}{3}$  and on hind part. Fused areola and basal area of propodeum almost parallel-sided (fig. 11). Propodeal spiracle elliptic, nearer to lateral carina than to pleural carina. Nervulus postfurcal by  $\frac{1}{2}$ – $\frac{1}{3}$  of its own length. Nervellus slightly bent near its lower  $\frac{1}{5}$ . Hind femur 2.7–2.9 times as long as deep. Front spur of middle tibia 0.7–1.0 times as long as hind spur. Basal segment of middle tarsus about  $\frac{4}{5}$  as long as the following segments together except claw. Front and middle tarsal claws moderately pectinate, and hind one apparently simple. Abdomen rather parallel-sided; 1st tergite faintly and sparsely punctured; 2nd tergite about  $\frac{4}{5}$  as long as wide and a little shorter than the 3rd, strongly and closely longitudinally rugose-punctured, with sub-lateral longitudinal carinae on basal  $\frac{2}{5}$ ; 3rd tergite strongly and closely punctured, the basal part rugose-punctured, with a median longitudinal carina on basal  $\frac{4}{5}$ .

Black. Face, clypeus, lower corner of frons, mouth parts, malar space, and lower

front part of temple yellow (fig. 3). Scape and pedicel dark brown to black, yellowish ventrally; flagellum fulvous, sometimes darker dorsally. Tegula sordidly fulvous. Legs yellowish brown to dark brown; front coxa basally, middle and hind coxae except at apex, 1st trochanter of hind leg except at extreme apex, middle femur except at both ends and hind femur except at apex black; front femur darker ventrally. Wings hyaline; stigma and veins yellowish brown to dark brown.

Length: body 5.5–7.5 mm.; forewing 4.0–5.4 mm.

♂. Mandible 1.6–1.9 times as long as basal width; antennae with 31–34 segments; 1st flagellar segment 2.3–2.6 times as long as wide; basal segment of middle tarsus about  $\frac{3}{5}$  as long as the following segments together except claw; apex of penis without setae.

Length: body 6.0–7.5 mm.; forewing 4.5–5.7 mm.

Holotype (♀): Mt. Eniwa, Hokkaido, 1–vii–66, K. Kusigemati leg. Paratypes: 2♂♂, 22–26–vii–57, Mt. Daisetsu, Hokkaido, T. Uchida et al. leg.; 1♂, 21–vi–59, Mt. Apoi, Hokkaido, S. Momoi leg.; 1♂, 23–vii–62, Mt. Senjodake, Yamanashi, Honshu, F. Nakasuji leg.; 3♂♂, 1♀, 22–vii–64, Mt. Senjodake, Yamanashi, Honshu, A. Nakanishi leg.; 1♀, 29–vii–64, Sapporo, Hokkaido, 1♀, 12–viii–65, Toikambetsu, Hokkaido, 1♀, 1–vii–66, Mt. Eniwa, Hokkaido, 1♂, 10–vii–66, Mt. Daisetsu, Hokkaido, 1♂, 19–vii–66, 7♂♂, 3–viii–66, Aizankei, Hokkaido, 1♀, 10–viii–66, Mt. Yubari, Hokkaido, K. Kusigemati leg.; 2♂♂, 3–viii–66, Aizankei, Hokkaido, K. Kamijo leg. The holotype is deposited in the collection of the Entomological Institute, Hokkaido University.

Distribution: Japan.

This species is closely related to *C. funebris*, but easily distinguished by the relative width of the face, by the entirely yellow face and by the frons with a yellow spot on each lower lateral corner.

***Chorinaeus clypeatus*, sp. nov.**

♀. Face 1.2 times as wide as high, strongly convex and flattened ventrally (fig. 9), with strong and rather close punctures, the punctures becoming weaker on centro-ventral portion. Clypeus very broad, flat, more finely and a little more closely punctured than face, the apical margin being weakly concave medially (fig. 6). Malar space  $\frac{1}{2}$ – $\frac{4}{5}$  as long as basal width of mandible. Mandible somewhat stout, a little tapering towards apex, weakly swollen preapically, about 2.3 times as long as basal width, and the upper tooth very longer and larger than the lower. Distance between posterior ocelli and eyes 1.1–1.4 times as long as diameter of an ocellus. Temple rather strongly swollen, 1.1–1.3 times as long as eye in lateral view. Antennae filiform, with 26–28 segments; 1st flagellar segment 1.6–1.8 times as long as wide. Pronotum with 1–3 very short, oblique striae at lower hind corner. Scutellum rather flat, with sparse hairs, the lateral carina being obsolete. Metapleurum with sparse hairs on upper  $\frac{1}{4}$  and on hind corner. Fused areola and basal area of propodeum slightly widened towards apex (fig. 16). Propodeal spiracle small and long-ovate, and nearer to pleural carina than to lateral carina. Nervulus postfurcal by  $\frac{1}{2}$ – $\frac{3}{5}$  of its own length. Nervellus weakly bent near its lower  $\frac{1}{4}$ . Hind femur 2.4–2.6 times as long as deep. Front spur of middle tibia  $\frac{5}{7}$  as long as hind spur. Basal segment of middle tarsus about  $\frac{4}{5}$  as long as the remaining segments together except claw. Front and middle tarsal claws moderately pectinate, and hind one very weakly pectinate basally. Abdomen rather slender, parallel-

sided; 1st tergite very finely rugose-punctured; 2nd tergite  $5/6$  as long as wide and a little shorter than the 3rd, without sublateral longitudinal carinae, and strongly and closely punctured; 3rd tergite somewhat less strongly and closely punctured than the 2nd, without a median longitudinal carina. Seventh and 8th abdominal segments strongly compressed.

Black. Inner orbit from level of clypeal fovea to lower corner of frons yellow, sometimes dark brown, the orbital mark often expanded towards center of face (fig. 5). Interantennal process often yellow. Mandible ferruginous with the apical black teeth. Palpi pale yellow. Scape and pedicel dark brown, sordidly testaceous ventrally; flagellum light fulvous, darker dorsally. Tegula dark brown. Legs dark brown to black; coxae at extreme apex, 1st trochanters at extreme apex, 2nd trochanters, femora at apex, ventral side of front femur, front tibia, middle tibia at both ends, hind tibia at base, and front and middle tarsi yellowish brown; hind tibia at apex and hind tarsus piceous. Wings hyaline; stigma and veins yellowish brown to dark brown.

Length: body 5.6–7.0 mm.; forewing 4.1–4.6 mm.

♂. Unknown.

Holotype (♀): Jozankei, Hokkaido, 23-vi-67, K. Kusigemati leg. Paratypes: 1♀, 30-v-57, Sapporo, Hokkaido, S. Momoi leg.; 1♀, 21-vi-67, Sapporo, Hokkaido, 1♀, 23-vi-67, Jozankei, Hokkaido, K. Kusigemati leg. The holotype is deposited in the collection of the Entomological Institute, Hokkaido University.

Distribution: Japan.

This species is readily distinguished from any other congeneric species by the face which is strongly convex, flattened ventrally and by the very broad and flat clypeus.

***Chorinaeus parvus*, sp. nov.**

♀. Face about 1.2 times as wide as high, finely and rather sparsely punctured. Clypeus finely punctured as in face, separated from face by a very weak and shallow groove, the apical margin being weakly concave medially (fig. 6). Malar space about  $4/5$  as long as basal width of mandible. Mandible rather slender, hardly tapering towards apex, about 2 times as long as basal width, the upper tooth being very longer and larger than the lower. Distance between posterior ocelli and eyes about 1.4 times as long as diameter of an ocellus. Temple moderately swollen, about as long as eye in lateral view. Antennae filiform, with 22–24 segments; 1st flagellar segment 2 times as long as wide. Pronotum with 1–3 very short, longitudinal striae at lower hind corner. Scutellum weakly convex, with rather sparse hairs, the lateral carina moderately strong. Metapleurum with sparse hairs on upper  $2/5$  and on hind corner. Fused areola and basal area of propodeum slightly widened towards apex (fig. 15). Propodeal spiracle small and ovate, situated at equal distance from lateral and pleural carinae. Nervellus postfurcal by  $2/5$  of its own length. Nervellus weakly bent near its lower  $1/5$ . Hind femur about 2.8 times as long as deep. Spurs of middle tibia approximately equal in length. Basal segment of middle tarsus about  $4/5$  as long as the following segments together except claw. Front and middle tarsal claws moderately pectinate, and hind one apparently simple. Abdomen rather fusiform; 1st tergite finely punctured; 2nd tergite about  $4/5$  as long as wide and equal to 3rd tergite in length, without sublateral longitudinal carinae, and finely and closely punctured; 3rd tergite also finely and closely punctured, the median longitudinal carina being weak, extending to basal  $4/5$ .

Black. Face, clypeus, malar space, lower corner of frons and palpi yellow (fig. 6). Face with a median dorsal spot and crescent near each antennal socket dark brown (fig. 6). Mandible yellow to yellowish brown, ferruginous basally and apically. Scape dark brown, yellow ventrally; pedicel and flagellum testaceous, darker dorsally and apically. Tegula yellowish brown to dark brown. Legs dark brown to black, the coxae at extreme apex, 1st trochanters at extreme apex, 2nd trochanters, front femur ventrally, middle and hind femora at both ends, front tibia, middle and hind tibiae basally and tarsi yellowish brown. Wings hyaline; stigma and veins yellowish brown to dark brown.

Length: body 4.2-4.6 mm.; forewing 3.2-3.5 mm.

♂. Malar space approximately as long as basal width of mandible; distance between posterior ocelli and eyes about as long as diameter of an ocellus; temple about  $4/5$  as long as eye in lateral view; antennae with 29 or 30 segments; hind femur 3.0-3.2 times as long as deep; front spur of middle tibia a little shorter than hind spur; basal segment of middle tarsus  $3/5$  as long as the following segments together except claw; penis at apex without setae; face without a median dorsal spot; pedicel dark brown, yellow ventrally; tegula dark brown with a basal yellow spot; legs paler than in female, the front and middle coxae pale yellow apically.

Length: body 4.3-5.0 mm.; forewing 3.0-3.5 mm.

Holotype (♀): Mt. Soranuma, Hokkaido, 26-vi-65, K. Kusigemati leg. Paratypes: 1♀, 19-v-65, Sapporo, Hokkaido, H. Takizawa leg.; 4♂♂, 21-vi-67, Sapporo, Hokkaido, 10♀♀, 23-v-67, 7♀♀, 26-v-67, Jozankei, Hokkaido, K. Kusigemati leg. The holotype is deposited in the collection of the Entomological Institute, Hokkaido University.

Distribution: Japan.

This species is similar to *C. talpa* (Haliday, 1839), but differs from the latter by the median longitudinal carinae on 2nd and 3rd tergites, by the distinct lateral carinae of scutellum, and by the colouration of head.

### ***Chorinaeus flavipes* Bridgman**

*Chorinaeus flavipes* Bridgman, Trans. Ent. Soc. 1881: 165, 1881.

*Chorinaeus flavipes*: Morley, Ichneumonologia Britannica 4: 18, 1911.

This species is new to Japan. On the basis of the present specimens a redescription will be given below:—

♀. Face as wide as high, finely and rather sparsely punctured. Clypeus more sparsely punctured than face, the apical margin being rather truncate (fig. 7). Malar space about 1.2 times as long as basal width of mandible. Mandible hardly tapering towards apex, 1.6 times as long as basal width, the upper tooth being a little longer and larger than the lower. Distance between posterior ocelli and eyes about 1.2 times as long as diameter of an ocellus. Temple weakly swollen, about as long as eye in lateral view. Antennae filiform, the apical segments lacking; 1st flagellar segment 1.7 times as long as wide. Pronotum without longitudinal striae at lower hind corner. Scutellum rather flat, with sparse hairs, the lateral carina very weak or obsolete. Metapleurum with very sparse hairs on upper  $1/2$ - $1/3$ . Fused areola and basal area of propodeum parallel-sided, sometimes slightly widened towards apex (fig. 10). Propodeal spiracle small and ovate, nearer to pleural carina than to lateral carina. Nervulus postfurcal by  $2/5$  of its own length. Nervellus weakly bent near its lower  $1/5$ . Hind femur

3 times as long as deep. Front spur of middle tibia as long as hind spur. Basal segment of middle tarsus  $5/6$  as long as the following segments together except claw. Front and middle tarsal claws strongly pectinate, and hind one weakly pectinate basally. Abdomen rather clavate; 1st tergite almost impunctured; 2nd tergite  $2/3$  as long as wide and approximately as long as the 3rd, without sublateral longitudinal carinae, and strongly and closely punctured; 3rd tergite also strongly but a little less closely punctured, with a median longitudinal carina on basal  $4/5$

Black. Face, clypeus in part, lower corner of frons (fig. 7), mouth parts, front and middle legs, hind trochanter, hind femur on apical  $1/3$  and hind tibia pale yellow to yellow. Clypeus almost entirely (fig. 7), tegula and hind tarsus yellowish brown. Face with a median dorsal spot and crescent near each antennal socket brownish (fig. 7). Malar space dark brown. Scape and pedicel dark brown, yellowish ventrally; flagellum yellowish brown, darker dorsally. Subtegular ridge yellowish dark brown. Hind coxa dark brown, yellowish brown apically, Hind femur except on apical  $1/3$  dark brown. Tergites tinged with yellowish brown apically and laterally. Wings hyaline; stigma and veins yellowish brown to dark brown.

Length: body 4.2 mm.; forewing 5.2 mm.

♂. Differs from the female in the following characters except for general sexual differences:—

Face 1.2 times as wide as high; malar space 1.8 times as long as basal width of mandible; mandible 1.5–1.8 times as long as basal width; hind tarsal claw apparently simple; 1st tergite finely punctured; apex of penis with 4–6 setae on each side, the setae shorter and not stouter than in *aizanensis*; clypeus and malar space entirely yellow.

Length: body 5.3–5.5 mm.; forewing 4.0–4.2 mm.

Specimens examined: 1♂, 17–vii–64, Sapporo, Hokkaido, 1♂, 2–viii–65, Jozankei, Hokkaido, 1♀, 29–viii–65, Mt. Soranuma, Hokkaido, K. Kusigemati leg.

Morley (1911) gives *Salebria formosa* Haworth as host in Europe.

Distribution: Japan and Europe.

#### ***Chorinaeus aizanensis*, sp. nov.**

♀. Face about as wide as high, finely and rather sparsely punctured. Clypeus more strongly and sparsely punctured than face, the apical margin being rather truncate (fig. 8). Malar space as long as basal width of mandible. Mandible hardly tapering towards apex, about 1.9 times as long as basal width, the upper tooth being slightly longer and larger than the lower. Distance between posterior ocelli and eyes 1.2 times as long as diameter of an ocellus. Temple weakly swollen, about as long as eye in lateral view. Antennae filiform, with 36 segments; 1st flagellar segment 2.5 times as long as wide. Pronotum with 4 or 5 very short, longitudinal striae at hind lower corner. Scutellum weakly convex, with sparse hairs, the lateral carina being very weak or obsolete. Metapleurum very sparsely haired on upper posterior area and on hind corner. Fused areola and basal area of propodeum almost parallel-sided, sometimes slightly widened towards apex (fig. 12). Propodeal spiracle small and ovate, and nearer to pleural carina than to lateral carina. Nervulus postfurcal by  $3/5$  of its own length. Nervellus slightly bent near its lower  $1/5$ . Hind femur 3 times as long as deep. Front spur of middle tibia  $4/5$  as long as hind spur. Basal segment of middle tarsus slightly shorter than the remaining segments together except claw. Front and middle tarsal

claws strongly pectinate, and hind one weakly pectinate basally. Abdomen clavate; 1st tergite impunctured; 2nd tergite  $\frac{3}{5}$  as long as wide and about as long as the 3rd, with very weak, sublateral longitudinal carinae on basal  $\frac{2}{5}$ , and strongly and rather closely rugose-punctured; 3rd tergite also strongly, but a little more sparsely punctured, with a median longitudinal carina on basal  $\frac{3}{5}$ .

Black. Face almost entirely dark brown, yellowish dorsally and dorso-laterally (fig. 8). Interantennal process, lower lateral side of frons (fig. 8) and palpi pale yellow to yellow. Clypeus tinged with dark brown. Mandible sordidly testaceous (except for the apical black teeth). Scape and pedicel yellowish ventrally, dark brown dorsally; flagellum light fulvous, darker dorsally and apically. Tegula yellowish brown. Subregular ridge black anteriorly, dark brown posteriorly. Legs pale yellow to yellow; hind coxa except at apex, sometimes front and middle coxae basally, hind femur except at both ends dark brown to black. Tergites tinged with yellowish brown apically and laterally. Wings hyaline; stigma and veins yellowish brown to dark brown.

Length: body 6.3 mm.; forewing 4.7 mm.

♂. Differs from the female in the following characters except for general sexual differences:—

Malar space 1.4 times as long as basal width of mandible; antennae with 34–36 segments; hind tarsal claw simple; apex of penis with 2–4 stout setae on each side, the setae being longer and stouter than in *flavipes*; face dark brown to black on ventral  $\frac{1}{4}$ .

Length: body 5.8–6.1 mm.; forewing 4.5–4.7 mm.

Holotype (♀): Aizankei, Hokkaido, 2-viii-55, K. Morimoto leg. Paratypes: 1♂, 22–26-vii-57, Mt. Daisetsu, Hokkaido, T. Uchida et al. leg.; 1♂, 30-vii-61, Mt. Senjodake, Yamanashi, Honshu, A. Nakanishi leg. The holotype is deposited in the collection of the Entomological Laboratory, Kyushu University.

Distribution: Japan.

This species is very closely related to *C. flavipes*, but differs from the latter by the pronotum with short longitudinal striae, by the relative length of malar space, by the apex of penis with 2–4 stout setae and by the colour pattern of face.

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### Explanation of plates

**Plate III.** Head in frontal view. Fig. 1, *C. pectinatus*, ♀; 2, *C. funebris*, ♀; 3, *C. enivivanus*, ♀; 4, *C. funebris*, ♂; 5, *C. clypeatus*, ♀; 6, *C. parvus*, ♀.

**Plate IV.** Head in frontal (figs. 7-8) and lateral (9) view, ♀; shape of fused areola and basal area of propodeum (10-16). Figs. 7 & 10, *C. flavipes*; 8 & 12, *C. aizanensis*; 9 & 16, *C. clypeatus*; 11, *C. eniwanus*; 13, *C. funebris*; 14, *C. pectinatus*; 15, *C. parvus*.

## ON THE SPECIES OF *PLECTOCHORUS* UCHIDA IN JAPAN WITH DESCRIPTION OF A NEW SPECIES

By KANETOSI KUSIGEMATI

In 1933 the genus *Plectochorus* Uchida was originally described for the reception of *Mesochorus iwatensis* Uchida, 1928, and then in 1956 three new species, two from the Philippines and the other from Micronesia, were given by Townes as members of this genus. In the course of the present investigation has been found in Japan a new species, which will be described hereinafter.

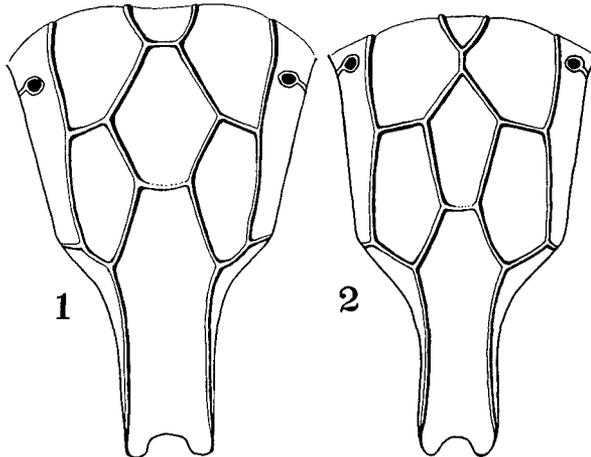
### Genus *Plectochorus* Uchida

*Plectochorus* Uchida, Ins. Mats. 7: 163, 1933 [type-species: *Mesochorus iwatensis* Uchida, 1928].

#### 1. *Plectochorus iwatensis* (Uchida)

Uchida, Jour. Fac. Agr. Hokkaido Imp. Univ. 21: 262, 1928 [*Mesochorus*]; *ibid.*, Ins. Mats. 7: 163, 1933; Townes, Philip. Jour. Sci. 85: 259, 1956.

♀. Flagellum with 31-34 segments. Transverse groove between mesonotum and scutellum strongly striate longitudinally. Propodeum areolated as in Fig. 1; basal area pentagonal; areola separated from petiolar area by a distinct carina, about 1.3 times as long as wide; second lateral area 1.8-2.1 times as long as wide; petiolar area more or



**Figs. 1 and 2.** Propodeum in dorsal view.

1. *Plectochorus iwatensis* (Uchida), female;
2. *Plectochorus niger*, sp. nov., female.