

## Original Article

## Taxonomic and Zoogeographic Notes on Japanese Cryptinae (Hymenoptera, Ichneumonidae), with Descriptions of 12 New Species

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**Abstract.** Taxonomic and zoogeographic notes on twelve genera of Japanese Cryptinae are reported. Twelve new species, *Aritranis kuro* sp. nov., *Buathra nipponica* sp. nov., *Cryptus daidaigaster* sp. nov., *Glabridorsum japonicum* sp. nov., *Gotra elegans* sp. nov., *Hoplocryptus ashoroensis* sp. nov., *H. ezoensis* sp. nov., *H. intermedius* sp. nov., *H. japonicus* sp. nov., *H. maculatus* sp. nov., *H. toshimensis* sp. nov. and *Trychosis breviterebratus* sp. nov. are described. Two species, *Hylophasma luica* Sheng, Li & Wang, 2019 and *Picardiella melanoleuca* (Gravenhorst, 1829) are newly recorded from Japan. The former is also a new record of the genus *Hylophasma* Townes, 1970 from Japan. *Agrothereutes minousubae* Nakanishi, 1965 is newly recorded from Honshu and Shikoku. Male of *Caenocryptoides convergens* Momoi, 1966 is described for the first time. *Cryptus diana* is newly recorded from Honshu. *Gambrus homonae* Sonan, 1930 (comb. rev.) is redescribed including new description of males and new distribution data from Honshu and Izu-oshima Is., Hachijojima Is. and Tsushima Is. *Hoplocryptus pini* is redescribed including new description of males and new distribution data from Miyakejima Is., Shikoku, Kyushu and Yakushima Is. The second specimen of *Hoplocryptus sumiyona* Uchida, 1956 is recorded from Tokunoshima Is. Keys to Japanese species of the genera *Caenocryptoides* Uchida, 1936, *Cryptus* Fabricius, 1804, *Gambrus*, *Gotra* Cameron, 1902, *Hoplocryptus* Thomson, 1873, *Picardiella* Lichtenstein, 1920 and *Trychosis* Förster, 1869 are provided.

**Key words:** Cryptini, distribution, new record, new species, parasitoid wasps

## Introduction

The subfamily Cryptinae is the second largest subfamily of family Ichneumonidae, with 276 genera and over 3100 species of worldwide distribution (Yu *et al.*, 2016; Santos, 2017). In Japan, total of two tribes, 61 genera and 134 species of Cryptinae have been recorded (Watanabe *et al.*, 2019; Watanabe, 2019), while many undescribed and unrecorded species were still recognized. Recently I sorted the ichneumonid collection of Kanagawa Prefectural Museum of Natural History and examined collections of several institutes including types. Then I found some new taxa, a new combination and new distribution records.

This paper is the second part (the first part see Watanabe, 2019) of taxonomic and zoogeographical notes of Japanese Cryptinae (Hymenoptera, Ichneumonidae). Generic identification is based on Townes (1970) and Wang *et al.* (2019b). In this study, I treat 12 genera of tribe Cryptini Kirby, 1837, *Agrothereutes* Förster, 1850, *Aritranis* Förster, 1869, *Buathra* Cameron, 1903, *Caenocryptoides* Uchida, 1936, *Cryptus* Fabricius, 1804, *Gambrus* Förster, 1869, *Glabridorsum* Townes, 1970, *Gotra* Cameron, 1902, *Hoplocryptus* Thomson, 1873, *Hylophasma* Townes, 1970, *Picardiella* Lichtenstein, 1920 and *Trychosis* Förster, 1869.

## Materials and methods

In this study, dried specimens deposited in the following collections were examined:

KPM-NK, Insect collection, Kanagawa Prefectural Museum of Natural History, Odawara, Kanagawa, Japan.

MNHAH, Museum of Nature and Human Activities, Sanda, Hyogo, Japan.

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NIAES, National Institute for Agro-Environmental Sciences, Tsukuba, Ibaraki, Japan.

SEHU, Systematic Entomology, Hokkaido University, Sapporo, Japan.

TARI, Taiwan Agricultural Research Institute Council of Agriculture, Executive Yuan, Taichung, Taiwan.

TMNH, Toyohashi Museum of Natural History, Toyohashi, Aichi, Japan.

A Nikon SMZ800 stereomicroscope (Nikon Co. Ltd., Japan) was used for observation. Photographs were taken using Canon 7D Mark2 (Canon Co. Ltd., Japan) with Canon 100mmL IS (for Figs 6A and 10G) and an Olympus TG-4 digital camera (Olympus Co. Ltd., Japan) joined with the stereomicroscope (for the figures except for above photos and line drawings). Digital images were edited using Adobe Photoshop® CS6 (Adobe Co. Ltd., USA). Morphological terminology follows Broad *et al.* (2018). Eady (1968) is also referred to for the description microsculpture. The following abbreviations are used in description: holotype (HT), segment of antennal flagellum (FL), diameter of lateral ocellus (OD), ocellular line (OOL), postocellar line (POL), segment of tarsus (TS) and metasomal tergite (T). The following abbreviations are used for material data: female (F), male (M), Yellow pan trap (YPT) and Malaise trap (MsT). For the new species and newly recorded species from Japan, I propose standard Japanese names.

## Results and discussion

Subfamily **Cryptinae** Kirby, 1837

Tribe **Cryptini** Kirby, 1837

Genus ***Agrothereutes*** Förster, 1850

*Agrothereutes* Förster, 1850: 71. Type species: *Ichneumon abbreviatus* Fabricius, 1794. Designated by Viereck (1914).

*Spilocryptus* Thomson, 1873: 472, 501. Type species: *Spilocryptus zygaenarum* Thomson, 1873 (= *Cryptus fumipennis* Gravenhorst, 1829). Designated by Viereck (1914).

*Dayro* Cameron, 1902: 209. Type species: *Dayro pilosus* Cameron, 1902. Monobasic.

Four species, *Ag. grapholithae* (Uchida, 1933), *Ag. lanceolatus* (Walker, 1874), *Ag. minousubae* Nakanishi, 1965 and *Ag. ramellaris* (Uchida, 1930), have been recorded from Japan. Some new distribution records of *Ag. minousubae* are provided below.

*Agrothereutes minousubae* Nakanishi, 1965  
(Standard Japanese name: Minousuba-togari-himebachi)  
(Figs 4A-D)

*Agrothereutes minousubae* Nakanishi, 1965: 456.

**Material examined.** JAPAN, KPM-NK 76583, F, Tochigi Pref., Nasushiobara City, Uwanohara, 21. VI. 2005, E. Katayama leg.; KPM-NK 76584, M, Tochigi Pref., Utsunomiya City, Yamato, 17. V. 2012, T. Nakayama leg.; NIAES, M, Tokyo, Kodaira, 5. V. 1969, J. Minamikawa leg.; NIAES, F, ditto, 22. V. 1965; NIAES, F, ditto, 1. VI. 1966; NIAES, F, ditto, 22. V. 1970; KPM-NK 76585–76587, 1 F & 2 M, Kanagawa Pref., Minami-ashigara City, Tsukahara, 29. IV. 2019, K. Watanabe leg.; KPM-NK 76589–76591, 3 M, ditto, 10. V. 2019; NIAES, 2 M, Chiba Pref., Nagareyama, 15. V. 1976, J. Minamikawa leg.; NIAES, F, ditto, 29. V. 1976; KPM-NK 76592, 76593, F & M (det. R. Matsumoto), Nara Pref., Yamatokoriyama City, Yatacho, 1–2. V. 2016, R. Matsumoto leg.; KPM-NK 76594–76597, 1 F & 3 M, Kagawa Pref., Takamatsu City, Enza Town, Riverside of Koutougawa, 5. V. 2011, K. Maeto & K. Watanabe leg.

**Remarks.** This species had been reported from Kyushu (Nakanishi, 1965). In this study, I record this species from Honshu and Shikoku for the first time. This species quite resembles *Ag. ramellaris* in the body coloration and structures but can be clearly distinguished by the following character states: posterior transverse carina of propodeum complete (female and male of *Ag. ramellaris*) or absent medially (female and male of *Ag. minousubae*); area basalis of propodeum transversely elongate and slopping anteriorly (female and male of *Ag. ramellaris*) or nearly quadrate and almost flat (female and male of *Ag. minousubae*); wing base blackish brown (female and male of *Ag. ramellaris*), yellowish brown (female of *Ag. minousubae*: Fig. 4B) or yellow (male of *Ag. minousubae*); posterior margin of T II (and usually also T III) with (female and male of *Ag. minousubae*: Figs 4A, C) or without (female and male of *Ag. ramellaris*) conspicuous reddish brown area; basal reddish area of hind femur sometimes indistinct (female of *Ag. ramellaris*) or always distinct (female of *Ag. minousubae*: Fig. 4A); yellow stripes of frontal and facial orbits separated by black area (male of *Ag. ramellaris*) or united into a single stripe (male of *Ag. minousubae*: Fig. 4D); apical margin of clypeus rounded (male of *Ag. ramellaris*) or subtruncate (male of *Ag. minousubae*: Fig. 4D); yellow spot of clypeus small or absent (male of *Ag. ramellaris*) or large (male of *Ag. minousubae*: Fig. 4D). The males of this species more

or less vary in coloration, that is, subtegular ridge with or without a yellow spot, scutellum with or without a yellow spot and fore and mid coxae and trochanters each with or without yellow area.

According to Nakanishi (1965), this species specifically attacked a single host, *Pryeria sinica* Moore, 1877 (Lepidoptera: Zygaenidae). I observed this species in Kanagawa prefecture that is the adult wasps flew around or walked on the hedge by *Euonymus japonicus* Thunb. (Celastraceae) damaged by the larvae of *P. sinica*. While all the males flew around the hedge, the female that I observed walked on the tree.

Genus *Aritranis* Förster, 1869

*Aritranis* Förster, 1869: 187. Type species: *Cryptus exploratory* Schulz, 1906. Designated by Viereck (1914).

*Pycnocryptus* Thomson, 1873: 471, 500. Type species: *Ichneumon peregrinator* Linnaeus, 1758 sensu Gravenhorst, 1829 = *Ichneumon director* Thunberg, 1822. Monobasic.

*Cylindrocryptus* Ceballos, 1921: 50. Type species: *Cylindrocryptus nitidus* Ceballos, 1921. Original designation.

Townes (1970) treated both *Aritranis* (including *Hoplocryptus* Thomson, 1873) and *Pycnocryptus* as valid genera. Then Schwarz & Shaw (1998) reviewed these genera and they treated that *Hoplocryptus* is a valid genus and that *Pycnocryptus* is a synonym of *Aritranis*. *Aritranis* is morphologically similar to *Hoplocryptus*, but it can be distinguished from the latter by the following character states: dorso-lateral carina of T I absent or indistinct based of spiracle (distinct based of spiracle in *Hoplocryptus*), postpetiole rather distinctly convex dorsally in lateral view (rather weakly convex in *Hoplocryptus*) and apical margin of clypeus without a tooth except for *A. nigripes* group sense Schwarz (with a more or less distinct tooth or a pair of teeth in *Hoplocryptus*).

In Japan, six species of *Aritranis* s. lat. had been described by Uchida (1936, 1952, 1956) and Momoi (1963, 1968, 1973) while all of them were transferred from this genus to *Hoplocryptus* Thomson, 1873 (Yu *et al.*, 2016). Schwarz (2005) recorded a single species, *Ar. occisor* (Gravenhorst, 1829) from Japan. In this study, I describe a new species from Japan below.

*Aritranis occisor* (Gravenhorst, 1829)

*Cryptus occisor* Gravenhorst, 1829: 615.

*Cryptus gracilis* Taschenberg, 1865: 98.

*Cryptus fuscicornis* Tschek, 1871: 140.

*Spilocryptus punguri* Kiss, 1915: 26.

*Hoplocryptus nigripes* notabilis Habermehl, 1926: 152.

**Material examined.** No material was available in this study.

**Distribution.** Japan (Honshu?); widely distributed in Palearctic region.

**Remarks.** Schwarz (2005, p. 1652) recorded this species from Japan based on a female specimen collected from “Minoo”. This species belongs to *Ar. nigripes* group sense Schwarz.

*Aritranis kuro* sp. nov.

(Figs 1A, 2A, B, 3A, 4E-K)

(Standard Japanese name: Yamato-kuro-togari-himebachi)

**Type series. Holotype:** JAPAN, KPM-NK 75838, F, Toyama Pref., Toyama City, Kamegai, 15–26. IX. 2009, M. Watanabe *et al.* leg. (MsT). **Paratypes:** JAPAN, KPM-NK 75824, F, JAPAN, Hokkaido, Horokanai Town, Uryu, Forest of Hokkaido University, 16. VII. 2012, M. Ito leg.; NIAES, F, Hokkaido, Sapporo City, Misumai, Kannonzawa, 3–16. VII. 1992, N. Kuhara leg. (MsT); NIAES, 2 F, ditto, 27. VII. – 11. VIII. 1992; NIAES, 2 M, ditto, 11–22. VIII. 1992; NIAES, F, Yamagata Pref., Mts. Iide, Yachidaira, 19. VI. 1988, K. Konishi leg.; KPM-NK 75826, F, Nagano Pref., Kawakami Vil., Azusayama, 14. VI. 2015, K. Watanabe leg.; KPM-NK 75827, F, Nagano Pref., Outaki Vil., Mt. Ontake-san, Hakkaisan, 6. VIII. 2010, K. Watanabe leg.; KPM-NK 75846, F, Shizuoka Pref., Shizuoka City, Umegashima, Abe-toge, 15. VI. 2008, K. Watanabe leg.; KPM-NK 75833, 75834, 2 F, Toyama Pref., Toyama City, Arimine, Jurodani, 11–16. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 75828, F, ditto, 1–8. IX. 2009; KPM-NK 75842, F, Toyama Pref., Toyama City, Kamegai, 1–8. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 75844, F, ditto, 8–15. IX. 2009 (MsT); KPM-NK 75829–75831, 75836, 75841, 5 F, same data of holotype, 15–26. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 75835, F, Toyama Pref., Nanto City, Togamura, Kamimomose, 7–14. VII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 75825, 76576, 76577, 1 F & 2 M, ditto, 21. VII. – 28. VII. 2009, KPM-NK 75845, F, ditto, 28. VII. – 4. VIII. 2009; KPM-NK 75840, F, ditto, 1–8. IX. 2009 (MsT); KPM-NK 75839, F, ditto, 8–15. IX. 2009; KPM-NK 75832, F, ditto, 15–29. IX. 2009; KPM-NK 75837, F, Toyama Pref., Toyama City, Inonedani, 28. VII. – 4. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 75773,

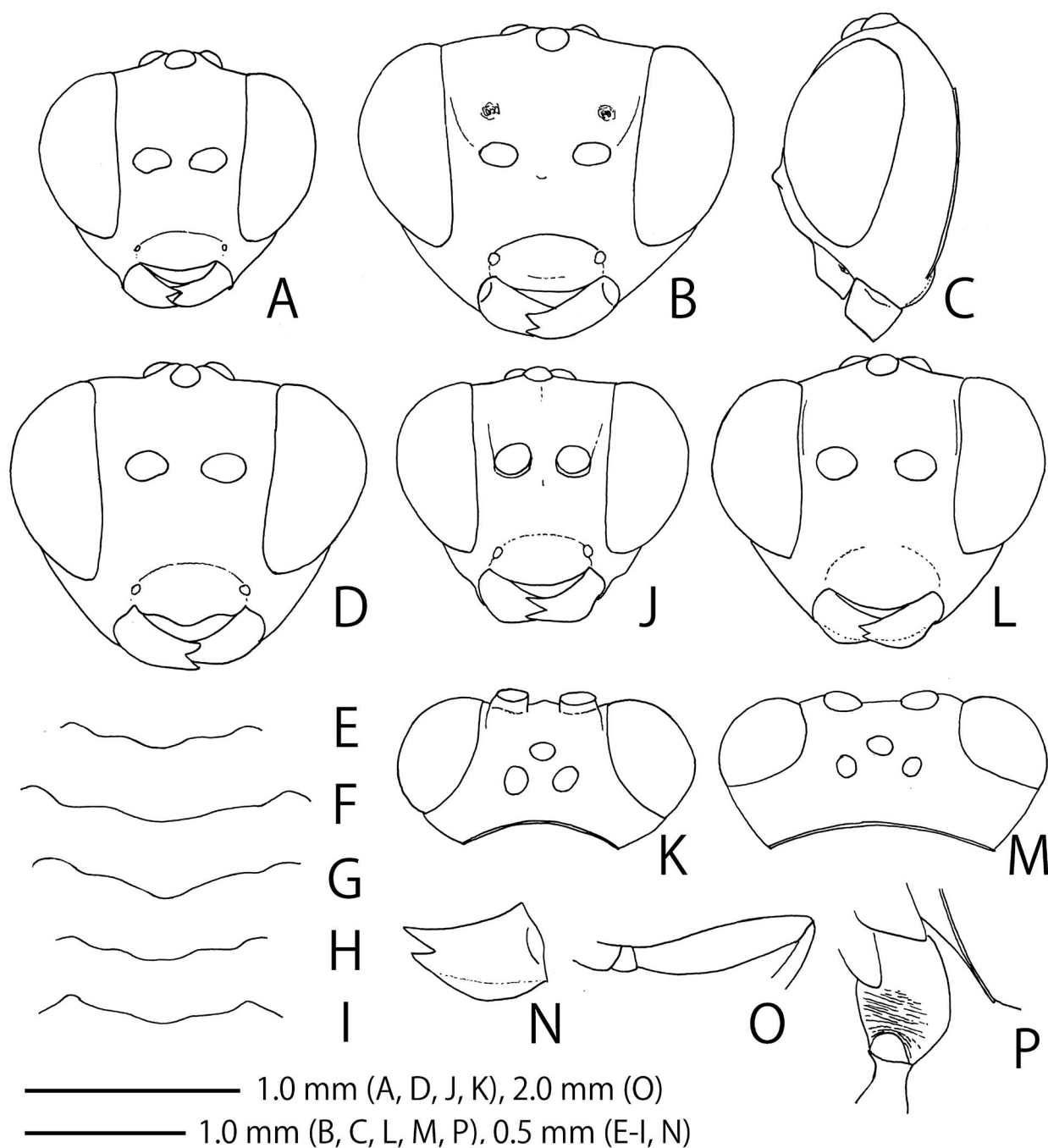


Fig. 1. *Aritranis kuro* sp. nov. (A, KPM-NK 75838); *Buathra nipponica* sp. nov. (B, C, KPM-NK 75746), *Hoplocryptus ezoensis* sp. nov. (D, KPM-NK 75799), *Ho. ashoroensis* sp. nov. (E, NIAES), *Ho. intermedius* sp. nov. (F, KPM-NK 75804), *Ho. japonicus* sp. nov. (G, KPM-NK 75771), *Ho. maculatus* sp. nov. (H, KPM-NK 75781), *Ho. toshimensis* sp. nov. (I, KPM-NK 75797), *Hylophasma luica* Sheng, Li & Wang, 2019 (J, K, KPM-NK 75813) and *Trychosis breviterebratus* sp. nov. (L-P, KPM-NK 75748), females — A-D, J-M, head, frontal (A, B, D, J, L), lateral (C) and dorsal (K, M) view; E-I, apical margin of clypeus, frontal view; K, left mandible; O, left fore femur, anterior view; lower part of epinomial carina, lateral view.

F, Fukui Pref., Natasho Vil., Mushi-dani, 31. V. 1981, T. Murota leg.

**Description.** Female (n=27). Body covered with silver setae, length 6.5–9.0 (HT: 6.5) mm.

Head 0.55–0.6 (HT: 0.57) × as long as wide, polished, finely punctate. Clypeus sparsely punctate, 0.55–0.6 (HT: 0.56) × as long as maximum wide, slightly convex in

lateral view, its apical margin rounded, without a median tooth or convexity (Fig. 1A). Face 0.45–0.5 (HT: 0.45) × as long as maximum wide, finely coriaceous. Frons finely coriaceous except for a narrow smooth area above antennal sockets. Length of malar space 0.75–0.8 (HT: 0.8) × as long as basal mandibular width. Base of mandible almost flat. Upper tooth of mandible almost as long as lower

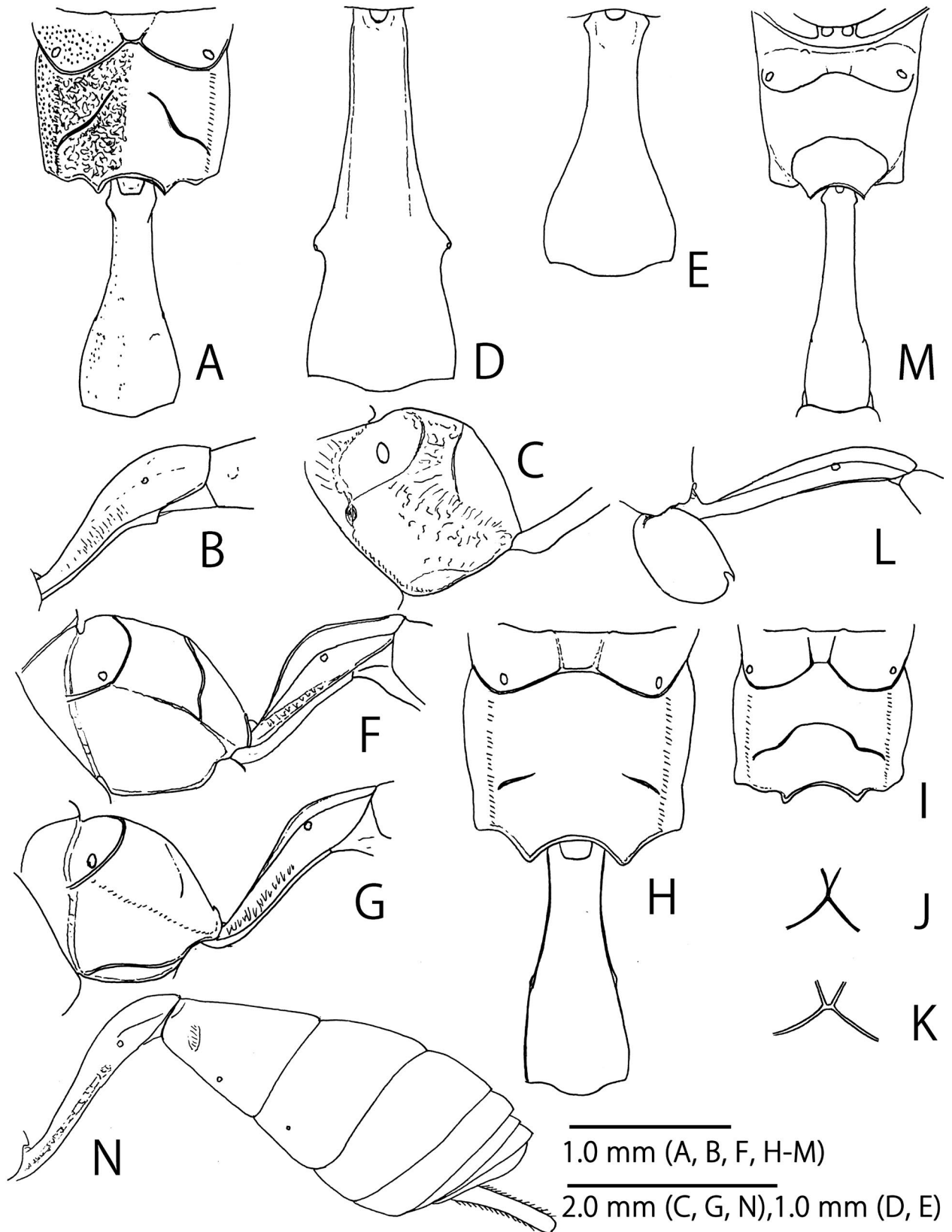


Fig. 2. *Aritranis kuro* sp. nov. (A, B, KPM-NK 75832); *Buathra nipponica* sp. nov. (C, D, KPM-NK 75746), *Glabridorsum japonicum* sp. nov. (E, KPM-NK 75742), *Hoplocryptus ezoensis* sp. nov. (F, KPM-NK 75799), *Ho. intermedius* sp. nov. (G, KPM-NK 75804), *Ho. japonicus* sp. nov. (H, KPM-NK 75771), *Ho. maculatus* sp. nov. (I, KPM-NK 75790, J, KPM-NK 75781, K, KPM-NK 75783), *Hylophasma luica* Sheng, Li & Wang, 2019 (L, M, KPM-NK 75813) and *Trychosis breviterebratus* sp. nov. (N, KPM-NK 75748), females — A, F, G, H, M, propodeum and T I, dorsal (A, H, M) and lateral (F, G) view; B, E, L, T I, lateral view; C, I, propodeum, lateral (C) and dorsal (I) view; D, T I, lateral view; J, K, area basalis and part of anterior transverse carina of propodeum; N, metasoma, lateral view. Surface sculpture of right half of Fig. 2A omitted.

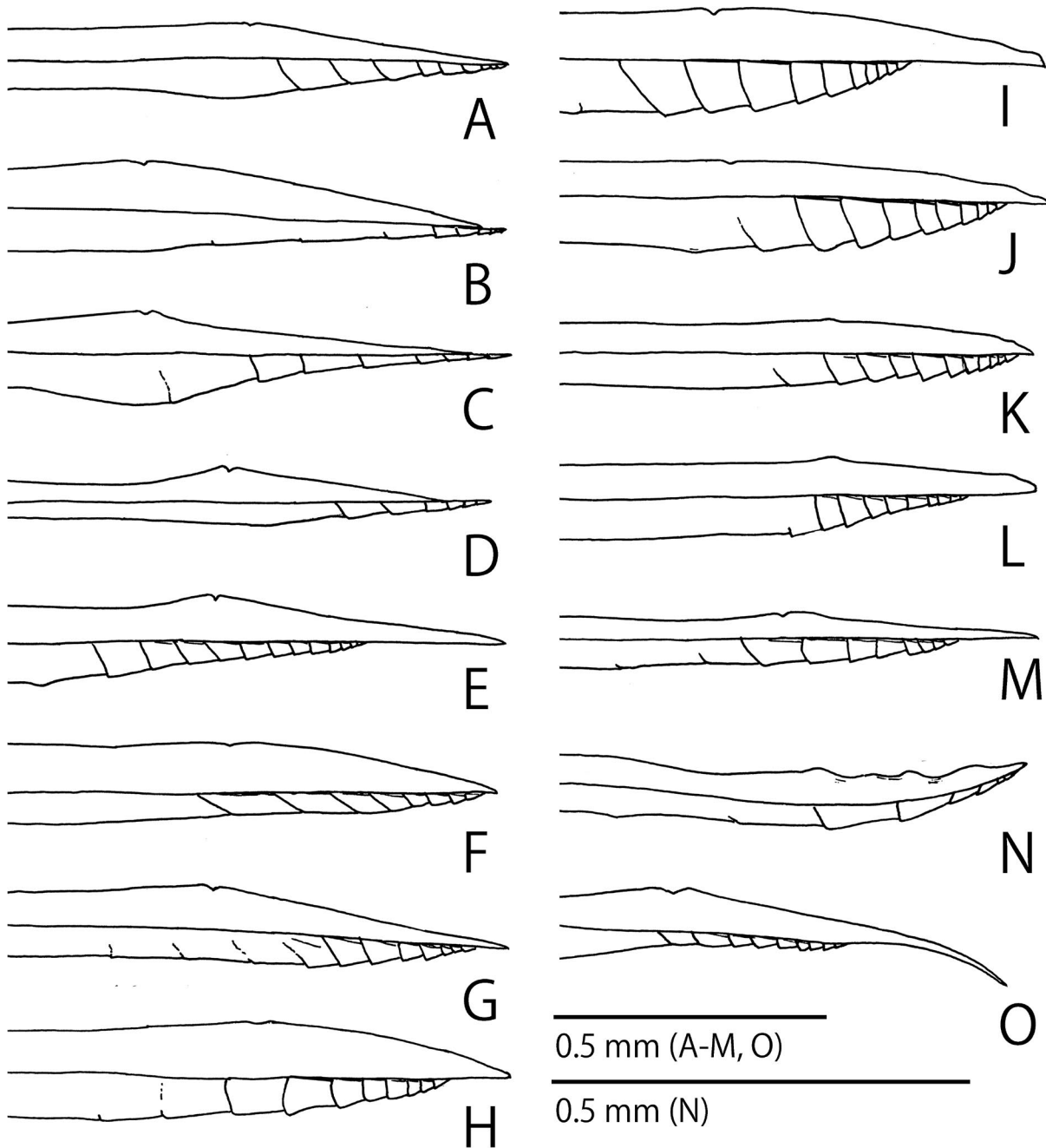


Fig. 3. *Aritranis kuro* sp. nov. (A, KPM-NK 75838), *Buathra nipponica* sp. nov. (B, KPM-NK 75746), *Cryptus daidaigaster* sp. nov. (C, NIAES), *Gambrus homonae* Sonan, 1930 (D, KPM-NK 76566); *Glabridorsum japonicum* sp. nov. (E, KPM-NK 75742), *Gotra elegans* sp. nov. (F, KPM-NK 75822); *Hoplocryptus ashoroensis* sp. nov. (G, NIAES), *Ho. ezoensis* sp. nov. (H, KPM-NK 75800), *Ho. intermedius* sp. nov. (I, KPM-NK 75804), *Ho. japonicus* sp. nov. (J, KPM-NK 75771), *Ho. maculatus* sp. nov. (K, KPM-NK 75781), *Ho. pini* (L, KPM-NK 76579), *Ho. toshimensis* sp. nov. (M, KPM-NK 75797), *Picardiella melanoleuca* (Gravenhorst, 1829) (N, KPM-NK 75744) and *Trychosis breviterebratus* sp. nov. (N, KPM-NK 75758), apex of ovipositor, lateral view.

tooth. OD: POL: OOL = 1.0: 1.3–1.4 (HT: 1.3): 1.1–1.15 (HT: 1.1). Flagellum with 26–27 (HT: 27) segments. FL I 5.0–5.5 (HT: 5.0) × as long as maximum depth in lateral view and 0.97–1.0 (HT: 1.0) × as long as FL II.

Mesosoma polished. Lateral aspect of pronotum punctate dorsally, longitudinally strigose ventrally except for antero-ventral small smooth area. Epomia present, short. Posterior end of notauli reached to middle of

mesoscutum. Mesoscutum densely punctate. Scutellum punctate. Mesopleuron largely rugose, with a smooth area on speculum. Mesosternum with the short median portion of posterior transverse carina. Metapleuron reticulate rugose and obliquely rugose ventrally. Juxtacoxal carina present, partly indistinct posteriorly. Propodeum punctate on area externa and strongly reticulate rugose on areas behind anterior transverse carina (Figs 2A, 4H). Anterior

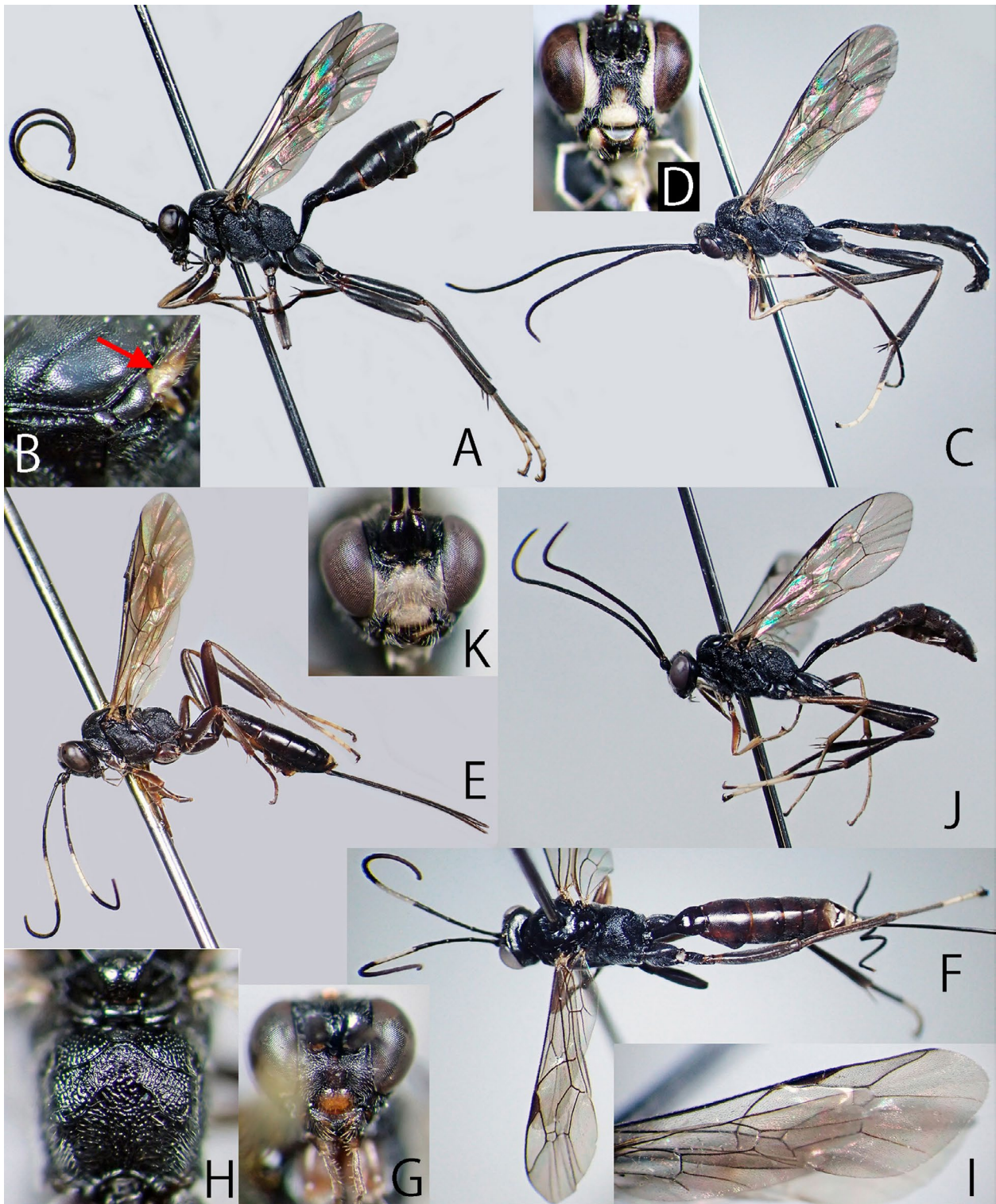


Fig. 4. *Agrothereutes minousubae* Nakanishi, 1965 (A, B, KPM-NK 76585; C, D, KPM-NK 76590) and *Aritranis kuro* sp. nov. (E, G, I, KPM-NK 75824; F, H, KPM-NK 75825; J, K, KPM-NK 76577) — A, C, E, J, lateral habitus; B, tegula and humeral plate (red arrow), dorso-lateral view; D, G, K, head, frontal view; F, dorsal habitus; H, propodeum, dorsal view; I, right wings.

section of lateromedian longitudinal carina present (Fig. 2A). Anterior transverse carina complete (Figs 2A, 4H). Posterior transverse carina complete or sometimes median part of the latter indistinct, arched forward medially (Figs 2A, 4H). Pleural carina complete. Propodeal spiracle oval. Area basalis trapezoidal, widened anteriorly. Fore wing length 4.9–7.0 (HT: 4.9) mm. Areolet pentagonal, vein

2rs-m and vein 3rs-m more or less convergent anteriorly (Fig. 4I). Distance from vein 2rs-m to vein 2m-cu slightly shorter than distance from vein 2m-cu to vein 3rs-m (Figs 4F, I). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu (Fig. 4I). Hind femur 5.0 × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.4–4.8 (HT: 4.4): 2.0: 1.3–1.5 (HT: 1.3):

0.7–0.8 (HT: 0.7): 1.2.

Metasoma polished. T I 2.2–2.4 (HT: 2.2) × as long as maximum width, largely smooth, with a few, sparse punctures, without latero-median carina and dorso-lateral carina (Fig. 2B), with a pair of small convexities present at base. T II 1.0–1.2 (HT: 1.0) × as long as maximum width. T II, T III and T IV finely coriaceous, with fine punctures. Ovipositor distinctly longer than half length of fore wing, its sheath 1.68–1.8 (HT: 1.7) × as long as hind tibia. Apex of ovipositor as Fig. 3A.

Colouration (Figs 4E–I). Body (excluding wings and legs) black to blackish brown, except for: clypeus, apex of mandible, posterior margin of metasomal tergites and ovipositor reddish brown; FL V to FL IX white except for outer surface; palpi dark brown; humeral plate and membranous parts of metasomal sternites tinged with yellowish brown; apex of metasoma with white membranous part. Wings hyaline. Veins and pterostigma blackish brown to brown. Legs black to blackish brown, except for: tibial spurs yellowish brown; apical part of hind TS II to TS IV white. Fore and mid legs usually partly tinged with yellowish brown.

Male (n=4). Similar to female (Figs 4J, K). Clypeus 0.5–0.56 × as long as maximum wide. Face 0.57–0.59 × as long as maximum wide. Length of malar space 0.55–0.6 × as long as basal mandibular width. OD: POL: OOL = 1.0: 1.5: 1.2–1.45. Flagellum with 29–30 segments, with tyloid from FL 13 to FL 16 or 17. FL I 4.3 × as long as maximum depth in lateral view, 1.2–1.3 × as long as FL II. Posterior transverse carina of propodeum weaker than female. Hind femur 5.2–5.5 × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.0–4.2: 2.0: 1.4: 0.8: 1.1. T I 3.0–3.4 × as long as maximum width. T II 1.5–1.75 × as long as maximum width. Antenna without a white area. Face, clypeus and mandible largely yellow. Frons with a pair of small yellow spots along inner margin of eye. Palpi whitish yellow. Fore and mid trochanters and trochantelli with a ventral yellow area. Fore and mid femora, tibiae and tarsi largely reddish or yellowish brown. Base of hind femur narrowly tinged with reddish brown. Base of hind tibia tinged with yellowish brown. Malar space sometimes tinged with yellow.

**Distribution.** Japan (Hokkaido and Honshu).

**Etymology.** The species name is from the black (Japanese term: Kuro) coloration of body.

**Remarks.** This species resembles *Ar. chinensis* (Uchida, 1952) and *Ar. robiniae* Sun & Sheng, 2006 in body structures but it can be distinguished by the metasomal tergites black (black with conspicuous red area(s) in *Ar. chinensis* and *Ar. robiniae*) and the ovipositor distinctly

longer than half length of fore wing (not distinctly longer than half length of fore wing in *Ar. chinensis* and *Ar. robiniae*). This species can easily be distinguished from *Ar. occisor* by the clypeus without a distinct median tooth (with a tooth in female of *Ar. occisor*).

#### Genus *Buathra* Cameron, 1903

*Buathra* Cameron, 1903a: 233. Type species: *Buathra rufiventris* Cameron, 1903. Monobasic.

*Bathycrisis* Cameron, 1905: 96. Type species: *Bathycrisis striaticollis* Cameron, 1905 (= *Cryptus excavatus* Cameron, 1905). Monobasic.

In Japan, only one species, *B. laborator* (Thunberg, 1822), has been recorded. I herein describe a new species, *B. nipponica* sp. nov. based on specimens from Honshu, Japan.

#### *Buathra nipponica* sp. nov.

(Figs 1B, C, 2C, D, 3B, 5-I)

(Standard Japanese name: Anaaki-togari-himebachi)

**Type series. Holotype:** KPM-NK 75746, F, JAPAN, Yamanashi Pref., Koushu City, Katsunuma-cho, Nr. Ootaki-fudou, 22. V. 2010, K. Watanabe leg. **Paratypes:** KPM-NK 75747, M, JAPAN, Saitama Pref., Ogawa Town, Sengen-yama, 14. V. 1994, A. Shimizu leg.; NIAES, F, Niigata Pref., Asahi Vil., Mt. Shinbo-dake, 5. VI. 1980, K. Maeto leg.

**Description.** Female (n=2). Body polished, covered with slightly brownish silver setae, length 10.5–11.0 (HT: 11.0) mm.

Head 0.5 × as long as wide, punctate. Clypeus 0.5 × as long as maximum wide, strongly convex in lateral view (Fig. 1C), its apical margin rounded, without a median tooth or convexity (Fig. 1B). Face 0.36–0.4 (HT: 0.36) × as long as maximum wide, finely coriaceous, slightly convex medially in lateral view. Frons densely punctate except for a smooth area above antennal sockets, with a pair of distinct concavity on the smooth area. Length of malar space 0.8 × as long as basal mandibular width. Base of mandible slightly convex. Upper tooth of mandible almost as long as lower tooth (Fig. 1B). OD: POL: OOL = 1.0: 1.7: 1.8–2.0 (HT: 2.0). Flagellum with 34–35 (HT: 35) segments. FL I 5.0 × as long as maximum depth in lateral view and 1.36 × as long as FL II.

Mesosoma. Lateral aspect of pronotum punctate dorsally, longitudinally strigose ventrally and posteriorly. Epomia present, short. Posterior end of notauli barely reached to middle of mesoscutum. Mesoscutum densely punctate.



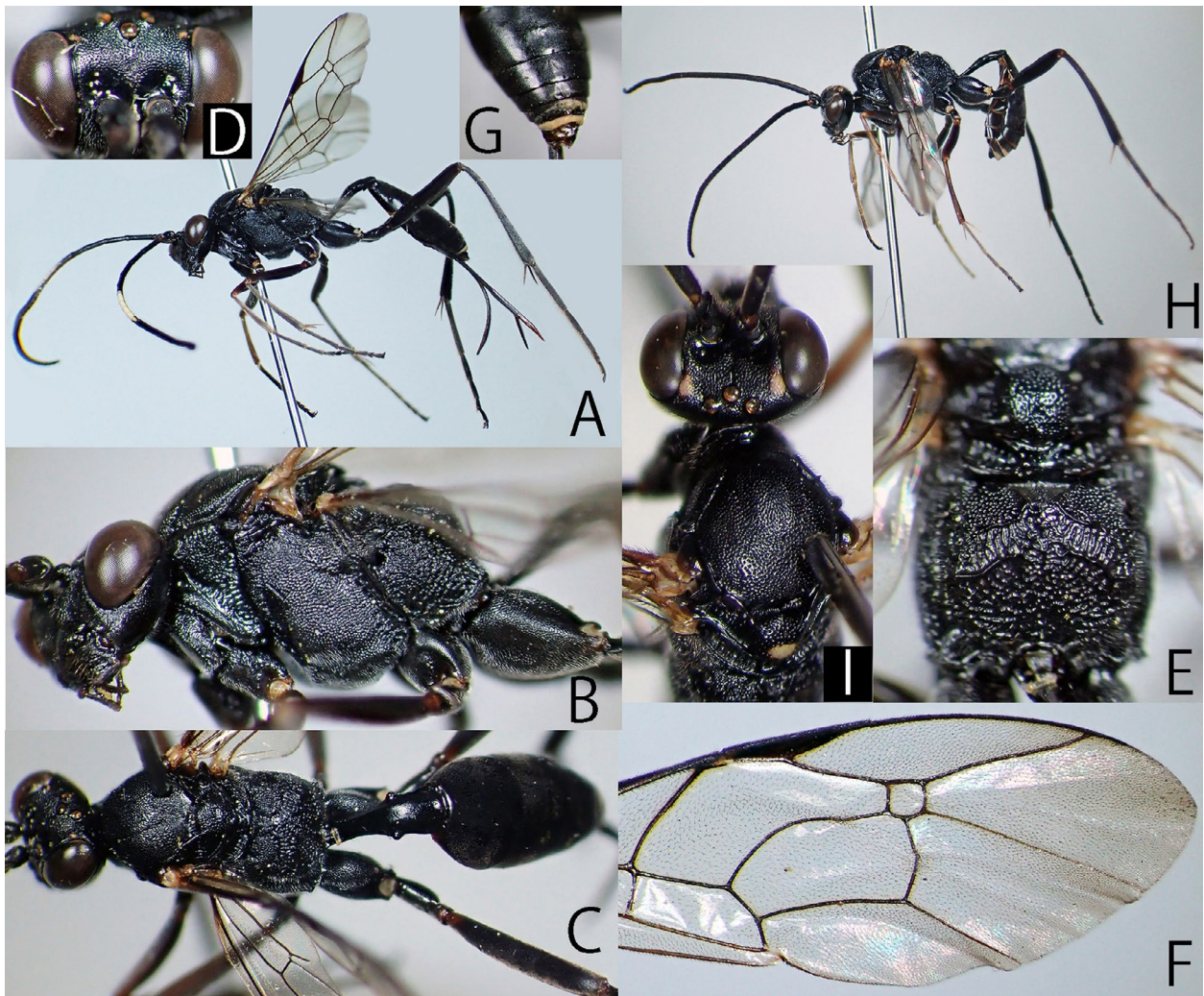


Fig. 5. *Buathra nipponica* sp. nov. (A-G, KPM-NK 75746; H, I, KPM-NK 75747) — A, lateral habitus; B, mesosoma, lateral view; C, head, mesosoma and metasoma, dorsal view; D, frons, frontal view; E, propodeum, dorsal view; F, right fore wing; G, apex of metasoma, dorso-lateral view.

Scutellum punctate. Mesopleuron largely rugose (Fig. 5B), without a smooth area on speculum. Mesosternum without a median part of posterior transverse carina. Metapleuron reticulate rugose (Fig. 2C). Juxtacoxal carina present but indistinct partly (Fig. 2C). Propodeum punctate on area externa and strongly reticulate rugose on areas behind anterior transverse carina (Fig. 5E). Anterior section of lateromedian longitudinal carina present except for anterior part. Anterior transverse carina complete except for median part absent (Fig. 5E). Posterior transverse carina complete except for median part absent (Fig. 5E). Pleural carina present in anterior section, absent in posterior section (Fig. 2C). Area supermedia indistinct. Propodeal spiracle slightly elongate. Area basalis trapezoidal, widened anteriorly. Fore wing length 8.3–8.8 (HT: 8.8) mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m subparallel (Fig. 5C). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu (Fig. 5C). Hind coxa with an antero-basal weak convexity. Hind femur 6.1–6.6 (HT:

6.1) × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.0: 2.0: 1.4: 0.7–0.75 (HT: 0.75): 1.0.

Metasoma. T I 2.6–2.9 (HT: 2.6) × as long as maximum width, largely smooth basally, densely and finely punctate posteriorly, with a pair of strong convexities at base of spiracle, without latero-median carina, with dorso-lateral carina but largely absent, without a pair of triangular convexities at base (Fig. 2D). T II 0.82–0.9 (HT: 0.82) × as long as maximum width. T II, T III and T IV densely and finely punctate. Ovipositor sheath 1.0 × as long as hind tibia. Apex of ovipositor as Fig. 3B.

Colouration (Figs 5A-G). Body (excluding wings and legs) black to blackish brown, except for: base of FL I tinged with reddish brown; FL VI to FL VI whitish yellow except for outer surface; Posterior margin of T VI and T VII with a white membranous area; ovipositor reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown except for yellowish brown wing base. Legs black to blackish brown.

Male (n=1). Similar to female (Figs 5H, I). Body length 10.2 mm. Face  $0.45 \times$  as long as maximum wide. OD: POL: OOL = 1.0: 1.75: 1.75. Flagellum with tyloid from FL 12 to FL 21. FL I  $2.85 \times$  as long as maximum depth in lateral view. Fore wing 7.5 mm. Hind femur  $6.35 \times$  as long as maximum depth in lateral view. T I  $3.5 \times$  as long as maximum width. T II  $0.9 \times$  as long as maximum width. Antenna without a white area. Scutellum with a small yellow spot. Posterior margin of metasomal tergites more or less tinged with yellowish brown. Base of hind femur narrowly tinged with reddish brown.

**Distribution.** Japan (Honshu).

**Etymology.** The epithet is from the type locality, Nippon (= Japan).

**Remarks.** This species resembles *B. melana* Sheng & Sun, 2014 (male unknown) in the coloration of body and legs, the sculptured speculum and the shape of vein AP of hind wing, but it can be distinguished by the antenna of female with a white band (without it in *B. melana*) and the area superomedia indistinct (distinct in *B. melana*). This species can easily be separable from *B. laborator* by the black legs (red in *B. laborator*).

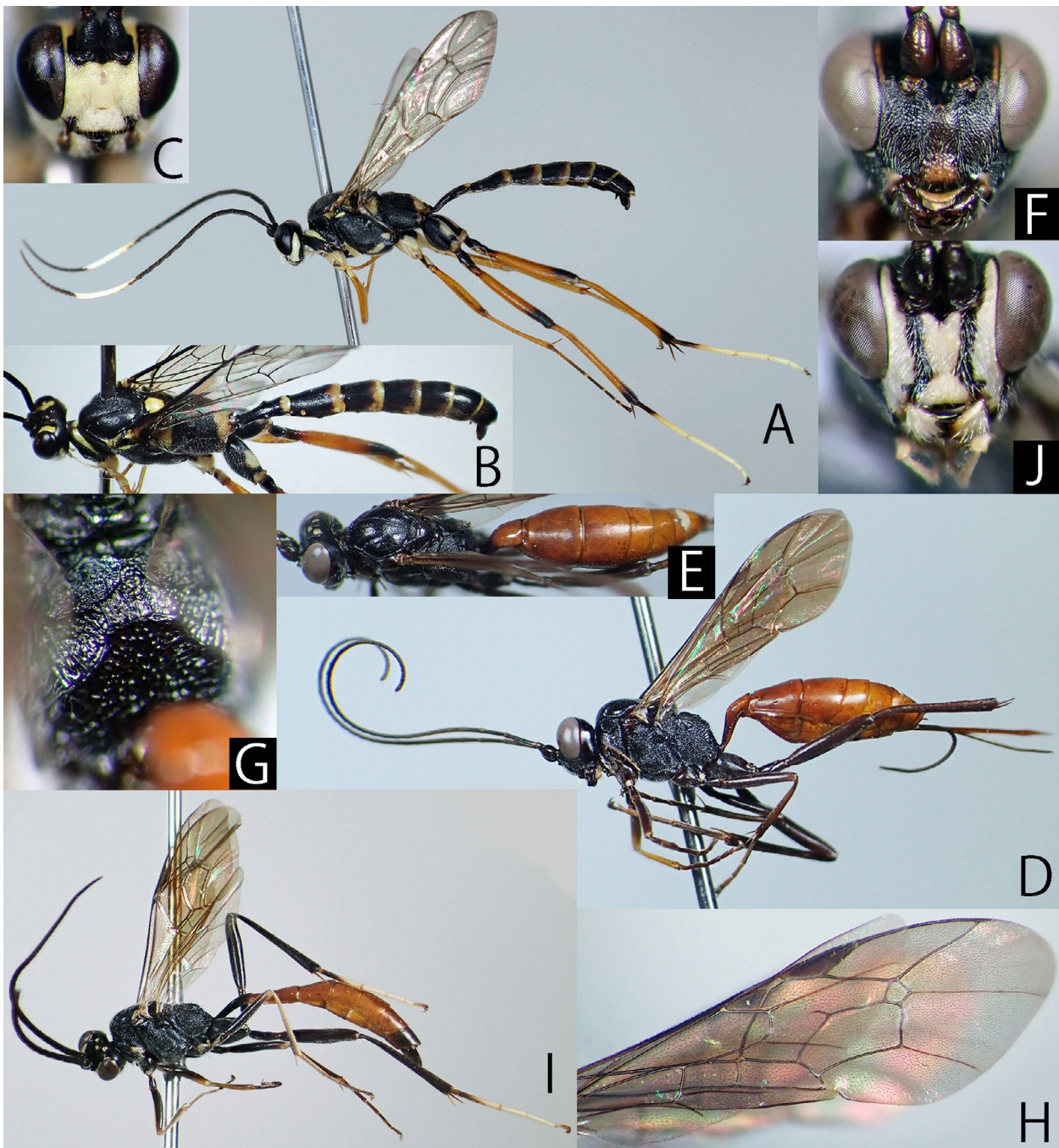


Fig. 6. *Caenocryptoides convergens* Momoi, 1966 (A-C, TMNH) and *Cryptus daidaigaster* sp. nov. (D-J, NIAES) — A, D, I, lateral habitus; B, E, head, mesosoma and metasoma, dorso-lateral view; C, F, J, head, frontal view; G, propodeum, dorsal view; H, right wings.

Genus *Caenocryptoides* Uchida, 1936

*Caenocryptoides* Uchida, 1936: 4. Type species: *Ischnojoppa tarsalis* Matsumura, 1912. Original designation.

Three species, *Ca. convergens* Momoi, 1966, *Ca. nigrifacies* Jonathan, 1999 and *Ca. tarsalis* (Matsumura, 1912), have been recorded from Japan. I herein describe a male of *Ca. convergens* for the first time.

*Caenocryptoides convergens* Momoi, 1966

(Figs 6A-C)

(Standard Japanese name: Kisuji-togari-himebachi)

*Caenocryptoides convergens* Momoi, 1966: 162.

**Description.** Male (n=1). Body polished, covered with silver setae, length 14.5 mm. General character states similar to female.

Head  $0.6 \times$  as long as wide, punctate. Clypeus  $0.48 \times$  as long as maximum wide, convex in lateral view, its apical margin narrowly reflexed, with a median obtuse tooth and a pair of lateral convexities. Face  $0.57 \times$  as long as maximum wide, densely punctate, slightly convex medially in lateral view. Frons densely punctate except for a smooth area above antennal sockets. Length of malar space  $0.6 \times$  as long as basal mandibular width. Base of mandible slightly convex. Upper tooth of mandible almost as long as lower tooth. OD: POL: OOL = 1.0: 1.5: 1.7. Flagellum with 34 segments, with tyloid from FL 16 to FL 20. FL I  $3.75 \times$  as long as maximum depth in lateral view and  $1.22 \times$  as long as FL II.

Mesosoma. Lateral aspect of pronotum punctate dorsally, longitudinally strigose ventrally and posteriorly. Epomia present. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum densely punctate. Scutellum sparsely punctate. Mesopleuron largely rugose, with a smooth area on speculum. Mesosternum without a median part of posterior transverse carina. Metapleuron reticulate rugose. Juxtacoxal carina absent. Propodeum punctate on area externa and strongly reticulate rugose on areas behind anterior transverse carina. Anterior section of lateromedian longitudinal carina present except for anterior part. Anterior transverse carina complete. Posterior transverse carina complete except for median part largely absent. Pleural carina present. Propodeal spiracle elongate. Area basalis trapezoidal, widened anteriorly. Fore wing length 9.5 mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m convergent anteriorly. Hind femur  $6.9 \times$  as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 3.8: 2.0: 1.25: 0.5: 0.9.

Metasoma. T I  $2.6 \times$  as long as maximum width, punctate, with a pair of strong convexities at base of spiracle, without latero-median carina, with dorso-lateral carina but largely indistinct, with a pair of triangular convexities at base. T II  $1.6 \times$  as long as maximum width. T II, T III and T IV densely and finely punctate.

Colouration (Figs 6A-C). Similar to female. Body (excluding wings and legs) black to blackish brown, except for: clypeus, face, malar space, gena except for posterior and dorsal areas, frons and vertex except for median area, palpi, propleuron, dorsal spots of pronotum, scutellum, postscutellum, tegula, subtegular ridge, posterior spot of mesopleuron, longitudinal stripe along sternaulus on mesosternum, upper division of metapleuron, posterior part of propodeum, posterior margin of each metasomal tergite and membranous part of metasomal sternites yellow to whitish yellow; FL XI to FL XX white. Wings hyaline. Veins and pterostigma blackish brown to brown except for yellowish brown wing base. Coxae, trochanters and trochantelli whitish yellow with black area(s) in fore and mid legs and black with whitish yellow area in hind leg. Femora, tibiae and fore and mid tarsi reddish brown. Apex of mid and hind femora and tibiae tinged with blackish brown to black. Hind tarsus white except for base of TS I and apex of TS V blackish brown to black.

**Material examined.** JAPAN, TMNH, F, Aichi Pref., Toyohashi City, Imure Town, Takeyama, 26. IV. 2017, S. Morishita leg.; TMNH, M, Aichi Pref., Toyohashi City, Oiwa Town, Taimatsu-toge, 1–11. VII. 2019, S. Morishita leg. (MsT); MNHAH, F (holotype of *C. convergens*), Hyogo Pref., Sasayama, 13. VI. 1955, K. Iwata leg.

**Distribution.** Japan (Honshu).

**Remarks.** This is the first description of the male of this species. This species resembles *Ca. nigrifacies* in many character states especially body coloration, but they can be distinguished by the body length more than 15 mm (12 mm in *Ca. nigrifacies*), the propodeum with yellow marking(s) (entirely black in *Ca. nigrifacies*) and the hind coxa with a yellow marking (entirely black in *Ca. nigrifacies*). The yellow marking of this species varies in size (e.g., it on frons, face and pronotum) and thus the taxonomic position of *Ca. nigrifacies* should be reviewed in the future study.

**Key to Japanese species of the genus*****Caenocryptoides***

(Male of *Ca. nigrifacies* is unknown)

1. Hind femur nearly entirely black. Yellow area of face and frons of male separated by black area.

Propodeum without conspicuous yellow marking(s), at most tinged with reddish brown in some males. Hind coxa without a yellow marking (but some males with reddish brown spot). Face of female more or less matt. Posterior margin of some (100% in T I and T II but variously reduced in other tergites) metasomal tergites with white band.

.....*Ca. tarsalis* (Matsumura, 1912)

- Hind femur reddish brown with a black apical part (Fig. 6A). Yellow area of face and frons of male united into a single area (Fig. 6C). Propodeum sometimes with yellow marking(s) (Figs 6A, B). Hind coxa sometimes with a yellow marking (Figs 6A, B). Face of female more or less polished. Posterior margin of all metasomal tergites with yellow band (sometimes partly reduced) (Figs 6A, B).

.....2

- 2. Propodeum with yellow marking(s) (Figs 6A, B). Hind coxa with a yellow marking (Figs 6A, B). Relatively large species, body length more than 15 mm.

.....*Ca. convergens* Momoi, 1966

- Propodeum and hind coxa without a yellow marking. Relatively small species, body length 12 mm.

.....*Ca. nigrifacies* Jonathan, 1999

#### Genus *Cryptus* Fabricius, 1804

*Cryptus* Fabricius, 1804: 70. Type species: *Cryptus viduatorius* Fabricius, 1804. Designated by Curtis (1837).

*Eucryptus* Haldeman, 1842: 191. New name for *Cryptus*.

*Itamoplex* Förster, 1869: 188. Type species: *Cryptus americanus* Cresson, 1864 (= *Ischnus albitarsis* Cresson, 1864). Designated by Viereck (1914).

*Plesiocryptus* Cameron, 1903b: 299. Type species: *Plesiocryptus carinifrons* Cameron, 1903. Monobasic.

Five species, *Cr. diana* (Gravenhorst, 1829), *Cr. kono* Uchida, 1936, *Cr. lugubris* atrifemur (Townes, 1962), *Cr. nipponensis* Uchida, 1930 and *Cr. spiralis* (Fourcroy, 1785), have been recorded from Japan. Among them, types of *Cr. nipponensis* are lost (Townes *et al.*, 1965; Yu *et al.*, 2016). I could not find any specimens with the character states of *Cr. nipponensis*. I herein describe a new species, *Cr. daidaigaster* sp. nov., from Hokkaido, Japan and newly record *Cr. diana* from Honshu.

#### *Cryptus daidaigaster* sp. nov.

(Figs 3C, 6D-J)

(Standard Japanese name: Daidai-togari-himebachi)

**Type series. Holotype:** NIAES, F, Hokkaido, Mt. Tarumaezan, 12–21. VII. 1998, K. Konishi (MsT). *Paratypes:* NIAES, 2 F & 5 M, same data of holotype.

**Description.** Female (n=3). Body covered with silver setae, length 7.3–8.0 (HT: 8.0) mm.

Head 0.55–0.6 (HT: 0.59) × as long as wide. Clypeus sparsely punctate, 0.55–0.63 (HT: 0.56) × as long as maximum wide, weakly convex in lateral view, its apical margin rounded, without a median tooth or convexity. Face 0.5 × as long as maximum wide, finely coriaceous, densely and finely punctate, weakly convex medially in lateral view. Frons dull, irregularly rugose dorsally, transversely rugose ventrally. Length of malar space 1.05–1.1 (HT: 1.1) × as long as basal mandibular width. Lower part of occipital carina not raised and without a projecting lobe, its lower end joining hypostomal carina. Base of mandible almost flat. Upper tooth of mandible as long as lower tooth. OD: POL: OOL = 1.0: 1.5–1.6 (HT: 1.5): 1.2–1.3 (HT: 1.2). Flagellum with 36–37 (HT: 37) segments. FL I 6.67 × as long as maximum depth in lateral view and 1.36–1.43 (HT: 1.36) × as long as FL II.

Mesosoma polished. Lateral aspect of pronotum punctate dorsally, longitudinally strigose ventrally and posteriorly. Epomia present. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum and scutellum punctate. Mesopleuron largely covered with reticulate rugose, with a small smooth area on speculum. Mesosternum without a posterior transverse carina. Metapleuron reticulate rugose dorsally and obliquely rugose ventrally. Juxtacoxal carina present except for median part absent. Propodeum reticulate rugose on area externa, area postero and area postero-externa and longitudinally rugose on area superomedia and area dentipara (Fig. 6G). Anterior section of lateromedian longitudinal carina present. Anterior transverse carina complete. Posterior transverse carina complete, its dorso-lateral part more or less strongly raised but not form as strong apophysis (Figs 6D, G). Pleural carina present but partly indistinct. Propodeal spiracle elongate. Area basalis widened anteriorly. Fore wing length 5.8–6.0 (HT: 6.0) mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m convergent anteriorly (Fig. 6H). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu (Fig. 6H). Hind femur 5.3–5.6 (HT: 5.4) × as long as maximum depth in lateral view. Hind tibia in lateral view with spines projecting distinctly above dorsal margin of tibia. Hind TS I: II: III: IV: V = 4.0–4.1 (HT: 4.0): 2.0: 1.4: 0.75–0.8 (HT: 0.8): 4.6–5.0 (HT: 5.0).

Metasoma dull, covered with very sparse, fine punctures.

T I 4.6–4.75 (HT: 4.75) × as long as maximum width, with smooth area posteriorly, without latero-median carina, dorso-lateral carina and a pair of small convexities at base. T II 0.9 × as long as maximum width. Ovipositor longer than half length of fore wing, its sheath 1.15–1.25 (HT: 1.25) × as long as hind tibia. Apex of ovipositor as Fig. 3C.

Colouration (Figs 6D–H). Body (excluding wings and legs) black to blackish brown, except for: clypeus, malar space, frontal orbit and palpi yellowish brown; metasoma except for base of T I orange; ovipositor reddish brown. Wings hyaline, more or less darkened. Veins and pterostigma blackish brown to brown. Legs black to blackish brown, except for: tibial spurs, fore and mid tibiae and hind tarsus more or less tinged with yellowish brown.

Male (n=5). Similar to female (Figs 6I, J). Body length 8.0–10.5 mm. Clypeus 0.53–0.56 × as long as maximum wide. Face 0.55–0.59 × as long as maximum wide. OD: POL: OOL = 1.0: 1.5–1.8: 1.2–1.4. Flagellum with 36–40 segments, with tyloid from FL 15 to FL 19 or 20. FL I 3.3 × as long as maximum depth in lateral view, 1.5 × as long as FL II. Fore wing 6.0–7.3 mm. Hind femur 5.6–5.8 × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 3.8: 2.0: 1.4–1.5: 0.7: 1.05–1.1. T I 3.7–3.9 × as long as maximum width. T II 1.48–2.2 × as long as maximum width. Antenna without a white area. Face except for a pair of longitudinal black stripes below antennal sockets, clypeus except for dorsal and lateral margins, malar space and mandible except for apex largely yellow. Vertex with a pair of narrow yellow stripes along inner margin of eye. Tegula whitish yellow. Apex of metasoma blackish brown. Hind TS II to TS IV white to whitish yellow.

**Distribution.** Japan (Hokkaido).

**Etymology.** The species name is from the orange (Japanese term, daidai) coloration of metasomal tergites (gaster).

**Remarks.** This species resembles *Cr. praefortis* *praefortis* Rossem, 1990 in some character states especially coloration but it can be distinguished by the ovipositor longer than half length of fore wing (0.44–0.47 in *Cr. praefortis praefortis*) and the propodeum without strongly projecting apophysis (with it in *Cr. praefortis praefortis*). This species also resembles *Cr. diana* in some character states but it can be distinguished by the antenna without white band in both sexes (with white band in female of *Cr. diana*), the hind femur blackish brown (reddish brown in *Cr. diana*), the face of male with a median yellow marking (without it in male of *Cr. diana*) and the tegula of male whitish yellow (largely black in male of *Cr. diana*).

*Cryptus diana* Gravenhorst, 1829

(Standard Japanese name: Diana-togari-himebachi)

*Cryptus diana* Gravenhorst, 1829: 545.

*Cryptus gracilicornis* Gravenhorst, 1829: 553.

*Cryptus leucostomus* Gravenhorst, 1829: 531.

*Cryptus stenogaster* Gravenhorst, 1829: 529.

*Cryptus seticornis* Ratzeberg, 1844: 141.

*Cryptus solitarius* Habermehl, 1909: 629.

*Cryptus solitarius* Habermehl, 1918: 149.

**Material examined.** JAPAN, NIAES, F, Aomori Pref., Aomori City, Moyasawa, 7. VI. 1992, T. Ichita leg.

**Distribution.** Japan (Hokkaido and Honshu); widely distributed in Palaearctic region.

**Remarks.** This is the first record of this species from Honshu.

**Key to Japanese species of the genus *Cryptus*  
(Female only)**

(Female of *Cr. lugubris atrifemur* is unknown)

1. Metasomal tergites largely red or orange (Figs 6D, E).  
.....2
- Metasomal tergites without large red or orange area.  
.....3
2. Metasomal tergites red except for base of T I and T IV (excluding base) to apex of metasoma. Flagellum with a white band. Body usually longer than 10 mm.  
.....*Cr. diana* (Gravenhorst, 1829)
- Metasomal tergites entirely orange except for base of T I (Figs 6D, E). Flagellum without a white band (Fig. 6D). Body shorter than 8.5 mm.  
.....*Cr. daidaigaster* sp. nov.
3. Legs nearly entirely black. Antenna without a white band. Apex of metasomal tergite without a white spot.  
.....*Cr. konoi* Uchida, 1936
- Femora reddish brown to red. Antenna with a white band. Apex of metasomal tergite with or without a white spot.  
.....4
4. Apex of T VII without a white spot. Fore and mid coxae each entirely black.  
.....*Cr. spiralis* (Fourcroy, 1785)
- Apex of T VII with an oval white spot. Fore and mid coxae each black with yellow area.  
.....*Cr. nipponensis* Uchida, 1930  
(not seen by the author)

Genus *Gambrus* Förster, 1869

*Kaltenbachia* Förster, 1869: 187. Type species: *Cryptus*

*ornatus* Gravenhorst, 1829 (= *Ichneumon incubitor* Linnaeus, 1758). Designated by Viereck (1914).

*Gambrus* Förster, 1869: 188. Type species: *Gambrus* (*Cryptus*) *maculatus* Brischke, 1888 (= *Ichneumon incubitor* Linnaeus, 1758). Included by Brischke (1888).

*Hygrocryptus* Thomson, 1873: 472, 513. Type species: *Cryptus carnifex* Gravenhorst, 1829. Designated by Viereck (1914).

*Allocryptus* Viereck, 1917: 333. Type species: *Agrothereutes* (*Allocryptus*) *hyslopi* Viereck, 1917 (= *Cryptus ultimus* Cresson, 1864). Monobasic.

Three species, *Ga. ruficoxatus* (Sonan, 1930), *Ga. variator* (Walker, 1874) and *Ga. wadai* (Uchida, 1936), have been recorded from Japan. I herein transfer the generic position of *Ischnus homonae* (Sonan, 1930) from *Ischnus* Gravenhorst, 1829, to this genus (comb. rev.) and redescribe this species including previously unknown males.

***Gambrus homonae*** Sonan, 1930 comb. rev.

(Figs 3D, 7A-E)

(Standard Japanese name: Chahamaki-togari-himebachi)

*Gambrus homonae* Sonan, 1930: 143.

**Description.** Female (n=13). Body largely finely coriaceous, covered with silver setae, length 4.5–7.3 mm.

Head  $0.62\text{--}0.67 \times$  as long as wide. Clypeus sparsely

punctate,  $0.5 \times$  as long as maximum wide, weakly convex in lateral view, its apical margin rounded and narrowly reflexed. Face  $0.5 \times$  as long as maximum wide. Frons rugose anterior to ocelli, with narrow smooth area above antennal sockets. Length of malar space  $1.0 \times$  as long as basal mandibular width. Base of mandible almost flat. Upper tooth of mandible almost as long as lower tooth. OD: POL: OOL = 1.0: 1.5–1.6: 1.6–2.0. Flagellum with 23–25 segments. FL I  $6.0 \times$  as long as maximum depth in lateral view and  $1.2 \times$  as long as FL II.

Mesosoma. Lateral aspect of pronotum reticulate rugose dorsally, longitudinally strigose ventrally. Epomia short and largely indistinct. Posterior end of notauli reached to middle of mesoscutum. Scutellum polished and punctate. Mesopleuron reticulate rugose dorsally and longitudinally rugose ventrally, with a smooth area on speculum. Mesosternum with the short median portion of posterior transverse carina. Sternaulus reaching ca. 0.6 the distance to middle coxa, weakly upcurved. Metapleuron reticulate rugose. Juxtacoxal carina present anteriorly. Propodeum weakly reticulate rugose (Fig. 7C). Anterior section of lateromedian longitudinal carina present except for anterior part. Anterior transverse carina complete (Fig. 7C). Posterior transverse carina complete. Pleural carina complete. Propodeal spiracle round to oval. Area basalis trapezoidal, widened anteriorly. Fore wing length 3.4–5.0 mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m convergent anteriorly (Fig. 7D). Nervellus of hind wing intercepted at or slightly below the middle by second abscissa of vein Cu. Hind femur  $5.0\text{--}5.2 \times$  as long as



Fig. 7. *Gambrus homonae* Sonan, 1930 (A, KPM-NK 76572; B-D, 76568; E, KPM-NK 76573) — A, E, lateral habitus; B, head, frontal view; C, propodeum, dorsal view; D, right fore wing.

maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.0–4.5: 2.0: 1.3: 0.7: 1.1.

Metasoma more or less polished. T I 1.9–2.1 × as long as maximum width, partly smooth, with a few, sparse punctures, without latero-median carina, with complete dorso-lateral carina, with a pair of triangular projections at base. T II 1.0–1.15 × as long as maximum width. T II and T III finely coriaceous, finely punctate. Ovipositor sheath 0.7–0.73 × as long as hind tibia. Apex of ovipositor as Fig. 3D.

Colouration (Figs 7A–D). Body (excluding wings and legs) black to blackish brown, except for: basal part of flagellum and ovipositor reddish brown; FL VI to FL IX white except for ventral surface; palpi, humeral plate and membranous parts of metasomal sternites whitish yellow; T I to T III red to reddish brown; apex of metasoma with white membranous part. Wings hyaline. Veins and pterostigma blackish brown to brown except for yellowish brown wing base. Fore and mid coxae, trochanters and trochantelli whitish yellow except for basal black area of each coxa. Fore and mid femora and tibiae and fore tarsi reddish brown to yellowish brown. Hind coxa black. Hind trochanter and trochantellus whitish yellow. Hind femur reddish brown except for black apical part. Hind tibia with subbasal white band. Hind tibial spurs whitish yellow. Mid and hind TS I and TS II white to whitish yellow basally, black apically. TS III to TS V black to blackish brown except for narrow white area of TS III. Hind tibia sometimes tinged with reddish brown.

Male (n=19). Similar to female. Face 0.5–0.55 × as long as maximum wide. Length of malar space 0.8–0.9 × as long as basal mandibular width. OD: OOL = 1.0: 1.5–1.6. Flagellum with 26–29 segments, with tyloid from FL 12 to FL 14 or FL 15. FL I 4.3 × as long as maximum depth in lateral view, 1.15–1.2 × as long as FL II. Posterior transverse carina of propodeum weak. Hind femur 4.9–5.1 × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 3.8–4.1: 2.0: 1.35–1.5: 0.8–0.9: 0.95–1.0. T I slender, 2.4–2.5 × as long as maximum width. T II 1.2–1.6 × as long as maximum width. Antenna with a white area on FL 12 to FL 13. Base of T IV red to reddish brown. Legs paler than female. Fore and mid coxae usually completely whitish yellow. Mid and hind TS III largely white basally. FL 11, FL 14 and FL 15 sometimes with a white area.

**Material examined.** JAPAN, NIAES, F, Aomori Pref., Aomori City, Yokouchi to Yaegiku, 5. IX. 1992, T. Ichita leg.; NIAES, F, Aomori Pref., Aomori City, Moyatouge, 5. IX. 1992, T. Ichita leg.; NIAES, M, Tokyo, Mt. Takao, 3. V. 1964, J. Minamikawa leg.; KPM-NK 75851–75853, 75860–75862, 1 F & 5 M, Tokyo., Oshima

Town, Motomachi, Mt. Omaru, Tsubakinomori, K. Tsujii leg., 5–31. X. 2012 (MsT); KPM-NK 75854–75859, 6 M, *ditto*, 17. VIII. – 5. X. 2012 (MsT); NIAES, F, Tokyo, Hachijojima Is., Ohkagou, 19. VII. 1987, H. Takahashi leg.; NIAES, F, Tokyo, Hachijojima Is., Nakanogou, 21. V. 1988, H. Takahashi leg.; NIAES, M, Ibaraki Pref., Tsukuba, Yukarinomori, 14–19. IV. 1989, M. Sharkey leg. (MsT); NIAES, F, Niigata Pref., Nakajo Town, Sadaguchiyama, 6. VI. 1980, K. Maeto leg.; KPM-NK 75847–75850, 1 F & 3 M, Shizuoka Pref., Higashiizu Town, Inatori, T. Muraki leg., 11–18. VIII. 2009 (YPT); NIAES, F, Nagasaki Pref., Tsushima Is., Mt. Mokokoku-yama, 16. X. 1983, K. Konishi leg.; TARI, F (holotype), Kagoshima, 9. VII. 1926, S. Isshiki leg., em. from *Homona magnanima* Diakonoff, 1948; KPM-NK 76566–76575, 7 F & 3 M, Kagoshima Pref., Kimotsuke Town, Minamikata, Kanaedake, 18. VII. – 20. VII. 2019, K. Watanabe & K. Matsumoto leg. (YPT).

**Distribution.** Japan (Honshu, Izu-oshima Is., Hachijojima Is., Tsushima Is. and Kyushu).

**Remarks.** Townes (1984) changed the generic position of this species from *Gambrus* to *Ischnus*. I confirmed the character states of holotype and additional specimens. By the result, I conclude that the generic position of this species should be recombined with *Gambrus* (comb. rev.) based on the sternaulus reaching ca. 0.6 the distance to middle coxa, weakly upcurved and the mesosternum with the short median portion of posterior transverse carina. This is the first record of the males of this species and of them from Honshu, Izu-oshima Island, Hachijojima Is. and Tsushima Island.

#### Key to Japanese species of the genus *Gambrus* (female only)

1. Hind leg entirely black. Metasomal tergites entirely black except for a large median white spot of T VII.  
.....*Ga. wadai* (Uchida, 1936)
- . Hind leg and metasomal tergites with a conspicuous red to reddish brown area (Fig. 7A).  
.....2
2. Hind tarsus black with conspicuous white bands (Fig. 7A). Hind coxa black (Fig. 7A).  
.....*Ga. homonae* Sonan, 1930
- . Hind tarsus without conspicuous white bands, at most tinged with reddish brown. Hind coxa red.  
.....3
3. Metathorax and propodeum black. Hind leg reddish brown except for anterior part of tibia, femur and each tarsal segment blackish brown to black.  
.....*Ga. ruficoxatus* (Sonan, 1930)
- . “Metathorax” red (= propodeum red?). Hind leg

black, with femur towards the base and coxa red.

.....*Ga. variator* (Walker, 1874)  
(not seen by the author)

Genus *Glabridorsum* Townes, 1970

*Glabridorsum* Townes, 1970: 174. Type species:  
*Gambrus stokesii* Cameron, 1912. Original  
designation.

Two species, *Gl. acroclitae* Kusigemati, 1982 and  
*Gl. simile* Kusigemati, 1982, have been recorded from  
Japan. In this study, I herein describe a new species, *Gl.*  
*japonicum* sp. nov., from Honshu, Japan.

***Glabridorsum japonicum* sp. nov.**

(Figs 2E, 3E, 8A-G)

(Standard Japanese name: Oo-tsuya-togari-  
himebachi)

**Type series. Holotype:** JAPAN, KPM-NK 75742, F,  
Fukui Pref., Imajo Town, Hachibuseyama, 21. VI. 1981, T.  
Murota leg. **Paratype:** KPM-NK 75743, F, JAPAN, Fukui  
Pref., Oono City, 17. X. 1982, H. Kurokawa leg.

**Description.** Female (n=2). Body covered with silver  
setae, length 7.1–7.3 (HT: 7.1) mm.

Head 0.59–0.63 (HT: 0.59) × as long as wide, polished,  
finely and sparsely punctate. Clypeus 0.5 × as long as  
maximum wide, convex in lateral view, its apical margin  
rounded with a pair of lateral narrow impressions. Face  
0.48–0.53 (HT: 0.48) × as long as maximum wide, slightly  
convex medially in lateral view. Frons with a smooth area  
above antennal sockets. Gena with a large smooth area.  
Length of malar space 0.65–0.7 (HT: 0.65) × as long as  
basal mandibular width. Base of mandible almost flat.  
Upper tooth of mandible almost as long as lower tooth.  
OD: POL: OOL = 1.0: 1.5–1.6 (HT: 1.5): 1.4–1.5 (HT: 1.5).  
Flagellum with 26 segments. FL I 6.0–6.67 (HT: 6.67) × as  
long as maximum depth in lateral view and 1.1–1.15 (HT:  
1.15) × as long as FL II.

Mesosoma polished. Lateral aspect of pronotum punctate  
dorsally except for a large smooth area, longitudinally  
strigose ventrally (Figs 8C, D). Epomia present but weak.  
Posterior end of notauli reached to 0.8 of mesoscutum (Fig.  
8B). Mesoscutum largely smooth (Fig. 8B) except for  
anterior part of median lobe densely punctate. Scutellum  
smooth with a few punctures. Mesopleuron largely  
punctate and rugose, with a smooth area on speculum  
(Figs 8C, D). Mesosternum with the short median portion  
of posterior transverse carina. Metapleuron punctate  
with a complete juxtacoxal carina. Propodeum punctate

on area externa, area postero and area postero-externa  
and longitudinally rugose on area superomedia and area  
dentipara (Fig. 8F). Anterior section of lateromedian  
longitudinal carina present. Anterior transverse carina  
complete (Fig. 8F). Posterior transverse carina complete.  
Pleural carina absent except anterior section. Propodeal  
spiracle round. Area basalis widened anteriorly. Fore wing  
length 5.4–5.7 (HT: 5.7) mm. Areolet pentagonal, vein  
2rs-m and vein 3rs-m convergent anteriorly (Fig. 8G).  
Nervellus of hind wing intercepted below the middle by  
second abscissa of vein Cu (Fig. 8D). Hind femur 4.6–4.8  
(HT: 4.8) × as long as maximum depth in lateral view.  
Hind TS I: II: III: IV: V = 5.1: 2.0: 1.3: 0.7: 1.0.

Metasoma weakly polished. T I 1.8 × as long as  
maximum width, largely smooth, with a few, sparse  
punctures, without latero-median carina and dorso-lateral  
carina, with a pair of triangular teeth at base (Fig. 2E). T II  
0.9–1.0 (HT: 0.9) × as long as maximum width, densely  
and finely punctate. T III and T IV granulate, covered with  
fine punctures. Ovipositor sheath 0.88–0.9 (HT: 0.88) × as  
long as hind tibia. Apex of ovipositor as Fig. 3E.

Colouration (Figs 8A-G). Body (excluding wings and  
legs) black to blackish brown, except for: malar space,  
mandible, base of FL I, subtegular ridge tinged with  
yellowish brown to yellow; FL 7 to FL 11 or to FL 12  
except for ventral surface white; a pair of yellow spots of  
frontal orbit, palpi, tegula, humeral plate, membranous part  
of T VII and T VIII and membranous part of metasomal  
sternites whitish yellow; ovipositor reddish brown. Wings  
hyaline. Veins and pterostigma blackish brown to brown.  
Legs black to blackish brown, except for: fore and mid  
coxae each with whitish yellow area; trochanters except for  
base of hind trochanter white to whitish yellow; mid and  
hind tibial spurs whitish yellow; fore and mid legs except  
for coxae, trochanters and mid tibial spurs yellowish  
brown to reddish brown; hind trochantellus partly brown;  
base of hind tibia, base of hind TS I and TS III, TS II and  
apex of TS IV whitish yellow. Size of yellow area(s) on  
frons, malar space, mandible, subtegular ridge and coxae  
vary in size. Apex of scutellum sometimes narrowly tinged  
with yellow. Anterior part of tegula sometimes darkened.  
Hind coxa sometimes with a yellow spot dorsally. Postero-  
lateral corner of T I and T II sometimes narrowly tinged  
with yellowish brown.

Male. Unknown.

**Distribution.** Japan (Honshu).

**Etymology.** The species name is from Japan.

**Remarks.** This species resembles *Gl. varibalteatum*  
Jonathan, 2000 in T I with a pair of triangle teeth basally  
and T II and T III covered with punctures, but it can be



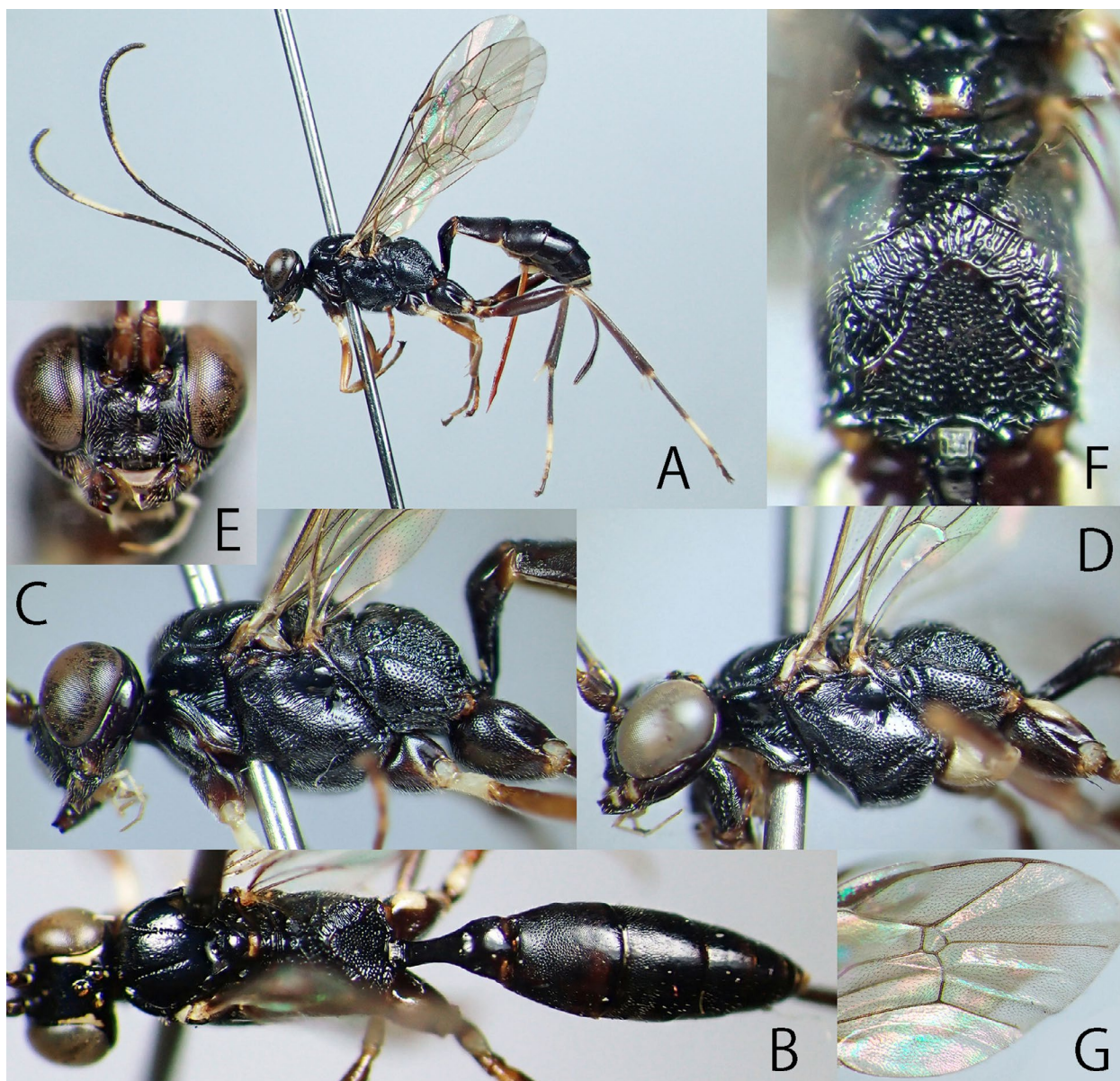


Fig. 8. *Glabridorsum japonicum* sp. nov. (A, C, E, G, KPM-NK 75742; B, D, F, KPM-NK 75743) — A, lateral habitus; B, head, mesosoma and metasoma, dorsal view; C, D, mesosoma, lateral view; E, head, frontal view; F, propodeum, dorsal view; G, apical part of right fore wing.

distinguished by the entirely black face (largely yellow in *Gl. varibalteatum*) and the ovipositor sheath  $0.85 \times$  as long as hind tibia (ca.  $0.7$  in *Gl. varibalteatum*). This species also can easily be distinguished by other Japanese species, *Gl. acroclitae* and *Gl. simile*, by the T I with a pair of triangle teeth basally, the metasomal tergites without yellow posterior band and the T II clearly and densely punctate.

Genus *Gotra* Cameron, 1902

*Gotra* Cameron, 1902: 206. Type species: *Gotra longicornis* Cameron, 1902. Monobasic.

*Stenaraeoides* Uchida, 1932: 181. Type species: *Mesostenus octocinctus* Ashmead, 1906. Original designation.

*Ivondrites* Seyrig, 1952: 186. Type species: *Ivondrites fugator* Seyrig, 1952. Original designation.

Three species, *Go. interrupta* Kusigemati & Ikeshima, 1986, *Go. octocincta* (Ashmead, 1906) and *Go. ryukyuensis* Kusigemati & Ikeshima, 1986, have been recorded from Japan. I herein describe a new species, *Go. elegans* sp. nov., based on specimens from Honshu, Japan.

*Gotra elegans* sp. nov.

(Figs 3F, 9A-E)

(Standard Japanese name: Amano-togari-himebachi)

**Type series.** **Holotype:** KPM-NK 75822, F, JAPAN, Kanagawa Pref., Hadano City, Naganuki, 1. VI. 2019,

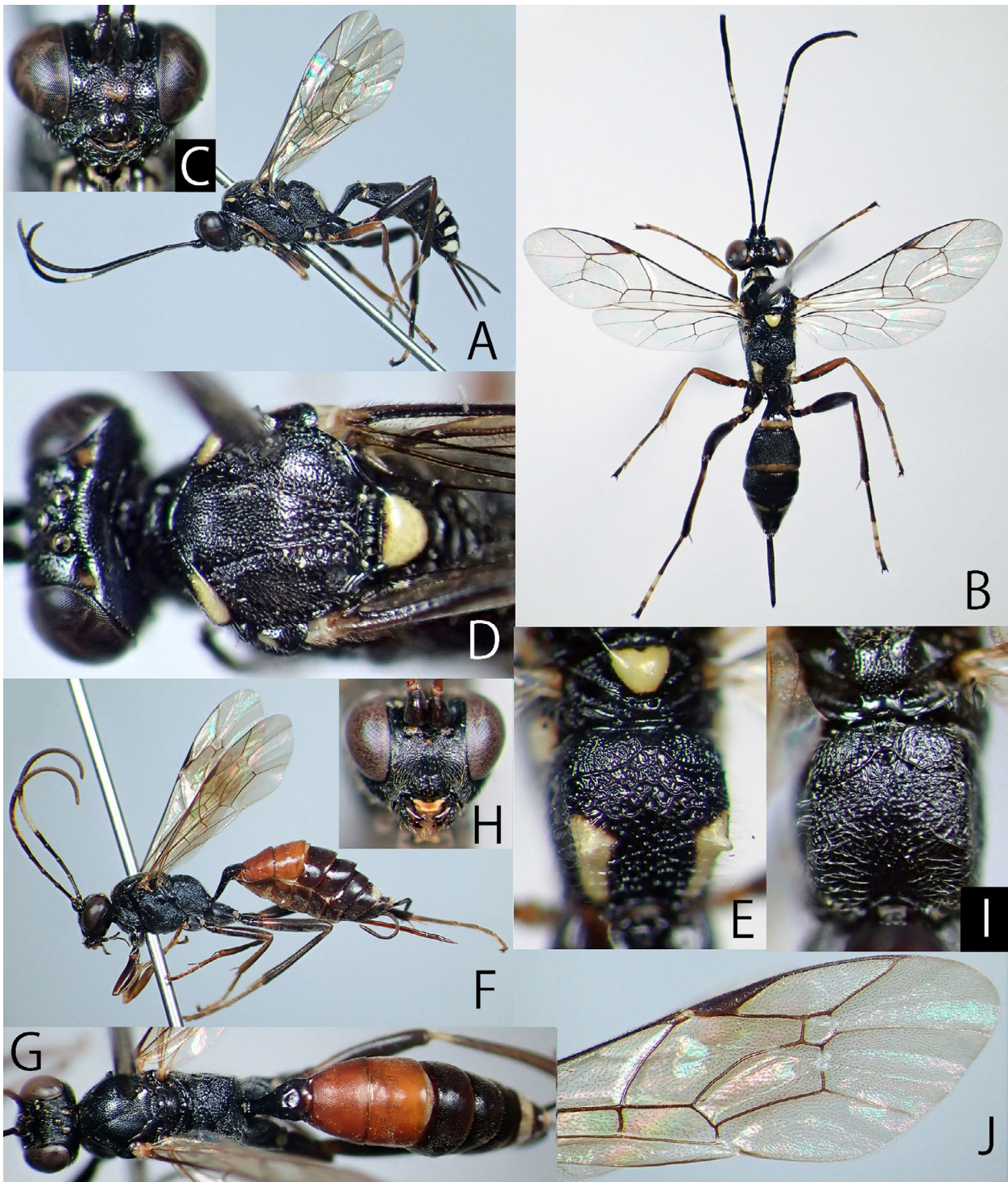


Fig. 9. *Gotra elegans* sp. nov. (A, C, D, KPM-NK 75822; B, E, KPM-NK 75823) and *Hoplocryptus ashoroensis* sp. nov. (F–J, NIAES) — A, C, lateral habitus; B, dorsal habitus; C, H, head, frontal view; D, head, mesoscutum and scutellum, dorsal view; E, I, propodeum, dorsal view; J, right fore wing.

T. Amano leg. **Paratypes:** NIAES, F, Saitama Pref., Ogawa, Yotsuyama, 20. IX. 1997, T. Nambu leg.; KPM-NK 75823, F, JAPAN, Kanagawa Pref., Yokohama City, Sakae-ku, Kamigou, Sekiya-Miharashidai, 24. VIII. 2003, K. Kubo leg.

**Description.** Female (n=3). Body polished, covered with silver setae, length 7.5–8.0 (HT: 8.0) mm.

Head  $0.55 \times$  as long as wide. Clypeus sparsely punctate

dorsally, smooth ventrally,  $0.5\text{--}0.54$  (HT: 0.5)  $\times$  as long as maximum wide, convex in lateral view, its apical margin rounded, without a median tooth or convexity, narrowly impressed. Face  $0.45\text{--}0.48$  (HT: 0.45)  $\times$  as long as maximum wide, punctate except for rugae around antennal sockets, weakly convex medially. Frons concave above antennal sockets, largely rugose anterior to ocelli, with smooth areas above antennal sockets, without a median

longitudinal carina. Apical margin of labrum subtruncate. Antennal socket more or less raised. Length of malar space 0.75–0.8 (HT: 0.75) × as long as basal mandibular width. Mandible weakly convex basally, with a narrow ventral flange. Upper tooth of mandible almost as long as lower tooth. OD: POL: OOL = 1.0: 1.5–1.6 (HT: 1.5): 1.4–1.5 (HT: 1.5). Flagellum with 24–25 (HT: 25) segments. FL I 5.0–6.0 (HT: 6.0) × as long as maximum depth in lateral view and 1.1 × as long as FL II.

Mesosoma. Lateral aspect of pronotum smooth dorsally, longitudinally strigose ventrally, dorsal margin with a longitudinal convexity (Fig. 9D). Epomia present, its lower end far distant from anterior margin of pronotum. Posterior end of notauli reached to posterior end of mesoscutum. Mesoscutum densely punctate, with some longitudinal rugae on posterior part of median lobe (Fig. 9D). Scutellum smooth with a few punctures. Mesopleuron largely rugose, with a smooth area on speculum. Mesosternum with a median part of posterior transverse carina. Metapleuron reticulate rugose with complete juxtacoxal carina. Propodeum reticulate rugose, with a pair of sublateral apophyses (Fig. 9E). Anterior section of lateromedian longitudinal carina present. Anterior transverse carina complete. Posterior transverse carina and pleural carina absent. Propodeal spiracle oval. Area basalis widened anteriorly. Fore wing length 5.6–6.3 (HT: 6.3) mm. Areolet pentagonal, longer than wide, small, vein 2rs-m and vein 3rs-m subparallel or slightly convergent anteriorly (Fig. 9B). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu (Fig. 9B). Hind femur 5.0 × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.8–5.0 (HT: 5.0): 2.0: 1.2: 0.6–0.7 (HT: 0.6): 1.5–1.6 (HT: 1.6).

Metasoma polished. T I 1.5 × as long as maximum width, punctate, with latero-median carina in part, with complete dorso-lateral carina, with a pair of triangular teeth at base. T II 0.8–0.85 (HT: 0.8) × as long as maximum width. T II, T III and T IV densely punctate. Ovipositor sheath 0.75–0.78 (HT: 0.75) × as long as hind tibia. Apex of ovipositor as Fig. 3E.

Colouration (Figs 9A–E). Body (excluding wings and legs) black to blackish brown, except for: a median spot of face, mandible and a pair of spots on vertex along inner margin tinged with yellowish brown; FL VII to IX or to FL X white except for outer surface; palpi yellowish brown; a large dorsal stripe of pronotum, a small ventral spot of pronotum, scutellum, anterior part of tegula, humeral plate, a small spot of subtegular ridge, upper division of metaopleuron, a pair of longitudinal spots (its anterior end situated near apophysis) of propodeum and posterior

margin of T I and T II whitish yellow to yellow; a pair of spots on posterior margin of T IV to T VII white to whitish yellow; ovipositor dark reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown. Legs black to blackish brown, except for: fore and mid coxae each with a whitish yellow to yellow spot; trochanters and trochantelli partly tinged with yellowish brown to reddish brown; fore and mid femora, tibiae and tarsi largely reddish brown to yellowish brown; base of hind femur narrowly tinged with reddish brown; hind TS II and TS III whitish yellow except for apex. Yellow area of face sometimes indistinct. Clypeus sometimes tinged with reddish brown. Base of hind tibia sometimes tinged with reddish brown.

Male. Unknown.

**Distribution.** Japan (Honshu).

**Etymology.** The species name is from the beautiful and elegant colouration of this species.

**Remarks.** This species resembles *Go. interrupta* in the character states of frons, pronotum and areolet and the coloration, but it can be distinguished by the flagellum with 24–25 segments (28 segments in *Go. interrupta*), the collar black (yellow in *Go. interrupta*), the hind coxa and femur black (largely reddish brown in *Go. interrupta*) and the ovipositor sheath 0.75–0.78 × as long as hind tibia (0.63 in *Go. interrupta*).

#### Key to Japanese species of the genus *Gotra* (female only)

1. Frons with a median longitudinal carina. Face entirely black. Epomia long, its lower end reaching to anterior margin of pronotum. Yellow band of T V to T VII not interrupted medially.  
.....*Go. ryukyuensis* Kusigemati & Ikeshima, 1986
- . Frons without a median longitudinal carina. Face not entirely black (Fig. 9C). Epomia short to moderately long, its lower end far distant from anterior margin of pronotum. Yellow band of T V to T VII interrupted medially (Fig. 9B).  
.....2
2. Hind coxa entirely black (Figs 9A, B). Hind femur almost entirely black (Figs 9A, B). Face black with an yellowish brown marking but without white marking (Fig. 9C).  
.....*Go. elegans* sp. nov.
- . Hind coxa reddish brown or black with white marking. Hind femur largely reddish brown. Face entirely whitish yellow or black with three conspicuous yellow markings (these markings partly united with each other).  
.....3

3. Large species, body longer than 9.0 mm. Areolet wider than high. Mesoscutum with a median yellow marking. Mesopleuron with yellow markings. Metapleuron with a yellow marking .....*Go. octocincta* (Ashmead, 1906)
- . Small species, body shorter than 9.0 mm. Areolet higher than wide. Mesoscutum, mesopleuron and metapleuron entirely black. ....*Go. interrupta* Kusigemati & Ikeshima, 1986

Genus *Hoplocryptus* Thomson, 1873

*Hoplocryptus* Thomson, 1873: 472, 508. Type species: *Hoplocryptus binotatula* Thomson, 1873 (= *Cryptus fugitivus* Gravenhorst, 1829). Designated by Viereck (1914).

Six species, *Ho. alboanalis* (Uchida, 1952), *Ho. ohgushii* (Momoi, 1963), *Ho. pini* (Momoi, 1973), *Ho. scorteus* (Momoi, 1968), *Ho. sugiharai* Uchida, 1936 and *Ho. sumiyona* Uchida, 1956, have been recorded from Japan. Recently Wang *et al.* (2019b) provided a key to the species of this genus known from the Oriental and Eastern Palaearctic regions. I herein describe six new species, *Ho. ashoroensis* sp. nov., *Ho. ezoensis* sp. nov., *Ho. intermedius* sp. nov., *Ho. japonicus* sp. nov., *Ho. maculatus* sp. nov. and *Ho. toshimensis* sp. nov., from Japan. In addition, I redescribe *Ho. pini* with a new description of male and record *Ho. sumiyona* from Tokunoshima Island for the first time below.

*Hoplocryptus ashoroensis* sp. nov.

(Figs 1E, 3G, 9F-J)

(Standard Japanese name: Ashoro-togari-himebachi)

**Type series.** **Holotype:** NIAES, F, JAPAN, Hokkaido, Ashoro, 3–13. VI. 1984, O. Tadauchi leg. (YPT). **Paratype:** NIAES, F, JAPAN, Hokkaido, Sapporo City, Misumai, Kannonzawa, 27. VII. – 11. VIII. 1992, N. Kuhara leg. (MsT).

**Description.** Female (n=2). Body covered with silver setae, length 8.1–8.6 (HT: 8.6) mm.

Head  $0.58 \times$  as long as wide, finely coriaceous. Clypeus polished, sparsely punctate,  $0.6–0.67$  (HT: 0.67)  $\times$  as long as maximum wide, slightly convex in lateral view, its apical margin with a median obtuse tooth and a pair of lateral weak convexities (Fig. 1E). Face  $0.5 \times$  as long as maximum wide, punctate. Frons punctate, covered with rugae on anterior to median ocelli. Length of malar space  $0.9–1.0$  (HT: 0.9)  $\times$  as long as basal mandibular width. Base of mandible slightly convex. Upper tooth of mandible

almost as long as lower tooth. OD: POL: OOL = 1.0: 1.7: 1.6. Flagellum with 27 segments. FL I  $5.0 \times$  as long as maximum depth in lateral view and  $1.07 \times$  as long as FL II.

Mesosoma polished, length  $1.65 \times$  as long as maximum height in lateral view. Lateral aspect of pronotum reticulate rugose dorsally, longitudinally strigose ventrally. Epomia short. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum and scutellum punctate. Mesopleuron largely rugose, with a smooth area on speculum. Mesosternum with the short median portion of posterior transverse carina. Metapleuron reticulate rugose dorsally and obliquely rugose ventrally. Juxtacoxal carina present only near anterior end. Propodeum punctate and reticulate rugose. Anterior section of lateromedian longitudinal carina present. Anterior transverse carina complete (Fig. 9I). Posterior transverse carina present except for median part absent. Pleural carina complete. Propodeal spiracle rounded. Area basalis widened anteriorly. Fore wing length 5.9–6.2 (HT: 6.2) mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m weakly convergent anteriorly (Fig. 9J). Distance from vein 2rs-m to vein 2m-cu slightly longer than distance from vein 2m-cu to vein 3rs-m (Fig. 9J). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu. Fore tibia with a bulge in anterior 0.7. Hind femur 4.7–5.2 (HT: 4.7)  $\times$  as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.1–4.3 (HT: 4.3): 2.0: 1.35–1.45 (HT: 1.45): 0.8: 1.4.

Metasoma. T I 1.8–2.05 (HT: 1.8)  $\times$  as long as maximum width, largely smooth, with a few, sparse punctures, with basal part of latero-median carina, with basal part of dorso-lateral carina present, without a pair of small convexities at base. T II 0.7–0.73 (HT: 0.73)  $\times$  as long as maximum width. T II, T III and T IV matt, covered with fine, small punctures. Ovipositor straight, its sheath  $0.95 \times$  as long as hind tibia. Apex of ovipositor as Fig. 3G.

Colouration (Figs 9F-J). Body (excluding wings and legs) black to blackish brown, except for: mandible partly slightly tinged with reddish brown; humeral plate and membranous parts of metasomal sternites yellowish brown; FL V to FL IX white except for outer surface; T II and T III red; posterior margin of T I, T III to T V narrowly tinged with reddish brown; a median spot of T VII white; ovipositor reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown. Legs black to blackish brown, except for: apex of trochantelli and base of femora more or less narrowly tinged with red; fore and mid tibiae, tibial spurs and tarsi partly tinged with brown to yellowish brown; base of hind tibia whitish yellow; hind tarsus yellowish brown to reddish brown.

Male. Unknown.

**Distribution.** Japan (Hokkaido).

**Etymology.** The species name is from the type locality, Ashoro.

**Remarks.** This species resembles *Ho. coxator* (Tschek, 1871) in body structures and colouration, but it can be distinguished by the scutellum black (with a white marking in *Ho. coxator*), the hind femur blackish brown (red in *Ho. coxator*), the hind coxa black (sometimes red in *Ho. coxator*), the flagellum with 27 segments (21–23 in *Ho. coxator*) and the hind femur  $4.7 \times$  as long as maximum depth ( $4.9\text{--}5.6$  in *Ho. coxator*).

***Hoplocryptus ezoensis* sp. nov.**

(Figs 1D, 2F, 3H, 10A–F)

(Standard Japanese name: Kita-togari-himebachi)

**Type series. Holotype:** KPM-NK 75799, F, JAPAN, Hokkaido, Horokanai Town, Moshiri, Uryu, 15. VII. 2012, K. Watanabe leg. **Paratypes:** JAPAN, KPM-NK 75800, F, Hokkaido, Ebetsu City, Nishinopporo, Nopporo Forest Park, 5. VII. 2015, N. Kikuchi leg.; KPM-NK 75801, F, Hokkaido, Sapporo City, Maruyama, 29. VII. 2009, K. Watanabe leg.; KPM-NK 75802, F, Niigata Pref., Nagaoka City, Kaki Town, Mt. Nokogiri-yama, 21. VII. 2013, S. Shimizu leg.; KPM-NK 75803, F, Yamagata Pref., Iide

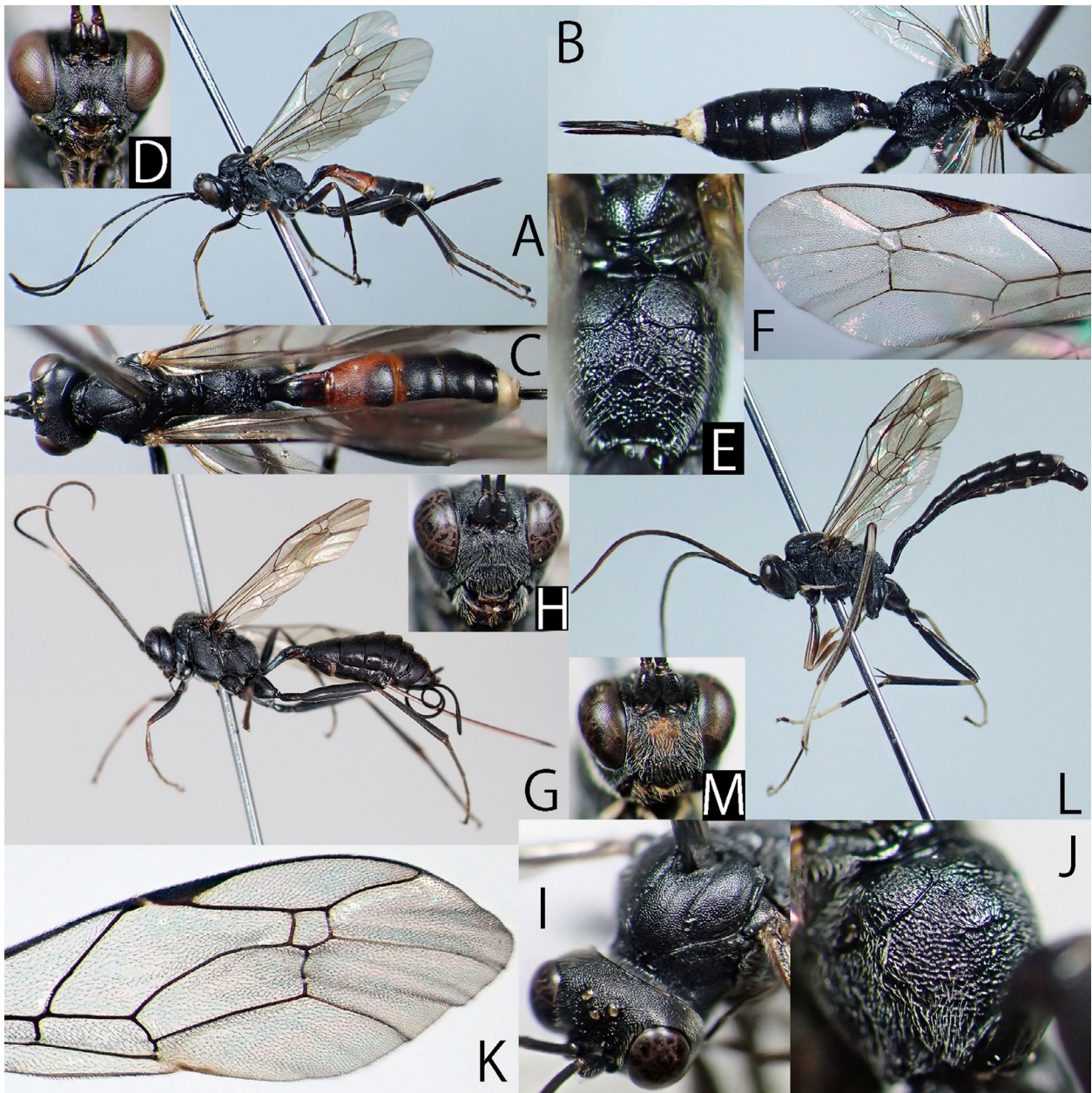


Fig. 10. *Hoplocryptus ezoensis* sp. nov. (A, C–F, KPM-NK 75799; B, KPM-NK 75802) and *Ho. intermedius* sp. nov. (G–K, KPM-NK 75806; L, M, KPM-NK 76582) — A, G, L, lateral habitus; B, C, dorsal habitus; D, H, M, head, frontal view; E, J, propodeum, dorsal (E) and dorso-lateral (J) view; I, head and mesoscutum, dorso-lateral view; K, right fore wing.

Town, Kawazoe, 19. VII. 2015, K. Watanabe leg.; NIAES, F, Yamagata Pref., nr. Mts. Iide, Budosawa, 29–30. VI. 1987, K. Konishi leg.

**Description.** Female (n=6). Body covered with silver setae, length 7.6–8.4 (HT: 8.2) mm.

Head 0.57–0.59 (HT: 0.57) × as long as wide, finely coriaceous. Clypeus sparsely punctate, 0.59–0.67 (HT: 0.67) × as long as maximum wide, slightly convex in lateral view, its apical margin with a median obtuse tooth and a pair of lateral weak convexities. Face 0.48–0.5 (HT: 0.48) × as long as maximum wide, finely coriaceous, partly finely punctate. Frons finely coriaceous, with some transverse rugae above antennal sockets. Vertex finely punctate. Length of malar space 0.8–0.9 (HT: 0.85) × as long as basal mandibular width. Base of mandible slightly convex. Upper tooth of mandible almost as long as lower tooth. OD: POL: OOL = 1.0: 1.2–1.25 (HT: 1.25): 1.6–1.8 (HT: 1.75). Flagellum with 21–23 (HT: 23) segments. FL I 7.5 × as long as maximum depth in lateral view and 1.02–1.03 (HT: 1.03) × as long as FL II.

Mesosoma polished, length 1.65 × as long as maximum height in lateral view. Lateral aspect of pronotum rugose dorsally, longitudinally strigose ventrally. Epomia present. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum granulate, densely and finely punctate. Scutellum punctate. Mesopleuron finely coriaceous, partly rugose, with a smooth area on speculum. Mesosternum with the short median portion of posterior transverse carina. Metapleuron reticulate rugose. Juxtacoxal carina absent (Fig. 2F). Propodeum finely coriaceous on area externa, reticulate rugose on areas behind anterior transverse carina. Maximum width of propodeum 0.92–1.0 (HT: 1.0) × as long as median length of propodeum in dorsal view. Anterior section of lateromedian longitudinal carina present. Anterior transverse carina complete. Posterior transverse carina complete (Fig. 2F). Pleural carina present but partly obsolete on posterior section (Fig. 2F). Propodeal spiracle oval. Area basalis longer than wide, widened anteriorly. Fore wing length 5.7–6.9 (HT: 6.9) mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m more or less convergent anteriorly (Fig. 10F). Distance from vein 2rs-m to vein 2m-cu shorter than distance from vein 2m-cu to vein 3rs-m (Fig. 10F). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu. Fore tibia with a bulge in anterior 0.7. Hind femur 5.0–5.2 (HT: 5.1) × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.5–4.7 (HT: 4.5): 2.0: 1.2–1.3 (HT: 1.2): 0.7–0.75 (HT: 0.75): 1.7.

Metasoma dull. T I 1.9–2.1 (HT: 2.0) × as long as maximum width, polished, largely finely coriaceous, with

a few, sparse punctures, with latero-median carina and dorso-lateral carina, without a pair of small convexities at base. T II 0.85–0.95 (HT: 0.88) × as long as maximum width. T II, T III and T IV finely coriaceous and finely punctate. Ovipositor straight, its sheath 0.88–1.0 (HT: 0.95) × as long as hind tibia. Apex of ovipositor as Fig. 3H.

Colouration (Figs 10A–F). Body (excluding wings and legs) black to blackish brown, except for: mandible partly slightly tinged with reddish brown; humeral plate and membranous parts of metasomal sternites yellowish brown; FL V or FL VI to FL VIII or FL IX white except for ventral surface; posterior margin of each metasomal tergites narrowly tinged with reddish brown; a median spot of T VI and T VII white; ovipositor reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown. Legs black to blackish brown, except for: base of femora more or less narrowly tinged with red; base of mid and hind tarsal segments narrowly tinged with yellowish brown. Posterior part of T I, T II and T III sometimes red.

Male. Unknown.

**Distribution.** Japan (Hokkaido and Honshu).

**Etymology.** The species name is from the old name of Hokkaido, Ezo.

**Remarks.** This species resembles *Ho. alboanalis* and *Ho. scorteus* but it can be distinguished by the propodeum wide, its maximum width 0.92–1.0 × as long as its median length in dorsal view (0.8 in *Ho. alboanalis*), the lateral sides of area basalis widened anteriorly (subparallel in *Ho. alboanalis*), the metasomal tergites sometimes partly tinged with red (without conspicuous red area except for posterior margin of T II in *Ho. alboanalis* and *Ho. scorteus*), the vein 2rs-m and vein 3rs-m of areolet convergent anteriorly (subparallel in *Ho. scorteus*) and the nervellus of hind wing intercepted below the middle by second abscissa of vein Cu (at the middle in *Ho. scorteus*).

***Hoplocryptus intermedius* sp. nov.**

(Figs 1F, 2G, 3I, 10G–M)

(Standard Japanese name: Semaru-togari-himebachi)

**Type series. Holotype:** KPM-NK 75804, F, JAPAN, Toyama Pref., Toyama City, Arimine, Inonedani, 25. VIII. – 1. IX. 2009, M. Watanabe leg. (MsT). **Paratypes:** NIAES, F, Hokkaido, Sapporo, 30. VI. 1906, S. Mitsuhashi leg.; KPM-NK 75805, F, same locality of holotype, 7–14. VII. 2009 (MsT); KPM-NK 75806, F, Toyama Pref., Nanto City, Togamura to Kamimomose, 21–28. VII. 2009, M. Watanabe leg. (MsT); KPM-NK 76582, M, Toyama Pref., Toyama City, Kamegai, 14–21. VII. 2009, M. Watanabe leg. (MsT); KPM-NK 75807, F, ditto, 15–21. IX. 2009.

**Description.** Female (n=5). Body covered with silver setae, length 10.0–12.0 (HT: 12.0) mm.

Head 0.57–0.59 (HT: 0.59) × as long as wide, polished, covered with dense punctures. Clypeus sparsely punctate along anterior margin, 0.56 × as long as maximum wide, slightly convex in lateral view, its apical margin with a median obtuse tooth and a pair of lateral weak convexities (Fig. 1F). Face 0.47–0.49 (HT: 0.49) × as long as maximum wide, finely coriaceous. Frons finely coriaceous, largely rugose anterior to ocelli. Length of malar space 0.75–0.9 (HT: 0.9) × as long as basal mandibular width. Base of mandible slightly convex. Upper tooth of mandible almost as long as lower tooth. OD: POL: OOL = 1.0: 1.45–1.7 (HT: 1.45): 1.85–2.1 (HT: 1.85). Flagellum with 25–27 (HT: 26) segments. FL I 6.7–7.5 (HT: 6.7) × as long as maximum depth in lateral view and 1.07–1.11 (HT: 1.07) × as long as FL II.

Mesosoma polished, length 1.65 × as long as maximum height in lateral view. Lateral aspect of pronotum reticulate rugose dorsally, longitudinally strigose ventrally. Epomia present. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum and scutellum densely punctate. Mesopleuron largely reticulate rugose, with a smooth area on speculum. Mesosternum with the short median portion of posterior transverse carina. Metapleuron reticulate rugose. Juxtacoxal carina absent. Propodeum punctate on area externa and strongly reticulate rugose on areas behind anterior transverse carina. Anterior section of lateromedian longitudinal carina present basally. Anterior transverse carina complete (Fig. 2G). Posterior transverse carina largely absent except for a pair of short sublateral sections (Fig. 2G). Pleural carina present anterior section, absent posterior section (Fig. 2G). Propodeal spiracle oval. Area basalis wider than long, widened anteriorly. Fore wing length 7.5–8.5 (HT: 8.5) mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m slightly convergent anteriorly or subparallel (Fig. 10K). Distance from vein 2rs-m to vein 2m-cu shorter than distance from vein 2m-cu to vein 3rs-m (Fig. 10K). Nervellus of hind wing intercepted at the middle by second abscissa of vein Cu. Fore tibia with a bulge in anterior 0.7. Hind femur 5.5–5.7 (HT: 5.7) × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.3–4.5 (HT: 4.5): 2.0: 1.2–1.35 (HT: 1.35): 0.65–0.7 (HT: 0.7): 1.25–1.35 (HT: 1.25).

Metasoma dull, finely coriaceous. T I 2.0–2.2 (HT: 2.0) × as long as maximum width, polished, with sparse punctures, with latero-median carina and dorso-lateral carina, without a pair of small convexities at base. T II 0.75–0.8 (HT: 0.8) × as long as maximum width. T II and T III densely punctate except for posterior margin.

Ovipositor slightly upcurved, its sheath 1.58–1.75 (HT: 1.58) × as long as hind tibia. Apex of ovipositor as Fig. 3I.

Colouration (Figs 10G–K). Body (excluding wings and legs) black to blackish brown, except for: mandible partly slightly tinged with reddish brown; FL VI or FL VII to FL IX white except for outer surface; a median spot of T VII and T VIII white; ovipositor reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown. Legs black to blackish brown except for: fore tibia more or less tinged with reddish brown. Apex of scutellum sometimes narrowly tinged with yellow.

Male (n=1). Similar to female. Face 0.53 × as long as maximum wide. Length of malar space 0.7 × as long as basal mandibular width. Flagellum with 29 segments, with tyloid from FL 13 to FL 17. FL I 5.0 × as long as maximum depth in lateral view, 1.5 × as long as FL II. Posterior transverse carina of propodeum complete. Fore wing 6.4 mm. Hind femur 5.9 × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 3.75: 2.0: 1.4: 0.7: 0.9. T I 6.2 × as long as maximum width. T II 2.05 × as long as maximum width. Antenna without a white area. Face with a pair of lateral yellow spots and a median yellow spot. Palpi whitish yellow. Fore and mid femora, tibiae and tarsi largely reddish or yellowish brown. Base of hind tibia with a conspicuous white band. Hind TS II, TS III, TS IV and base of TS V white.

**Distribution.** Japan (Hokkaido and Honshu).

**Etymology.** The species name is from the character states of this species, which is more or less intermediate condition between *Agrothereutes* and *Hoplocryptus*.

**Remarks.** This species resembles *Ho. savioi* Uchida, 1940 in the body covered with dense punctures, but it can be distinguished by the nervellus of hind wing intercepted at the middle by second abscissa of vein Cu (intercepted above the middle in *Ho. savioi*) and the ovipositor distinctly longer than T I (slightly longer than T I in *Ho. savioi*). This species also resembles *Ho. japonicus* sp. nov., but it can easily be distinguished by the ovipositor slightly upcurved (straight in *Ho. japonicus*) and the length of mesosoma 1.65 × as long as maximum height in lateral view (1.73 in *Ho. japonicus*).

***Hoplocryptus japonicus* sp. nov.**

(Figs 1G, 2H, 3J, 11A–D)

(Standard Japanese name: Hokuriku-togari-himebachi)

*Hoplocryptus scorteus* (Momoi, 1968) in Watanabe *et al.*, 2012: 25. misident.

**Type series. Holotype:** KPM-NK 75771, F, JAPAN,

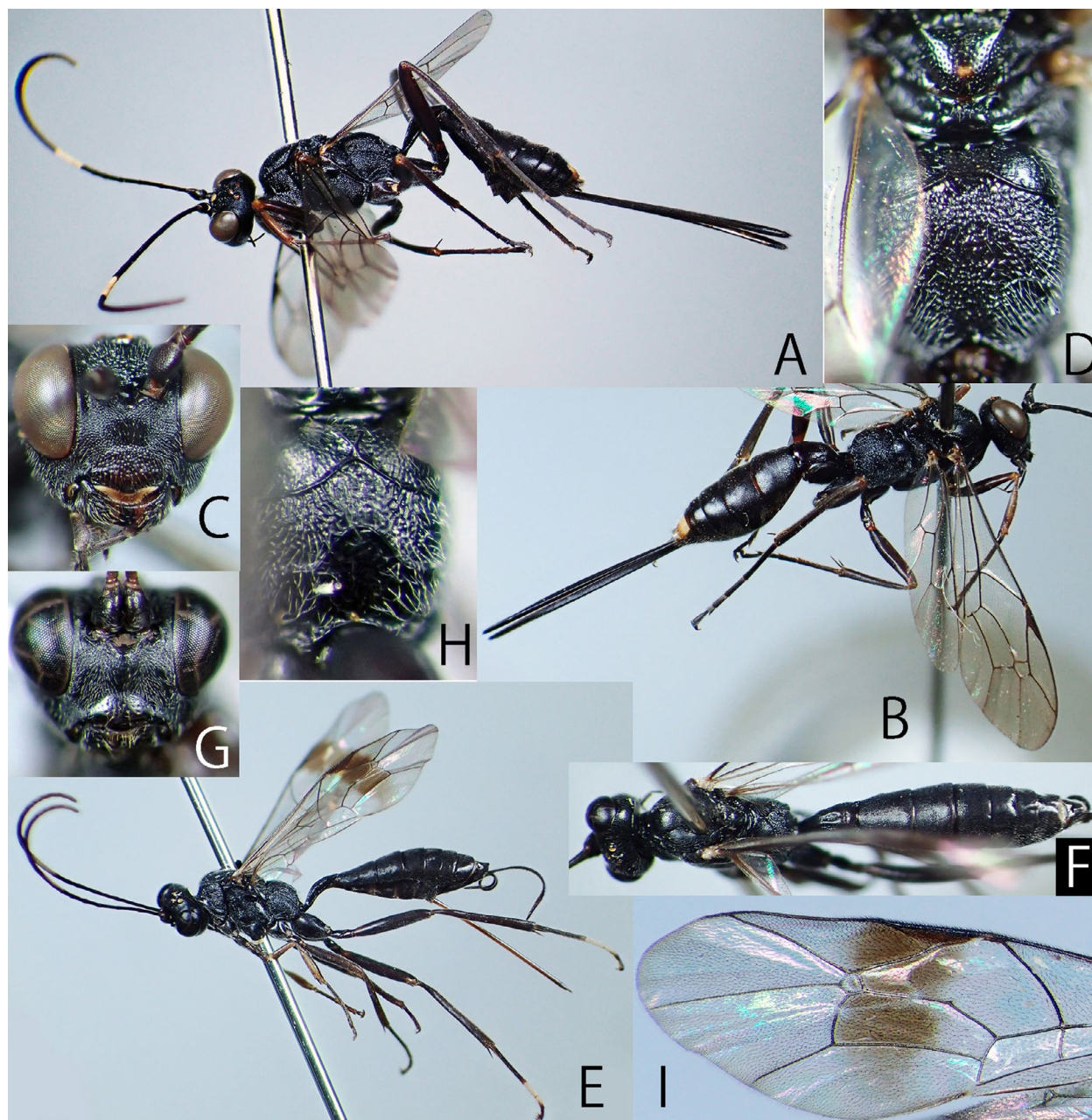


Fig. 11. *Hoplocryptus japonicus* sp. nov. (A–D, KPM-NK 75771) and *H. maculatus* sp. nov. (E–I, KPM-NK 75781) — A, E, lateral habitus; B, F, head, mesosoma and metasoma, dorsal view; C, G, head, frontal view; D, H, propodeum, dorsal view; I, left fore wing.

Fukui Pref., Arashi, 15. VI. 1975, H. Kurokawa leg. Paratype: JAPAN, KPM-NK 75772, F, Fukui Pref., Oono City, Taniyama, 18. IX. 1980, T. Murota leg.

**Description.** Female (n=2). Body covered with silver setae, length 10.0–10.5 (HT: 10.0) mm.

Head 0.56–0.57 (HT: 0.57) × as long as wide, densely and finely punctate. Clypeus polished, punctate, 0.56–0.59 (HT: 0.59) × as long as maximum wide, almost flat in lateral view, its apical margin with a median obtuse tooth and a pair of lateral weak convexities (Fig. 1G). Face 0.44 × as long as maximum wide, finely coriaceous laterally, reticulate rugose medially. Frons reticulate rugose except for a narrow smooth area above antennal sockets. Length of malar space 0.7–0.75 (HT: 0.7) × as long as basal

mandibular width. Base of mandible slightly convex. Upper tooth of mandible as long as lower tooth. OD: POL: OOL = 1.0: 1.8: 2.4–2.5 (HT: 2.5). Flagellum with 26 segments. FL I 7.5 × as long as maximum depth in lateral view and 1.07–1.15 (HT: 1.15) × as long as FL II.

Mesosoma polished, length 1.73 × as long as maximum height in lateral view. Lateral aspect of pronotum reticulate rugose dorsally, longitudinally strigose ventrally. Epomia present. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum densely punctate. Scutellum punctate. Mesopleuron largely rugose, with a smooth area on speculum. Mesosternum with the short median portion of posterior transverse carina. Metapleuron reticulate rugose. Juxtacoxal carina present, weak. Propodeum



punctate on area externa and strongly reticulate rugose on areas behind anterior transverse carina. Anterior section of lateromedian longitudinal carina present basally. Anterior transverse carina complete (Fig. 2H). Posterior transverse carina complete except for median part absent (Fig. 2H). Pleural carina present anterior section, absent posterior section. Propodeal spiracle oval. Area basalis wider than long, its sides subparallel or slightly widened anteriorly (Fig. 2H). Fore wing length 7.3–8.0 (HT: 8.0) mm. Areolet vein 2rs-m and vein 3rs-m weakly convergent anteriorly (Fig. 11B). Distance from vein 2rs-m to vein 2m-cu shorter than distance from vein 2m-cu to vein 3rs-m (Fig. 11B). Hind wing vein 1-cu almost as long as cu-a. Fore tibia with a bulge in anterior 0.7. Hind femur 5.2–5.6 (HT: 5.2) × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.0–4.2 (HT: 4.0); 2.0: 1.2: 0.7: 1.35–1.4 (HT: 1.4).

Metasoma dull, largely finely coriaceous. T I 2.2–2.3 (HT: 2.2) × as long as maximum width, polished, sparsely punctate, with latero-median carina except for posterior part, with dorso-lateral carina, without a pair of small convexities at base. T II 0.9 × as long as maximum width, densely and finely punctate. Ovipositor straight, its sheath 1.68–1.69 (HT: 1.68) × as long as hind tibia. Apex of ovipositor as Fig. 3J.

Colouration (Figs 11A–D). Body (excluding wings and legs) black to blackish brown, except for: mandible partly tinged with reddish brown; FL VI or FL VII to FL IX white except for outer surface; posterior margin of each metasomal tergite narrowly tinged with reddish brown; a median spot of T VII and T VIII white to whitish yellow; ovipositor reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown. Legs black to blackish brown except for: fore tibia more or less tinged with reddish brown. Apex of scutellum sometimes narrowly tinged with yellow.

Male. Unknown.

**Distribution.** Japan (Honshu).

**Etymology.** The species name is from Japan.

**Remarks.** This species resembles *Ho. scorteus* in body structures and coloration, but it can easily be distinguished by the ovipositor sheath 1.68–1.69 × as long as hind tibia (0.9–0.95 in *Ho. scorteus*). This species also resembles *Ho. intermedius* sp. nov., but it can easily be separable by some characters (see Remarks of *Ho. intermedius* sp. nov.).

***Hoplocryptus maculatus* sp. nov.**

(Figs 1H, 2I–K, 3K, 11E–I)

(Standard Japanese name: Hanemon-togari-himebachi)

**Type series. Holotype:** KPM-NK 75781, F, JAPAN, Toyama Pref., Toyama City, Kamegai, 15–26. IX. 2009, M. Watanabe leg. (MsT). **Paratypes:** JAPAN, NIAES, F, Iwate Pref., Mt. Hayachine, 25. VII. – 2. VIII. 1989, M. Sharkey & H. Makihara leg. (MsT); NIAES, F, Gunma Pref., Kitakaruizawa, 10. VI. 1972, Yamaguchi & Aoki leg.; KPM-NK 75790, 75793, 2 F, Tochigi Pref., Nasushiobara City, Shiobara, Oonuma, 6–15. VI. 2008, T. Matsumura leg. (MsT); KPM-NK 75786, F, Yamanashi Pref., Koushu City, Yanagisawa-toge, 5. VIII. 2008, K. Watanabe leg.; KPM-NK 75788, F, Nagano Pref., Outaki Vil., Mt. Hakkaisan, 31. VII. 2013, M. Ito leg.; KPM-NK 75794, F, Nagano Pref., Ueda City, Sugadaira-kogen. Tsukuba Univ., 8. VIII. – 3. IX. 2014, S. Shimizu leg. (MsT); KPM-NK 75789, 75791, 2 F, Niigata Pref., Sado Is., Kanaishinbo, Hakuundai–Mt. Myouken-zan, 4. VIII. 2009, K. Watanabe leg.; KPM-NK 75787, F, Toyama Pref., Nanto City, Togamura, Kamimomose, 4–11. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 75796, F, Toyama Pref., Toyama City, Arimine, Inonedani, 28. VII. – 4. VIII. 2009 (MsT); KPM-NK 75795, F, ditto, 25. VIII. – 1. IX. 2009; KPM-NK 75782–75785, 4 F, ditto, 15–26. IX. 2009; KPM-NK 75798, F, Toyama Pref., Toyama City, Arimine, Jyurodani, 8–15. IX. 2009, M. Watanabe leg. (MsT); KPM-NK 75792, F, Fukui Pref., Izumi Vil., Asahi-maesaka, 22. X. 1982, T. T. leg.

**Description.** Female (n=19). Body covered with silver setae, length 6.2–11.3 (HT: 7.7) mm.

Head 0.57 × as long as wide, polished, finely punctate. Clypeus sparsely punctate except for smooth apical area, 0.56–0.61 (HT: 0.56) × as long as maximum wide, slightly convex in lateral view, its apical margin with a median obtuse tooth and a pair of lateral weak convexities (Fig. 1H). Face 0.48–0.5 (HT: 0.5) × as long as maximum wide, finely coriaceous. Frons finely coriaceous except for a narrow smooth area above antennal sockets. Length of malar space 1.0–1.05 (HT: 1.0) × as long as basal mandibular width. Base of mandible slightly convex. Upper tooth of mandible almost as long as lower tooth. OD: POL: OOL = 1.0: 1.3–1.7 (HT: 1.7): 1.6–1.89 (HT: 1.6). Flagellum with 20–22 (HT: 20) segments. FL I 7.5 × as long as maximum depth in lateral view and 1.0 × as long as FL II.

Mesosoma polished, length 1.65 × as long as maximum height in lateral view. Lateral aspect of pronotum longitudinally strigose except for narrow dorsal area reticulate rugose. Epomia weak. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum densely punctate. Scutellum punctate. Mesopleuron largely rugose, with a smooth area on speculum. Mesosternum

with the short median portion of posterior transverse carina. Metapleuron covered with irregular and/or oblique rugae. Juxtacoxal carina present anteriorly. Propodeum punctate on area externa and strongly reticulate rugose on areas behind anterior transverse carina. Anterior section of lateromedian longitudinal carina present, its posterior ends sometimes confluent (Figs 2I-K). Anterior transverse carina complete (Figs 2I, 11H). Posterior transverse carina complete (Figs 2I, 11H). Pleural carina complete (Fig. 2I). Propodeal spiracle rounded. Area basalis longer than wide, widened anteriorly (Fig. 2I). Fore wing length 5.4–8.6 (HT: 5.9) mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m convergent anteriorly (Fig. 11I). Distance from vein 2rs-m to vein 2m-cu almost as long as distance from vein 2m-cu to vein 3rs-m (Fig. 11I). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu. Fore tibia with a bulge in anterior 0.7. Hind femur 5.1–5.7 (HT: 5.7) × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.4–4.8 (HT: 4.8): 2.0: 1.2: 0.6: 1.25–1.3 (HT: 1.3).

Metasoma dull, densely coriaceous. T I 1.9–2.3 (HT: 2.2) × as long as maximum width, with sparse punctures, with latero-median carina and dorso-lateral carina, without a pair of small convexities at base. T II 0.75–0.95 (HT: 0.95) × as long as maximum width. Ovipositor straight, its sheath 1.06–1.18 (HT: 1.08) × as long as hind tibia. Apex of ovipositor as Fig. 3K.

Colouration (Figs 11E-I). Body (excluding wings and legs) black to blackish brown, except for: mandible partly tinged with reddish brown; FL VI or FL VII to FL IX white except for outer surface; humeral plate and membranous parts of metasoma white to whitish yellow; posterior margin of each metasomal tergite narrowly tinged with dark reddish brown; ovipositor reddish brown. Wings hyaline, with a large, conspicuous longitudinal clouded area posterior to pterostigma. Veins and pterostigma blackish brown to brown. Legs black to blackish brown, except for: base of femora more or less narrowly tinged with red; fore femora and tibiae more or less tinged with yellowish brown; hind TS II, TS III and base of TS IV white.

**Distribution.** Japan (Honshu and Sado Is.).

**Etymology.** The species name is from a pigmented blackish marking of fore wing.

**Remarks.** This species resembles *Ho. alboanalis*, but it can be distinguished by the fore wing with a broad, conspicuous clouded band posterior to pterostigma (without any clouded band in *Ho. alboanalis*) and the ovipositor sheath 1.06–1.18 × as long as hind tibia (ca. 1.0 in *Ho. alboanalis*). This species also apparently

resembles *Nippocryptus vittatorius* (Jurine, 1807) in the black body and the fore wing with a conspicuous clouded band, but it can be distinguished by the generic diagnose and the hind tarsus with a white area (without a white band in *N. vittatorius*).

***Hoplocryptus pini*** (Momoi, 1973)

(Figs 3L, 12A-J)

(Standard Japanese name: Muneaka-togari-himebachi)

*Aritranis pini* Momoi, 1973: 38.

**Material examined.** JAPAN, KPM-NK 76578, F, Tokyo, Akiruno City, Ninomiya, Riverside of Tamagawa, 3. V. 2010, K. Watanabe leg.; KPM-NK 75774, F, Tokyo., Oshima Town, Motomachi, Mt. Omaru, Tsubakinomori, 5. VIII. 2012, K. Tsujii leg.; KPM-NK 75779, 75780, F & M, Tokyo., Miyake Vil., Tsubota, Tsubotarindo, 25. VIII. – 22. IX. 2012, K. Tsujii leg. (MsT); MNHAH, F (holotype), Kanagawa Pref., Shonan, 21. III. 1969, S. Yamazaki leg.; KPM-NK 76579, F, Kanagawa Pref., Ebina City, Riverside of Sagami-gawa, 21. V. 2006, M. Ooishi & R. Watanabe leg. (YPT); KPM-NK 76580, Niigata Pref., Nagaoka City, Urasemachi, 22. VIII. – 8. IX. 2015, S. Shimizu leg. (MsT); NIAES, F, Fukui Pref., Oono City, Suwara, 22. VI. 1997, Y. Haneda leg.; NIAES, M, Kochi Pref., Asakura, 22. VII. 1987; NIAES, M, Fukuoka Pref., Hakomatsu-cho, 6. X. 1985, M. Yoshida leg.; KPM-NK 75775, F, Kagoshima Pref., Yakushima, Hanyama, 22. VII. – 22. VIII, 2006, T. Yamauchi *et al.* leg. (MsT); KPM-NK 75777, F, ditto, 28. IX. – 2. XI. 2007; KPM-NK 75776, M, Kagoshima Pref., Yakushima, Arakawa, 29. VII. – 25. VIII. 2007, T. Yamauchi *et al.* leg. (MsT);

**Description.** Female (n=9). Body dull, covered with silver setae, length 7.1–8.3 mm.

Head 0.57–0.61 × as long as wide. Clypeus punctate, 0.56–0.59 × as long as maximum wide, with a smooth area along apical margin, slightly convex in lateral view, its apical margin with a median obtuse tooth and a pair of lateral weak convexities. Face 0.45–0.56 × as long as maximum wide. Frons largely reticulate rugose, with or without a weak median longitudinal carina. Length of malar space 0.95–1.1 × as long as basal mandibular width. Base of mandible slightly convex. Upper tooth of mandible almost as long as lower tooth. OD: POL: OOL = 1.0: 1.3–2.0: 1.8–2.0. Flagellum with 23–25 segments. FL I 7.5–10.0 × as long as maximum depth in lateral view and 1.07–1.15 × as long as FL II.

Mesosoma polished, length 1.65 × as long as maximum height in lateral view. Lateral aspect of pronotum reticulate

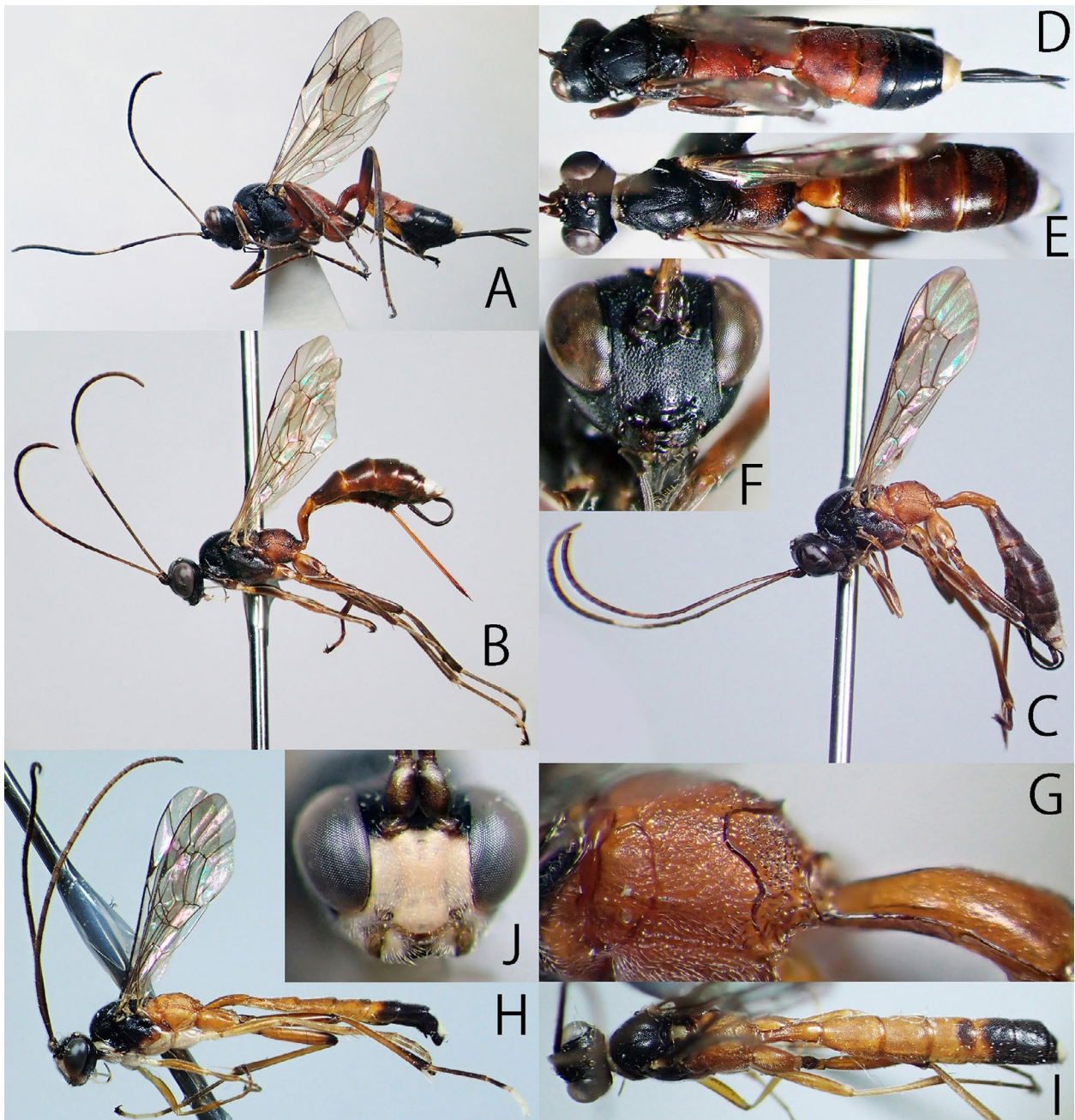


Fig. 12. *Hoplocryptus pini* (Momoi, 1973) (A, D, F, KPM-NK 76578; B, E, KPM-NK 75780; C, G, KPM-NK 75774; H-J, 76580) — A-C, H, lateral habitus; D, E, I, head, mesosoma and metasoma, dorsal view; F, J, head, frontal view; G, propodeum, dorso-lateral view.

rugose dorsally, longitudinally strigose ventrally. Epomia present. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum finely coriaceous and finely punctate. Scutellum polished, densely punctate. Mesopleuron largely reticulate rugose, with a smooth area on speculum. Mesosternum with a median part of posterior transverse carina. Metapleuron covered with reticulate rugae. Juxtacoxal carina complete. Propodeum punctate on area externa and strongly reticulate rugose on areas behind anterior transverse carina. Anterior section of lateromedian longitudinal carina present. Anterior transverse carina complete (Fig. 12G). Posterior transverse carina complete (Fig. 12G). Pleural carina complete.

Propodeal spiracle rounded. Area basalis about as long as wide, its sides widened anteriorly. Fore wing length 5.0–6.8 mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m more or less convergent anteriorly. Distance from vein 2rs-m to vein 2m-cu shorter than distance from vein 2m-cu to vein 3rs-m. Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu. Apical 0.7 of fore tibia swollen. Hind femur 5.0–5.2 × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.6–5.2: 2.0: 1.2–1.3: 0.8–0.9: 1.7.

Metasoma. T I 1.8–2.4 × as long as maximum width, polished, densely and finely punctate, with latero-median carina and dorso-lateral carina, without a pair of triangular

projections at base. T II  $0.85\text{--}1.05 \times$  as long as maximum width, densely and finely punctate. T II, T III and T IV finely coriaceous. Ovipositor straight, its sheath  $0.83\text{--}0.95 \times$  as long as hind tibia. Apex of ovipositor as Fig. 3L.

Colouration (Figs 12H–J). Body (excluding wings and legs) black to blackish brown, except for: mandible and base of flagellum partly tinged with reddish brown to yellowish brown; FL VI or FL VII to FL IX or FL X white except for outer surface; palpi and humeral plate whitish yellow; metapleuron and propodeum largely or entirely reddish brown to red; T I and posterior margin of T II to T VI reddish brown; membranous parts of metasoma yellowish brown to yellowish white; a median spot of T VII and T VIII white; ovipositor reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown except for base of pterostigma with a small yellow area. Legs black to blackish brown, except for: coxae, trochanters, trochantelli, femora, tibial spurs, fore tibia and fore tarsus more or less tinged with reddish brown, yellowish brown or brown; base of mid and hind tibiae narrowly tinged with yellowish brown; hind TS III and base of TS IV yellowish brown.

Relatively large variation of coloration present in mesosoma, basal part of metasomal tergites and legs. Pronotum with a dorso-median white marking on collar. Yellow area of base of hind tibia sometimes enlarged. Apex of scutellum sometimes narrowly tinged with reddish brown to red. Postscutellum and axilla of metathorax sometimes reddish brown to red. Mesopleuron sometimes largely tinged with reddish brown to red. TII and T III sometimes largely or entirely reddish brown to red. Fore and mid legs, hind coxa, hind trochanter and hind trochantellus sometimes entirely reddish brown. Hind femur and tibia except both apical parts sometimes reddish brown; Hind TS I to TS IV sometimes largely tinged with reddish brown.

Male (n=5). Similar to female. Body length 6.6–9.3 mm. Face  $0.56\text{--}0.59 \times$  as long as maximum wide. Length of malar space  $0.9 \times$  as long as basal mandibular width. OD: POL: OOL = 1.0: 1.1–1.4: 1.5–2.0. Flagellum with 30–32 segments, with tyloid from FL 13 to FL 16. FL I  $1.3\text{--}1.43 \times$  as long as FL II. Fore wing 4.9–5.3 mm. Hind femur  $5.5\text{--}5.65 \times$  as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.0: 2.0: 1.4: 0.9: 1.0. T I  $3.0\text{--}3.1 \times$  as long as maximum width. T II  $1.4\text{--}1.9 \times$  as long as maximum width. Face entirely whitish yellow. Malar space and mandible largely whitish yellow. Ventral surface of scape with a whitish yellow marking apically. Antenna without a white area. Whitish yellow area of collar larger than female (if present). Scutellum with a

large yellow marking. Subtegular ridge and mesosternum whitish yellow. T IV and base of T V reddish brown to red. T VII with a white median spot. Fore and mid coxae and trochanters whitish yellow. Other parts of fore and mid legs yellowish brown to reddish brown. Hind tibial spurs and apical part of hind TS II, TS III, TS IV and basal part of TS V whitish yellow to white.

**Distribution.** Japan (Honshu, Izu-oshima Is., Niijima Is., Miyakejima Is. Shikoku, Kyushu and Yakushima Is.).

**Remarks.** This is the first description of the male of this species. The coloration of the female of this species shows large intraspecific variation. In general, the reddish area(s) of mesosoma, metasoma and legs are sometimes reduced in the specimens collected from Izu Isles and Yakushima Is. I carefully observed the character states of above specimens including various colorations, while no differences were found except for coloration. In addition, the variation of coloration is apparently gradually changed. Thus, I conclude that they are single species, *Ho. pini*. This is the first records of this species from Miyakejima Is., Shikoku, Kyushu and Yakushima Island.

***Hoplocryptus sumiyona* Uchida, 1956**

(Figs 13A–C)

(Standard Japanese name: Sumiyou-togari-himebachi)

*Hoplocryptus sumiyonus* Uchida, 1956: 86.

**Material examined.** JAPAN, SEHU, M (holotype), Kagoshima Pref., Amami-oshima Is., Sumiyo, 5. IV. 1954, T. Oku leg.; KPM-NK 76581, M, Kagoshima Pref., Tokunoshima Is., Todoroki, 17. V. 2008, K. Watanabe leg.

**Distribution.** Japan (Amami-oshima Is. and Tokunoshima Is.).

**Remarks.** This species was previously recorded by only single specimen (holotype) collected from Amami-oshima Is. This is the second record of this species and is the first record of this species from Tokunoshima Island.

***Hoplocryptus toshimensis* sp. nov.**

(Figs 1I, 3M, 13D–I)

(Standard Japanese name: Izu-togari-himebachi)

**Type series.** **Holotype:** KPM-NK 75797, F, JAPAN, Tokyo, Toshima Is., Toshima Vil., Minshuku Teradaya, 11. IX. 2012, K. Tsujii leg.

**Description.** Female (n=1). Body covered with silver setae, length 8.3 mm.

Head  $0.61 \times$  as long as wide, polished, punctate. Clypeus  $0.56 \times$  as long as maximum wide, with a smooth

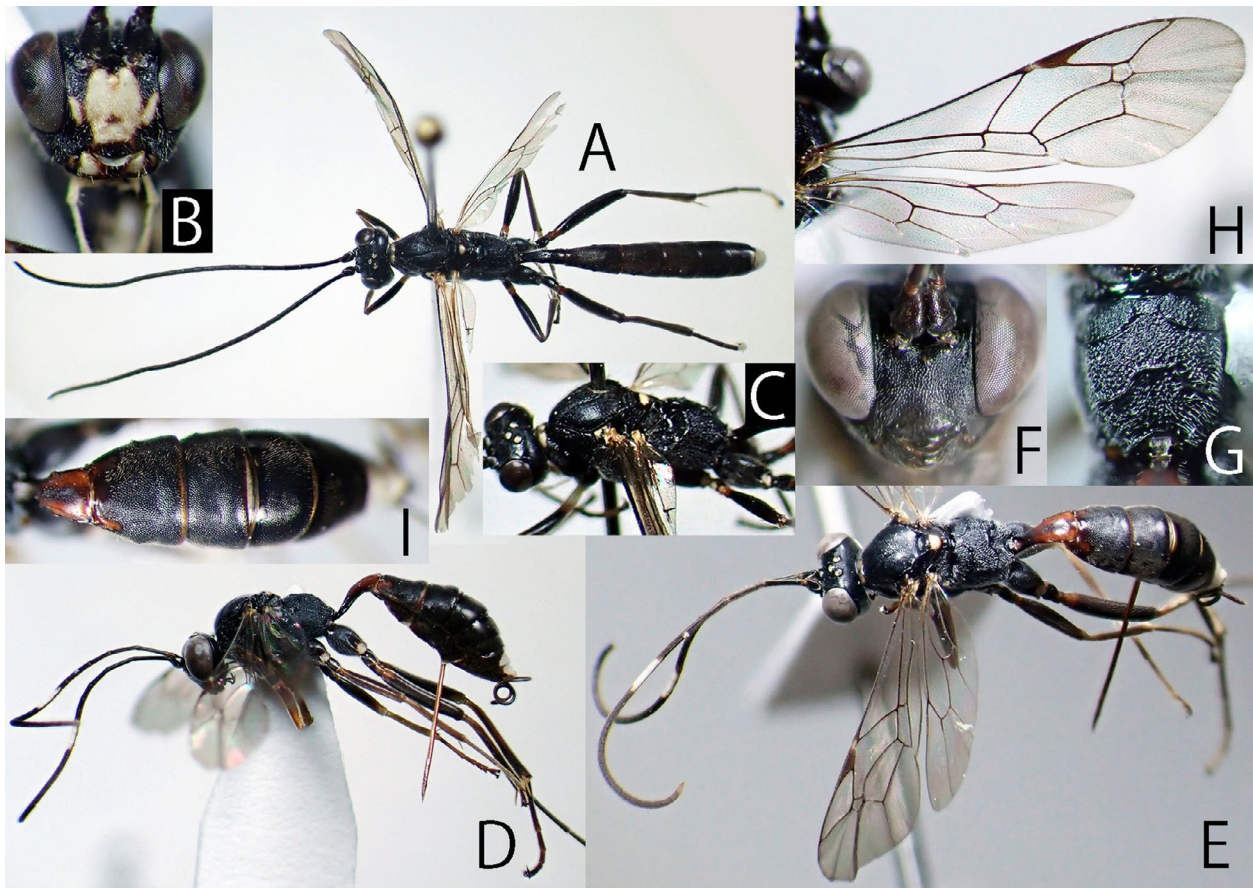


Fig. 13. *Hoplocryptus sumiyona* Uchida, 1956 (A-C, KPM-NK 76581) and *H. toshimensis* sp. nov. (E-I, KPM-NK 75797) — A, E, dorsal habitus; B, F, head, frontal view; C, head and mesosoma, dorso-lateral view; D, lateral habitus; G, propodeum, dorsal view; H, right fore wing; I, metasoma, dorsal view.

area along apical margin, slightly convex in lateral view, its apical margin with a median obtuse tooth and a pair of lateral weak convexities (Fig. 11). Face  $0.56 \times$  as long as maximum wide, densely punctate, granulate. Frons largely reticulate rugose, with a weak median longitudinal carina. Length of malar space  $0.75 \times$  as long as basal mandibular width. Base of mandible almost flat. Upper tooth of mandible almost as long as lower tooth. OD: POL: OOL = 1.0: 1.1: 1.5. Flagellum with 25 segments. FL I  $8.6 \times$  as long as maximum depth in lateral view and  $1.15 \times$  as long as FL II.

Mesosoma polished, length  $1.65 \times$  as long as maximum height in lateral view. Lateral aspect of pronotum reticulate rugose dorsally, longitudinally strigose ventrally. Epomia present. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum densely punctate. Scutellum punctate. Mesopleuron largely rugose, with a smooth area on speculum. Mesosternum with the short median portion of posterior transverse carina. Metapleuron reticulate rugose. Juxtacoxal carina complete. Propodeum punctate on area externa and strongly reticulate rugose on areas behind anterior transverse carina. Anterior section of lateromedian longitudinal carina present. Anterior

transverse carina complete (Fig. 13G). Posterior transverse carina complete (Fig. 13G). Pleural carina complete except for a small interruption of posterior section. Propodeal spiracle oval. Area basalis wider than long, widened anteriorly. Fore wing length 5.6 mm. Areolet pentagonal, vein 2rs-m and vein 3rs-m weakly convergent anteriorly (Fig. 13H). Distance from vein 2rs-m to vein 2m-cu shorter than distance from vein 2m-cu to vein 3rs-m (Fig. 13H). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu (Fig. 13). Apical 0.7 of fore tibia swollen. Hind femur  $5.0 \times$  as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.4: 2.0: 1.2: 0.7: 1.4.

Metasoma polished. T I  $2.2 \times$  as long as maximum width, sparsely punctate, with latero-median carina except for posterior part absent, dorso-lateral carina and a pair of small convexities at base. T II  $0.85 \times$  as long as maximum width. T II, T III and T IV covered with dense punctures except for posterior margin. Ovipositor straight, its sheath  $0.95 \times$  as long as hind tibia. Apex of ovipositor as Fig. 3M.

Colouration (Figs 13D-I). Body (excluding wings and legs) black to blackish brown, except for: mandible partly tinged with reddish brown; FL VI to FL IX white

except for outer surface; humeral plate yellowish brown; scutellum with a conspicuous yellow marking (its ca. apical 0.7 of scutellum); T I reddish brown except for base; thyridium and ovipositor reddish brown; posterior margin of metasomal tergites narrowly tinged with reddish brown; membranous part of metasoma and a median spot of T VII and T VIII white. Wings hyaline. Veins and pterostigma blackish brown to brown. Legs black to blackish brown, except for: fore and mid legs except for coxae and trochanters more or less tinged with yellowish brown; apex of hind trochantellus and base of hind femur narrowly tinged with reddish brown; base of hind tibia and hind tibial spurs yellowish brown.

Male. Unknown.

**Distribution.** Japan (Toshima Is.).

**Etymology.** The species name is from the type locality, Toshima Island.

**Remarks.** This species resembles *Ho. pini* but it can be distinguished by the scutellum with a conspicuous yellow marking (entirely black in *Ho. pini*), the metapleuron and propodeum black (red to reddish brown in *Ho. pini*) and the malar space  $0.75 \times$  as long as basal mandibular width (more than  $0.9 \times$  as long as basal mandibular width in *Ho. pini*).

#### Key to Japanese species of the genus *Hoplocryptus* (female only)

(Female of *H. sumiyona* is unknown)

1. Metapleuron, propodeum and T I largely to entirely reddish brown to red (Figs 12A-E, G). Scutellum black, at most slightly tinged with dark reddish brown (Figs 12D, E). Metapleuron red to reddish yellow (Figs 12A-E). Ovipositor sheath  $0.83-0.95 \times$  as long as hind tibia.  
.....*Ho. pini* Momoi, 1973
- Metapleuron and propodeum black (e.g., Fig. 13D). T I black (e.g., Fig. 11F) or reddish brown (Figs 10C, 13E, I). Scutellum sometimes with a yellow marking (Figs 11D, 13E). Ovipositor length various.  
.....2
2. Scutellum with a large (more than 60 % length of scutellum) conspicuous yellow spot (Fig. 13E). T I tinged with reddish brown (Figs 13E, I). Length of malar space  $0.75 \times$  as long as basal mandibular width. Ovipositor sheath  $0.95 \times$  as long as hind tibia.  
.....*Ho. toshimensis* sp. nov.
- Scutellum black or sometimes with a small (less than 30 % length of scutellum) yellowish brown spot (Fig. 11D). T I black (e.g., Fig. 11F). Other character states various.

- .....3
3. Both T II and T III entirely red (Figs 9F, G). Area basalis widened anteriorly. 2rs-m and vein 3rs-m of areolet weakly convergent anteriorly. Ovipositor sheath  $0.9-0.95 \times$  as long as hind tibia. Base of hind tibia whitish yellow.  
.....*Ho. ashoroensis* sp. nov.
- T II and T III black (Figs 10B, G, 11A, B, E, F) or at most partly red (Figs 10A, C). Other character states various.  
.....4
4. Fore wing with a broad, conspicuous clouded band posterior to pterostigma (Figs 11E, I). Hind TS II, TS III and base of TS IV white (Fig. 11E).  
.....*Ho. maculatus* sp. nov.
- Fore wing without a conspicuous clouded area (Figs 10G, K, 11B). Coloration of hind tarsus various.  
.....5
5. Tegula entirely whitish yellow. Ovipositor sheath slightly longer than hind tibia. White area of antenna rather small, present on two or three segments of flagellum. Base of hind tibia tinged with whitish yellow. Nervellus of hind wing intercepted at the middle by second abscissa of vein Cu.  
.....*Ho. sugiharai* (Uchida, 1936)
- Tegula black to blackish brown. Other character states various.  
.....6
6. Upper valve of ovipositor with six dorsal minute teeth at apex. Ovipositor sheath distinctly shorter than hind tibia. Nervellus of hind wing intercepted at the middle by second abscissa of vein Cu. Hind TS II to TS IV white. Median part of posterior transverse carina sometimes obscured.  
.....*Ho. ohgushii* Momoi, 1963
- Upper valve of ovipositor without dorsal tooth at apex (Figs 3H-J). Hind tarsus without conspicuous large white area(s) (Figs 10A, G, 11A, B). Other character states various.  
.....7
7. Ovipositor sheath longer than  $1.5 \times$  of hind tibia (Figs 10A, 11A, B). Punctures on vertex and mesoscutum relatively dense and large (Fig. 10 I). Scutellum sometimes with a small yellow marking (Fig. 11D).  
.....8
- Ovipositor sheath longer than  $1.1 \times$  of hind tibia (Fig. 10A). Punctures on vertex and mesoscutum relatively sparse and fine. Scutellum black.  
.....9
8. Length of mesosoma  $1.65 \times$  as long as maximum

height in lateral view. Median convexity of apical margin of clypeus weak and indistinct (Fig. 1F). Ovipositor slightly upcurved (Fig. 10G). Area basalis widened anteriorly.

.....*Ho. intermedius* sp. nov.

- Length of mesosoma  $1.73 \times$  as long as maximum height in lateral view. Median convexity of apical margin of clypeus strong and distinct (Fig. 1G). Ovipositor straight (Fig. 11A). Area basalis weakly widened anteriorly (Fig. 2H) or its lateral sides almost parallel.

.....*Ho. japonicus* sp. nov.

9. Lateral sides of area basalis subparallel. Vein 2rs-m and vein 3rs-m of areolet convergent anteriorly. Maximum width of propodeum  $0.8 \times$  as long as median length of propodeum in dorsal view.

.....*Ho. alboanalis* (Uchida, 1952)

- Area basalis widened anteriorly. Vein 2rs-m and vein 3rs-m of areolet convergent anteriorly or subparallel. Maximum width of propodeum  $0.92\text{--}1.0 \times$  as long as median length of propodeum in dorsal view.

.....10

10. Vein 2rs-m and vein 3rs-m of areolet convergent anteriorly (Fig. 10F). T II and T III covered with fine and relatively sparse punctures. Metasomal tergites sometime with conspicuous red area(s) (Figs 10A, C). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu.

.....*Ho. ezoensis* sp. nov.

- Vein 2rs-m and vein 3rs-m of areolet subparallel. T II and T III covered with coarse and dense punctures. Metasomal tergites without red area(s). Nervellus of hind wing intercepted at the middle by second abscissa of vein Cu.

.....*Ho. scorteus* Momoi, 1968

#### Genus *Hylophasma* Townes, 1970

*Hylophasma* Townes, 1970: 275.

I newly found a Chinese species, *Hylophasma luica* Sheng, Li & Wang, 2019, from Japan and record it below. This is also the first record of this genus from Japan.

*Hylophasma luica* Sheng, Li & Wang, 2019  
(Figs 1J, K, 2L, M, 14A-E)

(New standard Japanese name: Yuuyake-togari-himebachi)

*Hylophasma luica* Sheng *et al.*, in Wang *et al.*, 2019a: 285.

**Diagnosis.** Body length 5.9–7.0 mm. Malar space

weakly concave in anterior view (Fig. 1J). Length of malar space  $0.9 \times$  as long as basal mandibular width. Antennal socket more or less raised (Fig. 1K). Occipital carina complete, its lower end joining hypostomal carina. Posterior transverse carina of mesosternum complete except for anterior to mid coxa. Pleural carina distinct except apical section. Anterior and posterior transverse carinae of propodeum complete, the latter evenly, slightly arched forward (Fig. 2M). Fore wing 3.8–4.2 mm. T I  $3.4 \times$  as long as maximum width. Latero-median carina of T I absent. Dorso-lateral carina of T I sharply defined (Fig. 2L) but area near spiracle sometimes obscured. Ovipositor sheath  $0.9\text{--}1.0 \times$  as long as hind tibia. Head largely black (Figs 14A-C, E). Clypeus, pronotum, tegula and subtegular ridge black (Figs 14A-C, E). Metapleuron and propodeum reddish yellow (Figs 14A, B, E). T IV to T VI (in female) or T VI to T VII (in male) entirely black (Figs 14A, B, E).

**Material examined.** JAPAN, NIAES, F, Hokkaido, Jozankei, 24. VIII. 1962, J. Minamikawa leg.; NIAES, F, ditto, 20–31. VII. 1989, K. Maeto & M. Sharkey leg. (MsT); NIAES, F, Hokkaido, Toyotomi Town, Kabutoyama, 12. VII. 1980, K. Maeto leg.; NIAES, Ibaraki Pref., Tsuchiura, Shishizaka-oike, 21–28. VIII. 1989, K. Konishi leg. (MsT); KPM-NK 75814, F, Saitama Pref., Tazima, Yanagiba, Matsubusi, 14. IX. 2004, T. Nambu leg.; KPM-NK 75815, F, Saitama Pref., Matsubushi, Yumemino-higasi, Matsubushi-Park, 8. IX. 2007, T. Nambu leg. (YPT); KPM-NK 75816, F, Saitama Pref., Mure, Yorii, 16. VII. 2001, T. Nambu leg.; KPM-NK 75819, M, Saitama Pref., Okegawa, 15. X. 1984, T. Nambu leg.; KPM-NK 75820, 75821, 2 F, Tokyo., Akiruno City, Ninomiya, Tamagawa-riverside, 3. V. 2010, K. Watanabe leg.; KPM-NK 75778, M, Tokyo, Ohshima Town, Mt. Omaru, 17. VIII. – 5. X. 2012, K. Tujii leg. (MsT); KPM-NK 75813, F, JAPAN, Chiba Pref., Ichinomiya Town, 31. VII. 2002, K. Kubo leg.; KPM-NK 75817, M, Shizuoka Pref., Higashiizu Town, Inatori, 9. IX. 2009, T. Muraki leg.; KPM-NK 75818, F, ditto, 26. VII. 2009; KPM-NK 76564, 76565, 2 F, Kagoshima Pref., Kimotsuke Town, Minamikata, Kanaedake, 18. VII. – 20. VII. 2019, K. Watanabe & K. Matsumoto leg. (YPT).

**Distribution.** Japan (Hokkaido, Honshu, Izu-oshima Is. and Kyushu); China (Shangdon).

**Remarks.** This is the first record of this species from Japan. The character states of this species was described in detail in the original description (Wang *et al.*, 2019a). By the result of comparing Japanese specimens with the description, the character states of Japanese specimens are in accordance with the data of original description by Wang *et al.* (2019a) except for the following character

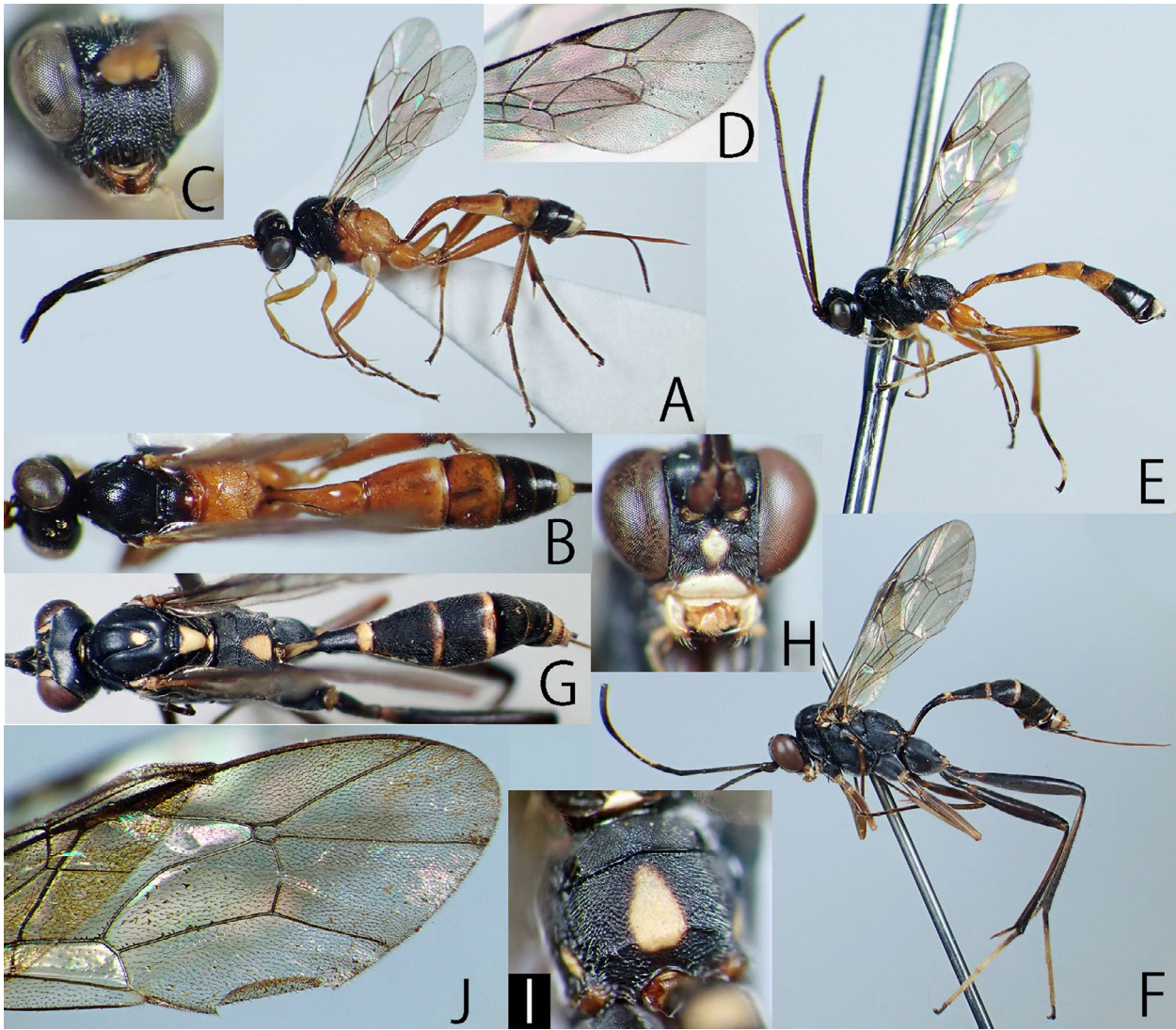


Fig. 14. *Hylophasma luica* Sheng, Li & Wang, 2019 (A-D, KPM-NK 75813; E, KPM-NK 75821) and *Picardiella melanoleuca* (Gravenhorst, 1829)(F-J, KPM-NK 75744) — A, E, F, lateral habitus; B, G, dorsal habitus; C, H, head, frontal view; D, J, right fore wing; I, propodeum, dorsal view.

states: mesopleuron sometimes partly tinged with reddish brown to red; hind coxa and T I to T III usually entirely reddish brown to red; T IV sometimes partly tinged with reddish brown.

Genus *Picardiella* Lichtenstein, 1920

*Picardiella* Lichtenstein, 1920: 76. Type species: *Cryptus melanoleucus* Gravenhorst, 1829. Monobasic.

*Borciella* Constantineanu, 1929: 516. Type species: *Borciella crenulata* Constantineanu, 1929 (= *Cryptus melanoleucus* Gravenhorst, 1829). Monobasic.

*Nipporicnus* Uchida, 1931: 147. Type species: *Acroricnus tarsalis* Matsumura, 1912. Original designation.

*Paretha* Seyrig, 1952: 200. Type species: *Paretha tarsalis* Seyrig, 1952 (= *Picardiella seyrigi* Townes, Townes & Gupta, 1961). Original designation.

Two species, *P. rufa* (Uchida, 1932) and *P. tarsalis* (Matsumura, 1912), have been recorded from Japan. I herein record *P. melanoleuca* (Gravenhorst, 1829) from Japan for the first time.

*Picardiella melanoleuca* (Gravenhorst, 1829)  
(New standard Japanese name: Tsushima-togari-himebachi)

*Cryptus melanoleucus* Gravenhorst, 1829: 489.

*Mesostenus argiolus* Rudow, 1882: 33.

*Mesostenus peregrinus* Schmiedeknecht, 1905: 572.

*Borciella crenulata* Constantineanu, 1929: 516.

*Habrocryptus assertorius tarsoleucus* Kiss, 1929: 108.

Description based on Japanese specimens. Female (n=2). Body largely dull, covered with short, dense silver setae, length 8.0–9.8 mm.



Head 0.61–0.63 × as long as wide. Clypeus punctate, 0.38–0.4 × as long as maximum wide, convex in lateral view, its apical margin subtruncate (Fig. 14H). Face 0.53 × as long as maximum wide. Frons with a longitudinal carina anterior to median ocellus, with some transverse rugae above antennal sockets. Length of malar space 0.4–0.5 × as long as basal mandibular width. Mandible strongly twisted medially, its upper tooth distinctly longer than lower tooth. Base of mandible almost flat. OD: POL: OOL = 1.0: 1.2–1.3: 1.25–1.3. Flagellum with 27 segments. FL I 0.45–0.5 × as long as maximum depth in lateral view and 1.2–1.25 × as long as FL II.

Mesosoma. Lateral aspect of pronotum densely punctate dorsally and ventrally, longitudinally strigose medially. Epomia present. Posterior ends of notauli reached to middle of mesoscutum and both ends confluent posteriorly. Mesoscutum and scutellum densely punctate. Mesopleuron largely reticulate rugose dorsally and densely punctate ventrally, with a smooth area on speculum. Mesosternum with a median part of posterior transverse carina. Metapleuron finely reticulate rugose. Juxtacoxal carina present. Propodeum finely reticulate rugose, with complete anterior transverse carina and posterior transverse carina (Fig. 14I). Pleural carina complete except for indistinct posterior area. Propodeal spiracle elongate. Area basalis indistinct. Fore wing length 6.1–7.5 mm. Areolet pentagonal, small, vein 2rs-m and vein 3rs-m subparallel (Fig. 14J). Nervellus of hind wing intercepted below the middle by second abscissa of vein Cu. Hind femur 6.0 × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.8: 2.0: 1.3: 0.7: 1.0.

Metasoma more or less polished. T I 3.4–3.5 × as long as maximum width, densely and finely punctate, without latero-median carina and dorso-lateral carina, with a pair of triangular projections at base. T II 1.0–1.05 × as long as maximum width. T II and T III finely coriaceous, covered with fine punctures. Ovipositor sheath 0.92–0.96 × as long as hind tibia, shorter than fore wing and metasoma. Apex of ovipositor as Fig. 3N.

Colouration (Figs 14F–J). Body (excluding wings and legs) black to blackish brown, except for: clypeus, a median spot of face, mandible except for apex, a pair of spots on vertex along inner margin, palpi, tegula, subtegular ridge, a median spot of mesoscutum, scutellum, postscutellum, a posterior small spot of metapleuron, a large median spot of propodeum, a basal longitudinal spot of T I and posterior margin of each metasomal tergite whitish yellow; malar space partly tinged with yellowish brown; FL V to FL XI white except for outer surface; humeral plate and membranous parts of metasomal sternites yellowish

brown; ovipositor reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown except for yellowish brown wing base. Coxa black. Fore and mid legs except for coxae dark brown to yellowish brown. Hind trochanter, trochantellus, femur, tibia, base of TS I and TS V blackish brown to black. Subbasal part of hind tibia more or less tinged with reddish brown. Tarsus except for base of TS I and TS V whitish yellow. Yellow spot of face sometimes absent. Yellow posterior margin of T IV and T V partly narrow.

Male. No material is collected in Japan.

**Material examined.** JAPAN: KPM-NK 75744, F, Nagasaki Pref., Izuhara Town, Tsushima Is., 30. VII. 1998, A. Shimizu leg.; KPM-NK 75745, F, ditto, 31. VII. 1998.

**Distribution.** Japan (Tsushima Is.). Outside Japan, this species widely distributed in Palearctic region (Yu *et al.*, 2016).

**Remarks.** This is the first record of this species from Japan.

#### Key to Japanese species of the genus *Picardiella* (Female only)

1. Face entirely whitish yellow. Mesopleuron and metapleuron with a conspicuous whitish yellow stripe respectively. Hind tibia largely reddish yellow. Ovipositor sheath distinctly shorter than hind tibia.  
.....*P. rufa* (Uchida, 1932)
- . Face black or black with a yellow spot (Fig. 14H). Mesopleuron and metapleuron without a yellow stripe (Fig. 14F). Hind tibia largely reddish yellow or black (Fig. 14F).  
.....2
2. Scutellum yellow (Fig. 14G). Hind tibia reddish yellow subbasally (Fig. 14F). Face sometimes with a yellow spot (Fig. 14H). Base of T I with a conspicuous yellow area (Figs 14F, G). Ovipositor sheath slightly shorter than hind tibia.  
.....*P. melanoleuca* (Gravenhorst, 1829)
- . Scutellum black. Hind tibia entirely black. Face entirely black. Base of T I without a conspicuous yellow area. Ovipositor sheath distinctly longer than hind tibia.  
.....*P. tarsalis* (Matsumura, 1912)

#### Genus *Trychosis* Förster, 1869

*Trychosis* Förster, 1869: 187. Type species: *Cryptus ambiguus* Tschek, 1871 (= *Cryptus mesocastanus* Tschek, 1871). Designated by Schmiedeknecht (1890).

*Phaedrophadnus* Cameron, 1906: 285. Type

species: *Phaedrophadnus striatus* Cameron, 1906. Monobasic.

*Ethaomorpha* Viereck, 1913: 565. Type species: *Cryptus similis* Cresson, 1864. Original designation. *Orthocryptus* Viereck, 1913: 567. Type species: *Cryptus monticola* Ashmead, 1890 (= *Cryptus sanderi* Dalla Torre, 1902). Original designation.

Three species, *T. maruyamana* (Uchida, 1930), *T. tokioensis* (Uchida, 1930) and *T. yezoensis* (Uchida, 1930), have been recorded from Japan. I herein describe a new species, *T. breviterebratus* sp. nov., from Japan below.

***Trychosis breviterebratus* sp. nov.**

(Figs 1L-P, 2N, 3O, 14A-F)

(Standard Japanese name: Higejiro-marumune-togari-himebachi)

**Type series. Holotype.** KPM-NK 75748, F, JAPAN, Yamanashi Pref., Koushu City, Katsunuma-cho, Nr. Ootaki-fudou, 9. VII. 2007, K. Watanabe leg. **Paratypes:** JAPAN, NIAES, F, Iwate Pref., Mt. Hayachine, 2–8. VIII. 1989, M. Sharkey & H. Makihara leg. (MsT); NIAES, F, ditto, 8–15. VIII. 1989; KPM-NK 75766, F, Yamagata Pref., Mamurogawa-machi, 14. VII. 2012, Y. Matsubara & K. Fukuda leg. (MsT); KPM-NK 75767, 75768, 2 F, Fukushima Pref., Tajima Town, Tonyu, 3–7. VIII. 2003, A. Shimizu leg.; KPM-NK 75754, F, Tochigi Pref., Nasushiobara City, Ohsabigawa, 13. VIII. 2010, E. Katayama leg.; KPM-NK 75755, F, Tochigi Pref., Ohtawara City, Shimoishigami, 28. V. 2002, E. Katayama leg.; KPM-NK 75756, F, Tochigi Pref., Ohtawara City, Handa, 2. VI. 1999, E. Katayama leg.; KPM-NK 75753, F, Tochigi Pref., Kuroiso City, Shigiuchi, 25. VIII. 2001, E. Katayama leg.; KPM-NK 75758, F, Tochigi Pref., Kuroiso City, Momura, 4. VIII. 2000, E. Katayama leg.; KPM-NK 75762, F, Tochigi Pref., Ohtawara City, Ryujoh Park, 31. V. 2001, E. Katayama leg.; KPM-NK 75763, F, Tochigi Pref., Ohtawara City, Shimoishigami, 21. V. 2001, E. Katayama leg.; KPM-NK 75749, F, Kanagawa Pref., Yokosuka City, Ookusuyama, 18. VII. 2000, H. Nagase leg.; KPM-NK 75750, 75764, 2 F, Yamanashi Pref., Koushu City, Katsunuma-cho, Nr. Ootaki-fudou, 9. VII. 2007, T. Zakoji & K. Watanabe leg.; KPM-NK 75752, F, ditto, 4. VIII. 2008, K. Watanabe leg.; KPM-NK 75760, F, Niigata Pref., Nagaoka City, Suyoshi Town, Mt. Nokogiriyama, 21. VIII. 2014, S. Shimizu & R. Shimizu leg.; KPM-NK 75751, F, Nagano Pref., Outaki Vil., Ontakesan, Hakkaisan, 7. VIII. 2010, K. Watanabe leg.; KPM-NK 75761, F, Nagano Pref., Ueda City, Sugadaira-kogen.

Tsukuba Univ., 22. VII. – 8. VIII. 2014, S. Shimizu leg. (MsT); KPM-NK 75769, F, Nagano Pref., Karuizawa, 9. VIII. 1955, R. Ishikawa leg.; KPM-NK 75770, F, Toyama Pref., Toyama City, Kamegai, 28. VII. – 4. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 75757, F, Fukui Pref., Natasho Vil., Mushi-dani, 7. VIII. 1981, T. Murota leg.; KPM-NK 75759, F, Fukui Pref., Uchitomi-hanto, 13. VII. 1980, H. Kurokawa leg.; KPM-NK 75765, F, Fukui Pref., Arashi, 22. VI. 1980, T. Tano leg.; NIAES, F, Ishikawa Pref., Tsurugi Town, Yahata, 11. VIII. 1992, I. Togashi leg.; NIAES, F, Oita Pref., Mt. Sobo, 14–20. VII. 1979, K. Konishi leg.; NIAES, F, Miyazaki Pref., Mt. Takachihonome, 4. VIII. 1982, M. Takanashi leg.

**Description.** Female (n=28). Body polished, covered with brownish silver setae, length 8.0–11.5 (HT: 10.0) mm.

Head 0.5–0.53 (HT: 0.5) × as long as wide, punctate. Clypeus 0.5–0.56 (HT: 0.5) × as long as maximum wide, slightly convex in lateral view, its apical margin rounded, without a median tooth or convexity (Fig. 1L). A line drawn between the bottoms of the compound eyes at least cuts through the upper part of the clypeal bulge. Anterior tentorial pit apparently absent (Fig. 1L). Face 0.43–0.48 (HT: 0.45) × as long as maximum wide, densely punctate except for rugose below antennal sockets. Frons densely punctate except for a pair of smooth areas above antennal sockets, weakly concave above antennal sockets. Gena almost straight in dorsal view (Fig. 1M). Length of malar space 1.0–1.1 (HT: 1.0) × as long as basal mandibular width. Mandible almost flat basally, with a wide ventral flange except for apex (Figs 1L, N). Upper tooth of mandible almost as long as lower tooth. OD: POL: OOL = 1.0: 1.8–1.9 (HT: 1.8): 1.35–1.5 (HT: 1.4). Flagellum with 28–29 (HT: 29) segments. FL I 6.0 × as long as maximum depth in lateral view and 1.3–1.43 (HT: 1.43) × as long as FL II.

Mesosoma. Lateral aspect of pronotum punctate dorsally, longitudinally strigose ventrally. Epomia present, rather strongly raised. Posterior end of notauli reached to middle of mesoscutum. Mesoscutum densely punctate. Scutellum punctate. Mesopleuron densely punctate, without a smooth area on speculum. Epicnemial carina present, its dorsal end not reaching the anterior margin of mesopleuron, its ventral part without a rounded tooth-like projection (Fig. 1P). Mesosternum with the short median portion of posterior transverse carina. Metapleuron covered with oblique rugae. Juxtacoxal carina absent except for anterior part present. Propodeum punctate and reticulate rugose. Anterior section of lateromedian longitudinal carina present. Anterior transverse carina complete. Posterior transverse carina complete except for median part absent. Pleural carina present on anterior section, absent on

posterior section. Propodeal spiracle elongate. Area basalis strongly slopping and widened anteriorly. Fore wing length 6.0–7.9 (HT: 7.8) mm. Areolet pentagonal, large, vein 2rs-m and vein 3rs-m subparallel (more than 90% of specimens including holotype) (Fig. 15F) or slightly convergent anteriorly (in a few specimens with small body size). Nervellus of hind wing intercepted slightly below the middle by second abscissa of vein Cu (Fig. 15F). Fore femur normal shape (Fig. 10), length 4.5 × as long as maximum depth in lateral view. Hind femur 5.7–6.0 (HT: 6.0) × as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 4.2–4.7 (HT: 4.7): 2.0: 1.4–1.5 (HT: 1.5): 0.9: 1.1.

Metasoma. T I 2.3–2.7 (HT: 2.4) × as long as maximum width, largely smooth, with a few, sparse punctures, without latero-median carina (Fig. 2N), without a pair of small convexities at base. Dorso-lateral carina of T I absent. T II 0.75–0.85 (HT: 0.8) × as long as maximum width, with normal sized laterotergite (Fig. 2N). Spiracle of T II nearer to lateral margin than to hind margin (Fig. 2N). T II, T III and T IV finely coriaceous and finely punctate. Ovipositor sheath 0.29–0.33 (HT: 0.29) × as long as hind tibia, shorter than T I. Apex of ovipositor as Fig. 3O.

Colouration (Figs 15A–F). Body (excluding wings and legs) black to blackish brown, except for: FL VI or FL VII to FL IX or FL X white except for outer surface; ovipositor

reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown. Legs black to blackish brown, except for: fore and mid trochantelli, femora, tibiae and tarsi more or less tinged with reddish brown to brown; base and apex of hind femur narrowly tinged with reddish brown to brown. Posterior margin of metasomal tergites usually narrowly tinged with reddish brown.

Male. Unknown.

**Distribution.** Japan (Honshu and Kyushu).

**Etymology.** The species name is from short ovipositor.

**Remarks.** This species resembles *T. maruyamana* (Uchida, 1930) in the black body and the white spot of antenna, but it can be distinguished by the ovipositor sheath 0.29–0.33 × as long as hind tibia (0.45 in *T. maruyamana*), the pronotum with longitudinal striae (without striae except for short striae along posterior margin in *T. maruyamana*), the palpi entirely blackish brown to black (second and third segments of maxillary palpus with yellow area in *T. maruyamana*) and the hind tarsus entirely blackish brown to black (TS II to TS IV white in *T. maruyamana*). This species also resembles *T. ambigua* (Tschek, 1871) in body structures but it can be distinguished from the black metasoma (red to dirty orange in *T. ambigua*) and the FL I 6.0 × as long as maximum depth in lateral view (4.5–5.5 in *T. ambigua*).

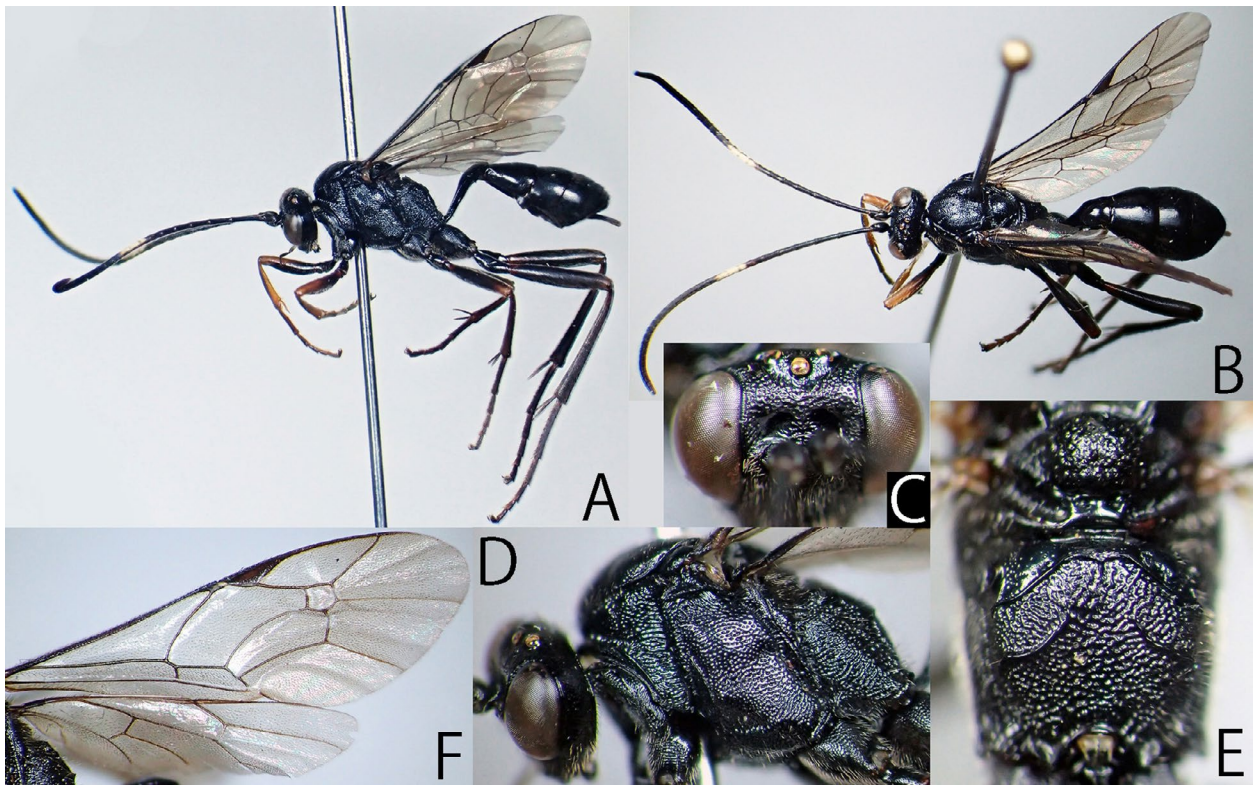


Fig. 15. *Trychosia breviterebratus* sp. nov. (A–F, KPM-NK 75758) — A, lateral habitus; B, dorsal habitus; C, frons, frontal view; D, head and mesosoma, lateral view; E, propodeum, dorsal view; F, right wings.

### Key to Japanese species of the genus *Trychosis*

#### (Female only)

1. Antenna with a white band (Figs 15A, B).  
.....2
- Antenna without a white band.  
.....3
2. Ovipositor sheath  $0.45 \times$  as long as hind tibia. Lateral aspect of pronotum without longitudinal striae except for short striae along posterior margin. Palpi blackish brown to black except for second and third segments of maxillary palpus with yellow area. Hind tarsus with TS II to TS IV white.  
.....*T. maruyamana* (Uchida, 1930)
- Ovipositor sheath  $0.29\text{--}0.33 \times$  as long as hind tibia. Lateral aspect of pronotum largely covered with longitudinal striae (Fig. 15D). Palpi and hind tarsus entirely blackish brown to black (Fig. 15A).  
.....*T. breviterebratus* sp. nov.
3. T1  $3.7 \times$  as long as maximum width. Ovipositor sheath  $0.5\text{--}0.55 \times$  as long as hind tibia. Ramulus absent. Body length usually shorter than 7.0 mm.  
.....*T. tokioensis* (Uchida, 1930)
- T1  $2.8\text{--}3.4 \times$  as long as maximum width. Ovipositor sheath  $0.65\text{--}0.8 \times$  as long as hind tibia. Ramulus usually present. Body length usually longer than 7.5 mm.  
.....*T. yezoensis* (Uchida, 1930)

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## 摘 要

渡辺恭平, 2020. 日本産トガリヒメバチ亜科 (ハチ目、ヒメバチ科) の 12 新種の記載を伴う分類学のおよび動物地理学的記録. 神奈川県立博物館研究報告 (自然科学), (49): 29–66. [Watanabe, K., 2020. Taxonomic and Zoogeographic Notes on Japanese Cryptinae (Hymenoptera, Ichneumonidae), with Descriptions of 12 New Species. *Bull. Kanagawa Pref. Mus. (Nat. Sci)*, (49): 29–66.]

日本産トガリヒメバチ亜科の 12 属について、分類学のおよび動物地理学的記録を報告した。12 新種、ヤマトクロトガリヒメバチ *Aritranis kuro* sp. nov.、アナアキトガリヒメバチ *Buathra nipponica* sp. nov.、ダイダイトガリヒメバチ *Cryptus daidaigaster* sp. nov.、オオツヤトガリヒメバチ *Glabridorsum japonicum* sp. nov.、アマノトガリヒメバチ *Gotra elegans* sp. nov.、アショロトガリヒメバチ *Hoplocryptus ashoroensis* sp. nov.、キタトガリヒメバチ *H. ezoensis* sp. nov.、セマルトガリヒメバチ *H. intermedius* sp. nov.、ホクリクトガリヒメバチ *H. japonicus* sp. nov.、ハネモントガリヒメバチ *H. maculatus* sp. nov.、イズトガリヒメバチ *H. toshimensis* sp. nov.、ヒゲジロマルムネトガリヒメバチ *Trychosis breviterebratus* sp. nov. を記載し、学名と標準和名を命名した。ユウヤケトガリヒメバチ *Hylophasma luica* Sheng, Li & Wang, 2019 とツシマトガリヒメバチ *Picardiella melanoleuca* (Gravenhorst, 1829) を日本から新たに記録した。前者は属レベルでも日本新産である。チャハマキトガリヒメバチ *Ischnus homonae* (Sonan, 1930) の属を記載時の所属である *Gambrus* に戻し、未知であったオスも含めて再記載を行い、本州と伊豆大島、八丈島、対馬から新たに記録した。九州からのみ知られていたミノウスバトガリヒメバチ *Agrothereutes minousubae* Nakanishi, 1965 を本州と四国から新たに記録した。キスジトガリヒメバチ *Caenocryptoides convergens* Momoi, 1966 のオスを新たに記載した。国内では北海道からのみ知られていたダイアナトガリヒメバチ *Cr. diana* を本州から新たに記録した。ムネアカトガリヒメバチ *Ho. pini* の色彩変異を整理し、未知であったオスと併せて再記載を行い、三宅島、四国、九州および屋久島から新たに記録した。従来奄美大島で得られたホロタイプしか知られていなかったスミヨウトガリヒメバチ *Hoplocryptus sumiyona* Uchida, 1956 の 2 個体目となる個体を徳之島から発見して報告した。 *Caenocryptoides*、 *Cryptus*、 *Gambrus*、 *Gotra*、 *Hoplocryptus*、 *Picardiella*、 *Trychosis* の 7 属について日本産種への検索表を提供した。