Original Article

# Taxonomic and Zoogeographic Study of the Japanese Phygadeuontinae (Hymenoptera, Ichneumonidae), with Descriptions of 17 New Species

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**Abstract.** Phygadeuontinae (Hymenoptera, Ichneumonidae) is one of the poorly studied subfamilies in Japan. In this study, I study 28 genera and 61 species of Japanese Phygadeuontinae taxonomically and zoogeographycally. Seven genera, *Diaglyptidea* Viereck, 1913, *Micraris* Townes, 1970, *Surculus* Townes, 1970, *Bentyra* Cameron, 1905, *Isadelphus* Förster, 1869, *Megacara* Townes, 1970, and *Tropistes* Gravenhorst, 1829, are newly recorded from Japan. *Micraris* and *Surculus* are also newly recorded from the Palearctic region. The following 17 new species are described: *Acrolyta japonica* **sp. nov.**; *Micraris ryukyuensis* **sp. nov.**; *Surculus japonicus* **sp. nov.**; *Bentyra ryukyuana* **sp. nov.**; *Paraphylax elegans* **sp. nov.**; *Pa. politus* **sp. nov.**; *Pa. transstriatus* **sp. nov.**; *Pa. yakushimensis* **sp. nov.**; *Pa. yambarensis* **sp. nov.**; *Hemiteles japonicus* **sp. nov.**; *H. kuro* **sp. nov.**; *H. maculipterus* **sp. nov.**; *H. yamatonis* **sp. nov.**; *Isadelphus nigrus* **sp. nov.**; *Lochetica japonica* **sp. nov.**; *Tropistes shimizui* **sp. nov.**; *Uchidella toichii* **sp. nov.** The following nine species are newly recorded from Japan: *Acr. flavicoxis* Sheng & Sun, 2014; *Acr. rufocincta* (Gravenhorst, 1829); *Diaglyptidea conformis* (Gmelin, 1790); *Bathythrix margaretae* Sawoniewicz, 1980; *Ba. thomsoni* (Kerrich, 1942); *Dichrogaster nitida* Sheng & Sun, 2014; *Megacara similis* Sheng, 1999; *Orthizema semanotae* Sheng & Sun, 2014; *Mesoleptus laevigatus* (Gravenhorst, 1829). *Bathythrix narangae* Uchida, 1930 is newly synonymized under *Ba. kuwanae* Viereck, 1912 (**syn. nov.**). *Ethelurgus politus* Townes, 1983 is newly synonymized under *E. episyrphicola* Kusigemati, 1983 (**syn. nov.**). *Ethelurgus sodalis fuscipes* Townes, 1983 is newly synonymized under *E. kumatai* Kusigemati, 1983 (**syn. nov.**). Furthermore, the taxonomic status of *E. kumatai* changed as a subspecies of *E. sodalis* (Taschenberg, 1865) (**comb. nov.**). Some new distribution records and a key to species of the 11 genera are also provided.

**Key words:** distribution, Eastern Palearctic region, new record, parasitoid wasps, taxonomy

## Introduction

The subfamily Phygadeuontinae Förster, 1869 is a large-sized subfamily of the family Ichneumonidae, consisting of more than 120 genera and 1900 species in the world (Yu *et al*., 2016). This subfamily has been previously treated as a tribe of the subfamily Cryptinae Kirby, 1837 (e.g., Yu *et al*., 2016), while Santos (2017) treated this tribe as a separate subfamily. The phylogenetic relationships among this subfamily are still poorly understood in the present time. Members of this subfamily have relatively smaller body size than those of other subfamilies and exhibit sex-related dimorphism. They are idiobiont parasitoids, but the strategy and host preference are highly varied.

Townes (1970) provided a preliminary key to the identification of genera, but this has since been updated via only a few studies (e.g., Townes, 1983; Horstmann, 1978, 1992; Jussila, 1979). Consequently, the taxonomic study of this subfamily is poorly developed even in Europe and North America. Therefore, the identification of higher taxa is relatively more difficult than in other subfamilies.

In Japan, 34 genera and 103 species of this subfamily have been recorded. This subfamily is a poorly studied group and additional records after the first record are not available for many species. Recently I had the opportunities to examine collections in both domestic and foreign museums and found many additional records and some undescribed species. In this study, I provide

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taxonomic and zoogeographic data for the Japanese Phygadeuontinae. Some re-descriptions of Japanese species (e.g., species described by Dr. Toichi Uchida (1898–1974)) and keys to species of some genera are also provided.

## Materials and methods

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

AEIC, American Entomological Institute, Logan, Utah, USA.

GSFPM, General Station of Forest Pest Management, State Forestry Administration, Shenyang, China.

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

KU, Entomological Laboratory, Faculty of Agriculture, Kyushu University, Ito, Fukuoka, Japan.

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

NHMUK, Natural History Museum, London, UK.

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.

ZSM, Zoologische Staatssammlung München, Germany.

A stereomicroscope (Nikon SMZ800) was used for the observation. The photographs (Figs 1–61) were taken using the OLYMPUS TG-4 digital camera joined with the stereomicroscope. The digital images including line drawings (Figs 62–66) were edited using the Adobe Photoshop® CC. Morphological terminology mainly follows Broad *et al*. (2018). Eady (1968) is also referred to for the descriptions of microsculpture. In the description of propodeal areas, the following terms are used: anterior part (area externa and area basalis); median part (area dentipara and area superomedia); posterior part (area postero-externa and area petiolaris). In the description, the following abbreviations are used: holotype (HT), segment of antennal flagellum (FL), diameter of lateral ocellus (OD), ocello-ocular 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), Malaise trap (MsT), light trap (LT), and yellow pan trap (YPT). For the new species and newly recorded species from Japan, I propose the standard Japanese names (SJN). The symbol "*" in the distribution indicates a new record.

All genera were identified by Townes (1970, 1983), except for the genus *Acrolyta* Förster, 1869, identified by Schwarz & Shaw (2000); *Mastrus* Förster, 1869 and its related genera, identified by Horstmann (1978); *Orthizema* Förster, 1869, identified by Schwarz & Shaw (2011). In this study, I treat the subtribes of Gelini sensu Townes (1970) and Horstmann (1992) as the genus-group because the monophyly of these groups is still debated and there is little reliable evidence.

## Results and discussions

In the following taxonomic section, I studied 28 genera and 61 species of Japanese Phygadeuontinae including 17 new species, nine newly recorded species, and three synonyms. Seven genera, *Diaglyptidea* Viereck, 1913, *Micraris* Townes, 1970, *Surculus* Townes, 1970, *Bentyra* Cameron, 1905, *Isadelphus* Förster, 1869, *Megacara* Townes, 1970, and *Tropistes* Gravenhorst, 1829, were newly recorded from Japan. Micraris and Surculus are also reported for the first time from the Palearctic region.

## Taxonomy

### Subfamily **Phygadeuontinae** Förster, 1869

All subtribes sensu Townes (1970) and Horstmann (1992) were found in Japan. Among these, while Cremnodina Townes (1970) has not been recorded in Japan, I identified a single specimen from Japan. The taxonomic treatment of this group requires additional specimens and comparison with European species.

### ***Acrolyta* genus group**
(subtribe Acrolytina sensu Townes (1970))

Three genera, *Acrolyta*, *Diatora* Förster, 1869, and *Lysibia* Förster, 1869, have been recorded from Japan. In addition, I found *Diaglyptidea*, *Encrateola* Förster, 1869, *Micraris*, *Eudelus* Förster, 1869, and an unidentified genus from Japan. In this study, I newly record two of them, *Diaglyptidea* and *Micraris*, from Japan and review *Acrolyta* and *Lysibia*. The identification of genera see Townes (1970) and Schwarz & Shaw (2000).

### Genus ***Acrolyta*** Förster, 1869

*Acrolyta* Förster, 1869: 174. Type: *Acrolyta empretiae* Ashmead, 1896 (= *Ischnoceros nigricapitatus* Cook & Davis, 1891). Designated by Viereck (1914).

*Rhadinocera* Förster, 1869: 177. Type: *Hemiteles* (*Rhadinocera*) *algonquinus* Viereck, 1917 (= *Ischnoceros nigricapitatus* Cook & Davis, 1891). Included by Viereck (1922).

*Mosia* Seyrig, 1952: 69. Type: *Mosia crassicornis* Seyrig, 1952. Original designation.

*Parhemiteles* Seyrig, 1952: 82. Type: *Parhemiteles flaviger* Seyrig, 1952. Original designation.

Five species, *Acr. albiscapus* (Ashmead, 1906), *Acr. aporiae* (Okamoto, 1923), *Acr. discrepa* Momoi, 1970, *Acr. excisa* Momoi, 1970, and *Acr. spola* Momoi, 1970, have been recorded from Japan. Among them, *Acr. albiscapus* is treated as status (Yu *et al*., 2016). I found at least 13 species of this genus from Japan. Two of them, *Acr. flavicoxis* Sheng & Sun, 2014 and *Acr. rufocincta* (Gravenhorst, 1829), are newly recorded from Japan here. In addition, one new species and at least five unidentified species are also recognized. In this study, I record five described species including the newly recorded species with some distributional data and describe a new species, *Acr. japonica* sp. nov. below.

Schwarz & Shaw (2000) revised the generic concepts of this genus and of *Eudelus* Förster, 1869. I re-examined the generic position of all Japanese species based on it and concluded their character statuses are accorded with the *Acrolyta*. No identification key to Japanese species has been provided except for the key to the Ryukyu species according to Momoi (1970), thus I provide a preliminary key to the Japanese species below.

**Preliminary key to Japanese species of the genus *Acrolyta* (♀)**

(female of *Acr. albiscapus* is unknown)

1. Metasomal tergites at least partly (usually T II and T III entirely) reddish brown to reddish yellow (Figs 5A, C). Clypeus with (Fig. 62G) or without a pair of distinct teeth anteromedially. ..... 2
-. Metasomal tergites black except that the posterior margins usually tinged with reddish brown to reddish yellow (e.g., Figs 2C, 3C, 6C). Clypeus without a pair of distinct teeth anteromedially (Fig. 62F). ..... 3
2. Clypeus with a pair of distinct teeth anteromedially (Fig. 62G). T II striated and the interspace of striae smooth. ..... *Acr. rufocincta* (Gravenhorst, 1829)
-. Clypeus without a pair of distinct teeth anteromedially. T II reticulate rugose except for smooth posterior margin. ..... *Acr*. sp. A
3. Anterior margin of clypeus distinctly entirely rounded. ..... 4
-. Median part of anterior margin of clypeus truncate, subtruncate (Fig. 62F) or slightly concave. ..... 5
4. Posterior half of T II and T III largely smooth, without striae (Fig. 1C). Face matt. Hind coxa blackish brown (Fig. 1A). ..... *Acr. aporiae* (Okamoto, 1923)
-. Above combination of character states lacking. ..... *Acr*. spp. (including at least 2 spp.)
5. Hind coxa black. Hind femur usually darkened basally. ..... *Acr*. spp. (including at least 2 spp.)
-. Hind coxa yellowish brown or reddish brown (e.g., Figs 2A, 4A), or if largely tinged with blackish brown, clypeus with dense setae and hind femur nearly entirely yellow. ..... 6
6. T II without striae. T III covered with sparse and fine punctures, without dense punctures and striae. Mesoscutum largely polished. Median part of flagellum slightly wider than other parts, its maximum width less than 2.0 times as long as maximum depth of FL I in lateral view. Ovipositor sheath 0.9 times as long as hind tibia. ..... *Acr. discrepa* Momoi, 1970
-. T II covered with dense punctures and/or striae (e.g., Figs 2C, 3E, 4C, 6C). T III sometimes covered with dense punctures and/or striae. Mesoscutum largely matt (e.g., Figs 2C, 4C, 6C). Other character states various. ..... 7
7. T II and T III covered with longitudinal striae except for smooth areas (Fig. 4C). ..... *Acr. japonica* **sp. nov.**
-. At least T III without longitudinal striae. ..... 8
8. T II and T III polished and punctate, with some longitudinal striae on basal part of T II (Fig. 3E). Antenna robust and strongly widened except for basal part (Figs 3A, C). FL III 2.0 times as long as maximum depth in lateral view (Fig. 62O). ..... *Acr. flavicoxis* Sheng & Sun, 2014
-. T II and T III covered with dense punctures or minute irregular rugae except for smooth areas, without longitudinal striae (Figs 2C, 6C). Antenna slender. FL III longer than 4.0 times as long as maximum depth in lateral view. ..... 9
9. Propodeum moderately long, evenly convexly

descending, its dorsal face much longer than the hind face (Fig. 2A). Pterostigma light brown (Fig. 2A).
..... *Acr. excisa* Momoi, 1970

-. Propodeum short, abruptly, strongly declivous behind, its dorsal face much shorter than the hind face (Fig. 6A). Pterostigma dark brown (Figs 6A, D).
..... *Acr. spola* Momoi, 1970

***Acrolyta aporiae*** (Okamoto, 1921)
(SJN: Tatehida-mame-togari-himebachi)
(Figs 1A–D)

*Brachycyrtus aporiae* Okamoto, 1923: 64.
*Hemiteles aporiae* Uchida, 1930: 343.

**Description**. Female (n=2). Body length 3.3–3.4 mm. Body covered with silver setae.

Head. Clypeus 1.9 times as wide as maximum length, its anterior margin rounded, without distinct teeth anteromedially. Face granulate (Fig. 1B). MSL 1.1 times as long as BWM. Malar space polished and coriaceous. Frons and anterior part of vertex matt except for smooth area above antennal sockets. Posterior part of vertex and gena polished, with fine punctures. OOL almost as long as POL. Occipital carina complete, joined with hypostomal carina near mandibular base. Upper tooth of mandible almost as long as lower tooth. Base of mandible flat. Antenna with 20 flagellomeres, median and subapical part strongly widened, the most widened part ca. 2.0 times as long as maximum depth of FL I in lateral view. FL I, FL II, and FL III distinctly longer than other segments. FL III 3.0 times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum largely smooth dorsally, rugulose ventrally, with indistinct epomia. Mesoscutum matt and subpolished, with distinct notaulus. Scutellum polished, punctate. Mesopleuron smooth, with some longitudinal striae ventrally. Metapleuron finely and sparsely punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete. Area basalis distinct. Area superomedia distinct or partly indistinct laterally. Anterior part of propodeum finely and sparsely punctate. Median and posterior parts of propodeum covered with shallow, longitudinal, oblique and irregular rugae. Length of fore wing 3.2 mm. Areolet absent (Fig. 1D). Vein 2m-cu of fore wing with two bullae. Nervellus inclivous, intercepted behind the middle (Fig. 1D). Hind femur 4.3 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.7: 0.3: 0.4. Tarsal claws simple.

Metasoma. T I 1.5–1.6 times as long as maximum width, longitudinally striated. Median dorsal carina of T I present except for posterior part absent. Dorsolateral carina of T I complete. T II covered with longitudinal striae except for smooth area on posterior 0.5 (Fig. 1C). T III to T V sparsely punctate except for posterior smooth areas. Ovipositor sheath 0.73 times as long as hind tibia. Ovipositor straight, with a nodus and ventral teeth.

Coloration (Figs 1A–D). Body (excluding wings and legs) black to blackish brown. Ventral parts of scape and pedicel and base of FL I yellowish brown to reddish brown. Mandible yellow except for darkened apex. Palpi, postero-dorsal corner of pronotum, and tegula yellow. Posterior

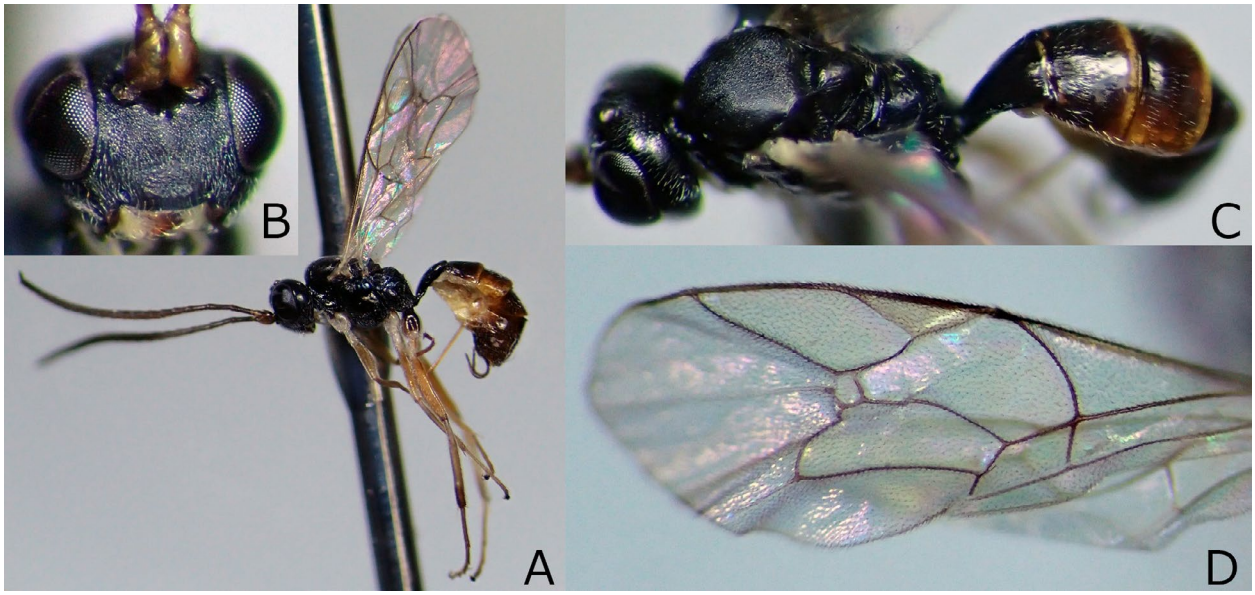


Fig. 1. *Acrolyta aporiae* (Okamoto, 1921), KPM-NK 54955, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorso-lateral view; D, wings.

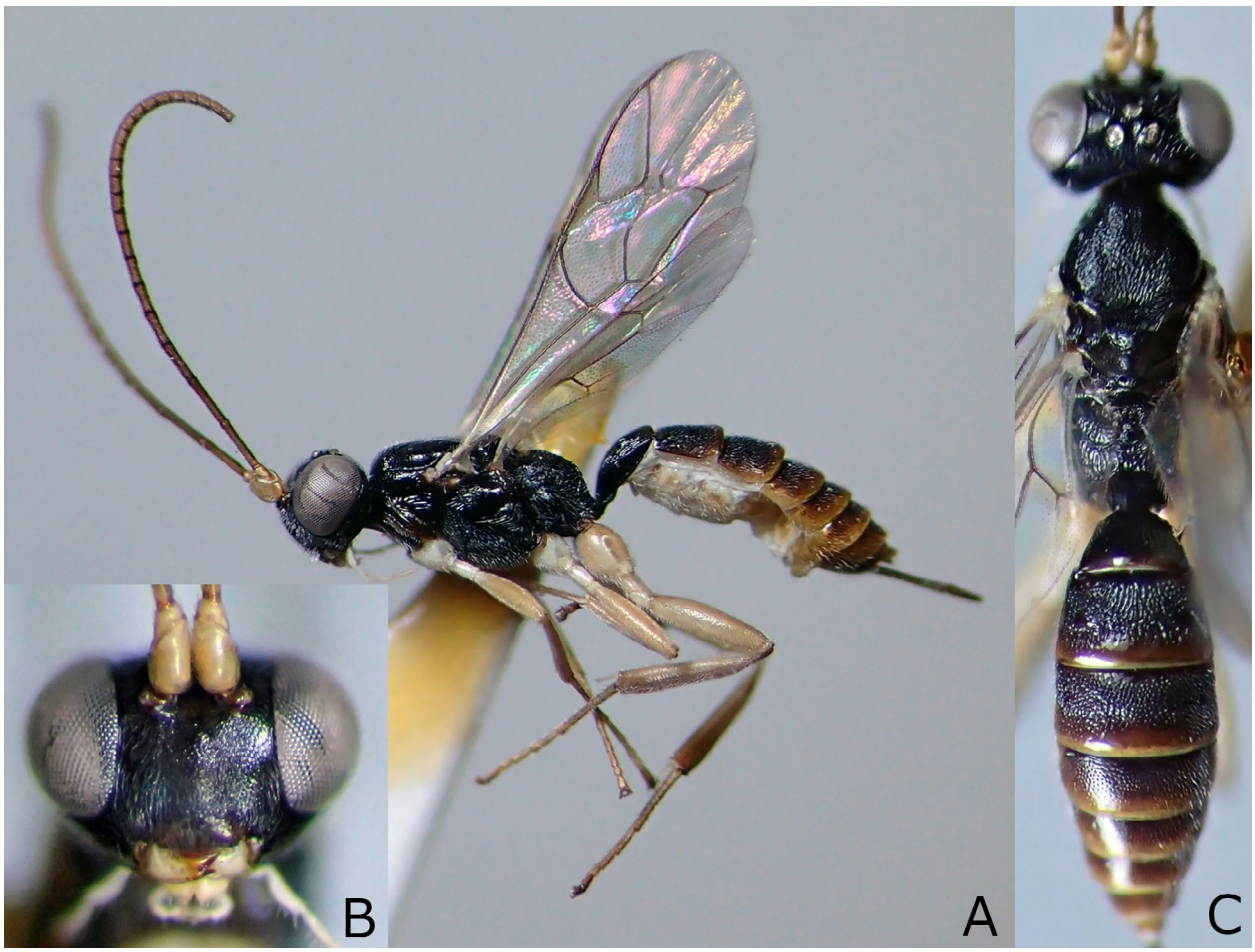


Fig. 2. *Acrolyta excisa* Momoi, 1970, KPM-NK 81881, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view.

margin of metasomal tergites (it of T II to T IV wider than other tergites) reddish brown. Metasomal tergites more or less tinged with reddish brown. Membranous part of metasomal sternites and ovipositor reddish brown. Wings hyaline. Veins and pterostigma yellowish brown to brown. Legs reddish brown to yellowish brown. Fore and mid coxae, trochanters, and trochantelli yellow. Base of hind coxa, base and apical parts of hind tibia, and TS V more or less tinged with blackish brown.

Male. Not studied in this study.

**Materials examined**. JAPAN: SEHU, F (lectotype), Hokkaido, "Sapporo, H. Okamoto" (em. from *Aporia crataegi*); KPM-NK 54995, F, Hokkaido, Horokanai Town, Moshiri, Uryu, 11–17. VII. 2012, K. Watanabe leg. (MsT).

**Distribution**. Japan (Hokkaido).

**Bionomics**. Host record: *Aporia crataegi adherbal* Fruhstorfer, 1910 (Lepidoptera, Pieridae) (Okamoto, 1923).

**Remarks**. According to Yu *et al.* (2016), this species was described in 1921, but the actual description year is 1923.

***Acrolyta excisa*** Momoi, 1970
(SJN: Munenaga-mame-togari-himebachi)
(Figs 2A–C)

*Acrolyta excisa* Momoi, 1970: 345.

**Description**. See Momoi (1970).

**Materials examined**. JAPAN: MNHAH, F (holotype), Amamioshima Is., 24. V. 1965, H. Takada leg.; KPM-NK 81884, F, Kagoshima Pref., Tokunoshima Is., Kedoku, 20. V. 2008, K. Watanabe leg.; KPM-NK 81878, F, ditto, 21. V. 2008; KPM-NK 81880, F, Kagoshima Pref., Tokunoshima Is., Tete, Mt. Amagi-dake, 27. III. 2011, K. Watanabe leg.; KPM-NK 81883, F, Okinawa Pref., Okinawajima Is., Nago City, Mt. Nagodake, 18. V. 2006, K. Watanabe leg.; KPM-NK 81885, F, Okinawa Pref., Okinawajima Is., Kunigami Vil., Yona, 22. V. 2007, K. Watanabe leg.; KPM-NK 81879, M, Okinawa Pref., Iriomotejima Is., Komi, Airagawa-rindo, 14. V. 2008, K. Watanabe leg.; KPM-NK 81881, 81882, 2 F, Okinawa Pref., Yonagunijima Is., Mt. Kuburadake, 25. VI. 2013, M. Ito leg.

**Distribution**. Japan (Amamioshima Is., Tokunoshima

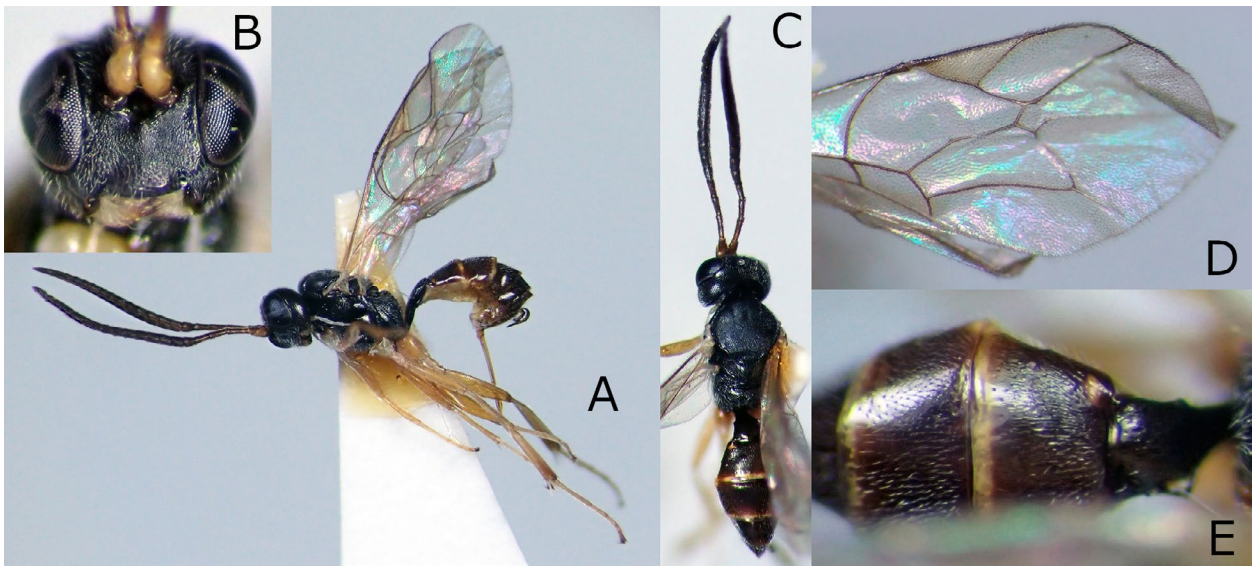


Fig. 3. *Acrolyta flavicoxis* Sheng & Sun, 2014, KPM-NK 81732, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings; E, T I to T III, dorsal view.

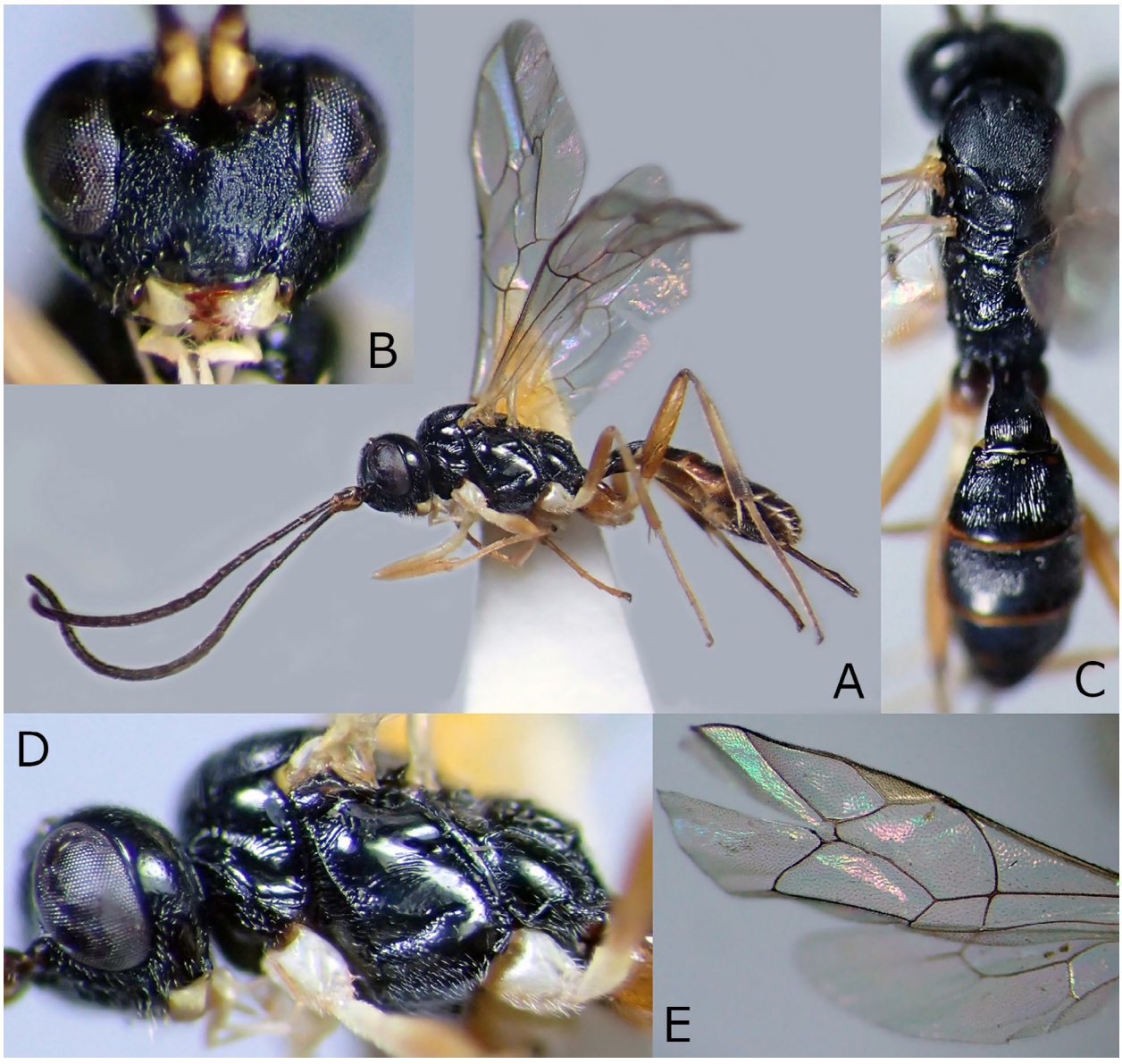


Fig. 4. *Acrolyta japonica* **sp. nov.**, KPM-NK 54996 (A, B, D, holotype) and 55004 (C, E, paratype), females — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, head and mesosoma, lateral view; E, wings.

Is.*, Okinawajima Is., Ishigakijima Is., Iriomotejima Is., and Yonagunijima Is.*).

**Bionomics**. Unknown.

***Acrolyta flavicoxis*** Sheng & Sun, 2014
(New SJN: Higebuto-mame-togari-himebachi)
(Figs 3A–D, 62O)

*Acrolyta flavicoxis* Sheng & Sun, 2014: 133.

**Description**. See Sheng & Sun (2014).

**Material examined**. JAPAN: KPM-NK 81732, F, Hokkaido., Horokanai Town, Moshiri, Uryu, 11–17. VII. 2012, K. Watanabe leg. (MsT).

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

**Bionomics**. Unknown.

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

***Acrolyta japonica*** **sp. nov.**
(New SJN: Tatesuji-mame-togari-himebachi)
(Figs 4A–E, 62F, N, 63A, 65A, 66A)

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

**Type series**. **Holotype**: KPM-NK 54996, F, JAPAN, Hokkaido, Horokanai Town, Moshiri, Uryu, 16. VII. 2012, M. Ito leg. **Paratypes**: JAPAN, KPM-NK 54998–54500, 3 F, same data of holotype; KPM-NK 54997, F, ditto, 16. VII. 2012; KPM-NK 54501, 54502, 2 F, ditto, 17. VII. 2012, K. Watanabe leg.; KPM-NK 54503, Niigata Pref., Sado Is., Sado City, Kanaisinbo, Hakuundai to Mt. Myokenzan, 4. VIII. 2009, K. Watanabe leg.; KPM-NK 54504, F, Yamanashi Pref., Koushu City, Sagashio, 4. VIII. 2009, K. Watanabe leg.; KPM-NK 54505, F, Yamanashi Pref., Koushu City, Kaminikkawa-toge, 8. VI. 2009, T. Kidokoro leg.

**Description**. Female (n=10). Body length 3.5–4.7 (HT: 4.2) mm. Body covered with silver setae.

Head. Clypeus 2.0–2.1 (HT: 2.0) times as wide as maximum length, its anterior margin subtruncate, without distinct teeth anteromedially. Face granulate (Fig. 4B). MSL 0.9–1.0 (HT: 1.0) times as long as BWM. Malar space polished except for coriaceous anterior part. Frons and anterior part of vertex matt except for smooth area above antennal sockets. Posterior part of vertex and gena polished, with fine and sparse punctures. OOL almost as long as POL. Occipital carina complete, joined with hypostomal carina near mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible weakly convex. Antenna with 21–24 (HT: 24) flagellomeres, median and subapical parts slightly widened (Fig. 4A), the most widened part ca. 2.0 times as long as maximum depth of FL I in lateral view. FL I, FL II, and FL III distinctly longer than other segments (Fig. 62N). FL III 3.8–4.0 (HT: 3.8) times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum largely smooth, with epomia (Fig. 4D). Mesoscutum matt and subpolished, with distinct notaulus (Fig. 4C). Scutellum polished, punctate (Fig. 4C). Mesopleuron smooth, with some longitudinal striae ventrally (Fig. 4D). Metapleuron punctate except for median smooth area, with a complete juxtacoxal carina (Fig. 4D). Anterior and posterior transverse carinae of propodeum complete (Fig. 65A). Area basalis distinct (Fig. 65A). Area superomedia distinct or indistinct laterally (Fig. 65A). Anterior part of propodeum finely and sparsely punctate. Median and posterior parts of propodeum covered with longitudinal, oblique and irregular rugae. Length of fore wing 3.4–4.6 (HT: 3.7) mm. Areolet absent (Fig. 4E). Vein 2m-cu of fore wing with two bullae. Nervellus inclivous, intercepted behind the middle (Fig. 4E). Hind femur 4.7–5.1 (HT: 5.1) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.95–1.0 (HT: 1.0): 0.7: 0.3: 0.4–0.5 (HT: 0.45). Tarsal claws simple.

Metasoma. T I 1.7–1.8 (HT: 1.7) times as long as maximum width, longitudinally striated (Fig. 4C). Median dorsal carina of T I present except for posterior part absent. Dorsolateral carina of T I complete. T II and T III covered with longitudinal striae except for smooth areas (Fig. 4C). T IV and T V sparsely punctate except for posterior smooth areas. Ovipositor sheath 0.63–0.70 (HT: 0.68) times as long as hind tibia. Ovipositor straight, with a nodus and ventral teeth (Fig. 66A).

Coloration (Figs 4A–E). Body (excluding wings and legs) black to blackish brown. Ventral parts of scape and pedicel, and base of FL I reddish brown. Mandible yellow except for darkened apex. Palpi, postero-dorsal corner of pronotum, and tegula yellow. Posterior margin of metasomal tergites (it of T II to T IV wider than other tergites), lateral parts of T II to T IV, and thyridium reddish brown. Membranous part of metasomal sternites and ovipositor reddish brown. Wings hyaline. Veins and pterostigma yellowish brown to brown. Legs reddish brown to yellowish brown. Fore and mid coxae, trochanters, and trochantelli yellow. Base of hind coxa, base and apical parts of hind tibia, and apical part of hind tarsus more or less tinged with blackish brown.

Male. Unknown.

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

**Bionomics**. Unknown.

**Remarks**. This species resembles *Acr. marginata* (Bridgman, 1883) in the body structures, but it can be distinguished by the FL III 3.8–4.0 times as long as maximum width (4.4–4.6 in *Acr. marginata*).

***Acrolyta rufocincta*** (Gravenhorst, 1829)
(New SJN: Kimura-mame-togari-himebachi)
(Figs 5A–D, 62G)

*Hemiteles rufocinctus* Gravenhorst, 1829: 811.
*Hemiteles distinctus* Bridgman, 1883: 151.
*Hemiteles capreolus* Thomson, 1884: 970.
*Hemiteles 4-maculatus* Lange, 1911: 542.
*Hemiteles monodon obscurata* Kiss von Zilah, 1924: 74.
*Hemiteles unifasciatus* Kiss von Zilah, 1924: 74.

**Description based on Japanese materials**. Female (n=12). Body length 3.7–5.1 mm. Body covered with silver setae.

Head. Clypeus 1.7–1.8 times as wide as maximum length, its anterior margin rounded, with a pair of distinct teeth anteromedially (Fig. 62G). Face granulate (Fig. 5B). MSL 0.95–1.0 times as long as BWM. Malar space smooth except for coriaceous anterior part. Frons, vertex, and gena largely smooth, with fine and sparse punctures. OOL distinctly longer than POL. Occipital carina complete, joined with hypostomal carina near mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible weakly convex. Antenna with 24–26 flagellomeres, median and subapical parts slightly widened (Fig. 5A), the most widened part ca. 2.0 times as long as maximum depth of FL I in lateral view. FL I, FL II, and FL III distinctly longer than other segments. FL III 3.4–3.6 times as long as maximum depth in lateral view.

Mesosoma. Pronotum with smooth areas on collar and dorsal part, without epomia. Mesoscutum matt (Fig. 5C) and subpolished except for longitudinally striated posterior part, with distinct notaulus. Scutellum polished, punctate. Mesopleuron with longitudinal striae. Metapleuron punctate and granulate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete. Area basalis distinct. Area superomedia indistinct. Anterior part of propodeum finely and sparsely punctate. Median and posterior parts of propodeum covered with longitudinal, oblique and irregular rugae. Length of fore wing 3.2–3.8 mm. Areolet absent (Fig. 5D). Vein 2m-cu of fore wing with two bullae (Fig. 5D). Nervellus inclivous, intercepted behind the middle (Fig. 5D). Hind femur 5.2 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.2: 0.4. Tarsal claws simple.

Metasoma. T I 1.9–2.0 times as long as maximum width, longitudinally striated. Median dorsal carina of T I present except for posterior part absent. Dorsolateral carina of T I complete. T II covered with longitudinal striae except for posterior smooth areas (Fig. 5C). T III, T IV, and T V sparsely punctate except for posterior smooth areas. Ovipositor sheath 0.53–0.58 times as long as hind tibia. Ovipositor straight, with a nodus and ventral teeth.

Coloration (Figs 5A–D). Body (excluding wings and legs) black to blackish brown. Basal part of antenna reddish brown. Mandible partly tinged dark yellowish brown. Metasomal tergites partly tinged with reddish brown to reddish yellow, usually T II and T III completely reddish. Membranous part of metasomal sternites and ovipositor reddish brown. Wings hyaline. Veins and pterostigma blackish brown to brown. Legs reddish brown to yellowish brown. Apex of hind femur, tibia, and each tarsal segment tinged with black. Hind femur and tibia sometimes largely tinged with blackish brown.

Male. Not studied in this study.

**Materials examined**. JAPAN: KPM-NK 55008, F, Niigata Pref., Nagaoka City, Suyoshi Town, Mt. Nokogiriyama, 25. V. – 7. VI. 2014, S. Shimizu & R. Shimizu leg. (MsT); KPM-NK 81728, F, Kanagawa Pref., Hadano City, Mt. Koubou-yama, 5. IV. 2007, K. Watanabe leg.; KPM-NK 55010–55012, 3 F, Kanagawa Pref., Yamakita Town, Nakagawa, 3. IX. 2019 (host coll.), IX. 2019 em., Y. Komura leg.; KPM-NK 55006, 55007, 81727, 3 F, Shizuoka Pref., Honkawane Town, Mt. Yamainudan, 14. VI. 2008, K. Watanabe leg.; KPM-NK 81726, F, Toyama Pref., Nanto City, Togamura, Kamimomose, 21–28. VII. 2009, M. Watanabe *et al*. leg. (MsT); KPM-NK 81724, F, Fukui Pref., Imajo Town, Kinometoge, 14. VIII. 1981, H. Kurokawa leg.; KPM-NK 81725, F, Hyogo Pref., Shinonsen Town, Kishida, 12. X. 2012, S. Fujie leg.; KPM-NK 55009, F, Hyogo Pref., Toyooka City, Mesaka, Nasa forest park, 9. X. 2011, S. Fujie leg. GERMANY: ZSM, F, (det Horstmann), Eiderstedt grüne Insel Vorland, 10. VIII. 1964.

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

**Bionomics**. KPM-NK 55010–55012 were emerged from the cocoon of versicolor subgroup of *Meteorus* sp. (Hymenoptera, Braconidae). The all cocoons were parasitized by this species and *Gelis areator* (Panzer, 1804) (Hymenoptera, Ichneumonidae). Outside Japan, some microlepidoptera and braconids have been recorded as the hosts (see Yu *et al.*, 2016).

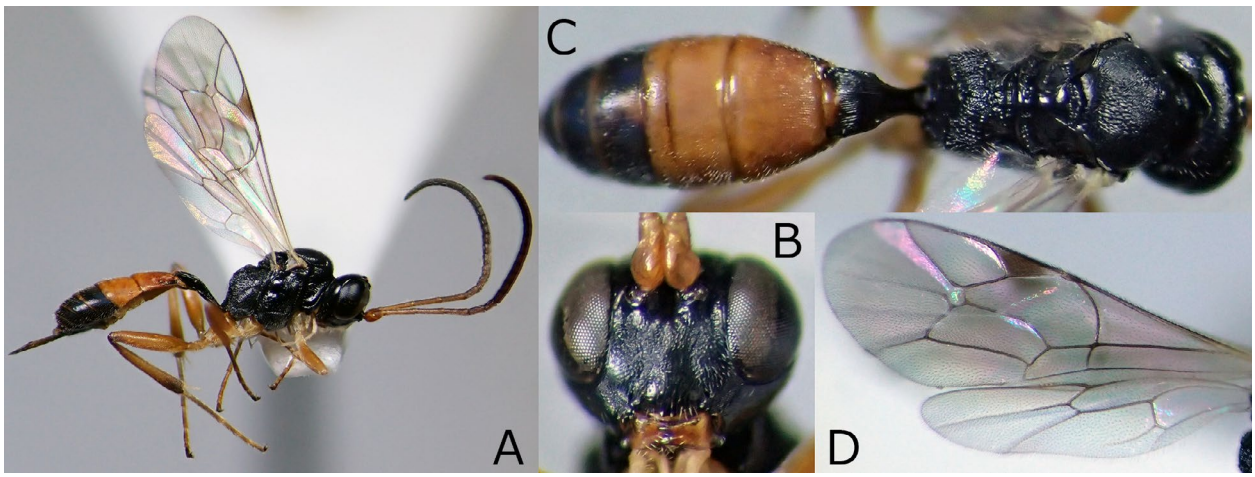


Fig. 5. *Acrolyta rufocincta* (Gravenhorst, 1829), KPM-NK 55012, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings.

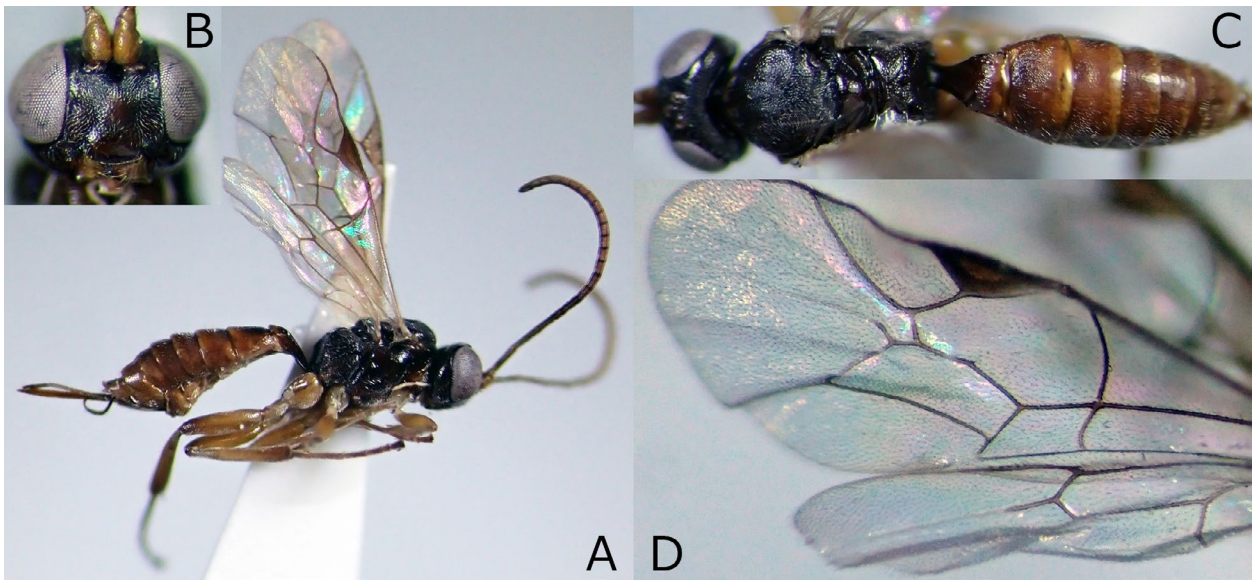


Fig. 6. *Acrolyta spola* Momoi, 1970, KPM-NK 81747, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings.

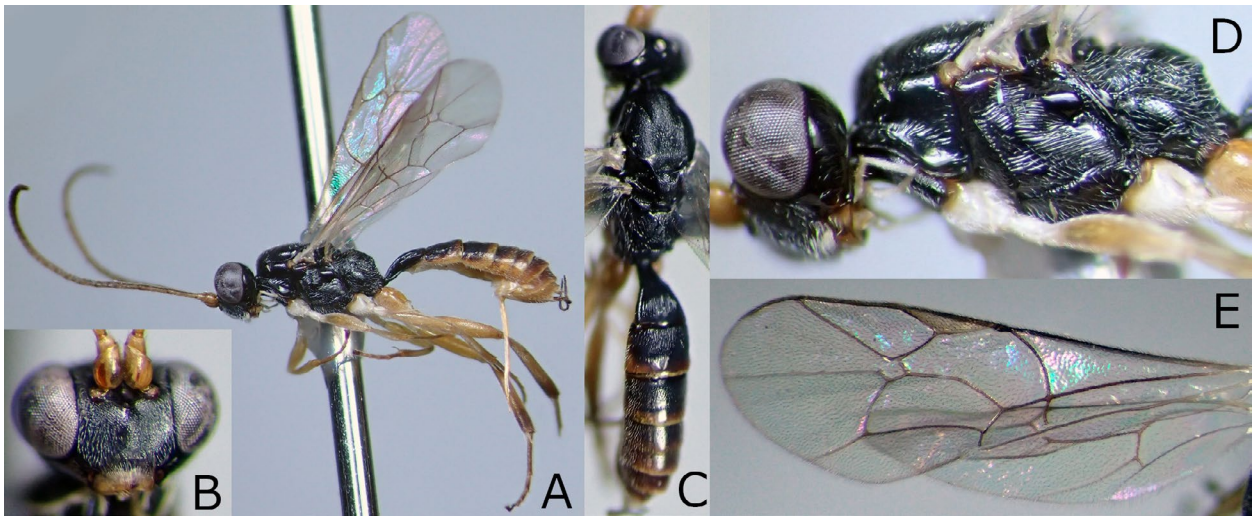


Fig. 7. *Diaglyptidea conformis* (Gmelin, 1790), KPM-NK 81603, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, head and mesosoma, lateral view; E, wings.

**Remarks**. This is the first record of this species from Japan and Eastern Palearctic region. Schwarz & Shaw (2000) described the clypeus with "a distinct tooth" while all Japanese specimens with a pair of distinct teeth. However other character states of both Japanese and European specimens are almost identical. Thus, I identify the Japanese specimens as this species.

***Acrolyta spola*** Momoi, 1970
(SJN: Munebuto-mame-togari-himebachi)
(Figs 6A–D)

*Acrolyta spola* Momoi, 1970: 344.

**Description**. See Momoi (1970).

**Material examined**. JAPAN: KPM-NK 81747, F, Kagoshima Pref., Yakushima Is., Mt. Aikodake, 29. IV. – 30. V. 2007, T. Yamauchi leg.; MNHAH, F (holotype), Amamioshima Is., Nase, 28. III.

**Distribution**. Japan (Yakushima Is.*, Amamioshima Is., Okinawajima Is., and Ishigakijima Is.).

**Bionomics**. Unknown.

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

Genus ***Diaglyptidea*** Viereck, 1913

*Diaglyptidea* Viereck, 1913: 371. Type: *Diaglyptidea roepkei* Viereck, 1913. Original designation.

In Palearctic region, two species, *Diag. conformis* (Gmelin, 1790) and *Diag. varipes* Jonaitis, 1981, have been recorded. In this study, I newly record *Diag. conformis* from Japan. This is the first record of this genus from Japan.

***Diaglyptidea conformis*** (Gmelin, 1790)
(New SJN: Fusahige-mame-togari-himebachi)
(Figs 7A–E, 62D, 65B)

*Ichneumon conformis* Gmelin, 1790: 2720.
*Hemiteles secernendus* Schmiedeknecht, 1897: 108.

**Description based on Japanese materials**. Female (n=60). Body length 3.4–4.8 mm. Body covered with silver setae.

Head. Clypeus covered with long and very dense setae, its anterior margin concave and indistinctly visible, obtuse in lateral view (Figs 4D, 62D). Face granulate (Fig. 7B). MSL 1.05–1.25 times as long as BWM. Malar space smooth with a few setae. Frons, vertex, and gena polished, with fine punctures. OOL almost as long as POL. Occipital carina incomplete dorsally, its lower end joined with hypostomal carina near mandibular base. Upper tooth of mandible almost as long as lower tooth. Base of mandible flat. Antenna with 21–24 flagellomeres, median and subapical parts not distinctly widened. FL III 3.2–3.75 times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum largely rugose except for dorsal and ventral smooth areas, with epomia (Fig. 7D). Mesoscutum matt (Fig. 7B) and subpolished, except for irregularly rugose posterior area, with distinct notaulus. Scutellum rugose-punctate anteriorly, punctate posteriorly. Mesopleuron covered with dense longitudinal striae except for smooth speculum (Fig. 7D). Metapleuron largely covered with sparse punctures and short striae, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete (Fig. 65B). Area basalis distinct (Fig. 65B). Area superomedia distinct or partly indistinct laterally (Fig. 65B). Anterior part of propodeum finely and sparsely punctate. Median and posterior parts of propodeum covered with longitudinal, oblique and irregular rugae. Length of fore wing 2.9–4.2 mm. Areolet absent (Fig. 7E). Vein 2m-cu of fore wing with two bullae (Fig. 7E). Nervellus inclivous, intercepted behind the middle (Fig. 7E). Hind femur 4.0–4.5 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.8: 0.6: 0.3: 0.5. Tarsal claws simple.

Metasoma. T I 1.4–1.5 times as long as maximum width, longitudinally striated. Median dorsal carina of T I present except for posterior part indistinct to absent. Dorsolateral carina of T I complete. T II punctate anterior 0.7 except for subapical transverse smooth area just in front of a shallow transverse concavity, anterior 0.4 covered with longitudinal striae. T III to T V covered with punctures except for smooth posterior areas. Ovipositor sheath 0.75–0.78 times as long as hind tibia. Ovipositor straight, with a nodus and ventral teeth.

Coloration (Figs 7A–E). Body (excluding wings and legs) black to blackish brown. Scape, pedicel, and base of FL I reddish brown to yellowish brown (but dorsal part sometimes darkened). Mandible yellowish brown except for darkened apex. Palpi, postero-dorsal corner of pronotum, and tegula yellow. Posterior and lateral margins of T II to T VII reddish brown. Membranous part of metasomal sternites and ovipositor reddish brown. Wings hyaline. Veins and pterostigma yellowish brown to brown. Legs reddish brown to yellowish brown. Trochanters, trochantelli, and fore and mid coxae yellow. Basal and apical parts of hind tibia and TS V more or less tinged

with blackish brown. Dorsal part of hind coxa sometimes weakly tinged with dark brown.

Male (n=14). Similar to female. Body size overlapped with female but usually smaller than female. T I 1.6–1.7 times as long as maximum width.

**Materials examined**. JAPAN: KPM-NK 81641–81648, 6 F & 2 M, Tokyo, Izuoshima Is., Ohshima Town, Mt. Omaru, 17. VIII. – 5. X. 2012, K. Tsujii leg.; KPM-NK 81598–81640, 32 F & 11 M, Tokyo, Miyakejima Is., Miyake Vil., Tsubota-rindo, 25. VIII. – 22. IX. 2012, K. Tsujii leg. (MsT); KPM-NK 81649, F, Tokyo, Hachijyojima Is., Mt. Miharayama, 31. V. 2012, K. Tsujii leg.; KPM-NK 81650, F, Tokyo, Hachijyojima Is., Hachijo Town, Mitsune, Mt. Miharayama, 6. X. 2011, K. Tsujii leg.; KPM-NK 81651–81653, 3 F, Tokyo, Mikurajima Is., Mikurajima Vil., Eigasawa, 20. IX. – 25. X. 2012, K. Tsujii leg. (MsT); KPM-NK 81654, F, Tokyo, Mikurajima Is., Mikurajima Vil., Borosawa, 13. V. 2012, K. Tsujii leg.; KPM-NK 81655, F, Tokyo, Mikurajima Is., Mikurajima Vil., 14. V. 2012, K. Tsujii leg. (YPT); KPM-NK 81657, F, Nagano Pref., Outaki Vil., Mt. Ontakesan, Hakkaisan, 6. VIII. 2010, K. Watanabe leg.; KPM-NK 81658, F, ditto, 7. VIII. 2010, K. Watanabe leg.; KPM-NK 81656, F, ditto, 30. VI. 2012, M. Ito leg.; KPM-NK 81659, F, Niigata Pref., Myoukou City, Suginosawa, Myoukou-sasagamine, 9. VII. 2013, S. Shimizu leg.; KPM-NK 81660, M, ditto, 17. IX. 2013; KPM-NK 81662–81663, 2 F, Niigata Pref., Sado Is., Kanaishinbo, Hakuundai-Mt. Myoukenzan, 10. IX. 2010, K. Watanabe leg.; KPM-NK 81664–81666, 3 F, Shizuoka Pref., Honkawane Town, Mt. Yamainudan, 14. VI. 2008, K. Watanabe leg.; KPM-NK 81667–81668, 2 F, Toyama Pref., Nanto City, Togamura-kamimomose, 21–28. VII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81669–81670, 2 F, Toyama Pref., Toyama City, Arimine, Jyuroudani, 7–14. VII. 2009, M. Watanabe *et al*. leg. (MsT); KPM-NK 81671–81672, 2 F, ditto, 16–25. VIII. 2009; KPM-NK 81661, F, Osaka Pref., Takatsuki City, Mishimae, left bank of Yodo river, 27. X. 2012, S. Fujie leg. GERMANY: ZSM, F (det. Horstmann), Göttingen, 16. VIII. 1947.

**Distribution**. Japan (Honshu, Sado Is., Izuoshima Is., Miyakejima Is., Hachijyojima Is., and Mikurajima Is.); widely distributed in Western Palearctic region.

**Bionomics**. Unknown in Japan. Some microlepidoptera and braconids have been recorded as the hosts (see Yu *et al*., 2016).

**Remarks**. This is the first record of this species from Japan and Eastern Palearctic region. This species can be distinguished from *Diag. varipes* by the occipital carina complete (incomplete medially in *Diag. varipes*) (Jonaitis, 1981).

## Genus ***Lysibia*** Förster, 1869

*Lysibia* Förster, 1869: 175. Type: *Tryphon nanus* Gravenhorst, 1829. Designated by Perkins (1962).

*Pemon* Förster, 1869: 174. Type: *Pemon proximum* Perkins, 1962 (= *Haplaspis ceylonensis* Kerrich, 1956). Designated by Perkins (1962).

*Stiboscopus* Förster, 1869: 182. Type: *Hemiteles mandibularis* Provancher, 1875. Designated by Carlson (1979).

*Haplaspis* Townes, 1944: 190. Type species: *Hemiteles mandibularis* Provancher, 1875. Original designation.

Two species, *Ly. ceylonensis* (Kerrich, 1956) and *Ly. nana* (Gravenhorst, 1829), have been recorded from Japan. In this study, I record the distributional data of the former below. Key to species including Japanese species is provided by Townes (1983).

### ***Lysibia ceylonensis*** (Kerrich, 1956)

(SJN: Ceylon-mame-togari-himebachi)

(Figs 8A–C)

*Haplaspis ceylonensis* Kerrich, 1956 in Blunck & Kerrich (1956): 555.

*Pemon proximum* Perkins, 1962: 395.

**Materials examined**. JAPAN: KPM-NK 55013, F, Niigata Pref., Myoukou City, Suginosawa, Mt. Sasagamine, 13. X. 2013, S. Shimizu leg.; KPM-NK 55014, Niigata Pref., Sado Is., Sado City, Kanaisinbo, Hakuundai to Mt. Myokenzan, 4. VIII. 2009, K. Watanabe leg.; KPM-NK 81729–81731, 3 F, Tokyo, Izuoshima Is., Ohshima Town, Mt. Omaru, 17. VIII. – 5. X. 2012, K. Tsujii leg. (MsT). CHINA: GSFPM, F (det. Sheng), Jiangxi, 24. IV. 2011.

**Description**. See Townes (1983) and Sheng *et al.* (2013).

**Distribution**. Japan (Hokkaido, Honshu*, Sado Is.*, and Izuoshima Is.*); Taiwan, China, India, Sri Lanka, and Europe.

**Bionomics**. Unknown.

**Remarks**. This is the first record of this species from Honshu, Sado Is., and Izuoshima Is.

## Genus ***Micraris*** Townes, 1970

*Micraris* Townes, 1970: 36. Type: *Micraris collaris* Townes, 1970. Original designation.

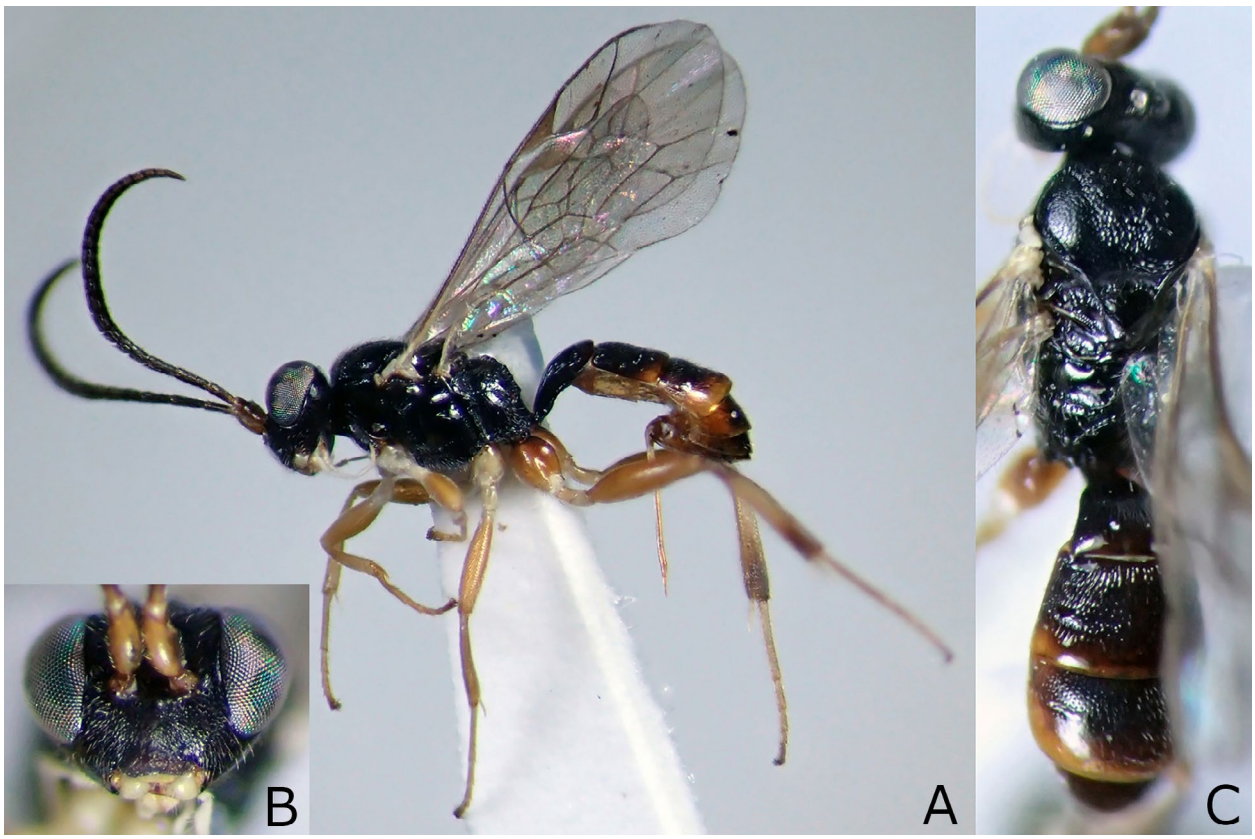


Fig. 8. *Lysibia ceylonensis* (Kerrich, 1956), KPM-NK 55013, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view.

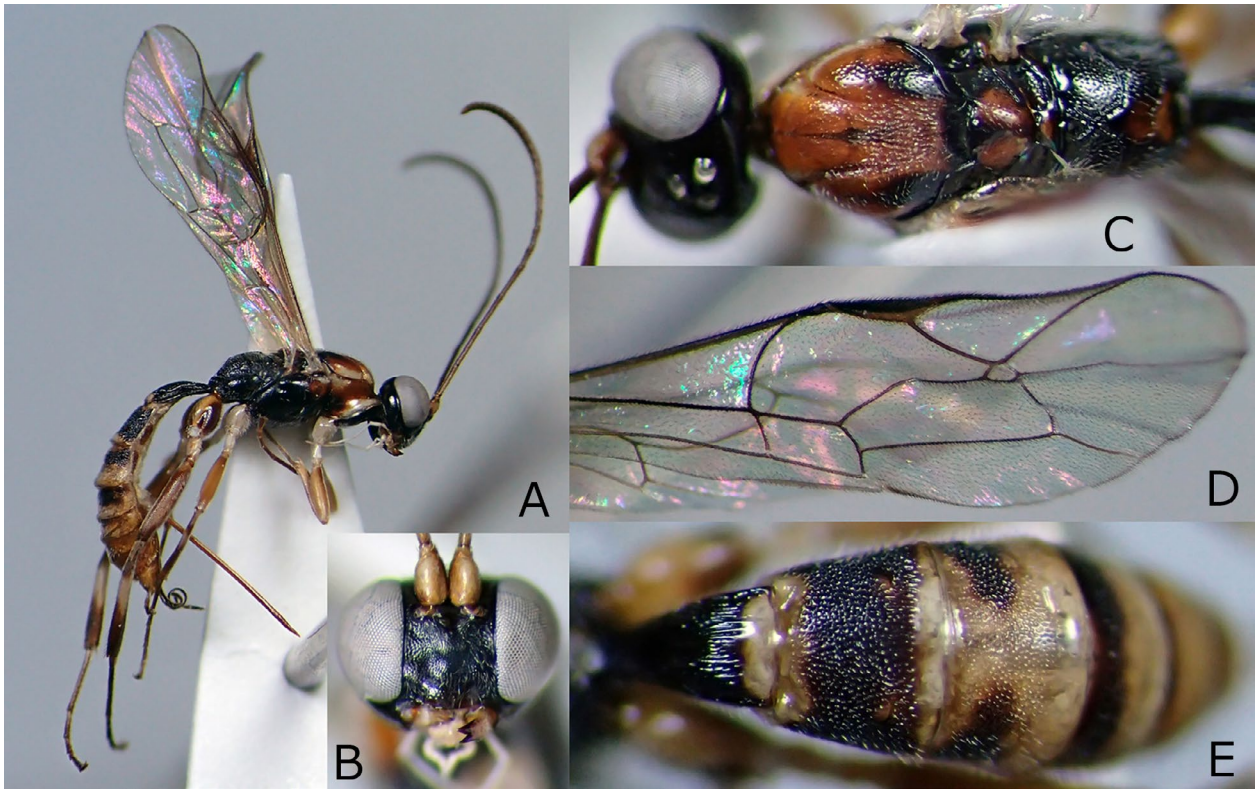


Fig. 9. *Micraris ryukyuensis* **sp. nov.**, KPM-NK 81873, holotype, female — A, lateral habitus; B, head, frontal view; C, head and mesosoma, dorsal view; D, wings; E, metasoma, dorsal view.

Only a type species, *Mi. collaris* Townes, 1970, has been recorded from the Philippines. In this study, I newly record this genus from Japan based on a new species *Mi. ryukyuensis* **sp. nov.** described below. This is also the first record of this genus from Palearctic region.

***Micraris ryukyuensis* sp. nov.**

(New SJN: Ryukyu-mame-togari-himebachi)

(Figs 9A–E, 65C, 66B)

**Etymology**. The specific name is from Ryukyu Islands, where contains the type locality, Yakushima Islands.

**Type series**. **Holotype**: KPM-NK 81873, F, JAPAN, Kagoshima Pref., Yakushima Is., Hanyama, 29. I. – 27. II. 2007, T. Yamauchi *et al*. leg. (MsT).

**Description**. Female (n=1). Body length 5.7 mm. Body covered with silver setae.

Head. Clypeus 1.8 times as wide as maximum length, its anterior margin subtruncate, narrowly margined. Face polished, punctate (Fig. 9B). MSL 0.5 times as long as BWM. Frons and gena polished, with fine and sparse punctures. Vertex largely smooth. OOL longer than POL. POL shorter than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible almost as long as lower tooth. Base of mandible flat. Antenna with 25 flagellomeres, subapical part slightly widened. FL III 7.0 times as long as maximum depth in lateral view.

Mesosoma 2.1 times as long as maximum depth in lateral view. Lateral part of pronotum smooth except for punctuated dorso-lateral areas, with short epomia. Mesoscutum polished, punctate except for postero-median rugulose area, with distinct notaulus (Fig. 9C). Punctures on median and lateral lobes of mesoscutum evenly punctate, separated by about 1.5 times as long as diameter of punctures. Scutellum punctate, its lateral margin completely absent. Mesopleuron covered with longitudinal striae medially, punctures dorsally and ventrally except for smooth speculum. Metapleuron punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete (Fig. 65C). Area basalis distinct (Fig. 65C). Area superomedia indistinct laterally (Fig. 65C). Anterior part of propodeum punctate (Fig. 9C). Median and posterior parts of propodeum punctate except for median smooth areas. Areolet present (vein 3rs-m weakly developed) (Fig. 9D). Vein 2m-cu of fore wing with two bullae. Nervellus inclivous, intercepted behind the middle (Fig. 9D). Length of fore wing 4.5 mm. Hind femur 4.3 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.8: 0.6: 0.3: 0.5. Tarsal claws simple.

Metasoma. T I 1.9 times as long as maximum width, longitudinally striae (Fig. 9E) except for area above spiracle punctate. Median dorsal carina of T I present except for posterior part. Dorsolateral carina of T I complete. T II and T III densely punctate except for posterior smooth area (Fig. 9E), with subapical shallow transverse concavity, with a pair of smooth convexity on the sublateral side of the concavity. T IV and T V covered with dense punctures except for smooth posterior areas. Ovipositor sheath 1.0 times as long as hind tibia. Apex of ovipositor without a nodus and its lower valve expanded dorsally to enclose tip of upper valve, with subvertical teeth (Fig. 66B).

Coloration (Figs 9A–E). Body (excluding wings and legs) black to blackish brown. Ventral parts of scape and pedicel yellowish brown. Ventral surface of flagellum paler than dorsal surface. Mandible yellowish brown except for darkened apex. Palpi, postero-dorsal corner of pronotum, collar, anterior spot of mesoscutum, subtegular ridge, and tegula yellow. Pronotum reddish yellow except for yellow areas and posterior black area. Mesoscutum reddish yellow except for yellow areas and posterior black area. Mesopleuron with reddish yellow area below subtegular ridge. Scutellum reddish yellow except for median black area. Postscutellum reddish yellow. Propodeum with a median reddish yellow spot. Posterior part of T I to T V whitish yellow. Anterior margin of T II to T IV whitish yellow. Whitish yellow area of T III enlarged and joined anterior area with posterior area at median part. T VI to T VIII entirely reddish yellow. Membranous part of metasomal sternites whitish yellow. Ovipositor reddish brown. Wings hyaline. Veins and pterostigma dark brown. Legs reddish brown to yellowish brown. Trochanters, fore and mid coxae, and trochantelli yellow. Fore and mid tibiae with a white base and a subbasal white band. Dorsal part of hind coxa blackish brown except for dorsal and basal brown areas. Apical part of hind femur, basal and apical parts of hind tibia, and hind tarsus blackish brown. Hind tibia with a subbasal white band.

Male. Unknown.

**Distribution**. Japan (Yakushima Is.).

**Bionomics**. Unknown.

**Remarks**. This species can be distinguished from *Mi. collaris* by the following character states: antero-ventral area of mesopleuron without wrinkles (with wrinkles in *Mi. collaris*); length of fore wing 4.5 mm (3.2–3.8 mm in *Mi. collaris*); pronotum, mesoscutum, and mesopleuron tinged with tricolor by black, red, and yellow (bicolor by black and white or ocher color in *Mi. collaris*).

### *Bathythrix* genus group
(subtribe Bathytrichina sensu Townes (1970))

Two genera, *Bathythrix* Förster, 1869 and *Retalia* Seyrig, 1952, have been recorded from Japan. In addition, I found *Surculus* from Japan. In this study, I newly record this genus from Japan and review *Bathythrix* and *Retalia*. The Japanese genera can be distinguished by the following key.

**Key to Japanese genera of *Bathythrix* genus group**

1. Notaulus short, not reaching to center of mesoscutum, its ending abruptly at a weak pit (Fig. 63E). Body relatively small, fore wing shorter than 3.5 mm. …… *Retalia* Seyrig, 1952
-. Notaulus long, at least reaching to center of mesoscutum, its end without pit (Figs 63D, F). Body relatively large, fore wing usually longer than 3.5 mm. …… 2
2. Notaulus fading out near center of mesoscutum (Fig. 63F). T I with its spiracle near the basal 0.45 (Fig. 65X). Anterior section of lateral longitudinal carina of propodeum absent (Fig. 64A). …… *Surculus* Townes, 1970
-. Notaulus ending abruptly far behind center of mesoscutum (Fig. 63D). T I with its spiracle usually beyond the middle. Anterior section of lateral longitudinal carina of propodeum present. …… *Bathythrix* Förster, 1869

Genus ***Bathythrix*** Förster, 1869

*Ischnurgops* Förster, 1869: 175. Type: *Cryptus claviger* Taschenberg, 1865. Designated by Viereck (1914).
*Steganops* Förster, 1869: 175. Type: *Cryptus claviger* Taschenberg, 1865. Designated by Viereck (1914).
*Bathythrix* Förster, 1869: 176. Type: *Bathythrix meteori* Howard, 1897. Designated by Viereck (1914).
*Panargyrops* Förster, 1869: 182. Type: *Cryptus claviger* Taschenberg, 1865. Designated by Viereck (1914).
*Gausocentrus* Förster, 1869: 198. Type: *Gausocentrus gyrini* Ashmead, 1894 (= *Hemiteles gyrinophagus* Cushman, 1930). Designated by Viereck (1914).
*Stenoschema* Förster, 1869: 220. Nomen nudum.
*Leptocryptus* Thomson, 1873: 1884. Type: *Cryptus claviger* Taschenberg, 1865. Designated by Viereck (1914).
*Agenora* Cameron, 1909: 722. Type: *Agenora hirticeps* Cameron, 1909. Monobasic.

Six species, *Ba. claviger* (Taschenberg, 1865), *Ba. kuwanae* Viereck, 1912, *Ba. linearis* (Gravenhorst, 1829), *Ba. narangae* (Uchida, 1930), *Ba. prothorax* Momoi, 1970, and *Ba. sericea* (Provancher, 1875), have been recorded from Japan. In this study, I newly record *Ba. marginatae* Sawoniewicz, 1980 and *Ba. thomsoni* (Kerrich, 1942) from Japan and newly synonymized *Ba. narangae* under *Ba. kuwanae* below. In addition, I record some distributional data of all Japanese species below. Japanese species including unidentified species can be distinguished by the following key.

**Preliminary key to Japanese species of the genus *Bathythrix* (♀)**
(female of *Ba. prothorax* is unknown)

1. Face strongly narrowed ventrally, eye almost reaching basal part of mandible (Figs 13B, 62B). ..... *Ba. marginatae* Sawoniewicz, 1980
-. Face not strongly narrowed ventrally, eye not reaching basal part of mandible (e.g., Figs 12B, 62A, C). …… 2
2. Anterior tentorial pit exceptionally large, extending from the margin of clypeus and basal part of mandible to lower eye margin, with long dense setae inside (Figs 15B, 62C). And nervellus not intercepted. …… 3
-. The combination of above character states lacking. ..... 5
3. Lower part of occipital carina absent near hypostomal carina. ..... *Ba*. sp. A
-. Lower part of occipital carina complete. ..... 4
4. T II and T III covered with longitudinal striae (Fig. 15C). ..... *Ba. thomsoni* (Kerrich, 1942)
-. T II and T III covered with punctures, without longitudinal striae. ..... *Ba*. sp. B
5. Anterior tentorial pit exceptionally large, extending from the margin of clypeus and basal part of mandible to lower eye margin, with long dense setae inside. The margin of the pit invisible. …… *Ba*. sp. D
-. Anterior tentorial pit not exceptionally large, without long dense setae inside (e.g., Fig. 62A). The margin of the pit at least largely visible (e.g., Fig. 62A). …… 6
6. T II and T III covered with longitudinal striae. …… *Ba*. spp.

-. T II and T III covered with punctures, without longitudinal striae.
..... 7

7. T II and T III largely red, with black spots (Figs 11A, C). And hind femur and tibia reddish yellow with conspicuous black apex (Fig. 11A).
..... *Ba. kuwanae* Viereck, 1912
(= *Ba. narangae* Uchida, 1930 **syn. nov.**)

-. The combination of character states lacking.
..... 8

8. Ovipositor sheath shorter than 1.3 times as long as hind tibia. And/or metasomal tergites with large red area(s).
..... *Ba.* spp.

-. Ovipositor sheath longer than 1.5 times as long as hind tibia (Figs 10A, 12A). And metasomal tergites entirely black (posterior margin sometimes narrowly tinged with reddish brown) (Figs 10C, 12C, 16C).
..... 9

9. Hypostomal carina strongly raised behind the base of mandible. Dorsolateral carina of T I absent beyond the spiracle. Hind coxa and femur dark reddish brown to black (Fig. 12A).
..... *Ba. linearis* (Gravenhorst, 1829)

-. Hypostomal carina not raised behind the base of mandible. Dorsolateral carina of T I present or absent beyond the spiracle. Coloration of hind coxa and femur various.
..... 10

10. Dorsolateral carina of T I at least present beyond the spiracle. Coxae and hind femur reddish brown (Fig. 10A).
..... *Ba. claviger* (Taschenberg, 1865)

-. Dorsolateral carina of T I absent beyond the spiracle. Fore and mid coxa whitish yellow. Hind coxa and hind femur dark reddish brown to black (Figs 16A, C).
..... *Ba. sericea* (Provancher, 1875)

***Bathythrix claviger*** (Taschenberg, 1865)
(SJN: Kuro-mame-togari-himebachi)
(Figs 10A–C)

*Cryptus claviger* Taschenberg, 1865: 76.
*Cryptus* (*Chaeretymma*) *ater* Brischke, 1881: 337.
*Bathythrix tibialis* Cushman, 1917: 458.

**Description**. See Sawoniewicz (1980).

**Materials examined**. JAPAN: KPM-NK 81874, F, Hokkaido, Shintoku town, Tomuraushi, 23. VI. 2017, K. Watanabe leg.; KPM-NK 81876, F, Yamanashi Pref., Hokuto City, Masutomi, Biwakubo-sawa, 24. VI. 2007, K. Watanabe leg.; KPM-NK 81875, F, Toyama Pref., Toyama City, Arimine, Jyuroudani, 7–14. VII. 2009, M. Watanabe *et al.* leg. (MsT). GERMANY: ZSM, M (det. Sawoniewicz), Handorfer Gel., Rendsbg, 8. VII. 1962; ZSM, F (det. Sawoniewicz), Schraudenbach Würzburg, 4. VI. 1968.

**Distribution**. Japan (Shikotan Is., Hokkaido, and Honshu*); widely distributed in Palearctic region.


Fig. 10. *Bathythrix claviger* (Taschenberg, 1865), KPM-NK 81876, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view.

**Bionomics**. Unknown in Japan. Some sawflies and coleopterans have been recorded as the hosts (see Yu *et al*., 2016).

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

***Bathythrix kuwanae*** Viereck, 1912
(SJN: Kuwana-mame-togari-himebachi)
(Figs 11A–C, 62A, 63D, 65D)

*Bathythrix kuwanae* Viereck, 1912b: 584.
*Bathythrix kuwanae* var. *nigrans* Sonan, 1930: 358.
*Hemiteles narangae* Uchida, 1930: 342. **Syn. nov.**

**Description**. Female (n=11). Body length 3.4–5.3 mm. Body covered with silver setae.

Head. Clypeus punctate except for smooth anterior part, its anterior margin with a pair of obtuse teeth. Face punctate, covered with long setae, not strongly narrowed ventrally (Figs 11A, 62A). Eye not reaching basal part of mandible. Anterior tentorial pit not exceptionally large, without long dense setae inside (Fig. 62A). The margin of the pit at least largely visible. MSL 0.45–0.5 times as long as BWM. Frons, vertex, and gena polished, finely punctate. OOL: POL: OD = 1.0: 0.6: 0.4–0.5. Occipital carina complete, sinuate ventrally, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible almost as long as lower tooth. Base of mandible flat. Antenna with 23–25 flagellomeres. FL I 3.95 times as long as maximum depth in lateral view. FL III 3.25 times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum largely rugose except for dorsal and ventral smooth areas, with strong epomia. Mesoscutum polished, finely punctate, with long notaulus (Fig. 63D). Scutellum finely punctate. Mesopleuron finely punctate except on speculum and a small area in front of and a little below speculum. Posterior transverse carina of mesosternum complete. Metapleuron largely rugose, its juxtacoxal carina indistinct. Propodeum covered with irregular rugae. Propodeal carinae complete but median section of lateromedian longitudinal carina somewhat indistinct. Area superomedia longer than wide, receiving the lateral section of anterior transverse carina anteriorly (Fig. 65D). Area petiolaris with a median longitudinal carina. Nervellus intercepted slightly posterior to middle. Length of fore wing 3.1–4.3 mm. Hind femur 5.0–5.4 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9–1.0: 0.6: 0.4: 0.5. Tarsal claws simple.

Metasoma. T I 3.0–4.0 times as long as maximum width, largely smooth. Median dorsal carina of T I present except for posterior part indistinct, largely obtuse. Dorsolateral carina of T I present in front of the spiracle. T II as long as or slightly shorter than maximum wide. T II to T V covered with fine punctures. Ovipositor sheath 0.81–0.93 times as long as hind tibia. Ovipositor straight, with a nodus and ventral teeth.

Coloration (Figs 11A–C). Body (excluding wings and legs) black to blackish brown. Basal part of antenna reddish brown to yellowish brown. Mandible reddish brown except for darkened apex. Palpi whitish yellow. Posterodorsal corner of pronotum and tegula tinged with yellow. A longitudinally oval spot of posterior part of T I reddish brown. T II with large triangular reddish brown area, its width gradually widened posteriorly. Lateral margin of T II to T VII reddish brown. Anterior and posterior parts of T III reddish brown. Both areas enlarged medially and united into a single area. T III reddish brown posteriorly. T IV to T VII reddish brown but sometimes partly darkened. Membranous part of metasomal sternites whitish yellow. Ovipositor reddish brown. Wings hyaline. Veins and pterostigma yellowish brown to dark brown. Fore and mid legs and hind coxa, trochanter, and trochantellus whitish yellow to yellowish brown. Hind femur and tibia reddish brown except for apex of femur and base and apical parts of tibia blackish brown. Apical part of mid tarsus and hind tarsus blackish brown.

Male (n=3). Similar to female. Flagellum without tyloids. MSL 0.5–0.6 times as long as BWM. T I 3.8–4.3 times as long as maximum width.

**Materials examined**. JAPAN: TARI, M (holotype of *Ba. kuwanae* var. *nigrans*), Hokkaido, Hakodate, 4. VIII. 1921, T. Shiraki leg.; SEHU, M, "Iwate", Ogasawara leg.; KPM-NK 81722, M, Tokyo, Akiruno City, Ninomiya, Tamagawa-riverside, 3. V. 2010, K. Watanabe leg.; KPM-NK 81721, F, Kanagawa Pref., Ebina City, Sagamigawa-Riv., 10. X. 1992, H. Nagase leg.; KPM-NK 81716, F, ditto, 30. IV. 2006, M. Ooishi & R. Watanabe leg.; KPM-NK 81717, F, Kanagawa Pref., Atsugi City, Funako, Tokyo University of Agriculture, 8. X. 2010, T. Mita leg.; KPM-NK 81719, F, Kanagawa Pref., Aikawa Town, Nakatsu, 11. IV. 2014; KPM-NK 81720, F, Kanagawa Pref., Hadano City, Mt. Koubou-yama, 15. IV. 2007, K. Watanabe leg.; KPM-NK 81718, F, Shizuoka Pref., Ooigawa Town, Shitarou, 13. IX. 2008; TMNH, F, Aichi Pref., Toyohashi City, Iwata Town, Rihyooike, 25. IX. 2018, S. Morishita leg.; TMNH, F, Aichi Pref., Toyohashi City, Suse Town, Kanbata, 23. X. 2018, S. Morishita leg.; KU, F (det. Momoi, as *Ba. kuwanae*), Fukuoka Pref., Futsukaichi, 23. III. 1966, em. from *Naranga* sp., E. Drake leg.; SEHU,

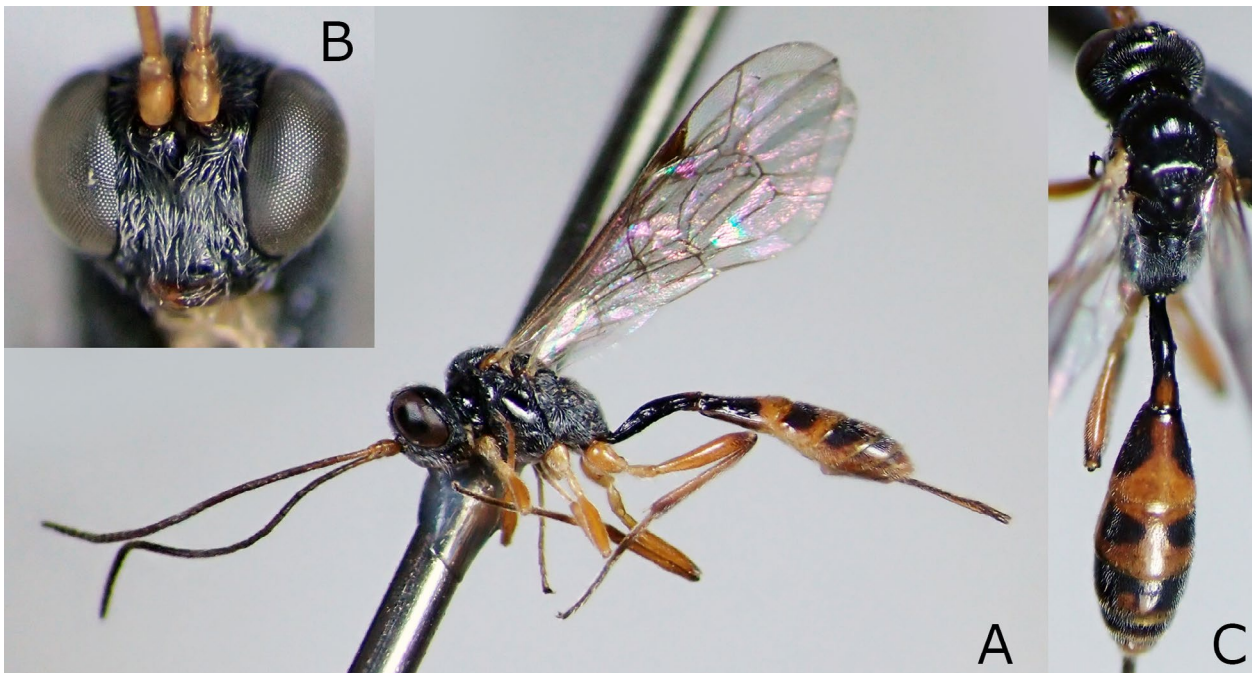


Fig. 11. *Bathythrix kuwanae* Viereck, 1912, KPM-NK 81718 (B) and 81719 (A, C), females from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view.

F (det. Kusigemati, as *Ba. narangae*), Kagoshima Pref., Kagoshima City, 14. VII. 1963, K. Kusigemati leg.; SEHU, M (det. Kusigemati, as *Ba. narangae*), ditto., 28. XI. 1963, em. from *Casinaria* sp.

**Distribution**. Japan (Hokkaido, Honshu, and Kyushu), China, Taiwan, and Korea.

**Bionomics**. Many pests and its parasitoids in paddy field have been recorded as the hosts (see Yu *et al.*, 2016). In Japan, three serious pests, *Hypera postica* Gyllenhal, 1813 (Coleoptera, Curculionidae), *Oulema oryzae* (Kuwayama, 1931) (Coleoptera, Chrysomelidae), and *Naranga aenescens* Moore, 1881 (Lepidoptera, Noctuidae), and a parasitoid, *Casinaria nigripes* (Gravenhorst, 1829) (Hymenoptera, Ichneumonidae), have been recorded as hosts (e.g., Viereck, 1912b; Minamikawa, 1954; Kusigemati, 1976; Togashi, 1974; Yamaguchi *et al.*, 2008).

**Remarks**. *Bathythrix narangae* (Uchida, 1930) is newly synonymized under this species because no differences of character states between both species are recognizable.

***Bathythrix linearis*** (Gravenhorst, 1829)
(New SJN: Miyama-mame-togari-himebachi)
(Figs 12A–D)

*Nematopodius linearis* Gravenhorst, 1829: 958.
*Leptocryptus heteropus* Thomson, 1886: 1040.

**Description**. See Sawoniewicz (1980).

**Materials examined**. JAPAN: KPM-NK 81696, F, Hokkaido, Horokanai Town, Moshiri, Uryu, Butokamabetsu-rindo, 17. VII. 2012, K. Watanabe leg.; KPM-NK 81697, 81702, 81710, F & 2 M, Hokkaido, Horokanai Town, Moshiri, Uryu, 11–17. VII. 2012, K. Watanabe leg.; KPM-NK 81678, F, Tochigi Pref., Nasushiobara City, Shiobara, Oonuma, 6. VI. 2008, 15. VI. 2008, T. Matsumura leg. (MsT); KPM-NK 81703, M, Tochigi Pref., Mogi Town, Ayuta, 19. X. 2011, M. Imaizumi leg.; KPM-NK 81709, M, Ibaraki Pref., Tsukuba City, Oda, Mt. Hokyosan, 18. V. 2014, S. Shimizu leg.; KPM-NK 81711, M, Tokyo, Takao Town, Hikage-sawato Koke-sawa, 3. V. 2007, K. Watanabe leg.; KPM-NK 81690–81693, 3 F & 1 M, Tokyo, Ome City, Mt. Mitake-san, 1. VI. 2008, M. Gunji leg.; KPM-NK 81698, F, Kanagawa Pref., Fujino Town, Mt. Jinba-yama, 7. VI. 2008, K. Watanabe leg.; KPM-NK 81701, F, Kanagawa Pref., Hakone Town, Sengokubara, 15. VI. 1956, R. Ishikawa leg.; KPM-NK 81707, M, Kanagawa Pref., Atsugi City, Nakaogino, 26. IV. 2008, M. Gunji leg.; KPM-NK 81695, 81699, F & M, Yamanashi Pref., Koushu City, Katsunuma Town, Ootaki-fudou, 22. V. 2010, K. Watanabe leg.; KPM-NK 81700, F, Nagano Pref., Outaki Vil., Mt. Ontakesan, Hakkaisan, 13. VI. 2015, K. Watanabe leg.; KPM-NK 81706, M, Nagano Pref., Kawakami Vil., Mt. Azusayama, 14. VI. 2015, K. Watanabe leg.; KPM-NK 81694, M, Niigata Pref., Nagaoka City, Suyoshi Town, Mt. Nokogiri-yama, 6. V. 2014, 25. V. 2014, S. Shimizu & R. Shimizu leg. (MsT); KPM-NK 81705, F, Shizuoka Pref., Shizuoka City, Umegashima, Abe-toge, 15. VI. 2008, K.

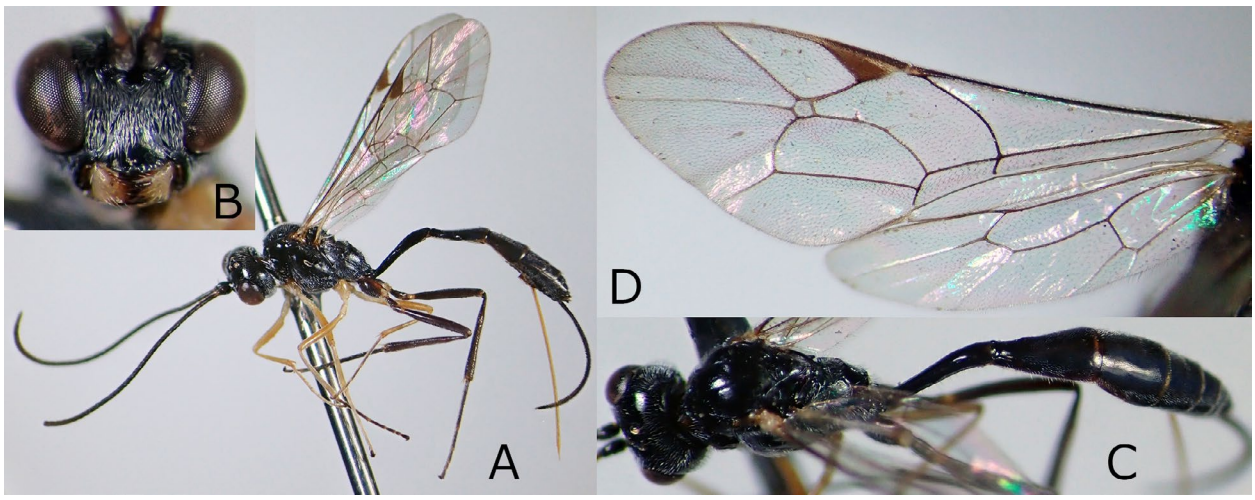


Fig. 12. *Bathythrix linearis* (Gravenhorst, 1829), KPM-NK 81695, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dors0-lateral view; D, wings.

Watanabe leg.; KPM-NK 81712, F, Mt. Tateyama, 17. X. 1974, K. K. & M. W. leg.; KPM-NK 81679, 81681, 2 F, Toyama Pref., Nanto City, Togamura-kamimomose, 18. VIII. 2009, 25. VIII. 2009, M. Watanabe *et al*. leg. (MsT); KPM-NK 81680, 81682, 81714, 3 F, ditto, 25. VIII. – 1. IX. 2009; KPM-NK 81683, 81688, F & M, ditto, 1–8. IX. 2009; KPM-NK 81687, F, ditto, 8–15. IX. 2009; KPM-NK 81684–81686, 81715, 4 F, ditto, 15–29. IX. 2009; KPM-NK 81713, F, Toyama Pref., Toyama City, Arimine, Inonedani, 1. IX. 2009, 8. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81689, F, Toyama Pref., Toyama City, Arimine, Jyuroudani, 21. VII. 2009, 28. VII. 2009, M. Watanabe *et al*. leg. (MsT); KPM-NK 81704, M, Hyogo Pref., Kami Town, Niiya, 16. VII. 2011, M. Ito leg.; KPM-NK 81708, F, Hyogo Pref., Sayo Town, Funakoshi, 14. V. 2011, S. Fujie leg.

**Distribution**. Japan (Kunashiri Is., Hokkaido*, and Honshu*); widely distributed in Palearctic region (Yu *et al.*, 2016).

**Bionomics**. Unknown.

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

***Bathythrix margaretae*** Sawoniewicz, 1980
(SJN: Yorime-mame-togari-himebachi)
(Figs 13A–C, 62B)

*Bathythrix margaretae* Sawoniewicz, 1980: 350.

**Description**. See Sawoniewicz (1980).

**Materials examined**. JAPAN: KPM-NK 50015, F, Yamanashi Pref., Hokuto City, Kanayamazawa, 3. VIII. 2006, T. Mita leg.; KPM-NK 50016–50018 3 F, Yamanashi Pref., Hokuto City, Masutomi, Biwakubo-sawa, 23–24. VII. 2007, K. Watanabe leg.

**Distribution**. Japan* (Honshu), Canada, Finland, Germany, Poland, USA, and UK.

**Bionomics**. Unknown.

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

***Bathythrix prothorax*** Momoi, 1970
(SJN: Kimune-mame-togari-himebachi)
(Figs 14A–D)

*Bathythrix prothorax* Momoi, 1970: 342.

**Description**. See Momoi (1970).

**Material examined**. KPM-NK 81877, M, Okinawa Pref., Ishigakijima Is., Mt. Omoto-dake, 8. V. 2004, T. Mita leg.; MNHAH, M (holotype), Iriomotejima Is., Ushikumori, 11. III. 1964, C. M. Yoshimoto & J. Harrell leg.

**Distribution**. Japan (Ishigakijima Is.* and Iriomotejima Is.).

**Bionomics**. Unknown.

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

***Bathythrix thomsoni*** (Kerrich, 1942)
(New SJN: Thomson-mame-togari-himebachi)
(Figs 15A–C, 62C)

*Thysiotorus thomsoni* Kerrich, 1942: 56.
*Panargyrops aereus corsicator* Aubert, 1961: 171.

**Description**. See Sawoniewicz (1980).

**Materials examined**. JAPAN: KPM-NK 81673, F, Niigata Pref., Sado Is., Kanaishinbo, Hakuundai-Mt.

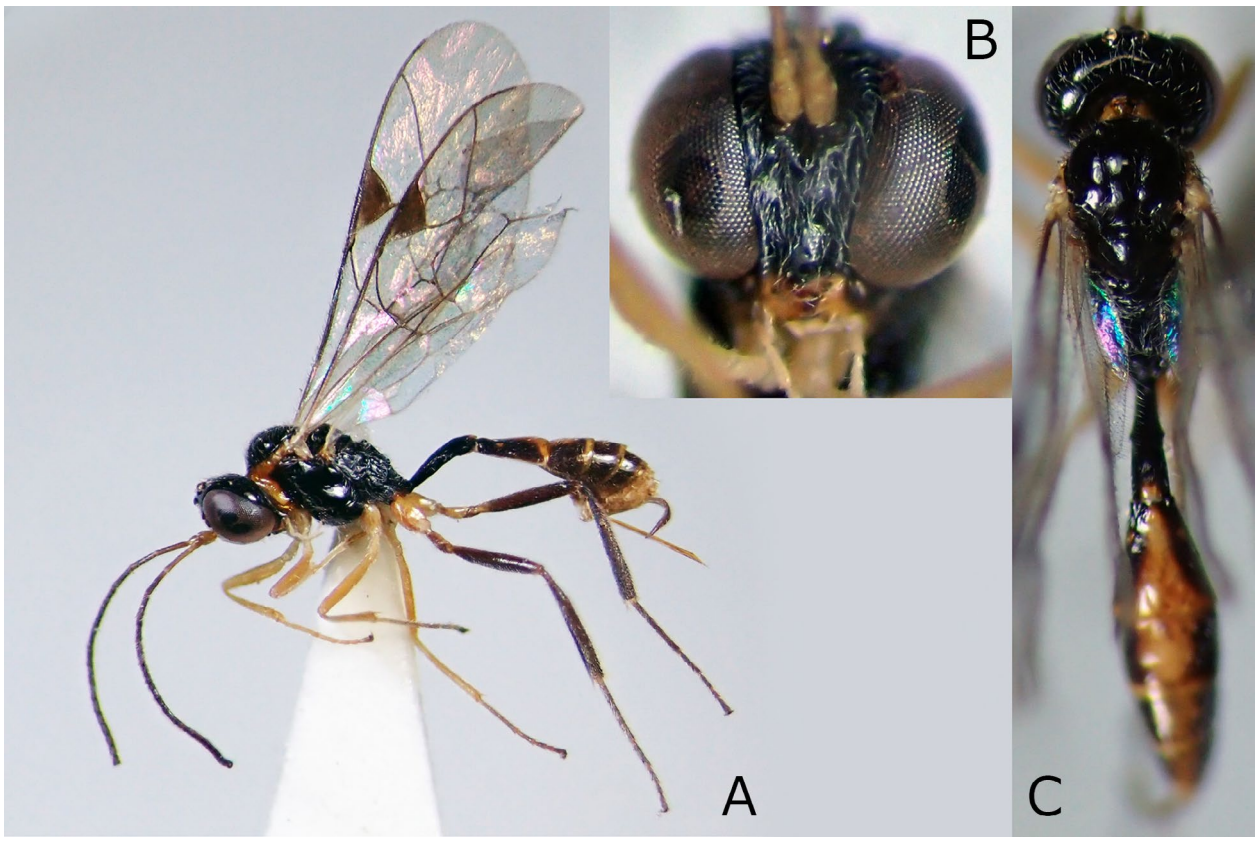


Fig. 13. *Bathythrix margaretae* Sawoniewicz, 1980, KPM-NK 55017, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view.

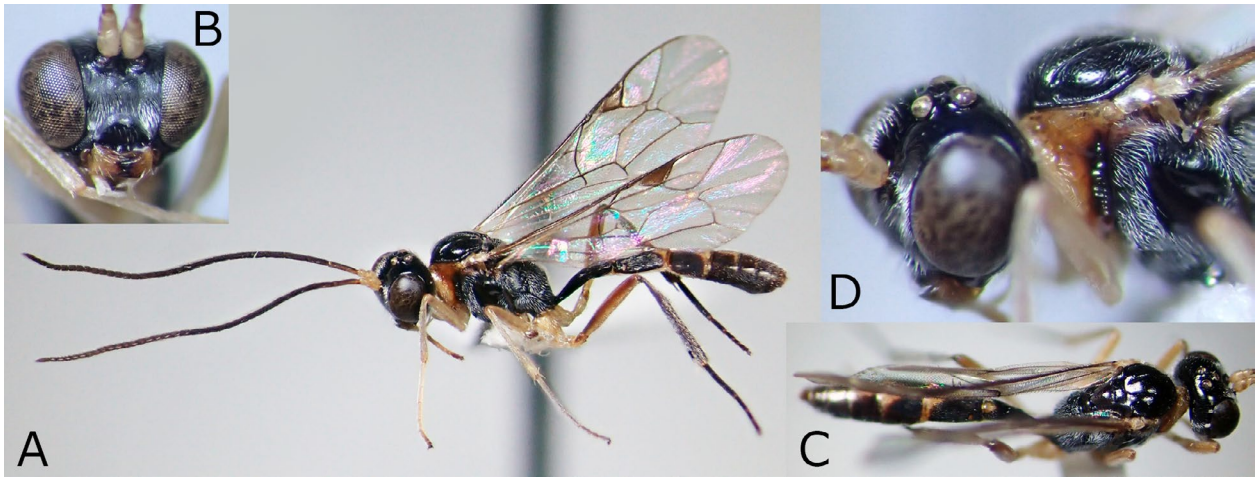


Fig. 14. *Bathythrix prothorax* Momoi, 1970, KPM-NK 81877, male from Japan — A, lateral habitus; B, head, frontal view; C, head and anterior part of mesosoma, lateral view; D, head, mesosoma, and metasoma, dorsal view.

Myoukenzan, 4. VIII. 2009, K. Watanabe leg.; KPM-NK 81674, F, ditto, 10. IX. 2010; KPM-NK 81675, F, Hyogo Pref., Kami Town, Niiya, Mikata kogen, 26. VI. – 18. VII. 2011, S. Fujie leg. (MsT).

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

**Bionomics**. Unknown in Japan. Various hosts like as microlepidoptera and braconids have been recorded (see Yu *et al.*, 2016).

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

***Bathythrix sericea*** (Provancher, 1875)
(New SJN: Hokubei-mame-togari-himebachi)
(Figs 16A–C)

*Mesostenus sericeus* Provancher, 1875: 264.

**Description**. See Townes (1983).

**Material examined**. JAPAN: KPM-NK 55019, F, Nagano Pref., Outaki Vil., M. Ontake-san, Tanohara, 13. VI. 2015, K. Watanabe leg.

**Distribution**. Japan (Honshu), Canada, and USA.

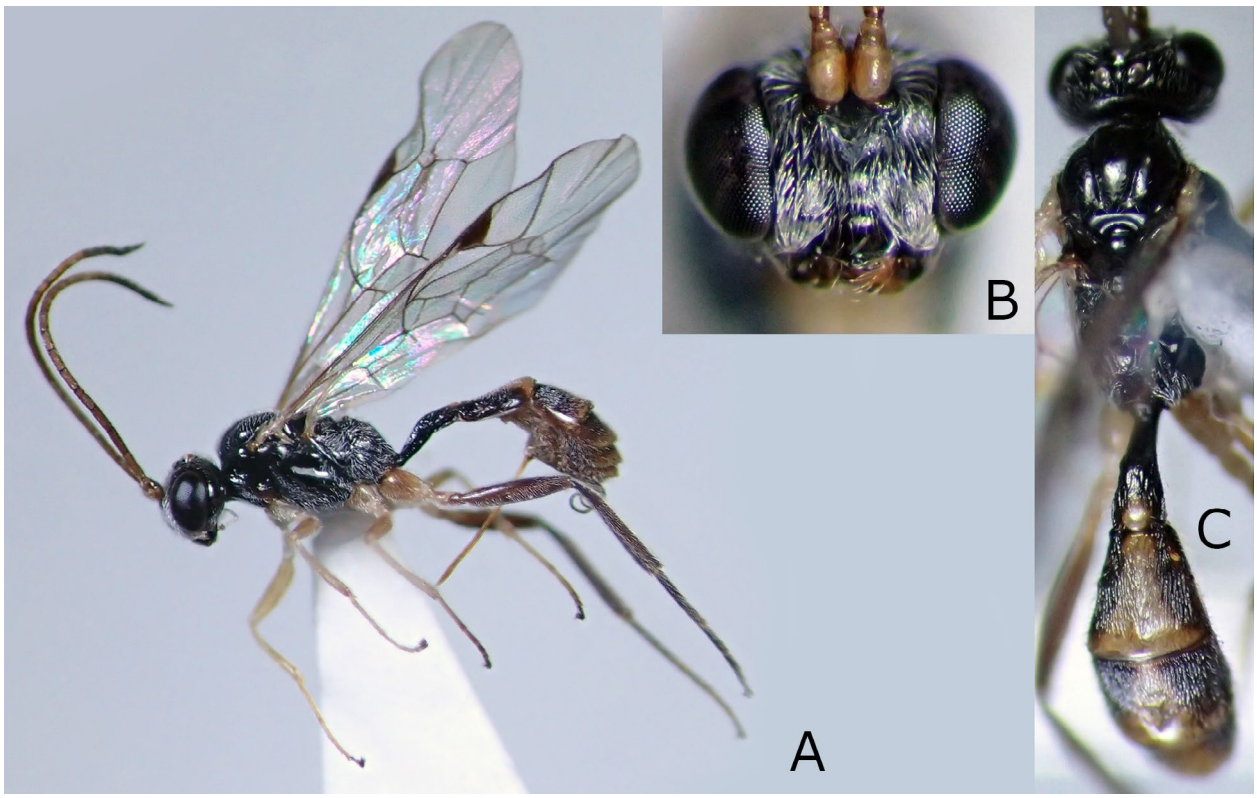


Fig. 15. *Bathythrix thomsoni* (Kerrich, 1942), KPM-NK 81675, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view.

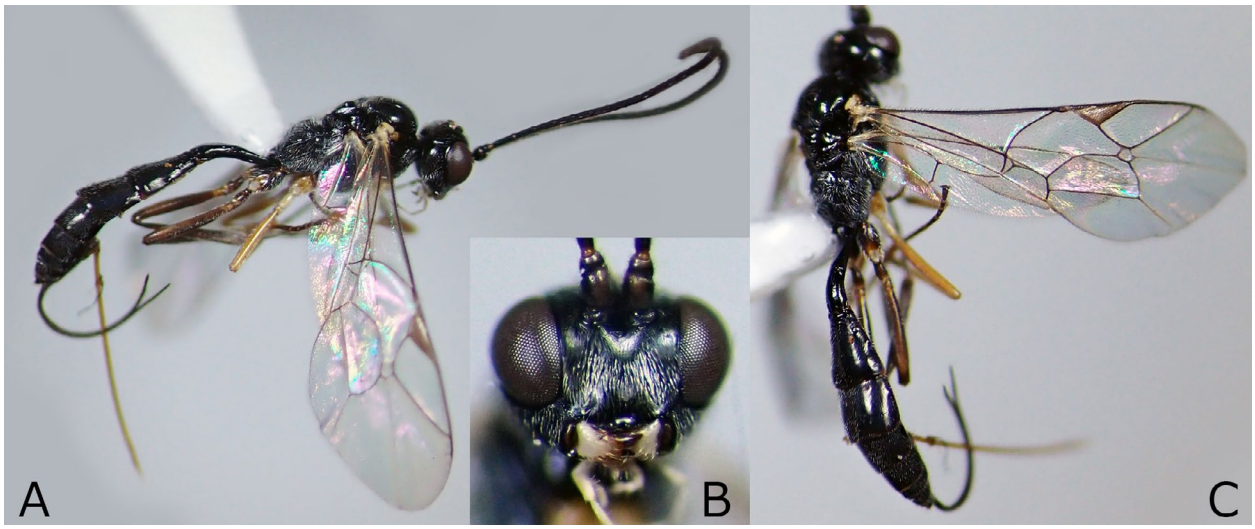


Fig. 16. *Bathythrix sericea* (Provancher, 1875), KPM-NK 55019, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, wings, and metasoma, dorsal view.

**Bionomics**. Unknown.

Genus ***Retalia*** Seyrig, 1952

*Retalia* Seyrig, 1952: 70. Type: *Retalia nitida* Seyrig, 1952. Original designation.

A single species, *Re. japonica* Kusigemati, 1985, has been recorded from Japan. In this study, I record some distributional data of this species below.

***Retalia japonica*** Kusigemati, 1985
(SJN: Haraboso-mame-togari-himebachi)
(Figs 17A, B, 63E)

*Retalia japonica* Kusigemati, 1985: 226.

**Description**. See Kusigemati (1985).

**Materials examined**. JAPAN: SEHU, F (holotype), Hokkaido, Aizankei, 3. VIII. 1966, K. Kusigemati leg.; KPM-NK 81677, F, Yamagata Pref., Mamurogawa Town, 4. IX. 2009, Y. Matsubara & K. Fukuda leg. (MsT); SEHU, M (paratype), Shizuoka Pref., Mt. Amagi, 31. V. 1959, K. Kamijo leg.; KPM-NK 81676, F, Shizuoka Pref., Izu City, Mt. Amagi-san, 3. VI. 2007, H. Katahira leg.

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

**Bionomics**. Unknown.

## Genus ***Surculus*** Townes, 1970

*Surculus* Townes, 1970: 88. Type: *Surculus oculatus* Townes, 1970. Original designation.

This genus contains a single species, *Sur. oculatus* Townes, 1970, from Chile. In this study, I record a new species, *Sur. japonicus* **sp. nov.**, from Japan. This is the first record of this genus from Japan, Palearctic region, and Old World, respectively.

The distribution of Japanese species is extremely far from Chile, while the character states of Japanese species are "completely" accorded with the character states of this genus proposed by Townes (1970). Thus, I conclude that Japanese species is belonging to this genus.

### ***Surculus japonicus*** **sp. nov.**

(New SJN: Hosomi-mame-togari-himebachi)

(Figs 18A–G, 62H, 63F, 64A, 65X, 66C)

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

**Type series**. **Holotype**: KPM-NK 81861, F, JAPAN, Nagano Pref., Outaki Vil., Mt. Ontakesan, Hakkaisan, 4. VIII. 2007, K. Watanabe leg. **Paratypes**: JAPAN, KPM-NK 81872, F, Tochigi Pref., Kuriyama Vil., Kinunuma, 1–14. VIII. 2004, H. Makihara leg. (MsT); KPM-NK 81863, F, Nagano Pref., Nagawa Town, Daimon, Utsukushimatsu, 26. VIII. 2011, S. Fujie leg.; KPM-NK 81862, F, Nagano Pref., Outaki Vil., Mt. Ontakesan, Tanohara, 8. VIII. 2007, K. Watanabe leg.; KPM-NK 81864, F, Nagano Pref., Ōtaki Vil., Mt. Ontake-san, 13–25. VI. 2015, S. Shimizu leg. (MsT); KPM-NK 81860, 81865, 81866, 3 F, Toyama Pref., Toyama City, Arimine, Jyuroudani, 8–15. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81858, 81859, 81867–81869, 5 F, ditto, 15–22. IX. 2009; KPM-NK 81870, 81871, 2 F, Toyama Pref., Toyama City, Arimine, Inonedani, 15–22. IX. 2009, M. Watanabe *et al*. leg. (MsT).

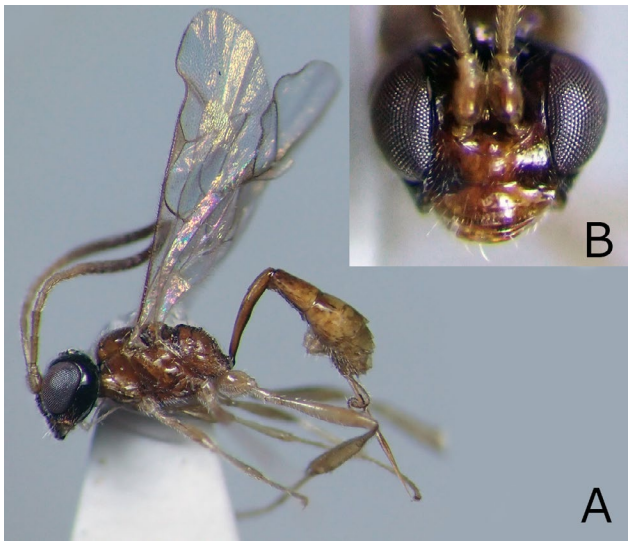


Fig. 17. *Retalia japonica* Kusigemati, 1985, KPM-NK 81677, female from Japan — A, lateral habitus; B, head, frontal view.

**Description**. Female (n=15). Body length 4.6–7.1 (HT: 5.7) mm. Body covered with silver setae.

Head. Clypeus 1.8 times as wide as maximum length, its anterior margin rounded with a median broad subtruncate convexity (Fig. 62H). Face polished, punctate (Fig. 18B). MSL 0.8 times as long as BWM. Frons, gena, and vertex polished, with fine punctures. OOL longer than POL. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible almost as long as lower tooth. Base of mandible slightly convex. Antenna with 18–19 (HT: 18) flagellomeres, subapical part not widened, all segments longer than wide. FL III 6.0–7.0 (HT: 7.0) times as long as maximum depth in lateral view. Apex of flagellum with some robust setae.

Mesosoma 1.7 times as long as maximum depth in lateral view. Upper side of collar with a median carina that is not much stronger than surrounding carinae. Lateral part of pronotum largely smooth except for some longitudinal striae medially (Fig. 18D). Epomia long and strong (Fig. 18D). Mesoscutum polished, punctate except for postero-median rugulose area (Fig. 18E). Notaulus long, fading our near center of mesoscutum (Figs 18E, 63F). Scutellum punctate, without a lateral longitudinal carina except for base. Mesopleuron smooth except for areas below subtegular ridge and speculum with longitudinal striae (Fig. 18D). The impression that is just below speculum with a pit, which situated in the short horizontal groove that joins mesopleural suture. Posterior transverse carina of mesosternum largely absent in front of mid coxae. Metapleuron largely punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of

propodeum complete (Fig. 64A). Anterior section of lateral longitudinal carina of propodeum absent (Fig. 64A). Area basalis distinct (Fig. 64A). Area superomedia indistinct laterally (Figs 18G, 64A). Anterior part of propodeum punctate. Median and posterior parts of propodeum longitudinally, obliquely, and irregularly rugulose. Propodeum without projections (Figs 18G, 64A). Length of fore wing 4.4–5.6 (HT: 4.9) mm. Areolet absent (Fig. 18F). Vein 2m-cu of fore wing with two bullae (Fig. 18F). Nervellus inclivous, intercepted near the middle (Fig. 18F). Hind femur 4.8–5.3 (HT: 5.3) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9–0.95 (HT: 0.9): 0.6: 0.25–0.3 (HT: 0.3): 0.4–0.5 (HT: 0.4). Tarsal claws simple.

Metasoma. T I slender, 2.35–2.6 (HT: 2.6) times as long as maximum width, largely longitudinally striated except for smooth posterior margin, its sternite ending at far behind of spiracle, its spiracle situated near the basal 0.45. Median dorsal carina of T I present except for posterior part absent. Dorsolateral carina of T I complete. T II to T VI wider than long. T II rugose-punctate anterior 0.75 except for smooth area around thyridium, posterior 0.25 smooth. Laterotergite of T II narrow and separated from T II. T III rugose-punctate except for posterior 0.25 smooth. T IV to T VII covered with fine punctures except for smooth posterior margin. Apex of T VIII protruding and its apex subtruncate. Ovipositor sheath 1.43–1.5 (HT: 1.5) times as long as hind tibia. Ovipositor straight, with a weak nodus and ventral teeth (Fig. 66C).

Coloration (Figs 18A–G). Body (excluding wings and legs) black to blackish brown. Scape, pedicel, and base of FL I reddish brown (but dorsal part of scape usually darkened). Mandible yellowish brown except for darkened apex. Palpi and tegula yellow. Metasomal tergites more or less tinged with reddish brown. T I except for posterior margin and apex of metasoma usually black or darkened. T II sometimes partly darkened medially. Membranous part of metasomal sternites yellowish brown. Sclerotized part of metasomal sternites dark brown. Ovipositor reddish brown. Wings hyaline. Veins and pterostigma brown to blackish brown. Fore and mid legs whitish yellow to yellowish brown. Mid femur, tibia, and tarsus partly

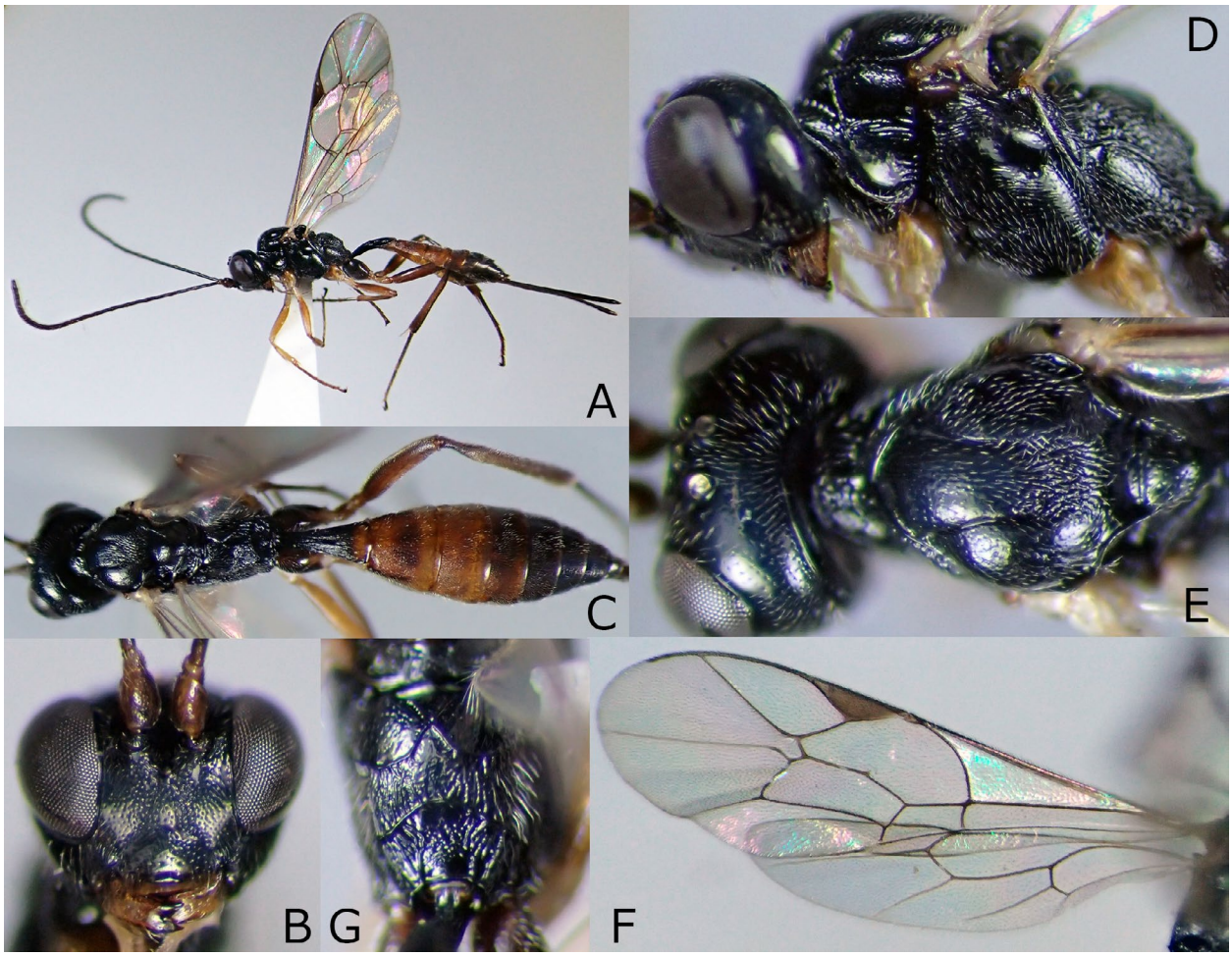


Fig. 18. *Surculus japonicus* **sp. nov.**, KPM-NK 81861, holotype, female — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, head and mesosoma, lateral view; E, head, mesoscutum and scutellum, dorsal view; F, wings; G, propodeum, dorsal view.

tinged with blackish brown. Hind coxa black, sometimes narrowly tinged with yellowish brown. Hind trochanter and trochantellus whitish yellow. Hind femur, tibia, and tarsus reddish brown to dark reddish brown. Base and apical parts of hind tibia and tarsus more or less darkened. Tibial spurs whitish yellow.

Male. Unknown.

**Distribution**. Japan (Honshu).

**Bionomics**. Unknown.

**Remarks**. This species resembles *Sur. oculatus* but it can be distinguished by the nervellus intercepted near the middle (near the posterior end in *Sur. oculatus*), the sternaulus absent in posterior 0.4 of mesopleuron (nearly complete in *Sur. oculatus*), the anterior transverse carina of propodeum complete (absent medially in *Sur. oculatus*), the area basalis of propodeum present (absent in *Sur. oculatus*), and the vein 3rs-m of fore wing absent (present in *Sur. oculatus*).

### *Chirotica* genus group

(subtribe Chiroticina sensu Townes (1970))

Two genera, *Chirotica* Förster, 1869 and *Paraphylax* Förster, 1869, have been recorded from Japan. In addition, I found *Bentyra* from Japan. In this study, I newly record this genus from Japan and review *Chirotica* and *Paraphylax*. The Japanese genera can be distinguished by the following key.

**Key to Japanese genera of *Chirotica* genus group**

1. Upper tooth of mandible longer than lower tooth. Mesoscutum with a median longitudinal groove on the median lobe in Japanese species (Fig. 63G).
…… *Bentyra* Cameron, 1905
-. Upper tooth of mandible as long as or slightly shorter than lower tooth. Mesoscutum with or without a median longitudinal groove on the median lobe.
…… 2
2. Median part of face relatively strongly convex. Area superomedia longitudinally elongate (Fig. 65F). Vein 2rs-m indistinct or absent (Fig. 20C). Mesoscutum without a median longitudinal groove on the median lobe in Japanese species.
…… *Chirotica* Förster, 1869
-. Median part of face relatively weakly convex or flat. Area superomedia not longitudinally elongate (Figs 65G–J). Vein 2rs-m short but distinct (e.g., Fig. 21C). Mesoscutum with a median longitudinal groove on the median lobe in Japanese species.
…… *Paraphylax* Förster, 1869

### Genus ***Bentyra*** Cameron, 1905

*Bentyra* Cameron, 1905a: 116. Type: *Bentyra striata* Cameron, 1905. Monobasic.

*Lissarcha* Cameron, 1912: 95. Type: *Lissarcha flavomaculata* Cameron, 1912 (= *Bentyra striata* Cameron, 1905). Monobasic.

*Koshunia* Uchida, 1932: 185. Type: *Hemiteles* (*Koshunia*) *taiwanellus* Uchida, 1932. Original designation.

This genus contains four species, *Be. striata* Cameron, 1905, *Be. divisa* (Szépligeti, 1908), *Be. taiwanella* (Uchida, 1932), and *Be. testacea* (Szépligeti, 1908). All species are recorded from the Oriental region. In this study, I describe a new species, *Be. ryukyuana* **sp. nov.**, from the Oriental part of Japan below. This is the first record of this genus from Japan.

### *Bentyra ryukyuana* sp. nov.

(New SJN: Kimadara-mame-togari-himebachi)

(Figs 19A–H, 63G, 65E, 66D)

**Etymology**. The specific name is from the Ryukyu Islands, where is locality of types.

**Type series**. **Holotype**: KPM-NK 81887, F, JAPAN, Kagoshima Pref., Tokunoshima Is., Tete, Mt. Amagi-dake, 27. III. 2011, K. Watanabe leg. **Paratype**: JAPAN, KPM-NK 81886, F, Okinawa Pref., Ishigakijima Is., Ishigaki City, Mt. Yarabudake, 25. III. 2012, M. Ito leg.

**Description**. Female (n=2). Body length 4.2–4.9 (HT: 4.9) mm. Body polished, covered with silver setae.

Head. Clypeus 2.0 times as wide as maximum length, sparsely punctate, its anterior margin weakly rounded. Face densely punctate, with a median weak convexity. MSL 1.15–1.2 (HT: 1.2) times as long as BWM. Frons sparsely punctate, with transverse rugae just above antennal sockets, with a median longitudinal groove. Gena punctate. Vertex sparsely punctate anteriorly, punctate posteriorly, with a median longitudinal groove (Fig. 19D). OOL slightly shorter than POL and as long as OD (Fig. 19D). Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base by the length of BWM. Upper tooth of mandible longer than lower tooth. Base of mandible slightly convex. Antenna with 20–21 (HT: 21) flagellomeres. FL I, FL II, and FL III almost equal in length. FL III 6.7–7.0 (HT: 6.7) times as long as maximum depth in lateral view. Apex of flagellum more or less pointed.

Mesosoma 1.75 times as long as maximum depth in lateral view. Upper side of collar with a median carina. Lateral part of pronotum largely smooth dorsally, largely striate ventrally. Epomia short and weak. Mesoscutum largely smooth, with a median longitudinal groove on the median lobe (Figs 19E, 63G). Notaulus long, its posterior ends joined with each other posteriorly (Figs 19E, 63G). Scutellum smooth except for a few punctures, without a lateral longitudinal carina except for base. Postscutellum smooth. Mesopleuron densely punctate except for areas above and below smooth speculum with longitudinal striae. The impression that is just below speculum with an isolate pit. Posterior transverse carina of mesosternum complete. Metapleuron densely punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete. Pleural carina complete. Basal section of lateral longitudinal carina of propodeum absent. Area basalis distinct (Fig. 65E). Area superomedia more or less indistinct laterally (Fig. 65E). Propodeum largely rugose-punctate. Propodeum without projections. Length of fore wing 3.6–4.2 (HT: 4.2) mm. Areolet absent (Fig. 19F). Vein 2m-cu of fore wing with two bullae (Fig. 19F). Nervellus inclivous, intercepted slightly posterior to middle (Fig. 19G). Hind femur 4.9 (HT: 4.9) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.8: 0.6: 0.35: 0.6. Tarsal claws simple.

Metasoma. T I 1.25–1.4 (HT: 1.25) times as long as maximum width, largely longitudinally striated except for smooth posterior margin (Fig. 19H), the interspace of striae punctate. Median dorsal carina of T I indistinct. Dorsolateral carina of T I complete. T II to T VI wider than long. T II and T III densely punctate and longitudinally striated except for smooth posterior area (Fig. 19H). Laterotergite of T II separated from T II. T IV to T VII largely smooth, with fine and sparse punctures. Ovipositor sheath 0.5–0.58 (HT: 0.5) times as long as hind tibia. Ovipositor straight, with a weak nodus and ventral teeth (Fig. 66D).

Coloration (Figs 19A–H). Head yellow. Apex of mandible, dorso-median part of face, area above antennal sockets, and antenna more or less tinged with reddish brown. Oceller area, posterior and median parts of vertex, and postero-dorsal part of gena blackish brown. Mesosoma yellow. Latero-median part of pronotum reddish brown. Propleuron tinged with reddish brown. Mesopleuron with three reddish brown stripes, its posterior part relatively darkened than anteriorly. Scuto-scutellar groove blackish brown to black. Axillae black. Scutellum with a median brown spot. Mesopleuron with reddish brown areas below subtegular ridge and speculum. Metapleuron with blackish brown margins. Dorsal face of propodeum largely blackish brown to black. Area petiolaris with a median blackish brown to black area. Metasoma blackish brown to black. Posterior margins of T I to T V broadly yellow. Posterior margins of T VI and T VII narrowly yellow. Border of black and yellow areas tinged with reddish brown. Lateral part of T II to VII reddish brown to yellow. Membranous part of metasomal sternites yellow. Ovipositor reddish brown. Wings hyaline. Veins and pterostigma yellowish brown. Legs yellowish brown. Coxae, trochanters, trochantelli, and base of hind tibia whitish yellow except for ventral face of hind coxa reddish brown. Reddish brown areas of pronotum and mesopleuron darkened in paratype.

Male. Unknown.

**Distribution**. Japan (Tokunoshima Is. and Ishigakijima Is.).

**Bionomics**. Unknown.

**Remarks**. This species can be distinguished from other species by the following combination of character states: body length 4.2–4.9 mm (7.0 mm in *Be. striata*); median lobe of mesoscutum with a conspicuous median groove (without a median groove in *Be. testacea*); hind coxa without a black area (with a black area in *Be. striata*); mesosoma and metasoma with conspicuous reddish brown and black areas (almost entirely reddish brown in *Be. taiwanella*); fore wing without a clouded band (with a clouded band in *Be. taiwanella*); head with black area (without black area in *Be. divisa*).

## Genus ***Chirotica*** Förster, 1869

*Chirotica* Förster, 1869: 173. Type: *Hemiteles insignis* Gravenhorst, 1829. Included by Schmiedeknecht (1897).

*Allocota* Förster, 1869: 173. Type: *Allocota confederatae* Ashmead, 1896. Included by Ashmead (1896).

*Spinolia* Förster, 1869: 173. Type: *Hemiteles maculipennis* Gravenhorst, 1829. Included by Schmiedeknecht (1897).

*Syneches* Förster, 1869: 173. Type: *Hemiteles thyridopteryx* Riley, 1869. Included by Ashmead (1900a).

*Diaglypta* Förster, 1869: 176. Type: *Diaglypta radiata* Ashmead, 1895 (= *Hemiteles pothinus* Marshall, 1892). Included by Ashmead (1895).

*Deuterospinolia* Dalla Torre, 1902: 678. New name for *Spinolia*.

*Aphadnus* Cameron, 1907: 26. Type: *Aphadnus rufipes* Cameron, 1907 (= *Hemiteles decoratus* Tosquinet, 1903). Monobasic.

*Hymenosyneches* Viereck, 1912a: 149. New name for *Syneches*.

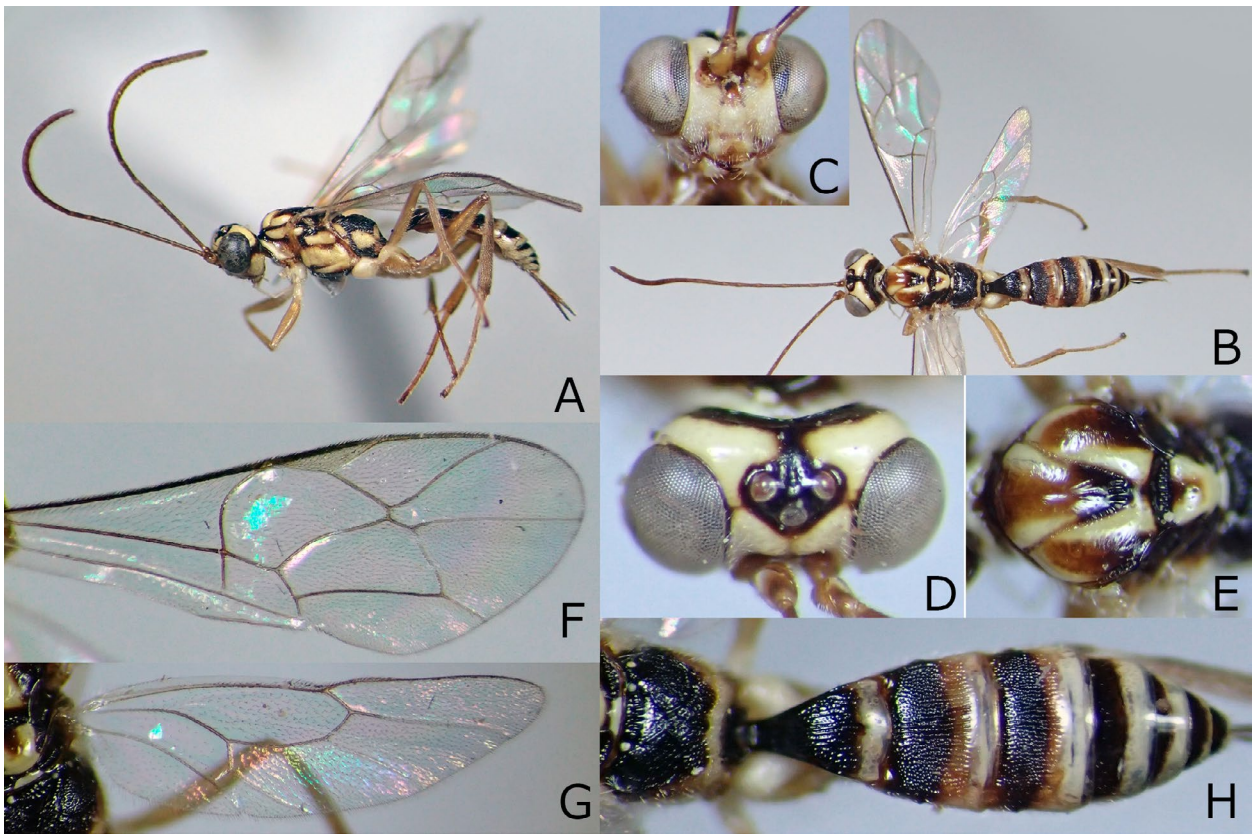


Fig. 19. *Bentyra ryukyuana* **sp. nov.**, KPM-NK 81886 (A, paratype) and 81887 (B-H, holotype), females — A, lateral habitus; B, dorsal habitus; C, head, frontal view; D, head, dorsal view; E, mesoscutum, dorsal view; F, fore wing; G, hind wing; H, propodeum and metasoma, dorsal view.

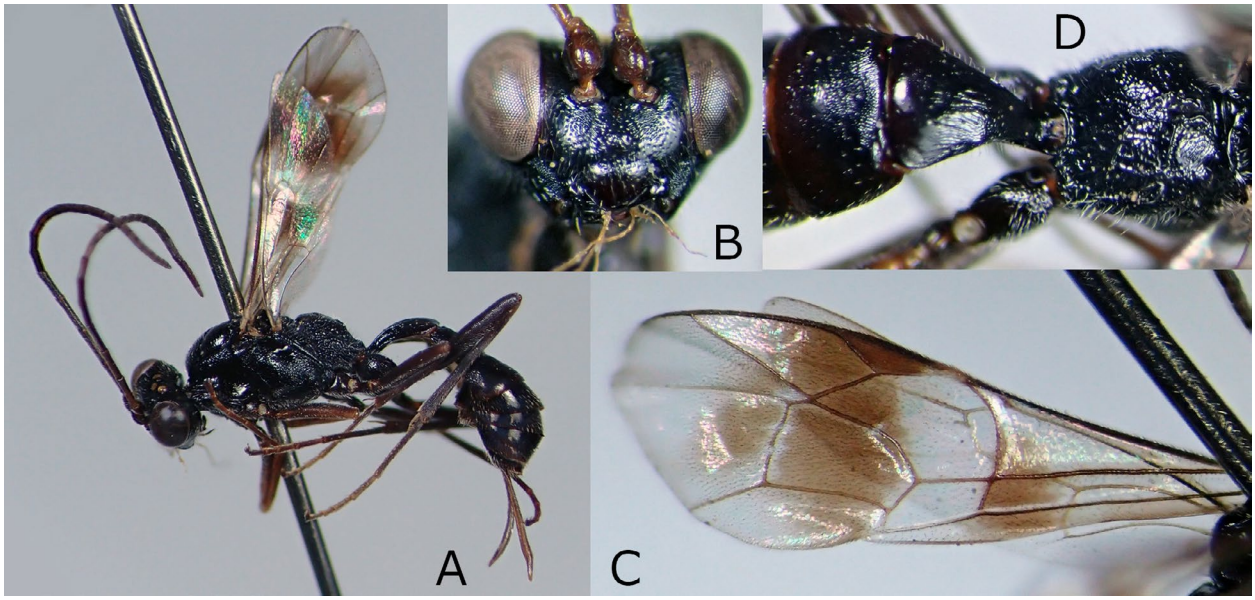


Fig. 20. *Chirotica matsukemushii* (Matsumura, 1926), KPM-NK 81906, female from Japan — A, lateral habitus; B, head, frontal view; C, wings; D, propodeum, T I, and T II, dorsal view..

A single species, *Chi. matsukemushii* (Matsumura, 1926), have been recorded from Japan. In this study, I re-describe this species with some distributional data below.

***Chirotica matsukemushii*** (Matsumura, 1926)
(SJN: Matsukemushi-mame-togari-himebachi)
(Figs 20A–D, 65F)

*Mesostenus matsukemushii* Matsumura, 1926a: 34.
*Mesostenus matsukemushi* Matsumura, 1926b: 23.

**Description**. Female (n=7). Body length 6.7–7.2 mm. Body polished, covered with silver setae.

Head. Clypeus 2.05–2.2 times as wide as maximum length, smooth except for area along dorsal margin

punctate, its anterior margin weakly rounded. Face punctate except for lateral smooth areas, with a median convexity (Fig. 20B). MSL 1.4–1.6 times as long as BWM. Frons rugose-punctate, with narrow smooth area just above antennal sockets. Gena and vertex finely punctate. OOL as long as or slightly shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base by the length of BWM. Upper tooth of mandible slightly shorter than lower tooth. Base of mandible flat. Antenna with 25–28 flagellomeres. FL I, FL II, and FL III almost equal in length. FL III 5.0 times as long as maximum depth in lateral view.

Mesosoma. Upper side of collar without a median carina. Lateral part of pronotum striate and punctate. Epomia absent. Mesoscutum irregularly or obliquely rugose, without a median longitudinal groove on the median lobe. Notaulus short and weak. Scutellum smooth except for a few punctures, with a lateral longitudinal carina except for apex. Postscutellum smooth. Mesopleuron rugose-punctate except for smooth speculum. Posterior transverse carina of mesosternum complete. Metapleuron rugose-punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete except for median section weak or absent. Pleural carina complete. Anterior section of lateral longitudinal carina of propodeum weak and partly indistinct. Lateromedian longitudinal carina complete except for posterior section partly absent. Area superomedia indistinct anteriorly and posteriorly, elongate (Fig. 65F). Propodeum largely covered with shallow rugae. Propodeum without projections. Length of fore wing 4.9–5.1 mm. Areolet absent (Fig. 20C). Vein 2rs-m absent (Fig. 20C). Vein 2m-cu of fore wing with two bullae (Fig. 20C). Nervellus inclivous, intercepted posteriorly. Hind femur 5.2–5.5 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.4: 0.4. Tarsal claws simple.

Metasoma. T I 1.4 times as long as maximum width, largely smooth (Fig. 20D). Median dorsal carina of T I absent. Dorsolateral carina of T I complete. T II and T III densely and finely punctate with some longitudinal striae except for smooth area on posterior 0.6. T IV to T VII finely and sparsely punctate. Ovipositor sheath 0.64–0.78 times as long as hind tibia. Ovipositor straight, with a nodus and ventral teeth.

Coloration (Figs 20A–D). Body (excluding wings) blackish brown to black. Antenna, apex of mandible, base of hind tibia more or less tinged with reddish brown. FL VII and T VIII paler than other segments. Fore femur, tibia, and tarsus largely reddish brown. Posterior margin of T II sometimes narrowly tinged with reddish brown. Ovipositor reddish brown. Wings hyaline, with a longitudinal clouded band just behind pterostigma and a small, clouded area subbasally. Veins and pterostigma brown to blackish brown.

Male. Unknown.

**Materials examined**. JAPAN: SEHU, 2 F (syntypes), Sapporo; KPM-NK 81904, F, Yamanashi Pref., Narusawa Vil., Mt, Fujisan, Fuji-rindo, 27. VI. – 1. VII. 2016, A. Ohwaki leg. (MsT); KPM-NK 81905, F, Fukui Pref., Katsuyama City, Ohara, 19. VI. 1982, T. Murota leg.; KPM-NK 81906, F, Fukui Pref., Izumi Vil., 19. VI. 1981, T. Tano leg.

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

**Bionomics**. Host record: *Dendrolimus jezoensis* Matsumura, 1917 (= *D. superans* (Butler, 1877)) (Lepidoptera, Lasiocampidae) (Matsumura, 1926a, b).

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

## Genus ***Paraphylax*** Förster, 1869

*Strepsimallus* Förster, 1869: 176. Type: *Strepsimallus bicintus* Ashmead, 1905. Included by Ashmead (1905).

*Paraphylax* Förster, 1869: 176. Type: *Paraphylax fasciatipennis* Ashmead, 1904. Included by Ashmead (1904).

*Paurophatnus* Cameron, 1905b: 342. Type: *Paurophatnus annulipes* Cameron, 1905. Monobasic.

*Valoga* Cameron, 1911: 178. Type: *Valoga nitidisentis* Cameron, 1911. Monobasic.

*Photoptera* Viereck, 1913: 380. Type: *Photoptera erythronota* Viereck, 1913. Original designation.

*Neotheroscopus* Turner, 1927: 559. Type: *Hemiteles* (*Neotheroscopus*) *caffer* Turner, 1927. Original designation.

*Tsangamania* Seyrig, 1952: 38. Type: *Tsangamania nimbipennis* Seyrig, 1952. Original designation.

*Parallocota* Seyrig, 1952: 86. Type: *Parallocota monotypa* Seyrig, 1952. Original designation.

*Diodontops* Seyrig, 1952: 90. Type: *Diodontops cubiceps* Seyrig, 1952. Original designation.

*Resosoa* Seyrig, 1952: 124. Type: *Resosoa ridens* Seyrig, 1952. Original designation.

*Mioplectiscus* Benoit, 1955: 339. Type: *Mioplectiscus basilewskyi* Benoit, 1955. Original designation.

Five species, *Pa. agelenae* (Momoi, 1966), *Pa. fumeae* Momoi, 1966, *Pa. saigusai* Momoi, 1966, *Pa. sakabei* Momoi, 1966, and *Pa. subtilis* Momoi, 1966, have been

recorded from Japan. All species except for *Pa. agelenae* are relatively rarely collected in the field investigations. I recognize at least eight additional species from Japan. In this study, I newly describe five of them below. The identification of remaining undetermined species requires additional specimens. In addition, I record some distributional data of *Pa. agelenae*, *Pa. fumeae*, *Pa. sakabei*, and *Pa. subtilis* below. Japanese species including three undetermined species can be distinguished by the following key.

**Preliminary key to Japanese species of the genus *Paraphylax* (♀)**

1. T II and T III covered with longitudinal striae except for smooth posterior area (e.g., Figs 21D, 22F). ..... 2
-. T II covered with punctures and/or striae, or smooth. T III without longitudinal striae (Figs 23D, 24F). ..... 7
2. T I matt or polished, without longitudinal or transverse striae. ..... 3
-. T I polished, largely covered with longitudinal or transverse striae. ..... 4
3. T I polished, largely smooth. Collar largely reddish brown. Anterior part of T II black. Dark bands of fore wing obtuse. ..... *Pa. yambarensis* **sp. nov.**
-. T I matt except for smooth area on posterior 0.25. Collar black. Anterior part of T II with conspicuous reddish yellow area. Dark bands of fore wing strong. ..... *Pa. elegans* **sp. nov.**
4. Collar, mesoscutum, scutellum, and hind coxa black (Fig. 21A). Hind femur and tibia usually largely blackish brown except for a white base of the latter (Fig. 21A). Posterior margins of T I and T II usually tinged with reddish brown (reddish area of T II rarely expanded) (Fig. 21D). ..... *Pa. agelenae* (Momoi, 1966)
-. Collar sometimes with yellow markings. Mesoscutum and scutellum sometimes with red area (Fig. 27C). Hind coxa reddish brown to dark reddish brown (e.g., Fig. 27A). Hind femur and tibia largely reddish brown to yellowish brown except for a white base of the latter (e.g., Fig. 27A). ..... 5
5. Posterior part of T I covered with transverse striae (Fig. 27E). T II entirely reddish brown (Fig. 27C). Scutellum and postscutellum reddish brown (Fig. 27C). ..... *Pa. transstriatus* **sp. nov.**
-. Posterior part of T I covered with longitudinal striae. T II partly or entirely reddish brown. Scutellum and postscutellum reddish brown or black. ..... 6
6. Collar with yellow markings. Anterior part of mesoscutum and scutellum partly tinged with reddish brown. Posterior part of T I to T III reddish yellow. ..... *Pa. saigusai* Momoi, 1966
-. Mesosoma entirely black. Posterior part of T I to T III reddish yellow and T II and T III usually largely tinged with reddish yellow (Fig. 28G). ..... *Pa. yakushimensis* **sp. nov.**
7. T III almost smooth (Figs 24C, F, 25C). ..... 8
-. T III punctate or matt (Fig. 26D). ..... 9
8. Pronotum black (Fig. 25A). T II covered with shallow and dense punctures except for smooth posterior part (Fig. 25C). Dark bands of fore wing weakly developed. Flagellum without a white band (Fig. 25A). ..... *Pa. sakabei* Momoi, 1966
-. Pronotum reddish yellow (Fig. 24A). T II almost smooth, without distinct punctures (Figs 24C, F). Dark bands of fore wing strongly developed (Fig. 24E). Flagellum with a white band (Fig. 24A). ..... *Pa. politus* **sp. nov.**
9. Head and mesosoma with large yellowish brown to reddish brown areas (mesopleuron and metapleuron largely tinged with yellowish brown to reddish brown). ..... *Pa.* spp. (including at least 3 spp.)
-. Head and mesosoma largely or entirely black. ..... 10
10. Mesopleuron with dense striae. Posterior margins of T I to T III broadly tinged with reddish brown (Fig. 26D). ..... *Pa. subtilis* Momoi, 1966
-. Mesopleuron with dense punctures. Posterior margins of T I to T III narrowly tinged with reddish brown. ..... *Pa. fumeae* Momoi, 1966

***Paraphylax agelenae*** (Momoi, 1966)
(SJN: Kogusagumo-suji-togari-himebachi)
(Figs 21A–D)

*Strepsimallus agelenae* Momoi, 1966a: 55.

**Description**. See Momoi (1966a).

**Materials examined**. JAPAN: KPM-NK 81816, F, Kanagawa Pref., Yamakita Town, Kurokura, Yushin, 18.

V. 2016, K. Watanabe leg.; KPM-NK 81818, F, Kanagawa Pref., Yokosuka City, Nobi, 11. V. 1993, I. Kawashima leg.; KPM-NK 81821, F, Kanagawa Pref., Yokosuka City, Mt. Oogusu-yama, 7. V. 2014, K. Watanabe leg.; KPM-NK 81827, F, Kanagawa Pref., Yokosuka City, Mt. Miura-fuji to Mt. Takeyama, 16. V. 2010, K. Watanabe leg.; KPM-NK 81822, F, Kanagawa Pref., Hadano City, Mt. Koubou-yama, 1. V. 2016, K. Watanabe & H. Utsugi leg.; KPM-NK 81825, F, Kanagawa Pref., Odawara City, Hayakawa, Sarusawa rindo, 2. VI. 2014, K. Watanabe leg.; KPM-NK 81828, 81829, 2 F, Shizuoka Pref., Honkawane Town, Mt. Yamainudan, 14. VI. 2008, K. Watanabe leg.; TMNH, F, Aichi Pref., Toyohashi City, Imura Town, Takayama, 13. V. 2019, S. Morishita leg.; KPM-NK 81813, 81815, 2 F, Toyama Pref., Toyama City, Arimine, Inonedani, 7–14. VII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81814, F, ditto, 4. VIII. 2009, 11. VIII. 2009; KPM-NK 81826, F, Fukui Pref., Ono City, Minami-rokuroshi, Okuetsu-kogen to Mt. Hoduki, 28. V. 2011, S. Fujie leg.; KPM-NK 81819, 81820, 2 F, Hyogo Pref., Kasai City, Uzurano Town, 29. IV. 2011, S. Fujie leg.; KPM-NK 81830, 81831, 2 F, Hyogo Pref., Awajishima Is., Sumoto City, Yura Town, Yura, 4. V. 2011, S. Fujie leg.; KPM-NK 81823, 81824, 2 F, Kagawa Pref., Takamatsu City, Enza town, Koutougawa River, 5. V. 2011, K. Maeto & K. Watanabe leg.; MNHAH, F (holotype), Miyazaki Pref., Honjo, 29. I. 1957, em. from egg sac of *Agekena opulenta*, K. Yasumatsu leg.; KPM-NK 81817, F, Kagoshima Pref., Kirishimajingu, 10. X. 1980, H. Nagase leg.

**Distribution**. Japan (Hokkaido, Honshu, Awajishima Is.*, Shikoku*, Kyushu, and Okinawajima Is.).

**Bionomics**. Host record: egg sac of *Agelena opulenta* (L. Koch, 1878) (Araneae) (Momoi, 1966).

**Remarks**. This is the first record from Awajishima Is. and Shikoku.

### ***Paraphylax elegans* sp. nov.**

(New SJN: Ishigaki-suji-togari-himebachi)

(Figs 22A–E, 64B, 66E)

**Etymology**. The specific name is from the elegant body coloration.

**Type series**. **Holotype**: KPM-NK 55078, F, JAPAN, Okinawa Pref., Ishigakijima Is., Mt. Omoto-dake, Takeda-rindo, 24. III. 2010, H. Sawada leg.

**Description**. Female (n=1). Body length 4.5 mm. Body polished, covered with silver setae.

Head. Clypeus 1.9 times as wide as maximum length, its anterior margin rounded. Face densely granulate, with a median weak convexity (Fig. 22B). MSL 1.0 times as long as BWM. Frons covered with minute transverse striae and dense punctures. Gena and vertex finely and sparsely punctate. OOL as long as POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible flat. Antenna with 21 flagellomeres. FL III 4.4 times as long as maximum depth in lateral view.

Mesosoma. Upper side of collar without a median carina. Lateral part of pronotum densely and finely punctate except for a dorsal smooth area. Epomia long (Fig. 22D). Mesoscutum coriaceous, obliquely striae posteriorly, with a shallow median longitudinal groove on the median lobe (Fig. 22D). Notaulus long, its posterior ends joined with each other posteriorly. Scutellum largely smooth, with a lateral longitudinal carina except for base. Mesopleuron longitudinally and minutely striate except for smooth speculum. Posterior transverse carina of mesosternum complete. Metapleuron minutely rugose-punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete (Fig. 64B). Pleural carina complete (Fig. 64B). Lateral longitudinal carina of propodeum present (Fig. 64B). Area basalis distinct (Fig. 64B). Area superomedia present and its lateral margins weak (Fig. 64B). Anterior and median parts of propodeum largely and shallowly punctate. Posterior parts of propodeum largely transversely rugose-punctate. Length of fore wing 3.6 mm. Areolet absent (Fig. 22E). Vein 2m-cu of fore wing with two bullae. Nervellus inclivous, intercepted slightly behind middle. Hind femur 4.7 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.4: 0.5. Tarsal claws simple.

Metasoma. T I 1.5 times as long as maximum width, densely and finely punctate except for smooth posterior margin. Median dorsal carina of T I absent. Dorsolateral carina of T I complete. T II and T III covered with minute longitudinal striae except for smooth posterior area on posterior 0.4 (Fig. 22F), interspace of striae densely punctate. T IV covered with minute longitudinal striae except for smooth posterior area on posterior 0.6. T V to T VII smooth with a few, fine, and sparse punctures. Ovipositor sheath 0.75 times as long as hind tibia. Ovipositor straight, with a pointed nodus and ventral teeth (Fig. 66E).

Coloration (Figs 22A–E). Body (excluding wings and legs) black to blackish brown. Basal part of antenna reddish brown. Mandible yellow except for darkened apex. Palpi yellowish brown. Tegula reddish brown. Posterior part of T I tinged with reddish yellow. Basal 0.6 of T II reddish yellow. Membranous part of metasomal sternites

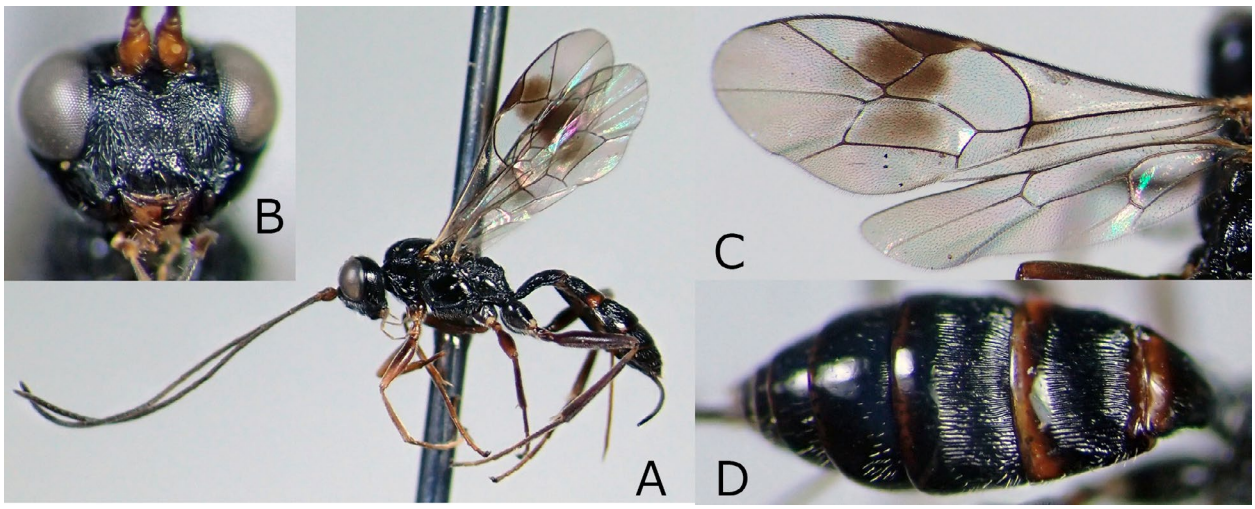


Fig. 21. *Paraphylax agelenae* (Momoi, 1966), KPM-NK 81816, female from Japan — A, lateral habitus; B, head, frontal view; C, metasoma, dorsal view; D, wings.

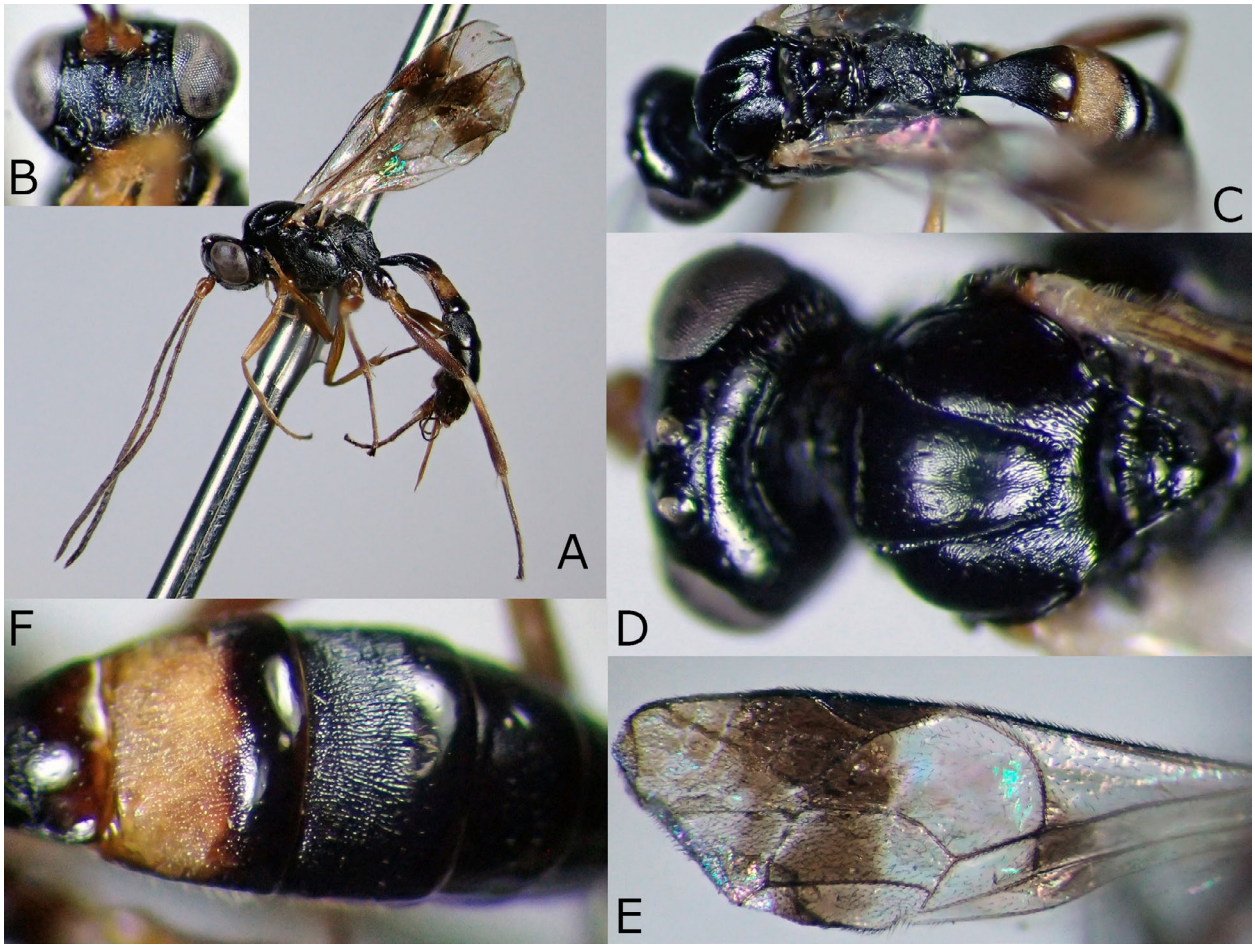


Fig. 22. *Paraphylax elegans* **sp. nov.**, KPM-NK 55078, holotype, female — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, head, mesoscutum, and scutellum, dorsal view; E, fore wing; F, T II and T III, dorsal view.

whitish yellow. Ovipositor reddish brown. Wings hyaline, with a longitudinal clouded band just behind pterostigma and a small, clouded area subbasally. Veins yellowish brown to blackish brown. Pterostigma blackish brown. Fore and mid legs reddish brown to yellowish brown. Hind coxa, femur, tibia except for base, and tarsus except for base of TS I, blackish brown to black. Hind trochanter and trochantellus reddish brown. Base of hind tibia and TS I and tibial spurs whitish yellow.

Male. Unknown.

**Distribution**. Japan (Ishigakijima Is.).

**Bionomics**. Unknown.

**Remarks**. This species resembles *Pa. yambarensis* **sp. nov.** in the T I without longitudinal striae but it can be

distinguished by the above key.

***Paraphylax fumeae*** Momoi, 1966
(SJN: Mie-minoga-togari-himebachi)
(Figs 23A–D)

*Paraphylax fumeae* Momoi, 1966a: 54.

**Description**. See Momoi (1966a).

**Materials examined**. JAPAN: MNHAH, F (holotype), Mie Pref., Ohmiya, 15–20. V. 1962, em. from *Fumea* sp., M. Sakabe leg.; KPM-NK 81900, F, Toyama Pref., Toyama City, Arimine, Jyuroudani, 8–15. IX. 2009, M. Watanabe *et al.* leg. (MsT).

**Distribution**. Japan (Honshu).

**Bionomics**. Host record: *Psychidae* sp. (Lepidoptera) (Momoi, 1966).

***Paraphylax politus* sp. nov.**
(New SJN: Izu-minoga-togari-himebachi)
(Figs 24A–F, 65G, 66F)

**Etymology**. The specific name is from the strongly polished mesoscutum and metasomal tergites.

**Type series**. **Holotype**: KPM-NK 55079, F, JAPAN, Tokyo, Izuoshima Is., Oshima Town, Motomachi, Mt. Omaruyama, Tsubakinomori, 5–31. X. 2012, K. Tsujii leg. (MsT).

**Description**. Female (n=1). Body length 4.0 mm. Body polished, covered with silver setae.

Head. Clypeus 2.0 times as wide as maximum length, its anterior margin rounded. Face densely punctate, with a median weak convexity (Fig. 24B). MSL 0.6 times as long as BWM. Frons, gena, and vertex finely and sparsely punctate. OOL slightly longer than POL and OD. POL as long as OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible as long as lower tooth. Base of mandible flat. Antenna with 21 flagellomeres. Subapical part of flagellum slightly wider than basal part. FL III 5.0 times as long as maximum depth in lateral view.

Mesosoma. Upper side of collar without a median carina. Lateral part of pronotum smooth except for narrowly punctate dorsally and ventrally. Epomia long (Fig. 24D). Mesoscutum smooth, with a few, sparse, and fine punctures and a median longitudinal groove on the median lobe (Fig. 24D). Notaulus long, its posterior ends closed each other (Fig. 24D). Scutellum finely and sparsely punctate, with a lateral longitudinal carina except for apical half. Mesopleuron smooth except for areas below subtegular ridge and speculum and along sternaulus finely and densely punctate. Posterior transverse carina of mesosternum complete. Metapleuron punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete (Fig. 65G). Pleural carina complete. Lateral longitudinal carina of propodeum present except for anterior section. Area basalis distinct (Fig. 65G). Area superomedia distinct (Fig. 65G). Propodeum largely smooth, with fine punctures. Length of fore wing 3.2 mm. Areolet absent (Fig. 24E). Vein 2m-cu of fore wing with two bullae. Nervellus inclivous, intercepted slightly behind middle. Hind femur 4.1 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.55: 0.3: 0.5. Tarsal claws simple.

Metasoma. T I 1.75 times as long as maximum width, smooth. partly coriaceous. Median dorsal carina of T I present except for posterior part. Dorsolateral carina of T I complete. T II to T V smooth (Figs 24C, F). Ovipositor sheath 0.95 times as long as hind tibia. Ovipositor straight, with a weak nodus and ventral teeth (Fig. 66F).

Coloration (Figs 24A–F). Body (excluding wings and legs) black to blackish brown. Basal part of antenna yellowish brown. Apex of FL IV to base of FL XI white dorsally. Mandible yellow except for darkened apex. Clypeus and malar space more or less tinged with reddish brown. Palpi white. Pronotum reddish yellow. Tegula yellow. Subtegular ridge reddish yellow. Mesopleuron tinged with dark reddish brown medially. Metasomal tergites dark brown to blackish brown except for posterior parts of T I and T II yellowish brown. Membranous part of metasomal sternites whitish yellow. Ovipositor reddish brown. Wings hyaline, with a longitudinal clouded band just behind pterostigma and a small, clouded area subbasally. Veins yellowish brown to blackish brown. Pterostigma blackish brown. Legs reddish brown. Coxae except for dorsal surface of hind coxa, trochanters, trochantelli except for apical part of hind trochantellus, and tibial spurs whitish yellow. Dorsal surface of hind coxa, hind femur, and hind tibia except for base more or less darkened. Base of hind tibia white.

Male. Unknown.

**Distribution**. Japan (Izuoshima Is.).

**Bionomics**. Unknown.

**Remarks**. This species resembles *Pa. sakabei* Momoi, 1966 in the smooth T III but it can be distinguished by the above key.

***Paraphylax sakabei*** Momoi, 1966
(SJN: Sakabe-minoga-togari-himebachi)
(Figs 25A–C)

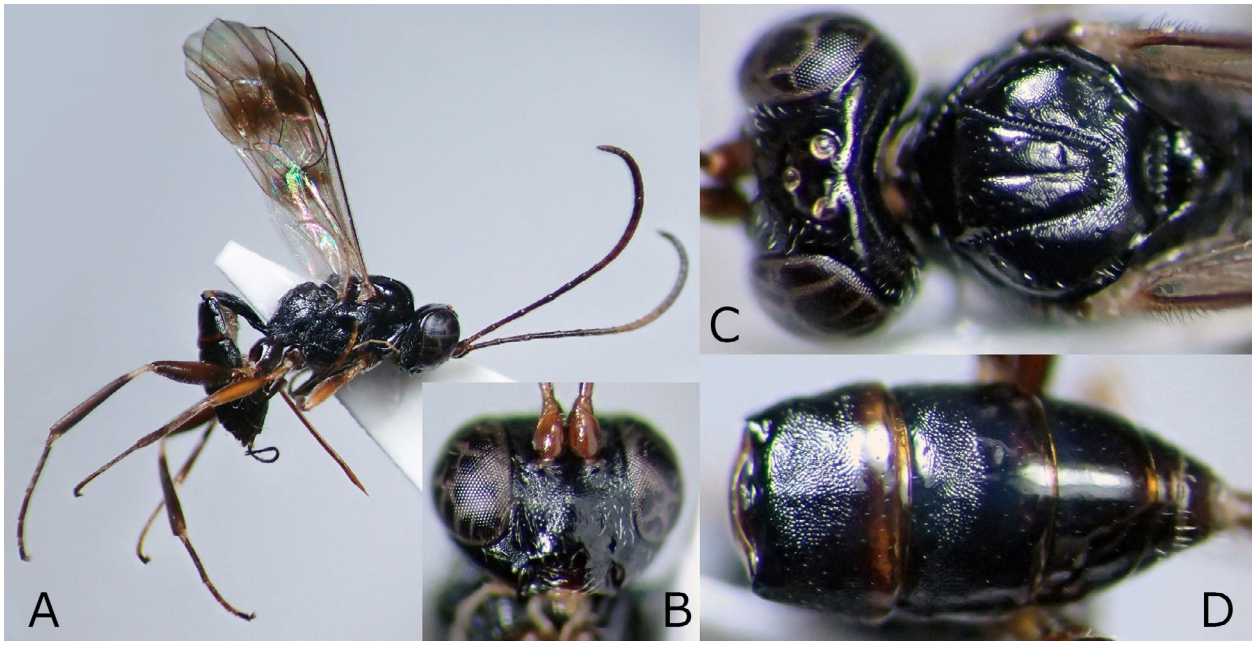


Fig. 23. *Paraphylax fumeae* Momoi, 1966, KPM-NK 81900, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesoscutum, and scutellum, dorsal view; D, T II to T VII, dorsal view.

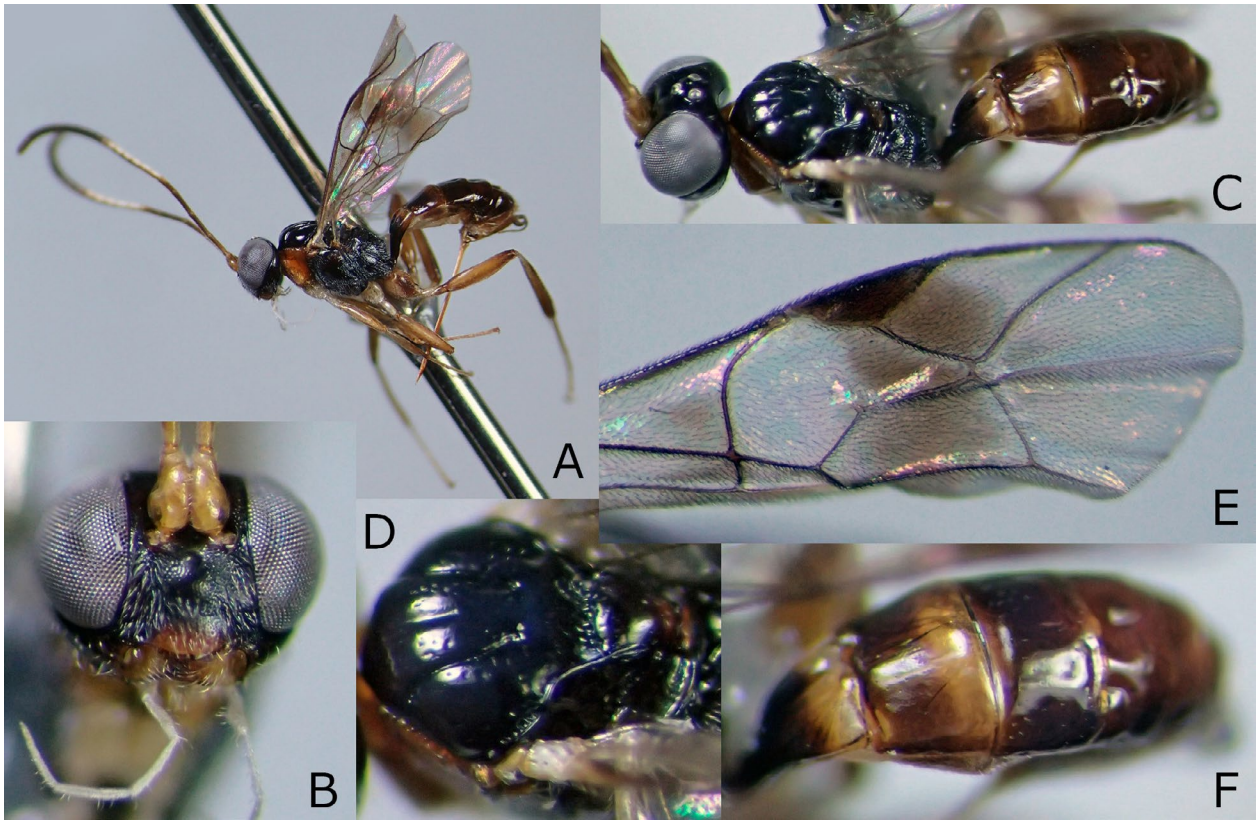


Fig. 24. *Paraphylax politus* **sp. nov.**, KPM-NK 55079, holotype, female — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, mesoscutum and scutellum, dorsal view; E, fore wing; F, metasoma, dorso-lateral view.

*Paraphylax sakabei* Momoi, 1966a: 54.

**Description**. See Momoi (1966a).

**Materials examined**. JAPAN: MNHAH, F (holotype), Mie Pref., Ohmiya, 15–20. V. 1962, em. from *Fumea* sp., M. Sakabe leg.; KPM-NK 81902, 55086, 2 F, Kagoshima Pref., Yakushima Is., Mt. Aikodake, 30. III. – 29. IV. 2007, T. Yamauchi *et al.* leg. (MsT); KPM-NK 55087, F, ditto, 29. IV. – 1. V. 2007; KPM-NK 55088, 55089, 2 F, Kagoshima Pref., Yakushima Is., Kankake, 28. IV. –

1. V. 2007, T. Yamauchi *et al.* leg.; KPM-NK 81903, F, Kagoshima Pref., Yakushima Is., Hanyama, 28. IV. – 1. V. 2007, T. Yamauchi *et al*. leg. (MsT).

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

**Bionomics**. Host record: *Psychidae* sp. (Lepidoptera) (Momoi, 1966).

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

***Paraphylax subtilis*** Momoi, 1966
(SJN: Fukuoka-minoga-togari-himebachi)
(Figs 26A–D)

*Paraphylax subtilis* Momoi, 1966a: 53.

**Description**. See Momoi (1966a).

**Materials examined**. JAPAN: KPM-NK 81901, F, Kagoshima Pref., Ookuchi Town, 4. VII. 2012, Y. Matsubara & K. Fukuda leg. (MsT).

**Distribution**. Japan (Kyushu and Amamioshima Is.).

**Bionomics**. Unknown.

***Paraphylax transstriatus* sp. nov.**
(New SJN: Yokosuji-togari-himebachi)
(Figs 27A–E, 65H, 66G)

**Etymology**. The specific name is from the transverse striae of T I.

**Type series**. Holotype: KPM-NK 55080, F, JAPAN, Tokyo, Miyakejima Is., Miyake Vil., Kamitsuki, 22. IX. – 20. X. 2012, K. Tsujii leg. (MsT).

**Description**. Female (n=1). Body length 4.6 mm. Body polished, covered with silver setae.

Head. Clypeus 2.0 times as wide as maximum length, its anterior margin rounded. Face densely punctate, with a median weak convexity (Fig. 27B). MSL 1.0 times as long as BWM. Frons rugose. Gena and vertex punctate, rugulose on oceller area and posterior part of vertex. OOL slightly shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible flat. Antenna with 25 flagellomeres. FL III 6.7 times as long as maximum depth in lateral view.

Mesosoma. Upper side of collar with a weak median carina. Lateral part of pronotum largely smooth. Epomia short. Mesoscutum coriaceous, with a median longitudinal groove on the median lobe. Notaulus long, its posterior ends joined with each other posteriorly. Area along notaulus transversely striae. Scutellum irregularly rugose anteriorly, smooth posteriorly, with a lateral longitudinal carina except for apex. Mesopleuron longitudinally striate except for smooth speculum. Posterior transverse carina of mesosternum complete. Metapleuron minutely


Fig. 25. *Paraphylax sakabei* Momoi, 1966, KPM-NK 81902, female from Japan — A, lateral habitus; B, head, frontal view; C, metasoma, dorsal view.


Fig. 26. *Paraphylax subtilis* Momoi, 1966, KPM-NK 81901, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesoscutum, and scutellum, dorsal view; D, T II, dorsal view.

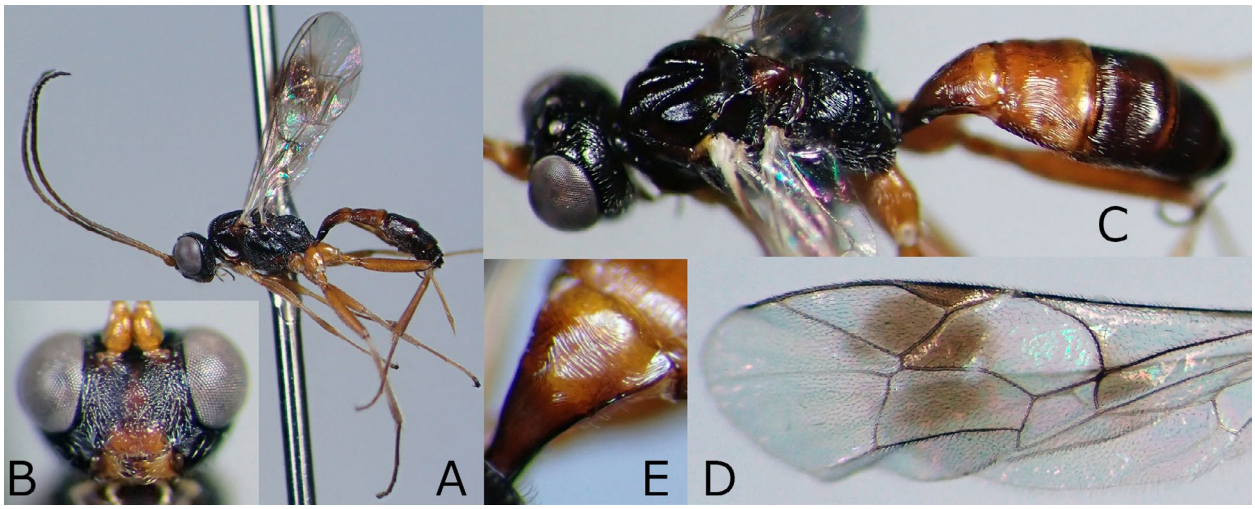


Fig. 27. *Paraphylax transstriatus* **sp. nov.**, KPM-NK 55080, holotype, female — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings; E, T I, dorso-lateral view.

striate anteriorly, finely punctate posteriorly, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete (Fig. 65H). Pleural carina complete. Lateral longitudinal carina of propodeum absent. Area basalis distinct (Fig. 65H). Area superomedia indistinct laterally (Fig. 65H). Anterior part of propodeum obliquely rugulose (Fig. 65H). Median part of propodeum longitudinally rugulose (Fig. 65H). Posterior part of propodeum transversely, obliquely, and irregularly rugulose. Length of fore wing 4.0 mm. Areolet absent (Fig. 27D). Vein 2m-cu of fore wing with two bullae (Fig. 27D). Nervellus inclivous, intercepted slightly behind middle (Fig. 27D). Hind femur 5.4 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.95: 0.7: 0.4: 0.55. Tarsal claws simple.

Metasoma. T I 1.5 times as long as maximum width, longitudinally striate anteriorly, transversely striate posteriorly (Fig. 27E). Median dorsal carina of T I absent. Dorsolateral carina of T I complete. T II and T III covered with longitudinal striae except for smooth posterior area on posterior 0.4 (Fig. 27C). T IV to T VII finely and sparsely punctate. Ovipositor sheath 0.78 times as long as hind tibia.

Ovipositor slightly decurved, with a nodus and ventral teeth (Fig. 66G).

Coloration (Figs 27A–E). Body (excluding wings and legs) black to blackish brown. Basal parts of antenna yellowish brown to reddish brown. Median parts of face and clypeus tinged with yellowish brown to reddish brown. Mandible yellow except for darkened apex. Palpi and tegula yellow. Lower part of collar, postero-dorsal corner of pronotum, anterior margin of mesoscutum, scutellum, postscutellum, anterior margin of mesopleuron, speculum, and mesosternum tinged with reddish brown. T I, T II, and posterior margin of T III reddish brown. T III more or less tinged with dark reddish brown. Membranous part of metasomal sternites whitish yellow. Ovipositor reddish brown. Wings hyaline, with a longitudinal clouded band just behind pterostigma and a small, clouded area subbasally. Veins yellowish brown to blackish brown. Pterostigma blackish brown. Legs reddish brown to yellowish brown. Base of tibiae white.

Male. Unknown.

**Distribution**. Japan (Miyakejima Is.).

**Bionomics**. Unknown.

**Remarks**. This species resembles *Pa. saigusai* Momoi, 1966 and *Pa. yakushimensis* **sp. nov.** in the body coloration but it can be distinguished by the above key.

### ***Paraphylax yakushimensis*** **sp. nov.**

(New SJN: Yakushima-suji-togari-himebachi)

(Figs 28A–G, 65I, 66H)

**Etymology**. The specific name is from Yakushima Island, where is locality of types.

**Type series**. Holotype: KPM-NK 55081, F, JAPAN, Kagoshima Pref., Yakushima Is., Mt. Aiko-dake, 2. XI. – 1. XII. 2007, T. Yamauchi leg. (MsT). Paratype: JAPAN, KPM-NK 55082, F, same data of holotype, 25. VIII. – 22. IX. 2007; KPM-NK 55083, F, ditto, 28. IX. – 2. XI. 2007; KPM-NK 55084, F, Kagoshima Pref., Yakushima Is., Hanyama, 25. VIII. – 23. IX. 2006, T. Yamauchi leg. (MsT).

**Description**. Female (n=4). Body length 4.3–4.8 (HT: 4.8) mm. Body polished, covered with silver setae.

Head. Clypeus 1.9–2.0 (HT: 2.0) times as wide as maximum length, its anterior margin rounded. Face densely punctate, with a median weak convexity (Fig. 28B). MSL 1.0 times as long as BWM. Frons rugose, the rugae largely transverse. Gena punctate. Vertex punctate and largely transversely striate. OOL slightly shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible flat. Antenna with 24–25 (HT: 24) flagellomeres. FL III 6.7 times as long as maximum depth in lateral view.

Mesosoma. Upper side of collar with a weak median carina. Lateral part of pronotum largely rugose except for a smooth area dorsally. Epomia short. Mesoscutum with a median longitudinal groove on the median lobe (Fig. 28D). Notaulus long, its posterior ends joined with each other posteriorly (Fig. 28D). Area along notaulus transversely striae (Fig. 28D). Scutellum smooth except for lateral part partly rugulose, with a lateral longitudinal carina except for apex. Mesopleuron longitudinally striate except for smooth speculum and an anterior small smooth area. Posterior transverse carina of mesosternum complete. Metapleuron punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete (Fig. 65I). Pleural carina complete. Lateral longitudinal carina of propodeum absent. Area basalis distinct (Fig. 65I). Area superomedia indistinct laterally (Figs 28E, 65I). Anterior and posterior parts of propodeum transversely, obliquely, and irregularly rugulose. Median part of propodeum longitudinally rugulose (Figs 28E, 65I). Length of fore wing 3.6–3.9 (HT: 3.9) mm. Areolet absent (Fig. 28F). Vein 2m-cu of fore wing with two bullae (Fig. 28F). Nervellus inclivous, intercepted slightly behind middle. Hind femur 5.1–5.2 (HT: 5.2) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9–0.95 (HT: 0.9): 0.65–0.7 (HT: 0.7): 0.3–0.4 (HT: 0.4): 0.4. Tarsal claws simple.

Metasoma. T I 1.7 times as long as maximum width, longitudinally striate except for smooth posterior margin (Figs 28C, G). Median dorsal carina of T I indistinct. Dorsolateral carina of T I complete. T II and T III covered with longitudinal striae except for smooth posterior area on posterior 0.4 (Figs 28C, G). T IV finely and sparsely punctate, with some weak longitudinal striae medially. T V and T VI largely smooth medially. Ovipositor sheath 0.7–0.75 (HT: 0.75) times as long as hind tibia. Ovipositor straight, with a nodus and ventral teeth (Fig. 66H).

Coloration (Figs 28A–G). Body (excluding wings and legs) black to blackish brown. Basal parts of antenna yellowish brown to reddish brown. Median parts of face and clypeus tinged with yellowish brown to reddish brown. Mandible yellow except for darkened apex. Palpi and tegula yellowish brown to yellow. Margins of pronotum, mesoscutum, and mesopleuron partly tinged with reddish brown. Scutellum and postscutellum dark reddish brown. T I reddish brown, its lateral sides more or less darkened. T II and T III reddish brown. T IV dark reddish brown anteriorly, reddish brown posteriorly. T

V to T VII dark reddish brown except for reddish brown posterior margin. Membranous part of metasomal sternites whitish yellow. Ovipositor reddish brown. Wings hyaline, with a longitudinal clouded band just behind pterostigma and a small, clouded area subbasally. Veins yellowish brown to blackish brown. Pterostigma blackish brown. Legs reddish brown. Base of tibiae white. T I and T IV to T VII sometimes entirely tinged with reddish brown.

Male. Unknown.

**Distribution**. Japan (Yakushima Is.).

**Bionomics**. Unknown.

**Remarks**. This species resembles *Pa. saigusai* Momoi, 1966 in the body coloration but it can be distinguished by the above key.

### ***Paraphylax yambarensis* sp. nov.**

(New SJN: Okinawa-suji-togari-himebachi)

(Figs 29A–G, 65J, 66I)

**Etymology**. The specific name is from the local locality name, Yambaru, where is the northern area of Okinawajima Island and type locality of this species.

**Type series**. **Holotype**: KPM-NK 55085, F, JAPAN, Okinawa Pref., Okinawajima Is., Kunigami Vil., Aha, 21. IV. 2016, K. Watanabe leg.

**Description**. Female (n=1). Body length 4.2 mm. Body polished, covered with silver setae.

Head. Clypeus 1.9 times as wide as maximum length, its anterior margin rounded. Face densely punctate, with a median slight convexity. MSL 0.9 times as long as BWM. Frons transversely rugose, the interspace of rugae partly punctate. Gena punctate. Vertex punctate, partly rugulose on oceller area and posterior part. OOL shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible flat. Antenna with 23 flagellomeres. FL III 6.7 times as long as maximum depth in lateral view.

Mesosoma. Upper side of collar with an indistinct median carina. Lateral part of pronotum largely smooth (Fig. 29E). Epomia short and indistinct. Mesoscutum largely smooth, with a median longitudinal groove on the anterior half of median lobe (Fig. 29D). Notaulus long, its posterior ends closed each other. Area along notaulus partly and narrowly transversely striae. Scutellum largely smooth, without a lateral longitudinal carina except for base. Mesopleuron largely smooth. Posterior transverse carina of mesosternum complete. Metapleuron sparsely and finely punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete (Fig. 65J). Pleural carina complete. Lateral longitudinal carina of propodeum absent. Area basalis distinct (Fig. 65J). Area superomedia indistinct laterally (Fig. 65J). Anterior

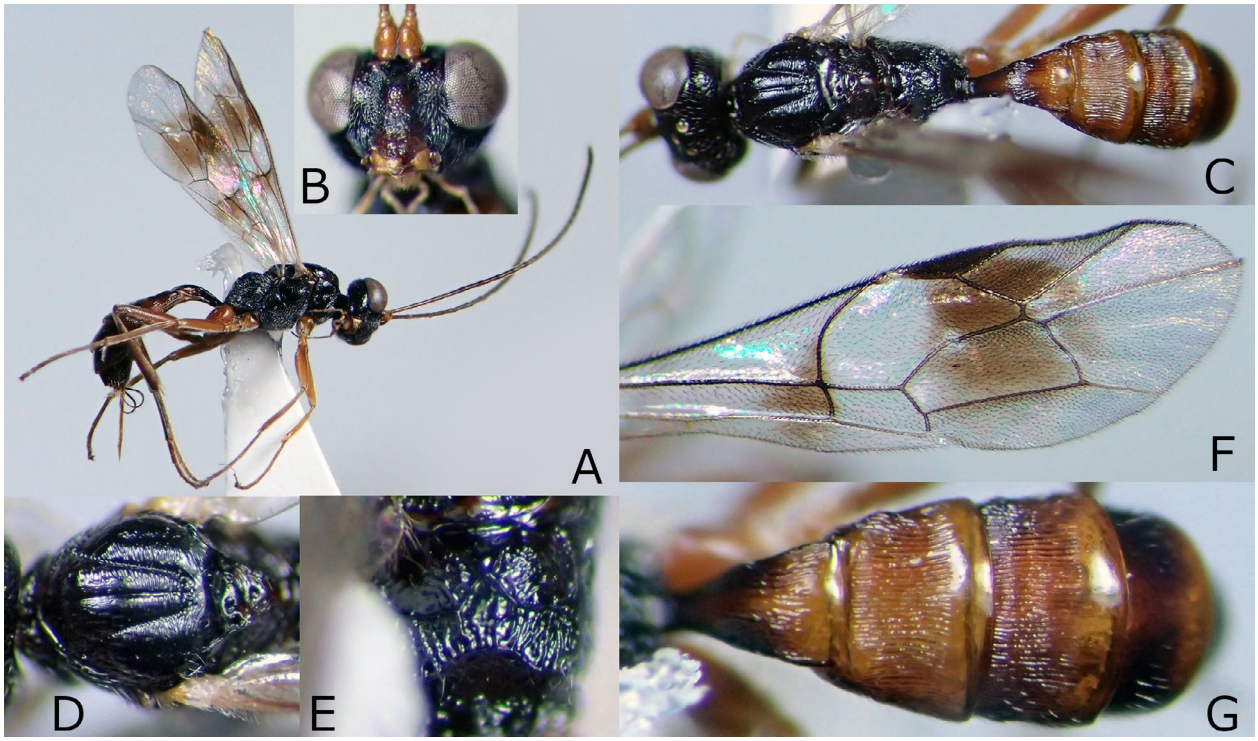


Fig. 28. *Paraphylax yakushimensis* **sp. nov.**, KPM-NK 55081, holotype, female — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, mesoscutum and scutellum, dorsal view; E, propodeum, dorsal view; F, fore wing; G, metasoma, dorsal view.

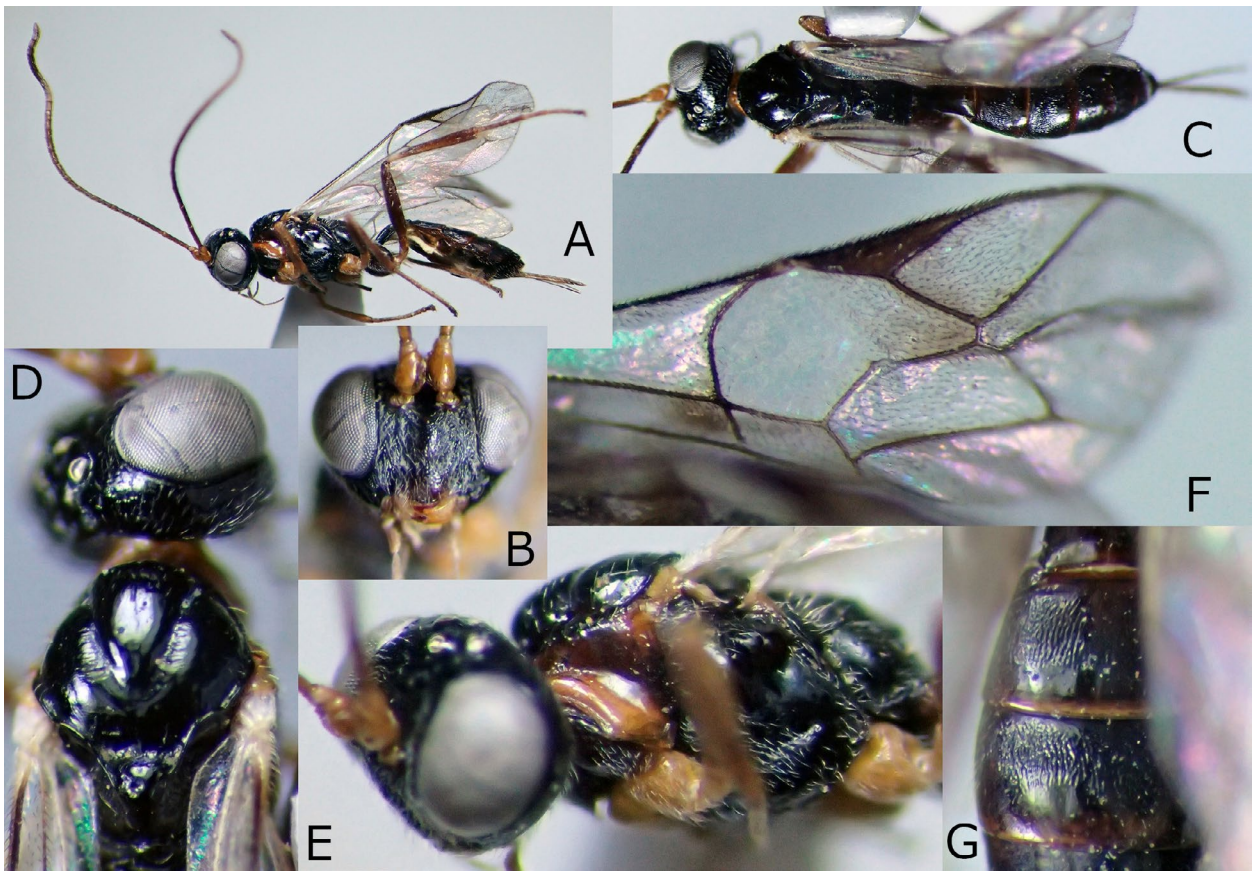


Fig. 29. *Paraphylax yambarensis* **sp. nov.**, KPM-NK 55085, holotype, female — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, head, mesoscutum and scutellum, dorsal view; E, head and mesosoma, lateral view; F, fore wing; G, T II and T III, dorsal view.

part of propodeum largely smooth. Median and posterior parts of propodeum transversely, obliquely, and irregularly rugulose. Length of fore wing 3.6 mm. Areolet absent (Fig. 29F). Vein 2m-cu of fore wing with two bullae. Nervellus inclivous, intercepted slightly behind middle. Hind femur 5.3 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.65: 0.35: 0.5. Tarsal claws simple.

Metasoma. T I 1.7 times as long as maximum width, coriaceous anteriorly, smooth posteriorly. Median dorsal carina of T I absent. Dorsolateral carina of T I complete. T II and T III covered with longitudinal striae and fine and dense punctures except for smooth posterior area on posterior 0.4 (Fig. 29G). T IV to T VII finely and sparsely punctate laterally, smooth medially. Ovipositor sheath 0.75 times as long as hind tibia. Ovipositor straight, with a weak nodus and ventral teeth (Fig. 66I).

Coloration (Figs 29A–G). Body (excluding wings and legs) black to blackish brown. Basal parts of antenna yellowish brown to reddish brown. Anterior part of clypeus tinged with reddish brown. Mandible yellow except for darkened apex. Palpi and tegula yellow. Pronotum reddish brown to dark yellowish brown. Posterior margins of T I to T VI narrowly tinged with reddish brown. Membranous part of metasomal sternites whitish yellow. Ovipositor reddish brown. Wings hyaline, with obtuse clouded areas. Veins yellowish brown to blackish brown. Pterostigma blackish brown. Fore and mid coxae, trochanters, and trochantelli yellowish brown. Fore and mid femora, tibiae, and tarsi reddish brown. Hind coxa, femur, apical part of tibia, and tarsus dark brown to blackish brown. Hind trochanter, trochantellus, and base of tibia whitish yellow to yellowish brown. Tibial spurs whitish yellow.

Male. Unknown.

**Distribution**. Japan (Okinawajima Is.).

**Bionomics**. Unknown.

**Remarks**. This species resembles *Pa. elegans* **sp. nov.** in the T I without longitudinal striae but it can be distinguished by the above key.

### ***Ethelurgus* genus group**

(subtribe Ethelurgina sensu Townes (1970))

Two genera, *Ethelurgus* Förster, 1869 and *Rhembobius* Förster, 1869, have been recorded from Japan. In this study, I review both genera. The Japanese genera can be distinguished by the following key.

**Key to Japanese genera of *Ethelurgus* genus group**

1. Vein 2m-cu vertical (Fig. 32C). Propodeum with strong, projecting apophyses (Figs 32A, D). T II largely smooth except for longitudinally striate basally in Japanese species (Fig. 32D).
..... *Rhembobius* Förster, 1869*
-. Vein 2m-cu inclivous. Propodeum without distinct apophyses (Figs 30A, 31A). T II largely punctate in Japanese species.
..... *Ethelurgus* Förster, 1869**

* This genus is sometimes misidentified with *Pleolophus* Townes, 1962 (Aptesini Smith & Shenfelt, 1955 of Cryptinae) because vein 2m-cu vertical. Users should carefully check the character states of them.

** This genus is sometimes misidentified with *Stibeutes* Förster, 1869 (*Phygadeuon* genus group). Users should carefully check the character states of clypeus, propodeum, and ovipositor.

Genus ***Ethelurgus*** Förster, 1869

*Tolmerus* Förster, 1869: 177. Type: *Phygadeuon sodalis* Taschenberg, 1865. Designated by Townes & Townes (1966).

*Ethelurgus* Förster, 1869: 180. Type: *Hemiteles* (*Ethelurgus*) *lonicerae* Viereck, 1917 (= *Hemiteles syrphicola* Ashmead, 1890). Included by Viereck (1917).

*Nuneches* Förster, 1869: 186. Type: *Phygadeuon sodalis* Taschenberg, 1865. Designated by Perkins (1962).

*Platycryptus* Kriechbaumer, 1893: 150. Type: *Phygadeuon sodalis* Taschenberg, 1865. Designated by Horstmann (1992).

*Zamicrotoridea* Viereck, 1917: 340. Type: *Hemiteles* (*Zamicrotoridea*) *orbiformis* Viereck, 1917 (= *Hemiteles syrphicola* Ashmead, 1890). Monobasic.

Four species, *E. episyrphicola* Kusigemati, 1983, *E. kumatai* Kusigemati, 1983, *E. sodalis fuscipes* Townes, 1983, and *E. politus* Townes, 1983, have been recorded from Japan. Kusigemati (1983) and Townes (1983) individually revised Japanese species. I compared the types of these species deposited in AEIC and SEHU and conclude that *E. episyrphicola* and *E. politus*, and *E. kumatai* and *E. sodalis fuscipes* are same species, respectively. Townes (1983) was published in December and Kusigemati (1983) was published in March. Thus, I newly synonymize *E. politus* under *E. episyrphicola* and *E. sodalis fuscipes* under *E. kumatai*. In addition, according to Horstmann (2000), the taxonomic status of *E. kumatai* should be treated as subspecies of *E. sodalis* (Taschenberg, 1865). Thus, I treat that E. kumatai is as the subgenus of this species (**comb. nov.**). In addition, I recognize an undetermined species from Japan, while the identification of this species requires more materials. Japanese species can be distinguished by the following key.

**Preliminary key to Japanese species of the genus *Ethelurgus* (♀)**

1. Mesoscutum polished (Fig. 30C). A smooth area of mesopleuron distinctly larger than speculum (Fig. 30D). Coxae and femora more or less tinged with reddish brown (Fig. 30A).
..... *E. episyrphicola* Kusigemati, 1983
(= *E. politus* Townes, 1983 **syn. nov.**)
-. Mesoscutum matt (Fig. 31C). A smooth area of mesopleuron larger than or as size as speculum (Fig. 31D). Coxae and femora black (Fig. 31A).
..... 2
2. Mesopleuron covered with longitudinal striae except for speculum (Fig. 31D). T II covered with longitudinal striae basally (Fig. 31C).
..... *E. sodalis kumatai* Kusigemati, 1983
(= *E. sodalis fuscipes* Townes, 1983 **syn. nov.**)
-. Mesopleuron punctate and smooth dorsally, longitudinally striae ventrally. T II without longitudinal striae.
..... *E.* sp.

***Ethelurgus episyrphicola*** Kusigemati, 1983
(SJN: Hosohirataabu-togari-himebachi)
(Figs 30A–D)

*Ethelurgus episyrphicola* Kusigemati, 1983: 110.
*Ethelurgus politus* Townes, 1983: 135. **Syn. nov.**

**Description**. See Kusigemati (1983) and Townes (1983).

**Materials examined**. JAPAN: KPM-NK 81913, F, Hokkaido, Otofuke Town, Kibougaoka-koen, 25. VI. 2017, K. Watanabe leg.; KPM-NK 81915, M, Saitama Pref., Urawa, Tajima, 9. IV. 1999, T. Nambu leg.; KPM-NK 81916, F, Saitama Pref., Yorii town, Mure, 17. V. 2001, T. Nambu leg. (YPT); KPM-NK 81911, F, Tokyo, Izuoshima Is., Ohshima Town, Mt. Omaru, Tsubakinomori, 5–31. X. 2012, K. Tsujii leg. (MsT); KPM-NK 81918, F, Tokyo, Miyakejima Is., Miyake Vil., Tsubota-rindo, 25. VIII. – 22. IX. 2012, K. Tsujii leg. (MsT); KPM-NK 81917, F, Tokyo, Hachijojima Is., Oogakyo, 16–21. V. 2012, K.

Tsujii leg. (MsT); KPM-NK 81919–81921, 3 M, Tokyo, Akiruno City, Ninomiya, Tamagawa-riverside, 3. V. 2010, K. Watanabe leg.; KPM-NK 81914, M, Kanagawa Pref., Yokosuka City, Fukadadai, 11. IV. 1997, I. Kawashima leg.; KPM-NK 81926, F, Kanagawa Pref., Hakone Town, Ochudo, 21. VI. 2010, M. Takakuwa leg.; KPM-NK 81925, M, Yamanashi Pref., Koushu City, Yanagisawa-toge, 5. VIII. 2008, K. Watanabe leg.; TMNH, F, Aichi Pref., Toyohashi City, Imura Town, Takayama, 2. VI. – 6. VI. 2019, S. Morishita leg. (MsT); KPM-NK 81922, M, Toyama Pref., Toyama City, Kamegai, 28. VII. – 4. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81923, F, Fukui Pref., Arashi, 23. IX. 1973, T. Tano leg.; AEIC, F (holotype of *E. politus*), Tokushima Pref., Nishino, 18. VI. 1932, K. Sato leg.; KPM-NK 81912, F, Saga Pref., Tara Town, Mt. Taradake, 20. V. 2011, T. Yamauchi leg.; SEHU, F (holotype of *Et. episyrphicola*), Kagoshima Pref., Kagoshima City, 18. XII. 1962, em. from *Episyrphus balteatus*, K. Kusigemati leg.; KPM-NK 81924, F, Kagoshima Pref., Tokunoshima Is., Tete, Mt. Amagi-dake, 27. III. 2011, K. Watanabe leg.

**Distribution**. Japan (Hokkaido*, Honshu, Izuoshima Is.*, Miyakejima Is.*, Hachijojima Is.*, Shikoku, Kyushu, and Tokunoshima Is.*), China, and India.

**Bionomics**. Host record: *Episyrphus balteatus* (De Geer, 1776) (Diptera, Syrphidae) (Kusigemati, 1983).

**Remarks**. This is the first record of this species from Hokkaido, Izuoshima Is., Miyakejima Is., Hachijojima Is., and Tokunoshima Is.

***Ethelurgus sodalis kumatai*** Kusigemati, 1983 **comb. nov.**

(New SJN: Tairiku-abu-togari-himebachi)

(Figs 31A–D, 65K)

*Ethelurgus kumatai* Kusigemati, 1983: 111.

*Ethelurgus vulnerator fuscipes* Townes, 1983: 133.

*Ethelurgus sodalis fuscipes* Townes, 1983; Horstmann, 2000: 70. **Syn. nov.**

**Description**. See Kusigemati (1983) and Townes (1983).

**Materials examined**. JAPAN: SEHU, F (holotype of *E. kumatai*) and M (paratype of *E. kumatai*), Hokkaido, Eniwa, 30. VI. 1962, em. from *Syrphus torvus*, T. Kumata leg.; KPM-NK 81955, F, Hokkaido, Horokanai Town, Moshiri, Uryu, Butokamabetsu-rindo, 17. VII. 2012, K. Watanabe leg.; KPM-NK 81935, F, Gunma Pref., Tsumagoi Vil., Kanbata, Takamine-kogen, 3. IX. 2015, K. Watanabe leg.; KPM-NK 81937, F, Gunma Pref., Katashina Vil., Marunuma, Yuzawa, 2. VII. 2008, K. Watanabe leg.; KPM-NK 81936, F, Tochigi Pref., Nasushiobara City, Shiobara, Utou-sawa, 22–28. V. 2008, T. Matsumura leg. (MsT); KPM-NK 81940, F, Tochigi Pref., Nasushiobara, Uwanohara, 7. X. 2010, E. Katayama leg.; KPM-NK 81939, F, Kanagawa Pref., Fujino Town, Mt. Jinba-yama, 7. VI. 2008, K. Watanabe leg.; KPM-NK 81952–81954, 3 F, Nagano Pref., Outaki Vil., Mt. Ontakesan, Hakkaisan, 7. VIII. 2010, K. Watanabe leg.; KPM-NK 81947, F, ditto, 16–17. IX. 2011, K. Asahi

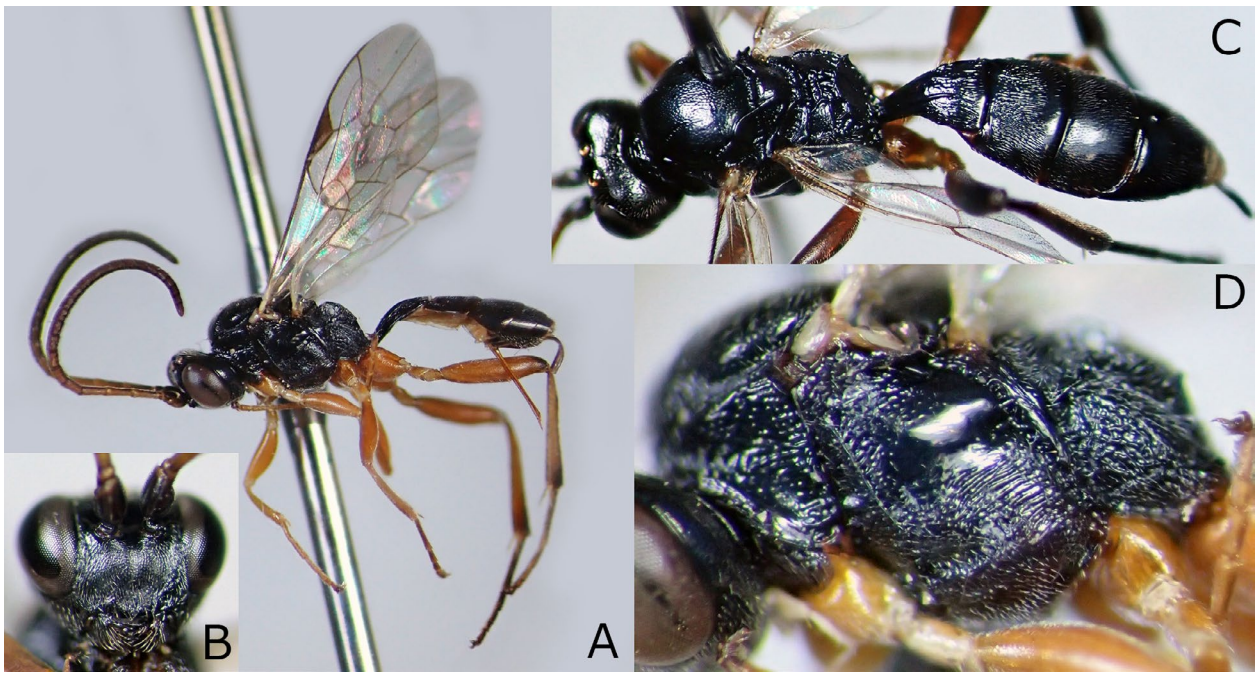


Fig. 30. *Ethelurgus episyrphicola* Kusigemati, 1983, KPM-NK 81913 (B, C) and 81924 (A, D), females from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, mesosoma, lateral view.

leg.; KPM-NK 81942–81946, 5 F, ditto, 4. VIII. 2017, K. Watanabe leg.; KPM-NK 81949–81951, 3 F, Niigata Pref., Sado Is., Kanaishinbo, Hakuundai to Mt. Myokenzan, 4. VIII. 2009, K. Watanabe leg.; KPM-NK 81948, F, ditto, 10. IX. 2010; AEIC, F (holotype of *E. vulnerator fuscipes*), Nagano Pref., Kamikochi, 22. VII. 1954, Townes family leg.; KPM-NK 81927, 81928, 2 F, Toyama Pref., Toyama City, Arimine, Inonedani, 1–8. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81929–81934, 6 F, Toyama Pref., Toyama City, Arimine, Jyuroudani, 16–25. VIII. 2009, M. Watanabe *et al*. leg. (MsT); KPM-NK 81941, F, Ishikawa Pref., Shiramine Vil., Hakusanshita, 21. VIII. 1982, H. Kurokawa leg.; KPM-NK 81938, F, Hyogo Pref., Yabu City, Mt. Hyonosen, Oodanganaru, 13–14. VII. 2013, K. Watanabe leg. (LT).

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

**Bionomics**. Host record: *Syrphus torvus* Osten Sacken, 1875 (Diptera, Syrphidae) (Kusigemati, 1983).

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

## Genus ***Rhembobius*** Förster, 1869

*Rhembobius* Förster, 1869: 184. Type: *Phygadeuon quadrispinus* Gravenhorst, 1829. Designated by Ashmead (1900a).

*Ulothymus* Förster, 1869: 185. Type: *Ichneumon perscrutator* Thunberg, 1824. Designated by Perkins (1962)

*Acanthocryptus* Thomson, 1873: 520. Type: *Phygadeuon quadrispinus* Gravenhorst, 1829. Original designation.

Two species, *Rh. perscrutator* (Thunberg, 1822) and *Rh. quadristriatus* (Uchida, 1956), have been recorded from Japan. The latter species is recorded by only a male holotype and I could not find the type. In this study, I record the distributional data of the former below. Japanese species can be distinguished by the following key.

### Key to Japanese species of the genus ***Rhembobius*** (♀♂)

(female of *Rh. quadristriatus* is unknown)

1. Metasoma entirely black (Figs 32A, D), sometimes T II and T III slightly tinged with reddish brown. Legs black (Fig. 32A). Body length 5.0–8.0 mm. ..... *Rh. perscrutator* (Thunberg, 1822)
-. Posterior margins of T I, T II, and T III yellowish red. Legs largely yellowish red. Body length 6.5 mm. ..... *Rh. quadristriatus* (Uchida, 1956)

### ***Rhembobius perscrutator*** (Thunberg, 1822)

(SJN: Tsuya-chibi-togari-himebachi)

(Figs 32A–D)

*Ichneumon perscrutator* Thunberg, 1822: 257.

*Cryptus basalis* Smith, 1874: 392.

*Acanthocryptus nigrita mesocastaneus* Constantineanu, 1929: 522.

**Description**. See Horstmann (2000).

**Materials examined**. JAPAN: KPM-NK 81959, F,

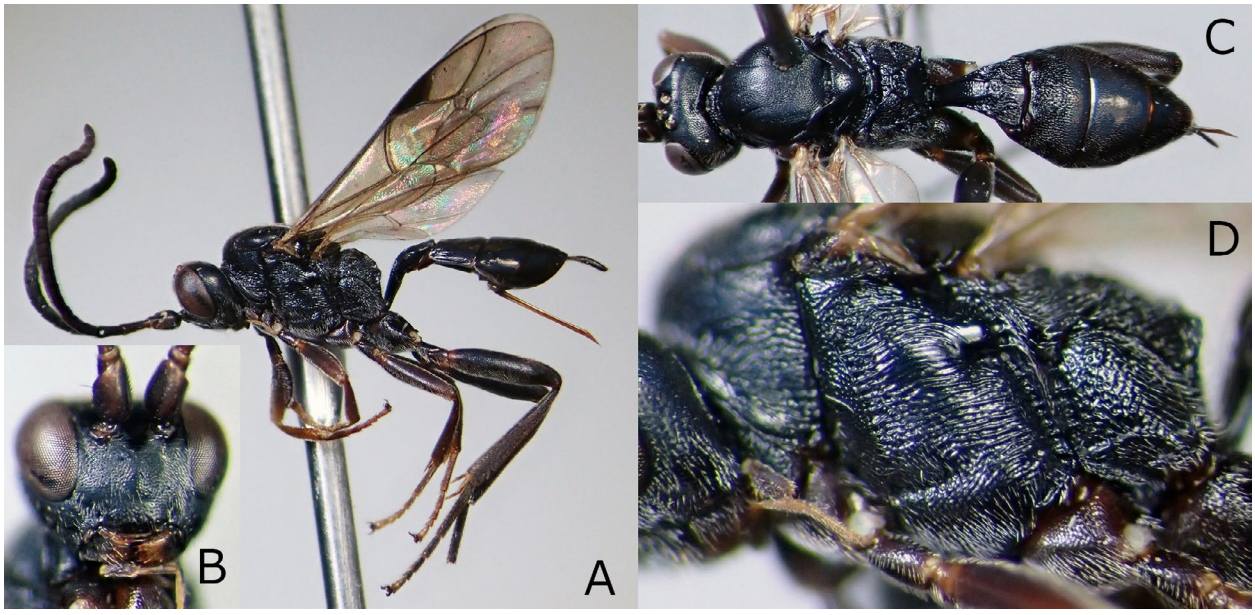


Fig. 31. *Ethelurgus sodalis kumatai* Kusigemati, 1983, KPM-NK 81947 (C) and 81950 (A, B, D), females from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, mesosoma, lateral view.

Saitama Pref., Yorii town, 27. V. 2013, T. Nambu leg.; KPM-NK 81957, F, Kanagawa Pref., Yokosuka City, Mt. Miura-fuji to Mt. Takeyama, 13. VII. 2008, K. Watanabe leg.; KPM-NK 81956, 81960, F & M, Niigata Pref., Nagaoka City, Urase Town, 7–23. VI. 2015, R. Shimizu *et al.* leg. (MsT); KPM-NK 81958, F, Toyama Pref., Toyama City, Arimine, Inonedani, 28. VII. – 4. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81961, F, Osaka Pref., Higashiosaka City, Hiraoka-park, 1. VI. 2012, K. Watanabe leg.; NHMUK, F (type of *Cryptus basalis*), "Hiogo". GERMANY: ZSM, F (det. Sawoniewicz), Blankenburg, Schmiedeknecht leg. SLOVENIA: ZSM, F (det. Sawoniewicz), Rogaška, Slatina, 4. VII. 1938, E. Bauer leg.

**Distribution**. Japan (Kunashiri Is., Hokkaido, Honshu, and Shikoku); widely distributed in Palearctic region (Yu *et al.*, 2016).

**Bionomics**. Unknown in Japan. In Europe, some species of Syrphidae (Diptera) have been recorded as the host (Yu *et al.*, 2016).

### ***Gelis* genus group**

(subtribe Gelina sensu Townes (1970))

Four genera, *Dichrogaster* Doumerc, 1855, *Gelis* Thunberg, 1827, *Townostilpnus* Aubert, 1961, and *Xenolytus* Förster, 1869, have been recorded from Japan. In this study, I review *Dichrogaster* below. The identification of genera see Townes (1970) and Schwarz (1995).

### Genus ***Dichrogaster*** Doumerc, 1855

*Dichrogaster* Doumerc, 1855: 38. Type: *Microgaster perlae* Doumerc, 1855. Monobasic.

*Otacustes* Förster, 1869: 174. Type: *Otacustes atriceps* Ashmead, 1894 (= *Otacustes chrysopae* Ashmead, 1894). Included by Ashmead (1894).

*Microtorus* Förster, 1869: 178. Type: *Microtorus kichijoi* Uchida, 1940. Designated by Townes (1957).

*Xenobrachys* Förster, 1869: 179. Type: *Hemiteles longicaudatus* Thomson, 1884. Designated by Perkins (1962).

*Brachycephalus* Förster, 1869: 179. Type: *Hemiteles aestivalis* Gravenhorst, 1829. Designated by Townes (1944).

*Brachycranium* Ashmead, 1900b: 368. New name for *Brachycephalus*.

*Chrysopoctonus* Cushman, 1919: 518. Type: *Otacustes atriceps* Ashmead, 1894 (= *Otacustes chrysopae* Ashmead, 1894). Original designation.

Four species, *Dic. imperialis* Yoshida & Konishi, 2008, *Dic. kichijoi* (Uchida, 1940), *Dic. liostylus* (Thomson, 1885), and *Dic. parva* Yoshida & Konishi, 2008, have been recorded from Japan. In this study, I record *Dic. nitida* Sheng & Sun, 2014 from Japan for the first time and some new distributional data of four previously recorded species below. All species except for *Dic. liostylus* are relatively rarely collected in the field investigations. Key

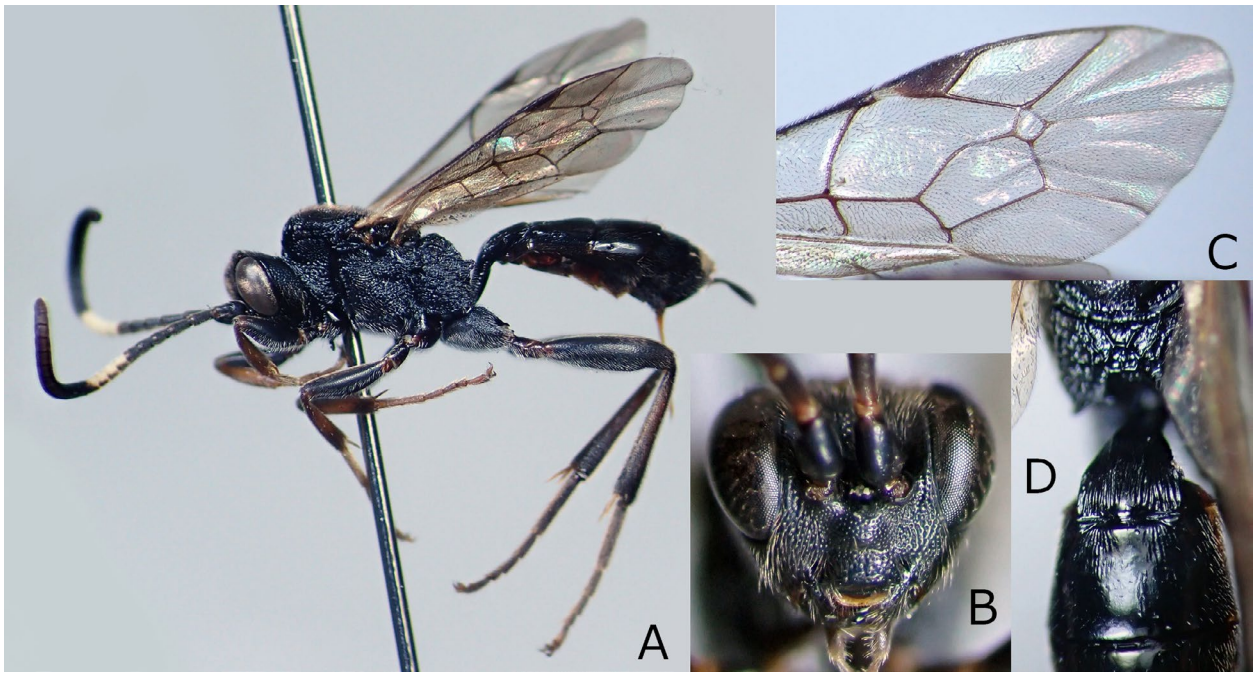


Fig. 32. *Rhembobius perscrutator* (Thunberg, 1822), KPM-NK 81957 (A, C, D) and 81961 (C), females from Japan — A, lateral habitus; B, head, frontal view; C, fore wing; D, propodeum, T I, and T II, dorsal view.

to species including four previously recorded species has been provided by Yoshida & Konishi (2008). *Dichrogaster nitida* apparently resembles *Dic. liostylus* in inclivous 2m-cu, but can be distinguished by the indistinct epomia (Fig. 63C) (distinct in *Dic. liostylus*, Fig. 63B) and the T II to T IV without dark transverse band (Fig. 36C) (usually with dark area(s) in *Dic. liostylus*, Figs 35A, C).

***Dichrogaster imperialis*** Yoshida & Konishi, 2008
(SJN: Mikado-kusakagerou-togari-himebachi)
(Figs 33A–C)

*Dichrogaster imperialis* Yoshida & Konishi, 2008: 252.

**Description**. See Yoshida & Konishi (2008).

**Materials examined**. JAPAN: SEHU, M (paratype), Saitama Pref., Hanno, 2. V. 1968, H. Takizawa leg.; KPM-NK 81909, M, Tokyo, Okutama, Nippara, 24. X. 2004, A. Shimizu leg.; KPM-NK 81910, F, Kanagawa Pref., Oiso Town, Koma, Komayama, 16. IV. 2016, K. Watanabe leg.; SEHU, F (paratype), Kagoshima Pref., Terayama, 1. V. 1970, K. Kusigemati leg.

**Distribution**. Japan (Honshu, Kyushu, and Amamioshima Is.).

**Bionomics**. Unknown.

***Dichrogaster kichijoi*** (Uchida, 1940)
(SJN: Kusakagerou-togari-himebachi)
(Figs 34A–D)

*Hemiteles* (*Rhadiurgus*) *chrysopae* Uchida, 1933a: 167.
*Microtorus kichijoi* Uchida, 1940: 66.

**Description**. See Yoshida & Konishi (2008).

**Materials examined**. JAPAN: SEHU, F (holotype of *Hemiteles* (*Rhadiurgus*) *chrysopae*), Hokkaido, Sapporo, 31. VII. 1931; KPM-NK 81839, 81840, 2 F, Gunma Pref., Tsumagoi Vil., Kanbata, Takamine-kogen, 3. IX. 2015, K. Watanabe leg.

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

**Bionomics**. Host record: *Chrysopa septempunctata* Wesmael, 1841 (= *C. pallens* (Rambur, 1838) (Neuroptera: Chrysopidae) (Uchida, 1933a).

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

***Dichrogaster liostylus*** (Thomson, 1885)
(SJN: Ana-kusakagerou-togari-himebachi)
(Figs 35A–C, 63B)

*Hemiteles liostylus* Thomson, 1885: 30.
*Hemiteles schaffneri* Schmiedeknecht, 1897: 109.

**Description**. See Yoshida & Konishi (2008).

**Materials examined**. This species is an exceptionally well-recorded species in Japanese Phygadeuontinae. In this study, I record this species based on the specimens collected newly recorded islands or prefectures.

JAPAN: KPM-NK 55037–55039, 3 F, Niigata Pref., Sado Is., Hakuundai to Mt. Myokenzan, 10. IX. 2010, K. Watanabe leg.; KPM-NK 55040–55047, 7 F & 1 M, Tokyo, Izuoshima Is., Oshima Town, Motomachi, Mt. Omaru, 17. VIII. – 5. X. 2012, K. Tsujii leg. (MsT); KPM-NK 55048–55054, 4 F & 3 M, ditto, 5. X. – 31. X. 2012; KPM-NK 55055, M, Tokyo, Aogashima Is., 8. X. 2011, K. Tsujii leg.; KPM-NK 55056–55065, 1 F & 9 M, Tokyo, Miyakejima Is., Miyake Vil., Kanjo-rindo, 25. VIII. – 22. IX. 2012, K. Tsujii leg. (MsT); KPM-NK 55066, 55067, 2 F, Tokyo, Mikurajima Is., Eiga-sawa, 20. IX. – 25. X. 2012, K. Tsujii leg. (MsT); KPM-NK 55068, 55069, 2 F, Tokyo, Hachijojima Is., Hachijo Town, Mt. Miharayama, 24. IX. – 28. X. 2012, K. Tsujii leg. (MsT); KPM-NK 55070, F, Yamanashi Pref., Koushu City, Yanagisawa-toge, 5. VIII. 2008, K. Watanabe leg.; KPM-NK 55071, 55072, 2 F, Toyama Pref., Nanto City, Togamura, Kamimomose, 1–8. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 55073, F, Hyogo Pref., Kasai City, Uzurano Town, 29. IV. 2011, K. Maeto & K. Watanabe leg.; KPM-NK 55074, 55075, F, Kagawa Pref., Takamatsu City, Enza Town, riverside of Koutougawa Riv., 5. V. 2011, K. Maeto & K. Watanabe leg.; KPM-NK 55076, F, Kochi Pref., Umaji Vil., 4. VIII. 2010, Y. Matsubara & K. Fukuda leg. (MsT); KPM-NK 55077, F, Kagoshima Pref., Amamioshima Is., Mt. Yuidake, 10. VIII. 2004, H. Makihara leg. (MsT).

**Distribution**. Japan (Kunashiri Is., Hokkaido, Honshu, Sado Is.*, Izuoshima Is.*, Miyakejima Is.*, Aogashima Is.*, Mikurajima Is.*, Hachijojima Is.*, Shikoku, Kyushu, Tsushima Is., Yakushima Is., Amamioshima Is.*, and Okinawajima Is.); Taiwan, India, and widely distributed in Palearctic region.

**Bionomics**. Host record: cocoon of Chrysopidae sp. (Neuroptera) (Yoshida & Konishi, 2008).

**Remarks**. This is the first record of this species from Sado Is., Izuoshima Is., Miyakejima Is., Aogashima Is., Mikurajima Is., Hachijojima Is., and Amamioshima Is.

***Dichrogaster nitida*** Sheng & Sun, 2014
(New SJN: Sheng-kusakagerou-togari-himebachi)
(Figs 36A–D, 63C)

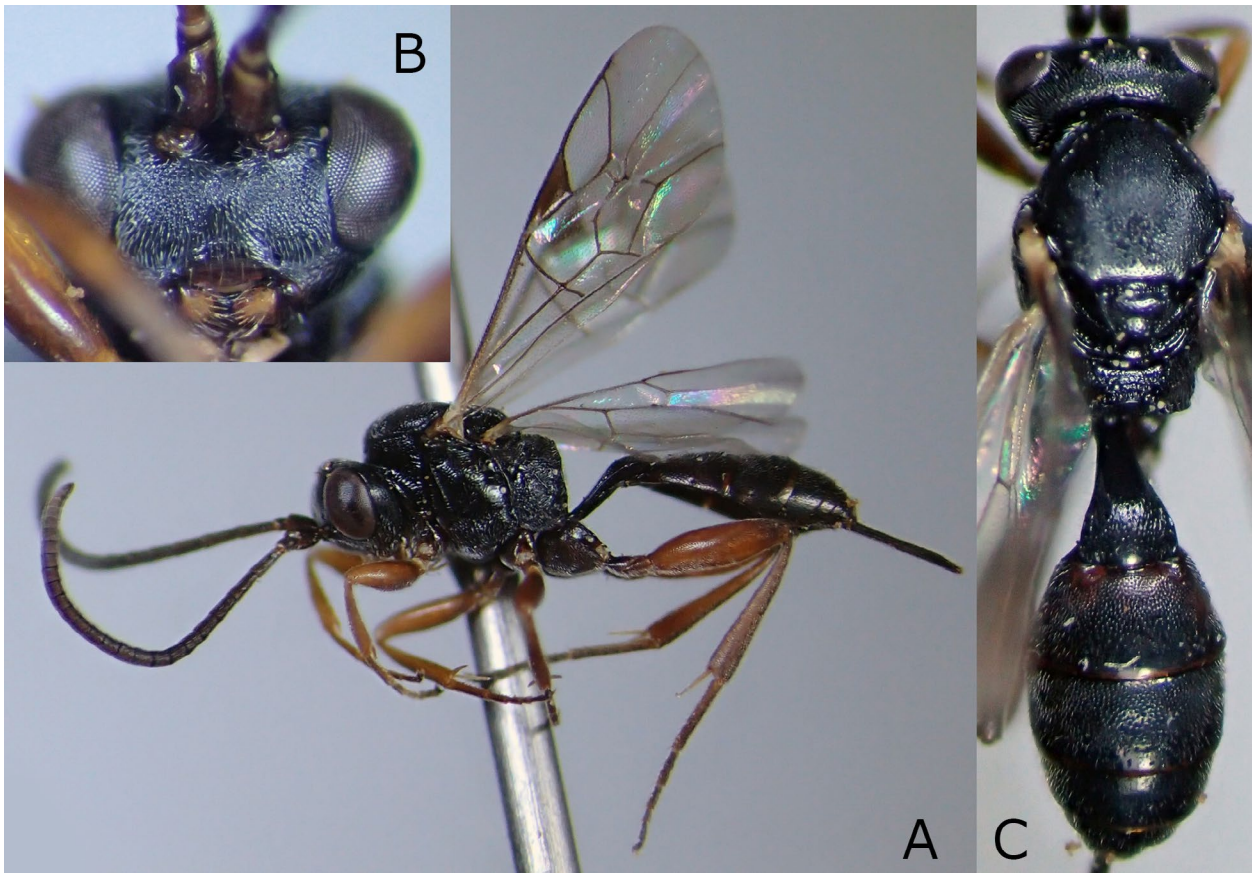


Fig. 33. *Dichrogaster imperialis* Yoshida & Konishi, 2008, KPM-NK 81910, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view.

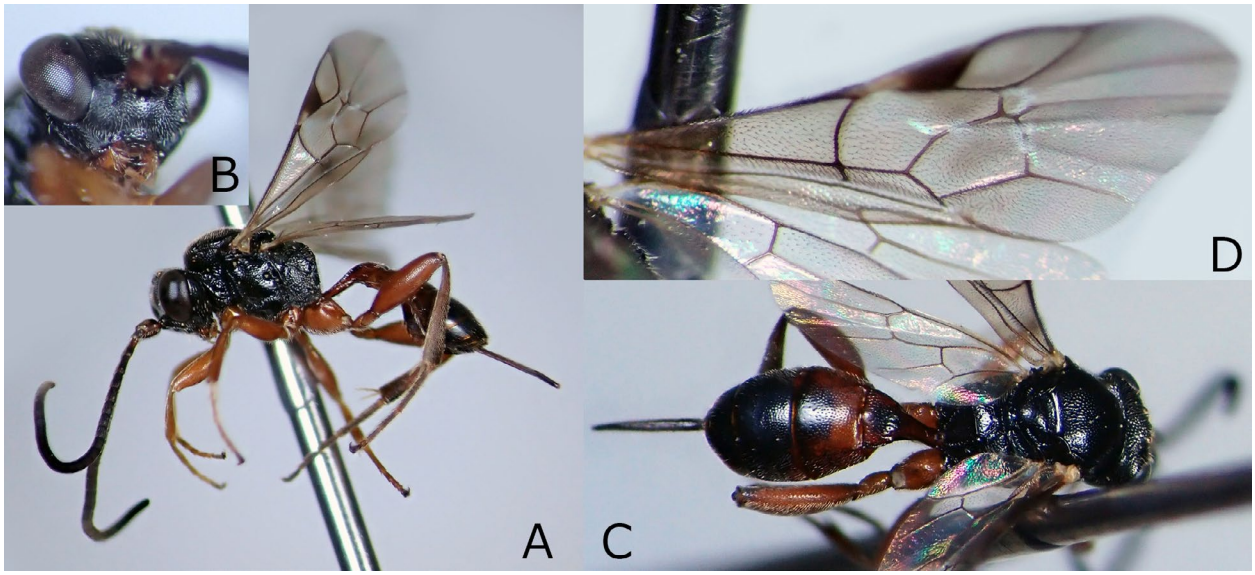


Fig. 34. *Dichrogaster kichijoi* (Uchida, 1940), KPM-NK 81840, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings.

*Dichrogaster nitidus* Sheng & Sun, 2014: 143.

**Description**. See Sheng & Sun (2014).

**Material examined**. JAPAN: KPM-NK 81908, F, Kanagawa Pref., Hadano City, Mt. Koubou-yama, 5. IV. 2007, K. Watanabe leg.

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

**Bionomics**. Unknown.

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

***Dichrogaster parva*** Yoshida & Konishi, 2008
(SJN: Chibi-kusakagerou-togari-himebachi)
(Figs 37A–C)

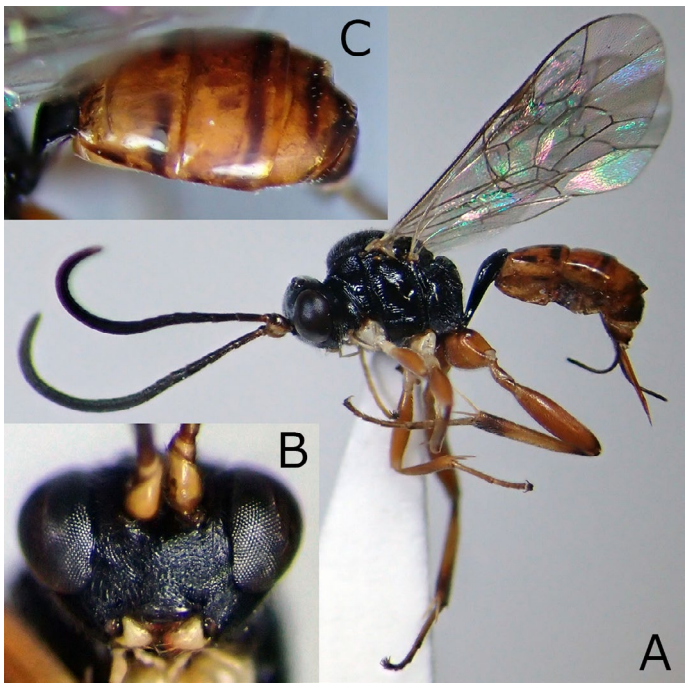


Fig. 35. *Dichrogaster liostylus* (Thomson, 1885), KPM-NK 55074, female from Japan — A, lateral habitus; B, head, frontal view; C, metasoma, dorso-lateral view.

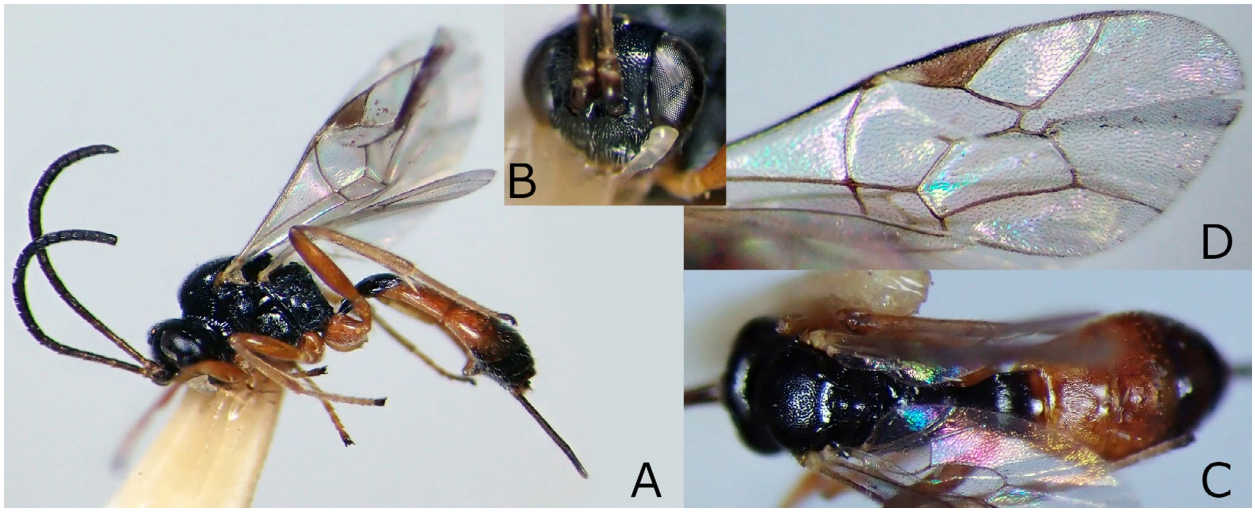


Fig. 36. *Dichrogaster nitida* Sheng & Sun, 2014, KPM-NK 81908, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings.

*Dichrogaster parva* Yoshida & Konishi, 2008: 255.

**Description**. See Yoshida & Konishi (2008).

**Materials examined**. JAPAN: KPM-NK 81907, F, Saitama Pref., Kumagaya City, Oasou, Arakawaoasou-park, 27. X. 2017, H. Handa leg.

**Distribution**. Japan (Honshu).

**Bionomics**. Unknown.

### ***Hemiteles* genus group**
(subtribe Hemitelina sensu Townes (1970) and Horstmann (1992))

Three genera, *Aclastus* Förster, 1869, *Hemiteles* Gravenhorst, 1829, and *Xiphulcus* Townes, 1970, have been recorded from Japan. In addition, I found *Obisiphaga* Morley, 1907 and *Polyaulon* Förster, 1869 from Japan. The taxonomic treatment of these genera requires the additional specimens and comparison with European species. In this study, I review *Aclastus* and *Hemiteles*. The identification of genera see Townes (1970).

#### Genus ***Aclastus*** Förster, 1869

*Aclastus* Förster, 1869: 175. Type: *Aclastus rufipes* Ashmead, 1902. Included by Ashmead (1902).

*Microplex* Förster, 1869: 175. Type: *Aclastus rufipes* Ashmead, 1902. Included by Roman (1909).

*Daetora* Förster, 1869: 175. Type: *Hemiteles solutus* Thomson, 1884. Designated by Perkins (1962).

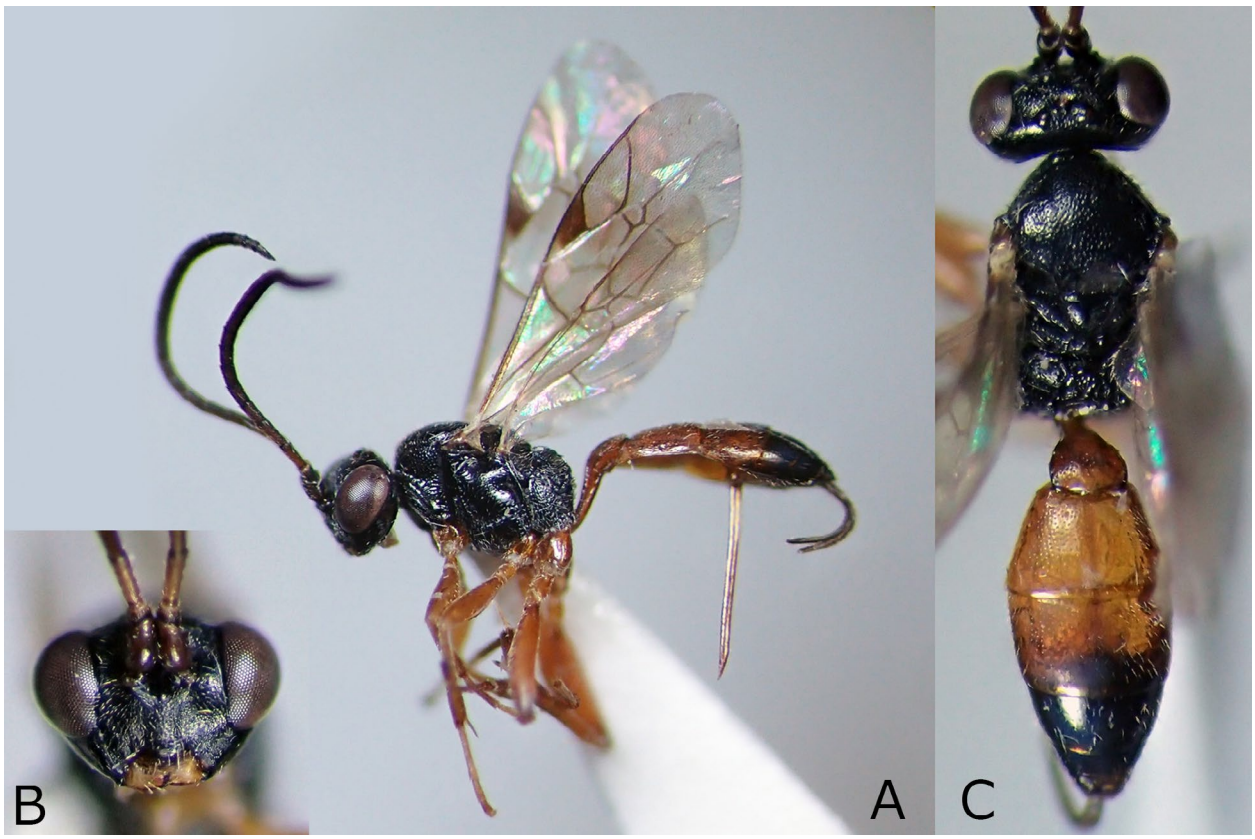


Fig. 37. *Dichrogaster parva* Yoshida & Konishi, 2008, KPM-NK 81907, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view.

*Opisthostenus* Förster, 1869: 175. Type: *Hemiteles* (*Opisthostenus*) *etorofuensis* Uchida, 1936. Included by Uchida (1936b).

*Fetialis* Rossem, 1990: 315. Type: *Fetialis alacris* Rossem, 1990. Original designation.

A single species, *Acl. etorofuensis* (Uchida, 1936), has been recorded from Japan. In addition, I found at least two undetermined species from Japan. In this study, I re-describe *Acl. etorofuensis* with some distributional data.

**Preliminary key to Japanese species of the genus *Aclastus* (♀)**

1. T III almost entirely smooth (Fig. 38D). Antenna with 18–20 flagellomeres.
   ..... *Acl. etorofuensis* (Uchida, 1936)
-. T III largely punctate. Antenna with various number of flagellomeres.
   ..... 2
2. Antenna with 19–20 flagellomeres. Ovipositor straight, distinctly shorter than hind tibia.
   ..... *Acl.* sp. A
-. Antenna with 23–24 flagellomeres. Ovipositor entirely upcurved, almost as long as hind tibia.
   ..... *Acl.* sp. B

***Aclastus etorofuensis*** (Uchida, 1936)
(SJN: Etorofu-mame-togari-himebachi)
(Figs 38A–D, 65L)

*Hemiteles* (*Opisthostenus*) *etorofuensis* Uchida, 1936b: 43.

**Description**. Female (n=4). Body length 3.2–4.0 mm. Body polished, covered with silver setae.

Head. Clypeus 1.45–1.6 times as wide as maximum length, punctate except for smooth anterior part, its anterior margin rounded. Face punctate, with a small longitudinal smooth area medially. MSL 1.5–1.8 times as long as BWM. Frons, vertex, and gena finely punctate. OOL as long as or slightly longer than POL. OOL and POL distinctly longer than OD. Occipital carina complete, its lower end joined with hypostomal carina near mandibular base. Mandible strongly narrowed toward apex, slightly twisted. Upper tooth of mandible longer than lower tooth. Base of mandible flat. Antenna with 18–20 flagellomeres. FL I 5.7–8.0 times as long as maximum depth in lateral view. FL III 5.0–5.5 times as long as maximum depth in lateral view. The penultimate segments of flagellum distinctly longer than wide.

Mesosoma. Lateral part of pronotum largely smooth, with epomia. Mesoscutum and scutellum finely punctate, with notaulus. Mesopleuron smooth except for area finely punctate below speculum, with some setae along epicnemial carina and mesopleural suture. Epicnemial carina complete, its dorsal end reaching the anterior margin of mesopleuron. Posterior transverse carina of mesosternum largely absent laterally. Metapleuron largely smooth, with a complete juxtacoxal carina. Propodeum covered with weak irregular rugae. Propodeal carinae complete (Figs 38C, 65L). Area superomedia longer than wide, receiving the lateral section of anterior transverse carina anteriorly (Figs 38C, 65L). Areolet absent (Fig. 38A). Nervellus subvertical (Fig. 38A). Length of fore wing 2.9–3.7 mm. Hind femur 5.0–5.5 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.3: 0.4. Tarsal claws simple.

Metasoma. T I 2.0–2.2 times as long as maximum width, covered with longitudinal striae (Fig. 38D). Median dorsal carina and dorsolateral carina of T I indistinct. T II shorter than maximum wide. T II and T III smooth (Fig. 38D) except for the punctures on the laterotergites. T IV to T VI covered with fine punctures posteriorly. Ovipositor sheath 0.53–0.65 times as long as hind tibia. Ovipositor straight except for slightly upcurved apical part, without a nodus and ventral teeth.

Coloration (Figs 38A–D). Body (excluding wings and legs) black to blackish brown. Clypeus and malar space more or less tinged with dark reddish brown. Scape and pedicel yellowish brown. Mandible whitish yellow except for darkened apex. Palpi whitish yellow. Mesosoma and T I usually partly tinged with reddish brown. Tegula yellowish brown. T II to T VII reddish yellow to reddish brown. Membranous part of metasomal sternites whitish yellow to reddish yellow. Ovipositor reddish brown. Wings hyaline. Veins and pterostigma yellowish brown to brown. Legs yellowish brown to reddish brown except for weakly darkened subbasal band and apical part of hind tibia.

Male. Not studied in this study.

**Materials examined**. JAPAN: SEHU, F (holotype), Etorofu Is., Shana, 11–20. VII. 1935, Y. Sugihara leg.; KPM-NK 81976, F, Hokkaido, Horokanai Town, Moshiri, Uryu, 11–17. VII. 2012, K. Watanabe *et al.* leg. (MsT); KPM-NK 81977, F, Aichi Pref., Shitara Town, Tsugu, Honsawa, 17. VI. 2019, S. Morishita leg.; KPM-NK 55020, F, Toyama Pref., Toyama City, Arimine, Jyurodani, 7–14. VII. 2009, M. Watanabe *et al*. leg. (MsT).

**Distribution**. Japan (Kunashiri Is., Etorofu Is., Hokkaido*, and Honshu), China, and Taiwan.

**Bionomics**. Unknown in Japan. In China, *Cotesia ruficrus* (Haliday, 1834) has been recorded as host (He, 1984; He *et al.*, 1996).

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

## Genus ***Hemiteles*** Gravenhorst, 1829

*Hemiteles* Gravenhorst, 1829: 780. Type: *Hemiteles tristator* Gravenhorst, 1829 (= *Ichneumon bipunctator* Thunberg, 1824). Designated by Westwood (1840).

*Ocymorus* Förster, 1869: 180. Type: *Hemiteles cingulator* Gravenhorst, 1829 (= *Ichneumon bipunctator*

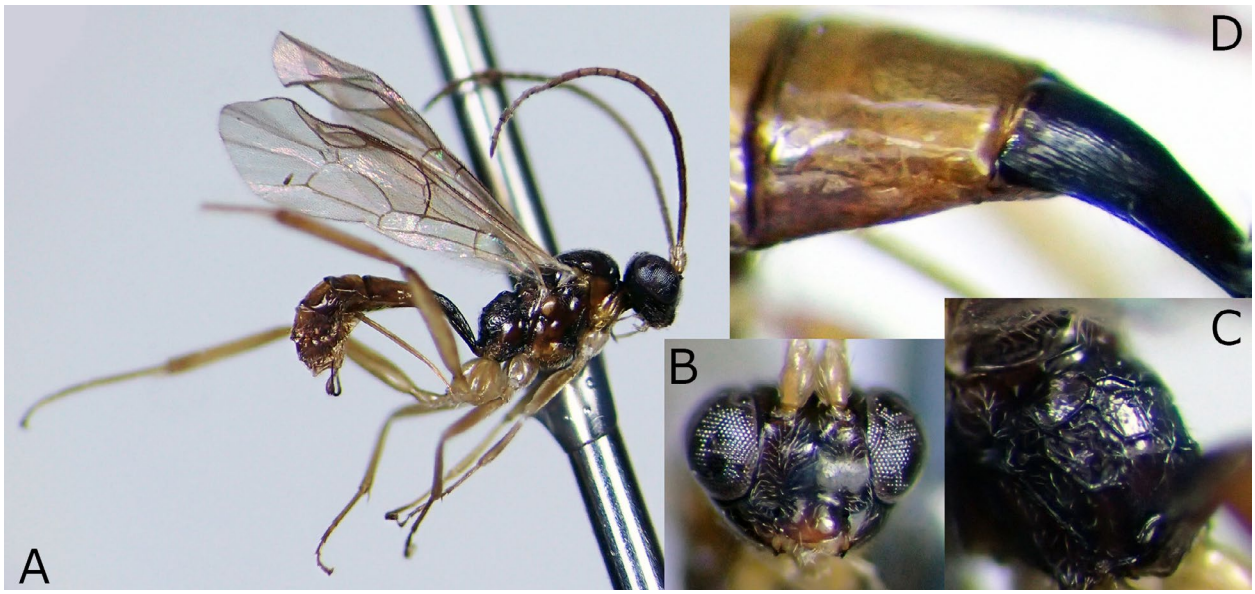


Fig. 38. *Aclastus etorofuensis* (Uchida, 1936), KPM-NK 81976, female from Japan — A, lateral habitus; B, head, frontal view; C, propodeum, dorso-lateral view; D, T I and T II, dorso-lateral view.

Thunberg, 1824). Designated by Townes (1944).

Three species, *H. bipunctator* (Thunberg, 1822), *H. hirashimai* Momoi, 1970, and *H. politus* (Ashmead, 1906), have been recorded from Japan. In this study, I found five additional species from Japan and four of them are undescribed. I describe them and record some distributional data of H. hirashimai below. Japanese species including new species and undetermined species can be distinguished by the following key.

**Preliminary key to Japanese species of the genus *Hemiteles* (♀)**

1. Mesoscutum largely smooth.
..... *H. politus* (Ashmead, 1906) *
-. Mesoscutum matt or densely punctate, without conspicuous smooth area.
..... 2
2. Flagellum with a white band (Figs 39A, 40A). Fore wing without a clouded area (Figs 39A, 40A). Hind TS I: II = 2.0: 0.6–0.7 (Fig. 63H). Ovipositor with a distinct nodus (Fig. 66J).
..... 3
-. Flagellum without a white band (e.g., Figs 41A, 42A). Fore wing with or without a clouded area (e.g., Figs 41A, D, 42A, D). Ratio of Hind TS I: II is various (usually 2.0: 0.9) (Fig. 63I). Ovipositor with or without (Fig. 66K-M) a distinct nodus.
..... 4
3. T I matt with longitudinal striae (Fig. 40E), without median dorsal carina. Hind coxa blackish brown to black (Fig. 40A).
..... *H. japonicus* **sp. nov.**
-. T I matt, at most narrowly striae and its median dorsal carina present basally. Hind coxa yellowish brown (Fig. 39A).
..... *H. hirashimai* Momoi, 1970
4. FL III longer than 4.5 times as long as maximum depth in lateral view. Subapical part of fore wing clouded. Pronotum laterally and mesopleuron at least partly marked with reddish brown.
..... *H. bipunctator* (Thunberg, 1822)
-. FL III shorter than 4.1 times as long as maximum depth in lateral view. Subapical part of fore wing clouded or not clouded. Pronotum and mesopleuron entirely black or at most weakly tinged with reddish brown on collar and upper part of mesopleuron (Fig. 43D).
..... 5
5. Hind coxa, femur, and tibia entirely black except for yellowish brown area in base of tibia (Fig. 41A). Fore wing without a clouded area (Fig. 41D).
..... *H. kuro* **sp. nov.**
-. At least hind coxa yellowish brown to reddish brown (Figs 42A, 43A). Fore wing with or without a clouded area (Figs 42D, 43E).
..... 6
6. FL III 1.8 times as long as maximum depth in lateral view. Fore wing without a clouded area.
..... *H.* sp.
-. FL III longer than 3.0 times as long as maximum depth in lateral view. Fore wing with or without a clouded area.
..... 7
7. Ovipositor sheath 0.75–0.8 times as long as hind tibia. T I 2.4–2.7 times as long as maximum width. Antenna with 26–30 flagellomeres. Subapical part of fore wing weakly but distinctly clouded just behind of pterostigma (Fig. 42D).
..... *H. maculipterus* **sp. nov.**
-. Ovipositor sheath 0.5–0.56 times as long as hind tibia. T I 2.1–2.2 times as long as maximum width. Antenna with 22–24 flagellomeres. Subapical part of fore wing not clouded (Fig. 43E).
..... *H. yamatonis* **sp. nov.**

* This species may be not *Hemiteles*.

***Hemiteles hirashimai*** Momoi, 1970
(SJN: Hirashima-mame-togari-himebachi)
(Figs 39A–C)

*Hemiteles hirashimai* Momoi, 1970: 349.

**Description**. See Momoi (1970).

**Materials examined**. JAPAN: KPM-NK 82083, F, Kanagawa Pref., Odawara City, Hayakawa, Sarusawa-rindo, 2. VI. 2014, K. Watanabe leg.; KPM-NK 82080, F, Niigata Pref., Myoukou City, Suginosawa, Myoukou-sasagamine, 17. VIII. 2013, S. Shimizu leg.; KPM-NK 82081, F, Toyama Pref., Toyama City, Arimine, Inonedani, 8–15. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 82076, F, Kochi Pref., Umaji Vil., 6. VIII. 2010, Y. Matsubara & K. Fukuda leg. (MsT); MNHAH, F (holotype), Kagoshima Pref., Amamioshima Is., Yuwan, 31. VII. 1963, Y. Hirashima leg.; KPM-NK 82075, F, Kagoshima Pref., Amamioshima Is., Amami City, Sumiyou Town, Santaro-toge, 2. VII. 2011, S. Fujie leg.; KPM-NK 82078, 82079, 82082, 82085, 82086, 4 F & 1 M, Kagoshima Pref., Tokunoshima Is., Kedoku, 21. V.

2008, K. Watanabe & A. Sakai leg.; KPM-NK 82077, M, Okinawa Pref., Iriomotejima Is., Uehara, 19. VII. 2007, H. Kawamoto leg.; KPM-NK 82084, F, Okinawa Pref., Iriomotejima Is., Komi, Airagawa-rindo, 23. VI. 2011, K. Watanabe leg.

**Distribution**. Japan (Honshu, Shikoku*, Amamioshima Is., Tokunoshima Is.*, Ishigakijima Is., and Iriomotejima Is.).

**Bionomics**. Unknown.

**Remarks**. This is the first record of this species from Shikoku and Tokunoshima Island.

***Hemiteles japonicus* sp. nov.**

(New SJN: Nihon-mame-togari-himebachi)

(Figs 40A–E, 63H, 64C, 66J)

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

**Type series**. **Holotype**: KPM-NK 55021, F, JAPAN, Kagoshima Pref., Kimotsuke Town, Minamikata, Kanaedake, 18–20. VII. 2019, K. Watanabe leg. (YPT). **Paratypes**: JAPAN, KPM-NK 55022, F, Toyama Pref., Nanto City, Togamura, Kamimomose, 21–28. VII. 2009, M. Watanabe *et al*. leg. (MsT); KPM-NK 55023, F, Kochi Pref., Umaji Vil., 6. VIII. 2010, Y. Matsubara & K. Fukuda leg. (MsT).

**Description**. Female (n=3). Body length 4.6–5.6 (HT: 4.7) mm. Body matt and densely punctate and coriaceous, covered with silver setae.

Head. Clypeus 1.9 times as wide as maximum length, its anterior margin rounded. MSL 0.9–0.95 (HT: 0.9) times as long as BWM. Gena punctate and coriaceous. OOL shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible as long as lower tooth. Base of mandible flat. Antenna with 23–24 (HT: 24) flagellomeres. FL III 6.7 times as long as maximum depth in lateral view.

Mesosoma. Epomia distinct. Mesoscutum with some longitudinal striae near posterior end of notaulus. Notaulus long, fading our just behind of the center of mesoscutum. Scutellum without a lateral longitudinal carina except for distinct basal part. Mesopleuron longitudinally and obliquely striate just anterior to and below speculum, with coriaceous speculum. Posterior transverse carina of mesosternum largely absent in front of mid coxae. Metapleuron obliquely striate medially, without a juxtacoxal carina. Anterior transverse carina and posterior transverse carina of propodeum complete (Figs 40E, 64C). Lateral longitudinal carina and lateromedian longitudinal carina of propodeum absent (Fig. 64C). Area basalis

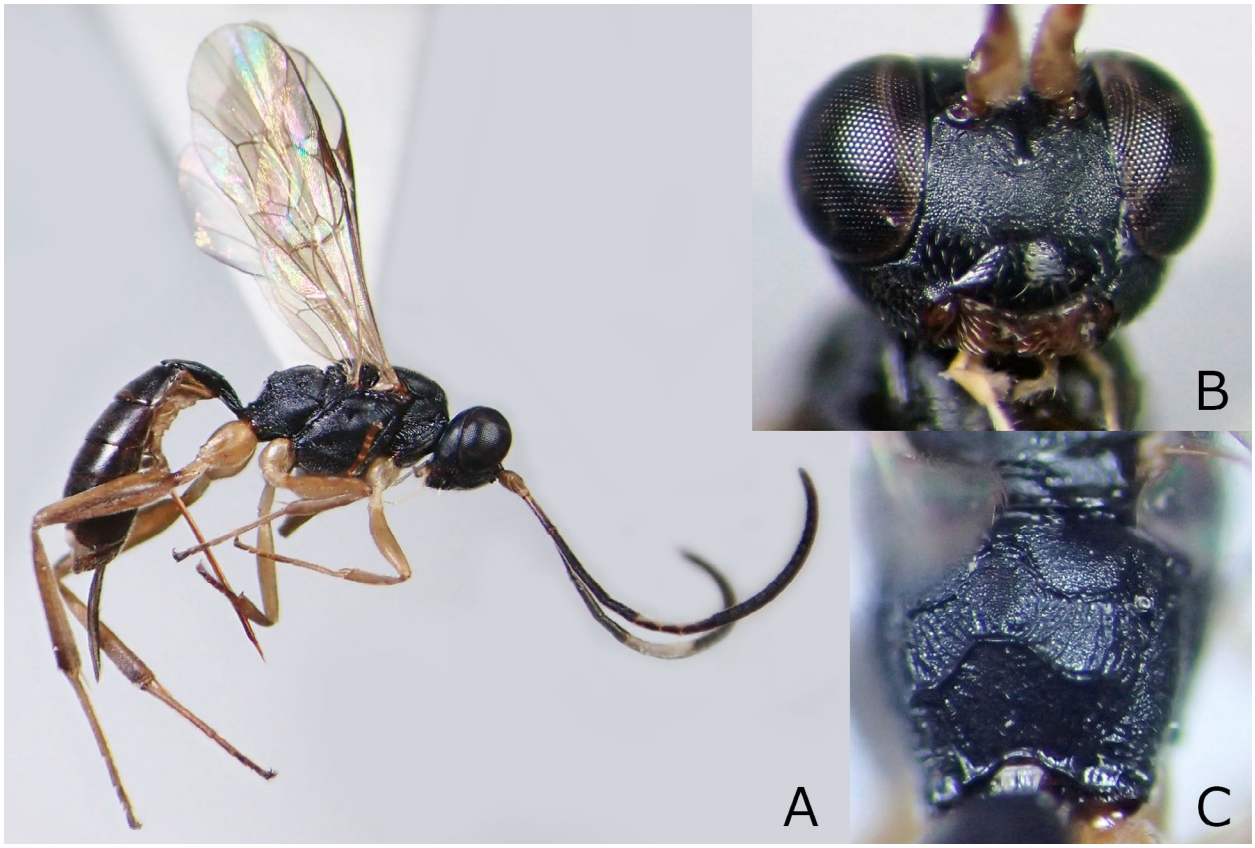


Fig. 39. *Hemiteles hirashimai* Momoi, 1970, KPM-NK 82086, female from Japan — A, lateral habitus; B, head, frontal view; C, propodeum, dorsal view.

indistinct (Fig. 64C). Area superomedia indistinct laterally (Fig. 64C). Area petiolaris not strongly elongated (Fig. 64C). Median parts of propodeum partly longitudinally striate (Fig. 64C). Length of fore wing 3.7–4.0 (HT: 3.7) mm. Areolet absent (Fig. 40D). Vein 2m-cu of fore wing with a single bulla (Fig. 40D). Nervellus inclivous, intercepted behind the middle (Fig. 40D). Hind femur 5.5–5.7 (HT: 5.5) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.6: 0.35: 0.15: 0.35–0.4 (HT: 0.4). Tarsal claws simple.

Metasoma. T I 1.55–1.7 (HT: 1.7) times as long as maximum width, longitudinally striate (Fig. 40E). Median dorsal carina of T I absent. Dorsolateral carina of T I complete except for indistinct area near spiracle. T II to T VI wider than long. Ovipositor sheath 0.9–0.93 (HT: 0.93) times as long as hind tibia. Ovipositor straight, with a distinct nodus and ventral teeth (Fig. 66J).

Coloration (Figs 40A–E). Body (excluding wings and legs) black to blackish brown. Ventral surface of scape, pedicel, and FL I reddish brown. Dorsal surfaces of scape, FL V to VII, and base of FL VIII white. Mandible reddish brown except for darkened apex and base. Palpi whitish yellow. T III sometimes tinged with reddish brown anteriorly. Apices of T VII and T VIII white. Membranous part of metasomal sternites whitish yellow. Ovipositor reddish brown. Wings hyaline. Veins and pterostigma brown to dark brown. Fore and mid legs brown to yellowish brown except for white trochanters, trochantelli, and base of tibiae. Hind coxa blackish brown, its apex tinged with white. Hind trochanter and base of tibia white. Hind trochantellus, femur and tibia except for base brown to dark brown. Median part of hind tibia more or less tinged with whitish yellow dorsally. Hind tibial spurs and tarsus yellow to yellowish brown.

Male. Unknown.

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

**Bionomics**. Unknown.

**Remarks**. This species resembles *H. hirashimai*, but it can be distinguished by the above key. This species and *H. hirashimai* are differed from other Japanese species by the short area petiolaris, the short hind TS II, and the ovipositor with a distinct nodus. They may be classified into a separate genus, while its taxonomic treatment requires the additional specimens and comparison with world species.

### *Hemiteles kuro* sp. nov.

(New SJN: Sumiiro-mame-togari-himebachi)

(Figs 41A–E, 65M, 66K)

**Etymology**. The specific name is from the Japanese term "Kuro" (= black), which is the coloration of body and legs.

**Type series**. **Holotype**: KPM-NK 55024, F, JAPAN, Nagano Pref., Nagawa Town, Daimon, 26. VIII. 2011, S. Fujie leg.

**Description**. Female (n=1). Body length 5.8 mm. Body covered with silver setae.

Head matt and densely punctate. Clypeus 1.8 times as wide as maximum length, its anterior margin rounded. MSL 0.9 times as long as BWM. OOL shorter than POL. OOL slightly shorter than and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible slightly convex. Antenna with 29 flagellomeres. FL III 4.0 times as long as maximum depth in lateral view.

Mesosoma polished. Lateral part of pronotum

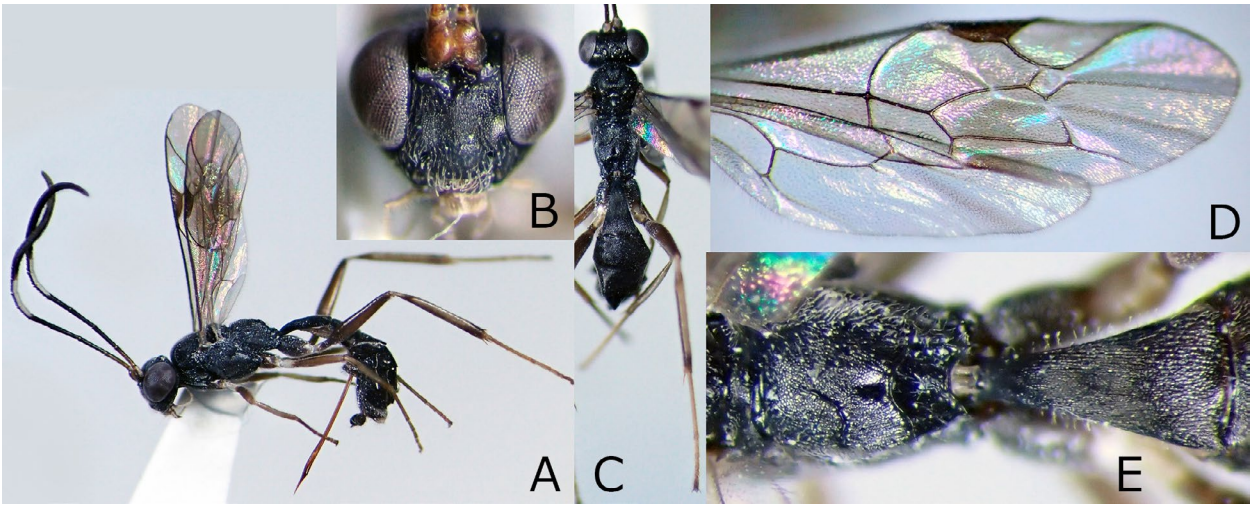


Fig. 40. *Hemiteles japonicus* **sp. nov.**, KPM-NK 55021, holotype, female — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings; E, propodeum and T I, dorsal view.

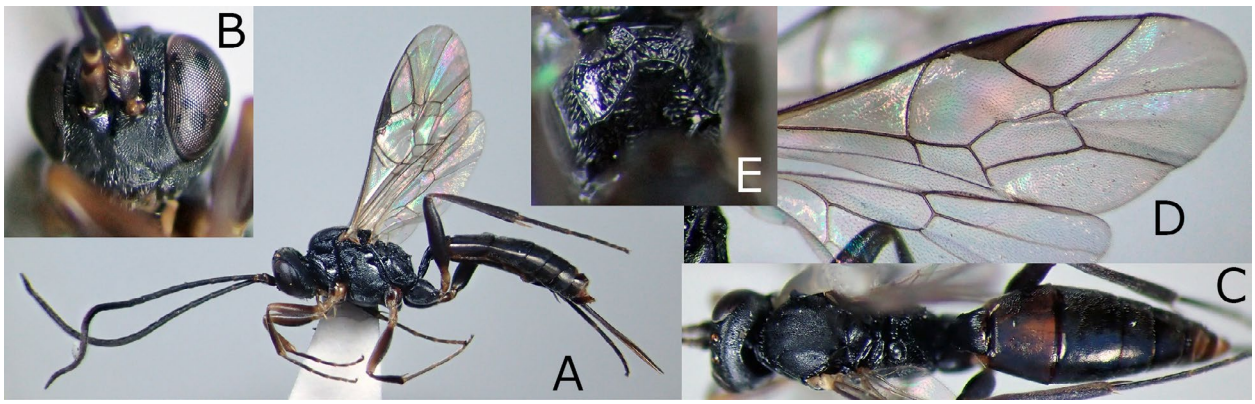


Fig. 41. *Hemiteles kuro* **sp. nov.**, KPM-NK 55024, holotype, female — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings; E, propodeum, dorsal view.

longitudinally striate medially, punctate dorsally and smooth ventrally. Epomia indistinct. Mesoscutum matt. Notaulus long, fading our just behind of the center of mesoscutum. Scutellum densely punctate and coriaceous, without a lateral longitudinal carina except for base. Mesopleuron longitudinally striate except for smooth speculum. Posterior transverse carina of mesosternum complete except for narrow indistinct area in front of mid coxae. Metapleuron punctures, without a juxtacoxal carina. Propodeal carinae complete (Figs 41E, 65M). Area basalis distinct (Figs 41E, 65M). Area superomedia distinct, transversely elongate, its length almost as long as area basalis (Figs 41E, 65M). Area petiolaris strongly elongated (Fig. 41E). Anterior part of propodeum largely smooth. Median part of propodeum partly longitudinally rugulose except for lateral smooth area. Posterior part of propodeum transversely rugulose. Postero-lateral corner of area dentipara weakly projected. Length of fore wing 4.2 mm. Areolet absent (Fig. 41D). Vein 2m-cu of fore wing with a single bulla (Fig. 41D). Nervellus inclivous, intercepted behind the middle (Fig. 41D). Hind femur 4.7 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.3: 0.4. Tarsal claws simple.

Metasoma polished. T I 1.8 times as long as maximum width, longitudinally striate. Median dorsal carina of T I absent. Dorsolateral carina of T I partly indistinct. T II to T VI wider than long, finely punctate. T II partly covered with minute longitudinal striae. Ovipositor sheath 1.1 times as long as hind tibia. Ovipositor straight, without a nodus and with minute ventral teeth (Fig. 66K).

Coloration (Figs 41A–E). Body (excluding wings and legs) black to blackish brown. Base of FL I reddish brown. Mandible reddish brown except for darkened apex and base. Palpi and tegula whitish yellow. T II tinged with reddish brown postero-medially. Apices of T III and T IV narrowly tinged with reddish brown. Membranous part of metasomal sternites and ovipositor yellowish brown. Wings hyaline. Veins and pterostigma brown to dark brown. Fore and mid legs brown to yellowish brown except for white trochanters, trochantelli, tibial spurs, and base of tibiae. Hind coxa, femur, tibia, and tarsal segments blackish brown to black. Hind trochanter and trochantellus, and tibial spurs whitish yellow. Apex of hind coxa, bases of hind femur, tibia, and each tarsal segment tinged with yellowish brown.

Male. Unknown.

**Distribution**. Japan (Honshu).

**Bionomics**. Unknown.

**Remarks**. This species can be easily distinguished from other species by the black body, hind coxa, hind femur, hind tibia, and hind tarsus.

### *Hemiteles maculipterus* sp. nov.

(New SJN: Hanemon-mame-togari-himebachi)

(Figs 42A–E, 63I, 64D, 66L)

**Etymology**. The specific name is from the fore wing with clouded maculation.

**Type series**. **Holotype**: KPM-NK 55025, F, JAPAN, Shizuoka Pref., Kawanehonchou Town, Mt. Yamainudan, 14. VI. 2008, K. Watanabe leg. **Paratypes**: JAPAN, KPM-NK 55026, F, ditto; KPM-NK 55027, F, Kagoshima Pref., Yakushima Is., Arakawa, 4–7. VI. 2007, T. Yamauchi leg. (MsT); KPM-NK 55028, F, ditto, 22. VII. – 22. VIII. 2006; KPM-NK 55029–55031, 3 F, ditto, 29. VII. – 25. VIII. 2007.

**Description**. Female (n=7). Body length 3.7–5.2 (HT: 5.2) mm. Body matt and densely coriaceous, covered with silver setae.

Head. Clypeus 2.0 times as wide as maximum length, its anterior margin rounded. MSL 1.0–1.1 (HT: 1.0) times as long as BWM. OOL almost as long as POL. OOL and POL longer than OD. Occipital carina complete, its lower

end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible flat. Antenna with 26–30 (HT: 30) flagellomeres. FL III 3.3 times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum covered with minute longitudinal striae ventrally. Epomia indistinct. Notaulus short, fading out in front of the center of mesoscutum. Scutellum without a lateral longitudinal carina except for base. Mesopleuron covered with minute longitudinal striae ventrally except for coriaceous speculum and posterior part. Posterior transverse carina of mesosternum largely absent in front of mid coxae. Metapleuron without a juxtacoxal carina. Anterior transverse carina and posterior transverse carina of propodeum complete (Fig. 64D) or lateral part of the latter sometimes partly indistinct. Lateral longitudinal carina absent except for distinct anterior section (Fig. 64D). Lateromedian longitudinal carina of propodeum complete (Figs 42E, 64D). Area basalis distinct (Fig. 64D). Area superomedia distinct, transversely elongate, its length almost as long as area basalis (Fig. 64D). Postero-lateral corner of area dentipara weakly projected. Area petiolaris strongly elongated (Fig. 64D). Median and posterior parts of propodeum irregularly rugulose except for transverse rugae on area petiolaris. Length of fore wing 4.0–4.4 (HT: 4.1) mm. Areolet absent (Fig. 42D). Vein 2m-cu of fore wing with a single bulla. Nervellus inclivous, intercepted behind the middle (Fig. 42D). Hind femur 4.7–4.9 (HT: 4.7) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9–0.95 (HT: 0.9): 0.65–0.7 (HT: 0.65): 0.3: 0.4. Tarsal claws simple.

Metasoma. T I 2.4–2.7 (HT: 2.7) times as long as maximum width, longitudinally and obliquely striate, sometimes with a shallow median longitudinal concavity posteriorly. Median dorsal carina of T I absent. Dorsolateral carina of T I indistinct. T II to T VI wider than long, finely and densely punctate. Ovipositor sheath 0.75–0.8 (HT: 0.75) times as long as hind tibia. Ovipositor straight except for slightly upcurved apex, without a nodus and with weak ventral teeth (Fig. 66L).

Coloration (Figs 42A–E). Body (excluding wings and legs) black to blackish brown. Scape, pedicel, and base of FL I reddish brown to brown. Mandible yellowish brown except for darkened apex and base. Palpi and tegula whitish yellow to yellowish brown. Apex of T I, T II, and base of T III reddish yellow. Posterior margins of T III to T VI narrowly tinged with reddish brown. Posterior part of T VII white. T III to T VII sometimes tinged with brown. Membranous part of metasomal sternites whitish yellow. Ovipositor yellowish brown. Wings hyaline, area behind of pterostigma largely clouded. Veins and pterostigma brown to dark brown. Fore and mid coxae and all tibial spurs, trochanters and trochantelli whitish yellow to yellow. Fore and mid femora, tibiae, and tarsi yellowish brown to dark brown. Hind coxa and base of femur reddish brown. Hind femur except base, tibia except for base, and tarsus blackish brown. Base of hind tibia tinged with whitish yellow.

Male. Unknown.

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

**Bionomics**. Unknown.

**Remarks**. This species resembles *H. similis* (Gmelin, 1790) and *H. rubropleuralis* Kiss, 1929, but it can be distinguished by the following combination of character states: the fore wing with clouded area (absent in *H. similis*); FL III 3.3 times as long as maximum depth in lateral view (2.5–3.0 in *H. rubropleuralis*); mesosoma without red area (usually with red area in *H. similis*).

### *Hemiteles yamatonis* sp. nov.

(New SJN: Haraaka-mame-togari-himebachi)

(Figs 43A–E, 65O, 66M)

**Etymology**. The specific name is from the old name of Japan "Yamato".

**Type series**. **Holotype**: KPM-NK 55032, F, JAPAN, Toyama Pref., Toyama City, Kamegai, 4–11. VIII. 2009, M. Watanabe *et al.* leg. (MsT). **Paratypes**: JAPAN, KPM-NK 55033, F, Hokkaido, Sapporo City, Maruyama, 29. VII. 2009, K. Watanabe leg.; KPM-NK 55034, F, Kanagawa Pref., Yamakita Vil., Nakagawa, 3. VII. 2013, K. Watanabe leg.; KPM-NK 55035, F, Yamanashi Pref., Koushu City, Yanagisawa-toge, 5. VIII. 2008, K. Watanabe leg.; KPM-NK 55036, F, Toyama Pref., Nanto City, Togamura, Kamimomose, 11–18. VIII. 2009, M. Watanabe *et al.* leg. (MsT).

**Description**. Female (n=5). Body length 4.4–4.7 (HT: 4.7) mm. Body densely coriaceous, covered with silver setae.

Head matt. Clypeus 2.0 times as wide as maximum length, its anterior margin rounded. MSL 1.0–1.1 (HT: 1.0) times as long as BWM. OOL almost as long as POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible flat. Antenna with 22–24 (HT: 24) flagellomeres. FL III 3.3 times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum covered with longitudinal striae ventrally, the interspace of striae

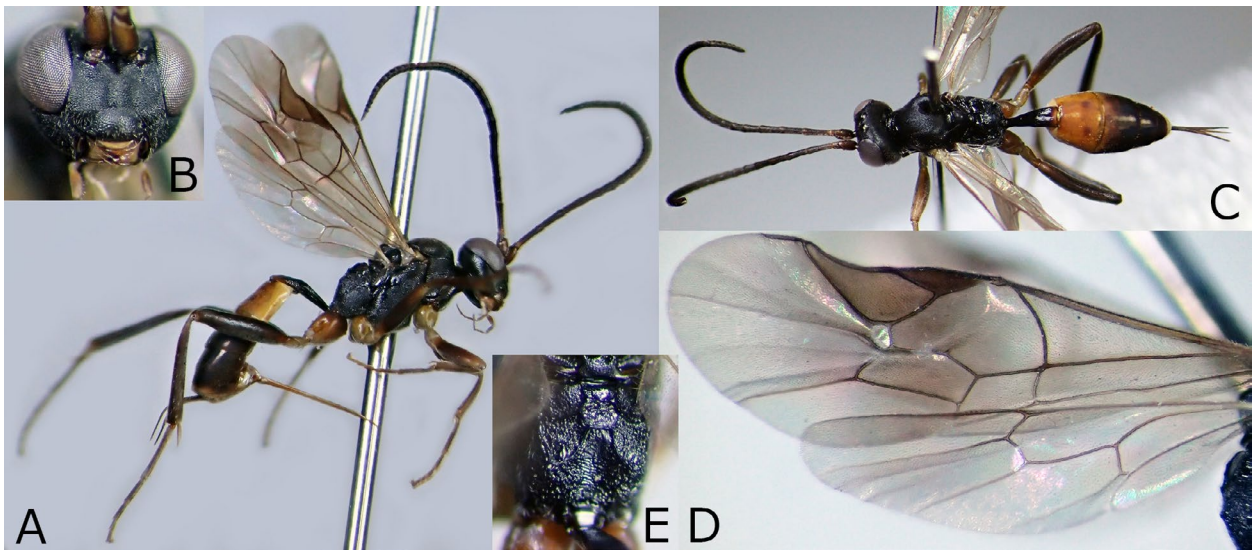


Fig. 42. *Hemiteles maculipterus* **sp. nov.**, KPM-NK 55025 (A, B, D, E, holotype) and 55026 (C, paratype), females — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings; E, propodeum, dorsal view.

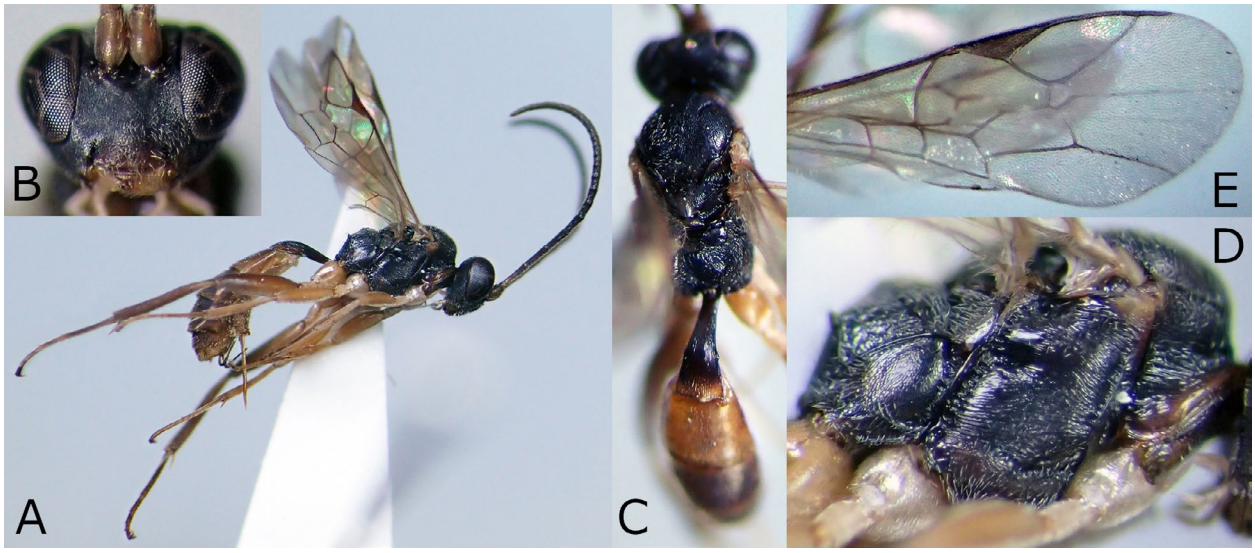


Fig. 43. *Hemiteles yamatonis* **sp. nov.**, KPM-NK 55032 (A-D, holotype) and 55033 (E, paratype), females — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, mesosoma, lateral view; E, wings.

polished. Epomia indistinct. Mesoscutum matt. Notaulus short, fading out in front of the center of mesoscutum. Scutellum polished and punctate, without a lateral longitudinal carina except for posterior half. Mesopleuron covered with longitudinal striae ventrally except for smooth speculum (Fig. 43D). Posterior transverse carina of mesosternum largely absent in front of mid coxae. Metapleuron with a complete juxtacoxal carina. Propodeal carinae complete (Fig. 65O). Area basalis distinct (Fig. 65O). Area superomedia distinct, transversely elongate, its length almost as long as area basalis (Fig. 65O). Postero-lateral corner of area dentipara weakly projected. Area petiolaris strongly elongated. Propodeum polished, partly irregularly, obliquely, and transversely rugulose, with a smooth area in the median part of area petiolaris. Length of fore wing 2.8–3.6 (HT: 3.6) mm. Areolet absent (Fig. 43E). Vein 2m-cu of fore wing with a single bulla. Nervellus inclivous, intercepted behind the middle (Fig. 43E). Hind femur 4.2–4.3 (HT: 4.2) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.8–0.9 (HT: 0.9): 0.6: 0.3: 0.4. Tarsal claws simple.

Metasoma. T I 2.1–2.2 (HT: 2.2) times as long as maximum width, longitudinally striate. Median dorsal carina of T I absent. Dorsolateral carina of T I indistinct. T II to T VI wider than long, finely and densely punctate. Ovipositor sheath 0.5–0.56 (HT: 0.5) times as long as hind tibia. Ovipositor straight, with or without an obtuse nodus and with weak ventral teeth (Fig. 66M).

Coloration (Figs 43A–E). Body (excluding wings and legs) black to blackish brown. Scape, pedicel, and base of

FL I reddish brown to brown. Clypeus more or less tinged with reddish brown. Mandible yellowish brown except for darkened apex and base. Palpi and tegula whitish yellow. Collar and antero-dorsal corner of mesopleuron tinged with reddish brown. Apex of T I, T II, and base of T III reddish yellow. Posterior margins of T III to T VI narrowly tinged with reddish brown. T VII whitish yellow. T III to T VII more or less tinged with brown. Membranous part of metasomal sternites whitish yellow. Ovipositor yellowish brown. Wings hyaline. Veins and pterostigma brown to dark brown. Legs yellowish brown to reddish brown. Fore and mid coxae, basal part of fore tibia, and all tibial spurs, trochanters and trochantelli whitish yellow to yellow. Hind femur, tibia except for base, and tarsus more or less darkened.

Male. Unknown.

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

**Bionomics**. Unknown.

**Remarks**. This species resembles *H. similis* (Gmelin, 1790), but it can be distinguished by the following combination of character states: hind coxa reddish brown (at least partly black in *H. similis*); mesosoma without red area (usually with red area in *H. similis*); ovipositor sheath 0.5–0.56 times as long as hind tibia (ca. 0.75 in *H. similis*). This species also resembles *H. maculipterus* **sp. nov.** but it can be distinguished by the above key.

### ***Mastrus* genus group**
(subtribe Mastrina sensu Townes (1970))

Four genera, *Brachypimpla* Strobl, 1902, *Charitopes* Förster, 1869, *Lochetica* Kriechbaumer, 1892, and *Mastrus* Förster, 1869, have been recorded from Japan. In addition, I found *Isadelphus*, *Odontoneura* Förster, 1869, and *Zoophthorus* Förster, 1869 from Japan. In this study, I newly record Isadelphus from Japan and review previously recorded genera. The taxonomic treatment of *Odontoneura* and *Zoophthorus* requires the additional specimens and comparison with European species. The identification of genera see Horstmann (1978).

### Genus ***Brachypimpla*** Strobl, 1902

*Brachypimpla* Strobl, 1902: 15. Type: *Brachypimpla brachyura* Strobl, 1902. Monobasic.

*Bassocryptus* Habermehl, 1919: 18. Type: *Microcryptus gravenhorsti* Habermehl, 1910 (= *Brachypimpla brachyura* Strobl, 1902). Monobasic.

A single species, *Br. latipetiolator* (Uchida, 1935), have been recorded from Japan. This species is apparently similar to the genera of *Acrolyta* genus group in a strong median carina of collar, while it can be distinguished by the lateral longitudinal carina of propodeum complete. In this study, I re-describe this species with some distribution records.

#### ***Brachypimpla latipetiolator*** (Uchida, 1935)
(SJN: Mame-hirata-togari-himebachi)
(Figs 44A–E, 66N, O)

*Phygadeuon latipetiolator* Uchida, 1935: 83.

**Description**. Female (n=4). Body length 8.2–9.5 mm. Body polished, covered with silver setae.

Head. Clypeus 1.5–1.8 times as wide as maximum length, matt, punctate, its anterior margin weakly rounded and transversely impressed. Face matt and densely punctate. MSL 1.2 times as long as BWM. Frons, gena, and vertex finely and densely punctate except for smooth area above antennal sockets. OOL as long as POL. OOL and POL slightly longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible almost as long as lower tooth. Base of mandible convex. Antenna with 31–32 flagellomeres, subapical part slightly widened. The widened part of flagellum largely flattened ventrally. FL III 4.0 times as long as maximum depth in lateral view.

Mesosoma 1.7 times as long as maximum depth in lateral view. Upper side of collar with a high median carina. Lateral part of pronotum densely punctate dorsally, largely smooth ventrally. Epomia short and weak. Mesoscutum densely punctate. Notaulus distinct, fading our near center of mesoscutum. Scutellum densely punctate, without a lateral longitudinal carina except for base. Mesopleuron smooth except for punctures on dorsal and ventral areas and some longitudinal striae on a median area below speculum. Posterior transverse carina of mesosternum largely absent in front of mid coxae. Metapleuron punctate, with a complete juxtacoxal carina. Anterior and posterior transverse carinae of propodeum complete. Pleural carina and lateral longitudinal carina of propodeum complete. Area basalis distinct. Area superomedia indistinct laterally. Anterior part of propodeum densely punctate. Median and posterior parts of propodeum longitudinally, obliquely, and irregularly rugulose. Propodeum without projections. Length of fore wing 6.5–7.3 mm. Areolet present (Fig. 44D). Vein 2m-cu with two bullae. Nervellus inclivous, intercepted posteriorly (Fig. 44D). Hind femur 4.2–4.6

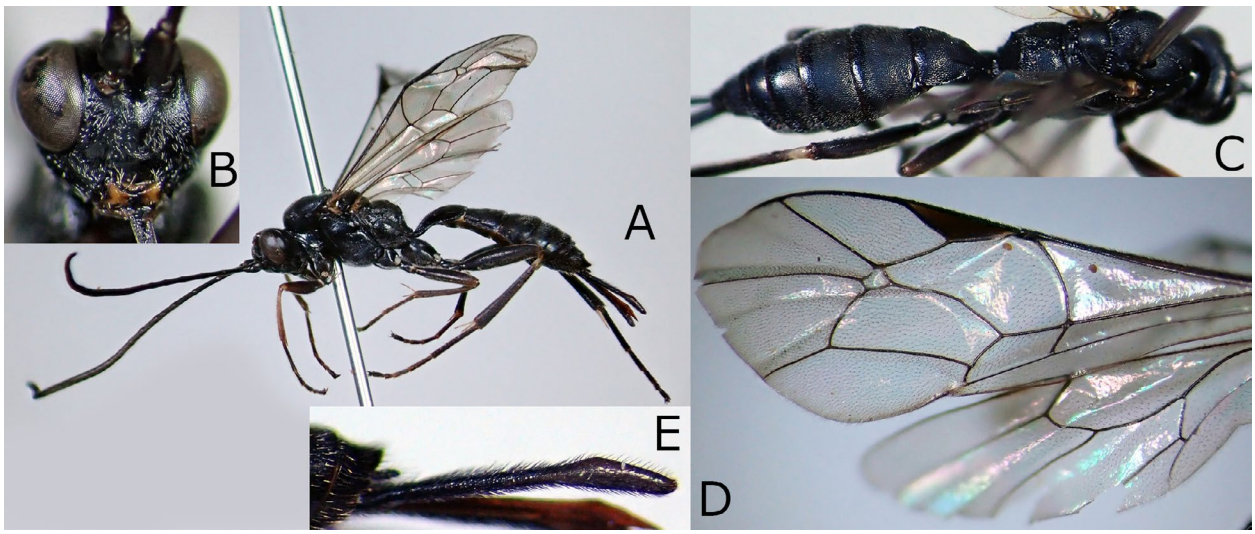


Fig. 44. *Brachypimpla latipetiolator* (Uchida, 1935), KPM-NK 81973, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings; E, ovipositor sheath, lateral view.

times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 1.0: 0.6: 0.35–0.4: 0.4–0.5. Tarsal claws simple.

Metasoma. T I 1.3–1.4 times as long as maximum width, densely punctate. Median dorsal carina of T I present except for posterior part. Dorsolateral carina of T I complete. T II to T IV wider than long, densely punctate (Fig. 44C). T V to T VII covered with fine punctures. T VII and T VIII weakly elongated. Ovipositor sheath 0.75 times as long as hind tibia, its apical part distinctly expanded (Figs 44E, 66O). Ovipositor straight, compress laterally, with a nodus and ventral teeth (Fig. 66N).

Coloration (Figs 44A–E). Body (excluding wings) black to blackish brown. Mandible yellowish brown except for darkened apex and base. Fore and mid femora, tibiae. and tarsi more or less tinged with yellowish brown to reddish brown. Base of tibiae white. Tibial spurs whitish yellow. Membranous part of metasomal sternites yellowish brown. Ovipositor reddish brown. Wings hyaline. Veins and pterostigma brown to blackish brown.

Male. Not studied in this study.

**Materials examined**. JAPAN: KPM-NK 81974, F, Nagano Pref., Outaki Vil., Mt. Ontakesan, Hakkaisan, 8–9. VIII. 2014, S. Shimizu leg. (MsT); KPM-NK 81973, F, ditto, 4. VIII. 2017, K. Watanabe leg.; KPM-NK 81975, F, Niigata Pref., Nagaoka City, Urase Town, 14–26. V. 2015, R. Shimizu, Y. Shimizu & S. Shimizu leg. (MsT). KOREA: SEHU, F (holotype), Keijo, em. from "Larva of *Dendrolimus spectabilis* (Scondary parasite)".

**Distribution**. Japan (Honshu* and Kyushu), China, and Korea.

**Bionomics**. Host record: *Dendrolimus spectabilis* (Butler, 1877) (Lepidoptera, Lasiocampidae) and *Rogas dendrolimi* (Matsumura, 1926) (= *Aleiodes esenbeckii* (Hartig, 1838)) (Hymenoptera, Braconidae) (Uchida, 1935; Kamiya, 1939).

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

## Genus ***Charitopes*** Förster, 1869

*Charitopes* Förster, 1869: 181. Type: *Hemiteles chrysopae* Brischke, 1890 (= *Hemiteles gastricus* Holmgren, 1868). Included by Brischke (1890).
*Adiastola* Förster, 1869: 180. Type: *Adiastola americana* Howard, 1897. Included by Howard (1897).

Two species, *Cha. gastricus* (Holmgren, 1868) and *Cha. striatus* Townes, 1983, have been recorded from Japan. Although key to species including Japanese species has been provided by Townes (1983), I found two undetermined species from Japan. The taxonomic treatment of these speciesrequired the additional specimens and comparison with European species. In this study, I record the distributional data of *Cha. gastricus* below.

### ***Charitopes gastricus*** (Holmgren, 1868)
(SJN: Himekagerou-mame-togari-himebachi)
(Figs 45A–D, 64E)

*Hemiteles gastricus* Holmgren, 1868: 401.
*Hemiteles* (*Charitopes*) *chrysopae* Brischke, 1890: 105.
*Hemiteles flavigaster* Schmiedeknecht, 1897: 534.
*Hemiteles flavocinctus* Strobl, 1901: 232.
*Hemiteles brunnescens* Schmiedeknecht, 1905: 815.

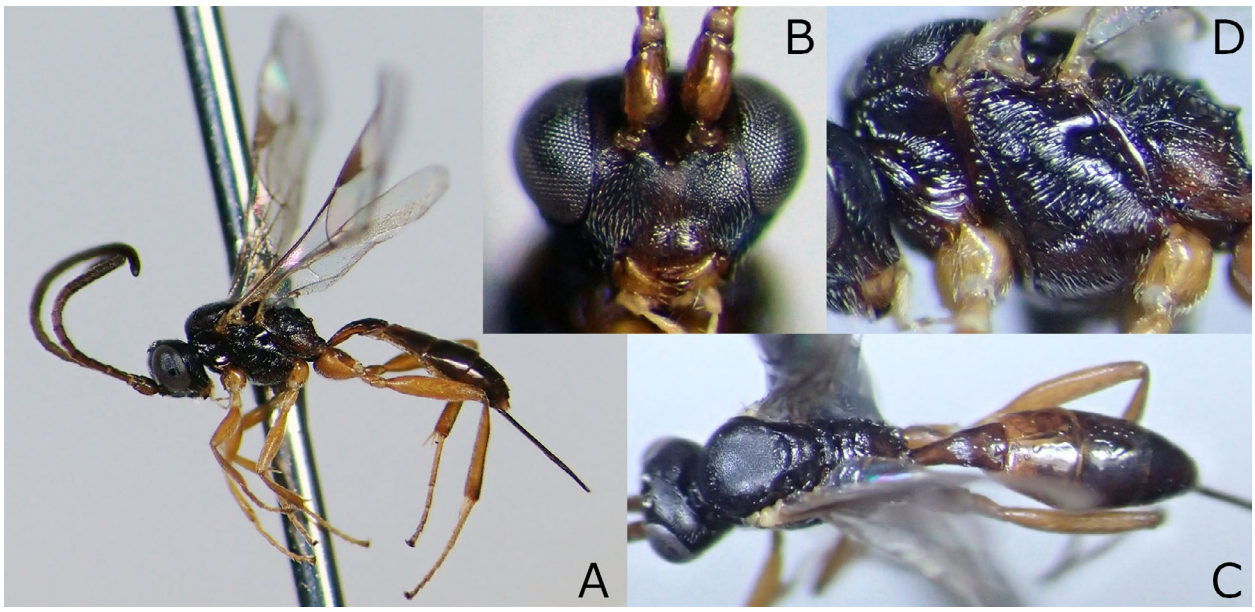


Fig. 45. *Charitopes gastricus* (Holmgren, 1868), KPM-NK 81962, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, mesosoma, lateral view.

*Hemiteles silvicola* Habermehl, 1920: 7.

**Description**. See Townes (1983).

**Materials examined**. JAPAN: KPM-NK 81962–81964, 3 F, Gunma Pref., Tsumagoi Vil., Kanbara, 3. IX. 2015, K. Watanabe leg.; KPM-NK 81965, F, Tochigi Pref., Nasushiobara City, Shiobara, Dodaira, 4. VII. 2008, 11. VII. 2008, T. Matsumura leg. (MsT); KPM-NK 81966, F, Nagano Pref., Outaki Vil., Mt. Ontakesan, Hakkaisan, 31. VII. 2013, K. Watanabe leg.; KPM-NK 81971, 81972, 2 F, Shizuoka Pref., Honkawane Town, Mt. Yamainudan, 14. VI. 2008, K. Watanabe leg.; KPM-NK 81967–81970, 4 F, Tottori Pref., Wakasa City, Mt. Hyonosen, 17. VII. 2011, K. Watanabe leg. GERMANY: ZSM, F (det. Horstmann), Schlüttsiel Husum anb....[?] 3.9.63.

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

**Bionomics**. Unknown in Japan. Aubert (1966, 1977) recorded *Pristiphora abietina* (Christ, 1791) (Hymenoptera, Tenthredinidae) as the host. Townes (1983) recorded *Hemerobius* sp. (Neuroptera, Hemerobiidae) as the host.

## Genus ***Isadelphus*** Förster, 1869

*Isadelphus* Förster, 1869: 177. Type: *Hemiteles inimicus* Gravenhorst, 1829. Designated by Viereck (1914).

*Perosis* Förster, 1869: 169. Type: *Echthrus armatus* Gravenhorst, 1829. Designated by Viereck (1914).

*Cecidonomus* Bridgman, 1880: 264. Type: *Cecidonomus gallicola* Bridgman, 1880.Designated by Viereck (1914).

In this study, I record a new species, *I. nigrus* **sp. nov.**, from Japan. This is the first record of this genus from Japan. Key to Eastern Palearctic species can be distinguished by the following key.

### Key to Eastern Palearctic species of the genus *Isadelphus* (♀)

1. Hind coxa red to reddish yellow. Anterior part of clypeus with a tongue-like protrusion, its apex more or less truncate. Metasomal tergites at least partly red. ..... *I. inimicus* (Gravenhorst, 1829)

-. Hind coxa brown to black (Fig. 46A). Anterior part of clypeus with two weak or indistinct teeth (Fig. 62I). Metasomal tergites at most tinged with brown. ..... 2

2. Hind coxa and T II brown. Ovipositor sheath 1.8 times as long as hind tibia. ..... *I. compressus* Sheng, 2001

-. Hind coxa and T II black (Figs 46A, C, E). Ovipositor sheath 1.35 times as long as hind tibia. ..... *I. nigrus* **sp. nov.**

### ***Isadelphus nigrus*** **sp. nov.**

(New SJN: Omagari-chibi-togari-himebachi)
(Figs 46A–E, 62I, 65P, 66P)

**Etymology**. The specific name is from the black (= Latin "*nigrus*") body and legs.

**Type series**. **Holotype**: KPM-NK 82003, F, JAPAN, Kanagawa Pref., Yokohama City, Midori-ku, Niiharu, 28.

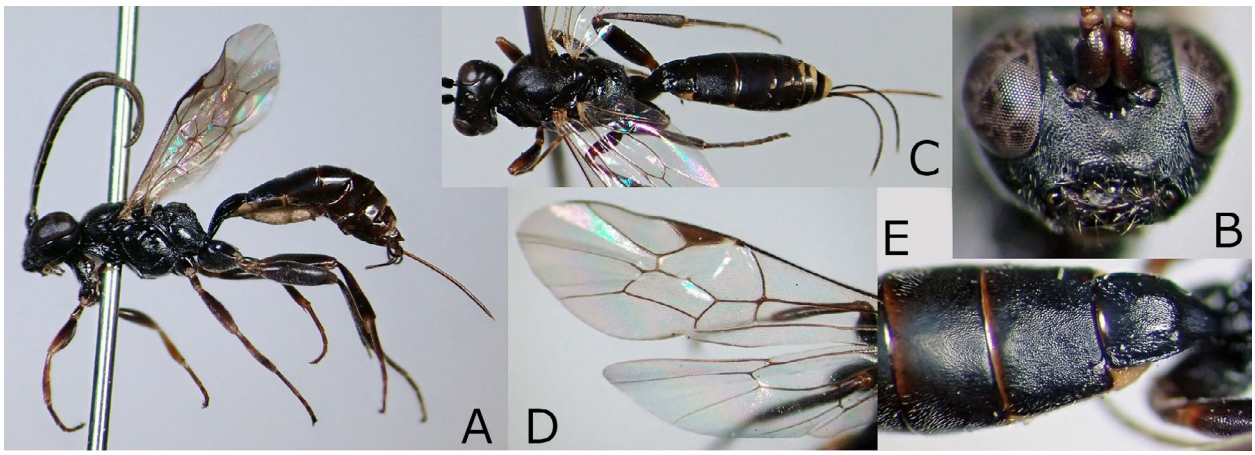


Fig. 46. *Isadelphus nigrus* **sp. nov.**, KPM-NK 82002 (A, B, paratype) and 82003 (C-E, holotype), females — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings; E, T I to T III, dorso-lateral view.

III. 2007, M. Konishi leg. **Paratypes**: JAPAN, KPM-NK 81996, F, Hokkaido, Kuriyama Town, 8. VI. 2007, 22. VI. 2007, A. Ueda leg.; KPM-NK 81998, F, Fukushima Pref., Tajima Town, Tonyu, 8. VIII. 1999, 21. VIII. 1999, A. Shimizu leg.; KPM-NK 81991, 81992, 2 F, Saitama Pref., Yorii Town, 30. V. 2013, T. Nambu leg. (MsT); KPM-NK 81990, F, Kanagawa Pref., Hadano City, Mt. Koubou-yama, 5. IV. 2007, K. Watanabe leg.; KPM-NK 81995, F, Kanagawa Pref., Atsugi City, Funako, Tokyo University of Agriculture, 22. IV. – 16. V. 2016, Y. Kato & S. Koizumi leg. (MsT); KPM-NK 81999, F, Toyama Pref., Nanto City, Togamura, Kamimomose, 4–11. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81993, F, ditto, 15–29. IX. 2009; KPM-NK 82002, F, Toyama Pref., Nanto City, Togamura, Kamimomose, 21. VII. 2009, 28. VII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 82001, F, Hyogo Pref., Sayo Town, Funakoshi, 1. – 8. V. 2010; KPM-NK 81997, F, Kagoshima Pref., Yakushima Is., Hanyama, 1. V. – 5. VI. 2007, T. Yamauchi leg. (MsT); KPM-NK 82000, F, Kagoshima Pref., Yakushima Is., Kankake, 2. III. – 28. III. 2007, T. Yamauchi *et al.* leg. (MsT); KPM-NK 81994, F, ditto, 1. V. – VI. 2007.

**Description**. Female (n=14). Body length 4.3–7.3 (HT: 7.0) mm. Body polished, covered with silver setae.

Head. Clypeus 2.1 times as wide as maximum length, sparsely punctate, its anterior margin rounded, with a pair of weak teeth medially (Fig. 62I). Face matt, densely and finely punctate (Fig. 46B). MSL 0.9–1.0 (HT: 1.0) times as long as BWM. Frons matt, densely and finely punctate except for transverse striae on area above antennal socket. Gena and vertex densely punctate, inter space of punctures coriaceous. OOL slightly shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible slightly longer than lower tooth. Base of mandible slightly convex. Antenna with 22–24 (HT: 22) flagellomeres. FL III 3.3–4.0 (HT: 4.0) times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum densely punctate and coriaceous dorsally, longitudinally striate ventrally. Epomia short and weak. Mesoscutum matt, finely and densely punctate. Notaulus short and weak. Scutellum densely punctate, without a lateral longitudinal carina except for base. Mesopleuron punctate and longitudinally striate except for smooth speculum and smooth areas below speculum. Epicnemial carina strongly developed dorsally, reaching subtegular ridge. Posterior transverse carina of mesosternum largely absent in front of mid coxae. Metapleuron punctate, with a weak juxtacoxal carina. Propodeal carinae complete (Fig. 65P). Area basalis indistinct anteriorly (Fig. 65P). Area superomedia present, hexagonal (Fig. 65P). Anterior and median parts of propodeum irregularly rugulose and punctate. Posterior part of propodeum transversely rugulose. Length of fore wing 3.6–5.2 (HT: 5.2) mm. Areolet absent (Fig. 46D). Vein 2m-cu of fore wing with a single bulla (Fig. 46D). Nervellus inclivous, intercepted behind the middle (Fig. 46D). Hind femur 3.6–4.0 (HT: 4.0) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9–0.95 (HT: 0.95): 0.6: 0.3–0.4 (HT: 0.35): 0.45–0.5 (HT: 0.5). Tarsal claws simple.

Metasoma. T I 1.6–1.8 (HT: 1.7) times as long as maximum width, coriaceous except for smooth posterior margin, posterior part usually with some short and weak longitudinal striae. Median dorsal carina of T I present basally, weak. Dorsolateral carina of T I complete. T II to T VI wider than long. T II granulate (Fig. 46E). T III granulate anteriorly, sparsely and finely punctate posteriorly. T IV to T VII sparsely and finely punctate. Ovipositor sheath 1.3–1.35 (HT: 1.3) times as long as hind

tibia. Ovipositor decurved (Fig. 46A), with an indistinct nodus and ventral teeth (Fig. 66P).

Coloration (Figs 46A–E). Body (excluding wings and legs) black to blackish brown. Palpi dark brown. Posterior margins of T II to T IV narrowly tinged with reddish brown. Posterior margins of T V to T VII with a conspicuous white band. Membranous part of metasomal sternites yellowish brown. Ovipositor reddish brown. Wings hyaline. Veins and pterostigma dark brown to blackish brown. Legs blackish brown to black except for apex and base of each segment more or less narrowly tinged with reddish brown to yellowish brown.

Male. Unknown.

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

**Bionomics**. Host unknown. KPM-NK 81991 and 81992 collected in the malaise trap in Bamboo forest.

**Remarks**. This species resembles *I. compressus* in the body structures and coloration but can be distinguished by the above key.

## Genus ***Lochetica*** Kriechbaumer, 1892

*Lochetica* Kriechbaumer, 1892: 340. Type: *Phygadeuon pimplarius* Thomson, 1884 (= *Cecidonomus westoni* Bridgman, 1880). Monobasic.

A single species, *Lo. westoni* (Bridgman, 1880), has been recorded from Japan. In this study, I record a new species, *Lo. japonica* **sp. nov.**, from Japan. Japanese species can be distinguished by the following key.

**Key to Japanese species of the genus *Lochetica* (♀)**

1. Legs reddish brown. Median dorsal carina of T I present. Ovipositor sheath ca. 3.0 times as long as hind tibia.
   ..... *Lo. westoni* (Bridgman, 1880)
-. Legs largely blackish brown to black (Fig. 47A). Median dorsal carina of T I absent. Ovipositor sheath 2.3–2.38 times as long as hind tibia.
   ..... *Lo. japonica* **sp. nov.**

### ***Lochetica japonica*** **sp. nov.**

(New SJN: Samehada-chibi-togari-himebachi)
(Figs 47A–H, 62J, 65Q, 66Q)

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

**Type series**. **Holotype**: KPM-NK 81989, F, JAPAN, Tochigi Pref., Nasushiobara City, Shiobara, Utou-sawa, 22–28. V. 2008, T. Matsumura leg. (MsT). **Paratype**: JAPAN, KPM-NK 81988, F, Hokkaido, Sapporo City, Mt. Soranuma-dake, 14. VI. 2007, 4. VII. 2007, A. Ueda leg. (MsT).

**Description**. Female (n=2). Body length 5.2–5.5 (HT: 5.2) mm. Body polished, covered with dense silver setae.

Head. Clypeus 1.8–2.0 (HT: 1.8) times as wide as maximum length, its anterior margin rounded and obtuse, with dense setae along anterior margin (Fig. 62J). Face densely punctate. The border between clypeus and face indistinct (Fig. 47B). MSL 0.7–0.8 (HT: 0.7) times as long as BWM. Frons, gena, and vertex densely punctate, inter space of punctures coriaceous. Gena strongly convex in dorsal view (Fig. 47C). OOL slightly shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Mandible covered with dense setae and its ventral margin indistinct. Upper tooth of mandible as long as lower tooth. Base of mandible slightly convex. Antenna with 20–21 (HT: 20) flagellomeres. FL III 2.2 times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum densely punctate, the punctures on ventral part more or less longitudinally lined. Epomia long below pronotal sulcus, its lower part parallel to front edge of pronotum. Mesoscutum matt, minutely punctate. Notaulus short and weak. Scutellum densely punctate, without a lateral longitudinal carina. Mesopleuron densely punctate except for small smooth areas below subtegular ridge and in posterior part of speculum, the punctures more or less longitudinally lined. Epicnemial carina strongly developed dorsally, reaching subtegular ridge. Posterior transverse carina of mesosternum largely absent in front of mid coxae. Metapleuron densely punctate, with a weak, partly indistinct juxtacoxal carina. Propodeal carinae complete (Figs 47G, 65Q). Area basalis indistinct anteriorly (Figs 47G, 65Q). Area superomedia present, pentagonal (Figs 47G, 65Q). Anterior part of propodeum densely punctate (Fig. 47G). Median part of propodeum irregularly rugulose (Fig. 47G). Posterior part of propodeum transversely rugulose, the interspace of rugae smooth. Length of fore wing 4.0–4.1 (HT: 4.0) mm. Areolet present, pentagonal (Fig. 47F). Vein 2m-cu of fore wing with a single bulla. Nervellus inclivous, intercepted behind the middle (Fig. 47F). Hind femur 3.6–3.7 (HT: 3.6) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.3: 0.6. Tarsal claws simple.

Metasoma. T I 1.9–2.0 (HT: 2.0) times as long as maximum width, densely punctate (Fig. 47H) except for smooth base. Median dorsal carina of T I absent. Dorsolateral carina of T I complete. T II almost as long as

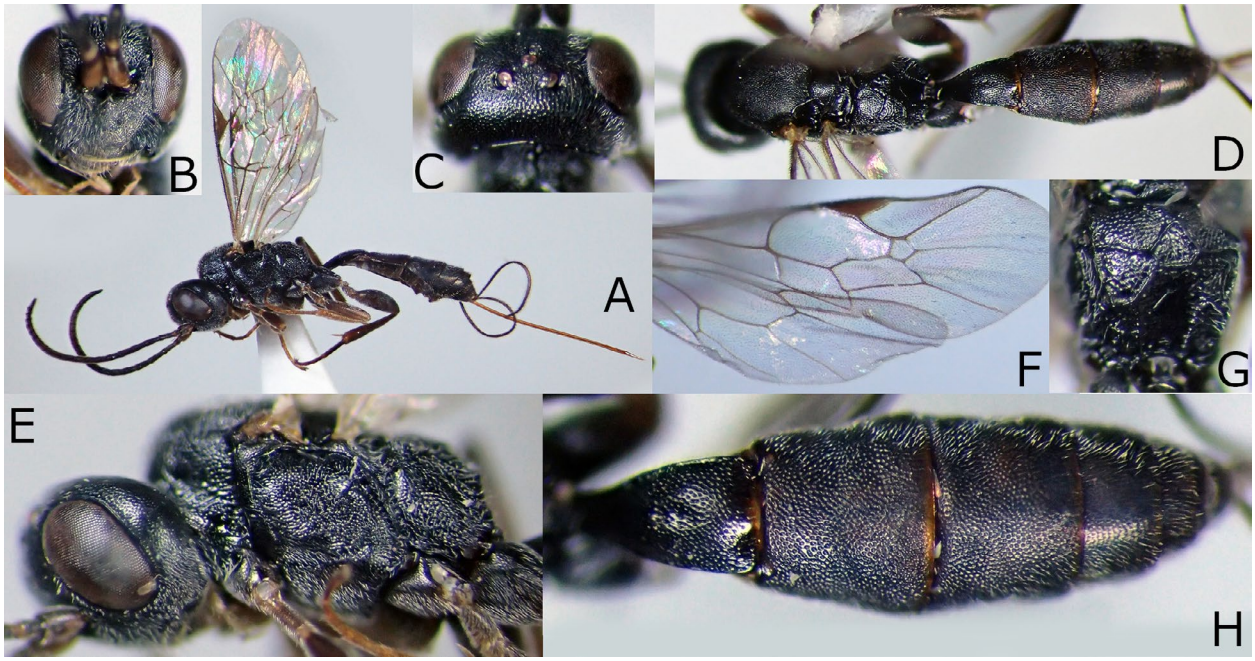


Fig. 47. *Lochetica japonica* **sp. nov.**, KPM-NK 81989, holotype, female — A, lateral habitus; B, head, frontal view; C, head, dorsal view; D, head, mesosoma, and metasoma, dorsal view; E, head and mesosoma, lateral view; F, wings; G, propodeum, dorsal view; H, metasoma, dorsal view.

wide. T II to T V densely punctate (Fig. 47H). Ovipositor sheath 2.3–2.38 (HT: 2.38) times as long as hind tibia. Ovipositor straight, with a weak but distinctly angulated nodus and ventral teeth (Fig. 66Q).

Coloration (Figs 47A–H). Body (excluding wings and legs) black to blackish brown. Ventral surfaces of scape and pedicel, base of FL I, and apical part of mandible tinged with reddish brown. Palpi and tegula dark yellowish brown. Posterior margins of T I to T IV narrowly tinged with reddish brown. Membranous part of metasomal sternites dark brown. Ovipositor yellowish brown. Wings hyaline. Veins yellowish brown to dark brown. Pterostigma dark brown. Legs blackish brown to black. Fore and mid legs except for coxae at least partly paler than other parts of legs. Hind tibial spurs yellowish brown.

Male. Unknown.

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

**Bionomics**. Unknown.

**Remarks**. This species resembles *L. westoni* in the long epomia, the strongly bordered area postero-externa, and the distinct nodus with angulation, but can be distinguished by the above key.

## Genus ***Mastrus*** Förster, 1869

*Mastrus* Förster, 1869: 176. Type: *Phygadeuon* (*Mastrus*) *neodiprioni* Viereck, 1911. Included by Viereck (1911).

*Daictes* Förster, 1869: 176. Type: *Phygadeuon* (*Daictes*) *fukaii* Viereck, 1911. Included by Viereck (1911).

*Aenoplex* Förster, 1869: 176. Type: *Aenoplex betulaecola* Ashmead, 1896 (= *Orthocentrus pilifrons* Provancher, 1879). Included by Ashmead (1896).

Seven species, *Ma. ecornutus* Momoi, 1970, *Ma. fukaii* (Viereck 1911), *Ma. molestae* (Uchida, 1933), *Ma. oshimensis* (Uchida, 1930), *Ma. sugiharai* (Uchida, 1936), *Ma. takadai* Momoi, 1970, and *Ma. tenuibasalis* (Uchida, 1940), have been recorded from Japan. I found more than ten undetermined species from Japan. The taxonomic treatment of these species requires the additional specimens and comparison with European species. In this study, I re-describe *Ma. molestae* and record some distributional data of this species and *Ma. takadai* below.

### ***Mastrus molestae*** (Uchida, 1933)
(SJN: Kuro-chibi-togari-himebachi)
(Figs 48A–D, 65R, 66R)

*Hemiteles* (*Isadelphus*) *molestae* Uchida, 1933b: 158.

**Description**. Female (n=2). Body length 6.0–7.0 mm. Body polished, covered with silver setae.

Head coriaceous. Clypeus 2.2 times as wide as maximum length, sparsely punctate dorsally, smooth ventrally and medially, its anterior margin rounded and with a pair of small tubercles. Face densely punctate (Fig. 65B). MSL 0.8 times as long as BWM. Frons, gena, and

vertex punctate. OOL slightly shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible almost as long as lower tooth. Base of mandible flat. Antenna with 21 flagellomeres, subapical part not widened. FL III 5.0–5.7 times as long as maximum depth in lateral view.

Mesosoma. Upper side of collar without a median carina. Lateral part of pronotum punctate dorsally, smooth with some rugae ventrally. Epomia present. Mesoscutum matt, finely and densely punctate. Notaulus distinct, fading our near center of mesoscutum. Scutellum punctate, without a lateral longitudinal carina except for base. Mesopleuron punctate except for smooth area of speculum and its adjacent areas. Posterior transverse carina of mesosternum complete. Metapleuron punctate, with a complete juxtacoxal carina. Propodeal carinae and areas complete (Fig. 65R). Postero-lateral corner of area dentipara weakly projected. Area superomedia as long as wide, receiving lateral section of anterior transverse carina just behind of middle (Fig. 65R). Length of fore wing 5.0 mm. Areolet absent (Fig. 65D). Nervellus inclivous, intercepted posteriorly. Hind femur 4.0 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.5: 0.3: 0.5. Tarsal claws simple.

Metasoma. T I 1.3–1.4 times as long as maximum width, coriaceous, with some longitudinal striae posteriorly. Median dorsal carina of T I present except for posterior part. Dorsolateral carina of T I complete. T II granulate with punctures and minute, irregular rugae except for smooth posterior margin (Fig. 65C). T II to T VII wider than long. T III granulate with punctures and minute, irregular rugae except for smooth posterior half. T IV to T VIII finely and sparsely punctate. T VII and T VIII weakly elongated. Ovipositor sheath 1.6–1.7 times as long as hind tibia. Ovipositor straight, weakly compress laterally, with a weak nodus and ventral teeth.

Coloration (Figs 48A–D). Body (excluding wings and legs) black to blackish brown. Basal spot of mandible and palpi whitish yellow. Ventral areas of scape and pedicel reddish brown. Tegula and membranous part of mesosternum whitish yellow. Posterior margins of T II and T III narrowly tinged with reddish yellow. Posterior margins of T IV to T VII tinged with whitish yellow. Ovipositor reddish brown. Wings hyaline. Veins and pterostigma brown to blackish brown except for yellowish brown base of pterostigma. Legs reddish brown. Trochanters, trochantelli, tibial spurs, apex of hind femur, and base of tibiae yellow to yellowish brown. TS V, apical part of hind femur, and hind tibia dark brown to blackish brown. Mid tibia sometimes partly darkened.

Male. Not studied in this study.

**Materials examined**. JAPAN: SEHU (holotype), F, Nagano Pref., Kamisuwa, 25. III. 1932, reared from *G. molesta*, G. J. Haeussler leg.; KPM-NK 81987, F, Nagano Pref., Outaki Vil., Mt. Ontakesan, Hakkaisan, 4. VIII. 2017, K. Watanabe leg.

**Distribution**. Japan (Honshu).

**Bionomics**. Host record: *Grapholita molesta* (Busck, 1916) (Lepidoptera, Tortricidae) (Uchida, 1933).

***Mastrus takadai*** Momoi, 1970
(SJN: Takada-chibi-togari-himebachi)
(Figs 49A–C, 65S)

*Mastrus takadai* Momoi, 1970: 352.

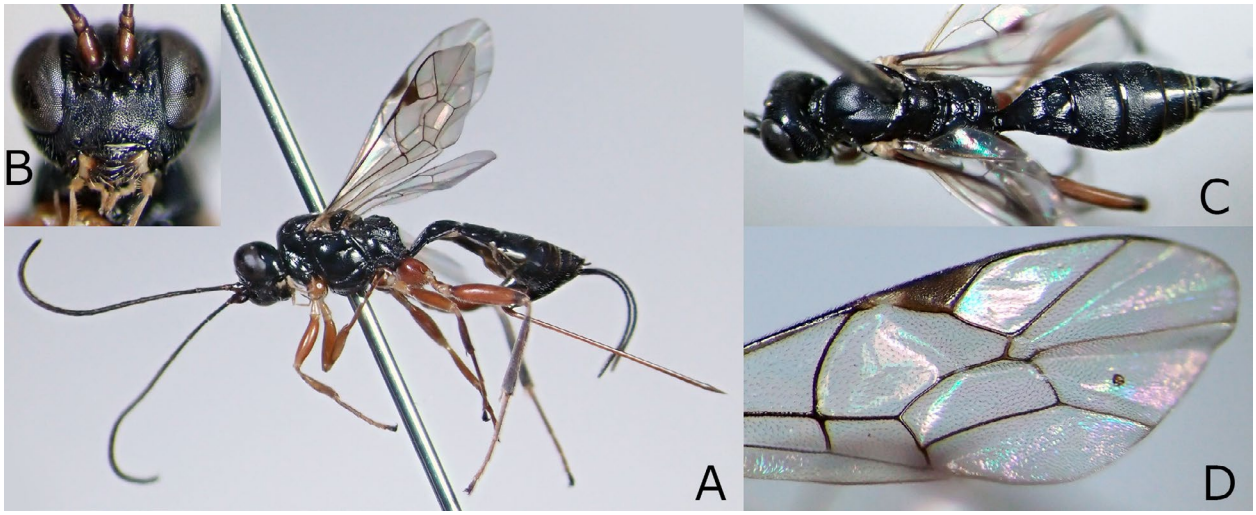


Fig. 48. *Mastrus molestae* (Uchida, 1933), KPM-NK 81987, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, fore wing.

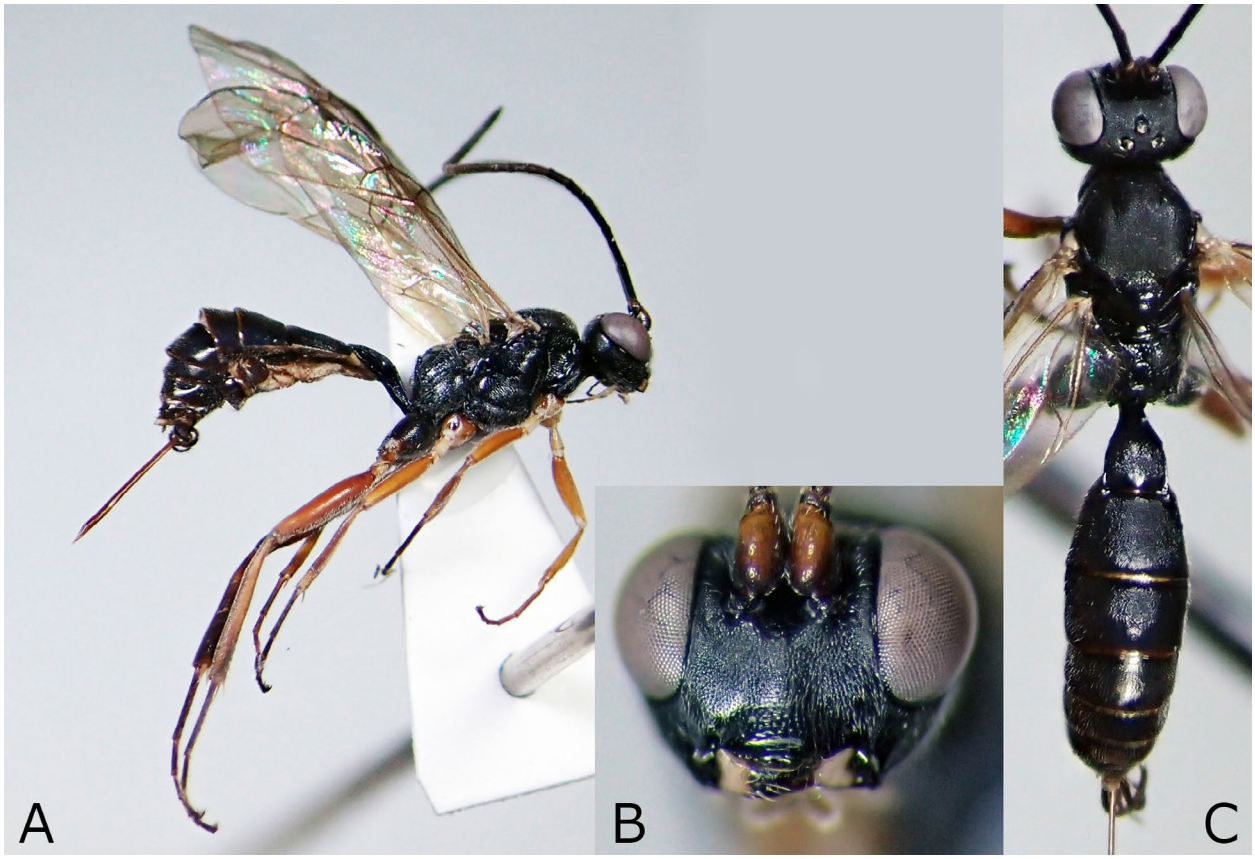


Fig. 49. *Mastrus takadai* Momoi, 1970, KPM-NK 81982 (A, B) and 81983 (C), females from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view.

**Description**. See Momoi (1970).

**Materials examined**. JAPAN: KPM-NK 81981, F, Hokkaido, Hidaka Town, Uenzaru-gawa, Natural forest, 10. VII. – 1. VIII. 2007, A. Ueda leg.; KPM-NK 81985, F, Hokkaido, Engaru Town, Maruseppu, 13. VII. 2012, K. Watanabe leg.; KPM-NK 81978, F, Kanagawa Pref., Hadano City, Mt. Koubou-yama, 1. V. 2016, K. Watanabe leg.; KPM-NK 81986, F, Shizuoka Pref., Honkawane Town, Mt. Yamainudan, 14. VI. 2008, K. Watanabe leg.; KPM-NK 81979, F, Kagoshima Pref., Yakushima Is., Hanyama, 1–25. XII. 2006, T. Yamauchi leg. (MsT); KPM-NK 81980, 81983, 2 F, Kagoshima Pref., Yakushima Is., Arakawa, 2. V. – 4. VI. 2007, T. Yamauchi leg. (MsT); KPM-NK 81982, F, Kagoshima Pref., Yakushima Is., Kankake, 27. X. – 28. XI. 2006, T. Yamauchi *et al*. leg. (MsT); KPM-NK 81984, F, Kagoshima Pref., Yakushima Is., Mt. Aikodake, 2. V. – 5. VI. 2007, T. Yamauchi *et al.* leg. (MsT); MNHAH, F (holotype), Kagoshima Pref., Amamioshima Is., 24. V. 1965, H. Takada leg.

**Distribution**. Japan (Honshu, Yakushima Is., Amamioshima Is., and Okinawajima Is.).

**Bionomics**. Unknown.

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

## ***Phygadeuon* genus group**

(subtribe Phygadeuontina sensu Townes (1970) and Horstmann (1992))

Seven genera, *Gnotus* Förster, 1869, *Phygadeuon* Gravenhorst, 1829, *Sulcarius* Townes, 1970, *Theroscopus* Förster, 1850, *Tricholinum* Förster, 1869, and *Uchidella* Townes, 1957, have been recorded from Japan. In addition, I found *Megacara*, *Stibeutes*, and *Tropistes* from Japan. In this study, I newly record *Megacara* and *Tropistes* from Japan and review *Gnotus*, *Orthizema*, and *Uchidella*. The taxonomic treatment of *Stibeutes* requires the additional specimens and comparison with European species. The identification of genera see Townes (1970).

### Genus ***Gnotus*** Förster, 1869

*Gnotus* Förster, 1869: 179. Type: *Hemiteles tenuicornis* Gravenhorst, 1829 (= *Phygadeuon tenuipes* Gravenhorst, 1829). Designated by Perkins (1962).

Three species, *Gn. chionops* (Gravenhorst, 1829), *Gn. hyperae* Kusigemati, 1990, and *Gn. striatus* (Uchida, 1930), have been recorded from Japan. In this study, I re-describe

*Gn. chionops* (Gravenhorst, 1829) and *Gn. striatus* (Uchida, 1930) with some distributional data. Japanese species can be distinguished by the following key.

**Key to Japanese species of the genus *Gnotus* (♀)**

1. Body and legs largely black (Figs 51A, D). Pronotum and mesopleuron largely smooth. Fore wing with a clouded area (Fig. 51A).
..... *Gn. striatus* (Uchida, 1930)
-. Body and legs at least partly with reddish brown area (Figs 50A, C). Pronotum and mesopleuron more or less sculptured. Fore wing without a clouded area (Fig. 50A).
..... 2
2. Upper tooth of mandible 3.0 times as long as lower tooth (Fig. 62L). Ovipositor sheath almost as long as hind tibia. Anterior margin of clypeus truncate (Fig. 50C). T IV black, at most tinged with dark reddish brown (Fig. 50C).
..... *Gn. chionops* (Gravenhorst, 1829)
-. Upper tooth of mandible less than 2.0 times as long as lower tooth. Ovipositor sheath shorter than hind tibia. Anterior margin of clypeus rounded. T IV reddish brown.
..... *Gn. hyperae* Kusigemati, 1990

***Gnotus chionops*** (Gravenhorst, 1829)
(SJN: Himesuga-chibi-togari-himebachi)
(Figs 50A–D, 62L, 65T)

*Hemiteles chionops* Gravenhorst, 1829: 797.
*Hemiteles scutellator* Lange, 1911: 543.

**Description** based on Japanese specimens. Female (n=21). Body length 3.8–7.1 mm. Body polished, covered with silver setae.

Head. Clypeus 2.0 times as wide as maximum length, covered with long setae, its anterior margin truncate, without teeth. Face densely punctate (Fig. 50B). MSL 0.7–0.75 times as long as BWM. Frons densely punctate, the interspace of punctures coriaceous. Gena and vertex densely punctate. OOL slightly shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end strongly curved inward and joined with hypostomal carina distant from mandibular base. Upper tooth of mandible 3.0 times as long as lower tooth (Fig. 62L). Base of mandible slightly concave. Antenna with 20–21 flagellomeres. Subapical part of antenna slightly wider than basal part. FL III 2.67–3.3 times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum punctate dorsally, longitudinally rugulose ventrally. Epomia distinct. Mesoscutum densely punctate. Notaulus distinct, fading out near center of mesoscutum. Scutellum punctate, with a lateral longitudinal carina except for apex. Mesopleuron longitudinally rugulose except for smooth speculum. Subtegular ridge strongly raised. Posterior transverse carina of mesosternum absent in front of mid coxae. Metapleuron densely punctate, with a complete juxtacoxal carina. Propodeal carinae complete except for reduced posterior section of lateromedian longitudinal carina. Area basalis and area superomedia distinct (Figs 50D, 65T). Postero-lateral corner of area dentipara weakly projected. Anterior and median parts of propodeum densely and shallowly punctate (Fig. 50D). Posterior part of propodeum coriaceous with oblique rugae. Length of fore wing 3.4–5.5 mm. Areolet absent. Vein 2m-cu of fore wing with two bullae. Nervellus slightly inclivous, intercepted behind the middle. Hind femur 4.7–4.9 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.8–0.85: 0.6: 0.2–0.25: 0.55. Tarsal claws simple.

Metasoma. T I 2.0–2.1 times as long as maximum width, punctate, some punctures longitudinally lined. Median dorsal carina of T I absent. Dorsolateral carina of T I complete. T II to T V wider than long, densely and finely punctate. Ovipositor sheath 1.0–1.05 times as long as hind tibia. Ovipositor straight, with a weak nodus and ventral teeth.

Coloration (Figs 50A–D). Body (excluding wings and legs) black to blackish brown. Basal half of antenna tinged with yellowish brown. Yellowish area of antenna sometimes reduced into ventral yellow markings of scape and pedicel. Mandible except for darkened apex, palpi, postero-dorsal corner of pronotum, and tegula yellow. Malar space and collar usually more or less tinged with yellowish brown. T II and T III largely or entirely reddish brown. T IV to T VI more or less tinged with brown. Posterior margins of T VI and T VII white. Membranous part of metasomal sternites yellowish brown. Ovipositor reddish brown. Wings hyaline. Veins yellowish brown to brown. Pterostigma brown to dark brown except for pale base. Legs reddish brown. Fore and mid coxae and all trochanters, trochantelli, and tibial spurs whitish yellow. Apical parts of hind femur and tibia more or less darkened.

Male. Not study in this study.

**Materials examined**. JAPAN: KPM-NK 82093, F, Tochigi Pref., Nasushiobara City, Shiobara, Utou-sawa, 22–28. V. 2008, T. Matsumura leg. (MsT); KPM-NK 82097, KPM-NK 82102, 2 F, Tochigi Pref., Nasushiobara City, Shiobara, Sakurakoen-bochi, 12–19. V. 2008, T.

Matsumura leg. (MsT); KPM-NK 82104, F, Ibaraki Pref., Daigo Town, Mt. Yamizo, 31. VII. 2010, T. Kurihara leg.; KPM-NK 82091, 82098, 2 F, Tokyo, Izuoshima Is., Oshima Town, Sashikiji, Mt. Futago, 5–31. X. 2012, K. Tsujii leg. (MsT); KPM-NK 82100, F, Tokyo, Hachijojima Is., Hachijyo Town, Mitsune, Mihararindo, 20. V. 2012, K. Tsujii leg.; KPM-NK 82103, F, Kanagawa Pref., Hadano City, Mt. Koubou-yama, 26. V. 2013, K. Watanabe leg.; KPM-NK 82092, F, Yamanashi Pref., Koushu City, Katsunuma Town, Ootaki-fudou, 9. VII. 2007, K. Watanabe leg.; KPM-NK 82087, F, Nagano Pref., Ōtaki Vil., Mt. Ontake-san, 25. VI. – 15. VII. 2015, S. Shimizu leg. (MsT); KPM-NK 82096, F, Nagano Pref., Outaki Vil., Mt. Ontakesan, Hakkaisan, 6. VIII. 2010, K. Watanabe leg.; KPM-NK 82089, F, Tochigi Pref., Nasushiobara, Osonozawa, 13–21. IV. 2011, T. Matsumura leg. (MsT); KPM-NK 82099, F, Niigata Pref., Sado Is., Kanaishinbo, Hakuundai to Mt. Myokenzan, 4. VIII. 2009, K. Watanabe leg.; KPM-NK 82088, F, Niigata Pref., Myoukou City, Suginosawa, Myoukou-sasagamine, 10. IX. 2013, S. Shimizu leg.; KPM-NK 82101, F, ditto, 16. VII. 2013; TMNH, F, Aichi Pref., Shitara Town, Tsugu, Honsawa, 17. VI. 2019, S. Morishita leg.; KPM-NK 82095, F, Toyama Pref., Toyama City, Arimine, Jyuroudani, 21–28. VII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 82090, F, ditto, 11–16. VIII. 2009; KPM-NK 82094, F, Toyama Pref., Toyama City, Arimine, Inonedani, 7–14. VII. 2009, M. Watanabe *et al*. leg. (MsT). GERMANY: ZSM, F (det. Horstmann), "6. 8. 1950 Iburg, T. W.".

**Distribution**. Japan (Hokkaido, Honshu*, Sado Is.*, Izuoshima Is.*, Hachijojima Is.*, Amamioshima Is., Okinoerabujima Is., and Iejima Is.); widely distributed in Holarctic region.

**Bionomics**. Unknown in Japan. In Europe, some species of Yponomeutidae (Lepidoptera) have been recorded as the host (Yu *et al.*, 2016).

**Remarks**. This is the first record of this species from Honshu, Sado Is., Izuoshima Is., and Hachijojima Is.

***Gnotus striatus*** (Uchida, 1930)
(SJN: Shiwa-chibi-togari-himebachi)
(Figs 51A–D, 62M, 65U)

*Leptocryptus striatus* Uchida, 1930: 335.

**Description**. Female (n=15). Body length 4.2–7.1 mm. Body polished, covered with silver setae.

Head. Clypeus 1.7 times as wide as maximum length, its anterior margin rounded and narrowly depressed, without teeth. Face densely punctate (Fig. 51B). MSL 0.95–1.0 times as long as BWM. Frons sparsely and finely punctate. Gena and vertex finely punctate. OOL as long as or slightly longer than POL. OOL and POL longer than OD. Occipital carina complete, its lower end strongly curved inward and joined with hypostomal carina slightly distant from mandibular base. Upper tooth of mandible slightly longer than (ca. 2.0 times as long as) lower tooth (Fig. 62M). Base of mandible flat. Antenna with 20–25 flagellomeres. Subapical part of antenna slightly wider than basal part. FL III 3.3–4.0 times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum largely smooth. Epomia distinct. Mesoscutum minutely punctate, strongly polished. Notaulus distinct, fading out in front of center

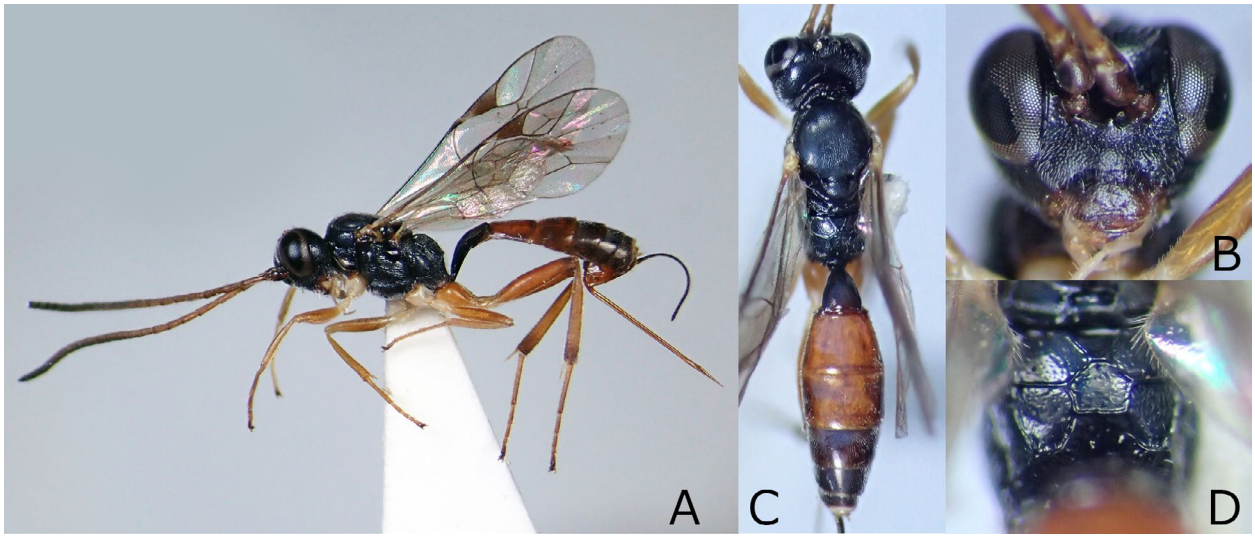


Fig. 50. *Gnotus chionops* (Gravenhorst, 1829), KPM-NK 82099, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, propodeum, dorsal view.

of mesoscutum. Scutellum punctate, with a lateral longitudinal carina except for apex. Mesopleuron smooth except for fine punctures on areas below subtegular ridge and speculum. Subtegular ridge strongly raised. Posterior transverse carina of mesosternum absent in front of mid coxae. Metapleuron finely punctate, with a complete juxtacoxal carina. Propodeal carinae complete except for median section of lateromedian longitudinal carina usually partly indistinct. Area basalis distinct (Figs 51C, 65U). Area superomedia distinct (Figs 51C, 65U), its lateral sides usually partly indistinct. Postero-lateral corner of area dentipara weakly projected. Propodeum largely smooth. Length of fore wing 3.7–5.75 mm. Areolet absent. Vein 2m-cu of fore wing with two bullae. Nervellus slightly inclivous, intercepted behind the middle. Hind femur 4.9–5.0 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.4: 0.5. Tarsal claws simple.

Metasoma. T I 2.7 times as long as maximum width, longitudinally striate (Fig. 51D). Median dorsal carina of T I present basally. Dorsolateral carina of T I present but indistinct posteriorly. T II to T V wider than long, densely and finely punctate, basal part of T II with a few longitudinal striae (Fig. 51D). Ovipositor sheath 0.65 times as long as hind tibia. Ovipositor straight, without a nodus and ventral teeth.

Coloration (Figs 51A–D). Body (excluding wings) dark brown to black. Mandible except for darkened apex, palpi, tibial spurs, membranous part of metasomal sternites, and ovipositor yellowish brown. Posterior margins of T IV to T VII narrowly tinged with yellowish brown. Scutellum and postscutellum sometimes tinged with yellowish brown. Wings hyaline, with clouded area behind of pterostigma. Veins brown to dark brown. Pterostigma dark brown except for pale base.

Male. Unknown.

**Materials examined**. JAPAN: SEHU, F (lectotype), Hokkaido, Sapporo, 4/9, 1926, Uchida leg.; KPM-NK 82064, F, Hokkaido, Otofuke Town, Kibougaoka-koen, 25. VI. 2017, K. Watanabe leg.; KPM-NK 82057, F, Tochigi Pref., Kuriyama Vil., Kinunuma, 1. VIII. 2004, 14. VIII. 2004, H. Makihara leg. (MsT); KPM-NK 82052, F, Kanagawa Pref., Yokosuka City, Take, Mishimasya, 9. V. 2001, I. Kawashima leg.; KPM-NK 82062, F, Kanagawa Pref., Odawara City, Iriuda, KPMNH, 19. VI. 2014, H. Taru leg.; KPM-NK 82054, F, Toyama Pref., Toyama City, Arimine, Jyuroudani, 16–25. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 82053, F, ditto, 25. VIII. – 1. IX. 2009; KPM-NK 82055, 82056, 2 F, Toyama Pref., Nanto City, Togamura, Kamimomose, 21–28. VII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 82059, F, Yamanashi Pref., Koushu City, Katsunuma Town, Ootaki-fudou, 9. VII. 2007, K. Watanabe leg.; KPM-NK 82058, F, ditto, 22. V. 2010; KPM-NK 82061, F, Nagano Pref., Outaki Vil., Mt. Ontakesan, Hakkaisan, 16. VII. 2007, K. Watanabe leg.; KPM-NK 82063, F, Hyogo Pref., Kami Town, Oziro-ku, Niiya, Mikata-kogen, 26. VI. – 18. VII. 2011, S. Fujie leg. (MsT); KPM-NK 82051, F, Hyogo Pref., Sanda City, Fukushima, Arimafuji park, 16. V. 2017, K. Watanabe leg.; KPM-NK 82060, F, Tottori Pref.,

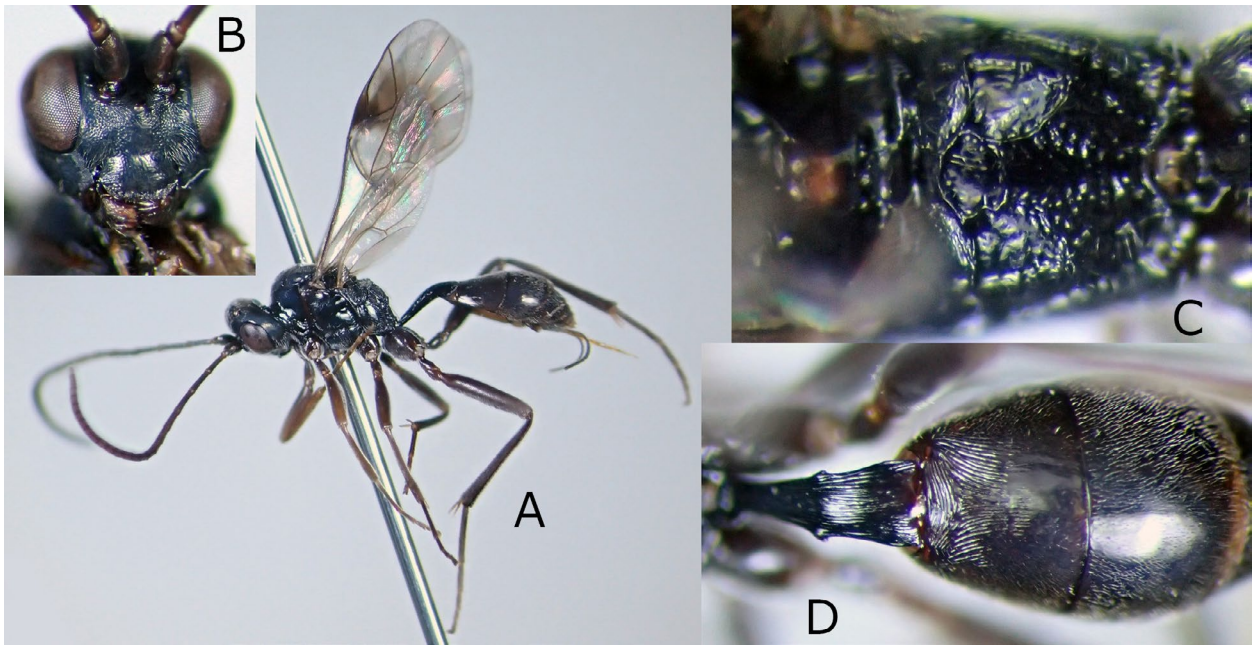


Fig. 51. *Gnotus striatus* (Uchida, 1930), KPM-NK 82064, female from Japan — A, lateral habitus; B, head, frontal view; C, propodeum, dorsal view; D, T I to T III, dorsal view.

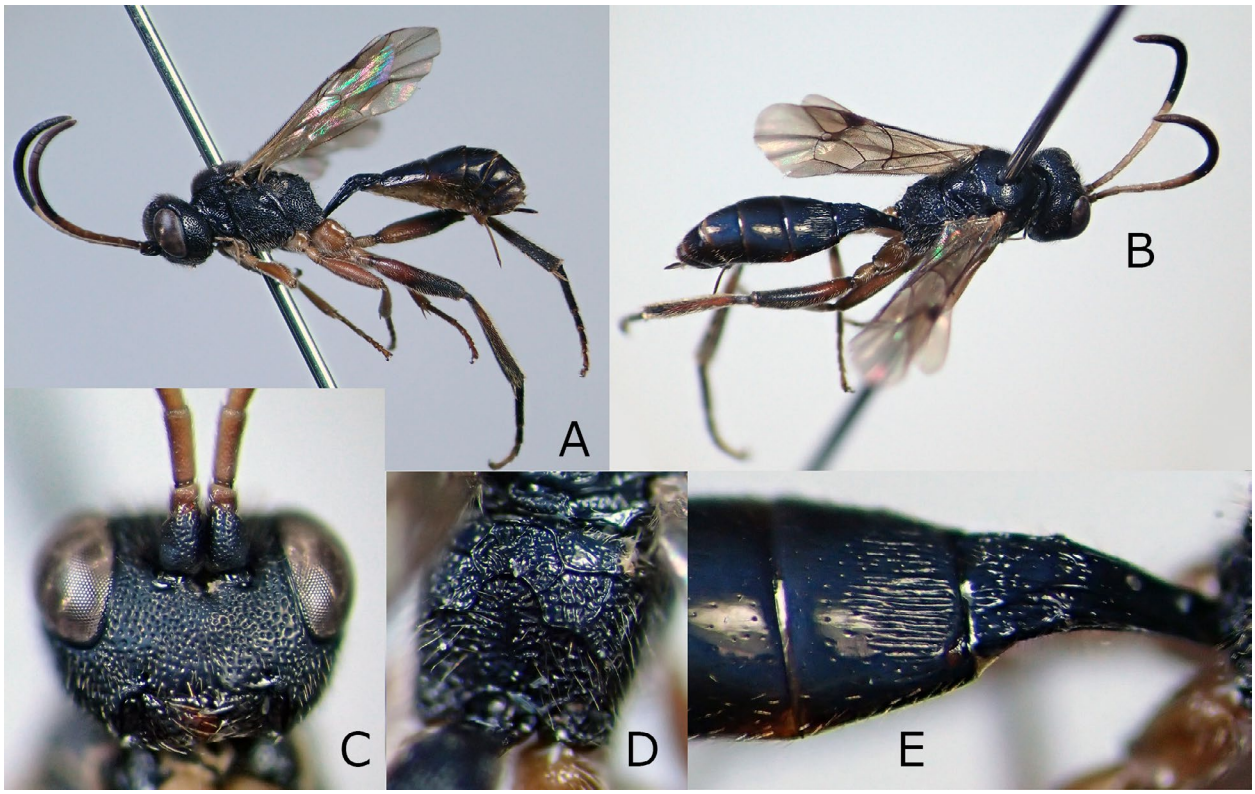


Fig. 52. *Megacara similis* Sheng, 1999, KPM-NK 81835, female from Japan — A, lateral habitus; B, dorsal habitus; C, head, frontal view; D, propodeum, dorsal view; E, T I and T II, dorso-lateral view.

Wakasa City, Mt. Hyonosen, Oodanganaru, 6. VIII. 2011, K. Watanabe leg.

**Distribution**. Japan (Kunashiri Is., Hokkaido, and Honshu).

**Bionomics**. Unknown.

Genus ***Megacara*** Townes, 1970

*Megacara* Townes, 1970: 102. Type species: *Phygadeuon lucens* Provancher, 1874. Original designation.

In this study, I newly record *Meg. similis* Sheng, 1999 from Japan. This is the first record of this genus from Japan. In addition, I recognize at least two undetermined species from Japan. The taxonomic treatment of these species requires the additional specimens and comparison with other species.

***Megacara similis*** Sheng, 1999
(New SJN: Oozu-chibi-togari-himebachi)
(Figs 52A–D, 62K, 66S)

*Megacara similis* Sheng, 1999 in Sheng & Sun (1999): 80.

**Description**. See Sheng & Sun (2009).

**Materials examined**. JAPAN: KPM-NK 81834, F, Kanagawa Pref., Hadano City, Mt. Koubou-yama, 17. V. 2015, K. Watanabe leg.; KPM-NK 81835, F, Toyama Pref., Toyama City, Kamegai, 1–8. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81836, F, Kagoshima Pref., Amamioshima Is., Sumiyou, Santaro-toge, 12. IV. 2007, 14. IV. 2007, T. Ishizaki leg.; KPM-NK 81837, F, ditto, 4. VI. 2007, K. Watanabe leg. CHINA: GSFPM, F (holotype), Henan, 11. VII. 1998, M-L. Sheng leg.

**Distribution**. Japan (Honshu and Amamioshima Is.) and China.

**Bionomics**. Unknown.

**Remarks**. This is the first record of this species from Japan. This species can be distinguished from the other undetermined species by the whitish yellow to reddish yellow hind coxa and the black metasomal tergites (Figs 52A, B, E).

Genus ***Orthizema*** Förster, 1869

*Orthizema* Förster, 1869: 178. Type: *Hemiteles* (*Orthizema*) *ornatus* Brischke, 1890 (= *Hemiteles subannulatum* Bridgman, 1883. Included by Brischke (1890).

*Naetes* Förster, 1869: 179. Type: *Hemiteles* (*Naetes*) *rufus* Brischke, 1892 (= *Hemiteles hadrocerus* Thomson, 1884. Included by Brischke (1892).

*Phyzelus* Förster, 1869: 185. Type: *Phyzelus fasciatus* Brischke, 1888. Included by Brischke (1888).

A single species, *Or. triannulatum* (Thomson, 1884), has been recorded from Japan. I found more than 10 species of this genus from Japan. The taxonomic treatment of these species requires the additional specimens and comparison with European species. In this study, I record *Or. semanotae* Sheng & Sun, 2014 from Japan for the first time.

***Orthizema semanotae*** Sheng & Sun, 2014
(New SJN: Kamikiri-chibi-togari-himebachi)
(Figs 53A–D, 65V)

*Orthizema semanotae* Sheng & Sun, 2014: 147.

**Description**. See Sheng & Sun (2014).

**Materials examined**. JAPAN: KPM-NK 82047, F, Tokyo, Akiruno City, Ninomiya, Tamagawa-riverside, 3. V. 2010, K. Watanabe leg.; KPM-NK 82048, F, Kanagawa Pref., Atsugi City, Shimofurusawa, 19. IV. 2007, T. Ban leg.; KPM-NK 82050, F, Kanagawa Pref., Atsugi City, Funako, 22. IV. 2016, 16. V. 2016, Y. Kato & S. Koizumi leg. (MsT); KPM-NK 82049, F, Kanagawa Pref., Hadano City, Naganuki, 3. XI. 2018, T. Amano leg.; KPM-NK 82045, F, Toyama Pref., Toyama City, Higashikuromaki, Ueno, 13. X. 2010, T. Yamauchi leg. (LT); KPM-NK 82046, F, Osaka Pref., Takatsuki City, Mishimae, left bank of Yodo river, 27. X. 2012, S. Fujie leg.

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

**Bionomics**. Unknown in Japan. In China, *Semanotus bifasciatus* (Motschulsky, 1857) (Coleoptera, Cerambycidae) is recorded as the host (Sheng & Sun, 2014).

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

Genus ***Tropistes*** Gravenhorst, 1829

*Tropistes* Gravenhorst, 1829: 442. Type: *Tropistes nitidipennis* Gravenhorst, 1829. Monobasic.
*Pseudolimerodes* Strobl, 1902: 46. Type: *Pseudolimerodes compressiventris* Strobl, 1902 (= *Hemiteles falcatus* Thomson, 1884). Monobasic.
*Boleslawia* Sawoniewicz, 1996: 493. Type: *Boleslawia burakowskii* Sawoniewicz, 1996. Original designation.

In this study, I record a new species, *Tro. shimizui* **sp. nov.**, from Japan. This is the first record of this genus from Japan.

***Tropistes shimizui* sp. nov.**
(New SJN: Tachi-chibi-togari-himebachi)
(Figs 54A–D, 64F, 66T)

**Etymology**. The specific name is from Dr. So Shimizu, who is a young Japanese ichneumonologist and collector of holotype.

**Type series**. **Holotype**: KPM-NK 81833, F, JAPAN, Nagano Pref., Ueda City, Sugadairakogen, Tsukuba University, 4–25. VI. 2015, S. Shimizu leg. (MsT).

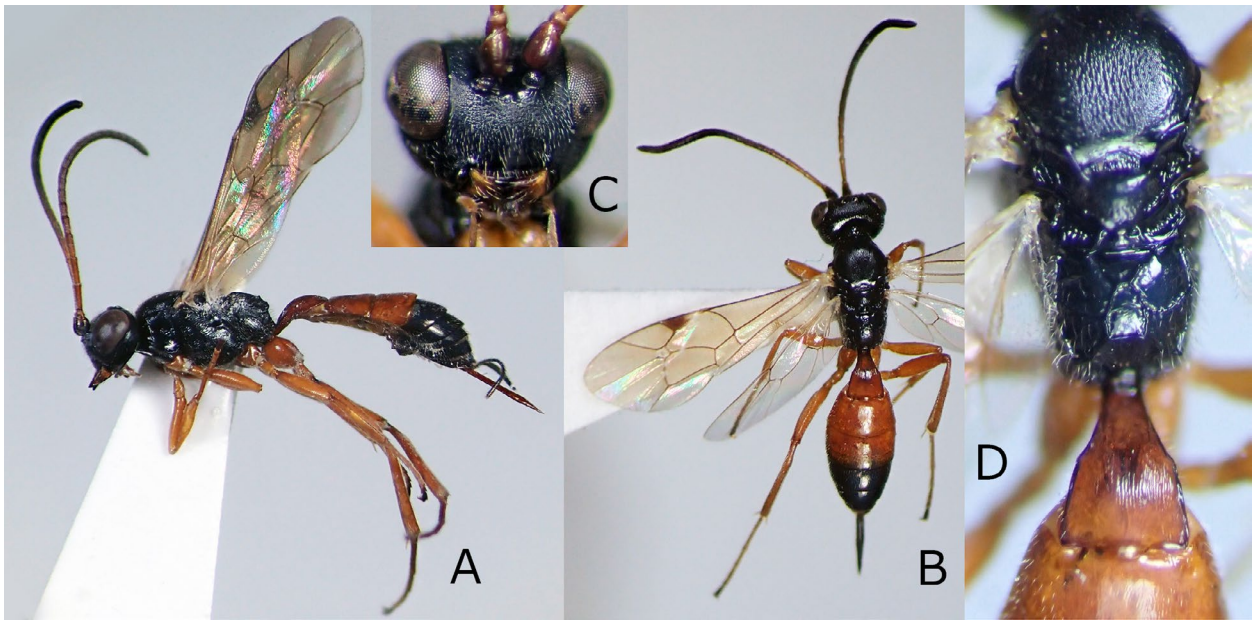


Fig. 53. *Orthizema semanotae* Sheng & Sun, 2014, KPM-NK 82047 (B-D) and 82049 (A), females from Japan — A, lateral habitus; B, dorsal habitus; C, head, frontal view; D, propodeum and T I, dorsal view.

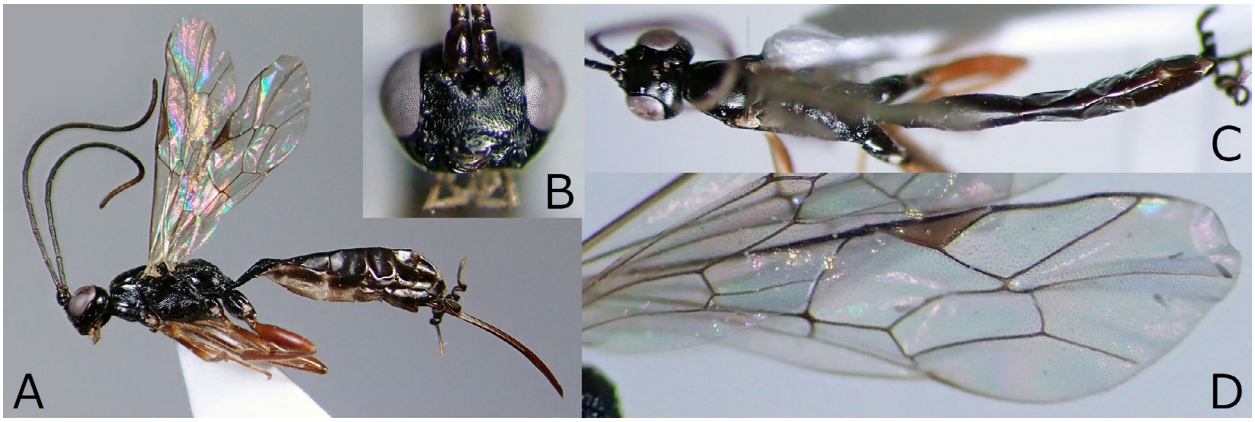


Fig. 54. *Tropistes shimizui* **sp. nov.**, KPM-NK 81833, holotype, female — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, wings.

**Description**. Female (n=1). Body length 6.7 mm. Body polished, covered with silver setae.

Head. Clypeus 2.7 times as wide as maximum length, sparsely punctate except for smooth anterior margin, its anterior margin rounded, without teeth. Face punctate (Fig. 54B), the interspace of punctures coriaceous. MSL 0.9 times as long as BWM. Frons and vertex punctate, the interspace of punctures coriaceous. Gena sparsely and finely punctate, largely smooth laterally. OOL shorter than POL. OOL and POL longer than OD. Occipital carina complete, its lower end joined with hypostomal carina distant from mandibular base. Upper tooth of mandible almost as long as lower tooth. Base of mandible slightly convex. Antenna with 26 flagellomeres. Subapical part of antenna not widened. All segments of flagellomeres longer than wide. FL III 6.67 times as long as maximum depth in lateral view.

Mesosoma 2.1 times as long as maximum depth in lateral view. Lateral part of pronotum smooth dorsally, longitudinally rugulose ventrally. Epomia indistinct. Mesoscutum punctate, the interspace of punctures coriaceous dorsally, smooth anteriorly and laterally. Notaulus distinct, fading out in front of center of mesoscutum. Scutellum sparsely punctate, without a lateral longitudinal carina except for base. Mesopleuron longitudinally rugulose dorsally and ventrally, median part coriaceous except for smooth speculum. Posterior transverse carina of mesosternum largely absent in front of mid coxae. Metapleuron sparsely punctate, with an indistinct juxtacoxal carina. Anterior transverse carina of propodeum absent except for median section (Fig. 64F). Posterior transverse carina of propodeum complete (Fig. 64F). Lateromedian longitudinal carina of propodeum present except for posterior section (Fig. 64F). Lateral longitudinal carina of propodeum complete except for indistinct anterior part (Fig. 64F). Pleural carina complete (Fig. 64F). Area basalis and area superomedia distinct (Fig. 64F). Anterior area of propodeum largely coriaceous. Median parts of propodeum transversely rugulose. Posterior part of propodeum largely smooth. Length of fore wing 4.7 mm. Areolet absent (Fig. 54D). Vein 2m-cu of fore wing with two bullae. Nervellus subvertical, intercepted near the middle (Fig. 54D). Hind femur 3.95 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.3: 0.55. Tarsal claws simple.

Metasoma laterally compressed except for first segment (Fig. 54C). T I 3.0 times as long as maximum width, coriaceous. Median dorsal carina of T I absent. Dorsolateral carina of T I present in front of the spiracle. T II and T III longer than wide, coriaceous. Ovipositor sheath 1.8 times as long as hind tibia. Ovipositor distinctly downcurved (Fig. 54A), without a nodus and ventral teeth (Fig. 66T).

Coloration (Figs 54A–D). Body (excluding wings and legs) black to blackish brown. Apex of mandible tinged with brown. Palpi and tegula yellowish brown. Membranous part of metasomal sternites whitish brown. Ovipositor reddish brown. Wings hyaline. Veins yellowish brown to brown. Pterostigma brown. Legs reddish brown except for black to blackish brown coxae, trochanters, and trochantelli.

Male. Unknown.

**Distribution**. Japan (Honshu).

**Bionomics**. Unknown.

**Remarks**. This species resembles *Tro. falcatus* (Thomson, 1884) in the character states of antenna, hind femur, and ovipositor, but it can be distinguished by the coxae black (orange in *Tro. falcatus*), the tegula yellowish brown (brown in *Tro. falcatus*), the metasomal tergites black (with red area in *Tro. falcatus*), the anterior part of

mesopleuron coriaceous medially (irregularly rugae in *Tro. falcatus*), and the area petiolaris largely smooth (distinctly sculptured in *Tro. falcatus*).

Genus ***Uchidella*** Townes, 1957

*Itamus* Förster, 1869; 179. Type: *Hemiteles* (*Itamus*) *okamotoi* Uchida, 1936. Included by Uchida (1936a).
*Uchidella* Townes, 1957: 119. New name for *Itamus*.

Two species, *U. longicaudata* Horstmann, 1997 and *U. okamotoi* (Uchida, 1936), have been recorded from Japan. In this study, I describe a new species, *U. toichii* **sp. nov.**, and record some distributional data of *U. okamotoi* below. Matsumoto (2013) recorded the *U. longicaudata* from Hokkaido, while this record may be based on the misidentification of *Bathythrix*. Japanese species can be distinguished by the following key.

**Key to Japanese species of the genus *Uchidella* (♀)**

1. Ovipositor sheath shorter than 0.6 times of hind tibia. Clypeus usually tinged with yellowish brown (Fig. 55B). Mesosoma with large reddish yellow areas (Figs 55A, C, D).
..... *U. okamotoi* (Uchida, 1936)
-. Ovipositor sheath at least slightly longer than hind tibia. Clypeus black (Fig. 56B). Mesosoma almost entirely black (Figs 56A, D, E).
..... 2
2. Area superomedia of propodeum as long as wide (Fig. 64H). Antenna dark brown to blackish brown (Fig. 56A). T II to T V with black areas (Figs 56G, H). Hind coxa, femur, and tibia sometimes partly or entirely darkened.
..... *U. toichii* **sp. nov.**
-. Area superomedia of propodeum wider than long. Antenna yellow to yellowish brown. Metasomal tergites yellow to yellowish brown except for T I. Hind coxa, femur, and tibia yellow to yellowish brown.
..... *U. longicaudata* Horstmann, 1997

***Uchidella okamotoi*** (Uchida, 1936)
(SJN: Okamoto-chibi-togari-himebachi)
(Figs 55A–E, 64G)

*Leptocryptus marginatus* Uchida, 1930: 335
*Hemiteles* (*Itamus*) *okamotoi* Uchida, 1936a: 13.

**Description**. Female (n=9). Body length 5.6–7.0 mm. Body polished, covered with silver setae.

Head. Clypeus 1.9–2.0 times as wide as maximum length, finely and sparsely punctate, its anterior margin subtruncate, without teeth. Face finely punctate (Fig. 55B), flat. MSL 0.5–0.6 times as long as BWM. Frons finely punctate except for smooth area above antennal sockets. Gena and vertex finely punctate. OOL distinctly longer than POL and OD. POL almost as long as OD. Occipital carina complete, its lower end and joined with hypostomal carina at mandibular base. Upper tooth of mandible distinctly longer than lower tooth. Base of mandible flat. Antenna with 24–26 flagellomeres. FL III 3.3–4.0 times as long as maximum depth in lateral view.

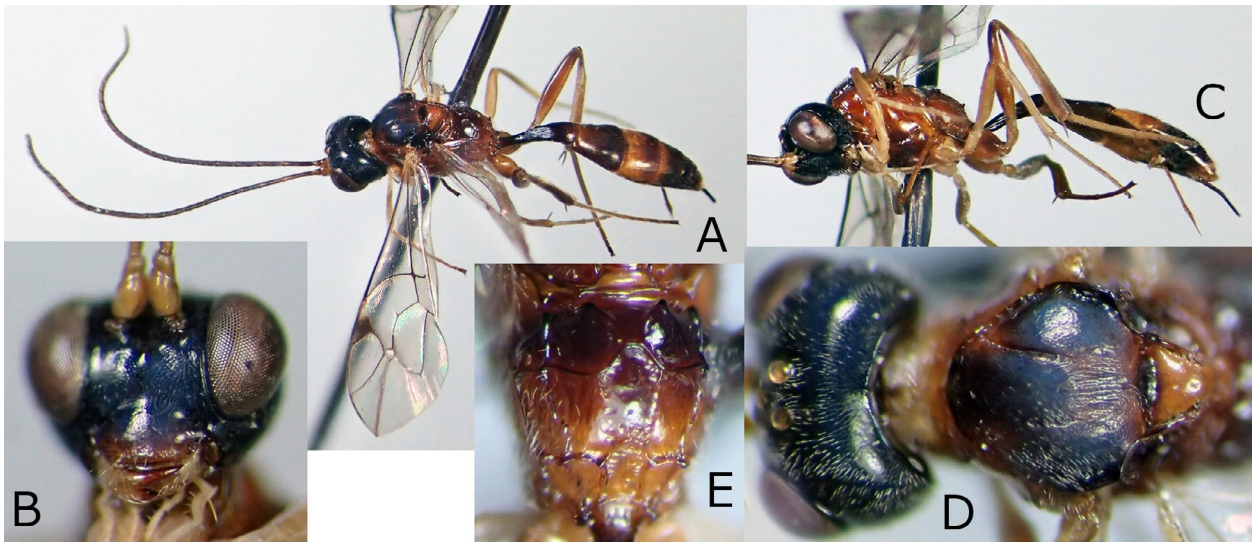


Fig. 55. *Uchidella okamotoi* (Uchida, 1936), KPM-NK 82073, female from Japan — A, dorsal habitus; B, head, frontal view; C, head, mesosoma, and metasoma, lateral view; D, head, mesoscutum and scutellum, dorsal view; E, propodeum, dorsal view.

Mesosoma. Lateral part of pronotum smooth. Epomia distinct and long. Mesoscutum densely and finely punctate. Notaulus distinct, fading our near center of mesoscutum (Fig. 55D). Scutellum largely smooth, with a lateral longitudinal carina except for apex (Fig. 55D). Mesopleuron smooth except for fine punctures on areas above and below speculum. Posterior transverse carina of mesosternum narrowly absent in front of mid coxae. Metapleuron finely punctate, with a complete juxtacoxal carina. Propodeal carinae almost complete (Fig. 55E, 64G). Median section of lateromedian longitudinal carina sometimes partly indistinct (Figs 55E, 64G). Area basalis usually distinct (Figs 55E, 64G). Area superomedia longer than wide, sometimes indistinct laterally (Fig. 55E, 64G). Postero-lateral corner of area dentipara weakly projected. Propodeum finely and sparsely punctate (Fig. 55E). Length of fore wing 4.3–4.8 mm. Areolet present (Fig. 55A). Vein 2m-cu of fore wing with two bullae. Nervellus subvertical, intercepted slightly behind the middle. Hind femur 5.3–5.6 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.7–0.75: 0.5–0.55: 0.25: 0.3. Tarsal claws simple.

Metasoma. T I 3.1–3.5 times as long as maximum width, largely longitudinally striate except for smooth apex. Median dorsal carina of T I absent. Dorsolateral carina of T I complete but weak. T II almost as long as wide. T II to T VI densely and finely punctate. Ovipositor sheath 0.38–0.5 times as long as hind tibia. Ovipositor straight, with an obtuse nodus and without ventral teeth.

Coloration (Figs 55A–E). Head black. clypeus at least reddish brown apically. Scape, pedicel, base of FL I, mandible except for darkened apex, and palpi yellowish brown. Antenna brown except for yellowish brown area. Mesosoma and metasoma (excluding wings and legs) reddish brown. Dorsal surfaces of mesoscutum and propodeum more or less darkened. Scutellum reddish yellow. T I dark brown to blackish brown except for apex. T II to T VII sometimes partly darkened. Membranous part of metasomal sternites yellowish brown. Ovipositor yellowish brown. Wings hyaline. Veins yellowish brown to dark brown. Pterostigma dark brown to blackish brown except for pale base. Legs yellowish brown to reddish brown. Hind coxa, hind femur, base and apical part of hind tibia usually darker than other parts of legs.

Male (n=3). Similar to female. Antenna with 23–24 flagellomeres. FL 10 to FL 13 with a longitudinal tyloids. Body coloration slightly paler than female.

**Materials examined**. JAPAN: KPM-NK 82071, F, Chiba Pref., Shiroi City, Ki, 26. VII. 2006, H. Suda leg.; KPM-NK 82065, M, Kanagawa Pref., Yokosuka City, Nagasawa, 13. VII. 2001, I. Kawashima leg.; KPM-NK 82067, M, Kanagawa Pref., Miura City, Koajiro, 9. VIII. 2001, I. Kawashima leg.; KPM-NK 82072, F, Kanagawa Pref., Hadano City, Mt. Koubou-yama, 9. X. 2006, H. Katahira leg.; KPM-NK 82074, F, ditto, 13. X. 2008, K. Watanabe leg.; KPM-NK 82073, F, Yamanashi Pref., Koushu City, Katsunuma Town, Ootaki-fudou, 4. VIII. 2007, K. Watanabe leg.; KPM-NK 82066, F, Kagoshima Pref., Mt. Kirishima, 15. VIII. 1953, H. Nagase leg.; KPM-NK 82068, M, Kagoshima Pref., Osumicho, 25. VI. 1980, H. Nagase leg.; KPM-NK 82069, F, Kagoshima Pref., Yakushima Is., Arakawa, 22. VII. – 22. VIII. 2006, T. Yamauchi leg. (MsT).

**Distribution**. Japan (Honshu, Shikoku, Kyushu, Yakushima Is.*, and Amamioshima Is.).

**Bionomics**. Unknown.

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

### *Uchidella toichii* sp. nov.

(New SJN: Uchida-chibi-togari-himebachi)

(Figs 56A–H, 64H, 66U)

**Etymology**. The specific name is from Dr. Toichi Uchida, who is a Japanese ichneumonologist.

**Type series**. **Holotype**: KPM-NK 82011, F, JAPAN, Gunma Pref., Katashina Vil., Marunuma, Yuzawa, 12. VII. 2014, K. Watanabe leg. **Paratypes**: JAPAN, KPM-NK 82005, 82038, 82044, 3 F, Hokkaido, Horokanai Town, Moshiri, Uryu, 11–17. VII. 2012, K. Watanabe leg. (MsT); KPM-NK 82013, F, ditto, 16. VII. 2012, M. Ito leg.; KPM-NK 82021, F, ditto, 17. VII. 2012; KPM-NK 82027, F, Hokkaido, Sapporo City, Maruyama, 29. VII. 2009, K. Watanabe leg.; KPM-NK 82007, F, Fukushima Pref., Hinoemata Vil., Hirosawa-rindo, 19. VII. 2006, T. Ishizaki leg.; KPM-NK 82008, F, Gunma Pref., Katashina Vil., Mt. Hotaka-san, 1. VIII. 2007, K. Watanabe leg.; KPM-NK 82023, F, same locality and collector of holotype, 2. VII. 2008, K. Watanabe leg.; KPM-NK 82018, M, Saitama Pref., Ootaki Vil., Mukaidani, 12. XI. 1986, K. Hara leg.; KPM-NK 82016, F, Tokyo, Oume City, Mt. Otsuka-yama, 1. VI. 2008, K. Watanabe leg.; KPM-NK 82020, F, Tokyo, Izuoshima Is., Oshima Town, Mt. Omaru, Tsubakinomori, 5–31. X. 2012, K. Tsujii leg. (MsT); KPM-NK 82029, F, Tokyo, Izuoshima Is., Oshima Town, Sashikiji, Mt. Futago, 5–31. X. 2012, K. Tsujii leg. (MsT); KPM-NK 82025, F, Kanagawa Pref., Yokosuka City, Mt. Miura-fuji to Mt. Takeyama, 13. VII. 2008, K. Watanabe leg.; KPM-NK 82037, F, Kanagawa Pref., Yamakita Town, Kurokura, Yushin, 18. V. 2016, K. Watanabe leg.; KPM-NK 82004,

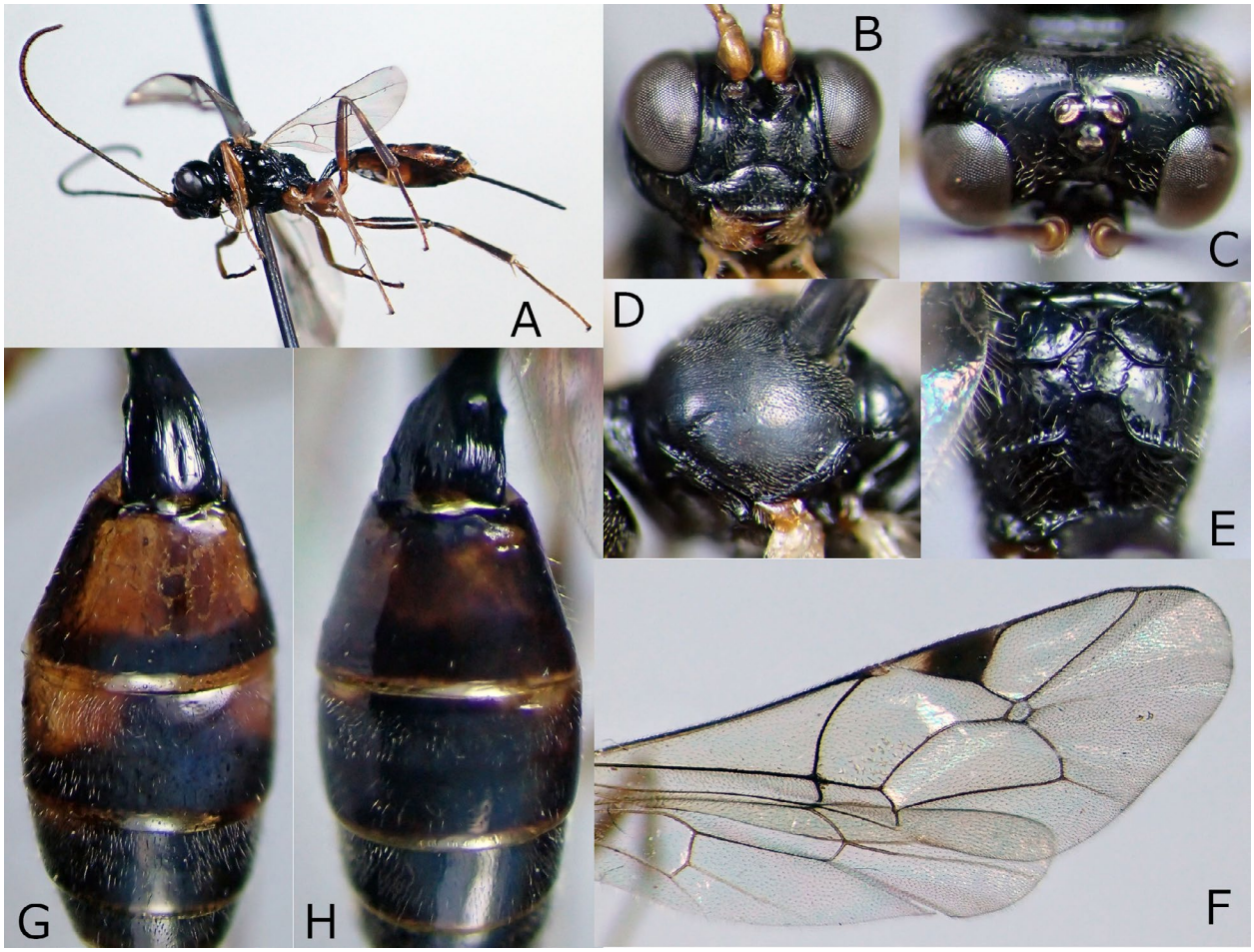


Fig. 56. *Uchidella toichii* **sp. nov.**, KPM-NK 82011 (A-G, holotype) and 82042 (H, paratype), females — A, lateral habitus; B, head, frontal view; C, head, dorsal view; D, mesoscutum, dorso-lateral view; E, propodeum, dorsal view; F, wings; G, H, T II to T IV, dorsal view.

82014, 82019, 82024, 82026, 5 F, Niigata Pref., Sado Is., Kanaishinbo, Hakuundai to Mt. Myokenzan, 4. VIII. 2009, K. Watanabe leg.; KPM-NK 82039, F, ditto, 10. IX. 2010, K. Watanabe leg.; KPM-NK 82017, F, Niigata Pref., Sado Is., Umedu, Mt. Donden-san, 5. VIII. 2009, J. Imura leg.; KPM-NK 82015, 82034, 82036, 3 F, Niigata Pref., Nagaoka City, Suyoshi Town, Mt. Nokogiri-yama, 25. V. – 7. VI. 2014, S. Shimizu & R. Shimizu leg.; KPM-NK 82028, F, Toyama Pref., Nanto City, Togamura, Kamimomose, 4–11. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 82033, F, ditto, 1–8. IX. 2009; KPM-NK 82030, F, ditto, 8–15. IX. 2009; KPM-NK 82032, 82040, 2 F, Toyama Pref., Toyama City, Arimine, Jyuroudani, 8–15. IX. 2009, M. Watanabe *et al*. leg. (MsT); KPM-NK 82042, F, Toyama Pref., Toyama City, Arimine, Inonedani, 28. VII. – 4. VIII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 82041, F, ditto, 15–22. IX. 2009; KPM-NK 82006, 82009, 2 F, Fukui Pref., Oono City, Hatogayu, 26. IX. 1982, H. Kurokawa leg.; KPM-NK 82010, F, Fukui Pref., Oono City, Mt. Akausagi, 27. VIII. 1980, T. Murota leg.; KPM-NK 82031, F, Hyogo Pref., Kobe City, Aina, 23. VI. 2016, K. Ogura leg.; KPM-NK 82035, M, Hyogo Pref., Kobe City, Aina, 6. VII. 2016, K. Ogura leg.; KPM-NK 82043, F, Hyogo Pref., Shinonsen Town, Kishida, 12. X. 2012, S. Fujie leg.; KPM-NK 82012, 82022, 2 F, Tottori Pref., Wakasa City, Mt. Hyonosen, Oodanganaru, 6. VIII. 2011, K. Watanabe leg.

**Description**. Female (n=40). Body length 5.1–7.3 (HT: 7.3) mm. Body polished, covered with silver setae.

Head. Clypeus 2.1 times as wide as maximum length, finely and sparsely punctate, its anterior margin subtruncate, without teeth. Face finely punctate (Fig. 56B), flat. MSL 0.6–0.7 (HT: 0.7) times as long as BWM. Frons finely punctate except for smooth area above antennal sockets. Gena and vertex finely punctate. OOL distinctly longer than POL and OD (Fig. 56C). POL almost as long as OD (Fig. 56C). Occipital carina complete, its lower end and joined with hypostomal carina at mandibular base. Upper tooth of mandible distinctly longer than lower tooth. Base of mandible flat. Antenna with 19–23 (HT: 23) flagellomeres. FL III 6.1 times as long as maximum depth in lateral view.

Mesosoma. Lateral part of pronotum smooth except for punctures on dorsal margin. Epomia distinct and long.

Mesoscutum densely and finely punctate. Notaulus distinct, fading out in front of center of mesoscutum. Scutellum sparsely punctate, with a lateral longitudinal carina except for apex. Mesopleuron smooth except for fine punctures on areas below speculum and anterior part. Posterior transverse carina of mesosternum absent in front of mid coxae. Metapleuron finely punctate, with a complete juxtacoxal carina. Propodeal carinae complete (Figs 56E, 64H). Median section of lateromedian longitudinal carina sometimes narrowly indistinct (Figs 56E, 64H). Area basalis distinct (Figs 56E, 64H). Area superomedia distinct, as long as wide (Figs 56E, 64H). Postero-lateral corner of area dentipara not projected. Propodeum finely and sparsely punctate. Length of fore wing 4.4–6.8 mm. Areolet present (Fig. 56F). Vein 2m-cu of fore wing with two bullae (Fig. 56F). Nervellus subvertical, intercepted slightly behind the middle (Fig. 56F). Hind femur 5.2–5.7 (HT: 5.7) times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.3: 0.4. Tarsal claws simple.

Metasoma. T I 2.1–2.5 (HT: 2.4) times as long as maximum width, largely longitudinally striate except for smooth apex. Median dorsal carina of T I indistinct. Dorsolateral carina of T I complete. T II wider than long. T II and T III largely smooth (Figs 56G, H). T IV to T VI finely and sparsely punctate. Ovipositor sheath 1.03–1.1 (HT: 1.08) times as long as hind tibia. Ovipositor straight, with a nodus and ventral teeth (Fig. 66U).

Coloration (Figs 56A–H). Body (excluding wings and legs) black. Scape, pedicel, ventral surface of FL I, mandible except for darkened apex, and palpi yellowish brown. Antenna dark brown except for yellowish brown area. Median part of Collar with yellowish brown area. Tegula dark yellowish brown to yellowish brown. Mesoscutum with bule dull reflection. Apex of T I sometimes tinged with reddish brown. Posterior margins of T II to T V tinged with reddish brown. T II usually largely reddish brown except for blackish brown posterior and lateral areas. T III usually reddish brown basally. T IV sometimes with reddish brown area near antero-lateral corner. Reddish brown areas of T II to T IV sometimes reduced. Posterior margin of T VI and T VII white. Membranous part of metasomal sternites yellowish brown. Ovipositor yellowish brown. Wings hyaline. Veins yellowish brown to dark brown. Pterostigma dark brown to blackish brown except for pale base. Legs yellowish brown to reddish brown. Hind coxa with blackish brown spots on anterior and posterior surfaces (the latter spot sometimes indistinct). Hind femur, hind tibia except for subbasal part, and hind tarsus usually darkened.

Male (n=1). Similar to female. Antenna without tyloids. Scutellum and postscutellum weakly tinged with reddish brown. Coxae, trochanters, and trochantelli entirely whitish yellow.

**Distribution**. Japan (Hokkaido, Honshu, Sado Is. & Izuoshima Is.).

**Bionomics**. Unknown.

**Remarks**. This species resembles *U. brevicauda* Horstmann, 1993 in the long ovipositor, but it can be distinguished by the area superomedia as long as wide (longer than wide in *U. brevicauda*).

## ***Rothneyia* genus group**

(subtribe Rothneyiina sensu Townes (1970))

A single genus, *Nipponaetes* Uchida, 1933, has been recorded from Japan. In this study, I review this genus.

### Genus ***Nipponaetes*** Uchida, 1933

*Nipponaetes* Uchida, 1933b: 160. Type: *Hemiteles* (*Nipponaetes*) *haeussleri* Uchida, 1933. Original designation.

*Potia* Seyrig, 1952: 36. Type: *Potia inelegans* Seyrig, 1952. Original designation.

*Thalops* Townes, 1958: 57. Type: *Thalops fessus* Townes, 1958. Original designation.

*Zurquilla* Gauld, 1997 in Gauld *et al*. (1997): 404. Type: *Zurquilla hansoni* Gauld, 1997. Original designation.

Two species, *N. haeussleri* (Uchida, 1933) and *N. striatus* Momoi, 1970, have been recorded from Japan. In this study, I re-describe the former with new distributional data below. Momoi (1970) used the striation of T II for the separation of both species, while this character states varied (Konishi *et al.*, 2014; in this study). Thus, taxonomic position of *N. striatus* should be revised in the future study. Japanese species can be distinguished by the following key.

### Key to Japanese species of the genus *Nipponaetes* (♀)

1. Malar space with a triangular yellow marking (Fig. 57B). Hind coxa reddish brown (Fig. 57A). ..... *N. haeussleri* (Uchida, 1933)
-. Malar space without a triangular yellow marking. Hind coxa blackish brown to black. ..... *N. striatus* Momoi, 1970

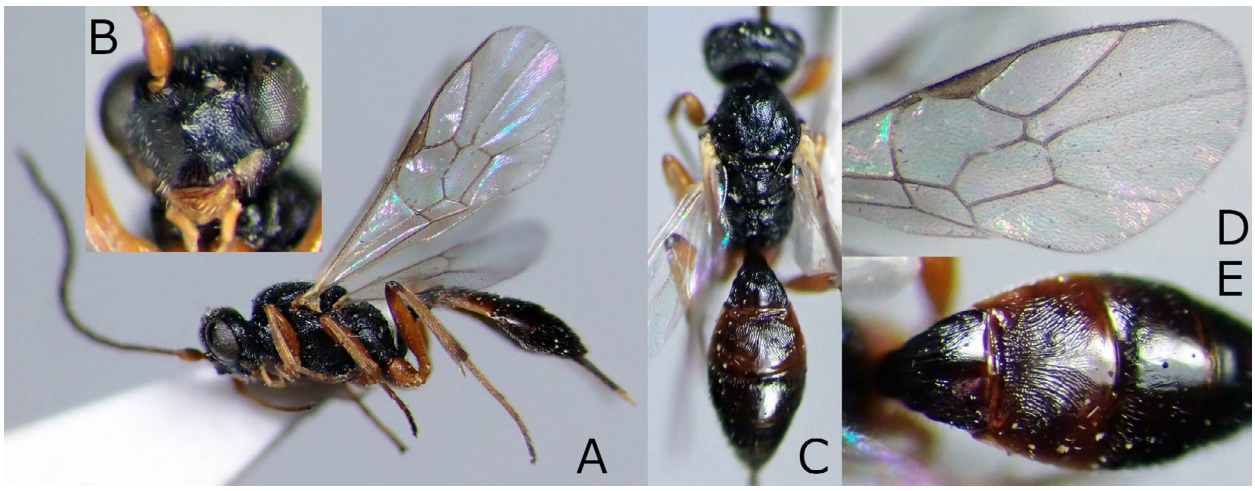


Fig. 57. *Nipponaetes haeussleri* (Uchida, 1933), KPM-NK 81832, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, fore wing; E, T I to T III, dorsal view.

***Nipponaetes haeussleri*** (Uchida, 1933)
(SJN: Kobu-togari-himebachi)
(Figs 57A–D, 62E, 65W)

*Hemiteles* (*Nipponaetes*) *haeussleri* Uchida, 1933b: 159.

**Description**. Female (n=3). Body length 3.3–3.4 mm. Body covered with silver setae.

Head. Clypeus 1.8 times as wide as maximum length, its anterior margin truncate (Fig. 57B), its median part slightly concave. Face polished, densely punctate, with a median strong convexity (Figs 57A, B, 62E). MSL 1.3 times as long as BWM. Frons, vertex, and gena matt. OOL shorter than POL. Occipital carina complete, joined with hypostomal carina distant from mandibular base. Upper tooth of mandible distinctly longer than lower tooth. Base of mandible flat. Antenna with 20 flagellomeres.

Mesosoma. Lateral part of pronotum largely granulate, with epomia. Mesoscutum granulate and polished, with distinct notaulus. Scutellum polished, coriaceous, lateral carina present except for apex. Mesopleuron polished, granulate except for smooth speculum. Metapleuron granulate, with a complete juxtacoxal carina. Propodeal carinae complete and strong (Fig. 65W). Propodeum polished and irregularly or transversally rugulose. Length of fore wing 2.9–3.3 mm. Fore wing without areolet (Fig. 57D). Nervellus subvertical, intercepted near the middle (Fig. 57A). Hind femur 5.0 times as long as maximum depth in lateral view. Hind TS I: II: III: IV: V = 2.0: 0.9: 0.6: 0.4: 0.5. Tarsal claws simple.

Metasoma. T I 1.4–1.5 times as long as maximum width, longitudinally striated medially and laterally. Median dorsal carina of T I present except for posterior part. Dorsolateral carina of T I complete. T II granulate, sometimes covered with longitudinal striae anteriorly and oblique striae posteriorly except for smooth area on posterior part (Figs 57C, E). T III to T V sparsely punctate except for weak, oblique striae on antero-lateral area of T III. Ovipositor sheath 0.75 times as long as hind tibia. Ovipositor straight, without a nodus.

Coloration (Figs 57A–D). Body (excluding wings and legs) black to blackish brown. Ventral part of scape and pedicel and base of FL I reddish brown. Mandible yellow except for darkened apex. A small spot of malar space, palpi, and tegula yellow. T II more or less tinged with reddish brown. Membranous part of metasomal sternites and ovipositor yellowish brown. Wings hyaline. Veins and pterostigma yellowish brown to brown. Legs reddish brown to yellowish brown. Apex of hind femur and base and apical parts of hind tibia blackish brown. Apical part of T I and T III to T VII sometimes tinged with dark reddish brown.

Male. Not studied in this study.

**Materials examined**. JAPAN: KPM-NK 81832, F, Osaka Pref., Takatsuki City, Kanmaki, 29. IV. 2011, M. Ito leg.; KU, F (det. Momoi), Miyazaki Pref., Miyazaki, Yamashiro, 12. VII. 1964, K. Yasumatsu & T. Nishida leg. KOREA: SEHU, F (holotype), Keikido, Suigen, 30. X.

**Distribution**. Japan (Honshu*, Kyushu, Amamioshima Is., and Okinawajima Is.); Korea, the Philippines, and India

**Bionomics**. Host record: *Grapholita molesta* (Busck, 1916) (Lepidoptera, Tortricidae) (Uchida, 1933b; Japan); *Cotesia ruficrus* (Haliday, 1834) (Hymenoptera, Braconidae) (He, 1984; China); Egg sac of Araneida (Araneae) (Broad *et al.*, 2004; India). The above specimen deposited in KU is collected by sweeping in paddy field.

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

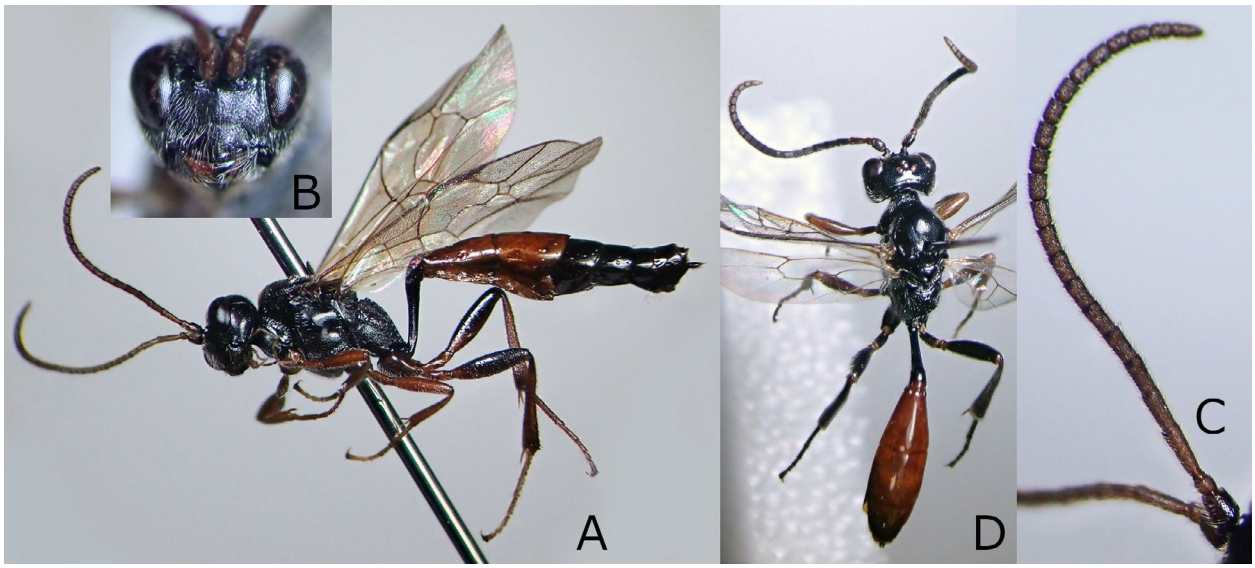


Fig. 58. *Mesoleptus laevigatus* (Gravenhorst, 1829), KPM-NK 81741 (A-C) and 81742 (D), females from Japan — A, lateral habitus; B, head, frontal view; C, antenna, lateral view; D, head, mesosoma, and metasoma, dorsal view.

### ***Stipnus* genus group**
(subtribe Stilpnina sensu Townes (1970))

Three genera, *Atractodes* Gravenhorst, 1829, *Mesoleptus* Gravenhorst, 1829, and *Stilpnus* Gravenhorst, 1829, have been recorded from Japan. In this study, I review *Mesoleptus* and *Stilpnus*. The identification of genera see Townes (1970), Jussila (1979), and Jussila (1987).

### Genus ***Mesoleptus*** Gravenhorst, 1829

*Mesoleptus* Gravenhorst, 1829: 3. Type: *Ichneumon laevigatus* Gravenhorst, 1820. Designated by Curtis (1837).
*Exolytus* Holmgren, 1859: 328. Type: *Ichneumon laevigatus* Gravenhorst, 1820. Monobasic.

Two species, *Mes. laticinctus* (Walker, 1874) and *Mes. sapporensis* (Uchida, 1930), have been recorded from Japan. I recognize a newly recorded species, *Mes. laevigatus* (Gravenhorst, 1829), and at least three undetermined species from Japan. The taxonomic treatment of the undetermined species requires the additional specimens and comparison with European species. In this study, I record *Mes. laevigatus* from Japan for the first time and some distribution records of *Mes. sapporensis* below.

### ***Mesoleptus laevigatus*** (Gravenhorst, 1829)
(New SJN: Futohige-haraaka-onashi-himebachi)
(Figs 58A–D)

*Ichneumon laevigatus* Gravenhorst, 1820: 371.
*Ichneumon censor* Thunberg, 1822: 269.
*Ichneumon transversor* Thunberg, 1822: 268.
*Atractodes dionaeus* Haliday, 1838: 118.
*Exolytus aequalis* Förster, 1876: 55.
*Exolytus binoculus* Förster, 1876: 113
*Exolytus complacens* Förster, 1876: 89
*Exolytus cooperator* Förster, 1876: 80.
*Exolytus dichrocerus* Förster, 1876: 56.
*Exolytus egregius* Förster, 1876: 81.
*Exolytus integrellus* Förster, 1876: 62.
*Exolytus molestus* Förster, 1876: 82.
*Exolytus monticola* Förster, 1876: 52.
*Exolytus perditorius* Förster, 1876: 95
*Exolytus peregrinus* Förster, 1876: 114
*Exolytus pontresinensis* Förster, 1876: 79.
*Exolytus propugnator* Förster, 1876: 111
*Exolytus spoliator* Förster, 1876: 66.
*Exolytus taeniolatus* Förster, 1876: 66.
*Exolytus tenuiventris* Förster, 1876: 92
*Exolytus tribulator* Förster, 1876: 86
*Exolytus vetustus* Förster, 1876: 65.
*Exolytus transsylvanicus* Kiss, 1924: 76.

**Description**. See Jussila *et al*. (2010).

**Materials examined**. JAPAN: KPM-NK 81743, F, Hokkaido, Okushiri Is., Tamaura, 28. VII. 2000, T. Nambu leg. (YPT); KPM-NK 81742, M, Yamanashi Pref., Hokuto City, Masutomi, Biwakubo-sawa, 28. VII. 2007, K. Watanabe leg.; KPM-NK 81741, M, Toyama Pref., Toyama City, Kamegai, 8–15. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81744–81746, 1 F & 2 M,


Fig. 59. *Mesoleptus sapporensis* (Uchida, 1930), KPM-NK 81740, female from Japan — A, lateral habitus; B, head, frontal view.

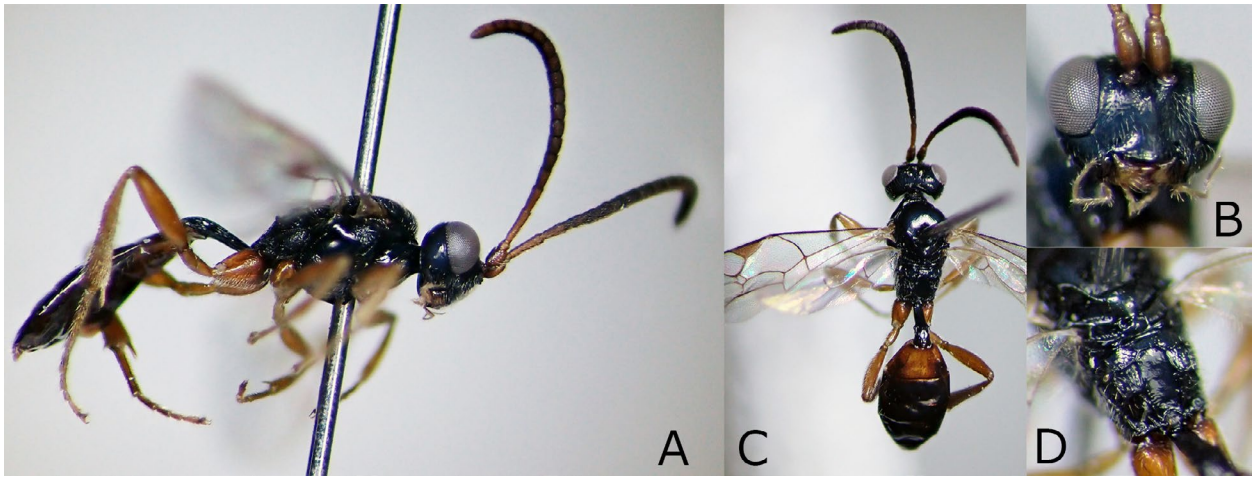


Fig. 60. *Stilpnus* (*Stilpnus*) *pavoniae* (Scopoli, 1763), KPM-NK 81749, female from Japan — A, lateral habitus; B, head, frontal view; C, head, mesosoma, and metasoma, dorsal view; D, propodeum, dorsal view.


Fig. 61. *Stilpnus* (*Stilpnus*) *subzonulus* Förster, 1876, KPM-NK 81748, female from Japan — A, lateral habitus; B, head, frontal view.

Toyama Pref., Nanto City, Togamura-kamimomose, 15–29. VII. 2009, M. Watanabe *et al.* leg. (MsT).

**Distribution**. Japan (Hokkaido, Okushiri Is., and Honshu); widely distributed in Palearctic region (Yu *et al.*, 2016).

**Bionomics**. Unknown in Japan. *Sarcophaga pseudoscoparia* (Kramer,1911) (Diptera) has been recorded as host in Romania (Ciochia, 1979).

**Remarks**. Momoi (1966b) examined the Japanese specimens of "*M. laevigatus*" and concluded all of them should be identified as *Mes. laticinctus*. He also deleted the record of this species from Japan. However, I recognized total of six specimens of this species from Japan. This is the first record of this species from Japan.

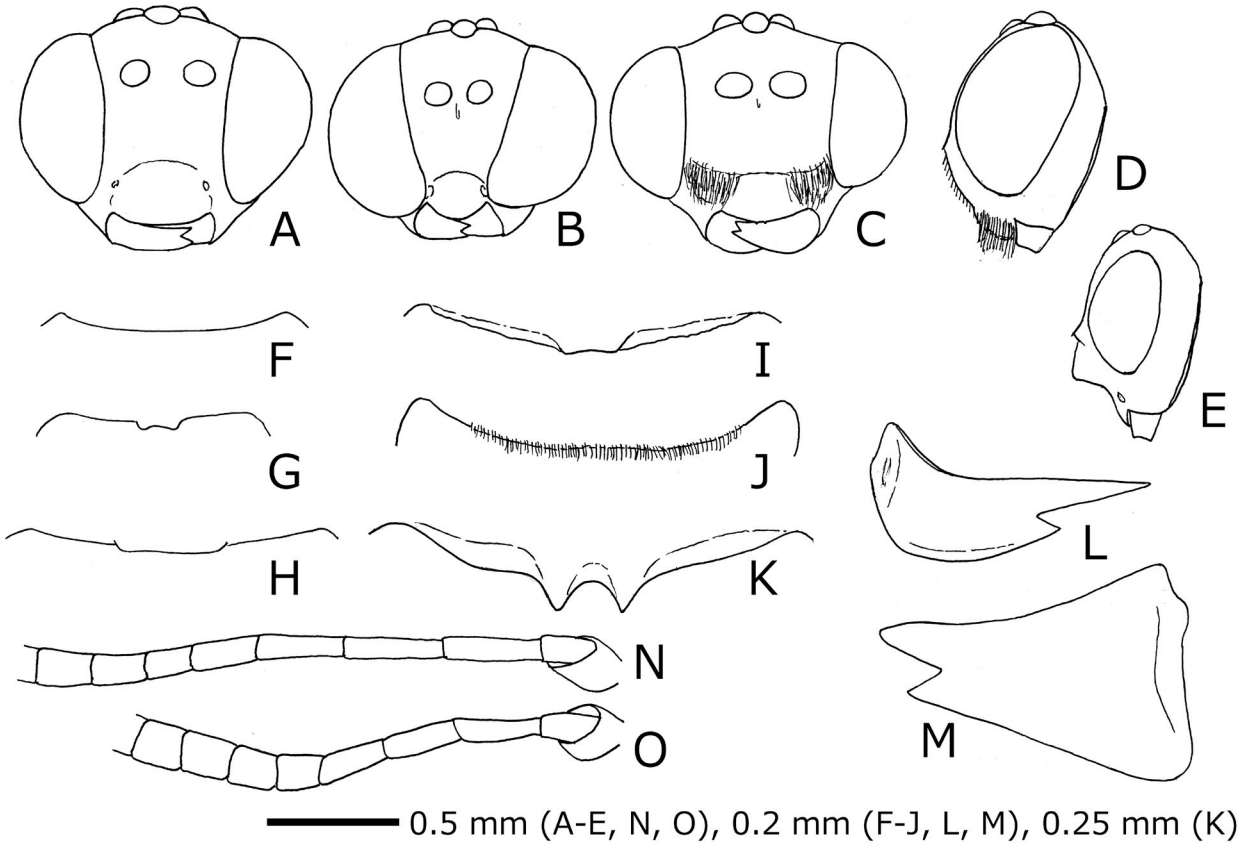


Fig. 62. *Bathythrix kuwanae* Viereck, 1912 (A, KPM-NK 81718), *Ba. margaretae* Sawoniewicz, 1980 (B, KPM-NK 55017), *Ba. thomsoni* (Kerrich, 1942) (C, KPM-NK 81675), *Diaglyptidea conformis* (Gmelin, 1790) (D, KPM-NK 81645), *Nipponaetes haeussleri* (Uchida, 1933) (E, KPM-NK 81832), *Acrolyta japonica* **sp. nov.** (F, N, KPM-NK 54996, holotype), *Acr. rufocincta* (Gravenhorst, 1829) (G, KPM-NK 81732), *Surculus japonicus* **sp. nov.** (H, KPM-NK 81861, holotype), *Isadelphus nigrus* **sp. nov.** (I, KPM-NK 82003, holotype), *Lochetica japonica* **sp. nov.** (J, KPM-NK 81989, holotype), *Megacara similis* Sheng, 1999 (K, KPM-NK 81837), *Gnotus chionops* (Gravenhorst, 1829) (L, KPM-NK 82100), *Gn. striatus* (Uchida, 1930) (M, KPM-NK 82060), and *Acr. flavicoxis* Sheng & Sun, 2014 (O, KPM-NK 81837), females from Japan — A–C, head, frontal view; D, E, head, lateral view; F–K, anterior margin of clypeus; L, M, mandible; N, O, basal part of antenna, lateral view.

***Mesoleptus sapporensis*** (Uchida, 1930)
(SJN: Sapporo-onashi-togari-himebachi)
(Figs 59A, B)

*Exolytus laevigatus* var. *sapporensis* Uchida, 1930: 323.

**Description**. See Momoi (1966b).

**Materials examined**. JAPAN: SEHU, F (lectotype), Sapporo; KPM-NK 81737, 81738, 2 M, Hokkaido, Horokanai Town, Moshiri, Uryu, 17. VII. 2012, K. Watanabe leg.; KPM-NK 81735, M, Tokyo, Akiruno City, Ninomiya, Tamagawa-riverside, 3. V. 2010, K. Watanabe leg.; KPM-NK 81736, M, Kanagawa Pref., Nakai Town, Zoushiki, 19. V. 2017, K. Watanabe leg.; KPM-NK 81739, M, Niigata Pref., Sado Is., Hakuundai to Mt. Myoukenzan, 4. VIII. 2009, K. Watanabe leg.; KPM-NK 81740, M, ditto, 10. IX. 2009, K. Watanabe leg.; KPM-NK 81733, M, Toyama Pref., Toyama City, Kamegai, 8–15. IX. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81734, F, Toyama Pref., Toyama City, Arimine, Inonedani, 7–14. VII. 2009, M. Watanabe *et al.* leg. (MsT); KPM-NK 81723, M, Fukui Pref., Arashiguchi-Oono, 24. VI. 1980, H. Kurokawa leg.

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

**Bionomics**. Unknown.

Genus ***Stilpnus*** Gravenhorst, 1829
Subgenus ***Stilpnus*** Gravenhorst, 1829

*Stilpnus* Gravenhorst, 1829: 664. Type: *Ichneumon gagates* Gravenhorst, 1807. Designated by Curtis (1832).

Three species, *Stil. japonicus* Jussila, 1988, *Stil. pavoniae* (Scopoli, 1763), and *Stil. subzonulus* Förster, 1876, have been recorded. I recognize two undetermined species from Japan. The taxonomic treatment of these species requires the additional specimens. In this study, I

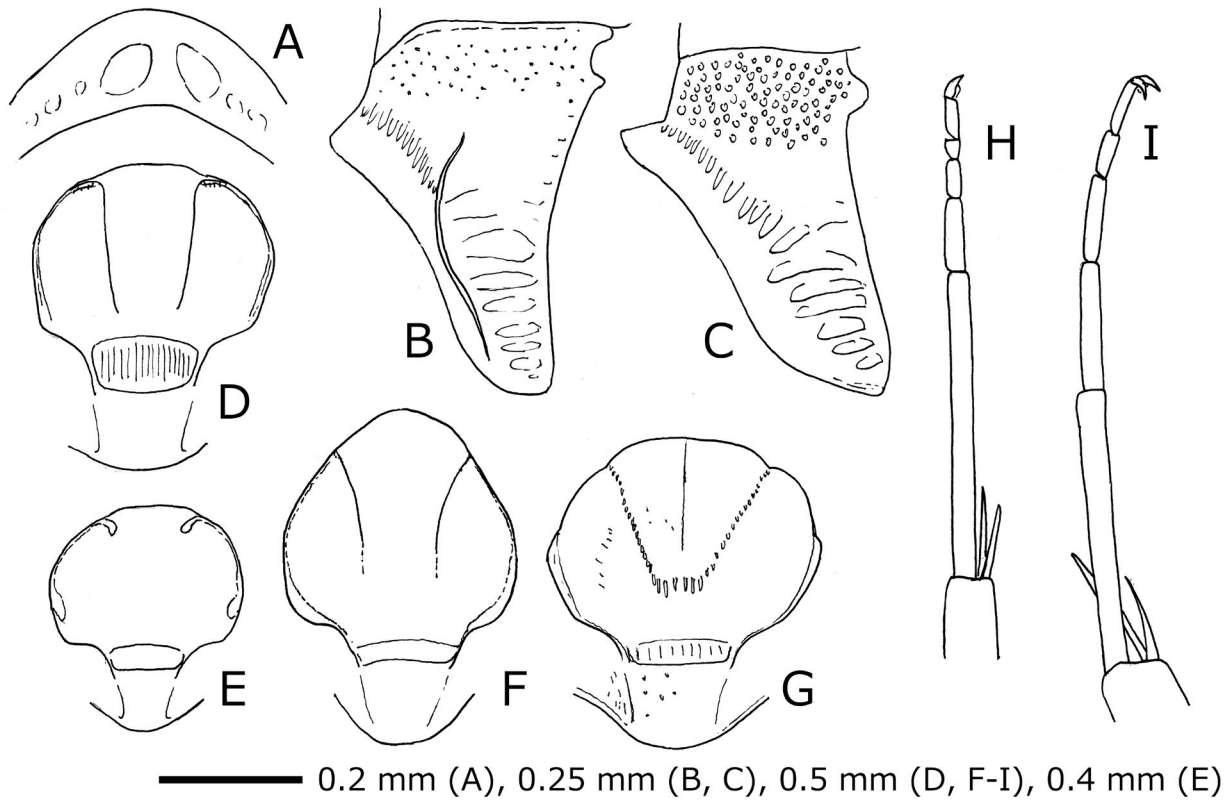


Fig. 63. *Acrolyta japonica* **sp. nov.** (A, KPM-NK 54996, holotype), *Dichrogaster liostylus* (Thomson, 1885) (B, KPM-NK 55074), *Dic. nitida* Sheng & Sun, 2014 (C, KPM-NK 81908), *Bathythrix kuwanae* Viereck, 1912 (D, KPM-NK 81718), *Retalia japonica* Kusigemati, 1985 (E, KPM-NK 81676), *Surculus japonicus* **sp. nov.** (F, KPM-NK 81861, holotype), *Bentyra ryukyuana* **sp. nov.** (G, KPM-NK 81887, holotype), *Hemiteles japonicus* **sp. nov.** (H, KPM-NK 55021, holotype), and *H. maculipterus* **sp. nov.** (I, KPM-NK 55025, holotype), females from Japan — A, median part of collar, dorsal view; B, C, lateral part of pronotum; D–G, mesoscutum and scutellum, dorsal view; H, I, hind tarsus, lateral view.

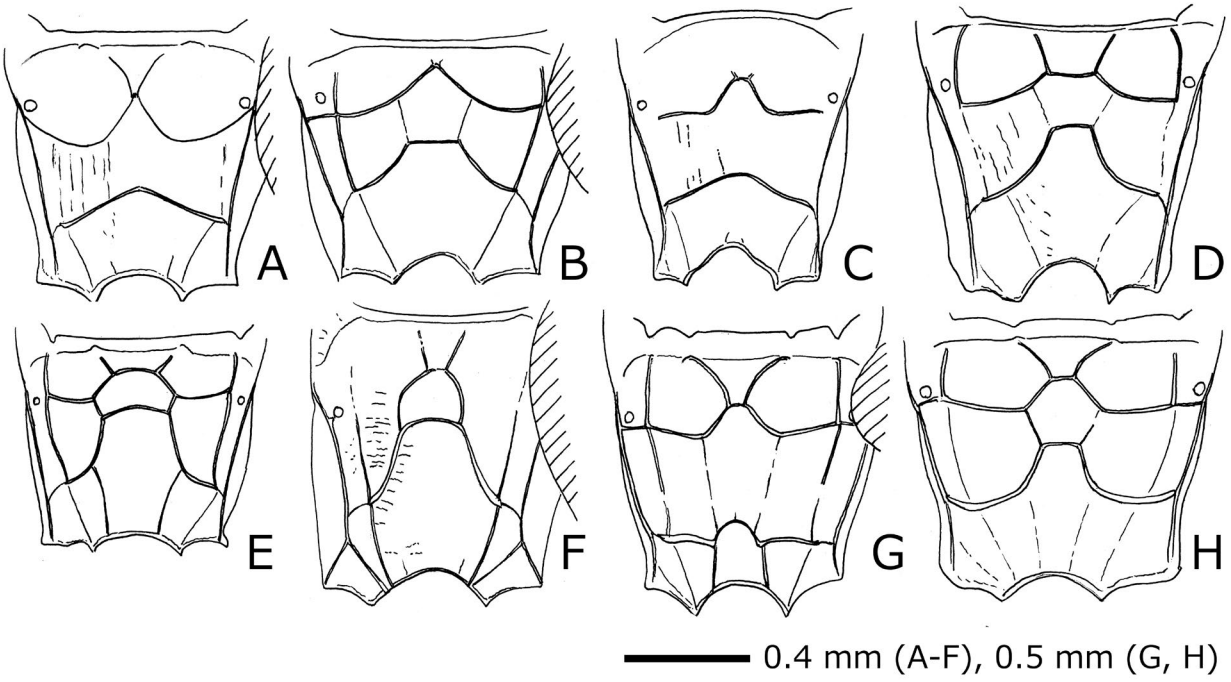


Fig. 64. *Surculus japonicus* **sp. nov.** (A, KPM-NK 81861, holotype), *Paraphylax elegans* **sp. nov.** (B, KPM-NK 55078, holotype), *Hemiteles japonicus* **sp. nov.** (C, KPM-NK 55021, holotype), *H. maculipterus* **sp. nov.** (D, KPM-NK 55026, paratype), *Charitopes gastricus* (Holmgren, 1868) (E, KPM-NK 81963), *Tropistes shimizui* **sp. nov.** (F, KPM-NK 81833, holotype), *Uchidella okamotoi* (Uchida, 1936) (G, KPM-NK 82073), and *Uchidella toichii* **sp. nov.** (H, KPM-NK 82011, holotype), females from Japan — A–H, propodeum, dorsal view.

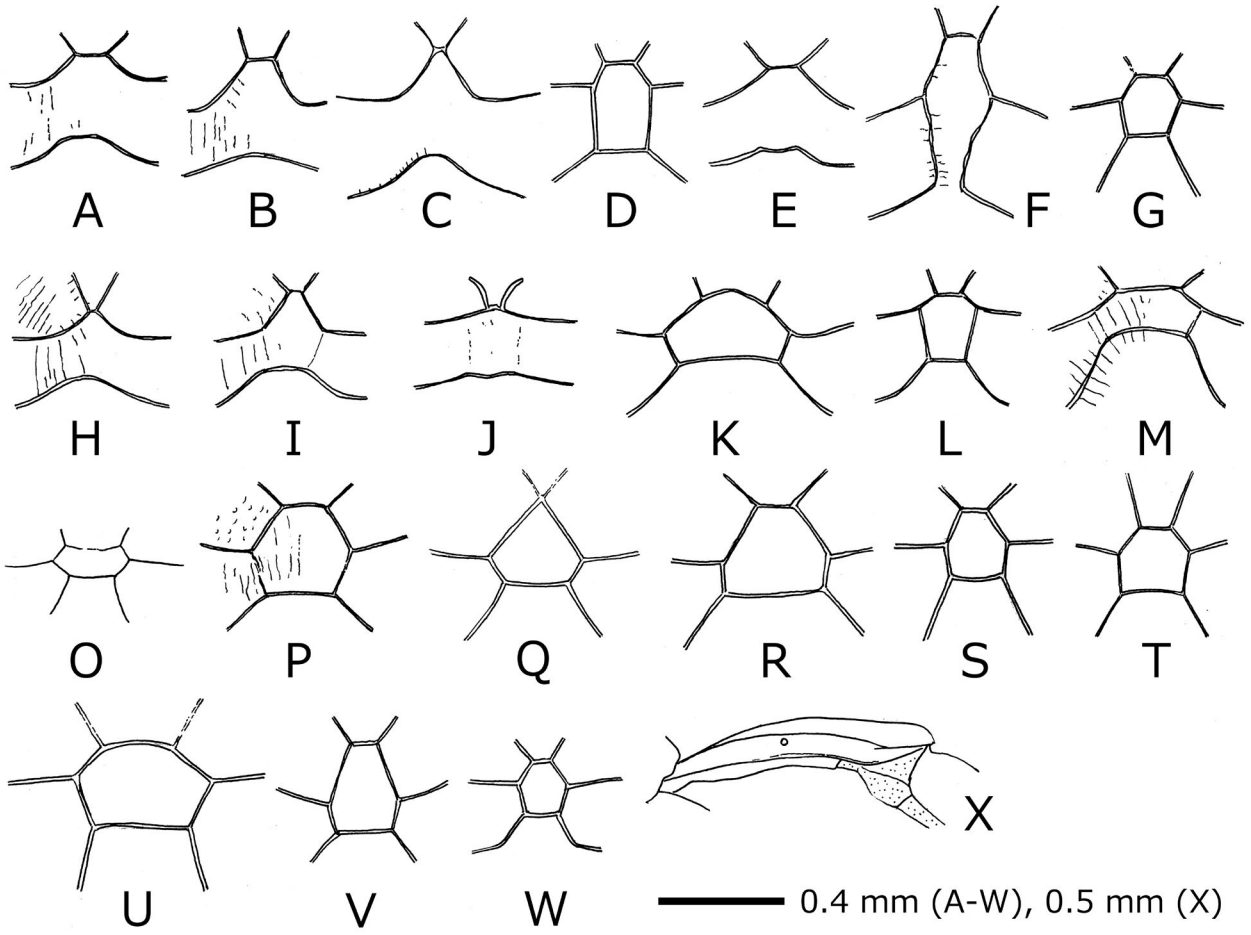


Fig. 65. *Acrolyta japonica* **sp. nov.** (A, KPM-NK 54996, holotype), *Diaglyptidea conformis* (Gmelin, 1790) (B, KPM-NK 81650), *Micraris ryukyuensis* **sp. nov.** (C, KPM-NK 81873, holotype), *Bathythrix kuwanae* Viereck, 1912 (D, KPM-NK 81718), *Bentyra ryukyuana* **sp. nov.** (E, KPM-NK 81887, holotype), *Chirotica matsukemushii* (Matsumura, 1926) (F, KPM-NK 81906), *Paraphylax politus* **sp. nov.** (G, KPM-NK 55079, holotype), *Pa. transstriatus* **sp. nov.** (H, KPM-NK 55080, holotype), *Pa. yakushimensis* **sp. nov.** (I, KPM-NK 55081, holotype), *Pa. yambarensis* **sp. nov.** (J, KPM-NK 55085, holotype), *Ethelurgus sodalis kumatai* Kusigemati, 1983 (K, KPM-NK 81938), *Aclastus etorofuensis* (Uchida, 1936) (L, KPM-NK 81976), *Hemiteles kuro* **sp. nov.** (M, KPM-NK 55024, holotype), *H. yamatonis* **sp. nov.** (O, KPM-NK 55033, paratype), *Isadelphus nigrus* **sp. nov.** (P, KPM-NK 82003, holotype), *Lochetica japonica* **sp. nov.** (Q, KPM-NK 81989, holotype), *Mastrus molestae* (Uchida, 1933) (R, KPM-NK 81987), *Ma. takadai* Momoi, 1970 (R, KPM-NK 81979), *Gnotus chionops* (Gravenhorst, 1829) (L, KPM-NK 82104), *Gn. striatus* (Uchida, 1930) (M, KPM-NK 82061), *Orthizema semanotae* Sheng & Sun, 2014 (V, KPM-NK 82047), *Nipponaetes haeussleri* (Uchida, 1933) (W, KPM-NK 81832), and *Surculus japonicus* **sp. nov.** (X, KPM-NK 81861, holotype), females from Japan — A-W, carinae around area superomedia of propodeum, dorsal view; X, T I, lateral view.

record some distribution records of *Stil. pavoniae* and *Stil. subzonulus* below.

***Stilpnus* (*Stilpnus*) *pavoniae*** (Scopoli, 1763)
(SJN: Hae-togari-himebachi)
(Figs 60A–D)

*Ichneumon pavoniae* Scopoli, 1763: 762.
*Stilpnus agilis* Förster, 1876: 39.
*Stilpnus ambulatorius* Förster, 1876: 40.
*Stilpnus arridens* Förster, 1876: 34.
*Stilpnus conformatus* Förster, 1876: 39.
*Stilpnus declinis* Förster, 1876: 38.
*Stilpnus morionellus* Förster, 1876: 40.
*Stilpnus neglectus* Förster, 1876: 41.
*Stilpnus nigricoxis* Förster, 1876: 41.
*Stilpnus politus* Förster, 1876: 36.
*Stilpnus providus* Förster, 1876: 39.
*Stilpnus retritus* Förster, 1876: 35.
*Stilpnus subtilis* Förster, 1876: 40.
*Stilpnus tersus* Förster, 1876: 36.
*Stilpnus trivialis* Förster, 1876: 36.
*Stilpnus unctus* Förster, 1876: 41.
*Stilpnus xanthopus* Förster, 1876: 39.
*Stilpnus angustatus* Thomson, 1884: 1027.

**Description**. See Jussila (1987, 1988).
**Materials examined**. JAPAN: KPM-NK 81750, M,

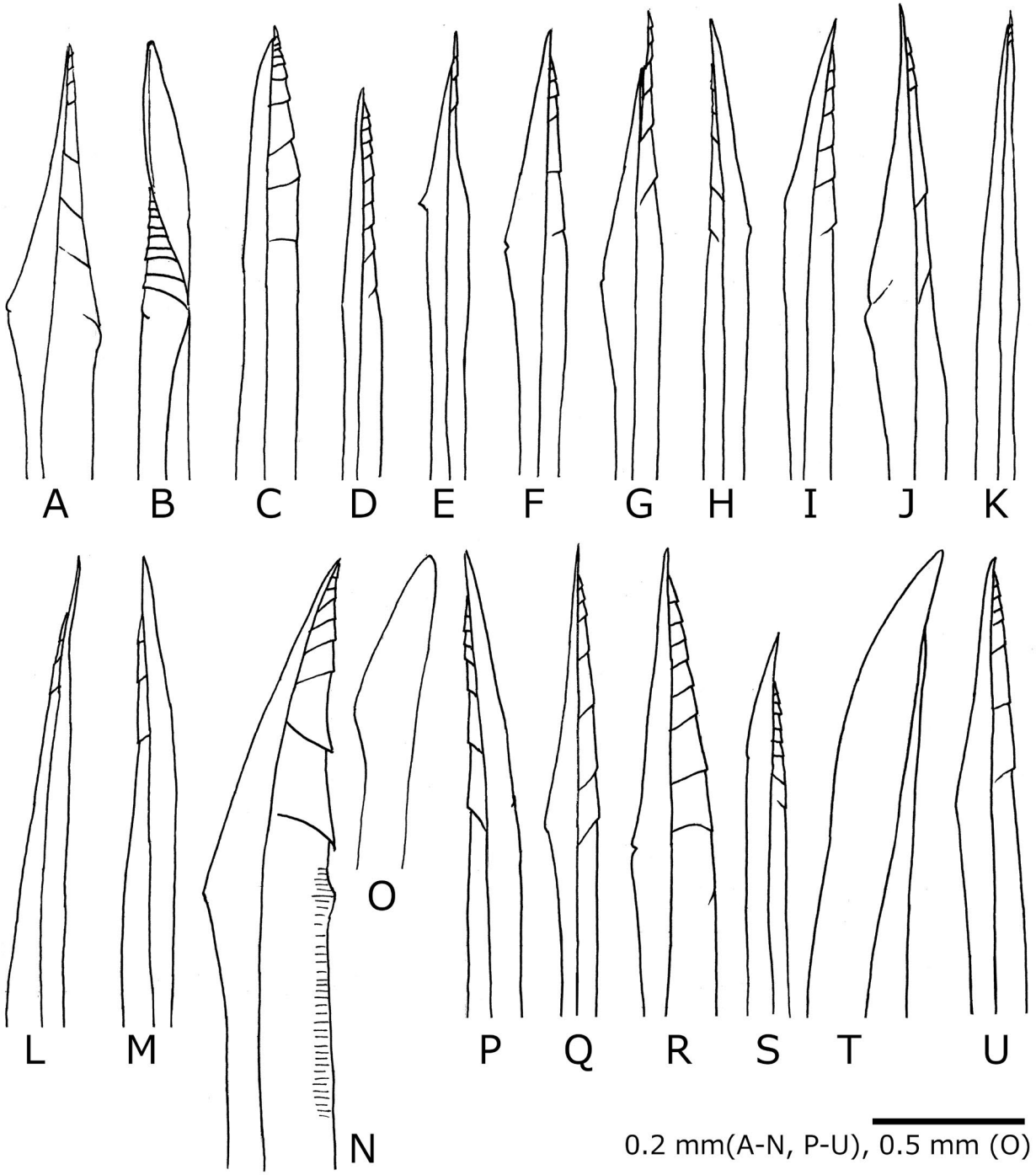


Fig. 66. *Acrolyta japonica* **sp. nov.** (A, KPM-NK 54996, holotype), *Micraris ryukyuensis* **sp. nov.** (B, KPM-NK 81873, holotype), *Surculus japonicus* **sp. nov.** (C, KPM-NK 81861, holotype), *Bentyra ryukyuana sp. nov.* (D, KPM-NK 81887, holotype), *Paraphylax elegans* **sp. nov.** (E, KPM-NK 55078, holotype), *Pa. politus* **sp. nov.** (F, KPM-NK 55079, holotype), *Pa. transstriatus* **sp. nov.** (G, KPM-NK 55080, holotype), *Pa. yakushimensis* **sp. nov.** (H, KPM-NK 55081, holotype), *Pa. yambarensis* **sp. nov.** (I, KPM-NK 55085, holotype), *Hemiteles japonicus* **sp. nov.** (J, KPM-NK 55021, holotype), *H. kuro* **sp. nov.** (K, KPM-NK 55024, holotype), *H. maculipterus* **sp. nov.** (L, KPM-NK 55025, holotype), *H. yamatonis* **sp. nov.** (M, KPM-NK 55032, holotype), *Brachypimpla latipetiolator* (Uchida, 1935) (N, O, KPM-NK 81973), *Isadelphus nigrus* **sp. nov.** (P, KPM-NK 82003, holotype), *Lochetica japonica* **sp. nov.** (Q, KPM-NK 81989, holotype), *Mastrus molestae* (Uchida, 1933) (R, KPM-NK 81987), *Megacara similis* Sheng, 1999 (S, KPM-NK 81835), *Tropistes shimizui* **sp. nov.** (T, KPM-NK 81833, holotype), and *Uchidella toichii* **sp. nov.** (U, KPM-NK 82011, holotype), females from Japan — A-N, P-U, apical part of ovipositor, lateral view (A, C-G, I-K, N, Q-U, left side; B, H, L, M, P, right side); O, apex of ovipositor sheath, lateral view.

Tokyo, Izuoshima, Motomachi, Ohmaruyama, 6. V. 2012, K. Tsujii leg.; KPM-NK 81749, M, Kanagawa Pref., Atsugi City, Nakaogino, 20. IV. 2008, H. Katahira leg. GERMANY: ZSM, F (det. Jussila), "D, Ostfriesische Inseln, Mellum - Memmert", 16–23. IV. 1985, V. Haeseler leg.

**Distribution**. Japan (Hokkaido, Honshu, and Izuoshima Is.*); Taiwan and widely distributed in Holarctic region.

**Bionomics**. Unknown in Japan. *Saturnia pavonia* (Linnaeus, 1758) (Lepidoptera, Saturniidae) has been recorded from Europe (Scopoli, 1763). This host record is doubtful because the main host of *Stilpnus* is Diptera.

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

***Stilpnus* (*Stilpnus*) *subzonulus*** Förster, 1876
(SJN: Chibi-hae-togari-himebachi)
(Figs 61A, B)

*Stilpnus subzonulus* Förster, 1876: 18.
*Stilpnus canaliculatus* Förster, 1876: 36.
*Stilpnus concinuus* Förster, 1876: 34.
*Stilpnus diversus* Förster, 1876: 39.
*Stilpnus latens* Förster, 1876: 35.
*Stilpnus placitus* Förster, 1876: 35.
*Stilpnus tenuipes* Thomson, 1884: 1028.

**Description**. See Jussila (1987, 1988).

**Materials examined**. JAPAN: KPM-NK 81748, M, Kanagawa Pref., Odawara City, Kuno, 31. V. 2014, K. Watanabe leg. GERMANY: ZSM, F (det. Jussila), Lübke Koog, Niebüll, A.u. gelb 18. IX. 1958.

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

**Bionomics**. Unknown.

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## 摘　要

Watanabe, K., 2021. Taxonomic and zoogeographic study of the Japanese Phygadeuontinae (Hymenoptera, Ichneumonidae), with descriptions of 17 new species. *Bull. Kanagawa Pref. Mus.* (*Nat. Sci*), (50): 55–136. [ 渡辺恭平 , 2021. 日本産チビトガリヒメバチ亜科（ハチ目、ヒメバチ科）の 17 新種の記載を伴う分類学的および動物地理学的研究 . 神奈川県立博物館研究報告（自然科学）, (50): 55–136.]

日本産のチビトガリヒメバチ亜科の 28 属 61 種について、分類学的および動物地理学的研究をおこなった。7 日本新産属、*Diaglyptidea* Viereck, 1913、*Micraris* Townes, 1970、*Surculus* Townes, 1970、*Bentyra* Cameron, 1905、*Isadelphus* Förster, 1869、*Megacara* Townes, 1970、*Tropistes* Gravenhorst, 1829 を記録した。これらのうち、*Micraris* と *Surculus* は旧北区初記録でもある。17 新種、タテスジマメトガリヒメバチ *Acrolyta japonica* **sp. nov.**、リュウキュウマメトガリヒメバチ *Micraris ryukyuensis* **sp. nov.**、ホソミマメトガリヒメバチ *Surculus japonicus* **sp. nov.**、キマダラマメトガリヒメバチ *Bentyra ryukyuana* **sp. nov.**、イシガキスジトガリヒメバチ *Paraphylax elegans* **sp. nov.**、イズミノガトガリヒメバチ *Pa. politus* **sp. nov.**、ヨコスジトガリヒメバチ *Pa. transstriatus* **sp. nov.**、ヤクシマスジトガリヒメバチ *Pa. yakushimensis* **sp. nov.**、オキナワスジトガリヒメバチ *Pa. yambarensis* **sp. nov.**、ニホンマメトガリヒメバチ *Hemiteles japonicus* **sp. nov.**、スミイロマメトガリヒメバチ *H. kuro* **sp. nov.**、ハネモンマメトガリヒメバチ *H. maculipterus* **sp. nov.**、ハラアカマメトガリヒメバチ *H. yamatonis* **sp. nov.**、オマガリチビトガリヒメバチ *Isadelphus nigrus* **sp. nov.**、サメハダチビトガリヒメバチ *Lochetica japonica* **sp. nov.**、タチチビトガリヒメバチ *Tropistes shimizui* **sp. nov.**、ウチダチビトガリヒメバチ *Uchidella toichii* **sp. nov.** を記載し、学名と標準和名を命名した。9 日本新参種、ヒゲブトマメトガリヒメバチ *A. flavicoxis* Sheng & Sun, 2014、キムラマメトガリヒメバチ *A. rufocincta* (Gravenhorst, 1829)、フサヒゲマメトガリヒメバチ *Diaglyptidea conformis* (Gmelin, 1790)、ヨリメマメトガリヒメバチ *Bathythrix margaretae* Sawoniewicz, 1980、トムソンマメトガリヒメバチ *Ba. thomsoni* (Kerrich, 1942)、シェンクサカゲロウトガリヒメバチ *Dichrogaster nitida* Sheng & Sun, 2014、オオズチビトガリヒメバチ *Megacara similis* Sheng, 1999、カミキリチビトガリヒメバチ *Orthizema semanotae* Sheng & Sun, 2014、フトヒゲハラアカオナシヒメバチ *Mesoleptus laevigatus* (Gravenhorst, 1829) を記録し、標準和名を命名した。イネマメトガリヒメバチ *Bathythrix narangae* Uchida, 1930 をクワナマメトガリヒメバチ *Ba. kuwanae* Viereck, 1912 の新参異名とした。ツヤアブトガリヒメバチ *Ethelurgus politus* Townes, 1983 をホソヒラタアブトガリヒメバチ *E. episyrphicola* Kusigemati, 1983 の新参異名とした。アブトガリヒメバチ *Ethelurgus sodalis fuscipes* Townes, 1983 をケヒラタアブトガリヒメバチ *E. kumatai* Kusigemati, 1983 の新参異名とし、さらにタイリクアブトガリヒメバチ *E. sodalis* (Taschenberg, 1865) の亜種とした。国内における新分布記録と、*Acrolyta*、*Bathythrix*、*Paraphylax*、*Ethelurgus*、*Rhembobius*、*Aclastus*、*Hemiteles*、*Isadelphus*、*Lochetica*、*Gnotus*、*Uchidella* の日本産種への検索表を提供した。