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<https://doi.org/10.5109/2633>

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出版情報 : ESAKIA. 39, pp.47-51, 1999-03-31. Entomological Laboratory, Faculty of Agriculture,  
Kyushu University

バージョン :

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## A New Species of the Genus *Epeolus* from Japan (Hymenoptera, Anthophoridae)\*

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**Abstract.** A new species, *Epeolus ishikawai* is described from Hokkaido, Japan.

Key words: taxonomy, Hymenoptera, Anthophoridae, *Epeolus*, new species, Japan.

### Introduction

The species of the genus *Epeolus* are known as parasites of *Colletes* and includes relatively rare species. Cockerell (1926) described *Epeolus tsushimensis* from Tsushima Is. as the first species of this genus from Japan. After that Yasumatsu (1938) revised the genus *Epeolus* of the Manchurian subregion and recorded 9 species including 5 Japanese species. They are *Epeolus ventralis* Meade Waldo 1913, *E. tsushimensis* Cockerell 1926, *E. coreanus* Yasumatsu 1933, *E. melectiformis* Yasumatsu 1938, and *E. japonicus* Bischoff 1930. Among them *Epeolus ventralis* was transferred to the genus *Triepeorus*. Hirashima (1955) described one more species, *E. himukanus*, which was downgraded to the subspecies of Eurosiberian *E. tarsalis* Morawitz (Hirashima & Tadauchi, 1979). In the present paper we describe one new species of the genus *Epeolus* from Hokkaido, northern Japan.

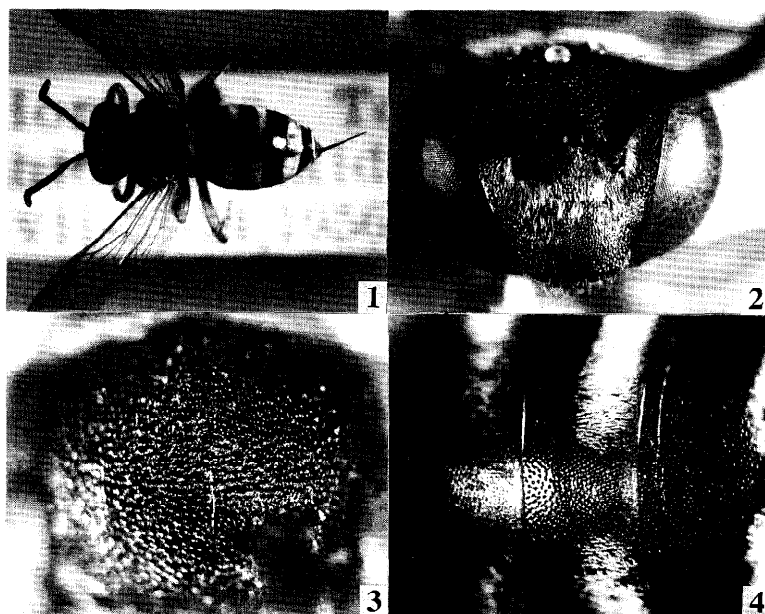
*Epeolus ishikawai* new species  
(Figs. 1-8)

**Female** BL 6.9 - 8.1 mm, WL 6.0 - 7.0 mm (n = 5).

**Color:** Flagellum with 1st segment and the base of 2nd segment orange yellow

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\* Contribution from the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka (Ser. 5, No. 26).

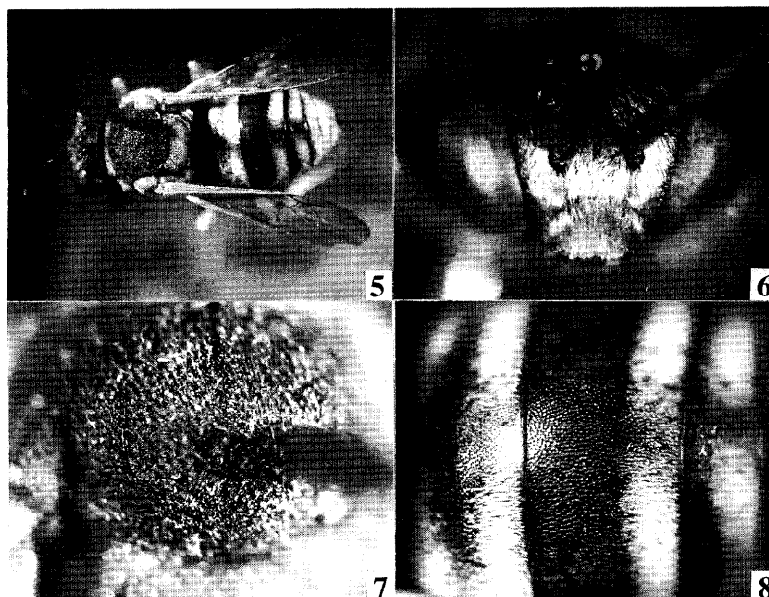


**Figs. 1-4.** *Epeolus ishikawai* n. sp., female. 1: dorsal view of the whole body; 2: head in frontal view; 3: mesoscutum; 4: metasomal terga.

beneath; mandible with apical third reddened; tubercle, tegula, mesoscutellum and axillae ferruginous; legs except fore and hind coxae ferruginous; wing membranes slightly dusky, darker apically; veins and pterostigma dark brown; tibial spurs silvery inside, dark brown marginally, apical margins of metasomal terga reddish brown.

*Pubescence:* Hairs on head sparse, those on antennal area and clypeus above more or less dense, dull whitish, short, decumbent; those on clypeus except above very sparse and short (150-200 $\mu$ ); those on frons sparse, longer (250-300 $\mu$ ); those on vertex short, whitish. Hair band on pronotal collar slender, fulvous to whitish; hairs on mesoscutum shorter and sparser, brownish (200 $\mu$ ); those on scutellum very short, brown; those on dorso-lateral metanotal area long erect, pale brownish; those on dorsal face short decumbent, brown. Hairs on metasomal terga very short brown; first metasomal terga with lateral transverse band of white hairs at subbase and apex, which sometimes united at the side, basal band nearly complete, apical one interrupted in the middle; following terga with conspicuous broad white apical hair bands on T2-4, interrupted medially; T5 with dense short silvery brown fringes apically, white hair patches laterally; pygidial plate with dense, short, brown hairs; S2-4 closed with dense short white apical hair bands, broadly interrupted on T2, narrowly interrupted on T3, complete on T4.

*Structure: Head:* HL/HW = 0.83. HW:MsW:MtW = 2.65 : 2.65 : 2.7. Vertex rugosopunctate, interspaces (IS) linear and etched, ocellular area smooth and shiny with distinct large PP. OOD:POD:OCD = 0.5 : 0.55 : 0.3. FL1 < FL2+3, FL1 > FL2 = FL3. Eyes with inner margins convergent toward mandibles. Facial quadrangle longer than broad (about 1.5 : 2.2). Frontal carina conspicuous, supraclypeal area strongly convex.



**Figs. 5-8.** *Epeolus ishikawai* n. sp., male. 5: dorsal view of the whole body; 6: head in frontal view; 7: mesoscutum; 8: metasomal terga.

Clypeus nearly flat, smooth and shiny with very small PP,  $\text{Ø } 20\mu$ ,  $\text{IS} < 1$ ,  $\text{CPL} = 0.55$  mm. Labrum large, smooth and shiny with distinct large PP, deeply emarginate with a pair of projections apically. Lower paraocular area as in clypeus. Malar space linear. Genal area much narrower than eye,  $\text{GW:EW} = 0.35 : 0.8$ , surface smooth and shiny, rugoso-punctate; preoccipital ridge conspicuous. *Mesosoma*: Pronotum smooth and shiny with small PP. Mesoscutum smooth and shiny with distinct large PP,  $\text{Ø } 40\text{-}50\mu$ ,  $\text{IS} < 1$ . Scutellum strongly convex with a slight dorsal impression, axillae dentate apically. Propodeal enclosure narrowly rugose basally, widely weakly tessellate apically; dorsal face smooth and shiny with distinct PP above, several rugulae below. Mesepisternum rugoso-punctate. Hind femora with dense PP. *Metasoma*: Metasomal terga smooth and shiny with small PP,  $\text{Ø } 20\mu$ ,  $\text{IS} = 1$ ; posterior depressions of terga weakly indicated; pygidial plate large, U-shaped, smooth and shiny with small PP. S2-4 with close PP; S5 widely rounded at apex, not impressed; S6 with lateral process long, leaf-like, denticulate at sides.

**Male** BL 7.0 mm, WL 6.3 mm ( $n = 1$ ).

**Color**: Flagellum with apical margin of 1st segment slightly orange yellow beneath; mandible with apical third reddened; tubercle, tegula, mesoscutellum and axillae ferruginous; legs except coxae ferruginous; wing membranes slightly dusky, darker apically; veins and pterostigma dark brown; tibial spurs silvery inside, dark brown marginally, apical margins of metasomal terga yellowish brown.

**Pubescence**: Hairs on head silvery, those on antennal area and clypeus dense, long, decumbent ( $150\text{-}200\mu$ ); those on frons more or less sparse, loosely decumbent, longer ( $250\text{-}300\mu$ ); those on vertex short. Hair band on pronotal collar slender, dense, whitish; hairs on mesoscutum short and moderately dense, whitish ( $100\mu$ ); those on scutellum

very short, whitish; those on dorso-lateral metanotal area long elect, whitish; those on mesepisternum dense, short, branched, white. Hairs on metasomal terga short, branched, brown; first metasomal terga with complete white branched transverse band subbasally and apically, which united at the side; following terga with conspicuous broad white apical hair bands on T2-6, which slightly interrupted in the middle; pygidial plate with sparse, white hairs; S2-4 with dense short white apical hair bands.

*Structure: Head:* HL/HW = 0.80. HW:MsW:MtW = 2.7 : 2.65 : 2.65. Vertex smooth and shiny with large PP; ocelloocular area smooth and shiny with distinct large PP,  $\varnothing$  40 $\mu$ , IS < 0.5. OOD:POD:OCD = 0.45 : 0.5 : 0.3. FL1 < FL2+3, FL1 < FL2 > FL3. Eyes with inner margins convergent toward mandibles. Facial quadrangle longer than broad (about 1.4 : 2.15). Frontal carina conspicuous, supraclypeal area strongly convex. Clypeus nearly flat, CPL = 0.65 mm. Labrum large, smooth and shiny with distinct large PP, deeply emarginate with a pair of projections apically. Malar space linear. Genal area much narrower than eye, GW:EW = 0.4 : 0.75, surface smooth and shiny, rugoso-punctate; preoccipital ridge conspicuous. *Mesosoma:* Pronotum smooth and shiny with small PP. Mesoscutum smooth and shiny with distinct large close PP,  $\varnothing$  40 $\mu$ , IS < 0.5. Scutellum strongly convex with a slight dorsal impression, axillae dentate apically. Propodeal enclosure narrowly rugose basally, widely weakly tessellate apically; dorsal face smooth and shiny with small PP above, several rugulae below. Mesepisternum rugoso-punctate. Hind femora with dense PP. *Metasoma:* Metasomal terga smooth with small PP,  $\varnothing$  20 $\mu$ , IS = 0.5-1; posterior depressions of terga weakly indicated; pygidial plate large, U-shaped, smooth and shiny with large, obscure PP. S2-4 smooth and shiny with close PP; S6 widely transverse at apex with a pair of lateral projections.

*Type material:* Holotype female, Horonobe, Teshio, Hokkaido, Japan, 23-24. vii. 1956 (R. Ishikawa). Paratypes: 4 females and 1 male, same data as the holotype. The holotype is preserved in the Entomological Lab., Kyushu University (Type No. 3090, Kyushu Univ.).

*Remarks:* This species is characterized by having the mesoscutellum and axillae entirely ferruginous including legs in both sexes, the 4th metasomal tergum with apical white hair band narrowly interrupted medially in female, complete in male.

*Distribution:* Japan (Hokkaido).

*Floral record:* Not available.

*Flight records:* Female and male: late July.

### Acknowledgments

We are grateful to Prof. Emerit. R. Ishikawa of Tokyo Metropolitan University for offering valuable material. We also thank Prof. Emerit. Y. Hirashima of Kyushu University for various help.

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