A New Species Belonging to the Genus *Hylaeus* from Eastern Asia and a Synonym of *Hylaeus tsingtauenensis* (Hymenoptera, Apoidea, Colletidae)

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**Abstract**  A new species belonging to the genus *Hylaeus* is described from Eastern Asia: *Hylaeus (Hylaeus) nobuyukii* sp. nov. And based on type study, new synonymy has been established for *Hylaeus pallescens* Cockerell, 1924 = *Hylaeus tsingtauenensis* (Strand, 1915), syn. nov.

**Key words:** new species, new synonym, distribution, taxonomy, *Hylaeus*, Eastern Asia

**Introduction**

In 2010 a very unique species was described by Dathe based on only male: *Hylaeus (Hylaeus) oehlkei* from Mongolia. The male is characteristic in having some basal flagellar segments each with a keel in particular. This time, a new species, *Hylaeus (Hylaeus) nobuyukii*, was found from Japan in the specimens collected by Mr. N. Yamamoto and from China in my own collection of a survey conducted in 1995*. This new species is very similar to *Hylaeus (Hylaeus) oehlkei* in point of above feature of flagellar segments.


On the other hand, in the course of a study of Asian *Hylaeus*, it has been newly established that *Hylaeus pallescens* Cockerell, 1924 known from Mongolia and the Asian part of Russia (Proshchalykin and Dathe, 2012) is a synonym of *Hylaeus tsingtauenensis* (Strand, 1915) described on a female from Tsingtau (Dsingdao), China.

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Materials and methods

Type specimens of *Hylaecus oehlkei* and *Hylaecus tsungtaiensis* were loaned from the DEI, and type specimens of *Hylaecus stentoriscapaeus* from the Institut für Zoologie, Martin-Luther-Universität (Halle, Germany). The specimens of *Hylaecus pallescens* was examined one (catalog number USNM 28005) which is on the data base of U.S. National Entomological Collection (NMNH). The specimens from Japan and China examined for this study are kept in the KWC. The morphological terms generally follow Ikudome (1989). The following abbreviations are used in this paper:

- **AOD**: Antennocular distance
- **BD**: Body length
- **BWM**: Basal width of mandible
- **CAD**: Clypeoantennal distance
- **HL**: Head length
- **HW**: Head width
- **IOD**: Interocellar distance
- **LFW**: Lower width of face
- **MCL**: Maximum clypeal length
- **MCW**: Maximum clypeal width
- **MSL**: Malar space length
- **OD**: Ocellocular distance
- **POW**: Paraocular width

DEI Senckenberg Deutsches Entomologisches Institut (Müncheberg, Germany)
KWC Kagoshima Women's College (Kagoshima, Japan)
NMNH Smithsonian Institution, National Museum of Natural History (Washington DC, U.S.A.)

Taxonomy

*Hylaecus (Hylaecus) nobuyukii* sp. nov.
(Japanese common name: ryūkotsu-men-hanabachi)
(Figs. 1-3)

**Diagnosis** This new species is a close relative of *Hylaecus oehlkei* which was described only on the male from Mongolia by Dathe (2010), and is very similar to the latter in having some basal flagellar segments each with a keel, but is distinctly different from the latter in having mesopleuron with denser, stronger punctures and propodeum with a sharp transverse edge.

**Description**

**Male**

**Measurements** (mm). [n=6] BL 5.4-6.0 (5.75); HL 1.61; HW 1.58; UFW 0.99; LFW 0.64; MCW 0.55; MCL 0.53; IAD 0.16; AOD 0.18; POW 0.22; CAD 0.28; BWM 0.23; MSL 0.08; IOD 0.24; ODD 0.22.

**Coloration.** Black. The following maculations or portions yellow (face marks paler): clypeus; supraclypeal area; well developed lateral face marks extending beyond antennal sockets with two tips, one ending acutely along eye margins, the other weak inside; anterior portions on scapes; basal halves of mandibles (paler); band interrupted in the middle on collar of pronotum; tubercles; anterior marks on tegulae; anterior stripes on fore tibiae; basal marks on mid tibiae; basal halves of hind tibiae; all basitarsi. Undersides of antennal flagellum and small segments of all tarsi brownish. Wings slightly brownish subhyaline; veins and stigma brown.

**Structure.** Head slightly long; lower portion of clypeus somewhat roundly convex; peripheral areas of antennal sockets convex, evidently in lower portion in especial; upper portion of supraclypeal area very narrow and high, its width and height steeply attenuated toward frons; paraocular areas convex along eye margins; punctures on frons weak and moderately scattered; antennal scapes well stout; antennal flagellar segments with 1st and 2nd evidently broader than length, and with 1st to 6th with a keel beneath, its keel conspicuous on 1st to 4th in particular (Fig. 2); malar space narrow, about one-third as long as basal width of mandible; mesoscutum and scutellum with punctures distinct and moderately dense; punctures on mesopleuron denser and stronger than those on mesoscutum, and denser and stronger than in *Hylaecus oehlkei*, propodeal enclosure with longitudinal
strong carinae anteriorly, posterior portion on the disc with a sharp transverse ridge, its ridge stronger than in *Hylaeus oehlkeri*; posterior portion of propodeum abrupt; stigmatic areas of propodeum strongly, irregularly clasrate; 1st metasomal tergum smooth, well shiny, and irregularly scattered with punctures small but distinct, and its posterior margin without puncture.

**Pilosity.** Hairs on vertex short, whitish and nearly erect; collar of pronotum with fringe of whitish hairs on posterior margin in front of view; hairs on mesonotum short, whitish but somewhat glistening goldish in some lights and subrect to subpressed; lateroposterior portions of 1st to 4th metasomal terga each with a weak band of whitish hairs.

**Female**

**Measurements** (mm). \([n=7]\) BL 5.9-6.1 (5.95); HL 1.69; HW 1.64; UFW 1.06; LFW 0.7; MCW 0.63; MCL 0.67; IAD 0.2; AOD 0.22; POW 0.23; CAD 0.23; BWM 0.26; MSL 0.08; IOD 0.25; OOD 0.25.

**Coloration.** Black. The following maculations or portions yellow: well developed lateral face marks ending at the upper level of antennal sockets; well developed band on collar of pronotum, interrupted in the middle; tubercles; anterior marks on tegulae; basal spots on mid tibiae; basal one-fourth of hind tibiae. The following portions brownish or reddish yellow dimly: lower portion of clypeus; anterobasal spots on fore tibiae. Antennal flagellum slightly brownish beneath. Wings slightly brownish subhyaline; veins and stigma brown.

**Structure.** Head slightly long; clypeus and supracylpeal area convex; upper portion of supracylpeal area narrow and high, its width and height gently-sloping toward frons; punctures on frons shallow and moderately scattered; antennal flagellar segments with 1st evidently longer than width, and with 2nd and 3rd slightly broader than length; malar space narrow, slightly narrower than in male; mesoscutum and scutellum with punctures distinct and moderately dense as in male; punctures on mesopleuron strong and dense as in male, but those on upper portions slightly larger and not so dense as in male; propodeum generally similar to male, but carinae not so strong as in male; 1st metasomal tergum similar to male, but with acupunctures.

**Pilosity.** Hairs on head and thorax generally as in male, but shorter and finer than in male; lateroposterior portions of 1st to 4th metasomal terga each with a weak band of whitish hairs, its bands obscure in one view.

**Type materials:** Holotype male: 20 m alt., Shiroyama-machi Nagasaki-shi Japan, 3 X 2012., Paratypes: same locality and data 1♂ 2♀ ♂; same locality, 7 X 2012, 2♂♂ 2♀ ♀; same locality, 21 X 2012, 1♀; same locality, 13 X 2011, 1♀; 220 m alt., Tateyama Nagasaki-shi Japan, 4 X 2008, 1♀; 9 X 2008, 1♂ 1♀; 240 m alt., Konpirasan Nagasaki-shi Japan, 15 IX 1996, 1♂; Xiuning Huangshan City Anhui Province China, 23 IX 1995, 1♂ 1♀. Specimens from Japan are collected by N. Yamamoto, and ones from China by S. Ikudome. The holotype is deposited in the Laboratory of Biology, KWC, and paratypes in KWC, DEI (1♂ 1♀) and private collection of N. Yamamoto (1♂ 1♀).
Remarks: Besides the above-mentioned features, the male of this new species is distinguished from *Hylaenus ochile* in the following points: maculations on upper portions along eye margins, mandibles and collar of pronotum are more developed; carinae on propodeum are evidently stronger even posterior portion.

Distribution: Japan (Nagasaki) and China (Anhui P.V.).

Floral association: *Perilla frutescens*, *Rosmarinus officinalis* (Labiatae); *Celosia argentea* (Amaranthaceae).

Etymology: The specific name, nobuyukii, is dedicated to Mr. Nobuyuki Yamamoto who is the first collector of this species in Japan so far as I know.

Synonymy

*Hylaenus (Hylaenus) tsingtauensis* (Strand, 1915)


Comments: Recently Proshchalykin and Dathe (2012) noted the synonymy of *Hylaenus stenitoriscapae* Dathe, 1986 with *Hylaenus pallescens* Cokerell, 1924. This species was found as widely distributed in the southern parts of Asian Russia, from Tomsk Province in the west to Primorsky Territory in the east. Further studies of Asian *Hylaenus* showed that this species had been described earlier by Strand (1915) from China as *Protopis tsingtauensis*. Meanwhile it was also found in Beijing (Chaoyang Park and Huyu Natural Science Area) and from Luoyang, Henan Province (Ascher and Dong leg.) (Dathe, personal communication).

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References


