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A REVISION OF THE GENUS PERIOPE HALIDAY WITH DESCRIPTION OF A NEW SPECIES

(HYMENOPTERA, ICHNEUMONIDAE)

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The genus *Periope* Haliday, a small group of the Metopiinae, has been represented by only three species in the world: *P. auscultator* Haliday, 1839, of Europe, *P. hoerhammeri* (Heinrich, 1949) of Europe and Japan, and *P. aethiops* (Cresson, 1868) of North America. In the present study has been found another species in Japan, which is new to science. On this occasion I will give a revision of *Periope*. The type of the new species described below is preserved in the collection of the Entomological Institute, Hokkaido University.

Before going further I wish to express my cordial thanks to Prof. C. Watanabe for his kind guidance and encouragement. Thanks are also due to Dr. S. Momoi of Kôbe University, who gave me the opportunity to examine authentic material of *P. aethiops*.

Genus *Periope* Haliday

Periope Haliday, Ann. Nat. Hist. 2: 114, 1839. Type-species: *Periope auscultator* Haliday.

Monoplectron Holmgren, Svenska Vetensk. Akad. Handl. 42: 64 & 81, 1856. Type-species: (*Monoplectron zygaenator* Holmgren) = *Periope auscultator* Haliday.

Monoplectrochus Heinrich, Mitt. Münchner Ent. Ges. 35-39: 109, 1949. Type-species: *Monoplectrochus hoerhammeri* Heinrich.

This genus is discussed in details by H. Townes and M. Townes (1959). The species of this genus can be distinguished by the following key:—

Key to the species of *Periope*

1. Clypeus separated from face by a broad, strong impression; antennae with 23 segments. Propodeum with areola and basal area combined wider than long. Tarsal claws pectinate. Abdomen not clavate, elongate apically; 2nd and 3rd tergites sparsely punctured on basal half, yellowish brown; hairs on subgenital plate almost vertical. Hind tibia entirely fulvous. Europe.
..... *auscultator* Haliday
- Clypeus separated from face by a faint impression; antennae with more than 29 segments. Propodeum with areola and basal area combined longer than wide. Tarsal claws simple. Abdomen clavate, not elongate apically; 2nd and 3rd tergites densely punctured, black; hairs on subgenital plate strongly slanted backwards. Hind tibia black with a yellow band. 2
2. Head not prolonged below; malar space 1/2 as long as basal width of mandible; glossa short, not surpassing mandible; labial palpus with 2nd and 3rd segments short and stout. Mesonotum with notaulix wanting; epomia weak, not produced as a thin plate; subtegular ridge sharp,

- black. Propodeal spiracle long-oval. First tergite with very strong lateral longitudinal carinae (Fig. 1B). Interantennal process yellow in male. Europe and Japan. *hoerhammeri* (Heinrich)
- Head prolonged below; malar space about as long as basal width of mandible; glossa very long, conspicuously surpassing mandible; labial palpus with 2nd and 3rd segments slender. Mesonotum with notaulix present; epomia strongly produced as a thin plate; subtegular ridge rounded, black or yellow. Propodeal spiracle circular or oval. First tergite with lateral longitudinal carinae obsolete (Fig. 2B). Interantennal process black. 3
 - 3. Occipital carina not joined with hypostomal carina; glossa strongly sclerotized; 1st flagellar segment 2.8-3.0 times as long as wide. Propodeum with areola and basal area impunctured, with a few hairs at base, the apical transverse carina being strong. First tergite stout, about 1.7 times as long as apical width, with spiracle not produced; 2nd tergite 4/5 as long as apical width; 1st sternite not reaching to spiracle. Subtegular ridge yellow; scutellum black; hind tibia on basal 3/5 yellow and on apical 2/5 black. North America. *aethiops* (Cresson)
 - Occipital carina joined with hypostomal carina; glossa membranous; 1st flagellar segment 4.3-4.6 times as long as wide. Propodeum with areola and basal area closely punctured, with dense hairs, the apical transverse carina being obsolete (Fig. 2C). First tergite slender, 2.3 times as long as apical width, with spiracle strongly produced (Fig. 2A); 2nd tergite 1.3 times as long as apical width (Fig. 2A); 1st sternite reaching beyond spiracle (Fig. 2B). Subtegular ridge black; scutellum black with a large yellow spot; hind tibia broadly yellow-banded, with base and apex black. Japan. *shibuyai*, sp. nov.

1. ***Periope auscultator*** Haliday

Periope auscultator Haliday, Ann. Nat. Hist. 2: 114, 1839.

Monoplectron zygaenator Holmgren, Svenska Vetensk. Akad. Handl. 42: 81, 1856.

Periope auscultator: Thomson, Dtsch. Ent. Ztschr. 31: 198, 1887; Morley, Ichneumonologia Britannica IV: 28, 1911; Townes & Townes, U.S. Nat. Mus. Bull. 216: 137, 1959.

Specimen examined: 1♀, 7-ix-89, Europe.

Distribution: Europe.

2. ***Periope aethiops*** (Cresson)

Tryphon aethiops Cresson, Trans. Amer. Ent. Soc. 2: 106, 1868.

Chorinaeus pulchripes Provancher, Naturaliste Canadien 14: 12, 1883.

Periope aethiops: Townes & Townes, U.S. Nat. Mus. Bull. 216: 137, 1959.

Specimens examined: 1♂, 14-ix-59, 1♀, 20-ix-61, Ann Arbor, Michigan, U.S.A., H. & M. Townes leg.

Distribution: North America.

3. ***Periope hoerhammeri*** (Heinrich)

Periope hoerhammeri Heinrich, Mitt. Münchner Ent. Ges. 35-39: 110, 1949.

Periope hoerhammeri: Townes, Proc. Ent. Soc. Washington 59: 111, 1957; Townes & Townes, U.S. Nat. Mus. Bull. 216: 137, 1959; Townes, Momoi & Townes, Mem. Amer. Ent. Inst. 5: 356, 1965.

This species was originally described on the basis of one male from Germany in Europe. In 1959 H. & M. Townes gave Japan as a locality of the species, without stating exact habitats. On the basis of the present specimens a redescription may be given below:—

♀. Head not prolonged below; face and clypeus combined about 5/7 as wide as high; malar space about 1/2 as long as basal width of mandible; glossa short, not surpassing mandible, membranous; labial palpus with 2nd and 3rd segments short and

stout; vertex more strongly and densely punctured than any other congeneric species; occipital carina present dorsally and laterally, absent below, so that the lower end not joined with hypostomal carina; antennae clavate, with 31-36 segments; 1st flagellar segment 4.2-4.7 times as long as wide and 1.6-1.8 times as long as the 2nd. Mesonotum with notaulix wanting; epomia weak, not produced as a thin plate; subtegular ridge sharp. Propodeum (Fig. 1 C) moderately long; areola and basal area combined 1.8-2.0 times as long as wide, parallel-sided. Abdomen clavate; 1st tergite (Figs. 1 A & B) about 1.4 times as long as wide at apex, with a distinct glymma and very strong median and lateral longitudinal carinae, the spiracle being not produced and situated at basal 2/5; 2nd tergite (Fig. 1 A) 4/5 as long as wide at apex; 1st sternite (Fig. 1 B) completely fused with its tergite, not reaching to spiracle.

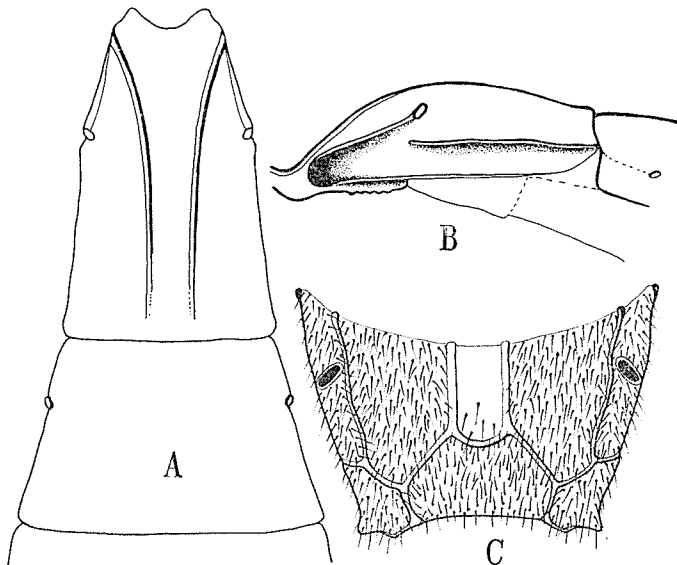


Fig. 1. *Periope hoerhammeri* (Heinrich), female.

- A, 1st and 2nd tergites in dorsal view;
 B, 1st tergite in lateral view;
 C, propodeum in dorsal view.

Black. Mandible almost entirely black. Antennae with scape, pedicel, and two or three basal flagellar segments dark brown to black, the rest reddish brown. Tegula dark brown, paler apically. Legs black; apex and apico-ventral half of front femur, apex of middle femur, front tibia, middle tibia except for apical 1/3, hind tibia except for both basal 1/5 and apical 2/5 yellow; apical third of middle tibia and all tarsi yellowish brown to dark brown. Wings hyaline; stigma and veins dark brown.

♂. Closely resembles female in general structure and colour, from which it differs by the following points:—

Face and clypeus combined 2/3 as wide as high. Propodeum with areola and basal area combined 1.6-1.8 times as long as wide. Interantennal process yellow, sometimes darkened. Tegula yellowish brown, with a yellow spot at base. Legs with yellow area

more extensive than female.

Length: body 7.0-9.5 mm., forewing 5.1-6.9 mm.

Specimens examined: 1♀, 19-v-64, 5♂♂, 20-24-v-67, Sapporo, and 4♂♂, 1♀, 12-vi-67, Shimamatsu, Hokkaido, K. Kusigemati leg.

Distribution: Japan and Europe.

4. *Periope shibuyai*, sp. nov.

♀. Head prolonged below; face and clypeus combined about 1/2 as wide as high; clypeus separated from face by a faint impression; malar space long, 6/7 as long as basal width of mandible; glossa elongate, membranous; labial palpus with 2nd and 3rd segments slender; vertex rather sparsely and weakly punctured; occipital carina com-

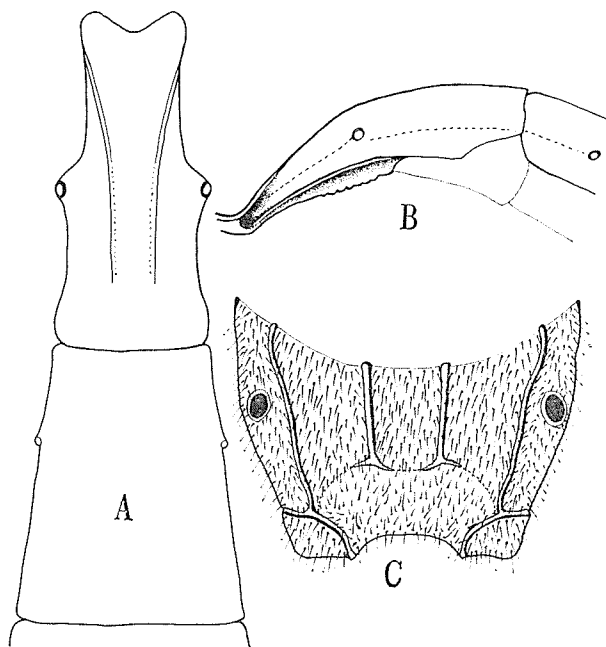


Fig. 2. *Periope shibuyai*, sp. nov., female.

A, 1st and 2nd tergites in dorsal view;

B, 1st tergite in lateral view;

C, propodeum in dorsal view.

plete, joined with hypostomal carina; antennae more or less clavate, more slender than any other congeneric species, with 33 or 34 segments; 1st flagellar segment 4.3-4.6 times as long as wide and 1.5-1.7 times as long as the 2nd. Mesonotum with notaulix weakly impressed; epomia strongly produced as a thin plate; subtegular ridge rounded, moderately thick, not thicker than in *aethiops*. Propodeum (Fig. 2C) rather long; areola and basal area combined a little narrowed towards apex, about 1.4 times as long as wide, finely and closely punctured and densely haired; apical transverse carina obsolete, being strong between pleural and lateral longitudinal carinae; propodeal spiracle oval. Tarsal claws simple. Abdomen somewhat clavate, more slender than *aethiops*

or *hoerhammeri*; 1st tergite (Figs. 2 A & B) about 2.3 times as long as wide at apex, with glymma distinct and median and lateral longitudinal carinae obsolete, the spiracle strongly produced as a tubercle and situated at middle; 2nd tergite (Fig. 2 A) about 1.3 times as long as wide at apex, with a weak median longitudinal carina on basal half; 3rd tergite with a weak median longitudinal carina on basal half; 1st sternite (Fig. 2 B) completely fused with its tergite, reaching beyond spiracle.

Black. Mandible black, ferruginous apically; palpi dirty yellowish brown; antennae dark brown to black. Scutellum black with a large yellow spot; tegula blackish, dark brown apically. Legs similar to *hoerhammeri* in colouration, but the ventral side of front femur wholly yellow. Wings hyaline; stigma and veins dark brown.

♂. Differs from the female, apart from sexual differences, by the following characters:—

Antennae with 32 or 33 segments. Palpi paler than female. Tegula dark brown, sometimes with a yellow spot at base; postscutellum often yellow. Front coxa at extreme apex pale yellow; front and middle trochanters pale yellow, with dorsal side dark brown; hind trochanter blackish brown.

Length; body 8.0–9.4 mm., forewing 6.1–6.7 mm.

Holotype (♀): Sapporo, Hokkaido, 6-ix-67, K. Kusigemati leg.; paratypes: 1♂, 1♀, 8-ix-67, 1♂, 18-ix-67, Sapporo, Hokkaido, K. Kusigemati leg.

Distribution: Japan.

This species is readily distinguished from any other congeneric species by the complete occipital carina and by the 2nd and 3rd tergites with a median carina.

It is my real pleasure that this species is named in honour of Prof. M. Shibuya of Kagoshima University.

Selected Literature

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