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A New Species of the Subgenus *Protonetelia* of the Genus *Netelia* from Taiwan (Hymenoptera, Ichneumonidae, Tryphoninae)

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Abstract. *Netelia* (*Protonetelia*) *tadauchii* n. sp. is described from Taiwan. This is the second species of the subgenus *Protonetelia* Konishi and can be distinguished from the only consubgener, *N*. (*P*.) *hirashimai* Konishi, 1986, by the larger ocelli, the coloration of mesosoma and the position of the spine on dorsal margin of paramere.

Key words: taxonomy, Hymenoptera, Ichneumonidae, Tryphoninae, *Netelia*, *Protonetelia*, *tadauchii*, Taiwan.

Introduction

Protonetelia Konishi is one of 12 subgenera of the genus *Netelia* Gray. This subgenus was established for a distinctive new species of the genus *Netelia*, *N*. (*P*.) *hirashimai*, from Papua New Guinea by Konishi (1986). Up to the present, this species has been the only member of *Protonetelia*. In the genus *Netelia*, *Protonetelia* can be easily distinguished from other subgenera by the coloration, such as the yellow body with the brown markings on mesoscutum, propodeum, 2nd and 5th metasomal tergites, and the venation, such as the absence of areolet and the straight Rs.

Among the specimens collected by Dr. I. Kanazawa in Taiwan in 1983, four females of a species, which possesses the character states of *Protonetelia*, were found. However, as Townes (1938) showed that species of the genus *Netelia* can be best distinguished by specialized structure on median surface of male claspers, male specimens were required for confirming the species status. In 2007, I had an opportunity to visit the Taiwan Agricultural Research Institute and found additional two males with three females in its huge collection of Taiwanese Hymenoptera. Through the close examination of the Taiwanese specimens, I concluded that they were distinct from *hirashimai*. This Taiwanese species is described as new to science in the following lines.

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Materials and Methods

Morphological nomenclature follows that of Gauld (1991). I refer to Snodgrass (1941) for terminology of male genitalia and to Eady (1968) for microsculpture description. Methods for observation and preservation of male genitalia, as well as measurements of head and mesosoma and indices are as in Konishi (1985, 2005). The following abbreviations are used: ocello-ocular line (OOL), postocellar line (POL) and diameter of posterior ocellus (OD). Images were taken with a Nikon Coolpix990 digital camera attached to a Leica MZ16 stereomicroscope. Several partially focused images were combined using CombineZP© (Hadley, 2009).

The specimens examined in this study are deposited in the Taiwan Agricultural Research Institute, Taichung, Taiwan (TARI), the Entomological Laboratory in Kyushu University, Fukuoka, Japan (ELKU) and the National Institute for Agro-Environmental Sciences, Tsukuba, Ibaraki, Japan (NIAES).

Genus *Netelia* Gray

Netelia Gray, 1860: 341. (Type species: *Paniscus inquinatus* Gravenhorst, 1829)

Subgenus *Protonetelia* Konishi

Protonetelia Konishi, 1986: 415. (Type species: *Netelia* (*Protonetelia*) *hirashimai* Konishi, 1986)

Diagnosis. Small sized species for the genus *Netelia*, length of fore wing 5.1-6.6 mm. Body yellow with brown to blackish brown markings on mesoscutum, propodeum, 2nd and 5th metasomal tergites. Occipital carina present; lateral carina of scutellum extending full length of scutellum; propodeum without trans-striae, lateral crest absent; fore wing with 3rs-m absent, Rs almost straight and cu-a opposite or slightly distad Rs&M; hind tarsal claw normal; paramere with a spine on dorsal margin, brace and pad present and digitus with ventro-apical corner pointed; ovipositor about twice as long as apical depth of metasoma.

Netelia (*Protonetelia*) *tadauchii* sp. nov.
(Figs. 1-11)

Description.

Head (Figs. 2 & 3) 1.6-1.7 times as wide as long, subpolished and weakly coriaceous with minute punctures; occipital carina present, weak and dorsally incomplete; occiput smooth; temple weakly convex; ocelli larger and lateral ocellus close to eye, POL/OD=0.4-0.6, OOL/OD=0.1-0.2; inner margins of eyes indented opposite antennal socket, weakly convergent ventrally; face 1.3-1.5 times as wide as long; clypeal suture weak; clypeus 1.5-1.8 times as wide as long, with apical margin truncate; antenna with 38-43 flagellomeres, 1st flagellomere 1.3-1.4 times as long as 2nd, which 3.4-3.7 times as long as wide.

Mesosoma (Fig. 4) polished, smooth and minutely and evenly punctuate; pronotum not costulate; mesoscutum 1.2-1.3 times as long as wide, with notaulus weak and gradually evanescent near the middle of mesoscutum; scutellum 1.3-1.5 times as long as distance between lateral carinae at its base, with lateral carina extending full length of scutellum; propodeum without trans-striae or sublateral crest, with pleural carina complete and spiracle ovoid.

Fore wing (Fig. 5) 2.6-2.8 times as long as wide, with 3rs-m absent, Rs almost straight and cu-a opposite or slightly distad Rs&M; basal 1/3 of sub-basal cell without hairs; anal cell with a band of hairs. Hind wing (Fig. 6) with 4-5 distal hamuli, nervellar index 0.4-0.5.

Fore tibial spur 0.4-0.5 times as long as basitarsus, which 10.8-11.9 times as long as wide; coxae weakly coriaceous; bristles on tibiae sparse, their sockets separated by more than the length of bristles; fore tarsal claw with 10-12 (male) and 7-9 (female) teeth; mid tarsal claw with 8-10 teeth; hind tarsal claw normal, with 6-9 teeth.

Metasoma polished, minutely and evenly punctate; 1st tergite 2.4-2.6 times as long as apical width, 1.6-1.8 times as long as 2nd; crease which separates epipleurum of 3rd tergite extending full length of the tergite; male hypopigium (Fig. 7) short, with apical margin almost straight and slightly convex; paramere (Figs. 8 & 9) slightly tapered toward rounded apex, with a spine on dorsal margin between basivolsella and pad, brace subtriangular and pad produced dorsally; digitus with ventro-apical corner pointed; aedeagus with penis valve slightly broadened toward apex and basal apodeme almost straight; ovipositor

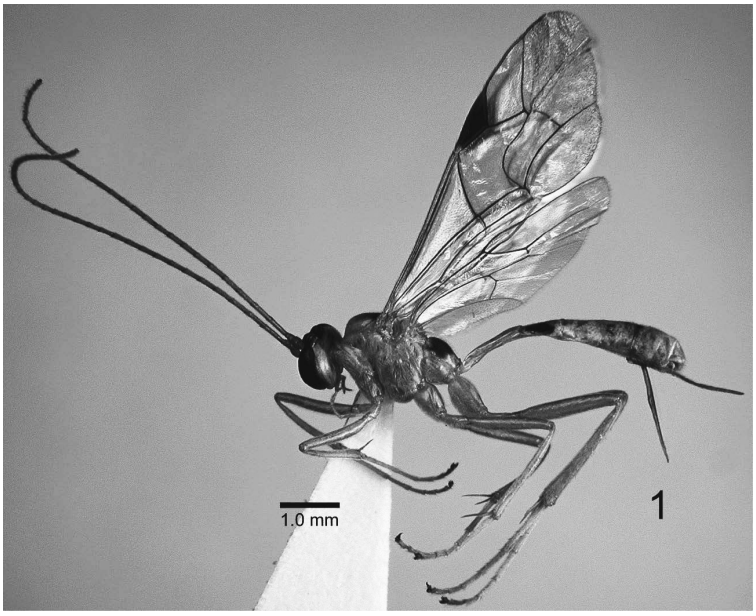


Fig. 1. *Netelia* (*Protonetelia*) *tadauchii* sp. nov., female. Habitus in lateral view.

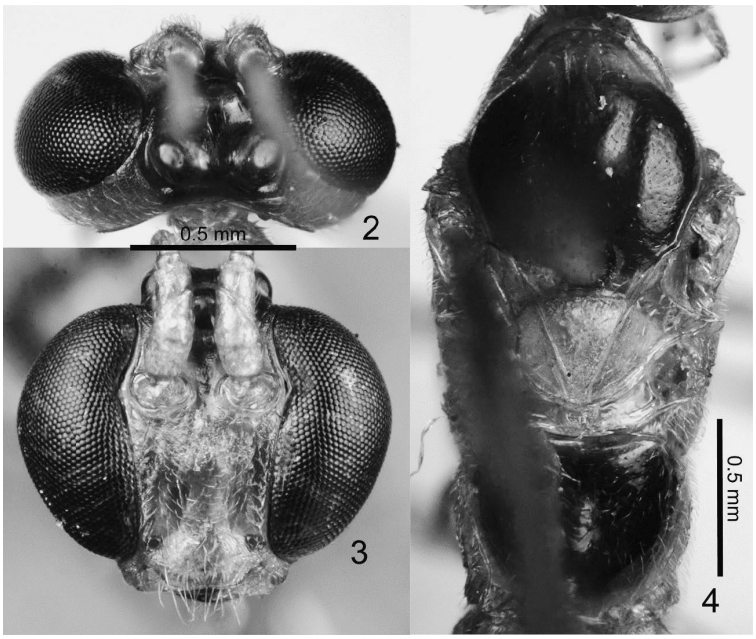
about twice as long as apical depth of metasoma; ovarian egg 0.5 mm long and 0.2 mm high, 2.3 times as long as high, with a stalk on posterior 1/4 of ventral margin.

Body yellow; interocellar area and teeth of mandible black; area around interocellar area and triangular marking on frons brown; posterior 1/2-3/4 of mesoscutum, and anterior 3/4-4/5 of propodeum except anterior and lateral margins brown; teeth of tarsal claws black; metasomal tergite 2 brown to blackish brown except anterior and posterior marginal area; metasomal tergite 5 except posterior margin (male) and anterior 1/2 of metasomal tergite 5 (female) brown; ovipositor sheath blackish yellow; ovipositor light brown. Wings hyaline; stigma blackish brown; other veins brownish yellow; distal abscissa of M and Cu1 weakly pigmented.

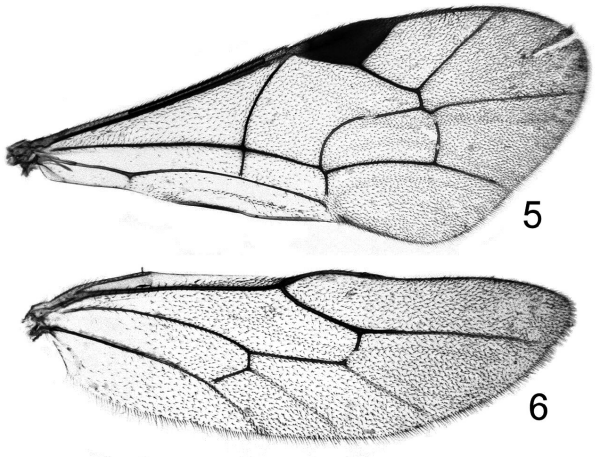
Length of fore wing: 5.1-6.6 mm.

Type material. Holotype: ♂, "ES. TAIWAN: Chipen, Taitung Hsien, 17-18. II. 1982, L. Y. Chou & K. C. Chou" (TARI).

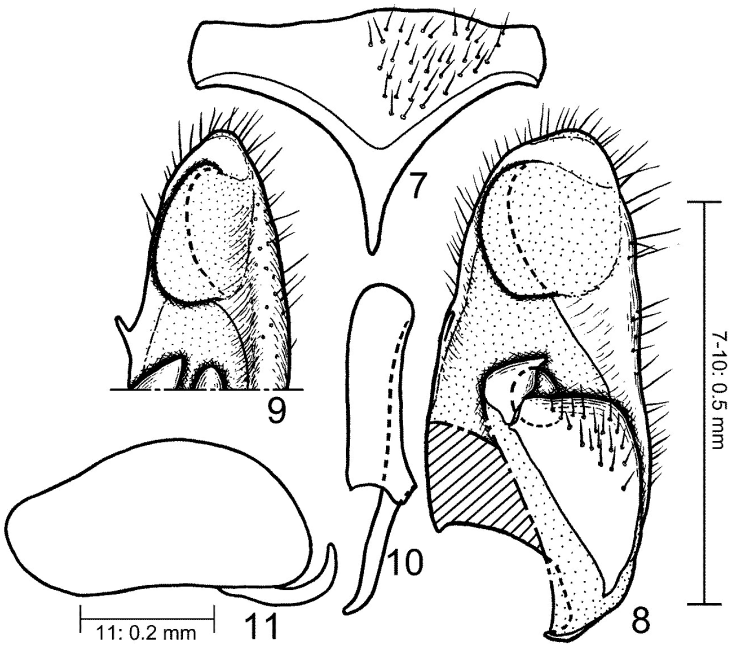
Paratypes: 1♀, "Hassenzan, FORMOSA, 8 VI 1941, Col. J. Sonan" (TARI); 1♀, "C. Taiwan: Anmashan 2275 m, Taichung Hs. 6-9. VII. 1979, L. Y. Chou" (TARI); 1♂, "CHINA: C. Taiwan, Wanfeng, Taichung Hsien, 18. IV. 1980, KSLin" (TARI); 1♀, "C. TAIWAN: Tungpu 1200m, Nantou Hsien, 19-23. VII. 1982, L. Y. Chou & T. Lin" (TARI); 3♀, "[TAIWAN] Alishan (L. T.), Chiai Hsien,



Figs. 2-4. *Netelia* (*Protonetelia*) *tadauchii* sp. nov., male holotype. 2, Head in dorsal view; 3, head in frontal view; 4, mesosoma in dorsal view.



Figs. 5-6. *Netelia* (*Protonetelia*) *tadauchii* sp. nov., male holotype. 5, Fore wing; 6, hind wing.



Figs. 7-11. *Netelia* (*Protonetelia*) *tadauchii* sp. nov. 7-10, Male holotype; 7, hypopigium; 8, paramere in median view; 9, paramere in ventro-median view; 10, aedeagus in lateral view; 11, ovarian egg in lateral view.

10-11. viii. 1983, I. Kanazawa leg." (ELKU); 1♀, "[TAIWAN] Fenchifu (L. T.), Chiai Hsien, 12-13. viii. 1983, I. Kanazawa leg." (NIAES).

Distribution. Taiwan.

Etymology. Named in honour of Osamu Tadauchi for his contribution to the taxonomy of Hymenoptera.

Remarks. This is the second species of the subgenus *Protonetelia*. This species is different from *N*. (*P*.) *hirashimai*, which has been the only known species of the subgenus, in the following character states (character states of *hirashimai* are in parenthesis): Lateral ocellus larger and close to eye (lateral ocellus smaller and distant from eye); anterior 1/2-1/4 of mesoscutum yellow (mesoscutum entirely light brown to brown); metanotum and metapleuron entirely yellow (hind margin of metanotum and posterior portion of metapleuron blackish brown); pad produced dorsally (produced dorso-basally); spine on dorsal margin of paramere situated between basivolsella and pad (situated close to pad).

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