

Six New Species of the Genus *Apenesia* (Insecta, Hymenoptera, Bethyliidae) from Taiwan

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Abstract. The bethylid wasp genus *Apenesia* of Taiwan is revised, and descriptions of six new species, *A. pingtungensis*, *A. chitouensis*, *A. formosimonticola*, *A. liukueiensis*, *A. meifuiiae*, and *A. takasago*, are given. This is the first record of the genus from Taiwan. A key to the Taiwanese species is also prepared.

Key words: Insecta, Hymenoptera, Bethyliidae, new species, Taiwan

Introduction

The genus *Apenesia* Westwood, 1874, belonging to the subfamily Pristocerinae of the family Bethyliidae, is represented by about 123 species including 17 species from the Oriental Region and is distributed from the tropics to the temperate zones of the world. However, no described species of this genus has been reported from East Asia up to now (Gordh & Móczár, 1990; Terayama, 1993, 1996). There is only a record of unnamed species from Japan (Terayama, 1990).

All the *Apenesia* species show distinct sexual dimorphism; males are fully winged and have ocelli; whereas females are completely apterous and lack ocelli.

In the course of my study on the bethylid fauna of Asia, I was able to examine several specimens of the genus from various countries. As for the Taiwanese materials, I recognized six species. In this paper, I describe them, together with a key to the Taiwanese species.

Measurements, indices and terms used in this paper follow those in Evans (1964, 1978). The following abbreviation of institutions are also used: NSMT: National Science Museum, Tokyo, Japan
NIAES: National Institute of Agro-Environmental Sciences, Tsukuba, Japan

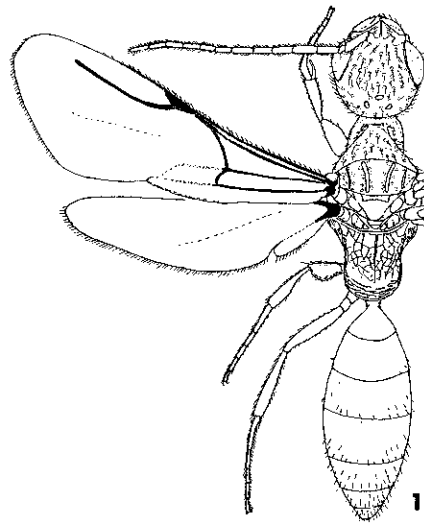


Fig. 1. *Apenesia meifuiiae* sp. nov., male, dorsal view.

Key to the Taiwanese species of *Apenesia* (Male)

1. Mandible with an apical tooth only; discoidal vein arising well down on transverse median vein 2
2. Mandible with 3-5 teeth; discoidal vein interstitial with transverse median vein or nearly so 3
2. Head microreticulate, with relatively large

- punctures densely; median carina of propodeum present at anterior half of disc
 *A. formosimonticola* sp. nov.
- Head moderately punctate, with smooth interspaces; median carina of propodeum reaching the transverse carina of disc
 *A. pingtungensis* sp. nov.
3. Eyes hairless; mandible with 5 teeth; anterior margin of clypeus broadly convex, without angle medially
 *A. chitouensis* sp. nov.
- Eyes with short erect hairs; mandible with 3-5 teeth; anterior margin of clypeus more or less triangular, with an obtuse angle medially
 4
4. Propodeum long, 1.5 x as long as wide in dorsal view; head elongate, 1.3 x as long as wide, and smooth and shining; mandible with 5 teeth; small species, total body length less than 3 mm
 *A. takasago* sp. nov.
- Propodeum shorter, 1.2 x as long as wide or less in dorsal view; head 1.2 x as long as wide at most, and more or less microreticulate; mandible with 3 or 4 teeth; larger species, total body length > 3 mm
 5
5. Mandible with 4 teeth; pronotal disc without transverse groove
 *A. meifuiaie* sp. nov.
- Mandible with 3 teeth; pronotal disc with a transverse groove at posterior portion
 *A. liukueiensis* sp. nov.

Descriptions

***Apenesia chitouensis* sp. nov.**

(Figs 2-5)

Holotype. Male. HL (head length) 1.08 mm; HW (head width) 0.95 mm; FW (width of frons) 0.60 mm; LM (length of mesosoma) 1.98 mm; LP (length of propodeum) 0.88 mm; WPF (width of propodeal disc) 0.60 mm; FWL (forewing length) 4.1 mm; TL (total body length) 5.4 mm.

Head black; mesosoma blackish brown; gaster castaneous, each posterior margin of tergites with

yellow band; mandibles yellow; antennal 1st to 3rd segments yellow, 4th to terminal segments brownish; legs yellow.

Head 1.14 x as long as wide, with weakly convex posterior margin in frontal view; frons and vertex moderately punctate, with smooth interspaces. Mandibles with 5 teeth; apical tooth acute and longest. Anterior margin of clypeus broadly convex. First 5 segments of antennae in a ratio of about 14:4:12:11:10 in length; 2nd segments as long as wide; 3rd 3.7 x as long as wide. Eyes 0.50 mm in length, hairless; WF 1.2 x EL. POL:AOL = 8:7; OOL 1.3 x WOT.

Pronotal disc trapezoidal, smooth and shining with scattered punctures; maximum width 1.89 x its median length, and 2.43 x minimum width. Mesonotum moderately punctate, with smooth interspaces. Propodeum long, 1.47 x as long as wide, with parallel sides in dorsal view; median carina weak, present on basal 2/3 of propodeum; basal area of disc reticulate; sublateral areas coarsely microreticulate with rugosity; transverse carina absent.

Gaster sessile. Discoidal vein of forewings arising slightly down on transverse median vein; metacarpus vein relatively long, 1.22 x as long as pterostigma.

Holotype. Male, Chitou, Nantou Hsien, 6.III.1968, T. Kunou leg. [NIAES].

***Apenesia formosimonticola* sp. nov.**

(Figs 6-8)

Holotype. Male. HL 1.26 mm; HW 1.10 mm; WF 0.70 mm; LM 2.45 mm; LP 0.93 mm; LPD (length of propodeal disc) 0.63 mm; WPD 0.70 mm; FWL 4.6 mm; TL 6.0 mm.

Head and mesosoma black; gaster blackish brown; mandibles, antennae and legs brownish yellow.

Head slightly longer than wide, with convex posterior margin in frontal view; posterodorsal corners not forming angle; frons and vertex strongly microreticulate, with relatively large shallow punctures densely; punctures separated by 0.5-1.0 x their own diameter. Mandibles with an acute apical

tooth alone. Anterior margin of clypeus triangular, with an obtuse median angle. First 5 segments of antennae in a ratio of 17:4:10:10:10 in length; 2nd segment almost as long as wide; 3rd 2.9 x as long as wide. Eyes 0.53 mm in length; hairless; WF 1.33 x EL. Ocelli forming a regular triangle; OOL 1.64 x WOT.

Pronotal disc trapezoidal, moderately punctate, with smooth interspaces; maximum width 1.86 x its minimum width. Mesonotum smooth in most part; lateral areas sparsely punctate; median area largely impunctate. Propodeal disc wider than long, 0.90 x as long as wide; median carina weak, present at anterior 1/2 of disc; transverse carina present, but indistinct at midlength; basal triangular area weakly depressed with oblique rugae; sublateral areas coarsely microreticulate.

Gaster sessile. Discoidal vein of forewings arising well down on transverse median vein; metacarpus vein short, 0.5 x as long as pterostigma.

Holotype. Male, Meifeng-Sungkan, Nantou Hsien, 4.V.1978, A. Shinohara leg. [NSMT].

Apenesia liukueiensis sp. nov.

(Figs 9-11)

Holotype. Male. HL 0.68 mm; HW 0.58 mm; WF 0.35 mm; LM 1.25 mm; LP 0.49 mm; WPD 0.30 mm; FWL 2.1 mm; TL 3.4 mm.

Head blackish brown; mesosoma castaneous excepting propodeum dark brown; gaster castaneous, lateral and posterior margin of 1st gastral tergite yellow; antennae, mandibles and legs yellowish brown with reddish tinge.

Head 1.2 x as long as wide, with strongly convex posterior margin in frontal view; posterodorsal corners not forming angle; frons and vertex weakly microreticulate, with scattered shallow punctures. Mandibles with 3 acute teeth. Anterior margin of clypeus triangular, forming an obtuse angle. First 5 segments of antennae in a ratio of 10:3:4:4:4 in length. Eyes 0.30 mm in length, with short erect hairs; WF 1.17 x EL. Ocelli forming a regular triangle; OOL 1.4 x WOT.

Pronotal disc trapezoidal and microreticulate; maximum width 3.2 x minimum width; shallow transverse groove present at posteriorly. Mesonotum microreticulate. Propodeum long, 1.63 x as long as wide; median carina present at anterior 5/4 of disc; transverse carina absent; surface of disc strongly rugose.

Gaster sessile. Discoidal vein of forewings interstitial with median vein; metacarpus vein relatively long, 1.32 x as long as pterostigma.

Holotype. Male, Liukuei, Kaohsiung Hsien, 29.IV.1971, N. Fukuhara leg. [NIAES].

Apenesia meifuia sp. nov.

(Figs 1, 12-16)

Holotype. Male. HL 0.90 mm; HW 0.85 mm; WF 0.53 mm; LM 1.78 mm; LP 0.73 mm; WPD 0.55 mm; FWL 3.2 mm; TL 4.9 mm.

Head blackish brown; mesosoma dark brown excepting propodeum blackish brown; gaster light brown; mandibles yellowish brown; clypeus reddish brown excepting median carina blackish; antennae and legs yellow.

Head slightly longer than wide, with moderately convex posterior margin in frontal view; posterodorsal corners round, not forming angle; frons and vertex microreticulate, with shallow punctures moderately; punctures separated by 1-2 x their own diameter. Mandibles with 4 teeth; apical tooth largest and basal one smallest. Anterior margin of clypeus convex with an obtuse angle medially. First 5 segments of antennae in a ratio of 14:3:8:8:7 in length; 2nd segment slightly wider than long; 3rd 2.7 x as long as wide. Eyes 0.38 mm in length, with scattered erect hairs; WF 1.39 x EL. Ocelli forming an obtuse triangle; OOL 1.3 x WOT.

Pronotal disc trapezoidal, microreticulate with shallow punctures; maximum width 3.1 x minimum width. Mesonotum microreticulate with shallow punctures. Propodeum 1.33 x as long as wide; median carina present at anterior 2/3 of disc; transverse carina absent; basal triangular area strongly reticulate.

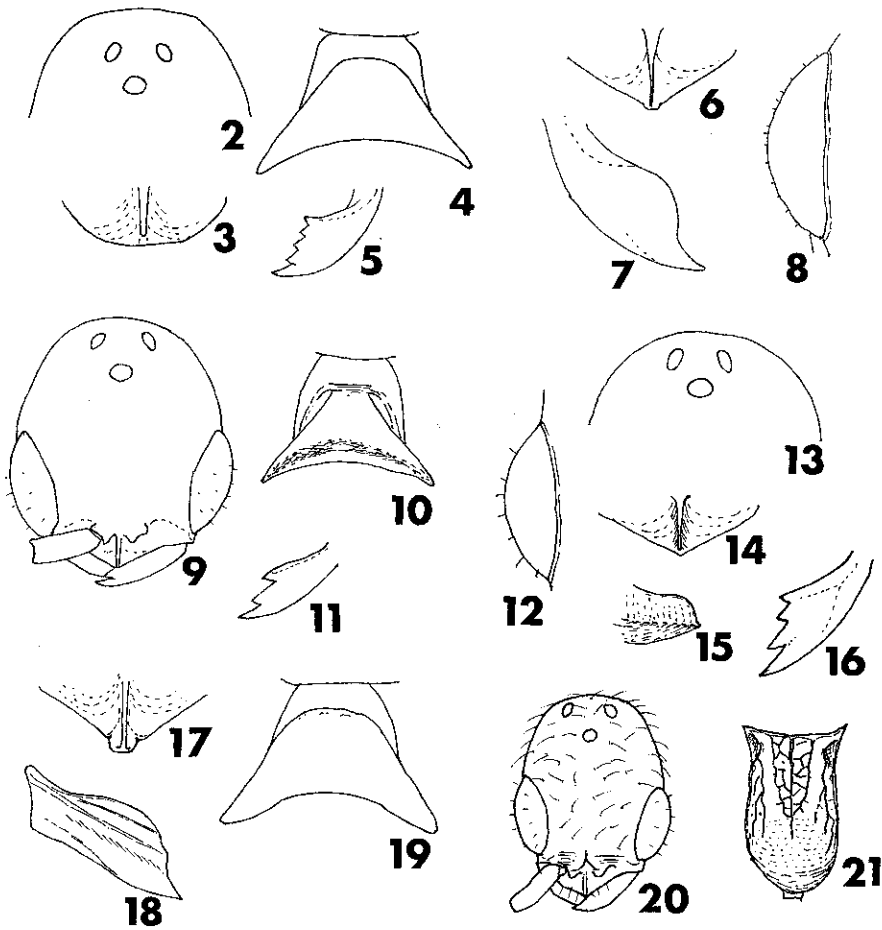
Gaster sessile. Discoidal vein of forewings

interstitial with transverse median vein; matacarpus vein long, 1.59 x as long as pterostigma.

Variation. The paratypes are smaller than the holotype (HL 0.73-0.80 mm. HW 0.63-0.70 mm), and punctures on head weaker. Gaster varies in color from reddish brown to dark brown, and antennae from yellow to yellowish brown.

Holotype. Male, Wushe, Nantou Hsien, 14.VII.1982, M. Terayama leg. [NIAES].

Paratypes. 1 male, Nanshanchi, nr. Puli, Nantou Hsien, 15.III.1979, A. Shinohara leg. [NSMT]; 1 male, Tokkasha, Nantou Hsien, 20.III.1978, A. Shinohara leg. [NSMT].



Figs 2-21. Taiwanese species of *Apenesia*, male — 2-5, *A. chitouensis* sp. nov.; 6-8, *A. formosimonticola* sp. nov.; 9-11, *A. liukueiensis* sp. nov.; 12-16, *A. meifuiiae* sp. nov.; 17-19, *A. pingtungensis* sp. nov.; 20-21, *A. takasago* sp. nov.— 2, 13, posterior margin of head; 3, 6, 14, 17, clypeus, frontal view; 15, clypeus, lateral view; 4, 10, 19, pronotum, dorsal view; 5, 7, 11, 16, 18, mandible; 8, 12, eye; 9, 20, head, frontal view; 21, propodeum, dorsal view.

Apenesia pingtungensis sp. nov.

(Figs 17-19)

Holotype. Male. HL 1.20 mm; HW 1.10 mm; WF 0.65 mm; LM 2.05 mm; LPD 0.75 mm; FWL 3.5 mm; TL 5.4 mm.

Body black; mandibles, antennae, and legs reddish brown.

Head slightly longer than wide, with weakly convex posterior margin in frontal view; frons and vertex densely punctate, with smooth interspaces; punctures relatively large and strong, separated by about 0.5 x their own diameter. Mandibles with an apical tooth only; 2 longitudinal straight rugae present as in Fig. 18. Anterior margin of clypeus triangular, forming a right angle. First 5 segments of antennae in a ratio of 15:3:7:6.5:6.5 in length; 3rd segment 2.0 x as long as wide. Eyes hairless, 0.53 mm in length; WF 1.21 x EL. Front angle of ocellar triangle slightly less than a right angle; OOL 0.5 x WOT.

Anterior margin of pronotal disc round; disc 0.5 x as long as maximum width, moderately punctate, with smooth interspaces, punctures separated by ca. 1.0 x their own diameter. Mesonotum smooth with scattered punctures. Propodeal disc 0.67 x as long as wide; transverse carina present, but weak; median carina reaching transverse carina; basal triangular area with longitudinal rugae; sublateral areas with transverse rugae.

Gaster sessile. Discoidal vein arising well down on transverse median vein. Metacarpus vein shorter than pterostigma.

Holotype. Male, Kentin Park, Pingtung Hsien, 16.III.1968, T. Okadome leg. [NSMT].

Apenesia takasago sp. nov.

(Figs 20-21)

Holotype. Male. HL 0.53 mm; HW 0.43 mm; WF 0.25 mm; LM 0.80 mm; LPD 0.38 mm; WPD 0.25 mm; FWL 1.7 mm; TL 2.4 mm.

Head and mesosoma castaneous; 1st to 3rd segments of gaster castaneous, 4th to 7th segments blackish brown; mandibles, antennae, and legs

yellowish brown.

Head long, 1.33 x as long as wide, with convex posterior margin in frontal view; frons and vertex smooth and shining with scattered punctures. Mandibles with 5 blunt teeth. Anterior margin of clypeus broadly rounded. First 5 segments of antennae in a ratio of 6:3:3:3.3:3 in length, 2nd segment longer than wide, 3rd segment 1.3 x as long as wide. Eyes 0.18 mm in length, with short erect hairs; WF 1.43 x EL. Ocelli large, forming regular triangle; OOL 1.6 x WOT.

Pro- and mesonotum smooth, with scattered punctures. Propodeal disc long, 1.52 x as long as wide, with a median carina; sublateral areas each with 2-3 relatively irregular longitudinal carinae; transverse carina absent.

Gaster sessile. Metacarpus vein of forewings 2.0 x as long as pterostigma; discoidal vein obscure.

Holotype. Male, Yangming-shan, Taipei Hsien, 11.VIII.1968, S. Suzuki leg. [NIAES].

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台湾産 *Apenesia* 属の6新種の記載

寺山 守

アリガタバチ科 (Bethyridae) に属する *Apenesia* 属は、世界に約123種が記載されており、東洋区からは17種が報告されているが、日本や韓国、台湾、中国を含む東アジア地域からは、日本からの本属が産すると言う情報のみが報告されていたにすぎない。

アジア各地域の本属に含まれる個体を点検したところ、台湾からは6種を確認し、いずれも新種であると判断されたので、それらを *A. pingtungensis*, *A. chitouensis*, *A. formosimonticola*, *A. liukueiensis*, *A. meifuiaie*, *A. takasago* の名のもとに記載した。

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