

Two New Species of the Genera *Apenesia* and *Dissomphalus* (Hymenoptera, Bethyilidae) from Borneo

Mamoru TERAYAMA

Department of Biology, College of Arts and Sciences, The University of Tokyo,
Meguro-ku, Tokyo, 153 Japan

and

Seiki YAMANE

Department of Earth and Environmental Sciences, Faculty of Science, Kagoshima University,
Kagoshima, 890 Japan

Abstract Two new species of bethylid wasps are described from Borneo: *Apenesia sarawakensis* sp. nov. and *Dissomphalus minus* sp. nov.

In the course of our study on the hymenopterous fauna of Borneo, we were able to examine several specimens of the family Bethyilidae. Among them, we recognized two new species of the genera *Apenesia* and *Dissomphalus* belonging to the subfamily Pristocerinae. Measurements, indices and special terms used in this paper follow those in EVANS (1964, 1978).

Genus *Apenesia* WESTWOOD

Apenesia WESTWOOD, 1874. Thesaurus Entomologicus Oxoniensis, 4: 170. For full synonymy see GORDH & MOCZAR (1990).

This genus is distributed from the tropics to the temperate zones of the world, and is represented by about 130 species including 18 species from the Oriental region. Of these, 20 species are known from females and only 3 are known for male-female associations.

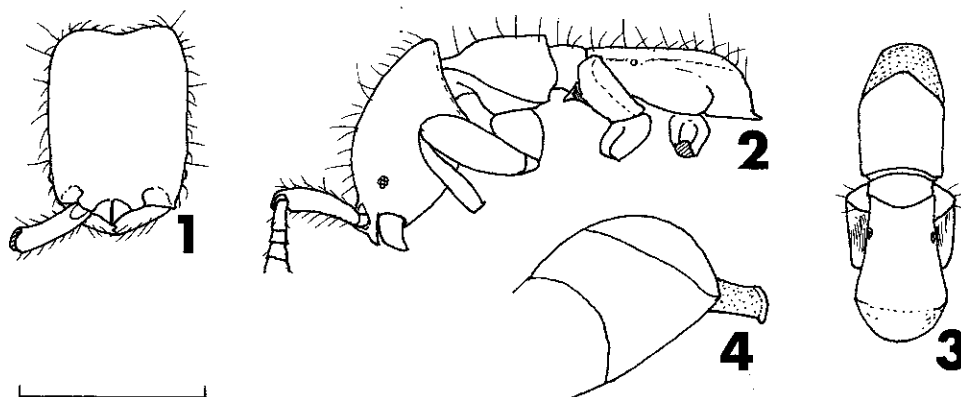
The genus is distinguished from other genera of the subfamily Pristocerinae in the female by the following combination of characteristics: 1) PF = 4, 3-2; 2) eyes each consist of 1 to 20 facets; 3) propodeum weakly to distinctly strongly constricted near the spiracles and its maximum width 1.2-1.8 x its width at the constriction; 4) mesopleura moderately produced laterally; 5) middle tibiae spinose above.

Apenesia sarawakensis sp. nov. (Figs. 1-4)

Holotype. Female. HL (head length) 0.48 mm; HW (head width) 0.33 mm; LM (length of mesosoma) 0.78 mm; WP (width of pronotum seen from above) 0.28 mm; LP (length of propodeum) 0.40 mm; WPD (width of propodeal disc) 0.24 mm; TL (total body length) 1.8 mm.

Head, alitrunk and gaster brown; antennal scapes brown; antennal flagellemeres and legs yellowish brown; eyes black.

Head rectangular, 1.45 x as long as wide, with parallel sides and shallowly concave posterior margin in frontal view; frons and vertex microreticulate with weak and shallow punctures sparsely. Mandibles with two acute teeth. Anterior part of clypeus triangular. Eyes each consist of 4-5 indistinct facets. Antennae with 13 segments; scapes 0.25 mm in length, 4.0 x as long as wide, and broadest at posterior end; pedicels slightly longer than wide; 3rd and 4th segments each 0.5 x as long as wide; 5th to 12th segments each distinctly wider than long; terminal segments 1.2 x as long as wide, and as long as



Figs. 1-4. *Apenesia sarawakensis* sp. nov., female. — 1, Head, frontal view; 2, head and alitrunk, profile; 3, alitrunk, dorsal view; 4, petiole and anterior portion of gaster, profile. Scale bar = 0.5 mm.

preceding two segments combined. Dorsum of head with abundant erect or suberect hairs.

Alitrunk with flat dorsum in profile. Pronotum relatively weakly microreticulate and impunctate; disc 0.91 x as long as wide; dorsum with relatively abundant erect hairs of which the longest one ca. 0.08 mm in length. Mesonotum microreticulate, 0.40 x as long as wide, with a few erect hairs. Mesopleura microreticulate; dorsal surface with 3 erect hairs. Propodeum microreticulate; disc 1.68 x as long as wide; its maximum width 1.36 x minimum width in dorsal view; dorsum with relatively abundant erect or suberect hairs.

Gaster petiolate; tergites smooth and shining; petiole coarsely microreticulate, 1.67 x as long as high in profile.

Holotype. Female, Kubah N. P. (alt. 250 ft.), Sarawak, Borneo, 9. VII. 1994, Sk. YAMANE.

Type depository. The type will be preserved in the collection of the Forest Department of Sarawak, Kuching, Malaysia.

Etymology. The specific epithet refers to the type locality.

Remarks. Three species of this genus have been known from the Oriental and Indo-Australian regions based upon the female sex: *A. modesta* (SMITH, 1864) and *A. parasitica* (SMITH, 1864) from Irian Jaya, New Guinea, and *A. philippinensis* (KIEFFER, 1913) from the Philippines. The present species is separated from them by the remarkably small body size (TL 1.8 mm; whereas 4-4.2 mm in the other species).

Genus *Dissomphalus* ASHMEAD

Dissomphalus ASHMEAD, 1893. Bull. U. S. Nat. Mus., 45: 41. For full synonymy see TERAYAMA (1996).

This genus is represented by 82 species including 6 Oriental species, and distributed in the temperate and the tropical zones of the world.

Dissomphalus is distinguished from other genera of the subfamily Pristocerinae in the females by the following combination of characteristics: 1) PF = 2-1, 2-1; 2) Eyes small, each consisting of less than 25 facets, or absent; 3) propodeal disc long, more or less parallel-sided; 4) mesopleura not or very weakly produced laterally; 5) middle tibiae with or without spines above.

Dissomphalus minor sp. nov.
(Figs. 5-7)

Holotype. Female. HL 0.35 mm; HW 0.26 mm; LM 0.40 mm; WP 0.18 mm; LP 0.23 mm; WPD 0.15 mm; TL 1.1 mm.

Body including head brown; antennae and legs yellowish brown.

Head 1.33 x as long as wide, microreticulate and impunctate, with convex sides and slightly convex posterior margin in frontal view. Mandibles with 3 teeth; apicalmost tooth acute and longest, 2nd acute, and basalmost smallest, forming obtuse triangle. Anterior part of clypeus triangular with an obtuse median angle. Eyes absent. Antennae with 13 segments; scape long, 0.16 mm in length, 3.0 x as long as wide, and 0.61 x head width; pedicel slightly longer than wide; 3rd segment as long as wide; 4th to 8th segments each slightly wider than long; 9th to 12th segments each as long as wide; apical segment 2.5 x as long as wide, slightly longer than the preceding segment.

Pronotum weakly microreticulate; disc 0.71 x as long as wide, with about 10 erect hairs; the longest hair ca. 0.08 mm. Mesonotum weakly microreticulate, with a few long erect hairs. Mesopleura weakly microreticulate; dorsal surface with erect or suberect hairs. Propodeum weakly microreticulate, 1.5 x as long as wide in dorsal view; disc with more than 10 long erect hairs.

Gaster petiolate, 0.38 mm wide seen from above; tergites smooth and subopaque; petiole smooth, higher than long in profile and wider than long in dorsal view.

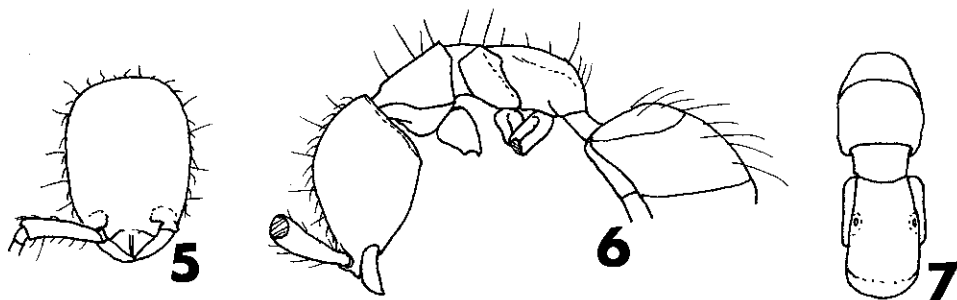
Holotype. Female, Kubah N. P. (alt. 1040 ft.), Sarawak, Borneo, 9. VII. 1994, Sk. YAMANE leg.

Paratype. One female, Kubah N. P. (alt. 250 ft.), Sarawak, Borneo, 9. VII. 1994, Sk. YAMANE leg.

Type depository. The holotype will be deposited in the collection of the Forest Department of Sarawak, Kuching, Malaysia, and the paratype in the National Institute of Agro-Environmental Sciences, Tsukuba, Japan.

Etymology. The specific epithet is named after the small body size.

Remarks. Among the Oriental species of the genus, this species resembles *D. khaoyaiensis* TERAYAMA, 1996, from Thailand in the shape of head and clypeus, but it is separated from that species by the impunctate head (moderately punctate in *khaoyaiensis*), the smaller body (HL 0.35 mm, HW 0.26 mm, TL 1.1 mm; whereas HL 0.55 mm, HW 0.40 mm, TL 2.5 mm in *khaoyaiensis*), and the absence of eye. It is also separated from the other two Indonesian congeners, *D. fuscus* (KIEFFER, 1904) and *D. kinabarensis*



Figs. 5-7. *Dissomphalus minor* sp. nov., female. — 5, Head, frontal view; 6, head and alitrunk, profile; 7, alitrunk, dorsal view. Scale bar = 0.5 mm.

TERAYAMA, 1996, by the microreticulate and impunctate head, the 3-toothed mandible, the absence of eye, and the smaller body.

Acknowledgements

Our study was partly supported by the Japan Ministry of Education, Science and Culture for International Scientific Research (Leader: T. INOUE, #04041067 and 06041013). We would like to thank Prof. T. INOUE (Kyoto Univ.) and Mr. Abang Abd. HAMID (Forest Department of Sarawak) for their constant encouragement.

References

- EVANS, H. E., 1964. A synopsis of the American Bethylidae (Hymenoptera, Bethylidae). *Bull. Mus. comp. Zool.*, **132**: 1-222.
- EVANS, H. E., 1978. The Bethylidae of America north of Mexico. *Mem. Amer. ent. Inst.*, **27**: 1-332.
- GORDH, G. and L. MOCZAR, 1990. A catalog of the world Bethylidae (Hymenoptera; Aculeata). *Mem. Amer. ent. Inst.*, **46**: 1-364.
- TERAYAMA, M., 1995. Three new species of the genus *Dissomphalus* (Hymenoptera: Bethylidae) from Asia. *Edaphologia*, **54**: 9-12.
- TERAYAMA, M., 1996. The phylogeny of the bethylid wasp subfamily Pristocerinae (Hymenoptera, Bethylidae). *Jpn. J. Ent.*, **64**: 587- 601.

[Received May 29, 1997; accepted August 3, 1997]

1. Head impunctate. 2
- Head distinctly punctate. 4
2. Body black; tibiae and tarsi yellowish white.
 *D. tibialis* ASHMEAD [the Philippines]
- Body light yellow; legs pale yellow. 3
3. Eye present; total body length 2.5 mm. *D. fuscus* (KIEFFER) [Sumatra]
- Eye absent; smaller, total body length 1.1 mm.
 *D. minor* TERAYAMA and YAMANE* [Borneo]
4. Mandible with 4 teeth; small species, head ca. 0.31 mm in width.
 *D. kinabarensis* TERAYAMA [Borneo]
- Mandible with less than 4 teeth; larger species, head wider than 0.40 mm. 5
5. Anterior margin of clypeus with 7 small teeth; mandible with 3 teeth.
 *D. chipenensis* TERAYAMA [Taiwan]
- Anterior margin of clypeus angulated medially, but without any tooth; mandible
 with 2 teeth. *D. khaoyaiensis* TERAYAMA [Thailand]

Acknowledgments

I thank Drs. F. FINNAMORE (PMA), J. FULLER (CNC) and J. POIRIER (CNC) for their kindness in offering valuable materials. My thanks are also due to Drs. T. KIFUNE (Fukuoka Univ.) and SK. YAMANE (Kagoshima Univ.) for useful comments.

References

- ASHMEAD, W. H., 1893. A monograph of the North American Proctotrypidae. *Bull. U. S. natn. Mus.*, **45**: 1–463.
- AZEVEDO, C. O., 1999. Revision of the Neotropical *Dissomphalus* ASHMEAD, 1893 (Hymenoptera, Bethylinidae) with median tergal processes. *Arg. Zool.*, **35**: 301–394.
- EVANS, H. E., 1955. The North America species of *Dissomphalus* (Hymenoptera, Bethylinidae). *Proc. ent. Soc. Washington*, **56**: 288–309.
- EVANS, H. E., 1964. A synopsis of the American Bethylinidae (Hymenoptera, Aculeata). *Bull. Mus. comp. Zool.*, **132**: 1–222.
- GORDH, G. and L. MOCZAR, 1990. A catalog of the world Bethylinidae (Hymenoptera: Aculeata). *Mem. Amer. ent. Inst.*, **46**: 1–364.
- KIEFFER, J. J., 1904. Description de nouveaux Dryininae et Bethylinae. Du. Musée Civique de Gènes. *Ann. Mus. civ. Str. nat. Genova, Ser. 3*, **1**: 351–412.
- KIEFFER, J. J., 1906. Proctotrypides. In André, E. (ed.), *Species des Hyménoptères d'Europe et d'Algérie*, **9**: 65–288. A. Hermann, Paris.
- KIEFFER, J. J., 1910. Description de nouveaux Bethylinidae (Hymen.). *Ann. ent. Soc. Fr.*, **79**: 31–56.
- KIEFFER, J. J., 1914. Bethylinae. *Das Tierreich*, **41**: 228–595. R. Friedlander und Sohn, Berlin.
- OGLOBLIN, A. A., 1930. Notes on Bethylinidae with the description of two new species from Misiones. *Rev. Soc. ent. argent.*, **3**: 15–24.
- TERAYAMA, M., 1995a. Three new species of the genus *Dissomphalus* (Hymenoptera: Bethylinidae) from Asia. *Edaphologia*, **54**: 9–12.
- TERAYAMA, M., 1995b. *Caloapenesia* and *Neoapenesia*, new genera of the family Bethylinidae (Hymenoptera, Chrysidoidea) from the Oriental region, with proposals of two new synonymies of genera. *Jpn. J. Ent.*, **63**: 881–891.
- TERAYAMA, M., 1996. The phylogeny of the bethylid wasp subfamily Pristocerinae (Hymenoptera, Bethylinidae). *Jpn. J. Ent.*, **64**: 587–601.
- TERAYAMA, M., and SK. YAMANE, 1997. Two new species of the genera *Apenesia* and *Dissomphalus*

*The generic name *Dissomphalus* is masculine, so *D. minus* described by TERAYAMA and YAMANE in 1997 should be emended to *D. minor*.