

Description of *Aphelopus mangshanensis*, a new species of Dryinidae from China

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Abstract

Aphelopus mangshanensis n. sp., from Mount Mangshan (Hunan Province, P. R. China), is described. The new taxon is different from all other Oriental species of *Aphelopus* Dalman, because of the tridentate distal apex of the aedeagus.

Key words: Hymenoptera, Chrysidoidea, Mt. Mangshan, Hunan, P. R. China.

Introduction

Dryinidae (Hymenoptera Chrysidoidea) are parasitoids of Hemiptera Auchenorrhyncha (Guglielmino and Olmi, 1997; 2006).

The genus *Aphelopus* Dalman is distributed in all zoogeographical regions (Olmi, 1984; 1999) and numbers sixty-six species, among which twenty-eight were described from the Oriental region (Bergman, 1957; He and Xu, 2002; Olmi, 1984; 1991; 1995; 1998; 2008a; 2008b; Xu and He, 1999; Xu *et al.*, 1997; 1998; 1999; 2000). The species of *Aphelopus* are known to parasitize Cicadellidae Typhlocybinae (Guglielmino and Olmi, 1997; 2006).

In 2011, the authors examined specimens of *Aphelopus* from P. R. China and found a new species described herein.

Materials and methods

The descriptions follow the terminology used by He and Xu (2002) and Olmi (1984; 1994; 1999). The measurements reported are relative, except for the total length (head to abdominal tip, without the antennae), which is expressed in millimetres.

In the description POL is the distance between the inner edges of the two lateral ocelli; OL is the distance between the inner edges of a lateral ocellus and the median ocellus; OOL is the distance from the outer edge of a lateral ocellus to the compound eye; OPL is the distance from the posterior edge of a lateral ocellus to the occipital carina; TL is the distance from the posterior edge of an eye to the occipital carina.

To complete the present paper the types of all Oriental species of *Aphelopus* were examined.

The following abbreviation was used in the text:

SCAU = The Hymenopteran Collection of South China Agricultural University, Department of Entomology, Guangzhou, Guangdong, P. R. China.

Aphelopus mangshanensis n. sp.

Diagnosis

Male with head black, except mandibles testaceous; mesosoma black; notauli incomplete, reaching about 0.6 length of scutum; aedeagus with distal apex tridentate; right basivolsella with two subdistal bristles; left basivolsella with one subdistal bristle.

Material examined

Male holotype (figure 1), "P. R. CHINA: Hunan Province, Mt. Mangshan, 13.VIII.2010, sweeping, Huayan Chen coll."; [red] "*Aphelopus mangshanensis* n. sp. Z. Xu, M. Olmi, A. Guglielmino, H. Chen det. ♂" (SCAU).

Description

Male

Fully winged; length 2.2 mm. Head black, except mandibles testaceous; antenna black-brown, except segment 1 testaceous; mesosoma black; metasoma brown; legs testaceous. Antenna filiform, covered with long sparse hairs; antennal segments in following proportions: 5:5:5:6:5:6:8:8:9:15; length/breadth ratio of ninth antennal segment: 9:2. Head dull, granulated; frontal line incomplete, only present in anterior half of face; POL = 6; OL = 3; OOL = 3; OPL = 2; TL = 3; greatest breadth of posterior ocelli as long as OL; occipital carina complete. Scutum and scutellum dull, granulated. Notauli incomplete, reaching approximately 0.6 length of scutum. Metanotum shiny, without sculpture. Propodeum without transverse carina between dorsal and posterior surface; dorsal surface reticulate rugose; posterior surface with two longitudinal keels, lateral areas reticulate rugose and median area almost completely smooth and without sculpture. Forewing hyaline, without dark transverse bands; stigmal vein short, regularly curved; marginal cell open. Aedeagus tridentate (figure 2); basivolsella without basal outer process; left basivolsella with one subdistal bristle; right basivolsella with two subdistal bristles. Tibial spurs 1, 1, 2.



Figure 1. *Aphelopus mangshanensis* n. sp.: holotype. Length 2.2 mm.

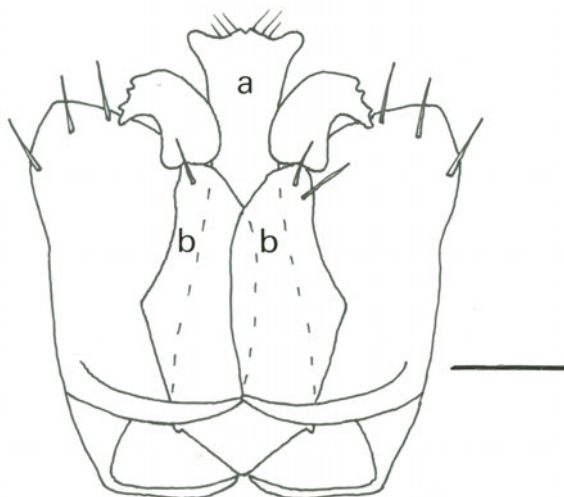


Figure 2. *Aphelopus mangshanensis* n. sp.: genitalia of the male holotype in ventral view; a = aedeagus; b = basivolsella. Scale bar: 0.06 mm.

F e m a l e
Unknown.

H o s t s
Unknown.

E t y m o l o g y
The specific name derives from the type locality, Mt. Mangshan.

R e m a r k s
The main distinctive characters of the new species are the following: head and mesosoma black; notauli reaching about 0.6 length of scutum; aedeagus tridentate; basivolsella with 1-2 distal bristles, without outer process. *A. mangshanensis* is the only Oriental species of *Aphelopus* with the above characters, so that it can be recognized easily. Following its description, the male of *A. mangshanensis* can be included into the key to the males of Oriental *Aphelopus* published by Xu *et al.*, (1999) by replacing the final couplets 15-19 as follows:

15	Basivolsella with 1 subdistal bristle (figure 3 in Xu <i>et al.</i> , 1999)	16
-	Basivolsella with 2 subdistal bristles (figure 1 in Xu <i>et al.</i> , 1999)	19
16	Basivolsella without outer process (figure 3 in Xu <i>et al.</i> , 1999)	17
-	Basivolsella with outer process (figure 3 in Xu and He, 1999)	18
17	Notauli reaching about 0.8 length of scutum; aedeagus not tridentate (figure 3 in Xu <i>et al.</i> , 1999)	<i>rugidorsalis</i> Xu, He et Olmi
-	Notauli reaching about 0.6 length of scutum; aedeagus tridentate (figure 2)	<i>mangshanensis</i> n. sp.
18	Head black, except mandibles whitish; occasionally clypeus partly testaceous; genae never testaceous	<i>niger</i> Xu et He
-	Head black, except mandibles, clypeus and genae testaceous	<i>thai</i> Olmi
19	Basivolsella without outer process (figure 1A in Olmi, 1991)	20
-	Basivolsella with outer process (figure 1 in Xu <i>et al.</i> , 1999)	22
20	Notauli reaching approximately 0.75-0.80 length of scutum	<i>taiwanensis</i> Olmi
-	Notauli reaching approximately 0.5-0.6 length of scutum	21
21	Aedeagus not tridentate (figure 38 in Olmi, 1984)	<i>nepalensis</i> Olmi
-	Aedeagus tridentate (figure 2)	<i>mangshanensis</i> n. sp.
22	Antennal hairs much shorter than breadth of antennal segments; frontal line very short, only present in anterior third of face near clypeus	<i>maculiclypeus</i> Xu, He et Olmi
-	Antennal hairs about as long as breadth of antennal segments; frontal line complete or almost complete (in this case absent only in front of anterior ocellus)	23
23	Frontal line complete; face and malar space usually with whitish or testaceous spots near clypeus	<i>querceus</i> Olmi
-	Frontal line almost complete, absent in front of anterior ocellus; face and malar space totally black	<i>spadiceus</i> Xu et He

Conclusions

A. mangshanensis was collected in Mangshan National Nature Reserve, a large protected area situated in Hunan Province at the border of Nanling National Nature Reserve (Guangdong Province). These two reserves form a large area including mainly mountains covered of dense forests. This range, separating Guangdong and Hunan, hosts a population of temperate and tropical species. According to the present knowledge (Xu *et al.*, 2011a), Nanling National Nature Reserve hosts 28 of the 193 dryinid species listed in China by He and Xu (2002). The population of Mangshan National Nature Reserve is less known, because the researches managed by the College of Natural Resources and Environment (South China Agricultural University) are at the beginning. However, the first results are very promising. In addition to the above new species of *Aphelopus* the following other species of Dryinidae were collected: *Anteon fidum* Olmi (Olmi, 1991) (previously known from Myanmar, Nepal, Thailand and China (many mountains of Fujian, Guangdong, Guizhou, Shaanxi, Taiwan, Zhejiang and Yunnan, in addition to Ningxia Hui Nationality Autonomous Region and Xizang Zhang Autonomous Region (= Tibet)); *Anteon meifenganum* Olmi (Olmi, 1991) (previously known from Myanmar, Thailand and China [Mt. Ziboshan (Shaanxi), Mt. Gutianshan and Mt. Tianmushan (Zhejiang), Tungpu and Mt. Meifeng (Taiwan)], and two further new species of *Anteon* Jurine described separately (Xu *et al.*, 2011b, in press). The environment of Mangshan Na-

tional Nature Reserve explains why the above listed species belong only to two genera of Dryinidae: *Aphelopus* (Dalman, 1823) and *Anteon* Jurine. These genera include in fact macropterous species parasitizing mainly forest leafhoppers: Cicadellidae Typhlocybinae are parasitized by *Aphelopus*; Cicadellidae Deltocephalinae, Eurymelinae, Iassininae, Idiocerinae, Ledrinae, Macropsinae and Tartessinae by *Anteon*.

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