

Short Communication

Description of a new species of the genus *Phanerotoma* Wesmael (Hymenoptera: Braconidae) and a key to Saudi Arabian species

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Accepted 30 September, 2011

***Phanerotoma arabica* sp. nov., (Hym., Braconidae, Cheloninae) is described in Saudi Arabia. Morphological diagnostic characters of the new species are shown, and they are compared with those of the related species from Arabian region. A key to Saudi Arabian species is also provided.**

Key words: *Phanerotoma*, Braconidae, new species, key, Saudi Arabia.

INTRODUCTION

The genus is characterized (van Achterberg, 1990) by glabrous eyes, 23 segmented antenna, clypeus with three teeth, absence of vein 2-R1 of forewing, vein CULb of forewing which is more or less developed giving rise to a closed first subdiscoidal cell, distinct carapace with transverse sutures and third metasomal tergite without side teeth.

Wesmael (1838) erected the genus *Phanerotoma* with the type species *Chelonus dentatus* Panzer. Tobias (1972, 1986) divided the genus *Phanerotoma* into four subgenera: *Bracotritoma* Csiki (1909), *Phanerotoma* s.str., Wesmael (1838), *Phanerotomina* Shestakov (1930) and *Unica* Snoflák (1951). Achterberg (1990) recognized only two of these subgenera viz., *Bracotritoma* Csiki and *Phanerotoma* s.str., Wesmael and showed that the use of the other subgenera viz., *Phanerotomina* Shestakov and *Unica* Snoflák is superfluous. In this work, the author adopted the approach proposed by Achterberg (1990).

Phanerotoma is a cosmopolitan genus containing parasitoids of Lepidoptera with 194 known species from almost all the zoogeographic regions (Zettel, 1990; Van Achterberg, 1990; Tobias, 2000; Yu et al., 2007). The members of genus *Phanerotoma* Wesmael are solitary endoparasitic koinobionts that attack Lepidoptera and are primarily host of the family Pyralidae (van Achterberg, 1990). Only three species of *Phanerotoma* have been described previously from Saudi Arabia viz., *Phanerotoma* (*Bracotritoma*) *graciloides* Achterberg, *Phanerotoma* (*Bracotritoma*) *masiana* Fahringer and *Phanerotoma* (*Bracotritoma*) *robusta* Zettel (van

Achterberg, 1990; Zettel, 1988). A third species of this genus from this region is described in this work. A key to Saudi Arabian species is also provided.

MATERIALS AND METHODS

Specimens were collected by sweeping net and malaise traps from different regions of Abha and Khamis Mushait, Saudi Arabia. The samplings were conducted between 2008 and 2009 in the Asir province. The collected specimens were killed with ethyl acetate and mounted on triangular labels and were examined with a stereoscopic binocular microscope Nikon SMZ1200. In addition to the collected samples, some preserved specimens in the collections of King Khalid University were checked and used in this paper. Classification, nomenclature and distributional data of Braconidae suggested by Yu et al. (2006) were followed. The terminology for morphology followed that used by Achterberg (1993). The types of new species are deposited in Department of Zoology, King Khalid University, Abha, KSA pending transfer to Natural History Museum, London.

Key to Saudi Arabian species of *Phanerotoma* Wesmael

- 1a. Maximum width of pterostigma more than 1.1 times length of vein 3-SR of fore wing; vein 1-SR of fore wing as long as pterostigma or distinctly shorter; veins 2-SR and SRI of fore wing (nearly) straight; middle tibia usually without distinct blister.....2
- 1b. Maximum width of pterostigma less than 1.1 times vein 3-SR of fore wing; vein 1-R1 of fore wing longer than pterostigma; veins 2-SR and SRI curved; middle tibia with whitish blister.....3

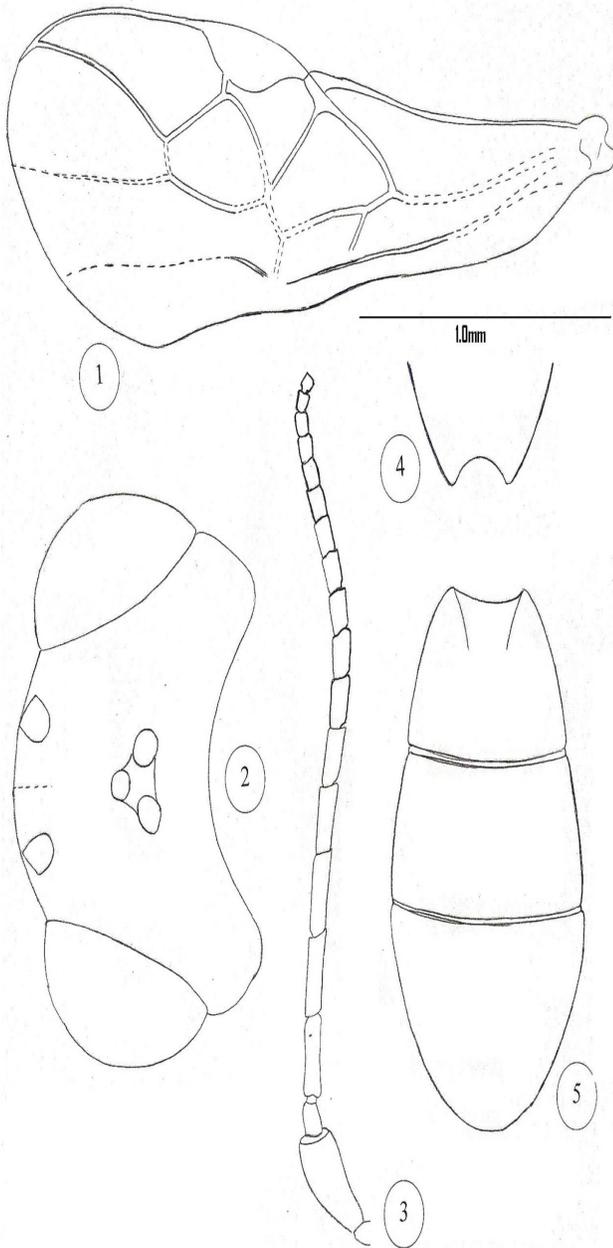


Figure 1. *Phanerotoma (Bracotritoma) arabica* sp. nov., (holotype, female). 1, Fore wing; 2, head dorsal view; 3, antenna; 4, third tergite; 5, metasoma dorsal view.

- 2a. Marginal cell of fore wing shorter than pterostigma; parastigma usually pale yellowish; vein r of fore wing vertical; middle tibia whitish sub-basally *P. (B.) masiana* Fahringer
- 2b. Marginal cell of fore wing about as long as pterostigma; parastigma dark brown; vein r of fore wing slightly reclivous; middle tibia yellowish sub-basally *P. (B.) graciloides* Achterberg.
- 3a. Fore tarsus long setose, several setae about as long as twice width of tarsal segments; length of fore wing about 5.5 mm, of body

about 7 mm; maximum width of head 0.8 times maximum width of mesoscutum *P. (B.) robusta* Zettel.
 3b. Fore tarsus normally setose, setae at most as long as width of tarsal segments; length of fore wing 2.5 mm or shorter, of body less than 4.5 mm; head wider than maximum width of mesoscutum..... *P. (B.) arabica* sp.nov.

Description:

Phanerotoma (Bracotritoma) arabica sp. nov., [holotype].

Female: Length of fore wing 2.5mm, of body 4.5mm.

Colour: Brownish-yellow; apex of antenna, pterostigma (but basal half pale) and apical one third of metasoma, tegulae, parastigma and apical margin of propodeum dark brown; metasomal tergite one and two, veins M+CU1, basal half of 1-1A, cu-a, apical half of 2-Cu1, basal half of 2-SR, 2M and m-cu of fore wing pale yellowish; wing membrane below pterostigma somewhat infuscated; remainder of veins largely brown; middle tibia whitish subbasally. Mesosoma and apical half of metasoma and of hind tibia, and a subbasal ring of hind tibia partly infuscated.

Head: Subapical antennal segments of female moderately robust (fig. 3) (apical segments broken); AOL:POL:OOL= 5:3:13 (fig. 2); frons and vertex granulate; length of eye in dorsal view 2.0-2.2 times temple (fig. 2); face granulate, about twice as wide as high; clypeus smooth and shiny; length of malar space 0.8 times basal width of mandible; inner tooth of mandible somewhat shorter than outer tooth and little narrower; head in frontal view about as wide as high.

Thorax: Mesosternum granulate as most of mesopleuron; propodeum reticulate-rugulose, without distinct strong carinae; mesoscutum very finely and densely granulate. Fore wing r 2.1-2.3 times vein 3-SR, vertical (fig. 1); 2- SR and SRI curved; marginal cell 2.2-2.4 times as wide as high; 1-R1 1.3-1.5 times as long as pterostigma; parastigma medium-sized, dark brown; 1-SR+M not dark brown, less than vein 2-CU1; maximum width of pterostigma about 0.7-0.9 times 3- SR. Middle tibia slender, with distinct blister.

Metasoma: Shape of metasoma oval and rather flate ((fig. 5)); first and second tergites finely longitudinally reticulate-rugulose, shiny, different from sculpture of third tergite, which is granulate-rugulose; third tergite of female distinctly emarginate, with protruding corners latero-apically (fig. 4), its medial length 1.2 times medial length of second tergite; ovipositor sheath not protruding beyond apex of metasoma.

Male: Unknown.

Distribution: Saudi Arabia: Asir region, Khamis Mushait.

Host: Unknown

Material examined. Holotype: Female (on card), 15.vii.2008, Jabel Al sodah, ABHA, Asir region, Saudi Arabia, coll. Hamed,(Malaise trap). **Paratypes:** 2 females (on card) with same data as holotype. **Other material:** 2 female 12.vii.2009, Khamis Mushait, Asir region, Saudi Arabia, coll. Hamed, (Malaise trap); 1 female 27. vi. 2008, Wadi Johan, Asir region, Saudi Arabia (Housed in Museum collection, Department of Biology, King Khalid University, Abha).(All the type material presently in the personal collection of author and will be deposited in BMNH, London).

Etymology: The species name is derived from its type locality.

DISCUSSION

P. (B.) arabica sp.nov. has the metasoma which is oval in shape dorsally, vein 1-M of forewing is dark brown; mesopleuron is granulate and vein r of forewing is comparatively shorter (Figure 1). *P. (B.) arabica* sp.nov has the resemblance from *P. (B.) robusta* Zettel. However, it can be easily separated: Fore tarsus is

normally setose, setae is as long as width of tarsal segments; length of forewing is 2.5 mm or shorter, of body less than 4.5 mm; head is wider than maximum width of mesoscutum. The new species is clearly separated from other Saudi Arabian species viz., *P. (B.) masiana* Fahringer and *P. (B.) graciloides* Achterberg in having: Maximum width of pterostigma more than 1.1 times length of vein 3-SR of fore wing; vein 1-SR of fore wing as long as pterostigma or distinctly shorter; veins 2-SR and SRI of fore wing (nearly) which is straight; middle tibia which is usually without distinct blister. The new species is also closely related to *P. (B.) ebneri* Fahringer from Sudan but *ebneri* has upper condyli of mandible above lower level of eyes, the antennal segments are more robust, length of eye in dorsal view is about 2.3 times that of temple, and length of fore wing is about 1.8 mm.

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