FIRST RECORD OF ASPICERA ABBREVIATA BELIZIN (HYMENOPTERA: FIGITIDAE: ASPICERINAE) FROM IRAN

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Abstract

The material of Aspicera collected from Iran has shown that Aspicera abbreviata Belizin 1952 is an aberrant form of A. tobiasi Belizin, 1961. Aspicera abbreviata is redescribed and A. tobiasi is synonymized with A. abbreviata. The morphological differences between this species and the other members of the genus are given, and its most important characters are illustrated. The male of A. abbreviata is described for the first time. This species has been recorded for the first time in Iran.

KEY WORDS: Figitidae, Aspicerinae, Aspicera abbreviata, male, female, Iran.

Introduction

The Aspicerinae, sometimes erroneously named “Aspiceratinae” (e.g. RONQUIST, 1995; ROS-FARRÉ et al., 2000), is a monophyletic subfamily of parasitoid wasps included in the Figitidae (Hymenoptera: Cynipoidea). The monophyly of the Aspicerinae is supported by several apomorphous morphological characters including the facial impression and the distinctly saddle-shaped third abdominal tergum (ROS-FARRÉ et al., 2000). The biology of the members of this subfamily is still poorly known. According to RONQUIST (1999) they are parasitoids of Dipteran predators (Syrphidae and Chamaemyiidae) of aphids. ROS-FARRÉ (2007), indicated the validity of eight genera within Aspicerinae including: Balha Cameron, 1883; Prosaspicera Kieffer, 1907; Aspicera Dalhomb, 1842; Paraspicera Dalhomb, 1842; Anacharoides Cameron, 1904; Omalaspis Giraud, 1860; Callaspidia Dalhomb, 1842; and Pujadella Ros-Farré, 2007. The morphological differences between
these genera are indicated in ROS-FARRÉ (2007). The genus Prosaspicera was revised by ROS-FARRÉ & PUJADE-VILLAR (2006). Anacharoides by BUFFINGTON & VAN NOORT (2009), Callaspidia by ROS-FARRÉ & PUJADE-VILLAR (2009) and Balna by ROS-FARRÉ & PUJADE-VILLAR (2010). In a few months the revisions of Omalaspis, Paraspicera and Aspicera will be finished (ROS-FARRÉ & PUJADE-VILLAR, in prep.).

Morphologically, the genus Aspicera is similar to Prosaspicera. They are easily recognisable and distinct from other Aspicerinae genera by the presence of a scutellar spine, which is usually long, slender and pointed. Aspicera can be distinguished from Prosaspicera according to ROS-FARRÉ & PUJADE-VILLAR (2006) by the absence of a vertical groove on the posterior area of the vertex and the absence of a strong continuous carina which results from the union of lateral frontal carina, occipital carina and lateral facial carina. Some species of the genus Paraspicera also have a long scutellar spine, but in these cases it is blunt and stout instead of pointed like the spine in Aspicera.

Until this work, Aspicera brevispina Kieffer, 1901 was the only species of this genus reported from Iran (BELIZIN, 1952); thus, A. abbreviata is the second record of Aspicera from Iran. Since its description, this is the third time that this species has been collected; until now it had been collected only in China and Kazakhstan.

Material and Methods

The type material of Aspicera abbreviata Belizin, 1952 and A. tobiasi Belizin, 1961 has been studied, as well as some specimens collected in Iran by N. KHAJEH. The material from Iran has been deposited in the JP-V collection (UB - Universitat de Barcelona, Barcelona, Spain).

The SEM images of the type material were obtained with the Leica Stereoscan S-360 (Cambridge Instruments) at a very low voltage (700-850 V) and without any coating, in order to guard the specimens from risk. The optical images were obtained from the Iranian material with a Canon camera PowerShot SX210 15.

The morphology of males and females of Aspicera is very similar except for sexual characters present on the metasoma and antennae. In the description, we presented a detail distinguishing characters of male for the antennal segments. The antennal formula includes: scape, pedicel and flagellomeres (length of each antennomere is indicated and the width between brackets). The morphological terminology used in this paper follows ROS-FARRÉ & PUJADE-VILLAR (2006).

Results & Discussion

Aspicera abbreviata Belizin, 1952
Aspicera abbreviata Belizin, 1952: 293.

Diagnosis

Aspicera abbreviata is easy to differentiate from all other species of Aspicera because the scutum and scutellum of this species are shiny, without microsculpture, sometimes with macrosculpture. Furthermore, A. abbreviata is characterized by having a scutellum concave after the scutellar foveae and never depressed on the central area; the scutellar spine is always blunt-pointed and wide with a median length from 1/3 to 1/2
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times the scutellar disc length; the interfoveal pits are very deep and the interfoveal carina is below the level of the scutellar disc.

Re-description (Fig. 1)

Length. Female 3.5-4.2 mm; male: 3.3-3.5 mm.


Head. Frons with many wrinkles but the space between them shiny, alutaceous. Lateral frontal carinae narrow and weak on dorsal half and curved near antenial foramina. Area between compound eye and lateral frontal carinae coriaceous with weak transversal carinae weaker in males. Genae in lateral view rounded, not expanded, shiny, with transversal carinae. Vertex not incised, rugose. Ocelli weakly prominent. Occiput shiny with strong and complete transversal carinae on ventral 2/3 and strong sinuate longitudinal carinae on dorsal 1/3 behind ocelli.


Mesosoma. Lateral surface of pronotum shiny, alutaceous, with weak transversal carinae. Subpronotial plate not projected, dorsal margin pubescent. Scutum shiny, with piliferous points, weakly transversally carinate and some punctate sculpture at lateral areas. Lateral line nearly complete, faint near anterior margin of scutum in some specimens. Antero- and median lines present. Notauli with some strong transversal carinae, shiny. Median mesoscutal furrow smooth, rarely with effaced dorsal margins; usually with some transversal carinae. Area between notauli not prominent when scutum is seen in lateral view. Parascutal sulcus ending near anterior end of notauli, shiny, pubescent on anterior half. Mesopleura with oblique carinae and weakly punctate on anterior half, smooth posteriorly. Scutellum 0.8-0.9 times scutum length, marginal. Scutellar foveae very big and quite deep, smooth or with some longitudinal carinae, scutellar pits deep. Interfoveal carina weak on dorsal surface of scutellar disc. Scutellar disc shiny, sometimes alutaceous near scutellar spine, with longitudinal sinuate carinae very few transversal carinae between them, convex, sloping towards apex of scutellar spine in lateral view. Scutellar spine 0.35-0.45 times scutellar disc length, wide, blunt or with a weak pointed, shiny, with some strong longitudinal carinae, straight in lateral view.

Wing. Wing membrane hyaline. Radial cell around 2.4-2.6 times longer than wide. Wing pubescence reduced. Marginal pubescence short, starting after R2. R1 long, R2 slightly curved.

Metasoma. Fourth metasomal tergum punctuated; usually this punctuation reaches the posterior margin of third dorsal tergum or there is a thin anterior strip without points.

Material studied

Type material of *Aspicera abbreviata*: (1♀). HOLOTYPE (ZIN), Dyn-Yuan-In, Alashan, China, 23.6.908, coll. O. Kozlov.

Type material of *Aspicera tobiasi*: (1♀). HOLOTYPE (ZIN), Zhezqazghan, Karaganda region, Kazakhstan, 25.6.958, coll. V. Tobias.

Additional material. IRAN: Zabol, *Medicago sativa*, 2010-02-28: 1♀, coll. N. Khajeh (Cod. 7); idem, 2010-03-10: 4♂, 1♀ (Cod. 8); 2010-02-27: 1♀ (Cod. 4); 2010-04-18: 1♂ (Cod. 16); 2010-02-27: 1♂ (Cod. 10); 2010-04-28: 1♀ (Cod. 1); 2010-05-06: 1♀ (Cod. 16); 2010-04-18: 1♂ (Cod. 16); 2010-03-08: 2♂, 1♀ (Cod. 19); 2010-04-04: 1♂, 1♀; 2010-03-06: 3♀.
Biology: Unknown.

Distribution: China, Kazakhstan and Iran (first record from this country is given here).
Comments

Aspicera abbreviata and A. tobiasi are the only species of Aspicera without microsculpture in the scutum and scutellum. Aspicera abbreviata differs from A. tobiasi in the number of flagellomeres in females, 12 in A. abbreviata and 11 in A. tobiasi (as the other species of Aspicera). In small specimens examined from Iran the scutum is weakly transversally carinate and punctuation of the fourth metasomal tergum does not reach the third metasomal tergum (this is the same morphology as in A. tobiasi); in big specimens the scutum is transversally carinated and punctuation of the fourth metasomal tergum reaches the margin of the third metasomal tergum (this is the same morphology as in A. abbreviata). A gradation of both characters has been observed. Thus, after examining the specimens collected in Iran, we conclude that both species are identical, and that having the antenna with 14 antennomeres is aberrant. For this reason we consider A. tobiasi as a new synonymy of A. abbreviata. The valid name according to the ZNC is the first described species (A. abbreviata) although this name corresponds to the aberrant form of the species.

Acknowledgements

We want to thank S. BELOKOYLSKIJ and O. KOVALEV from the Zoological Institute of the Russian Academy of Sciences (ZIN, Saint Petersburg, Russia) for the loan of the type material of Aspicera abbreviata and A. tobiasi used in this study. We also want to thank Miguel Angel ALONSO ZARAZAGA (CSIC, Madrid) for his comments concerning the nomenclature code.

References

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ПРВИ НАЛАЗ ASPICERA ABBREVIATA BELIZIN (HYMENOPTERA: FIGITIDAE: ASPICERINAE) У ИРАНУ

ЖУЛИ ПУЖАДЕ-ВИЛАР, ЖОРДИ ПАРЕТАС-МАРТИНЕЗ, ПАЛМИРА РОС-ФАРЕ, ЕХСАН РАКХШАНИ И НАХИД КХАЈЕХ

Извод


Received November 11th, 2010
Accepted December 6th, 2010