

## 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. tobiassi* Belizin, 1961. *Aspicera abbreviata* is redescribed and *A. tobiassi* 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 apomorphic 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: *Balna* Cameron, 1883; *Prosaspicera* Kieffer, 1907; *Aspicera* Dalhobom, 1842; *Paraspicera* Dalhobom, 1842; *Anacharoides* Cameron, 1904; *Omalaspis* Giraud, 1860; *Callaspidia* Dalhobom, 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.

*Aspicera tobiasi* Belizin, 1961: 156 *n. syn.*

### 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

times the scutellar disc length; the interfoveal pits are very deep and the interfoveal carina is below the level of the scutellar disc.

Re-descripton (Fig. 1)

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

Coloration. Head and metasoma black. Scape and pedicel dark brown to black, flagellomeres brown to light brown. Mesosoma ambarine to black; legs light brown, coxae darker. Wing venation brown. *Male*: usually darker, sometimes almost black.

Head. Frons with many wrinkles but the space between them shiny, alutaceous. Lateral frontal carinae narrow and weak on dorsal half and curved near antennal 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.

Antenna. Filiform. Antennal formula in female: 4(3.5): 2.5(2.5): 5(2.5): 4.5(2.5): 5(2.5): 5(2.5): 5(2.5): 5(2.5): 4.5(2.5): 4.5(2.5): 4.5(2.5): 4.5(2.5): 9(2.5). Male: 3(3): 2(2.5): 5(2.5): 4.5(2.5): 4.5(2.5): 4.5(2.5): 4.5(2.5): 4.5(2.5): 4(2.5): 4(2.5): 4(2.5): 4(2.5): 6.5(2.5).

Mesosoma. Lateral surface of pronotum shiny, alutaceous, with weak transversal carinae. Subpronotal 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. Anteroadmedian 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, marginate. 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), Zhezhqazghan, 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♀.

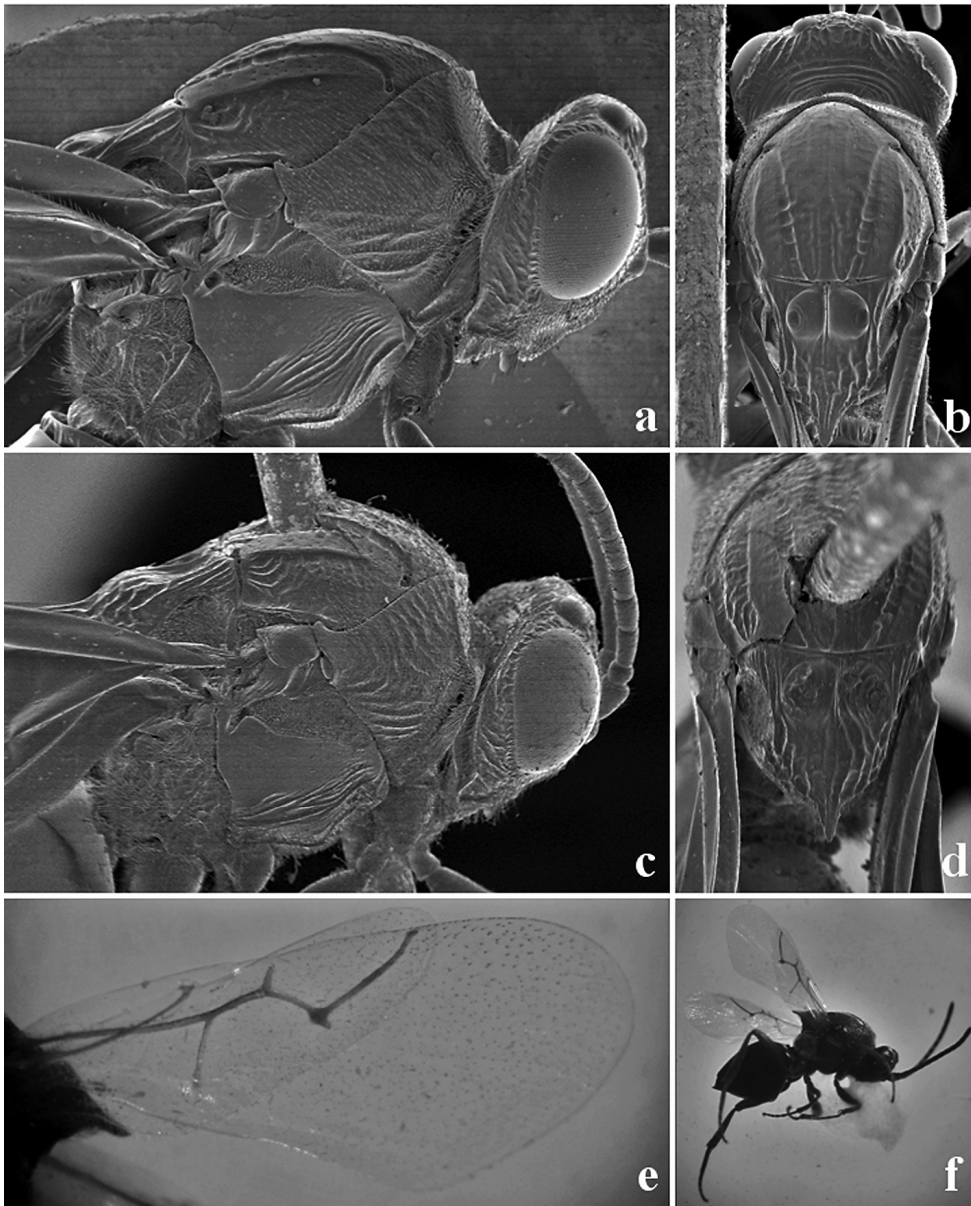


Figure 1. Lateral (a) and dorsal (b) view of *A. tobiasi* type, lateral (c) and dorsal (d) view of *A. abbreviata* type, forewing of *A. abbreviata* (= *tobiasi*) (e), female from the Iran material of *A. abbreviata* (= *tobiasi*) (f).

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.

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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

Aspicerinae су паразитоиди Diptera (Syrphidae и Chamaemyiidae) и биљних вашију (Aphididae). Обухватају осам родова. У Ирану је до сада била позната само једна врста рода *Aspicera* - *Aspicera brevispina* Kieffer (BELIZIN, 1952). По први пут се објављују подаци о распрострањењу врсте *Aspicera abbreviata* Belizin у Ирану. Према опису ове врсте до сад је била распрострањена само у Кини и Казахстану. Она је абератна врста са *A. tobiasi* Belizin 1961. *Aspicera abbreviata* је поново описана и *A. tobiasi* је синонимизирана са *A. abbreviata*. Написане су морфолошке разлике ових врста у оквиру рода, а најважнији карактери су илустровани. Први пут је описан мужјак *A. abbreviata*.

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