



## An annotated catalogue of the Iranian Alysiinae (Hymenoptera: Braconidae)

NEVEEN S. GADALLAH<sup>1</sup>, HASSAN GHAHARI<sup>2</sup>, FRANCISCO JAVIER PERIS-FELIPO<sup>3,5</sup>  
& MAXIMILIAN FISCHER<sup>4</sup>

<sup>1</sup>Entomology Department, Faculty of Science, Cairo University, Giza (Egypt). E-mail: [n\\_gadallah@yahoo.com](mailto:n_gadallah@yahoo.com)

<sup>2</sup>Department of Plant Protection, Yadegar - e-Imam Khomeini (RAH) Branch, Islamic Azad University, Tehran (Iran).  
E-mail: [hghahari@yahoo.com](mailto:hghahari@yahoo.com)

<sup>3</sup>Bleichstrasse 15, CH-4058 Basel (Switzerland). E-mail: [peris.felipo@gmail.com](mailto:peris.felipo@gmail.com); [francisco.peris@uv.es](mailto:francisco.peris@uv.es)

<sup>4</sup>Hofrat i.R. Univ.-Dozent, Naturhistorisches Museum, 2. Zoologische Abteilung, Burgring 7, A-1010 Wien (Austria).  
E-mail: [maximilian.fischer@chello.at](mailto:maximilian.fischer@chello.at)

<sup>5</sup>Corresponding author. E-mail: [peris.felipo@gmail.com](mailto:peris.felipo@gmail.com); [francisco.peris@uv.es](mailto:francisco.peris@uv.es)

### Abstract

In the present study, a catalogue of the Iranian Alysiinae (Hymenoptera: Braconidae) is given. It is based on a detailed study of all available published data. In total 78 species from 15 genera including *Alloea* Haliday, 1833 (1 species), *Angelovia* Zaykov, 1980 (1 species), *Aphaereta* Foerster, 1862 (2 species), *Aspilota* Foerster, 1862 (2 species), *Chorebus* Haliday, 1833 (42 species), *Coelinidea* Viereck, 1913 (2 species), *Coloneura* Foerster, 1862 (1 species), *Dacnusa* Haliday, 1833 (10 species), *Dinotrema* Foerster, 1862 (5 species), *Idiasta* Foerster, 1862 (1 species), *Orthostigma* Ratzeburg, 1844 (3 species), *Phaenocarpa* Foerster, 1862 (1 species), *Protodacnusa* Griffiths, 1964 (2 species), *Pseudopezomachus* Mantero, 1905 (2 species), and *Synaldis* Foerster, 1862 (3 species) are reported in this catalogue. Two species are new records for Iran: *Coelinidea elegans* (Curtis, 1829) and *Dacnusa (Pachysema) aterrima* Thomson, 1895. Also, a faunistic list with distribution data and host records is provided.

**Key words:** Hymenoptera, Braconidae, Alysiinae, faunistic list, new records, Iran

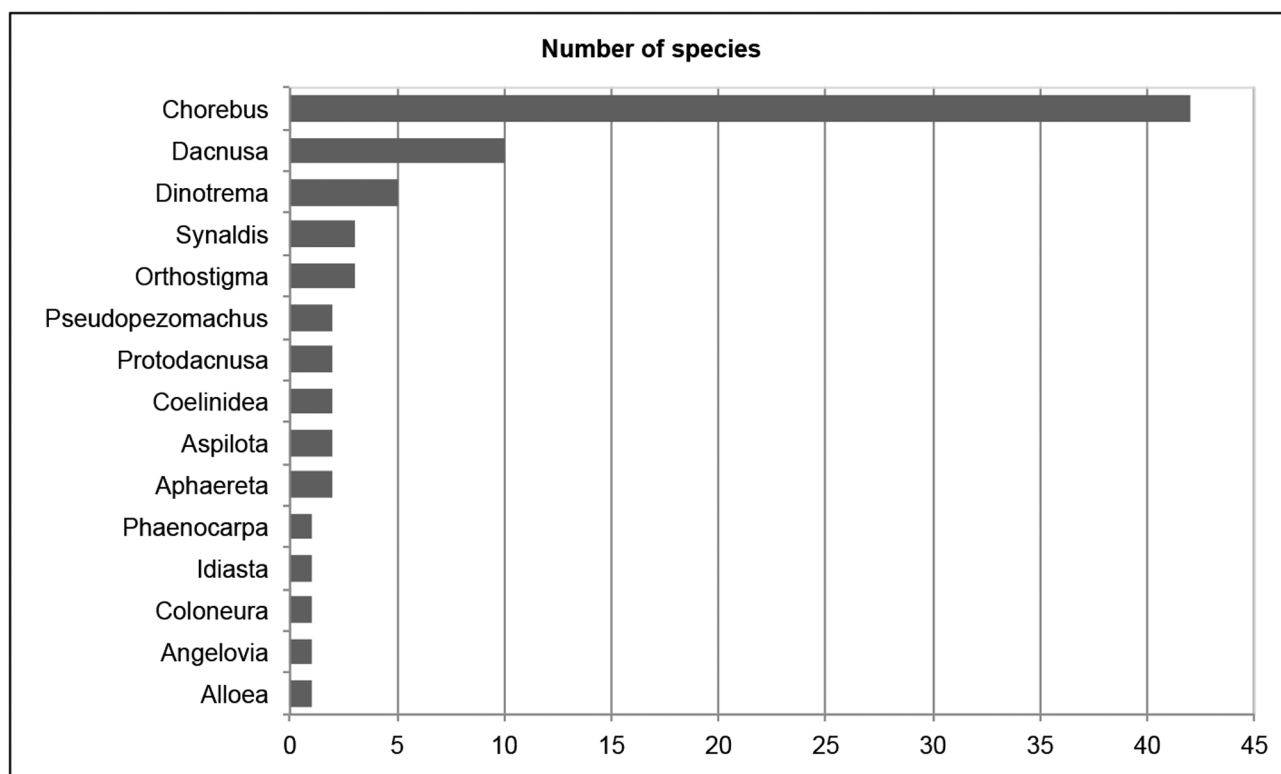
### Introduction

The subfamily Alysiinae is a monophyletic group on the basis of such distinctive apomorphic characters as the shape and position of the exodont mandibles, the total loss of the occipital and prepectal carinae, and koinobiont specialisation on Diptera-Cyclorrhapha, and this monophyly has been corroborated by molecular phylogenetic studies (Gimeno *et al.* 1997; Zaldivar-Riverón *et al.* 2006; Peris-Felipo *et al.* 2014a, b).

Alysiines are small braconid wasps that occur throughout the world (Fischer *et al.* 2011). About 2,000 species and 104 genera have been described worldwide within Alysiinae (Yu *et al.* 2012; Peris-Felipo *et al.* 2014b), which is divided into two large and polymorphic tribes, Alysiini and Dacnusini (Shenefelt 1974; Yu *et al.* 2012; Peris-Felipo *et al.* 2014a, b). Morphologically, these two tribes are mainly distinguished by the presence (Alysiini) or absence (Dacnusini) of the fore wing vein cuqu 2 (r-m or second radiomedial); accordingly Alysiini has three submarginal (radiomedial) cells while Dacnusini have only two (Peris-Felipo *et al.* 2014b).

Dacnusini members are parasitoids of leaf and stem mining dipterans, especially those of the family Agromyzidae; while those of the tribe Alysiini are recorded to attack a wide range of dipteran hosts from at least 20 families (more common Agromyzidae, Phoridae, Ephydriidae, Chloropidae, Calliphoridae and Anthomyiidae) (Belokobylskij 2005; Berry 2007; Fischer and Beyarslan 2012). They are larval-pupal endoparasitoids that finish their development and emerge from fly puparia (Belokobylskij and Tobias 1997; Belokobylskij 2005). So, they can play an important role in the regulation of such insect pests (Berry 2007).

Although several studies have been conducted on the Alysiinae of Iran (Lashkari Bod *et al.* 2010; Fischer *et al.* 2011; Sedighi *et al.* 2014; Khajeh *et al.* 2014; Hazini *et al.* 2015), these works have been insufficient to know the



**FIGURE 8.** Abundance of Iranian Alysiniinae genera.

In general, Iran is a large country with very different ecosystems, most of them poorly studied. We thus expect to find additional species of Alysiniinae. Further investigations both on the fauna and host associations of the Iranian Alysiniinae are necessary to provide the basis for the Discovery of new host-parasitoid relationships that may prove useful for biological control of the dipterous pests in agricultural and urban landscapes.

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