



## First record of the family Heloridae (Hymenoptera: Proctotrupoidea) from Iran, with description of a new species

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### Abstract

For the first time in more than 100 years, a new western Palaearctic species of Heloridae is described. Specimens of *Helorus alborzicus* Izadizadeh, van Achterberg & Talebi **sp. nov.** and *Helorus ruficornis* Förster were collected from the Alborz province of Iran. An illustrated identification key for Western Palaearctic Heloridae is provided.

**Key words:** Helorid wasps, taxonomy, identification key, Iran

### Introduction

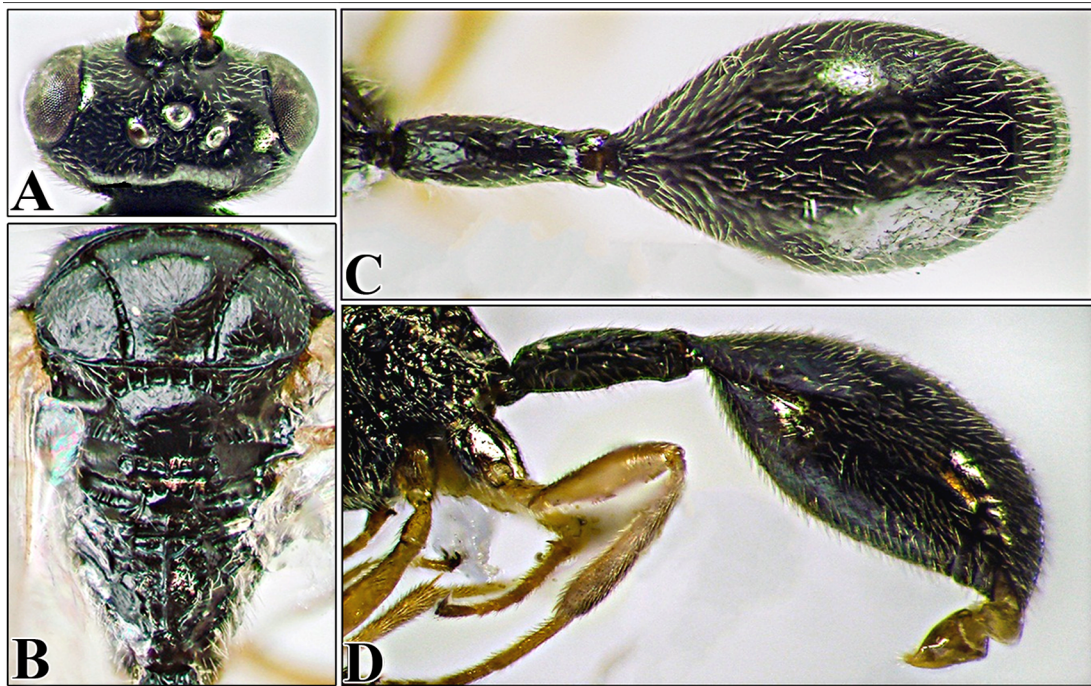
Members of the proctotrupoid family Heloridae Förster, 1856 develop as larval endoparasitoids in green lacewings larvae (Neuroptera: Chrysopidae) (van Achterberg 2006), emerging as adults from the host cocoon (Masner 1993). The single helorid genus, *Helorus* Latreille, 1802 is represented by 12 species in the Palaearctic, Nearctic, Neotropical, Indo-Australian and Afrotropical regions (van Achterberg 2006).

Heloridae can be readily characterized by the combination of the following characters: body 6–8 mm; antennae with 15 flagellomeres; first flagellomere ring-like and distinctly shorter than subsequent flagellomeres; antennal sockets situated near mid height of the head in frontal view; length of fore wing 2.5–5.2 mm; distinct pterostigma present; five closed wing cells present; subtriangular first medial cell (1m-cu) present; vein RS+M present; vein 1–RS absent; tarsal claws pectinate; first metasomal segment elongate; metasomal tergites 2–4 fused into a syntergite (Kusigemati 1987, Masner 1993).

In this paper, we describe a new species, *Helorus alborzicus* Izadizadeh, van Achterberg & Talebi **sp. nov.** from Iran and provide an identification key for West Palaearctic *Helorus*.

### Material and methods

Specimens of the present study were collected using Malaise traps in Mazandaran and Alborz provinces of Iran. The specimens were extracted from the traps and sorted weekly; the specimens were transferred to 70% ethanol and stored in the freezer. For the preparation of samples, they were transferred to a mixture of 40% xylene and 60% pure ethanol, after two days to amyl acetate for one day and finally placed on a piece of absorbing paper for drying (AXA method, van Achterberg 2009). Photographs were taken using an Olympus TM SZX9 stereomicroscope equipped with a BMZ-04-DZ digital imaging camera (Behin Pajouhesh Co., Iran). Image stacks were combined with Combine ZP1.0 (Hadley 2010). Morphological terminology follows Townes (1977) and van Achterberg



**FIGURE 4.** *Helorus ruficornis* Förster, 1856. A. Dorsal aspect of head, B. dorsal aspect of mesosoma, C. Dorsal aspect of metasoma, D. Lateral aspect of metasoma.

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