

# A contribution to the study of Megachilidae (Hymenoptera: Apoidea) from Golestan National Park, Northern Iran

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SAMIN, N., GHAHARI, H. & BAGRIACIK, N.: *A contribution to the study of Megachilidae (Hymenoptera: Apoidea) from Golestan National Park, Northern Iran.*

**Abstract:** The fauna of megachilid wasps (Hymenoptera, Megachilidae) of Golestan National Park (Northern Iran) is studied in this paper. In total 22 species of 9 genera, namely: *Anthidium* Fabricius, *Eoanthidium* Popov, *Heriades* Spinola, *Hoplitis* Klug, *Lithurgus* Berthold, *Megachile* Latreille, *Metadioxys* Popov, *Osmia* Panzer and *Stelis* Panzer were collected and identified.

**Keywords:** Hymenoptera, Apoidea, Megachilidae, fauna, Golestan National Park, Iran

## Introduction

Megachilid wasps (Hymenoptera: Megachilidae) with more than 4000 described species worldwide (MICHENER 2007) are found in a wide diversity of habitats on all continents except Antarctica, ranging from lowland tropical rain forests to deserts to alpine environments (LITMAN et al. 2011, GONZALEZ et al. 2012). All megachilid bees feed on nectar and pollen, but a few are cleptoparasites, feeding on pollen collected by other megachilid species. Parasitic species do not possess scopae. Megachilid bees are among the world's most efficient pollinators because of their energetic swimming-like motion in the reproductive structures of flowers, which moves pollen, as needed for pollination (HURD & MICHENER 1955, BOHART 1972, KRUNIC et al. 1995, ABROL 2011).

Iran has several noteworthy national parks, and Golestan National Park is the largest. It is situated in the highlands of the Caspian region and also in the steppes of Khorasan province of Northern Iran. The Golestan National Park was the first area in Iran to be designated as a national park. It is located at 37,16' to 37,36' north latitude and 55,44' to 56,17' east longitude and has an area of circa 91000 hectares. The terrain is mountainous with altitude varies between 380 and 2819 meters (HASSAN ZADEH et al. 1993). Although the animal fauna of Golestan National Park was studied well, the insects fauna was not studied so far, exceptn Ichneumonidae (GHAHARI & JUSSILA 2010 - Ichneumonidae; GHAHARI & FISCHER 2011 - Braconidae; GHAHARI 2013 - Miridae). In this aspect, the present study is an important contribution to the knowledge the entomofauna of Golestan National Park.

## Material and methods

The specimens were collected by sweeping net and Malaise traps. For identification of the species, the following keys were consulted: OSYCHNYUK et al. (1978), DORN & WEBER (1988), WARNCKE (1980, 1992), PASTEELS (1984), BANASZAK & ROMASENKO (1998), SCHEUCHL (2006), MICHENER (2007) and AMIET et al. (2004). Classification of the different taxa follows ROIG-ALSINA and MICHENER (1993) and MICHENER (2007).

## Results and discussion

Totally 22 species of Megachilidae from 9 genera were collected and identified from Golestan National Park. Among the 9 genera, Megachile Latreille with 8 collected species is more diverse than the other genera.

### Family **Megachilidae** Latreille, 1802

#### Genus **Anthidium** Fabricius, 1804

##### *Anthidium (Gulanthidium) anguliventre* Morawitz, 1888

Material examined: Golestan National Park, Soolegerd (1586 m), 2♀, 15 April 2012; Dasht-e-Mirza-Bayloo (1589 m), 2♀, 2♂, 27 June 2012.

Distribution in Iran: Fars (KHODAPARAST et al. 2011, KHODAPARAST & MONFARED 2012), Kuhguiloyeh & Boyerahmad (MONFARED et al. 2012).

Host plant: *Vitex agnus-castus* (Lamiaceae) (KHODAPARAST & MONFARED 2012).

##### *Anthidium latreillei* Lepeletier, 1841

Material examined: Golestan National Park, Cheshmeh-Khan (1547 m), 1♀, 15 April 2012.

Distribution in Iran: Azarbaijan (ESMAILI & RASTEGAR 1974).

#### Genus **Eoanthidium** Popov, 1950

##### *Eoanthidium (Eoanthidium) aff. judaeense* (Mavromoustakis, 1945)

Material examined: Golestan National Park, Ghareh-Ghashli (1817 m), 3♀, 1♂, 26 June 2012.

Distribution in Iran: Fars (KHODAPARAST et al. 2011; KHODAPARAST & MONFARED 2012).

Host plant: *Vitex agnus-castus* (Lamiaceae) (KHODAPARAST & MONFARED 2012).

#### Genus **Stelis** Panzer, 1806

##### *Stelis fossulata* Mocsáry, 1883

Material examined: Golestan National Park, Yakhtikalan (1887 m), 1♀, 26 June 2012.

Distribution in Iran: Iran (no locality cited) (UNGRICHT et al. 2008).

#### Genus **Metadioxys** Popov, 1947

##### *Metadioxys formosa* (Morawitz, 1875)

Material examined: Golestan National Park, Yakhtikalan (1887 m), 2♀, 26 June 2012; Soolegerd (1586 m), 1♀, 1♂, 15 April 2012.

Distribution in Iran: Fars (KHODAPARAST & MONFARED 2012).

Host plant: *Vitex agnus-castus* (Lamiaceae) (KHODAPARAST & MONFARED 2012).

Genus *Lithurgus* Berthold, 1827*Lithurgus cornutus fuscipennis* Lepeletier, 1841

Material examined: Golestan National Park, Almeh (1791 m), 2♀, 15 April 2012; Ghoosh-Cheshmeh (1593 m), 2♀, 2♂, 27 June 2012.

Distribution in Iran: Guilan (TAVAKKOLI et al. 2010).

Genus *Megachile* Latreille, 1802*Megachile (Creightonella) albisecta* (Klug, 1817)

Material examined: Golestan National Park, Ghareh-Ghashli (1817 m), 2♀, 1♂, 26 June 2012.

Distribution in Iran: Fars (KHODAPARAST &amp; MONFARED 2012), Sistan &amp; Baluchestan (SORAYA MOHTAT et al. 2012).

Host plant: *Vitex agnus-castus* (Lamiaceae) (KHODAPARAST & MONFARED 2012).*Megachile (Eutricharaea) apicalis* Spinola, 1808

Material examined: Golestan National Park, Dasht-e-Mirza-Bayloo (1589 m), 2♀, 27 June 2012; Ghareh-Ghashli (1817 m), 2♀, 26 June 2012; Almeh (1791 m), 3♀, 15 April 2012.

Distribution in Iran: Fars (KHODAPARAST et al. 2011, KHODAPARAST &amp; MONFARED 2012, KESHTKAR et al. 2012), Kuhguiloyeh &amp; Boyerahmad (MONFARED et al. 2012).

Host plant: *Medicago sativa* (Fabaceae), *Euphorbia* sp. (Euphorbiaceae), *Epilobium hirsutum* (Onagraceae) (KHODAPARAST & MONFARED 2012).*Megachile (Eutricaria) concinna* Smith, 1879

Material examined: Golestan National Park, Yakhtikalan (1887 m), 1♀, 1♂, 26 June 2012; Almeh (1791 m), 2♀, 1♂, 15 April 2012; Dasht-e-Mirza-Bayloo (1589 m), 2♀, 2♂, 27 June 2012.

Distribution in Iran: Alborz (TALEBI et al. 1995), Fars (ESMAILI &amp; RASTEGAR 1974, IZADI et al. 1998, 1999).

*Megachile (Eutricharaea) dorsalis* Pérez, 1879

Material examined: Golestan National Park, Dasht-e-Mirza-Bayloo (1589 m), 3♀, 1♂, 27 June 2012.

Distribution in Iran: Fars (KHODAPARAST &amp; MONFARED 2012).

Host plant: *Vitex agnus-castus* (Lamiaceae) (KHODAPARAST & MONFARED 2012).*Megachile (Eutricaria) flavipes* Spinola, 1838

Material examined: Golestan National Park, Cheshmeh-Khan (1547 m), 1♀, 1♂, 15 April 2012.

Distribution in Iran: Alborz (ESMAILI &amp; RASTEGAR 1974).

*Megachile (Eutricharaea) picicornis* Morawitz, 1853

Material examined: Golestan National Park, Ghareh-Ghashli (1817 m), 3♀, 26 June 2012.

Distribution in Iran: Fars (KHODAPARAST et al. 2011, KHODAPARAST &amp; MONFARED 2012), Kuhguiloyeh &amp; Boyerahmad (MONFARED et al. 2012).

Host plant: *Vitex agnus-castus* L. (Lamiaceae), *Brassica* sp. (Brassicaceae), *Astragalus* sp. (Fabaceae), *Centaurea* sp. and *Echinops* sp. (Asteraceae) (KHODAPARAST & MONFARED 2012).

*Megachile (Chalicodema) pyrenaica* (Lepeletier, 1841)

Material examined: Golestan National Park, Dasht-e-Mirza-Bayloo (1589 m), 2♂, 27 June 2012.

Distribution in Iran: Guilan (TAVAKKOLI et al. 2010).

*Megachile sericans* Fonscolombe, 1832

Material examined: Golestan National Park, Dasht-e-Mirza-Bayloo (1589 m), 2♀, 27 June 2012.

Distribution in Iran: Alborz (ESMAILI & RASTEGAR 1974).

Genus *Heriades* Spinola, 1808

*Heriades (Michenerella) hissaricus* Popov, 1955

Material examined: Golestan National Park, Almeh (1791 m), 2♂, 15 April 2012.

Distribution in Iran: Fars (KHODAPARAST et al. 2011, KHODAPARAST & MONFARED 2012).

Host plant: *Vitex agnus-castus* (Lamiaceae) (KHODAPARAST & MONFARED 2012).

Genus *Hoplitis* Klug, 1807

*Hoplitis (Anthocopa) acutellaris* (Morawitz, 1868)

Material examined: Golestan National Park, Cheshmeh-Khan (1547 m), 1♀, 1♂, 15 April 2012; Soolegerd (1586 m), 1♀, 15 April 2012.

Distribution in Iran: Guilan (TAVAKKOLI et al. 2010 as *Anthocopa acutellaris* (Morawitz, 1868)).

*Hoplitis mutica* (Warncke, 1991)

Material examined: Golestan National Park, Dasht-e-Mirza-Bayloo (1589 m), 2♀, 27 June 2012.

Distribution in Iran: Kuhguiloyeh & Boyerahmad (MONFARED et al. 2012).

*Hoplitis (Hoplitis) semilinguaria* Tkalcu, 1992

Material examined: Golestan National Park, Ghoosh-Cheshmeh (1593 m), 1♀, 27 June 2012.

Distribution in Iran: Khuzestan (UNGRICHT et al. 2008).

Genus *Osmia* Panzer, 1806

*Osmia aurulenta* (Panzer, 1799)

Material examined: Golestan National Park, Dasht-e-Mirza-Bayloo (1589 m), 1♀, 27 June 2012.

Distribution in Iran: Guilan (TAVAKKOLI et al. 2010).

*Osmia (Helicosmia) dives* Mocsáry, 1877

Material examined: Golestan National Park, Soolegerd (1586 m), 3♀, 15 April 2012; Ghoosh-Cheshmeh (1593 m), 1♀, 2♂, 27 June 2012.

Distribution in Iran: Fars (KHODAPARAST & MONFARED 2012, 2013), Kuhguiloyeh & Boyerahmad (MONFARED et al. 2012).

*Osmia (Alcidamea) iranica* Warncke, 1991

Material examined: Golestan National Park, Ghoosh-Cheshmeh (1593 m), 2♂, 27 June 2012.

Distribution in Iran: Fars (UNGRICHT et al. 2008).

*Osmia pedicornis* Cockerell, 1920

Material examined: Golestan National Park, Yakhtikalan (1887 m), 2♀, 1♂, 26 June 2012.

Distribution in Iran: Guilan (TAVAKKOLI et al. 2010).

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