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NEW DATA ON THE BEES OF THE GENUS *HYLAEUS* FABRICIUS, 1793 (HYMENOPTERA: COLLETIDAE) FROM THE FARS PROVINCE, IRAN

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Summary. An annotated list of seven species of the genus *Hylaeus* Fabricius, 1793 collected in the Fars Province of Iran is presented. Two species, *H. (Paraprosopis) gujaraticus* Nurse, 1903 and *H. (P.) taeniolatus* Förster, 1871 are new additions to the Iranian bee fauna. Furthermore, five species are new records for the Fars Province. With the current additions, the total number of *Hylaeus* recorded from the Fars Province and Iran is now increased to 17 and 66 species, respectively.

Key words: Apiformes, Malaise trap, fauna, new records, Palaearctic region.

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Резюме. Приведен аннотированный список 7 видов рода *Hylaeus* Fabricius, 1793, собранных в провинции Фарс (Иран). Впервые для Ирана приводятся два вида: *H. (Paraprosopis) gujaraticus* Nurse, 1903 и *H. (P.) taeniolatus* Förster, 1871. Пять видов являются новыми для провинции Фарс. Таким образом, список известных из Ирана и провинции Фарс видов увеличился до 66 и 17, соответственно.

INTRODUCTION

The genus *Hylaeus* Fabricius, 1793 (Hymenoptera, Colletidae) is potentially very large, species-rich, and is certainly a cosmopolitan genus in the subfamily Hylaeinae (Dathe, 2015). It currently contains more than 750 described species (Dathe & Proshchalykin, 2017, 2018; Proshchalykin & Dathe, 2021); while about 200 species are known to Palaearctic (Özbek & Dathe, 2020). Dathe (1980) reviewed all previous reports, described 9 species from Iran, and finally catalogued 35 species from the country. Later contributions increased the number of reported species from the country. Recently, Allahverdi *et al.* (2022) listed 63 species of *Hylaeus* from Iran. The aim of this paper is to add to our knowledge of the bee fauna from southern Iran.

MATERIAL AND METHODS

Specimens for the present study were collected using Malaise traps in different regions of the Fars Province in southern Iran and housed at the Insect Collection of Jahrom Branch, Islamic Azad University, Iran (JIAU). Classification and nomenclature of species followed those of Dathe & Proshchalykin (2018), Özbek & Dathe (2020), Proshchalykin & Dathe (2021), and Ascher & Pickering (2022). A total of seven *Hylaeus* species belonging to four subgenera were collected from different localities of Fars Province.

LIST OF THE SPECIES

Genus *Hylaeus* Fabricius, 1793

Subgenus *Dentigera* Popov, 1939

Hylaeus (Dentigera) imparilis Förster, 1871

MATERIAL EXAMINED. **Iran:** Fars, Fasa, 28°54'47"N, 53°39'25"E, 1348 m, Malaise trap in pomegranate orchard, *Punica granatum* L., 30.IV 2013, 1♀, leg. S. Azadi; Khonj, 27°53'31"N, 53°26'42"E, 527 m, Malaise trap in citrus garden, *Citrus* spp., 06.IV 2013, 1♀, leg. M. Atbaei; same locality and collector, 20.IV 2013, 1♂; Larestan, 27°38'N, 54°16'E, 820 m, *Eucalyptus* plantation, 05.V 2013, 1♀, leg. A. Falahatpisheh.

DISTRIBUTION IN IRAN. Mazandaran, Golestan (Dathe, 1980), Isfahan (Kholdarrahmi Ghahnavieh & Monfared, 2019), Fars (new record).

GENERAL DISTRIBUTION. West Palaearctic, Circum-Mediterranean, Asia Minor, Iran, Russia (Proshchalykin & Dathe, 2021).

Subgenus *Hylaeus* s. str.

Hylaeus (Hylaeus) leptcephalus (Morawitz, 1871)

MATERIAL EXAMINED. **Iran:** Fars, Khonj, 27°53'31"N, 53°26'42"E, 527 m, Malaise trap in citrus garden, *Citrus* spp., 20.VI 2013, 1♀, leg. M. Atbaei; Larestan, 27°38'N, 54°16'E, 820 m, Malaise trap in *Eucalyptus* plantation, 16.V 2013, 1♂, leg. A. Falahatpisheh.

DISTRIBUTION IN IRAN. Alborz, Hamadan, Kurdistan, Zanjan (Warncke, 1981; Allahverdi *et al.*, 2022), Isfahan (Khodarahmi Ghahnavieh & Monfared, 2019), Fars (new record).

GENERAL DISTRIBUTION. Palaearctic (Europe, Asia Minor, Caucasus, Iran, Central Asia) (Proshchalykin & Dathe, 2021).

***Hylaeus (Hylaeus) moricei* (Friese, 1898)**

MATERIAL EXAMINED. **Iran:** Fars, Kherameh, 29°30'51"N, 53°18'40"E, 1595 m, Malaise trap in pomegranate orchard, *Punica granatum* L. (Lythraceae), 12.VI 2013, 1♂, leg. E. Izadi; same locality and collector, 08.VI 2013, 1♀; Khonj, 27°53'31"N, 53°26'42"E, 527 m, Malaise trap in citrus garden, *Citrus* spp., 20.VI 2013, 1♀, leg. M. Atbaei; same locality and collector, 11.V 2013, 1♀, 2♂; same locality and collector, 06.IV 2013, 1♀.

DISTRIBUTION IN IRAN. Qazvin, Mazandaran (Dathe, 1980), Alborz, Hamadan (Warncke, 1981; Allahverdi *et al.*, 2022), Isfahan (Khodarahmi Ghahnavieh & Monfared, 2019), Fars (Proshchalykin & Dathe, 2016).

GENERAL DISTRIBUTION. North Africa, Europe, Asia Minor, Caucasus, Iran, Central Asia (Proshchalykin & Dathe, 2021).

Subgenus *Paraprosopis* Popov, 1939

***Hylaeus (Paraprosopis) gujaraticus* Nurse, 1903**

MATERIAL EXAMINED. **Iran:** Fars, Khonj, 27°53'31"N, 53°26'42"E, 527 m, Malaise trap in citrus garden, *Citrus* spp., 20.VI 2013, 2♂♂, leg. M. Atbaei.

DISTRIBUTION IN IRAN. Fars (new record).

GENERAL DISTRIBUTION. Middle East (Egypt, Israel, United Arab Emirates, Oman), India, Pakistan (Dathe, 2010).

***Hylaeus (Paraprosopis) taeniolatus* Förster, 1871**

MATERIAL EXAMINED. **Iran:** Fars, Larestan, 27°38'N, 54°16'E, 820 m, Malaise trap in *Eucalyptus* plantation, 05.V 2013, 1♀, 1♂, leg. A. Falahatpisheh.

DISTRIBUTION IN IRAN. Fars (new record).

GENERAL DISTRIBUTION. Western Palaearctic, mainly Mediterranean and Central Europe, Asia Minor (Özbek & Dathe, 2020).

***Hylaeus (Paraprosopis) soror* (Pérez, 1903)**

MATERIAL EXAMINED. **Iran:** Fars, Khonj, 27°53'31"N, 53°26'42"E, 527 m, Malaise trap in citrus garden, *Citrus* spp., 20.VI 2013, 2♀, leg. M. Atbaei; same locality and collector, 06.IV 2013, 1♀; same locality and collector, 15.III 2013, 1♀; Larestan, 27°38'N, 54°16'E, 820 m, Malaise trap in *Eucalyptus* plantation, 16.V 2013, 1♂, leg. A. Falahatpisheh; Fasa, 28°54'47"N, 53°39'25"E, 1348 m, Malaise trap in pomegranate orchard, *Punica granatum* L., 30.IV 2013, 1♀, leg. S. Azadi.

DISTRIBUTION IN IRAN. K. Sefid, SW-Iran (Warncke, 1972), information is unclear, possibly Kuh-e Safidar? (Dathe, 1980) [in Fars Province?], Hamadan (Ascher & Pickering, 2022: on map).

GENERAL DISTRIBUTION. West Palaearctic, Asia Minor (Proshchalykin & Dathe, 2021).

Subgenus *Prosopis* Fabricius, 1804

***Hylaeus (Prosopis) excelsus* (Alfken, 1931)**

MATERIAL EXAMINED. **Iran:** Fars, Khonj, 27°53'31"N, 53°26'42"E, 527 m, Malaise trap in citrus garden, *Citrus* spp., 20.VI 2013, 1♂, leg. M. Atbaei.

DISTRIBUTION IN IRAN. Golestan, East Azerbaijan (Dathe, 1980; Warncke, 1981), Mazandaran (Warncke, 1981; Allahverdi *et al.*, 2022), Isfahan (Khodarahmi Ghahnavieh & Monfared, 2019), Fars (new record).

GENERAL DISTRIBUTION. Asia Minor, Near East, Caucasus, Iran (Proshchalykin & Dathe, 2021).

DISCUSSION

Allahverdi *et al.* (2022) listed 63 species of *Hylaeus* from Iran and 10 from the Fars Province but *H. soror*, a species recorded from SW-Iran and Hamadan (Warncke, 1972; Ascher & Pickering, 2022) is absent in this checklist. With addition results of the present paper, the number of *Hylaeus* known from Fars Province and Iran is raised up to 17 and 66 species, respectively. So far, 86, 70 and 54 species of *Hylaeus* have been reported in Turkey, Central Asia and Caucasus, respectively (Dathe & Proshchalykin, 2018; Özbek & Dathe, 2020; Proshchalykin & Dathe, 2021). While comparing these numbers with that of species reported from Iran, which is a large country with various geographical regions and diverse climate ranges, and the fact that many parts of Iran have not been investigated, it is likely that additional species will be discovered.

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