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A study on the spider fauna (Arachnida, Araneae) associated with *Eucalyptus camadulensis* in some part of Iran, with three new records

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A b s t r a c t : Spiders have a wide insect host range and thus can act as biological control agents of insect pests in ecosystems. A faunistic survey of spiders associated with *Eucalyptus camadulensis* carried out at different locations of Golestan, Guilan, Mazandaran, Fars and Khuzestan provinces during 2005-2007. Among the 521 specimens collected, 27 species belonging to 22 genera and 14 families were recorded. *Araneus grossus* (C. L. KOCH, 1844), *Oecobius navus* BLACKWALL, 1859 and *Peucetia arabica* SIMON, 1882 are new records for Iran. The study was the first on spider fauna in Eucalypts trees in Iran.

K e y w o r d s : Araneae, spider fauna, *Eucalyptus camadulensi*, predator, Iran.

Introduction

Eucalyptus trees are evergreen and they belong to the *Eucalyptus* genus, in the Myrtaceae family. *Eucalyptus* genus is native to Australia and there are more than 700 *Eucalyptus* species. Although *Eucalyptus* is native to Australia but, many *Eucalyptus* species have been introduced to other parts of the world such as Iran. Currently, it has been noted that there are about fifty *Eucalyptus* species in the north and south of Iran. *Eucalyptus* trees have economic importance in Iran and they are planted as economic and ornamental trees in forest trial provenances. *Eucalyptus* trees are also cultivated to prevent desertification in some parts of Iran and they are one of the most important sources of fast-growing hardwood trees. *Eucalyptus* trees are also an important source of essential oils (Assareh & Sardabi, 2007).

More than 44,906 spider species have been described in 3935 recognized genera belonging to 114 families, most of which are restricted to tropical region (PLATNICK 2014). Many spider species are not yet known to science. According to recent evaluation, some arachnologists estimate that at least four times as many remain to be described (CODDINGTON & LEVI 1991). All spiders are predaceous and often insects are their primary prey (TURNBULL 1973). Ecological and faunistic studies on spiders indicated that they can regulate insect population in terrestrial ecosystems (LAUB & LUNA 1992; MALONEY et al. 2003).

A number of studies have been investigated on spiders in different trees (WISNIEWSKA & PROKOPY 1997; TAVARES 2007; OTTO & FLOREN 2007; BLICK 2011; TABRIZI et al. 2015). HETERICK et al. (2001) listed the spiders on several Western Australian eucalypts. BASHFORD & BOUTIN (2002) studied on spider fauna in *Eucalyptus obliqua* in southern Tasmania and recorded 74 species.

Among the neighboring countries, BOLU et al. (2008) worked the spider fauna of almond orchards (*Amygdalus* sp.) in Turkey and recorded 21 species belonging to 16 genera and 9 families. ÖZTÜRK et al. (2013) listed 59 species of spider belonging to 51 genera and 17 families in pomegranate (*Punica granatum* L.) and olive (*Olea europaea* L.) orchards in the Eastern Mediterranean of Turkey. BUKHARI et al. (2012) studied on spider fauna in citrus orchards in Pakistan and reported 11 genera and 7 families in this research.

The taxonomy and faunistics of spiders in Iran were poorly studied. Based on the species listed in ZAMANI et al. (2015), 518 species are represented in Iran belonging to 227 genera and 45 families. In recent years, considerable progress has been made in understanding the taxonomy of different family of spider in Iran (MIRSHAMSI KAKHKI 2005). Investigations on the fauna of spiders in different orchards have been worked in Iran (MOZAFFARIAN & FARZANEH 2000; MOZAFFARIAN 2002; MOZAFFARIAN & JAFARI NADOOSHAN 2006). GHAVAMI et al. (2007) reported 25 species and 9 genera of spider associated with olive orchards in northern Iran. Thirty four species of spiders have been reported from citrus orchards, of which four species of spiders were recorded for the first time from Iran (GHAVAMI & GHANNAD AMOOZ 2008).

The spider fauna of eucalypts of Iran has not been studied. The objective of this study as a part of our ongoing research on the spider's fauna of *Eucalyptus camadulensis* in some part of Iran because spiders may played an important role in stabilizing or regulating insect populations.

Material and Methods

In order to determine the spider fauna on *Eucalyptus camadulensis*, sampling was performed at different locations of Golestan, Guilan, Mazandaran, Fars, Khuzestan provinces during 2005-2007 (Fig 1). Specimens were collected in daytime from tree canopy and vegetation of selected eucalypts grooves and were taken to laboratory after labeling. Collected specimens were preserved in 70% ethanol alcohol. All specimens were labeled and deposited in the insect collection of the Research Institute of Forests and Rangeland, Tehran, Iran.

Results

A total of 27 species of spiders associated with *Eucalyptus camadulensis* belonging to 22 genera of 14 families were collected and identified during this study (Tab 1). They include three newly recorded species for the Iranian fauna, *Araneus grossus* (C. L. KOCH, 1844), *Oecobius navus* BLACKWALL, 1859 and *Peucetia arabica* SIMON, 1882, which are marked with an asterisk in the text.

Araneidae CLERCK, 1757***Araneus diadematus* (CLERCK, 1757)**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Khuzestan province: Dezful, Abbas abad, Bishah (32°16' N, 48°21' E, 90 m), 15.V.2007, leg. Farashani & Shoostari; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

General distribution: Holarctic (PLATNICK 2014).

Distribution of Iran: Ardebil (GHAHARI & MARUSIK 2009), Golestan (GHAVAMI et al. 2004; GHAVAMI 2007; GHAVAMI et al. 2007; GHAVAMI & GHANNAD AMOOZ 2008), Guilan (GHAVAMI et al. 2005; GHAVAMI 2006; GHAVAMI & GHANNAD AMOOZ 2008), Mazandaran (GHAVAMI et al. 2005; GHAVAMI 2006; GHAVAMI & GHANNAD AMOOZ 2008), Khuzestan (current study).

*** *Araneus grossus* (C. L. KOCH, 1844)**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Ramsar (36°54' N, 50°39' E, 23 m), 08.IV.2007, leg. Farashani & Zeinali; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

General distribution: Europe to Central Asia (PLATNICK 2014), new record from Iran.

Distribution of Iran: Guilan and Mazandaran provinces.

***Araneus* sp.**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Khuzestan province: Dezful, Abbas abad, Bishah (32°16' N, 48°21' E, 90 m), 15.V.2007, leg. Farashani & Shoostari; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

Distribution of Iran: Khuzestan, Guilan and Mazandaran.

***Araniella cucurbitina* (CLERCK, 1757)**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Khuzestan province: Shooshtar, Kooshak (32°08' N, 48°50' E, 63 m), 16.V.2007, leg. Farashani & Shoostari; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

General distribution: Palaearctic (PLATNICK 2014).

Distribution of Iran: Guilan (GHAVAMI 2007; GHAVAMI & GHANNAD AMOOZ 2008), Golestan (GHAVAMI et al. 2004; GHAVAMI 2006, 2007; GHAVAMI et al. 2007; GHAVAMI & GHANNAD AMOOZ 2008; KASHEFI et al. 2013), Mazandaran (ROEWER 1955; GHAVAMI 2006; GHAVAMI & GHANNAD AMOOZ 2008), Khuzestan (current study).

***Hypsosinga albivittata* (WESTRING, 1851)**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Khuzestan province: Dezful, Abbas abad, Bishah (32°16' N, 48°21' E, 90 m), 15.V.2007, leg. Farashani & Shoostari; Hamidiyeh, Karkheh (31°29' N, 48°25' E, 26 m), 14.V.2007, leg. Farashani & Shoostari; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

General distribution: North Africa, Palaearctic (PLATNICK 2014).

Distribution of Iran: Tehran (GHAVAMI 2006), Guilan, Mazandaran and Khuzestan (current study).

***Neoscona* sp.**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

Distribution of Iran: Guilan and Mazandaran provinces.

Eutichuridae LEHTINEN, 1967

***Cheiracanthium* sp.**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

Distribution of Iran: Guilan and Mazandaran provinces.

Gnaphosidae POCOCK, 1898

***Drassodes lapidosus* (WALCKENAER, 1802)**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 15.V.2007, leg. Farashani & Shoostari; Hamidiyeh, Karkheh (31°29' N, 48°25' E, 26 m), 14.V.2007, leg. Farashani & Shoostari; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

General distribution: Palaearctic (PLATNICK 2014).

Distribution of Iran: Guilan, East or West Azerbaijan, Kerman (ROEWER 1955), Mazandaran (ROEWER 1955; GHAHARI & TABARI 2012), Razavi Khorasan (MIRSHAMSI KAKHKI 2005; HOSSEINI et al. 2014), Golestan (KOMPOSCH 2002), Khuzestan (current study).

Oecobiidae BLACKWALL, 1862

*** *Oecobius navus* BLACKWALL, 1859**

Material examined: Golestan province: Airport road (36°55' N, 54°54' E, 153 m), 27.V.2006, leg. Farashani & Ahmadi; Gorgan, Saad abad (36°48' N, 54°22' E, 146 m), 03.VII.2005, leg. Farashani & Ahmadi; Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani.

General distribution: Cosmopolitan (PLATNICK 2014), new record from Iran.

Distribution of Iran: Golestan and Guilan (current study).

Oxyopidae THORELL, 1870***Oxyopus* sp.**

M a t e r i a l e x a m i n e d : Golestan province: Airport road (36°55' N, 54°54' E, 153 m), 27.V.2006, leg. Farashani & Ahmadi; Gorgan, Saad abad (36°48' N, 54°22' E, 146 m), 03.VII.2005, leg. Farashani & Ahmadi; Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 17.V.2006, leg. Farashani & Shoostari.

D i s t r i b u t i o n o f I r a n : Golestan, Guilan and Khuzestan provinces.

*** *Peucetia arabica* SIMON, 1882**

M a t e r i a l e x a m i n e d : Golestan province: Airport road (36°55' N, 54°54' E, 153 m), 27.V.2006, leg. Farashani & Ahmadi; Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani.

G e n e r a l d i s t r i b u t i o n : Greece, North and East Africa, Middle East (PLATNICK 2014); new record from Iran.

D i s t r i b u t i o n o f I r a n : Golestan and Guilan (current study).

Philodromidae THORELL, 1870***Philodromus* sp.**

M a t e r i a l e x a m i n e d : Golestan province: Airport road (36°55' N, 54°54' E, 153 m), 27.V.2006, leg. Farashani & Ahmadi; Gorgan, Saad abad (36°48' N, 54°22' E, 146 m), 03.VII.2005, leg. Farashani & Ahmadi; Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

D i s t r i b u t i o n o f I r a n : Golestan, Guilan and Mazandaran provinces.

Pholcidae C.L. KOCH, 1850***Pholcus* sp.**

M a t e r i a l e x a m i n e d : Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

D i s t r i b u t i o n o f I r a n : Guilan and Mazandaran provinces.

Salticidae BLACKWALL, 1841

***Euophrys* sp.**

M a t e r i a l e x a m i n e d : Khuzestan province: Dezful, Abbasmabad, Bisheh (32°16' N, 48°21' E, 90 m), 17.V.2006, leg. Farashani & Shoostari; Dezful, Safi abad (32°15' N, 48°24' E, 85 m), 28.XI.2007, leg. Farashani & Shoostari; Shooshtar, Kooshak (32°08' N, 48°50' E, 63 m), 16.V.2007, leg. Farashani & Shoostari.

D i s t r i b u t i o n o f I r a n : Khuzestan province.

***Phintella castriesiana* (GRUBE, 1861)**

Material examined: Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 17.V.2006, leg. Farashani & Shooshtari; Dezful, Safi abad (32°15' N, 48°24' E, 85 m), 28.XI.2007, leg. Farashani & Shooshtari; Shooshtar, Kooshak (32°08' N, 48°50' E, 63 m), 16.V.2007, leg. Farashani & Shooshtari.

General distribution: Palaearctic (PLATNICK 2014).

Distribution of Iran: Lorestan (LOGUNOV et al. 2001), Guilan, Mazandaran (MOZAFFARIAN et al. 2000; LOGUNOV et al. 2001), Khuzestan (current study).

***Salticus* sp.**

Material examined: Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 17.V.2006, leg. Farashani & Shooshtari; Dezful, Safi abad (32°15' N, 48°24' E, 85 m), 28.XI.2007, leg. Farashani & Shooshtari; Shooshtar, Kooshak (32°08' N, 48°50' E, 63 m), 16.V.2007, leg. Farashani & Shooshtari.

Distribution of Iran: Khuzestan province.

***Thyene* sp.**

Material examined: Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 17.V.2006, leg. Farashani & Shooshtari; Dezful, Safi abad (32°15' N, 48°24' E, 85 m), 28.XI.2007, leg. Farashani & Shooshtari; Shooshtar, Kooshak (32°08' N, 48°50' E, 63 m), 16.V.2007, leg. Farashani & Shooshtari.

Distribution of Iran: Khuzestan province.

Scytodidae BLACKWALL, 1864

***Scytodes thoracica* (LATREILLE, 1804)**

Material examined: Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 17.V.2006, leg. Farashani & Shooshtari; Dezful, Safi abad (32°15' N, 48°24' E, 85 m), 28.XI.2007, leg. Farashani & Shooshtari; Shooshtar, Kooshak (32°08' N, 48°50' E, 63 m), 16.V.2007, leg. Farashani & Shooshtari.

General distribution: Holarctic, Pacific Islands (PLATNICK 2014).

Distribution of Iran: Mazandaran, Gilan (ROEWER 1955); Golestan (GHAVAMI 2007; GHAVAMI et al. 2007; KASHEFI et al. 2013), Razavi Khorasan (MIRSHAMSI KAKHKI 2005), Zanjan (GHAVAMI et al. 2004; GHAVAMI et al. 2007), Khuzestan (current study).

***Scytodes* sp.**

Material examined: Khuzestan province: Dezful, Safi abad (32°15' N, 48°24' E, 85 m), 28.XI.2007, leg. Farashani & Shooshtari; Shooshtar, Kooshak (32°08' N, 48°50' E, 63 m), 16.V.2007, leg. Farashani & Shooshtari.

Distribution of Iran: Khuzestan province.

Sparassidae BERTKAU, 1872***Olios* sp.**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 15.V.2007, leg. Farashani & Shoostari; Hamidiyeh, Karkheh (31°29' N, 48°25' E, 26 m), 14.V.2007, leg. Farashani & Shoostari; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

Distribution of Iran: Khuzestan, Guilan and Mazandaran provinces.

Tetragnathidae MENGE, 1866***Tetragnatha montana* SIMON, 1874**

Material examined: Guilan province: Masal, Nehalestan-e-Shanderman (37°21' N, 49°07' E, 60 m), 02.VII.2006, leg. Farashani & Khanjani; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

General distribution: Palaearctic (PLATNICK 2014).

Distribution of Iran: Guilan (GHAVAMI & GHANNAD AMOOZ 2008), Golestan (GHAVAMI 2007; GHAVAMI et al. 2007), Mazandaran (GHAVAMI et al. 2004; GHAVAMI 2006), Razavi Khorasan (GHAHARI & MARUSIK 2009).

Theridiidae SUNDEVALL, 1833***Steatoda paykulliana* (WALCKENAER, 1806)**

Material examined: Fars province: Fasa, Gerebaygan (28°57' N, 53°38' E, 1373 m), 30.X.2005, leg. Farashani; Noorabad, Dehnow (30°18' N, 51°23' E, 802 m), 06.XII.2006, leg. Farashani; Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 17.V.2006, leg. Farashani & Shoostari; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

General distribution: Europe, Mediterranean to Central Asia (PLATNICK 2014).

Distribution of Iran: Ardebil (GHAVAMI et al. 2005), Golestan (GHAVAMI et al. 2005; GHAVAMI 2007; GHAVAMI & GHANNAD AMOOZ 2008; GHAHARI & MARUSIK 2009; KASHEFI et al. 2013), Ilam (MOZAFFARIAN et al. 2004); Mazandaran (GHAHARI & MARUSIK 2009; GHAHARI & TABARI 2012), Razavi Khorasan (MIRSHAMSI KAKHKI 2005, 2006), Fars, Semnan, Tehran (KOMPOSCH 2002), Khuzestan (current study).

***Steatoda triangulosa* (WALCKENAER, 1802)**

Material examined: Fars province: Fasa, Gerebaygan (28°57' N, 53°38' E, 1373 m), 30.X.2005, leg. Farashani; Noorabad, Dehnow (30°18' N, 51°23' E, 802 m), 06.XII.2006, leg. Farashani; Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 17.V.2006, leg. Farashani & Shoostari; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

General distribution: Cosmopolitan (PLATNICK 2014).

Distribution of Iran: Golestan (KASHEFI et al. 2013), Isfahan (GHAHARI & MARUSIK 2009), Fars, Khuzestan and Mazandaran (current study).

***Steatoda* sp.**

M a t e r i a l e x a m i n e d : Fars province: Fasa, Gerebaygan (28°57' N, 53°38' E, 1373 m), 30.X.2005, leg. Farashani; Noorabad, Dehnow (30°18' N, 51°23' E, 802 m), 06.XII.2006, leg. Farashani; Khuzestan province: Dezful, Abbas abad, Bisheh (32°16' N, 48°21' E, 90 m), 17.V.2006, leg. Farashani & Shoostari; Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

D i s t r i b u t i o n o f I r a n : Fars, Khuzestan and Mazandaran provinces.

Thomisidae SUNDEVALL, 1833***Misumenops* sp.**

M a t e r i a l e x a m i n e d : Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

D i s t r i b u t i o n o f I r a n : Mazandaran province.

***Thomisus* sp.**

M a t e r i a l e x a m i n e d : Khuzestan province: Dezful, Safi abad (32°15' N, 48°24' E, 85 m), 28.XI.2006, leg. Farashani & Shoostari; Ahvaz (31°19' N, 48°40' E, 21 m), 14.V.2006, leg. Farashani & Shoostari.

D i s t r i b u t i o n o f I r a n : Khuzestan province.

Titanoecidae LEHTINEN, 1967***Nurscia albomaculata* (LUCAS, 1846)**

M a t e r i a l e x a m i n e d : Mazandaran province: Noor, Chamestan (36°28' N, 52°07' E, 136 m), 29.V.2006, leg. Farashani & Zeinali.

G e n e r a l d i s t r i b u t i o n : Europe, Egypt to Central Asia (PLATNICK 2014).

D i s t r i b u t i o n o f I r a n : Tehran (MOZAFFARIAN & MARUSIK 2001; GHAVAMI 2006), Golestan (KASHEFI et al. 2013), Mazandaran (MOZAFFARIAN et al. 1998, 2000), Razavi Khorasan (NAMAGHI et al. 2014; HOSSEINI et al. 2014).

Discussion

According to our research and previous literatures 521 species of spider are known in Iran. Abundance and percentage of frequency of each species is given in Tab 1. In the five survey areas, 512 spiders were caught, distributed in 27 species from 14 different families. Khuzestan province showed the greatest number of individuals (n=168), including 32.25% of the total captured spiders, followed by Guilan province, with 152 individuals (29.17%). The lowest abundance of spiders was found in Fars province, where only 18 specimens (3.45%) were captured (Tab 1). High temperature and relative humidity maybe favored spider population.

Philodromus sp. was the most abundant species (7.29%), followed by *Olios* sp. (6.53%), *Araneus diadematus* and *Araneus* sp. (6.33%). The most number of species spider collected from eucalypts belonging to Araneidae and Theridiidae families (HETERICK et al. 2001; BASHFORD & BOUTIN 2002, respectively). In this study, among the families, Araneidae contained the highest number of species collected (6 species). According to

BOLU et al. (2008), two families Philodromidae and Salticidae were 50% of the total captured almond orchards of spiders, while ÖZTÜRK et al. (2013) reported Eutichuridae as the highest number of individuals collected (39.80%) on pomegranate and olive orchards.

Only four among 14 families of spider found one province (Salticidae, Scytodidae, Thomisidae, Titanocidae families). The spider fauna associated with eucalypts in Fars province was strictly restricted to family of Theridiidae. Two families, Salticidae and Scytodidae, are reported only from Khuzestan province.

This research is the first on eucalypts trees in Iran. The results may be useful for future biological and ecological studies. Iran is a large country with various climates and further studies aiming to complete our knowledge on Iranian spiders should focus on collecting in little known region and filling the large gaps in our knowledge regarding the diversity of spiders.

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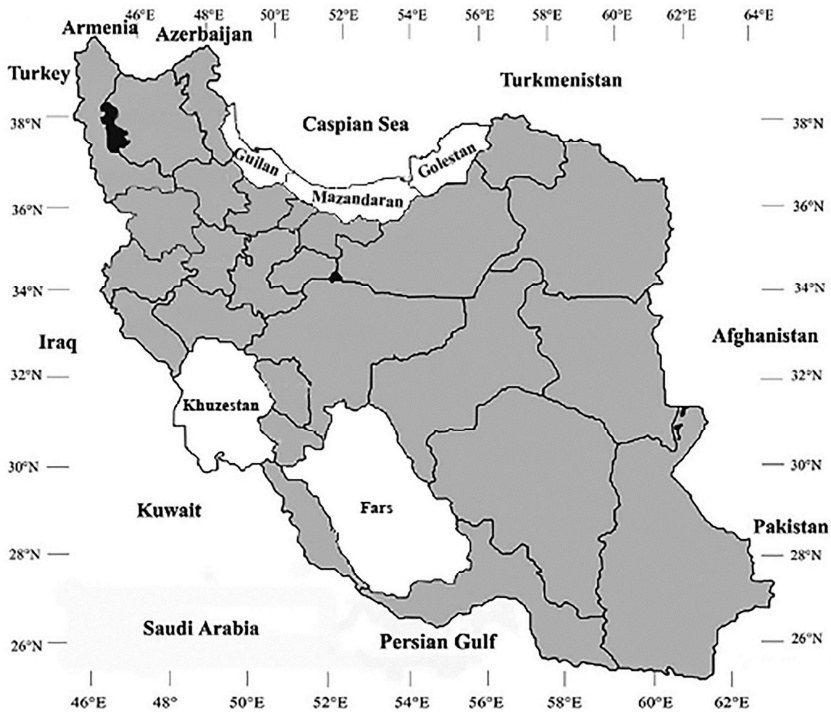


Fig. 1: Map of Iran: Golestan, Guilan, Mazandaran, Fars and Khuzestan provinces, where the specimens have been collected.

Tab. 1: Species number and abundance of the spiders associated with *Eucalyptus camadulensis* in five provinces of Iran (* new record for Iran).

Family	Spider species	Number of species in different provinces					Total	Frequency (%)
		Go.	Gu.	M.	F.	K.		
Araneidae	<i>Araneus diadematus</i>	-	15	11	-	7	33	6.33
	<i>Araneus grossus</i> *	-	17	12	-	-	29	5.57
	<i>Araneus</i> sp.	-	12	15	-	6	33	6.33
	<i>Araniella cucurbitina</i>	-	9	5	-	3	17	3.26
	<i>Hypsosinga albovittata</i>	-	9	6	-	7	22	4.22
	<i>Neoscona</i> sp.	-	5	4	-	-	9	1.73
Eutichuridae	<i>Cheiracanthium</i> sp.	-	17	10	-	-	27	5.18
Gnaphosidae	<i>Drassodes lapidosus</i>	-	10	5	-	7	22	4.22
Oecobiidae	<i>Oecobius navus</i> *	8	6	-	-	-	14	2.69
Oxyopidae	<i>Oxyopus</i> sp.	3	10	-	-	4	17	3.26
	<i>Peucetia arabica</i> *	6	7	-	-	-	13	2.50
Philodromidae	<i>Philodromus</i> sp.	15	12	11	-	-	38	7.29
Pholcidae	<i>Pholcus</i> sp.	-	5	4	-	-	9	1.73
Salticidae	<i>Euophrys</i> sp.	-	-	-	-	16	16	3.07
	<i>Phintella castrisiana</i>	-	-	-	-	17	17	3.26
	<i>Salticus</i> sp.	-	-	-	-	17	17	3.26
	<i>Thyene</i> sp.	-	-	-	-	15	15	2.88
Scytodidae	<i>Scytodes thoracica</i>	-	-	-	-	14	14	2.69
	<i>Scytodes</i> sp.	-	-	-	-	8	8	1.54
Sparassidae	<i>Olios</i> sp.	-	13	7	-	14	34	6.53
Tetragnathidae	<i>Tetragnatha montana</i>	-	5	9	-	-	14	2.69
Theridiidae	<i>Steatoda paykulliana</i>	-	-	11	8	7	26	4.99
	<i>Steatoda triangulosa</i>	-	-	15	7	10	32	6.14
	<i>Steatoda</i> sp.	-	-	9	3	5	17	3.26
Thomisidae	<i>Misumenops</i> sp.	-	-	8	-	-	8	1.54
	<i>Thomisus</i> sp.	-	-	-	-	11	11	2.11
Titanoecidae	<i>Nurscia albomaculata</i>	-	-	9	-	-	9	1.73
Total		32	152	151	18	168	521	~100
Frequency (%)		6.14	29.17	28.98	3.45	32.25	~100	-
Number of species		4	15	17	3	17	27	-

Go.: Golestan, Gu.: Guilan, M.: Mazandaran, F.: Fars, K.: Khuzestan.

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