

## The Crab Spiders (Araneae, Thomisidae) of Uludağ Mountain

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### ABSTRACT

The crab spiders, Family Thomisidae, were collected between the years of 2006-2008 from the Uludağ Mountain, North-West Turkey. A total of 72 adult specimens belong to Thomisidae family were examined and identified. The Thomisidae family was represented by 15 species in 8 genera. *Synema globosum* (Fabricius, 1775) and *Thomisus onustus* Walckenaer, 1805 were the most dominant species among collected thomisids.

**Key Words:** Araneae, Thomisidae, Bursa, Turkey, Uludağ Mountain.

### INTRODUCTION

Typical thomisid spiders are commonly called crab-spiders as they extend their legs in a crab-like fashion and are able to move forwards, backwards as well as sideways (Levy 1985). They commonly inhabit the flowers of the grasses and shrubs and the body coloration can adapt its living environment (Yang et al. 2005). Crab spiders do not spin webs to trap prey, but hunt on the open ground or on vegetation or flowers.

The Thomisidae is one of the largest spider families including 2093 species in 173 genera in the world (Platnick 2009). Of these, 79 species in 14 genera are distributed in Turkey (Topçu et al. 2005, Bayram et al. 2008, Demir 2008). Eight species of Thomisids are endemic for Turkey and most of which are known from a single or just a few localities.

Some thomisid spider records from Uludağ area can be found in the papers of Karol (1966, 1967), but there is no scientific report on the crab-spider fauna of the region. The aim of this study is to determine the crab spider fauna of Uludağ Mountain (Bursa).

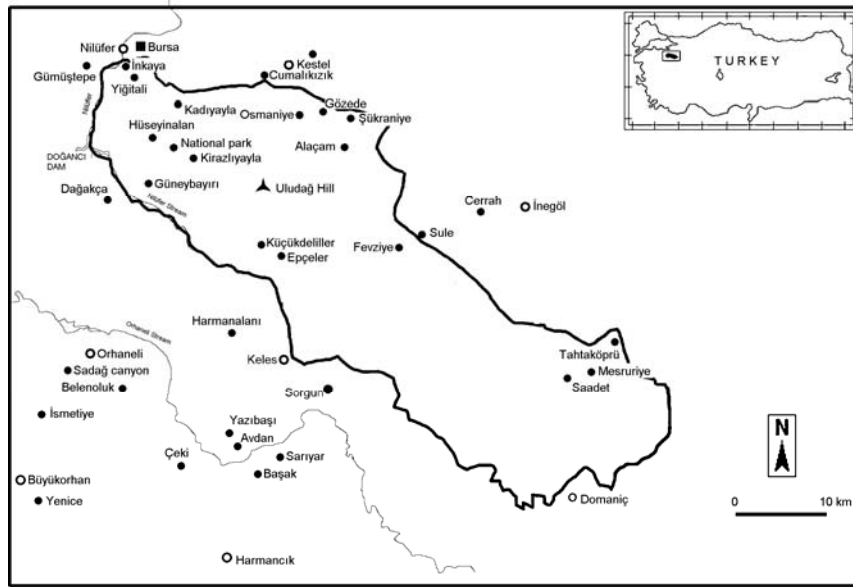
#### *Study Area*

Uludağ is the highest mountain in the Marmara region. The range of Uludağ in the northwest-southeast direction, extending the length of 40 km and width is 15-20 km. It has a stately appearance and bulk of the mountain slopes gradually to Bursa, south part is straight and Orhaneli is more upright. The highest point of Uludağ is Uludağ Hill (2,543 m) and there are some plateaus (Saralan, Kirazlıyayla and Kadiyayla) in the northern side of the mountain (Figure 1).

The climate of the mountain changes from the base to top, whereas on lower slopes which are face to Bursa city was a subtype of Mediterranean climate, on upper parts of Uludağ the climate is very cold and icy (Akman 1990). Due to these changes in the climate and its geomorphologic structure, six vegetation belts can be distinguished in the mount. General vegetation shows the change from Mediterranean to Euro-Siberian and Alpine type. This change can be seen very clearly step by step from bottom to top in the northern side (Kaynak et al. 2005, Güleriyüz 2000).

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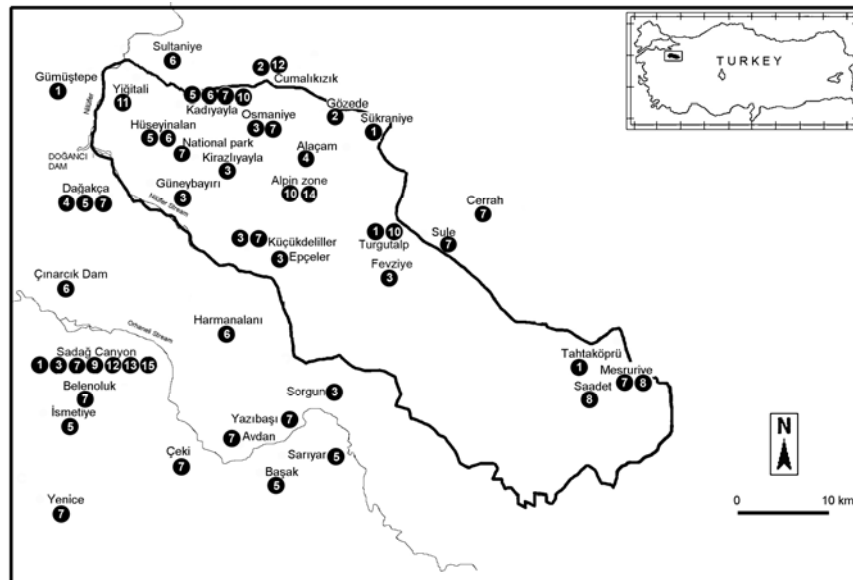
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**Figure 1.** The localities from which spider specimens were collected in Uludağ Mountain.

## MATERIALS AND METHODS

The specimens were collected from 36 localities of Uludağ mountain area in the spring and summer months of 2006-2008. They were collected under the stones, ground levels and on the plants by hand sampling, aspirator, sweeping and beating bushes and trees. In this study, only adult spiders (38♂♂, 34♀♀) were identified, and specimens were preserved in 5% glycerin alcohol and deposited in the Department of Biology, Zoology Museum, Uludağ University, Bursa, Turkey. The localities where the spiders have been collected are shown in Figure 1 and the list of localities with altitudes is given in Table 1. Also, the distribution of each species in study area is given in Figure 2.



*Heriaeus simoni* (1), *Heriaeus spinipalpus* (2), *Misumena vatia* (3), *Ozyptila praticola* (4), *Runcinia grammica* (5), *Synema globosum* (6), *Thomisus onustus* (7), *Tmarus stellio* (8), *Xysticus abditus* (9), *Xysticus cristatus* (10), *Xysticus kochi* (11), *Xysticus laetus* (12), *Xysticus luctuosus* (13), *Xysticus ninnii* (14), *Xysticus tristrami* (15)

**Figure 2.** Distribution map of determined Thomisid species in the study area.

**Table 1.** The list of localities where the spiders have been collected in the study area.

No	Locality	Town	Altitudes
1	Alaçam	Kestel	770 m
2	Alpin zone	Uludağ	2200 m
3	Avdan	Keles	620 m
4	Başak	Keles	970 m
5	Belenoluk	Orhaneli	770 m
6	Cerrah	İnegöl	300 m
7	Cumalıkızık	Yıldırım	272 m
8	Çeki	Orhaneli	840 m
9	Çınarcık dam	Orhaneli	240 m
10	Dağakça	Osmangazi	485 m
11	Epçeler	Keles	1300 m
12	Fevziye	İnegöl	790 m
13	Gözede	Kestel	696 m
14	Gümüštepe	Nilüfer	327 m
15	Güneybayırı	Osmangazi	800 m
16	Harmanalan	Keles	1120 m
17	Hüseyinalan	Osmangazi	1080 m
18	İsmetiye	Büyükorhan	760 m
19	Kadıyayla	Uludağ	1252 m
20	Kirazlıyayla	Uludağ	1505 m
21	Küçükdeliller	Osmangazi	1050 m
22	Mesruriye	İnegöl	660 m
23	Millipark	Uludağ	860 m
24	Osmaniye	Kestel	520 m
25	Saadet	İnegöl	590 m
26	Sadağ Canyon	Orhaneli	480 m
27	Sarıyar	Keles	1100 m
28	Sorgun	Keles	1110 m
29	Sule	İnegöl	650 m
30	Sultaniye	Osmangazi	835 m
31	Şükraniye	Kestel	550 m
32	Tahtaköprü	İnegöl	490 m
33	Turgutalp	İnegöl	650 m
34	Yazıbaşı	Keles	660 m
35	Yenice	Büyükorhan	350 m
36	Yiğitali	Osmangazi	660 m

The spider specimens were identified according to Levy (1985), Marusik and Logunov (1990), Heimer and Nentwig (1991), Logunov (1994), Marusik and Logunov (1995), Utotchin and Savelyeva (1995), Wunderlich (1995), Roberts (1996), Lehtinen (2000), Marusik and Logunov (2001), Jantscher (2001), Logunov et al. (2002), Nentwig et al. (2003), Marusik et al. (2004), Topçu and Demir (2004), Guseinov (2006), Demir et al. (2006), Logunov (2006), Logunov and Demir (2006), Logunov et al. (2006), Demir et al. (2007a, b), and Demir et al. (2008a, b, c). The taxonomy and world distribution follow Platnick (2009) in the text.

## RESULTS

In this study, crab-spiders were collected between 2006 and 2008 from Uludağ Mountain. A total of 15 crab spider species in 8 genera were identified from Uludağ.

These species are as follow:

**FAMILY THOMISIDAE** Sundevall, 1833  
**Genus *Heriaeus*** Simon, 1875  
***Heriaeus simoni*** Kulczyński, 1903

**Specimens examined:** Şükranıye, 16.07.2006, 1♂; Gümüştepe, 10.05.2007, 1♂; Tahtaköprü, 02.07.2007, 1♂; Sadağı Canyon, 02.06.2008, 1♂; Turgutalp, 13.07.2008, 1♂.

**World Distribution:** Palearctic.

***Heriaeus spinipalpus*** Loerbroks, 1983

**Specimens examined:** Cumalıkızık, 11.07.2006, 1♀; Gözede, 08.07.2007, 1♀.

**World Distribution:** Eastern Mediterranean.

**Genus *Misumena*** Latreille, 1804

***Misumena vatia*** (Clerck, 1757)

**Specimens examined:** around Güneybayırı, 18.07.2006, 1♀; Sorgun, 18.07.2006, 1♀; Osmaniye, 08.07.2007, 1♂; Epçeler, 07.08.2007, 1♀; around Küçükdeliller, 07.08.2007, 1♀; Sadağı Canyon, 02.06.2008, 1♂; Kirazlıyayla, 06.07.2008, 1♀; Fevziye, 13.07.2008, 1♂.

**World Distribution:** Holarctic.

**Genus *Ozyptila*** Simon, 1864

***Ozyptila praticola*** (C. L. Koch, 1837)

**Specimens examined:** Alaçam, 17.09.2006, 1♀; Dağakça, 07.05.2007, 1♀.

**World Distribution:** Holarctic.

**Genus *Runcinia*** Simon, 1875

***Runcinia grammica*** (C. L. Koch, 1837)

**Specimens examined:** Uludağ, 2006, 1♀; Kadiyayla, 20.06.2007, 1♀, 1♂; Kadiyayla, 15.07.2007, 1♂; İsmetiye, 02.08.2007, 1♀; Sarıyar, 07.08.2007, 1♀; Başak, 07.08.2007, 1♀; around Dağakça, 31.08.2007, 1♀; Hüseyinalan, 29.07.2008, 1♀.

**World Distribution:** Palearctic, St. Helena, South Africa.

**Genus *Synema*** Simon, 1864

***Synema globosum*** (Fabricius, 1775)

**Specimens examined:** Sultaniye, 03.06.2006, 1♂; Harmanalanı, 18.07.2006, 1♂; 14 km to Çınarcık dam, 13.07.2006, 1♂; Kadiyayla, 23.07.2006, 1♀, 2♂♂; Kadiyayla, 27.07.2006, 1♂; Kadiyayla, 20.06.2007, 2♂♂; Hüseyinalan, 27.06.2007, 1♀; Kadiyayla, 15.07.2007, 3♀♀, 1♂.

**World Distribution:** Palearctic.

**Genus *Thomisus*** Walckenaer, 1805

***Thomisus onustus*** Walckenaer, 1805

**Specimens examined:** Osmaniye, 08.07.2007, 1♂; Kadiyayla, 15.07.2007, 2♂♂; Belenoluk, 31.07.2007, 1♀; Yenice, 02.08.2007, 1♂; Çeki, 02.08.2007, 1♀; Yazıbaşı, 07.08.2007, 1♂; Avdan, 07.08.2007, 1♂; Küçükdeliller, 07.08.2007, 1♂; around Dağakça, 31.08.2007, 1♂, 1♀; Sadağı Canyon, 02.06.2008, 1♀; Mesruriye, 02.07.2008, 1♂; Cerrah, 13.07.2008, 1♀; Sule, 13.07.2008, 1♂; 5 km to Millipark, 29.07.2008, 1♂.

**World Distribution:** Palearctic.

**Genus *Tmarus*** Simon, 1875

***Tmarus stellio*** Simon, 1875

**Specimens examined:** Saadet, 02.07.2007, 2♂♂; Mesruriye, 02.07.2007, 1♂.

**World Distribution:** Palearctic.

**Genus *Xysticus*** C. L. Koch, 1835

***Xysticus abditus*** Logunov, 2006

**Specimens examined:** Sadağı Canyon, 08.03.2007, 1♂.

**World Distribution:** Bulgaria, Turkey.

***Xysticus cristatus*** (Clerck, 1757)

**Specimens examined:** Alpin zone, 08.07.2006, 1♀; Kadiyayla, 23.07.2006, 1♀; Turgutalp, 13.07.2006, 1♀.

**World Distribution:** Palearctic.

*Xysticus kochi* Thorell, 1872

**Specimens examined:** Yiğitalı, 23.04.2006, 2♂♂, 1♀.

**World Distribution:** Europe, Mediterranean to Central Asia.

*Xysticus laetus* Thorell, 1875

**Specimens examined:** Cumalıkızık, 11.07.2006, 1♀; Sadağı Canyon, 08.03.2007, 1♀.

**World Distribution:** Italy to Central Asia.

*Xysticus luctuosus* (Blackwall, 1836)

**Specimens examined:** Sadağı Canyon, 08.03.2007, 1♂.

**World Distribution:** Holarctic.

*Xysticus ninnii* Thorell, 1872

**Specimens examined:** Alpin zone, 08.07.2006, 1♂; Alpin zone, 21.06.2008, 1♀.

**World Distribution:** Palearctic.

*Xysticus tristrami* (O. P.-Cambridge, 1872)

**Specimens examined:** Sadağı canyon, 08.03.2007, 1♀.

**World Distribution:** Saudi Arabia to Central Asia.

## DISCUSSION

The entire spider fauna of the Uludağ Mountain region has not been examined in detail. The authors have been studying on the spider fauna of this region in recent years. This region is of great significance in terms of faunistical viewpoint because of the geographical and zoogeographical features of the mountain. Up to now, very few spider species of the family Thomisidae have been recorded from the Uludağ Mountain region.

In this study, a total of 72 adult crab-spider specimens belonging to 15 species in 8 genera were collected. *Synema globosum* (Fabricius, 1775) and *Thomisus onustus* Walckenaer, 1805 are the most dominant species among thomisids. *Xysticus abditus* Logunov, 2006, *Xysticus tristrami* (O. P.-Cambridge, 1872) and *Xysticus luctuosus* (Blackwall, 1836) are rare spiders.

The zoogeographic character of the Thomisidae family of the Uludağ Mountain is determined mainly by the Palearctic species (46.6%), followed by Holarctic (20%) species.

One aspect of the importance of this study lies in the discovery of *Xysticus abditus* Logunov, 2006 in the study area. This species is very similar to *X. kempeleni* Thorell, 1872 and *X. laetus* Thorell, 1875, but differs by the position of the tegular ridge (Logunov 2006). The species is known from Bulgaria and Turkey (Logunov 2006). The holotype of this species was collected from Niğde (Turkey) and paratypes were collected from Bulgaria. According to the present data, this species is known only from two localities until now. In the present study, a new locality was added to the currently known distribution range of *Xysticus abditus* Logunov, 2006. This finding indicates that the distribution range of this species is more widespread in Turkey.

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