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Spider (Ordo: Araneae) Diversity on Harbaceous Plants in Çorum province of Turkey

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Abstract

In this study, spider populations that spread on herbaceous plants or its areas of Çorum province were investigated. The samples were collected by sweeping on annual or perennial plants (especially Astaracea) between 2015 and 2018. In addition, the samples on the ground were caught by hand, with an aspiratory. 36 species in 28 genera belonging to 16 families were diagnosed. These; *Uloborus walckenaerius* Latreille, 1806, *Heliophanus lineiventris* Simon, 1868, *Heliophanus edentulous* Simon, 1871, *Oxyopes nigripalpis* Kulczyński, 1891, *Oxyopes lineatus* Latreille, 1806, *Pisaura mirabilis* (Clerck, 1757), *Pardosa* sp., *Thomisus onustus* Walckenaer, 1805, *Ebrechtella tricuspidata* (Fabricius, 1775), *Runcinia grammica* (C. L. Koch, 1837), *Xysticus acerbus* Thorell, 1872, *Tmarus stellio* Simon, 1875, *Philodromus longipalpis* Simon, 1870, *Philodromus cespitum* (Walckenaer, 1802), *Philodromus collinus* C. L. Koch, 1835, *Pulchellodromus pulchellus* (Lucas, 1846), *Enoplognatha latimana* Hippa & Oksala, 1982, *Kochiura aulica* (C. L. Koch, 1838) *Phylloneta impressa* (L. Koch, 1881), *Simitidion simile* (C. L. Koch, 1836), ***T****etragnatha extensa* (Linnaeus, 1758), *Tetragnatha intermedia* Kulczyński,1891, *Tetragnatha montana* Simon, 1874, *Araneus sturmi*(Hahn, 1831), *Cyclosa algerica* Simon, 1885, *Argiope lobate* (Pallas, 1772), *Mangora acalypha* (Walckenaer, 1802), *Larinioides suspicax* (O. Pickard-Cambridge, 1876), *Araniella cucurbitina* (Clerck, 1757), *Aculepeira ceropegia* (Walckenaer, 1802), *Hypsosinga pygmaea* (Sundevall, 1831), *Neoscona adianta* (Walckenaer, 1802), *Neoscona byzanthina* (Pavesi, 1876), *Linyphia triangularis* (Clerck, 1757), *Microlinyphia pusilla* (Sundevall, 1830). A study on spiders was conducted for the first time in Çorum province. Species registered in our country were supported with new localities

Key words: Araneae, Çorum, Harbaceous plant, population, spider.

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Çorum İli Otsu Bitkilerde Yayılış Gösteren Örümcek (Ordo: Araneae) Çeşitliliği

Özet

Çalışmada, Çorum ili otsu bitkiler üzerinde veya alanlarında yayılış gösteren örümcek populasyonları araştırılmıştır. Örnekler 2015 ve 2018 yılları arasında tek yıllık veya çok yıllık bitkiler (özellikle Astaracea) üzerinden atrap ile süpürülerek toplanmıştır. Ayrıca zemindeki aktif örnekler de elle ve aspiratör ile yakalanmıştır. Örümceklerin teşhisleri sonucunda 16 familya, 28 cins ve 36 tür tespit edilmiştir. Bunlar; *Uloborus walckenaerius* Latreille, 1806, *Heliophanus lineiventris* Simon, 1868, *Heliophanus edentulus* Simon, 1871, *Oxyopes nigripalpis* Kulczyński, 1891, *Oxyopes lineatus* Latreille, 1806, *Pisaura mirabilis* (Clerck, 1757), *Pardosa* sp., *Thomisus onustus* Walckenaer, 1805, *Ebrechtella tricuspidata* (Fabricius, 1775), *Runcinia grammica* (C. L. Koch, 1837), *Xysticus acerbus* Thorell, 1872, *Tmarus stellio* Simon, 1875, *Philodromus longipalpis* Simon, 1870, *Philodromus cespitum* (Walckenaer, 1802), *Philodromus collinus* C. L. Koch, 1835, *Pulchellodromus pulchellus* (Lucas, 1846), *Enoplognatha latimana* Hippa & Oksala, 1982, *Kochiura aulica* (C. L. Koch, 1838) *Phylloneta impressa* (L. Koch, 1881), *Simitidion simile* (C. L. Koch, 1836), *Tetragnatha extensa* (Linnaeus, 1758), *Tetragnatha intermedia* Kulczyński, 1891, *Tetragnatha montana* Simon, 1874, *Araneus sturmi* (Hahn, 1831), *Cyclosa algerica* Simon, 1885, Simon, 1885, *Argiope lobata* (Pallas, 1772),

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Mangora acalypha (Walckenaer, 1802), *Larinioides suspicax* (O. Pickard-Cambridge, 1876), *Araniella cucurbitina* (Clerck, 1757), *Aculepeira ceropegia* (Walckenaer, 1802), *Hypsosinga pygmaea* (Sundevall, 1831), *Neoscona adianta* (Walckenaer, 1802), *Neoscona byzanthina* (Pavesi, 1876), *Linyphia triangularis* (Clerck, 1757), *Microlinyphia pusilla* (Sundevall, 1830). Çorum ilinde ilk kez örümcekler üzerine bir çalışma yapılmış ve daha önce ülkemizden kaydı verilmiş olan türler yeni lokaliteler ile desteklenmiştir.

Anahtar kelimeler: Araneae, Çorum, Otsu bitki, örümcek, populasyon.

1. Introduction

Spiders are arthropods that can adapt in warm, dry region of all except Antarctica (Levy, 1998b, Nyffeler and Pusey, 2014). They are carnivorous and show the dominant feature in the ecosystem (Foelix, 2011). Insects make up the majority of their food, and therefore they are also known as predators. Studies on spiders, both in our country and in the world, are still ongoing and new species and records are added to spider lists day by day. There are 4260 genera and 50189 species belonging to 132 spider families that have been described so far (World spider catalog, 2022). Spider list of Turkey has not been updated yet and 55 families, 368 genera and 1259 species have been identified (Topçu et al., 2015; Demir & Seyyar 2017; Danışman et al. 2022)

Main pupose of this study is to determine the spider populations on herbaceous plants of Çorum province, which is located between the Black Sea and Central Anatolia regions.

2. Materials and methods

Spiders were collected from Çorum province between June and August of 2015-2018. Specimens were caught using by aspiratory, insect net and with hand. Insect net was mostly used and spiders on herbaceous plants were caught. Field studies were carried out during daylight hours. Samples were obtained from 80 localities belonging to the center of Çorum and its 13 districts (Table1). Spiders collected from the field were taken into sample tubes containing 90% ethyl alcohol and labeled. Morphological descriptions and nomeclature of spiders were made according to following literatures: Oger, 2002; Nentwig vd. 2021; World spider catalog,2022. All specimens were deposited in Gaziantep University, Department of Biology Zoology Museum (GAUNZM).

Table1. Research areas in Çorum province

Collected date	Research area		Coordinate		
	District/Locality		N	E	Altitude (m)
29.06.2015	Merkez	Sıklık Forest	40°34'	35°00'	960
29.06.2015	Mecitözü	Elvançelebi	40°35'	35°09'	1025
29.06.2015	Mecitözü	Merkez	40°31'	35°17'	810
01.07.2015	Kargı	Çalbaba Pass	41°12'	34°37'	1458
01.07.2015	Osmancık	Ovacıksuyu	40°59'	34°40'	414
01.07.2015	Laçin	Kırkdilim	40°43'	34°53'	1050
02.07.2015	Laçin	Gökgözler	40°48'	34°50'	460
02.07.2015	Laçin	Obruk	40°47'	34°48'	483
02.07.2015	Dodurga	Dikenli	40°49'	34°41'	1019
02.07.2015	Dodurga	Merkez	40°48'	34°50'	983
02.07.2015	Laçin	Berk	40°48'	34°50'	438
02.07.2015	Laçin	Kavaklıçiftlik	40°47'	34°53'	504
27.07.2015	Alaca	Karatepe	40°01'	34°57'	1080
27.07.2015	Alaca	İsahacı	40°09'	34°55'	965
27.07.2015	Merkez	Kadıkırı	40°27'	34°51'	715
28.07.2015	Mecitözü	Beyözü	40°34'	35°16'	985
28.07.2015	Mecitözü	Emirbağı	40°24'	35°13'	640
28.07.2015	Mecitözü	İbek	40°20'	35°14'	680
31.07.2015	Merkez	Konaklı	40°38'	35°12'	963

Table1. Continued

31.07.2015	Merkez	Seydim	40°32'	34°44'	1216
31.07.2015	Merkez	İnalözü	40°28'	34°34'	972
02.05.2016	Mecitözü	Koloğlu	40°34'	35°26'	625
29.05.2016	Merkez	Büyükçayır	40°34'	35°24'	713
01.06.2016	Laçin	Çamlıca	40°43'	34°55'	470
27.06.2016	Sungurlu	Çavuş	40°19'	34°48'	863
28.06.2016	Dodurga	Yeniköy	40°82'	34°69'	1011
28.06.2016	Osmancık	Ardıç	41°03'	34°60'	398
13.06.2017	Boğazkale	Yüksekyayla	40°00'	34°38'	1193
13.06.2017	Sungurlu	Turgutlu	40°10'	34°09'	635
13.06.2017	Sungurlu	Yörüklü	40°18'	34°15'	695
13.06.2017	Uğurludağ	Boztepe	40°41'	34°28'	636
15.06.2017	Osmancık	Öbektaşı	41°03'	34°59'	1154
15.06.2017	Osmancık	Çayırköy	40°59'	37°57'	540
28.06.2017	Alaca	Çevreli	40°13'	34°45'	1190
28.06.2017	Sungurlu	Şekerhacılı	40°09'	34°34'	1430
01.07.2017	Ortaköy	Totali	40°25'	35°23'	973
01.07.2017	Mecitözü	İbek	40°22'	35°03'	870
01.07.2017	Merkez	Altınbaş	40°39'	34°49'	899
01.07.2017	Uğurludağ	Kumçeltiği	40°34'	34°30'	784
01.07.2017	Sungurlu	Oğlaközü	40°12'	34°26'	966
02.07.2017	Sungurlu	Kamışlı	40°07'	34°28'	1000
02.07.2017	Boğazkale	Yazılıkaya	40°01'	34°36'	1010
25.07.2017	Boğazkale	Merkez	40°'17"	34°38'	1190
25.07.2017	Boğazkale	Hattuşa	40°20"	34°37'	1070
26.07.2017	Sungurlu	Çadırhöyük	40°28"	34°05'	614
26.07.2017	Sungurlu	Yörüklü	40°34"	34°13'	652
26.07.2017	Sungurlu	Kula	40°36"	34°08'	526
26.07.2017	Bayat	Kunduzlu1	40°47"	34°14'	1360
26.07.2017	Bayat	Kunduzlu2	40°28"	34°15'	1605
26.07.2017	Bayat	Çerkeş	40°12"	34°15'	1671
26.07.2017	İskilip	Elmalı	40°46"	34°21'	1044
27.07.2017	Merkez	Tozluburun	40°14"	34°33'	497
27.07.2017	İskilip	Başmakçı	40°26"	34°35'	857
27.07.2017	Dodurga	Kirenci	40°31"	34°43'	968
27.07.2017	Osmancık	Güvercinlik	40°53"	34°51'	420
28.07.2017	Merkez	Konak	40°21"	35°11'	980
31.07.2017	İskilip	Ahlatçık	40°17"	34°18'	1374
31.07.2017	Bayat	Kunduzlu2	40°28"	34°15'	1605
31.07.2017	Bayat	Kunduzlu3	40°47"	34°14'	1321
16.08.2017	Boğazkale	Hattuşa	40°24"	34°37'	1019
16.08.2017	Bayat	Kunduzlu	40°47"	34°14'	1321
17.08.2017	Kargı	Çalbaba Geçidi	41°45"	34°36'	1468

Table1. Continued

20.08.2017	Merkez	Çatak	40°32"	34°50'	1185
19.06.2018	Boğazkale	Hattuşa	40°01'	34°36'	1120
19.06.2018	Sungurlu	Tuğcu	40°11'	34°19'	796
22.06.2018	Laçin	Çamlıca	40°46'	34°54'	704
22.06.2018	Dodurga	Yeniköy	40°51'	34°42'	977
22.06.2018	Oğuzlar	Ağaççamı	40°48'	34°40'	991
22.06.2018	İskilip	Asarcık	40°44'	34°34'	1071
22.06.2018	Bayat	Kunduzlu4	40°45'	34°14'	1321
22.06.2018	Bayat	Karatepe	40°44'	34°12'	1681
23.06.2018	Uğurludağ	Merkez	40°23'	34°28'	548
23.06.2018	Sungurlu	Kaledere	40°20'	34°25'	1041
23.06.2018	Sungurlu	Çayan	40°38'	34°23'	850
23.06.2018	Sungurlu	Merkez	40°08'	34°32'	990
23.06.2018	Alaca	Fakılar	40°09'	34°50'	955
25.07.2018	Bayat	Kunduzlu	40°76'	34°25'	1346
25.07.2018	Bayat	Karatepe	40°74'	34°28'	1681
25.07.2018	İskilip	Ahlatçık	40°74'	34°28'	1482

3. Results

In the study, diversity the variety of spiders living on herbaceous plants were determined in the habitats where these plants are found belonging to Çorum province, located in the interior of the Central Black Sea region. The province is under the influence of the continental climate in general, and the Black Sea climate is also observed in the northern parts. Depending on the climatic diversity, the habitat has also diversified and has led to the collection of spiders belonging to different families from the area. As a result of the study, adult of 5 families (Nesticidae, Agelenidae, Gnaphosidae, Clubionidae, Zoridae) couldn't obtained in the research area, rest of 11 families identified from adult specimens (Table2).

Table2: Spider families in research area

Family	female(♀)	male (♂)	subadult	total	(%)
Araneidae	77	48	58	183	36,38
Thomisidae	36	15	63	114	22,66
Tetragnathidae	9	11	48	68	13,51
Theridiidae	14	10	8	32	6,36
Linyphiidae	9	2	17	28	5,56
Oxyopidae	18	3	2	23	4,57
Philodromidae	10	1	4	15	2,98
Agelenidae	-	-	12	12	2,38
Lycosidae	-	1	7	8	1,59
Salticidae	3	2	3	8	1,59
Nesticidae	-	-	2	2	0,39
Gnaphosidae	-	-	2	2	0,39
Clubionidae	-	-	2	2	0,39
Zoridae	-	-	1	1	0,19
Pisauridae	1	-	-	1	0,19
Uloboridae	1	-	-	1	0,19

As a result of the identification of 181 female and 93 male samples, 28 genera and 36 species were determined. These;

Family: ULOBORIDAE Thorell, 1869

Uloborus walckenaerius Latreille, 1806

Examined material*:* 1♀, Uğurludağ district, center, 40°23' N, 34°28' E, 548 m, 23.06.2018.

Family: SALTICIDAE Blackwall, 1841

Heliophanus lineiventris Simon, 1868

Examined material: 1♀, Uğurludağ, center,40°23' N, 34°28' E, 548 m, 23.06.2018.

Heliophanus edentulus Simon, 1871

Examined material: 1♂, Center, Tozluburun, 40°36' N, 34°33' E, 497 m, 27.07.2017.

Family: OXYOPIDAE Thorell, 1870

Oxyopes nigripalpis Kulczyński, 1891

Examined material: 1♂, İskilip , Başmakçı, 40°43' N, 34°35' E, 857 m, 27.07.2017.

Oxyopes lineatus Latreille, 1806

Examined material: 6♀♀, 2♂♂, Center, Altınbaş, 40°39' N, 34°49' E, 899 m, 01.07.2017; 3♀♀, İskilip, Başmakçı, 40°43' N, 34°35' E, 857 m, 27.07.2017; 1♀, İskilip, Elmalı, 40°46' N, 34°21' E, 1044 m, 26.07.2017; 1♀, Boğazkale, Yazılıkaya, 40°01' N, 34°36' E, 1010 m, 2.07.2017; 2♀♀, Laçin, Çamlıca, 40°46' N, 34°54' E, 704 m, 22.06.2018; 1♀, Uğurludağ, Kumçeltiği, 40°34' N, 34°30' E, 784 m, 1.07.2017; 1♀, , Uğurludağ, Center, 40°23' N, 34°28' E, 548 m, 23.06.2018; 2♀♀, Çorum, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1360 m, 26.07.2017.

PISAURIDAE Simon, 1890

*Pisaura mirabilis (*Clerck, 1757)

Examined material: 1♀, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1321 m, 16.08.2017.

Family: LYCOSIDAE Sundevall, 1833

Pardosa sp.

Examined material: 1♂, Uğurludağ, center, 40°23' N, 34°28' E, 548 m, 23.VI.2018.

Family: THOMISIDAE Sundevall, 1833

Thomisus onustus Walckenaer, 1805

Examined material:1♀, center, Çatak, 40°41' N, 34°50' E, 1185 m, 20.VIII.2017; 1♀, center, Altınbaş, 40°39' N, 34°49' E, 899 m, 1.07.2017, 2♂♂, Sungurlu, Çadırhöyük, 40°17' N, 34°05' E, 614 m, 26.07.2017; 1♂, Laçin, Çamlıca, 40°46' N, 34°54' E, 704 m, 22.06.2018.

Ebrechtella tricuspidata (Fabricius, 1775)

Examined material: 1♂, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1360 m, 26.07.2017.

Runcinia grammica (C. L. Koch, 1837)

Examined material: 3♀♀, 3♂♂, Sungurlu, center, 40°08' N, 34°32' E, 990 m, 23.06.2018; 1♀, Alaca, Fakılar, 40°09' N, 34°50' E, 955 m, 23.06.2018; 3♀♀, Sungurlu, Kamışlı, 40°07' N, 34°28' E, 1000 m, 2.07.2017; 9♀♀, 1♂, Laçin, Çamlıca, 40°46' N, 34°54' E, 704 m, 22.06.2018; 4♀♀, 1♂, center, Altınbaş, 40°39' N, 34°49' E, 899 m, 1.07.2017; 2♀♀, 1♂, Ortaköy, Totali, 40°25' N, 35°23' E, 973 m, 1.07.2017; 3♀♀, 1♂, Boğazkale, Hattuşa, 40°10' N, 34°37' E, 1070 m, 25.07.2017; 1♀; Sungurlu, Yörüklü, 40°18' N, 34°13' E, 652 m, 26.07.2017; 1♀, Uğurludağ, center, 40°23' N, 34°28' E, 548 m, 23.06.2018; 1♀, Boğazkale, Yazılıkaya, 40°01' N, 34°36' E, 1010 m, 2.07.2017.

Xysticus acerbus Thorell, 1872

Examined material: 1♀, Sungurlu, Kaledere, 40°20' N, 34°25' E, 1041 m, 23.06.2018.

Tmarus stellio Simon, 1875

Examined material: 1♀, Boğazkale, Hattuşa, 40°10' N, 34°37' E, 1070 m, 25.07.2017.

Family: PHILODROMIDAE Thorell, 1870

Philodromus longipalpis Simon, 1870

Examined material: 1♀, Bayat, Kunduzlu, 40°45' N, 34°15' E, 1605 m, 26.07.2017.

Philodromus cespitum (Walckenaer, 1802)

Examined material: 2♀♀,Boğazkale, Hattuşa, 40°10' N, 34°37' E, 1070 m, 25.07.2017.

Philodromus collinus C. L. Koch, 1835

Examined material: 1♂, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1360 m, 26.07.2017.

Pulchellodromus pulchellus (Lucas, 1846)

Examined material: 1♀, Uğurludağ, Center, 40°23' N, 34°28' E, 548 m, 23.06.2018.

Family: THERIDIIDAE Sundevall, 1833

Enoplognatha latimana Hippa & Oksala, 1982

Examined material: 2♀, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1360 m, 26.07.2017; 3♀♀, 4♂♂, İskilip, Başmakçı, 40°43' N, 34°35' E, 857 m, 27.07.2017; 1♀, 1♂, İskilip, Elmalı, 40°46' N, 34°21' E, 1044 m, 26.07.2017; 1♀, Center, Altınbaş, 40°39' N, 34°49' E, 899 m, 1.07.2017.

Kochiura aulica (C. L. Koch, 1838)

Examined material: 1♂, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1360 m, 26.07.2017.

Phylloneta impressa (L. Koch, 1881)

Examined material: 1♀, center, Altınbaş, 40°39' N, 34°49' E, 899 m, 1.07.2017; 1♀, Dodurga, Kirenci, 40°49' N, 34°43' E, 968 m, 27.07.2017, 2♂♂, Çorum, Laçin, Çamlıca, 40°46' N, 34°54' E, 704 m, 22.06.2018.

Simitidion simile (C. L. Koch, 1836)

Examined material: 1♀, Laçin, Çamlıca, 40°46' N, 34°54' E, 704 m, 22.06.2018; 1♀ ,Kargı, Asarcıkkazıklı, 41°11' N, 34°36' E, 1468 m, 17.08.2017; 1♀, center, Çatak, 40°41' N, 34°50' E, 1185 m, 20.08.2017.

Family: TETRAGNATHIDAE Menge, 1866

Tetragnatha extensa (Linnaeus, 1758)

Examined material: 3♀♀, 1♂, Uğurludağ, Center, 40°23' N, 34°28' E, 548 m, 23.06.2018; 2♀♀,4♂♂, Center, Altınbaş, 40°39' N, 34°49' E, 899 m, 1.07.2017, 1♂, Çorum, Uğurludağ, Center, 40°23' N, 34°28' E, 548 m, 23.06.2018.

Tetragnatha intermedia Kulczyński, 1891

Examined material: 1♀, İskilip, Başmakçı, 40°43' N, 34°35' E, 857 m, 27.07.2017.

Tetragnatha montana Simon, 1874

Examined material: 1♀, İskilip, Başmakçı, 40°43' N, 34°35' E, 857 m, 27.07.2017.

Family: ARANEIDAE Clerck, 1757

Araneus sturmi (Hahn, 1831)

Examined material: 1♀, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1360 m, 26.06.2017.

Cyclosa algerica Simon, 1885

Examined material: 1♀, Center, Altınbaş, 40°39' N, 34°49' E, 899 m, 1.07.2017.

*Argiope bruennichi (*Scopoli, 1772)

Examined material: 1♂, Center, Altınbaş, 40°39' N, 34°49' E, 899 m, 1.07.2017

*Argiope lobata (*Pallas, 1772)

Examined material: 2♂♂, Sungurlu, Yörüklü, 40°18' N, 34°13' E, 652 m, 26.07.2017; 1♂, Sungurlu, Çadırhöyük, 40°17' N, 34°05' E, 614 m, 26.07.2017.

Mangora acalypha (Walckenaer, 1802)

Examined material: 1♂, İskilip, Elmalı, 40°46' N, 34°21' E, 1044 m, 26.07.2017; 1♀, Sungurlu, Kaledere, 40°20' N, 34°25' E, 1041 m, 23.06.2018.

Larinioides suspicax (O. Pickard-Cambridge, 1876)

Examined material: 1♂, Uğurludağ, Kumçeltiği, 40°34' N, 34°30' E, 784 m, 1.07.2017; 1♂, Uğurludağ, Center, 40°23' N, 34°28' E, 548 m, 23.06.2018; 1♂; Center, Tozluburun, 40°36' N, 34°33' E, 497 m, 27.07.2017.

Araniella cucurbitina (Clerck, 1757)

Examined material: *3*♀♀, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1360 m, 26.07.2017; 1♀, Bayat, Çerkeş, 40°45' N, 34°15' E, 1671 m, 26.07.2017;1♀, Sungurlu, Kaledere, 40°20' N, 34°25' E, 1041 m, 23.07.2018; 1♀, Uğurludağ, Center, 40°23' N, 34°28' E, 548 m, 23.06.2018.

Aculepeira ceropegia (Walckenaer, 1802)

Examined material: 1♂, Çorum, Bayat, Çerkeş, 40°45' N, 34°15' E, 1671 m, 26.07.2017.

Hypsosinga pygmaea (Sundevall, 1831)

Examined material: 7♀♀, Uğurludağ, Center, 40°23' N, 34°28' E, 548 m, 23.06.2018.

Neoscona adianta (Walckenaer, 1802)

Examined material: 10♀♀,1♂, Laçin, Çamlıca, 40°46' N, 34°54' E, 704 m, 22.06.2018; 2♀♀,Ortaköy, Totali, 40°25' N, 35°23' E, 973 m, 1.07.2017; 1♀,8♂♂, Center, Altınbaş, 40°39' N, 34°49' E, 899 m, 1.07.2017; 2♂♂, Boğazkale, Yazılıkaya, 40°01' N, 34°36' E, 1010 m, 2.07.2017; 3♂♂, Sungurlu, Center, 40°08' N, 34°32' E, 990 m, 23.06.2018; 4♂♂, ♀, Sungurlu, Kamışlı, 40°07' N, 34°28' E, 1000 m, 2.07.2017; 4♂♂, Laçin, Çamlıca, 40°46' N, 34°54' E, 704 m, 22.06.2018; 3♂♂, Ortaköy, Totali, 40°25' N, 35°23' E, 973 m, 1.07.2017;1 ♂, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1360 m, 26.07.2017.

Neoscona byzanthina (Pavesi, 1876)

Examined material: 1♀, 1♂, Laçin, Çamlıca, 40°46' N, 34°54' E, 704 m, 22.06.2018; 11♀♀, Ortaköy, Totali, 40°25' N, 35°23' E, 973 m, 1.07.2017; 24♀♀, 6♂♂, Center, Altınbaş, 40°39' N, 34°49' E, 899 m, 1.07.2017; 2♀♀,1♂ , Sungurlu, Kamışlı, 40°07' N, 34°28' E, 1000 m, 2.07.2017; 1♀, Boğazkale, Hattuşa, 40°10' N, 34°37' E, 1070 m, 25.07.2017; 1♀, Alaca, Fakılar, 40°09' N, 34°50' E, 955 m, 23.06.2018; 1♀, Bayat, Çerkeş, 40°45' N, 34°15' E, 1671 m, 26.07.2017; 1♀, Sungurlu, Kamışlı, 40°07' N, 34°28' E, 1000 m, 2.07.2017; 1♀, Sungurlu, Center, 40°08' N, 34°32' E,

990 m, 23.06.2018; 1♂, Sungurlu, Oğlaközü, 40°12' N, 34°26' E, 966 m, 1.07.2017; 1♂, Boğazkale, Yazılıkaya, 40°01' N, 34°36' E, 1010 m, 2.07.2017.

Family: LINYPHIIDAE Blackwall, 1859

Linyphia triangularis (Clerck, 1757)

Examined material: 3♀♀, Boğazkale, Hattuşa, 40°01' N, 34°37' E, 1019 m, 16.08.2017; 2♀♀, 2♂♂, Bayat, Kunduzlu, 40°45' N, 34°14' E, 1321 m, 3107.2017; 2♀♀, Center, Çatak, 40°41' N, 34°50' E, 1185 m, 20.08.2017

Microlinyphia pusilla (Sundevall, 1830)

Examined material: 3♀♀, Çorum, Uğurludağ, Center, 40°23' N, 34°28' E, 548 m, 23.06.2018

4. Conclusions and discussion

In the study, 503 spiders were collected, including 274 adults and 229 juveniles. The adult subadult (juvenile) ratio was calculated as 1.19:1 and the female-male ratio 1.94:1. When adult-sub adult ratio examined, because of the adult period of most spiders in june, July, and August, adult rate found high. Spiders were generally caught on herbaceous plants, which can be annual or perennial (Asteraceae: *Achillea* spp., *Carduus spp., Carthamus* spp., *Centaurea* spp., *Cirsium* spp., *Crepis* spp., *Echinops* spp., *Inula spp.*). For this reason, mostly hunter spider (Thomisidae, Philodromidae) and web-making spider (Araneidae, Theridiidae, Tetragnathidae) samples were obtained. Samples were collected during the daytime hours. Spiders active at night (nocturnal spiders) could not be caught.

Çorum province is connected with both the Black Sea region and the Central Anatolia region, the region has different altitudes and samples were collected from these altitudes (between 414 m and 1605 m). The samples were caught from the herbaceous vegetation in the natural areas and the surrounding ground. Plants in polluted soils (such as thermal power plants (Akpınar and Varol, 2012)) and habitats in sprayed areas such as agricultural areas were not preferred. In these areas, the number and diversity of insects decreases and spiders are not encountered.

There are limited studies on herbaceous plants in natural areas and to identify spiders in herbaceous plant areas. Researches are more based on detecting spiders of a known region. Thus, samples can be collected from the plants (herbaceous or perennial) in that area. Varol et.al., (2007) were identified the spiders both in agricultural areas and in natural environments in Barak Plain (Gaziantep province). Elverici (2012) were studied spider fauna of semi natural olive groves and associated shrub-lands in the Western Mediterranean coast of Turkey and determined 220 species belonging to 38 family. In our study, we found 5 common species belonging to 4 families. Ayaz (2019) determined the spiders found in the areas between the fields located near Korkut district of Muş province. The spiders collected from these plants; *Salvia* sp., *Chondrilla* sp., *Medicago* sp., *Senecio* sp., *Centaurea* sp., *Achillea* sp., *Antriscus* sp.

In Turkey, studies on spiders are carried out by both native and foreign researchers, and a complete spider list has not been established yet. And 1259 species in 365 genera belonging to 55 families were described (Danısman et.al.,2022). We believe that this list is too little for our country, which hosts all kinds of habitats and ecosystems for spiders. We think that fauna determination studies on spiders should be increased.

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References

[1] Akpınar, A. & Varol, İ (2012). The spider fauna under the influence of Afşin-Elbistan (Kahramanmaraş/Turkey) thermal power plants. *Biological Diversity and Conservation.*5 (2) , 19-22.

[2] Ayaz, S (2019). *Korkut (Muş) Tarla Sınırları Arasında Bulunan Örümceklerin (Arachnida Araneae) Sistematik Ve Ekolojik Yönden İncelenmesi* (Master's thesis).

[3] Danışman, T., Kunt, K. B., & Özkütük, R. S (2022). The checklist of the spiders of Turkey.Version 2022, Online at http://www.spidersofturkey.info. [21 June]

[4] Demir, H and Seyyar O (2017). Annotated Checklist of The Spiders of Turkey. *Munis Entomology and Zoology*, 12 (2), 433-469

[5] Elverici, M (2012). *The Spider Fauna of An Olive Grove and Associateed Shrublands in Muğla, Milas, Kıyıkışlacık With Notes on Their Diversity and Composition* (Doctoral dissertation). Middle East Technical University).

[6] Foelix, R (2011). *Biology of spiders*. OUP USA.

[7] Levy G (1998b). Araneae: Theridiidae. In: Fauna Palaestina, Arachnida III. Israel Academy of Sciences and Humanities, Jerusalem. 228 pp.

[8] Nentwig, W., Blick, T., Gloor, D., Hänggi, A., & Kropf, C (2021). Spiders of europe. *Ex www. araneae. unibe. ch*.

[9] Nyffeler, M., & Pusey, B. J. (2014). Fish predation by semi-aquatic spiders: a global pattern. *PloS one* 9 (6), e99459..

[10] Oger, P. (2002). Les Araignées de Belgique et de France, on-line at http://arachno. Piwigo. com/index. *PhD/categor ies*.

[11] Topçu, A., Demir, H and Seyyar O (2005).A checklist of the spiders of Turkey. *Serket*, 9 4 (2005), pp.109-140

[12] Varol, M. İ., Mart, C., Özaslan, M., Bayram, A., & Akan, Z. Ö. A. 2007. *Barak Ovası Örümcek (Ordo: Araneae) Populasyonları ve Biyolojik Mücadele Olanaklarının Araştırılması. TC Devlet Planlama Teşkilatı, Temel Bilimler Araştırma Kurumu, Ankara*.

[13] World Spider Catalog (2022). World Spider Catalog. Version 23.5. Natural History Museum Bern, online at http://wsc.nmbe.ch, accessed on {21 June}. doi: 10.24436/2