

A QUICK SCAN OF THE SPIDER FAUNA OF THE EUROPEAN PART OF TURKEY

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ABSTRACT

A quick scan of the spider fauna of the European part of Turkey

A short inventory of the spider fauna of the European, European part of Turkey was carried out to collect additional distribution data for the Fauna Europaea database. The results of the inventory are compared with two available checklists for Turkey. Of the 77 species found during this inventory 53 had not been mentioned before from the European part of Turkey. Eleven species are recorded for Turkey for the first time: *Araniella opisthographa* (Kulcz.), *Clubiona brevipes* Blw., *Clubiona pseudoneglecta* Wunderl., *Dictyna innocens* Cbr., *Lathys humilis* (Blw.), *Pirata tenuitarsis* Sim., *Trabea paradoxa* Sim., *Macaroeris nidicolens* (Wlk.), *Tetragnatha intermedia* Kulcz., *Crustulina guttata* (Wid.), and *Zora nemoralis* (Blw.). The spider fauna of the European part of Turkey resembles that of Bulgaria.

Key words: European Turkey, Fauna Europaea, new records for Turkey

INTRODUCTION

Over the last decades faunistic research on spiders of Turkey has been carried out by Turkish scientists as well as by many arachnologists from foreign countries. Since traveling has become easy and Turkish hospitality was discovered there hardly exists any restraint to travel to this large and attractive country. The Turkish Riviera and the Anatolian highland offer not only tourist highlights but also interesting fauna with many non-European elements. It differs considerably from the western Mediterranean fauna.

However, a relatively small part of Turkey, west of Istanbul, constitutes the European part of Turkey. It shares its borders with Greece and Bulgaria and fauna and flora can be expected to be similar to those countries. However, our knowledge of the spider fauna of the European part of Turkey is relatively poor, because arachnologists are more attracted to the Asian part of the country than to the small European part. This already was the case in the earlier days of arachnology. Only few publications are devoted to European Turkey in the 19th and 20th century (Simon, 1875, 1879; Pavesi, 1876; Kulczynski, 1903, 1915; Giltay 1932) and most of them deal with the surroundings of Istanbul. Fauna Europaea's interest in Turkish spiders stops at the border of Europe in that region formed by the Bosphorus (Karadeniz Boğazi), consisting of the Bosphorus proper, the Sea of Marmara, and the Dardanelles (Çanakkale Boğazi). The border is based on the historical definition of Europe and may not really be of zoogeographical importance.

While accumulating spider records for the Fauna Europaea project – in 1998-2002 – I hardly could find any published data for the European part of Turkey and the set of species known to occur in the European Turkey remained very low in comparison to the well-known spider fauna of Bulgaria and the relatively poor set of records for mainland Greece. More recently and after the first version of Fauna Europaea had been released a checklist of the spiders of Turkey was published (Topçu et al. 2005). In the introduction of that paper an overview of all arachnological research up to 2005 is presented. This year, 2013, a new checklist of Turkish spiders was put on the internet (Bayram et al. 2013). The merits of the checklists will be discussed below. The next version of Fauna Europaea (Fauna Europaea Version 2014.1) appearing after this publication will contain the new records mentioned below.

MATERIAL AND METHODS

In 2012 I visited the European part of Turkey and tried to collect data on the spider fauna hoping to fill in distribution gaps. I collected 342 specimens of 77 different species from 16 families. Specimens were collected by sweeping, beating and collecting by hand. Many more specimens were observed and registered without collecting. The results are discussed below and summarized in table 1.

Of course I could cover only a small section of the fairly large European part of Turkey within the short period I had available for fieldwork. I spent seven days in the field, from May 26 up to June 1. The main goals of my visit were to get an impression of the composition of the spider fauna of the region and to improve on the database of Fauna Europaea. The sites I visited mostly were within short distance of Çerkesköy in the province of Tekirdag and all records come from this province. Two main types of land use and corresponding landscapes predominated in the region, namely agricultural areas (grassland, arable land) and relatively young forest used for grazing. Shepherds with a few cows or sheep were often encountered in such forests, always accompanied by a few very shy dogs. The shepherds were surprised to see me collect spiders instead of mushrooms! The arable land was not inventorized.

LOCALITIES

The following sites were visited.

- 1 Tekirdag: along road Pinarco-Safaalan (41° 21' 11" N, 28° 03' 05" E); oak with undergrowth of grasses; locally places with stagnant water along sandy road; sweeping and beating; 26-05-2012.
- 2 Tekirdag: along road Pinarco-Safaalan (41° 21' 02" N, 28° 03' 15" E); oak, heather, some grasses; locally places with stagnant water along sandy road; sweeping, beating and hand collecting; 26-05-2012.
- 3 Tekirdag: wet, marshy site along road Aydinlar-Hallaçlı (41° 21' 44" N, 28° 11' 39" E); sweeping and beating; 26-05-2012.
- 4 Tekirdag: along road Saray-Kiyiköy (41° 28' 24" N, 27° 57' 20" E); mixed forest with *Fagus*, *Quercus*, *Crateagus*; beating; 27-05-2012.
- 5 Tekirdag: along road Saray-Safaalan (41° 26' 17" N, 28° 01' 00" E); dry site with *Calluna* and grass; sweeping; 27-05-2012.
- 6 Tekirdag: along road Safaalan- Pinarco (44° 22' 45" N, 28° 05' 30" E); *Juncus* vegetation; sweeping; 27-05-2012.
- 7 Tekirdag: along road Pinarco-Safaalan (41° 21' 20" N, 28° 03' 30" E); wet area with *Juncus* spec. near road; sweeping and hand collecting; 28-05-2012.
- 8 Tekirdag: Ormanlı (41° 23' 50" N, 28° 28' 06" E); dike along canal with some *Quercus* trees and an area of mixed forest with *Ruscus*; the region was rich in rice-fields and other water bodies; sweeping; 29-05-2012.
- 9 Tekirdag: Yaliköy (41° 27' 38" N, 28° 20' 06" E); footpath at forest margin; hand collecting; 29-05-2012.
- 10 Tekirdag: N of Hallaçlı (41° 19' 41" N, 28° 06' 36" E); *Quercus* forest, wet and dry sites; sweeping on *Juncus* and hand-collecting; 30-05-2012.
- 11 Tekirdag: lake near Hallaçlı (41° 19' 57" N, 28° 05' 54" E); sweeping; 30-05-2012.
- 12 Tekirdag: along road east of Hallaçlı (41° 18' 45" N, 28° 06' 41" E); *Quercus* forest; hand collecting; 30-05-2012.
- 13 Tekirdag: along road Kumbag-Yeniköy (40° 50' 56" N, 27° 26' 16" E); open, rocky slopes with *Cistus*, *Juniperus*, few small *Quercus* trees; sweeping, beating and hand collecting; 31-05-2012.
- 14 Tekirdag: along road Kumbag-Yeniköy (40° 51' 22" N, 27° 27' 20" E); hand-collected from needle litter; 31-05-2012.
- 15 Tekirdag: small lake in forest along road Pinarco-Safaalan (41° 22' 00" N, 28° 04' 32" E); 01-06-2012.
- 16 Tekirdag: along road Pinarco-Safaalan (41° 21' 20" N, 28° 03' 32" E); wet sites with main cover by *Juncus*; 01-06-2012.

REMARKS ON THE RECORDED SPECIES

Distributions in European and Asian Turkey presented here are derived from the present inventory in comparison with the two available checklists mentioned in the introduction. The overall European distribution is based on the Fauna Europaea database (Van Helsdingen 2013). The nomenclature follows The World Spider Catalog (Platnick 2013).

AGELENIDAE

Agelena labyrinthica (Clerck, 1757) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. In sunny herbal vegetations, shrubs, and hedges. – Present inventory: very common on most sites, all in juvenile stage.

ARANEIDAE

- Agalenatea redii* (Scopoli, 1763) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. More common in southern Europe, less common in the northern regions. Thermophilous species, webs in herb- and shrublayer. – Present inventory: in open forest and near small lake.
- Araneus angulatus* Clerck, 1757 – Known from Turkey (Bayram et al. 2013)) and European Turkey (Topçu et al. 2005). Widespread over Europe. – Present inventory: on forest margin and near small lake in forest; males in the webs of females, some females not yet adult.
- Araniella opisthographa* (Kulczynski, 1905) – First record for European Turkey and first record for Turkey. Widespread in Europe. On leaves and branches of trees. – Present inventory: beaten from oak trees.
- Cercidia prominens* (Westring, 1851) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. – Present inventory: swept from lower vegetation.
- Cyclosa conica* (Pallas, 1772) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. Common species in forest. – Present inventory: collected at forest margin.
- Hypsosinga albovittata* (Westring, 1851) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. Prefers warmer habitat. – Present inventory: a single specimen was found at soil level on a roadside.

Hypsosinga heri (Hahn, 1831) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. Hygrophilous species. – Present inventory: a single specimen was found at soil level near a small lake.

Larinioides suspicax (O. P.-Cambridge, 1876) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe, but lacking in northern countries. Seems to replace *Larinioides cornutus* in the South. – Present inventory: collected in the surrounding of water.

Mangora acalypha (Walckenaer, 1802) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. Oblique webs between plants and lower shrubs. – Present inventory: Very common on all sites.

Nuctenea umbratica (Clerck, 1757) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. Under bark of trees, in crevices of rocks, on buildings. – Present inventory: two specimens under bark of trees.

CLUBIONIDAE

Clubiona brevipes Blackwall, 1841 – First record for European Turkey and first record for Turkey. Widespread in Europe. A tree inhabiting species, hiding under bark and hunting on the leaves. – Present inventory: a single specimen beaten from oak.

Clubiona pseudoneglecta Wunderlich, 1994 – First record for European Turkey and first record for Turkey. Recorded from many countries in Europe, but the species seems to be lacking in Scandinavia. Our knowledge of the distribution may be biased by the relatively late distinguishing from *C. neglecta*. – Present inventory: one specimen collected by hand between lower vegetation.

DICTYNIDAE

Dictyna arundinacea (Linnaeus, 1758) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. In tops of higher plants and lower shrubs usually in drier areas, such as heather. – Present inventory: common at many sites.

Dictyna innocens O. P.-Cambridge, 1872 – first record for European Turkey and first record for Turkey. Probably not rare in the eastern-mediterranean region. Presently known from Italy and Greece. – Present inventory: found on several sites in tops of plants.

Dictyna uncinata Thorell, 1856 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. In tops of higher plants and lower shrubs. – Present inventory: swept from rushes on two sites.

Lathys humilis (Blackwall, 1855) – First record for European Turkey and first record for Turkey. Widespread in Europe. – Present inventory: a single specimen beaten from a tree.

GNAPHOSIDAE

Drassodes lapidosus (Walckenaer, 1802) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Common European species. Widespread in Europe. Inhabitant of soil litter and under stones and timber. – Present inventory: a single specimen collected by hand in soil litter.

Drassodes pubescens (Thorell, 1856) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. Inhabitant of soil litter and lower vegetation. – Present inventory: a single specimen collected by hand in soil litter.

LINYPHIIDAE

Centromerus albidus Simon, 1929 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Known from Great Britain (southern species), France, Spain, Slovakia, Romania, and Greece (Lesbos) (Van Helsdingen 2013). A southern species. – Present inventory: a single female specimen hand-collected from needle litter in a *Pinus* forest.

Cresmatoneta mutinensis (Canestrini, 1868) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Most European records come from southern and southeastern countries. Relatively rare species. In lower vegetation. – Present inventory: a single male specimen collected by hand from wet vegetation.

Entelecara acuminata (Wider, 1834) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. Often found on trees. – Present inventory: a single female beaten from *Ruscus*.

Frontinellina frutetorum (C.L. Koch 1834) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Very common in the Mediterranean Region. In higher vegetation and shrubs. – Present inventory: common in the drier sites visited.

Prinrigone vagans (Audouin, 1826) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Occurring in most European countries but always in low densities. In vegetation at ground level. – Present inventory: a single male caught by sweeping.

Tenuiphantes tenuis (Blackwall, 1852) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. A typical ubiquist in a variety of habitats. – Present inventory: a single male specimen found on the dry and warm slope above the Sea of Marmara.

LYCOSIDAE

Alopecosa albofasciata (Brullé, 1832) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in the Mediterranean Region. – Present inventory: two females from two sunny sites outside forest.

Alopecosa pulverulenta (Clerck, 1757) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. The species shows preference for wet habitats. – Present inventory: two female specimens from road margin.

Arctosa leopardus (Sundevall, 1833) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. Preference for moist sites. – Present inventory: three female specimens collected on wet sites along road.

The specimens are relatively large. My specimens (3 females) measure 8.4, 12.2 and 13.0 mm with a prosomal length of 4.3, 4.5 and 5.3, respectively. Measurements of females as given in the literature range from 8.5-10.0 (length prosoma 4.0) (Fuhn & Niculescu-Burlacu 1971), 7.1-8.7 (length prosoma 3.24-3.82) (Almquist 2005) and 6.5-9.0 (length prosoma not recorded) (Roberts 1993). The specimens are very dark with a striking yellow cardiac mark on the opisthosoma.

Aulonia kratochvili Dunin, Buchar & Absolon, 1986 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Originally described from Azerbaijan (Dunin et al. 1986) and subsequently recorded from the province Makedonia in Greece (Kronstedt 1997) and Turkey (Varol et al. 2007). – Present inventory: male and female specimens in wet vegetation along a sandy road.

Pardosa hortensis (Thorell, 1872) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in southern Europe, less common in Central Europe and lacking in northern countries. Thermophilous species. – Present inventory: female specimens at four different sites, with egg cocoons.

Pardosa prativaga (L. Koch, 1870) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Prefers moist habitats. – Present inventory: collected on one site only, a wet spot along a sandy road.

Pardosa proxima (C.L. Koch, 1847) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in southern Europe, less common in Central Europe and lacking in northern countries. Hygrophilous species. – Present inventory: female specimens at four different sites, with egg cocoons.

Pirata tenuitarsis Simon, 1876 – First record for European Turkey and first record for Turkey. Widespread in Europe. Wetland species. – Present inventory: both sexes from wet sites.

Piratula latitans (Blackwall, 1841) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe, often on more dry, open vegetations. – Present inventory: both sexes from road margin.

Trabea paradoxa Simon, 1876 – First record for European Turkey and first record for Turkey. A Mediterranean species. Recorded from Portugal, Spain, southern France, Corsica, southern Italy, Greece (Lesbos), Albania, Bulgaria. Habitat preferences unclear. – Present inventory: one male and one female specimen from wet site along sandy road.

OXYOPIDAE

Oxyopes heterophthalmus (Latreille, 1804) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. In and on vegetation layer, frequently on heathland. – Present inventory: very common in adult and juvenile stages on most of the visited localities.

Oxyopes lineatus Latreille, 1806 – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. In and on vegetation layer on warmer sites. – Present inventory: very common in adult and juvenile stages on most of the visited localities.

PHILODROMIDAE

Philodromus aureolus (Clerck, 1757) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. One of the more common species of the genus. Inhabiting trees and tall herbs. – Present inventory: a single specimen beaten from trees in mixed forest.

Philodromus cespitum (Walckenaer, 1802) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. Common on trees. – Present inventory: several male specimens on different sites collected by beating.

Philodromus dispar Walckenaer, 1826 - Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. On trees. – Present inventory: a single male specimen was collected on an oak tree by beating.

Tibellus macellus Simon, 1875 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread through central and southern Europe. In tall vegetation. – Present inventory: males and females (one pair in copula on June 1st) at different sites.

Tibellus oblongus (Walckenaer, 1802) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. In tall vegetation. – Present inventory: several male and female specimens at different sites.

PISAURIDAE

Pisaura mirabilis (Clerck, 1757) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. Common on herbs and low shrubs. – Present inventory: Extremely common in the undergrowth of the oak forests.

SALTICIDAE

Evarcha arcuata (Clerck, 1757) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. On vegetation in shady places. – Present inventory: common in the herb layer.

Evarcha jucunda (Lucas, 1846) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). A southern European species, considered as imported when found in Belgium (Van Keer, 2007) and Germany (Ludy & Niechoj 2005) and outside their normal range of distribution. – Present inventory: one male and one female specimen on vegetation along a canal.

Heliophanus cupreus (Walckenaer, 1802) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. On herbal vegetation. – Present inventory: male and female specimens on different sites.

Heliophanus kochii Simon, 1868 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe, but lacking in northern countries. On herbal vegetation. – Present inventory: two female specimens collected on the dry and warm slope above the Sea of Marmara.

Heliophanus melinus L. Koch, 1867 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. – Present inventory: three female specimens collected on the dry, warm slope above the Sea of Marmara, under stones.

Heliophanus tribulosus Simon, 1868 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. A southern European species. On herbal vegetation. – Present inventory: one female specimen collected by sweeping *Juncus* vegetation.

Macaroeris nidicolens (Walckenaer, 1802) – First record for European Turkey and first record for Turkey. A southern European species. On herbal vegetation and trees. – Present inventory: a single male specimen swept from vegetation.

TETRAGNATHIDAE

Strikingly few *Tetragnatha* specimens were found during this inventory if compared with similar habitats in European Europe.

Tetragnatha extensa (Linnaeus, 1758) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. Common European species with a preference for wet vegetation. – Present inventory: a number of specimens was collected in relatively wet areas such as lakesides.

Tetragnatha intermedia Kulczyński, 1891 – First record for European Turkey and first record for Turkey. Few records in Europe: Portugal, Balearic Islands (Ibiza), Italy, Sardinia, Hungary, Croatia, Serbia, and European Russia. – Present inventory: male and female specimens were found in wetland region.

Tetragnatha montana Simon, 1874 – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. Common European species in wet and dry vegetation. – Present inventory: a single female was collected in wet parts in forest.

THERIDIIDAE

Anelosimus vittatus (C. L. Koch, 1836) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe; a tree inhabiting species, usually at the transition of forest to open areas or on isolated trees. – Present inventory: a single male was collected at a forest margin.

Crustulina guttata (Wider, 1834) – first record for European Turkey and first record for Turkey. A widespread and common species in Europe. In soil litter and detritus. – Present inventory: A single female and some juvenile specimens were sifted out of litter in a pine forest.

Dipoena melanogaster (C. L. Koch, 1837) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread over Europe. Inhabitant of trees. – Present inventory: female specimens were found on branches of trees in mixed forest.

Enoplognatha afrodite Hippa & Oksala, 1983 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Restricted to the Mediterranean Region. Recorded from (pine)forests. – Present inventory: a single male was swept from vegetation along a sandy road.

Enoplognatha ovata (Clerck, 1757) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread over Europe. On herbs and shrubs, usually on the underside of leaves. – Present inventory: two male specimens were beaten out of oak trees, while many juveniles and subadult specimens were seen.

- Euryopis episinoides* (Walckenaer, 1847) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Mediterranean species. Usually collected in lower vegetation. – Present inventory: a single female specimen was found on the dry and warm slope above the Sea of Marmara.
- Heterotheridion nigrovariegatum* (Simon, 1873) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in central and southern Europe. On and in lower vegetation. – Present inventory: a single male specimen was collected on the dry and warm slope above the Sea of Marmara.
- Kochiura aulica* (C. L. Koch, 1838) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. A Central European and southern species, absent from northern countries. Usually on herbs, shrubs and trees. – Present inventory: both sexes collected on the dry and warm slope above the Sea of Marmara as well as in coniferous forest in that same area.
- Neottiura bimaculata* (Linnaeus, 1767) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe on trees and shrubs. – Present inventory: a single male specimen beaten from oak tree.
- Parasteatoda lunata* (Clerck, 1757) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe. In shady forest. – Present inventory: very common on several sites visited.
- Platnickina tincta* (Walckenaer, 1802) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe on trees and shrubs. – Present inventory: male and female specimens were collected in mixed forest as well as when sifting litter in a pine forest.
- Simitidion simile* (C. L. Koch, 1836) – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe on trees and shrubs on drier sites. – Present inventory: only male specimens were captured on the verges of a sandy road.
- Theridion pinastri* L. Koch, 1872 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread in Europe on (often coniferous) trees and shrubs. – Present inventory: a single male was found by sweeping of the vegetation along a sandy road.
- Theridion varians* Hahn, 1833 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Widespread and common in Europe on trees, shrubs and lower vegetation. – Present inventory: male and female specimens were collected along a sandy road by sweeping vegetation.

THOMISIDAE

- Heriaeus simoni* Kulczynski, 1903 – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Despite the thorough analytic work by Loerbrocks (Loerbrocks 1983) the genus *Heriaeus* still is slightly problematic. Diagnostic characters are weak and ill-defined. Only males were collected and thus no females were available for identification support. *H. simoni* was already recorded from the Marmara Region and is also known from Greece (mainland as well as the archipelagoes), Crete, Bulgaria, Croatia, and Albania. – Present inventory: some male specimens were captured by beating branches of oak trees.
- Monaeses israeliensis* Levy, 1973 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Both sexes were collected, but at different dates and different but comparable sites as to habitat. Along the sand road between the villages Pinarco and Safaalan narrow pools of stagnant water with the typical vegetation which develops under such conditions, consisting of sedges and rushes. On May 26 several males were collected at one such site, while on June 1 only females were collected. At both occasions I tried to find the other sex at the sites but failed to find them.
Monaeses israeliensis was described from Israel but was subsequently discovered in Greece (Nestos Delta close to the Greek-Turkish border (Buchholz, S. 2007) and on the Aegean island Khios (Russell-Smith et al., 2011)). Also in the Asian part of Turkey, Lebanon and central Asia (Platnick, 2013). – Present inventory: six male and three female specimens were collected by sweeping low vegetation and hand-collecting of wet sites along a sandy road.
- Pistius truncatus* (Pallas, 1772) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. On trees and shrubs, usually collected by beating. – Present inventory: a single female collected by beating from oak.
- Runcinia grammica* (C. L. Koch, 1837) – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Rare in northern Europe, more common in southern countries. Usually collected by sweeping herbal vegetation. – Present inventory: two male specimens and some juveniles were captured by sweeping shore vegetation near a lake.
- Synema anatolica* Demir, Aktas & Topçu, 2009 – Known from Turkey (Bayram et al. 2013), first record for European Turkey. Originally described from the Osmaniye and Kahramanmaraş provinces in Asian Turkey. Habitat preferences unknown. – Present inventory: male and female specimens on the dry and warm slope above the Sea of Marmara.
- Thomisus onustus* Walckenaer, 1805 – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. On low vegetation and shrubs. – Present inventory: a single male specimen was captured along a sandy road.
- Xysticus acerbus* Thorell, 1872 – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe, but slightly more common in southern and Central Europe. Thermophilous

species living in and on low vegetation. – Present inventory: two female specimens were captured by sweeping vegetation.

Xysticus lanio C.L. Koch, 1835 – Known from Turkey (Bayram et al. 2013) and European Turkey (Topçu et al. 2005). Widespread in Europe. Forest and forest edges. – Present inventory: a single female specimen was collected by sweeping vegetation.

ULOBORIDAE

Uloborus walckenarius Blackwall, 1806 - Known from Turkey (Bayram et al. 2013), first record for European Turkey. Lacking in northern Europe, common in the Mediterranean countries. Thermophilous. Common in open-structured vegetation, such as roadsides. – Present inventory: male and female specimens were found in their webs in the tall or shrubby vegetation on open places in forest.

ZORIDAE

Zora nemoralis (Blackwall, 1861) - First record for European Turkey and first record for Turkey. Widespread in Europe. In detritus between herbs and shrubs. – Present inventory: two female specimens were collected by hand in tussocks of vegetation.

RESULTS AND DISCUSSION

Available literature sources

As indicated above two checklists for the spiders of Turkey are available. The first one dates from 2005 (Topçu et al. 2005), the second one from this year (Bayram et al. 2013). The two lists have different information levels. Topçu and his co-authors choose for the classic printed form in a scientific journal presenting the distribution for each species within Turkey in an aggregated but very useful form. It is more than just a checklist because of the added distributional information. Bayram and colleagues have put a checklist on the internet but without any indication of distributions within Turkey (with a handful of exceptions).

The printed checklist of Topçu et al. shows the state of the art in 2005 but is now obsolete, the inevitable fate of printed information on dynamic research activities. Many new species have been found since and new distribution data have to be added to those known in 2005. However, it appears to be the most practical source of information for the Fauna Europaea database.

The internet checklist of 2013 is up to date if not to the last minute, but I expect that regular updates will be given. The spider species of Turkey are neatly listed by family and in alphabetical order within the families. That the families are not listed in alphabetical order is a disadvantage. The Bayram et al. list is a checklist *sensu stricto* without any extra information. Next to the checklist the site comprises a long list of references to the literature on spiders of Turkey but these are not linked to the species and, therefore, it is not a catalogue.

For the purpose of filling in the Fauna Europaea database for the European part of Turkey the printed list of Topçu is very practical, while Bayram's list could hardly be of use here. I have taken it as highly probable that the extra species in Bayram's list – if compared to the Topçu list – have been found in the Asian part of Turkey because it is the largest part of the country and most research efforts have focused on that most promising region. The distribution data of the Topçu list have been inserted in the Fauna Europaea database. Additionally I have compared the results of my 2012 fieldwork in the European part of Turkey with the data provided by Topçu, Demir and Seyyar in their 2005 checklist.

Here I had to compromise in that the geographical regions used by Topçu et al. are not in agreement with the decision of the Fauna Europaea project to consider the Bosphorus, the Sea of Marmara, and the Dardanelles as the border of Europe and the geographical limit of Fauna Europaea. The data derived from the checklist concern their "Marmara Region" (MR in their table), which comprises not only the provinces Edirne, Kırklareli, Tekirdag and Istanbul (all west of the Bosphorus line) but also Çanakkale, Bahkesir, Bursa, Yalova, and Kocaeli east of the Bosphorus, the Sea of Marmara, and the Dardanelles. Some of the species thus selected from the checklist are now confirmed by my observations and results, but a few other species may indeed occur in the Asian part of the "Marmara Region" and not in the European part.

New distribution data

The results of my short investigation yielded records for 77 species. A faunal resemblance to those of mainland Greece and Bulgaria was to be expected and was found indeed. With only three exceptions (*Centromerus albidus*, *Tetragnatha intermedia*, and *Synema anatolica*) all 77 species are known from Bulgaria and/or mainland Greece. The inventory, however, also yielded some species not known from the European part of Turkey according to Topçu (Topçu et al. 2005). Of the 77 species found by me in 2012 no less than 53 species were not listed for the Marmara Region by them, which demonstrates the relative lack of attention the European part of Turkey had received so far.

Eleven species are not mentioned in the checklist of Bayram et al. of 2013 and are reported here as new for Turkey: *Araniella opisthographa* (Kulcz.), *Clubiona brevipes* Blw., *Clubiona pseudoneglecta* Wunderl., *Dictyna innocens* Cbr., *Lathys humilis* (Blw.), *Pirata tenuitarsis* Sim., *Trabea paradoxa* Sim., *Macaroeris nidicolens*

(Wlk.), *Tetragnatha intermedia* Kulcz., *Crustulina guttata* (Wid.), and *Zora nemoralis* (Blw.). The distributions of these species in Europe are indicated in the chapter on the recorded species.

Conclusions

The spider fauna of European Turkey closely resembles that of the adjacent Balkan countries Bulgaria and Greece, as was to be expected. The number of species known from the European part of Turkey according to Topçu et al. (2005) was 144 and can now be raised to 197. Eleven species can be added to the checklist for Turkey. Very likely the number of species in the European part of the country is much higher than indicated here, an assumption based on the number of species – no less than 1012 – known from Bulgaria (Van Helsdingen 2013). An inventory of a wider range of habitats in this part of Turkey would be welcome.

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Table 1. Overview of species collected, sites and sexes or status indicated.

| FAMILY / SPECIES | sites | m | f | others |
|--|---------------------|----|----|--------|
| AGELENIDAE | | | | |
| <i>Agelena labyrinthica</i> (Clerck, 1757) | 1 | | | juvs |
| ARANEIDAE | | | | |
| <i>Agalenatea redii</i> (Scopoli, 1763) | 9, 10, 13 | | 4 | |
| <i>Araneus angulatus</i> Clerck, 1757 | 9, 15 | 2 | 5 | |
| <i>Araniella opisthographa</i> (Kulczynski, 1905) | 1, 15 | 3 | | |
| <i>Cercidia prominens</i> (Westring, 1851) | 14 | | 1 | |
| <i>Cyclosa conica</i> (Pallas, 1772) | 9 | | 2 | |
| <i>Hypsosinga albovittata</i> (Westring, 1851) | 2 | 1 | | |
| <i>Hypsosinga heri</i> (Hahn, 1831) | 11 | | 1 | |
| <i>Larinioides suspicax</i> (O. P.-Cambridge, 1876) | 8, 11, 15 | 1 | 6 | |
| <i>Mangora acalypha</i> (Walckenaer, 1802) | 1, 5, 6, 14, 15 | 4 | 7 | |
| <i>Nuctenea umbratica</i> (Clerck, 1757) | 12 | | 1 | juvs |
| CLUBIONIDAE | | | | |
| <i>Clubiona brevipes</i> Blackwall, 1841 | 8 | 1 | | |
| <i>Clubiona pseudoneglecta</i> Wunderlich, 1994 | 7 | 1 | | |
| DICTYNIDAE | | | | |
| <i>Dictyna arundinacea</i> (Linnaeus, 1758) | 3, 6, 7, 10, 15, 16 | | 10 | |
| <i>Dictyna innocens</i> O. P.-Cambridge, 1872 | 2, 6, 13, 16 | 5 | 4 | |
| <i>Dictyna uncinata</i> Thorell, 1856 | 2, 8 | 1 | 2 | |
| <i>Lathys humilis</i> (Blackwall, 1855) | 4 | | 1 | |
| GNAPHOSIDAE | | | | |
| <i>Drassodes lapidosus</i> (Walckenaer, 1802) | 7 | 1 | | |
| <i>Drassodes pubescens</i> (Thorell, 1856) | 7 | | 1 | |
| LINYPHIIDAE | | | | |
| <i>Centromerus albidus</i> Simon, 1929 | 14 | | 1 | |
| <i>Cresmatoneta mutinensis</i> (Canestrini, 1868) | 7 | | 1 | |
| <i>Entelecara acuminata</i> (Wider, 1834) | 8 | | 1 | |
| <i>Frontinellina frutetorum</i> (C.L. Koch 1834) | 2, 5, 12 | 1 | 4 | |
| <i>Prinerigone vagans</i> (Audouin, 1826) | 10 | 1 | | |
| <i>Tenuiphantes tenuis</i> (Blackwall, 1852) | 13 | 1 | | |
| LYCOSIDAE | | | | |
| <i>Alopecosa albofasciata</i> (Brullé, 1832) | 7, 16 | | 2 | |
| <i>Alopecosa pulverulenta</i> (Clerck, 1757) | 7 | | 2 | |
| <i>Arctosa leopardus</i> (Sundevall, 1833) | 7, 15 | | 3 | |
| <i>Aulonia kratochvili</i> Dunin, Buchar & Absolon, 1986 | 7 | 1 | 3 | |
| <i>Pardosa hortensis</i> (Thorell, 1872) | 1, 2, 7, 16 | | 6 | |
| <i>Pardosa prativaga</i> (L. Koch, 1870) | 7 | | 2 | |
| <i>Pardosa proxima</i> (C.L. Koch, 1847) | 1, 2, 7, 16 | | 7 | |
| <i>Pirata tenuitarsis</i> Simon, 1876 | 7, 16 | 1 | 4 | |
| <i>Piratula latitans</i> (Blackwall, 1841) | 7, 16 | 1 | 1 | |
| <i>Trabea paradoxa</i> Simon, 1876 | 7 | 1 | 1 | |
| OXYOPIDAE | | | | |
| <i>Oxyopes heterophthalmus</i> (Latreille, 1804) | 2, 5, 7, 10, 16 | 11 | 6 | juvs |
| <i>Oxyopes lineatus</i> Latreille, 1806 | 1, 2, 5, 10, 16 | 12 | | subads |
| PHILODROMIDAE | | | | |
| <i>Philodromus aureolus</i> (Clerck, 1757) | 4 | | 1 | |
| <i>Philodromus cespitum</i> (Walckenaer, 1802) | 4, 8, 13 | 3 | | |
| <i>Philodromus dispar</i> Walckenaer, 1826 | 8 | | 1 | |
| <i>Tibellus macellus</i> Simon, 1875 | 1, 15, 16 | 3 | 6 | |
| <i>Tibellus oblongus</i> (Walckenaer, 1802) | 3, 7, 8, 11 | 3 | 7 | |
| <i>Pisaura mirabilis</i> (Clerck, 1757) | 7, 15 | | 3 | |

| | | | | |
|--|---------------------|----|----|--------|
| SALTICIDAE | | | | |
| <i>Evarcha arcuata</i> (Clerck, 1757) | 1, 4, 6, 10, 15, 16 | 10 | 1 | juvs. |
| <i>Evarcha jucunda</i> (Lucas, 1846) | 8 | 1 | 1 | |
| <i>Heliophanus cupreus</i> (Walckenaer, 1802) | 1, 2, 4, 10, 15 | 6 | 4 | |
| <i>Heliophanus kochii</i> Simon, 1868 | 13 | | 2 | |
| <i>Heliophanus melinus</i> L. Koch, 1867 | 13 | | 3 | |
| <i>Heliophanus tribulosus</i> Simon, 1868 | 5 | | 1 | |
| <i>Macaroeris nidicolens</i> (Walckenaer, 1802) | 7 | 1 | | |
| TETRAGNATHIDAE | | | | |
| <i>Tetragnatha extensa</i> (Linnaeus, 1758) | 8, 10, 11 | 3 | 5 | |
| <i>Tetragnatha intermedia</i> Kulczyński, 1891 | 8 | 1 | 3 | |
| <i>Tetragnatha montana</i> Simon, 1874 | 10 | | 1 | |
| THERIDIIDAE | | | | |
| <i>Anelosimus vittatus</i> (C. L. Koch, 1836) | 9 | 1 | | |
| <i>Crustulina guttata</i> (Wider, 1834) | 14 | | 1 | juvs |
| <i>Dipoena melanogaster</i> (C. L. Koch, 1837) | 4, 12 | | 13 | |
| <i>Enoplognatha afrodite</i> Hippa & Oksala, 1983 | 16 | 1 | | |
| <i>Enoplognatha ovata</i> (Clerck, 1757) | 1 | 2 | | juvs. |
| <i>Euryopis episinoides</i> (Walckenaer, 1847) | 13 | | 2 | |
| <i>Heterotheridion nigrovariegatum</i> (Simon, 1873) | 13 | 1 | | |
| <i>Kochiura aulica</i> (C. L. Koch, 1838) | 13, 14 | 5 | 5 | |
| <i>Neottiura bimaculata</i> (Linnaeus, 1767) | 2 | 1 | | |
| <i>Parasteatoda lunata</i> (Clerck, 1757) | 4, 8, 9, 10, 12, 15 | 7 | 7 | |
| <i>Platnickina tinca</i> (Walckenaer, 1802) | 4, 14 | 2 | 3 | |
| <i>Simitidion simile</i> (C. L. Koch, 1836) | 2, 5 | 5 | | |
| <i>Theridion pinastri</i> L. Koch, 1872 | 1 | 1 | | |
| <i>Theridion varians</i> Hahn, 1833 | 4, 5, 12 | 2 | 2 | |
| THOMISIDAE | | | | |
| <i>Heriaeus simoni</i> Kulczynski, 1903 | 1, 6, 10 | 4 | | |
| <i>Monaeses israeliensis</i> Levy, 1973 | 2, 16 | 6 | 3 | |
| <i>Pistius truncatus</i> (Pallas, 1772) | 8 | | 1 | |
| <i>Runcinia grammica</i> (C. L. Koch, 1837) | 11 | 2 | | subads |
| <i>Synema anatolica</i> Demir, Aktas & Topçu, 2009 | 13 | 3 | 3 | |
| <i>Thomisus onustus</i> Walckenaer, 1805 | 16 | 1 | | |
| <i>Xysticus acerbus</i> Thorell, 1872 | 1, 16 | | 2 | |
| <i>Xysticus lanio</i> C.L. Koch, 1835 | 8 | | 1 | |
| ULOBORIDAE | | | | |
| <i>Uloborus walckenaerius</i> Blackwall, 1806 | 2, 5, 6, 15, 16 | 4 | 4 | |
| ZORIDAE | | | | |
| <i>Zora nemoralis</i> (Blackwall, 1861) | 7 | | 2 | |

