

# The Arachnofauna (Araneae) of Wetland Kerkini (Macedonia-Northern Central Greece)

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**Abstract:** This paper presents a faunistic study of the spiders of Wetland Kerkini, a Greek National Park situated in Northern Central Greece, in the Serres Prefecture (province of Macedonia). Altogether 379 species belonging to 35 families were collected. 73 species and 1 family (Mysmenidae) are new records to the Greek fauna, 170 species are recorded for the first time in Macedonia. The most interesting faunistic records are *Mysmenella jobi* (KRAUS, 1967); *Lepthyphantes christodeltshev* VAN HELSDINGEN, 2009; *Walckenaeria extraterrestris* BOSMANS, 1993; *Zodarion blagoevi* BOSMANS, 2009; *Cryptodrassus hungaricus* (BALOGH, 1935); *Haplodrassus bohemicus* MILLER and BUCHAR, 1977; *Zelotes eugenei* KOVBLYUK, 2009; *Dipoena galilaea* LEVY and AMITAL, 1982 and *Ozyptila danubiana* WEISS, 1998. *Haplodrassus isaevi* PONOMAREV and TSVETKOV, 2006 is new to Europe.

**Key words:** Araneae, Greece, Macedonia, Wetland Kerkini, Faunistics

## Introduction

Balkan Peninsula is a high biodiversity hotspot and has been investigated by several arachnologists (DELTSHEV 1979; THALER *et al.* 2000; BOSMANS *et al.* 2009).

Greece forms a junction between the Central European, Mediterranean and Pontic biogeographical region, which results in a high biodiversity that is still very little known. Information about the spider fauna of Greece, especially of the northern parts Epiros, Thessalia, Macedonia and Thracia, remains very poor.

BOSMANS & CHATZAKI (2005) compiled a catalogue which summarized all the papers dealing with the Greek spiderfauna. Since the publication of this work, several authors have made contributions, revisions and catalogues dealing with specific spider

families, genera or inventories of different regions of Greece. GASPARO (2005) described a new *Leptonetela*, CHATZAKI & ARNEDE (2006) revised Harpacteinae from Crete and described a new *Stalagtia*, LOGUNOV (2006) added a poorly known *Xysticus* species from the East Mediterranean. DELTSHEV *et al.* (2006) described a *Zelotes* which appeared to be rather common in Balkan Peninsula. MUSTER (2007, 2009) revised several *Philodromus* species groups and added 4 *Philodromus* species. BUCHHOLZ (2007) made a large faunistic survey of Nestos Delta (NE Greece) and found 60 species to be new to Greece. BOSSELAERS (2009) described *Arabelia*, a new genus belonging to Corinnidae and KNOFLACH *et al.* (2009) found 3 Theridiidae species which showed to be new to Greece. VAN HELSDINGEN (2009 a, b) described a new

*Lepthyphantes* from Attiki and cited a *Rhomphaea* from Thracia. Later on BOSMANS *et al.* (2009) made a thorough inventory of the isle of Lesbos and mentioned 300 species of which 37 are recorded for first time in Greece. VAN KEER & BOSMANS (2009) described 4 new *Dysderidae* from Lesbos and BOSMANS (2009) added 20 *Zodarion* species, 18 of which are new to science. In the beginning of this year, CHATZAKI (2010) revised the genus *Nomisia* and described 2 new species from Greece, MUSTER & VAN KEER (2010) added a new *Philodromus* from Greek Macedonia. CHATZOPOULOU & CHATZAKI (2009) on the other hand, revised some *Drassodes* species from Greece and synonymised 2 species.

In our extensive material from all over Greece, a lot of species still await identification and some of them will turn out to be new to science.

### Study Area

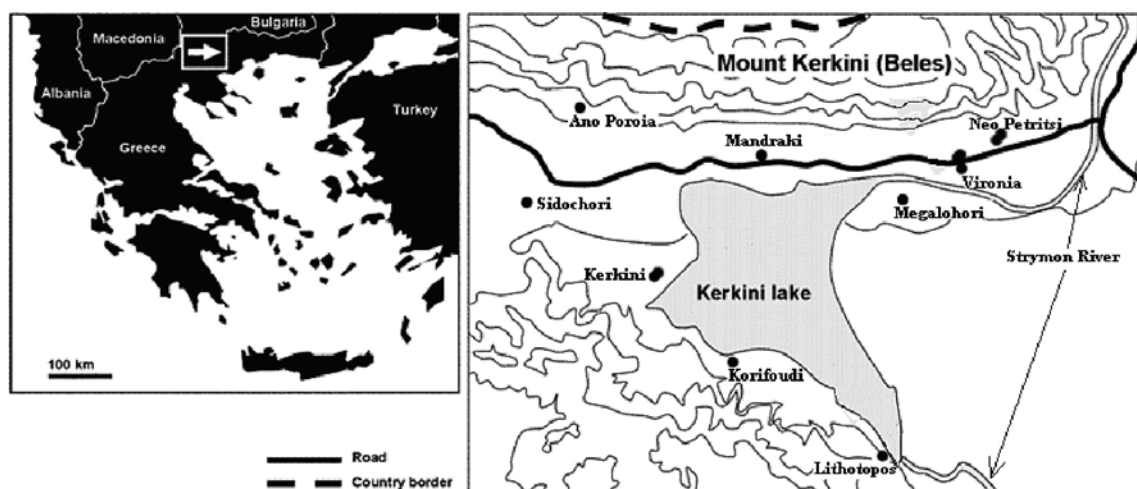
Kerkini is an artificial lake, created in 1932 on the river Strymon, immediately south of the Greek border with Bulgaria and 80 km north of Thessaloniki. The area was originally an inland delta, a very large marsh where the river unloaded the debris it had collected on its journey past Rila and Pirin mountains of Bulgaria, and as a wetland habitat it was quite unique in Europe.

To the north the lake is bounded by the 2000 m high Serbo-Macedonian massif (Kerkini Mountains) which forms the border with Bulgaria. The Serbo-

Macedonian massif is dissected by the narrow Ruppel Gorge through which the Strymon river enters Greece. The southwest reach of the lake is bordered by the 1000 m high Mavrovouni Mountains. The nature reserve includes parts of both mountain ranges, extending to the summit of Kerkini Mountains, all of the riverine habitats (about 20 km) between Greek-Bulgarian border and the lake, and has a total area of about 200 square km. The vegetation of the area is classified as para-Mediterranean and mountainous Mediterranean.

## Material and Methods

The main purpose of the project of Wetland Kerkini was to collect as many arthropods as possible and make a biodiversity inventory of the area. Therefore pitfall traps (15 sites), malaise traps (19 sites) and yellow pan traps (35 sites) were used during the recording period. The position of each trap was randomly determined. Pitfalls with diameter of 9 cm were filled with either 5% formalin-detergent solution, or commercial antifreeze and covered with a roof of flat stones protecting them from drying out, or being unduly diluted by rain. The collecting bottles for each of the malaise traps were half filled with 70% ethyl alcohol. The spiders were sorted out under a binocular microscope and preserved in 70% ethanol for subsequent examination and identification. Malaise and pitfall traps were emptied



**Map 1.** Study area: Wetland Kerkini in Central Northern Greece.

**Table 1.** List of localities with GPS Co-ordinates.

Village	Site name	Gps co-ordinates	Altitude
Vironia	1. Strymon River	N=41°15' 20,8 ; E=023°14' 11,2	35 m
Vironia	2. Beles (Kerkini) Mts	N=41°17' 19,5 ; E=023°12' 18,4	550 m
Lithotopos	3. Krouisia Mts	N=41°07' 52,2 ; E=023°12' 53,3	75 m
Lithotopos	4. Kerkini (Lake)	N=41°09' 06,5 ; E=023°11' 55,0	75 m
Lithotopos	5. Ecotourism	N=41°08' 15,6 ; E=023°13' 01,2	65 m
Kerkini	6. Kerkini Marsh	N=41°13' 32,8 ; E=023°05' 04,2	45 m
Kerkini	7. Pumping Station	N=41°12' 48,7 ; E=023°06' 11,9	40 m
Kerkini	8. Timber Yard	N=41°13' 29,2 ; E=023°05' 07,9	45 m
Kerkini	9. Krouisia Mts	N=41°11' 32,4 ; E=023°03' 59,5	190 m
Promachonas	10. Procom	N=41°22' 38,1 ; E=023°21' 58,8	60 m
Kerkini	11. Café Elodia	N=41°12' 46,8 ; E=023°05' 42,9	40 m
Neo Petritsi	12. Petritsi Stream	N=41°17' 43,7 ; E=023°17' 12,6	250 m
Kerkini	13. Kerkinitis River	N=41°12' 51,6 ; E=023°03' 51,5	45 m
Vironia	14. Ramna	N=41°17' 42,5 ; E=023°11' 33,1	750 m
Vironia	15. Beabies	N=41°19' 15,4 ; E=023°13' 39,6	1150 m
Neo Petritsi	16. Farfara	N=41°19' 30,5 ; E=023°15' 00,1	750 m
Neo Petritsi	17. Sultanitsa	N=41°19' 02,1 ; E=023°12' 05,0	1485 m
Neo Petritsi	18. Stratiom	N=41°17' 44,9 ; E=023°17' 36,6	420 m
Neo Petritsi	19. Midway	N=41°18' 49,8 ; E=023°16' 35,6	750 m
Megalochori	20. Megal Marsh	N=41°15' 01 ; E=023°14' 08	38 m
Ano Paroia	21. Base Camp	N=41°18' 35 ; E=023°03' 36	1300 m
Ano Paroia	22. Large Plateaux	N=41°18' 59 ; E=023°01' 55	1000 m
Akritohori	23. Akritohori Monastery	N=41°16' 42,4 ; E=023°10' 10,5	255 m
Sidirochori	24. Sidirochori Bridge	N=41°14' 19,5 ; E=023°01' 15,3	60 m
Limnochori	25. N-Limnochori	N=41°12' 12,2 ; E=023°12' 56,6	35 m
Hrisochorafa	26. E.-Hrisochorafa	N=41°10' 58,2 ; E=023°12' 53,8	42 m

once in seven days, yellow pan traps between one and six days. These three methods were used in 2006, 2007, 2008 and partly 2009 but not continuously. The duration that each trap was run was not scientifically chosen in many of the cases but arose as a result of a variety of negative influences. Traps were stolen, destroyed by vandalism, unusual strong winds and snow. Spiders were collected from May to September 2006, from March to September 2007, from February to December 2008 and from January to August 2009. In June 2009, a five-day trip was organised to focus especially on catching spiders by beating trees and bushes, sweeping grasslands and herbs and collecting spiders on bark of trees and in stonefields by handcatching. At 17 sites these three additional methods were used and resulted in exten-

sive extra material. The samplings were carried out at 26 main sites and different habitat types were investigated, e.g. marshy banks of Strymon river and fast flowing streams, meadows, pastures, mixed deciduous forests, reedbeds, dry south-facing slopes and stonefields.

## Results

3460 specimens in total were captured, 1953 of which were males (56.5%) and 1507 females (43.5%), divided into 35 families and 379 species (Table 2). Lycosidae, Linyphiidae and Salticidae are the best represented families accounting to 55% of the specimens and 42% of the species. With its 118 specimens, *Pardosa hortensis* is the most dominant species. This

**Table 2.** List of spiders collected in Wetland Kerkini in 2006, 2007, 2008, 2009.

**Abbreviations:** Gr=Greece, Mac=Macedonia, Ma=Males, Fe=Females, X=New to Greece and/or Macedonia. COM=Zoogeographical complex: WD=Widely Distributed, E=European, BK=Balkan Endemic, M=Mediterranean. CAT=Zoogeographical category: COS=Cosmopolitan, OLW=Old World, Hol=Holarctic, PAT=Palaearto-Afrotropic, PAL=Palaeartic, WPA=West-Palaeartic, EUS=Europeo-Siberian, ECA=Europeo-Centralasiatic, MCA=Mediterrano-Centralasiatic, ETU=Europeo-Turanian, EET=East-Europeo-Turanian, SEC=South-Europeo-Centralasiatic, SET=South-Europeo-Turanian, EUR=European, MSE=Middle-South-European, SEU=South-European, EEU=East-European, SEE=South-East-European, BALK=Balkan Endemic, GRE=Greek Endemic, BCA=Balkan-Centralasiatic, MED=Mediterranean, EME=East-Mediterranean, NME=North-Mediterranean, NEM=North-East-Mediterranean, MME=Mediteranean-Middle-East. METHOD: PT= Pitfall Trapping, MT=Malaise Trapping, YPT=Yellow Pan Trapping, BT=Beating, SW=Sweeping, HC=Handcatching.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
Atypidae (1)										
Atypus muralis Bertkau, 1890	X	X	0	1	1	VI	22	WD	ECA	HC
<b>Nemesiidae (1)</b>										
Brachythele denieri (Simon, 1916)			16	1	17	VI, IX-XI	1,2,12,15,18,19	BK	BALK	PT, YPT
<b>Filistatidae (1)</b>										
Pritha nana (Simon, 1868)		X	2	0	2	V-VI	18	E	SEU	PT
<b>Scytodidae (1)</b>										
Scytodes thoracica (Latreille, 1802)			6	3	9	VI-VIII	2,12,18,22,24	WD	HOL	PT, HC
Pholcidae (2)										
Holocnemus pluchei (Scopoli, 1763)			1	2	3	VI-VII	4,20,24	M	MED	HC
Spermophora senoculata (Dugès, 1836)			5	6	11	VI	20	M	MED	HC
<b>Segestriidae (1)</b>										
Segestria bavarica C.L.Koch, 1843		X	0	1	1	VII	1	WD	PAL	MT
<b>Dysderidae (3)</b>										
Dysdera crocota C.L.Koch, 1838			0	1	1	VI	7	WD	COS	PT
Dysdera longirostris Dobliska, 1853			2	0	2	V, IX	2,17	E	EEU	PT
Harpactea saeva Herman, 1879	X	X	2	2	4	II, VI, X	2,14,22	E	EEU	PT, HC
<b>Mimetidae (2)</b>										
Ero aphana (Walckenaer, 1802)			0	1	1	VI	12	WD	PAL	BT
Mimetus laevigatus (Keyserling, 1863)		X	3	3	6	VI	10,12,17,18	WD	MCA	MT, YPT, BT
<b>Eresidae (1)</b>										
Eresus walckenaeri Brullé, 1832			1	1	2	VI	20	M	MED	HC
<b>Oecobiidae (2)</b>										
Oecobius maculatus Simon, 1870		X	4	2	6	V-VI	18, 20	M	MED	PT, HC
Uroctea durandi (Latreille, 1809)			1	0	1	IX	1	M	MED	PT

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<b>Theridiidae (33)</b>										
Anatolidion gentile (Simon, 1881)		X	0	1	1	VI	12	M	MED	HC
Asagena phalerata (Panzer, 1801)			0	4	4	VI	4,15,22,25	WD	PAL	HC
Crustulina scabripes Simon, 1881		X	3	1	4	VI-VII	18,22	M	MED	PT,YPT,HC
Dipoena erythropus (Simon, 1881)		X	1	0	1	VI	14	E	EUR	MT
Dipoena galilaea Levy & Amitai, 1981		X	0	1	1	VI	2	M	MME	BT
Dipoena melanogaster (C.L.Koch, 1837)		X	1	1	2	V-VI	2,23	WD	WPA	MT,SW
Enoplognatha afrodite Hippa & Oksala, 1983			0	4	4	VI	22	E	SEU	HC
Enoplognatha latimana Hippa & Oksala, 1982		X	9	15	24	VI-VII	15,16,17,25	WD	HOL	MT,YPT,SW,HC
Enoplognatha oelandica (Thorell, 1881)	X	X	0	9	9	VI	15	WD	PAL	HC
Enoplognatha ovata (Clerck, 1757)			0	8	8	VI	4, 10	WD	HOL	YPT,BT
Enoplognatha penelope Hippa & Oksala, 1982			3	4	7	VI	4,10,12,23	BK	BALK	YPT,BT,HC
Enoplognatha thoracica (Hahn, 1833)		X	2	21	23	V-VI	11,12,15,16,22	WD	HOL	PT,MT,HC
Epispinus angulatus (Blackwall, 1836)	X	X	0	1	1	VII	10	E	EUR	MT
Epispinus truncatus Latreille, 1809		X	3	1	4	VII	10,15	WD	PAL	PT,YPT
Euryopsis episinoides (Walckenaer, 1847)			0	1	1	VIII	5	WD	MCA	MT
Euryopsis flavomaculata (C.L.Koch, 1836)	X	X	1	0	1	VI	10	WD	PAL	YPT
Euryopsis sexalbomaculata (Lucas, 1846)		X	0	1	1	VI-VII	15	WD	MCA	YPT
Heterotheridion nigrovariegatum (Simon, 1873)			23	13	36	VI	12,17,22,23	WD	PAL	BT,SW,HC
Neofitiura bimaculata (Linnaeus, 1767)	X	X	1	1	2	VI	17,22	WD	HOL	BT
Parastatoda tepidariorum (C.L.Koch, 1841)			2	3	5	VI	20,24,25	WD	COS	HC
Pholcomma gibbum Westring, 1851		X	1	0	1	II	1	WD	WPA	PT
Phylloneta impressa L.Koch, 1881		X	3	3	6	V-VI	8,15,20,23	WD	HOL	MT,HC
Phylloneta sisyphia (Clerck, 1757)		X	3	1	4	VI	17	WD	PAL	BT,HC
Platnickina tincta (Walckenaer, 1802)			2	4	6	VI-VII	4,5,10,17,22	WD	HOL	MT,BT
Selimus vittatus (C.L.Koch, 1836)		X	3	1	4	V-VI	2,4,17	WD	PAL	BT,SW
Simitidion simile (C.L.Koch, 1836)		X	6	5	11	IV-VI	2,3,12,17,22,23	WD	HOL	MT,BT,SW,HC
Steatoda albomaculata (DeGeer, 1778)			1	7	8	VI	15,25	WD	COS	BT,HC
Theridion adrianopoli Drensky, 1915			0	1	1	VI	12	BK	BALK	HC
Theridion cinereum Thorell, 1875		X	0	2	2	VI	4,12	WD	ECA	HC

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
Theridion hemerobius Simon, 1914		X	1	4	5	IV-VI	6,25	WD	HOL	MT,HC
Theridion italiense Wunderlich, 1995	X	X	1	0	1	VI	4	E	SEU	HC
Theridion pinastri L.Koch, 1872			4	3	7	VI	19,22,24	WD	PAL	MT,HC
Theridion varians Hahn, 1833			2	1	3	VI	10,20,23	WD	HOL	MT,BT,HC
<b>Mysmenidae (I)</b>										
Mysmenella jobi (Kraus, 1967)	X	X	2	0	2	IV,VI	11, 20	WD	PAL	MT,YPT
<b>Linyphiidae (67)</b>										
Abacoproeces saltuum (L.Koch, 1872)	X	X	0	1	1	VI	22	WD	PAL	HC
Acartauchenius securillus (O.P.-Cambridge, 1872)			3	1	4	VI-VII	2,9,15,25	WD	PAL	YPT,HC
Agneta ramosa Jackson, 1912	X	X	7	0	7	V-VI	17	WD	PAL	PT
Araconcus humilis (Blackwall, 1841)			1	0	1	VI	5	WD	PAL	MT
Bathypantes gracilis (Blackwall, 1841)	X	X	0	1	1	VI	4	WD	HOL	SW
Centromerus sylvaticus (Blackwall, 1841)			4	0	4	III-IV,XII	1,15	WD	HOL	PT
Cresmatoneta mutinensis (Canestrini, 1868)			1	0	1	V	10	WD	PAL	MT
Dactylopiastes digiticeps (Simon, 1881)			14	5	19	VI	20	WD	ECA	PT
Dicymbium brevisetosum Locket, 1962	X	X	1	0	1	VI	20	E	EUR	BT
Dicymbium nigrum (Blackwall, 1834)			1	0	1	II	10	WD	PAL	MT
Dicymbium tibiale (Blackwall, 1938)			0	1	1	IV	11	WD	PAL	PT
Diplocephalus crassiloba (Simon, 1884)	X	X	3	8	11	II,V-VII	14,15,16	E	EUR	PT,MT
Diplocephalus cristatus (Blackwall, 1833)			0	6	6	VI	22	WD	HOL	PT
Diplocephalus picinus (Blackwall, 1841)			1	0	1	V	17	WD	PAL	PT
Diplostyla concolor (Wider, 1834)			9	9	18	IV-X	1,2,5,14,16,20,22	WD	HOL	PT,MT,SW
Drapetisca socialis (Sundevall, 1833)	X	X	1	0	1	X	15	WD	PAL	MT
Entelecara acuminata (Wider, 1834)			1	0	1	VI	10	WD	HOL	MT
Entelecara flavipes (Blackwall, 1834)	X	X	1	0	1	VII	20	WD	PAL	YPT
Erigone dentipalpis (Wider, 1834)			8	4	12	III,V-VIII	3,10,13,20,21	WD	HOL	PT,MT,YPT,SW
Frontinella frutetorum (C.L.Koch, 1834)			3	7	10	II,IV-VI	2,5,12,17,22,23	WD	PAL	MT,BT,SW,HC
Gnathonarium dentatum (Wider, 1834)			13	13	26	II,IV,VI	14, 20	WD	PAL	PT,MT,BT,SW
Gonatum paradoxum (L.Koch, 1869)	X	X	2	1	3	XI-XII	14	WD	PAL	MT
Gongylidellum latebricola (O.P.-Cambridge, 1871)	X	X	6	1	7	V-VI,IX	17	WD	PAL	PT

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<i>Gonyglidium rufipes</i> (Linnaeus, 1758)			2	4	6	VI-VII	10,24	WD	PAL	MT,YPT,SW
<i>Hylyphantes nigrinus</i> (Simon, 1881)	X	X	2	0	2	VI,VIII	20	WD	PAL	YPT
<i>Hypomma bituberculatum</i> (Wider, 1834)	X	X	0	1	1	V	7	WD	PAL	MT
<i>Leptyphantes christodelfshev</i> Van Helsdingen, 2009		X	3	0	3	XII	2	BK	GRE	PT
<i>Leptyphantes leptrosus</i> (Ohlert, 1865)		X	1	2	3	VI	22	WD	HOL	HC
<i>Linyphia hortensis</i> Sundevall, 1830	X	X	0	1	1	VI	17	WD	PAL	SW
<i>Linyphia triangularis</i> (Clerck, 1757)		X	3	0	3	IX-X	14,15	WD	PAL	MT
<i>Maso sundevalli</i> (Westring, 1851)	X	X	1	2	3	V-VI,XII	5,17	WD	HOL	PT,MT
<i>Mecopisthes peusi</i> Wunderlich, 1972	X	X	1	0	1	XI	15	E	EUR	PT
<i>Megaleptyphantes collinus</i> (L.Koch, 1872)			1	0	1	X	15	WD	PAL	MT
<i>Meioneta fuscipalpa</i> (C.L.Koch, 1836)		X	4	0	4	VI,IX	17, 20	WD	PAL	MT,SW,HC
<i>Meioneta mollis</i> (O.P.-Cambridge, 1871)	X	X	3	6	9	IV,VI	7, 20	WD	PAL	PT,SW
<i>Meioneta rurestris</i> (C.L.Koch, 1836)		X	12	21	33	IV-VI	2,3,5,7,8,10,11,14,15,16,19,20,21,23	WD	PAL	PT,MT,YPT,HC
<i>Metopobactrus prominulus</i> (O.P.-Cambridge, 1872)			1	0	1	VI	20	WD	HOL	PT
<i>Micargus herbigradus</i> (Blackwall, 1854)	X	X	0	1	1	VIII	22	WD	PAL	PT
<i>Microlinyphia pusilla</i> (Sundevall, 1830)			4	2	6	VI	20,24	WD	HOL	YPT,SW
<i>Microneta viaria</i> (Blackwall, 1841)		X	1	5	6	V-VI	16,17,22	WD	HOL	MT,B,T,HC
<i>Moebelia penicillata</i> (Westring, 1851)	X	X	1	0	1	V	5	WD	PAL	MT
<i>Nerene clathrata</i> (Sundevall, 1830)		X	3	1	4	VII-VIII	2, 10	WD	HOL	MT,YPT
<i>Nerene peltata</i> (Wider, 1834)	X	X	2	2	4	III,IV,VI,VII	13,15,16	WD	PAL	MT,SW
<i>Nerene radiata</i> (Walckenaer, 1841)	X	X	1	1	2	VI	4, 20	WD	HOL	SW
<i>Oedothorax agrestis</i> (Blackwall, 1853)	X	X	17	0	17	VI-IX	2,7,16,22	WD	PAL	PT,MT,YPT
<i>Oedothorax apicatus</i> (Blackwall, 1850)			18	65	83	III-VIII	3,6,7,11,13,20,21,22	WD	PAL	PT,MT,YPT,HC
<i>Ostearius melanopygius</i> (O.P.-Cambridge, 1879)		X	1	1	2	VI	2	WD	COS	HC
<i>Palliduphantes byzantinus</i> (Fage, 1831)			2	0	2	V	7	M	EME	MT
<i>Pelecopis elongata</i> (Wider, 1834)		X	0	1	1	III	14	WD	EUR	MT
<i>Pelecopis parallela</i> (Wider, 1834)			2	1	3	VI,VIII,XII	10,19	WD	PAL	PT,YPT
<i>Pocadicnemis juncea</i> Locket & Millidge, 1953			1	1	2	IV-V	7,11	WD	PAL	MT
<i>Porrtomma oblitum</i> (O.P.-Cambridge, 1871)	X	X	0	1	1	VI	7	E	EUR	MT

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<i>Porthomma pygmaeum</i> (Blackwall, 1834)			1	1	2	IV-V	15	WD	PAL	MT
<i>Primerigone vagans</i> (Audouin, 1826)			54	43	97	IV-VII	1,4,13,15,16,18,20,24	WD	OLW	PT,MT,YPT,BT,SW,HC
<i>Sintula retroversus</i> (O.P.-Cambridge, 1875)		X	5	1	6	I,II,XI	1,2,18	E	EUR	PT
<i>Syedra gracilis</i> (Menge, 1869)	X	X	0	1	1	VIII	22	WD	PAL	PT
<i>Tenuiphantes tenuis</i> (Blackwall, 1852)			23	31	54	II-X	2,3,4,5,7,10,11,14,15,17,19,20,21,22	WD	WPA	PT,MT,YPT,BT,HC
<i>Tenuiphantes zimmermanni</i> (Bertkau, 1890)	X	X	3	0	3	VI,X	14,16,17	E	EUR	PT,MT
<i>Trichoncoides piscator</i> (Simon, 1884)	X	X	1	0	1	VI	14	WD	PAL	MT
<i>Trichoncus hackmani</i> Millidge, 1956			7	5	12	II,V-VII	5,10,11,14,20	E	EUR	PT,MT,BT
<i>Trichopterna cito</i> (O.P.-Cambridge, 1872)	X	X	0	3	3	IV-V	7,11	WD	PAL	PT,MT
<i>Walckenaeria antica</i> (Wider, 1834)	X	X	3	0	3	II-III	10,11	WD	PAL	PT
<i>Walckenaeria atrotibialis</i> (O.P.-Cambridge, 1878)	X	X	1	0	1	V	14	WD	HOL	MT
<i>Walckenaeria extraterrestris</i> Bosmans, 1993		X	1	0	1	XII	2	M	MED	PT
<i>Walckenaeria mitrata</i> (Menge, 1868)	X	X	1	0	1	IV	15	WD	PAL	MT
<i>Walckenaeria simplex</i> Chyzer, 1894	X	X	2	0	2	IV	14	E	EEU	MT
<i>Walckenaeria vigilax</i> (Blackwall, 1835)	X	X	1	0	1	VIII	22	WD	HOL	PT
<b>Tetragnathidae (8)</b>										
<i>Metellina mengei</i> (Blackwall, 1870)		X	0	3	3	III-IV	12,13,17	E	EUR	SW
<i>Metellina merianae</i> (Scopoli, 1763)			4	3	7	VI	14,24	E	EUR	MT,HC
<i>Metellina segmentata</i> (Clerck, 1757)		X	2	2	4	IX-X	15	WD	PAL	MT
<i>Pachygnatha degeeri</i> Sundevall, 1830			29	30	59	III-VIII	7,8,11,20,24	WD	PAL	PT,YPT,BT,HC
<i>Tetragnatha extensa</i> (Linnaeus, 1758)			9	0	9	V-VI	4,20,23	WD	HOL	BT,SW,HC
<i>Tetragnatha montana</i> Simon, 1874			6	4	10	IV-VII	4,10,12,13,24	WD	PAL	MT,YPT,SW
<i>Tetragnatha nigrita</i> Lendl, 1886			1	4	5	V-VI	4,7	WD	PAL	MT,BT
<i>Tetragnatha obtusa</i> C.L.Koch, 1837			4	1	5	V-VI	4,20	WD	PAL	YPT,BT,HC
<b>Araneidae (19)</b>										
<i>Agalenatea redii</i> (Scopoli, 1763)			0	3	3	V	17	WD	PAL	SW
<i>Araneus angulatus</i> (Clerck, 1757)			2	7	9	VI-VII	4,12,15,17,23,24	WD	PAL	YPT,BT,HC
<i>Araneus diadematus</i> Clerck, 1757			3	2	5	VI,IX,XI	12,14,17	WD	HOL	MT,BT
<i>Araniella cucurbitina</i> (Clerck, 1757)			4	5	9	VI	12,15,17,23	WD	PAL	BT,SW,HC
<i>Araniella opisthographa</i> (Kulczynski, 1905)			7	12	19	IV-VI	17,18,19,20,22	WD	ECA	MT,YPT,BT,SW



Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
Argiope bruennichi (Scopoli, 1772)			1	1	2	VII	17	WD	PAL	SW
Cercidia prominens (Westring, 1851)			0	1	1	VI	20	WD	HOL	YPT
Cyclosa conica (Pallas, 1772)		X	0	4	4	VI	12,23	WD	HOL	BT
Gibbaranea bituberculata (Walckenaer, 1802)		X	1	0	1	VI	2	WD	PAL	SW
Gibbaranea omoeda (Thorell, 1870)	X	X	1	1	2	VI	12	WD	PAL	BT
Glyptogona sextuberculata (Keyserling, 1863)			0	1	1	VI	24	M	MME	HC
Hypsosinga heri (Hahn, 1831)		X	0	5	5	VI	20	WD	PAL	SW
Hypsosinga pygmaea (Sundevall, 1831)			0	1	1	V	4	WD	HOL	MT
Hypsosinga sanguinea (C.L.Koch, 1844)			2	2	4	V-VII	2, 20	WD	PAL	YPT,SW
Larinioides suspicax (O.P.-Cambridge, 1876)			8	13	21	V-VI	4,7,20,23	WD	MCA	MT,BT,HC
Mangora acalypha (Walckenaer, 1802)			6	13	19	V-VII	2,4,8,10,17,20,21,25	WD	PAL	MT,YPT,BT,SW
Neoscona adianta (Walckenaer, 1802)			13	13	26	V-VI	5,7,12,16,20,23,24,25	WD	PAL	MT,YPT,BT,SW
Neoscona subfusca (C.L.Koch, 1837)			2	2	4	VI	4,12,20	WD	OLW	BT,HC
Singa nitidula C.L.Koch, 1844	X	X	0	1	1	IV	6	WD	PAL	SW
<b>Lycosidae (38)</b>										
Alopecosa accentuata (Latreille, 1817)			0	1	1	VI	15	WD	PAL	HC
Alopecosa albofasciata (Brullé, 1832)			26	6	32	IV-VI	1,2,4,12,20	WD	MCA	PT,YPT,HC
Alopecosa cuneata (Clerck, 1757)		X	0	1	1	VI	22	WD	PAL	HC
Alopecosa pentheri (Nosek, 1905)			1	1	2	XI-XII	18	E	SET	PT
Alopecosa pulverulenta (Clerck, 1757)			17	0	17	IV-V	11	WD	PAL	PT
Alopecosa trabalis (Clerck, 1757)			1	0	1	VI	2	E	EUR	YPT
Arctosa leopardus Sundevall, 1833			48	26	74	IV,VI-VII	4,13,20	WD	PAL	PT
Arctosa lutetiana (Simon, 1876)	X	X	1	0	1	IV	1	E	EUR	PT
Arctosa tbilisiensis Mcheidze, 1946			39	7	46	V-VII	1,11,20,25	M	EME	PT,YPT,HC
Arctosa variana C.L.Koch, 1847			2	1	3	VI	20	WD	MCA	PT
Aulonia albimana (Walckenaer, 1805)			4	1	5	IV-VI	11,22	WD	PAL	PT,HC
Geolycosa vultuosa C.L.Koch, 1838			1	0	1	IX-X	15	WD	ECA	PT
Hogna radiata (Latreille, 1817)			18	9	27	VII-X	1,2,10,12,15,18,19	WD	MCA	PT,MT,YPT,
Lycosa praegrandis C.L.Koch, 1836			1	0	1	VI	15	BK	BCA	HC
Pardosa agrestis (Westring, 1861)			6	10	16	VI	4,7,20,25,26	WD	PAL	PT,MT,SW,HC

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<i>Pardosa agricola</i> (Thorell, 1856)			4	2	6	VI,VIII	20	WD	ETU	PT,YPT,HC
<i>Pardosa alacris</i> (C.L.Koch, 1833)			6	1	7	V	22	E	EUR	YPT
<i>Pardosa albatula</i> (Roewer, 1951)			16	15	31	VI-VIII	2,15,21,22	E	EUR	PT,YPT,HC
<i>Pardosa amentata</i> (Clerck, 1757)			1	0	1	V	22	WD	EUS	YPT
<i>Pardosa atomaria</i> (C.L.Koch, 1847)			27	11	38	I-VI,IX,X,XII	4,12	WD	PAL	PT,MT,HC
<i>Pardosa cribrata</i> Simon, 1876			85	21	106	VI	20	M	MED	PT
<i>Pardosa hortensis</i> (Thorell, 1872)			71	47	118	III-VII	1,2,8,10,15,16,17,20,21,22,24,25,26	WD	PAL	PT,MT,YPT,HC
<i>Pardosa lugubris</i> (Walckenaer, 1802)			23	11	34	V-VII	2,15,17	WD	PAL	PT,YPT
<i>Pardosa monticola</i> (Clerck, 1757)	X	X	6	11	17	VI-VII	15,20,22	WD	PAL	YPT,HC
<i>Pardosa nebulosa</i> (Thorell, 1872)		X	1	0	1	VII	20	WD	PAL	PT
<i>Pardosa palustris</i> (Linnaeus, 1758)			1	0	1	VI	20	WD	HOL	PT
<i>Pardosa prativaga</i> (L.Koch, 1870)			14	11	25	IV-VIII	10,11,13,17,20,24	E	EUR	PT,YPT,HC
<i>Pardosa proxima</i> (C.L.Koch, 1847)			67	40	107	II-IX	1,2,4,9,10,11,15,20,23,23,25,26	WD	PAL	PT,MT,YPT,HC
<i>Pardosa saltans</i> Topfer-Hofman, 2000	X	X	3	11	14	VI-IX	2,15,16,17	E	EUR	PT,YPT,BT,HC
<i>Pardosa vittata</i> (Keyserling, 1863)			1	4	5	VI,VIII	1,10,20	E	EUR	PT,YPT
<i>Pirata hygrophilus</i> Thorell, 1872			13	23	36	V-IX	1,2,17,22,24	WD	PAL	PT,MT,HC
<i>Pirata latitans</i> (Blackwall, 1841)			52	19	71	VI	10,20,24	WD	ECA	PT,YPT,HC
<i>Pirata piraticus</i> (Clerck, 1757)			6	5	11	VI-VII	20	WD	HOL	PT
<i>Trochosa hispanica</i> Simon, 1870			70	18	88	II-VIII,X-XI	1,4,8,9,10,11,15,20	M	NME	PT,MT,YPT
<i>Trochosa rucicola</i> (DeGeer, 1778)			10	3	13	II-IV,VI	1,10,11,20	WD	HOL	PT
<i>Trochosa terricola</i> Thorell, 1856			0	2	2	VI	20,24	WD	HOL	YPT,HC
<i>Xerolycosa miniata</i> (C.L.Koch, 1834)			5	9	14	VI	20,22	WD	PAL	PT,HC
<i>Xerolycosa nemoralis</i> (Westring, 1861)			5	1	6	VI-VII	2,15,22	WD	PAL	PT,HC
<b>Pisauridae (1)</b>										
<i>Pisaura mirabilis</i> (Clerck, 1757)			2	11	13	IV-VII	2,4,10,11,17,20,24	WD	PAL	MT,YPT,SW,HC
<b>Oxyopidae (3)</b>										
<i>Oxyopes heterophthalmus</i> (Lateille, 1804)			6	9	15	V-VI	2,4,12,15,17,18,22,23	WD	PAL	MT,YPT,BT,SW,HC
<i>Oxyopes lineatus</i> Latreille, 1806			23	16	39	V-VII	3,5,7,9,10,12,15,16,17,18,20,24	WD	PAL	MT,YPT,SW
<i>Oxyopes nigripalpis</i> Kulczynski, 1891	X	X	16	0	16	V-VI	2,3,9,10,16,17,18,20	M	MED	MT,YPT,SW
<b>Zoridae (1)</b>										

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<i>Zora spinimana</i> (Sundevall, 1833)	X	X	2	1	3	V-VII	2,17	WD	PAL	PT,YPT,HC
<b>Agelenidae (8)</b>										
<i>Agelena gracilens</i> C.L.Koch, 1841		X	4	1	5	VII-IX	2,7,10,22	WD	MCA	PT,MT,YPT
<i>Agelena labyrinthica</i> (Clerck, 1757)			1	0	1	VII	5	WD	PAL	MT
<i>Agelena orientalis</i> C.L.koch, 1837		X	6	4	10	VI-VII	4,5,12	E	SEC	PT,MT,HC
<i>Histopona torpida</i> (C.L.Koch, 1834)	X	X	9	1	10	V-VIII	2,14,15,16	E	EUR	PT,YPT
<i>Malthonica ferruginea</i> (Panzer, 1804)			0	1	1	VI	22	E	EUR	HC
<i>Malthonica nemorosa</i> (Simon, 1916)			5	4	9	IV-VI	4,12,20	M	NME	PT,HC
<i>Malthonica silvestris</i> (L.Koch, 1872)		X	1	0	1	X	14	EUS	WD	PT
<i>Tegenaria regispyrrhi</i> Brignoli, 1976		X	2	0	2	IX-X	14,15	BK	BALK	PT
<b>Cybaeidae (2)</b>										
<i>Cybaeus angustiarum</i> L.Koch, 1868			2	1	3	VII-VIII	2,21	E	EUR	PT,MT
<i>Cybaeus balkanus</i> Deltshv, 1997	X	X	0	1	1	IX-X	16	BK	BALK	PT
<b>Dictynidae (7)</b>										
<i>Dictyna arundinacea</i> (Linnaeus, 1758)			3	3	6	V-VII	8,20,26	WD	HOL	PT,MT,HC
<i>Dictyna civica</i> (Lucas, 1850)		X	5	7	12	VI	20	WD	HOL	HC
<i>Dictyna latens</i> (Fabricius, 1778)			6	5	11	VI-VII	5,12	WD	ECA	MT,BT,SW
<i>Dictyna uncinata</i> Thorell, 1856			2	2	4	IV-V	10,11	WD	PAL	MT
<i>Dictyna vicina</i> Simon, 1873		X	0	2	2	VI	23	WD	MCA	BT
<i>Lathys humilis</i> (Blackwall, 1855)			1	1	2	III,V	2, 10	WD	PAL	MT
<i>Nigma flavescens</i> (Walckenaer, 1830)		X	2	1	3	IV-V	5,12,13	WD	PAL	MT,SW
<b>Amaurobiidae (4)</b>										
<i>Amaurobius erberi</i> (Keyserling, 1863)			3	0	3	II-III	1	E	EUR	PT
<i>Eurocoelotes brevispinus</i> Deltshv&Dimitrov, 1996	X	X	5	3	8	III-IV,VII	15,16,17	BK	BALK	PT,HC
<i>Eurocoelotes inermis</i> (L.Koch, 1855)	X	X	1	0	1	IV	15	E	EUR	PT
<i>Eurocoelotes karlinskii</i> (Kulczynski, 1906)	X	X	0	1	1	VI	15	BK	BALK	HC
<b>Titanoecidae (5)</b>										
<i>Nurscia albomaculata</i> (Lucas, 1846)			0	1	1	VI	4	WD	ECA	HC
<i>Titanoeca flavicoma</i> L.Koch, 1872	X	X	2	0	2	VI	2,4	WD	PAL	YPT,HC
<i>Titanoeca quadriguttata</i> (Hahn, 1833)		X	1	0	1	VII	15	WD	PAL	YPT,HC

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<i>Titanoeca schineri</i> L.Koch, 1872		X	2	0	2	VII	10	WD	PAL	YPT
<i>Titanoeca tristis</i> L.Koch, 1872		X	0	1	1	VI	25	WD	ECA	HC
<b>Miturgidae (4)</b>										
<i>Cheiracanthium elegans</i> Thorell, 1875	X	X	2	0	2	VI-VII	17	WD	ECA	MT,SW
<i>Cheiracanthium mildet</i> L.Koch, 1864			3	2	5	IV-VI	5,10,12	WD	HOL	MT,HC
<i>Cheiracanthium pelagicum</i> (C.L.Koch, 1837)			0	1	1	VI	15	WD	PAL	HC
<i>Cheiracanthium punctorium</i> (Villers, 1789)		X	3	0	3	VI-VII	3,5,12	WD	ECA	MT,BT
<b>Anypaenidae (2)</b>										
<i>Anypaena accentuata</i> (Walckenaer, 1802)		X	12	10	22	IV-VIII	10,14	WD	ECA	MT
<i>Anypaena sabina</i> L.Koch, 1866		X	2	2	4	IV-VI	2,12,18	WD	ETU	PT,MT,BT
<b>Liocranidae (5)</b>										
<i>Agroeca cuprea</i> Menge, 1873			3	0	3	II-III	11,16	WD	ECA	PT
<i>Agroeca lusatica</i> (L.Koch, 1875)	X	X	1	0	1	II	20	WD	ECA	PT
<i>Apostenus fuscus</i> Westring, 1851	X	X	0	2	2	VI	2	E	EUR	PT
<i>Mesiotelus scopensis</i> Drensky, 1935		X	2	0	2	II,X	1,2	BK	BALK	PT
<i>Mesiotelus tenuissimus</i> (L.Koch, 1866)		X	2	0	2	II-III	1	WD	MCA	PT
<b>Clubionidae (9)</b>										
<i>Clubiona brevipes</i> Blackwall, 1849		X	2	4	6	V-VII	10	WD	ECA	MT
<i>Clubiona caerulea</i> L.Koch, 1867	X	X	0	1	1	VI	15	WD	PAL	MT
<i>Clubiona comta</i> C.L.Koch, 1839			0	1	1	VII	21	WD	WPA	MT
<i>Clubiona frutetorum</i> L.Koch, 1867			5	3	8	IV-VII	7,11,20	WD	EUS	MT,YPT
<i>Clubiona juvenis</i> Simon, 1878	X	X	0	1	1	VI	7	WD	PAL	MT
<i>Clubiona lutescens</i> Westring, 1852			5	13	18	VI-VIII	10,24	WD	HOL	MT,YPT,BT
<i>Clubiona pallidula</i> (Clerck, 1775)			10	6	16	IV-VIII,IX	4,7,10,15,17,22	WD	HOL	MT,BT
<i>Clubiona terrestris</i> Westring, 1851			16	20	36	IV-VII	10,14,20	E	EUR	MT
<i>Clubiona vegeta</i> Simon, 1918		X	2	10	12	V-VII	4,12,15,21	WD	MCA	MT,HC
<b>Corinnidae (3)</b>										
<i>Phrurolithus festivus</i> (C.L.Koch, 1835)			4	6	10	VI-VIII	10,15,16,17,20,24	WD	PAL	PT,MT,BT,HC
<i>Phrurolithus szilyi</i> Herman, 1879		X	0	1	1	VI	20	E	EUR	PT
<i>Trachelas minor</i> O.P.-Cambridge, 1872		X	2	0	2	VI-VII	5,2	WD	MCA	MT,YPT

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<b>Zodariidae (5)</b>										
Zodarium blagoevi Bosmans, 2009	X	X	54	33	87	IV-VIII	1,4,11,12,15,16,19,20,22	BK	BALK	PT,YPT,HC
Zodarium frenatum Simon, 1884			7	3	10	VI-X	18, 20	WD	ETU	PT,YPT,HC
Zodarium hauseri Brignoli, 1984		X	1	1	2	VI	20,26	BK	GRE	PT,HC
Zodarium morosum Denis, 1935		X	8	14	22	VI-VIII	4,12,16,18,22	E	EEU	PT,HC
Zodarium thoni Nosek, 1905		X	0	1	1	VI-VII	15	WD	EET	YPT
<b>Gnaphosidae (47)</b>										
Aphanthaulax cincta (L.Koch, 1866)			2	2	4	IV,VI	4,20,23	WD	PAT	YPT,BT
Aphanthaulax trifasciata (O.P.-Cambridge, 1872)			10	1	11	V-VII	7,19,20,25	WD	PAL	MT,YPT,SW
Callilepis cretica (Roewer, 1928)			4	1	5	VI-VII	10,18	E	SET	PT,YPT
Callilepis nocturna (Linnaeus, 1758)			1	13	14	VI	15,21,22	WD	PAL	YPT,HC
Callilepis schusztleri (Herman, 1879)			3	9	12	VI	16,19,22	WD	PAL	PT,HC
Cryptodrasus hungaricus (Balogh, 1935)	X	X	0	1	1	VI	12	E	EUR	HC
Drassodes lapidosus (Walckenaer, 1802)			20	16	36	V-VI	2,4,5,7,12,16,18,20,22,25	E	EUR	MT,YPT,HC
Drassodes lutescens (C.L.Koch, 1839)			3	2	5	VI	15,18,22	WD	MCA	PT,YPT,HC
Drassodes pubescens (Thorell, 1856)			2	1	3	VI	15,22	WD	PAL	HC
Drassyllus praeficus (L.Koch, 1866)			4	5	9	V-VI	1,20,22	WD	ECA	PT,HC
Drassyllus villicus (Thorell, 1875)	X	X	2	1	3	V-VI	16,17	E	EUR	PT,HC
Haplodrasus bohemicus Miller & Buchar, 1977	X	X	0	2	2	VI	26	E	EEU	HC
Haplodrasus dalmatensis (L.Koch, 1866)			5	2	7	VI	15,22	WD	PAL	HC
Haplodrasus isaei Ponomarev & Tsvetkov, 2006	X	X	1	0	1	I	18	BK	BCA	PT
Haplodrasus signifer (C.L.Koch, 1839)			4	8	12	IV,VI-VII	1,4,15,19,20,22	WD	HOL	PT,HC
Haplodrasus silvestris (Blackwall, 1833)		X	2	0	2	VI	2	WD	PAL	PT
Kishidaia conspicua (L.Koch, 1866)	X	X	1	0	1	V	10	WD	ECA	MT
Leptodrasus albidus Simon, 1914		X	0	2	2	VI	4,12	M	MED	HC
Micaria albivittata (Lucas, 1846)			7	9	16	V-VI	20,22	WD	PAL	YPT,HC
Micaria coarctata (Lucas, 1846)		X	7	0	7	VI	4,9,18,26	WD	MCA	YPT,HC
Micaria dives (Lucas, 1846)		X	2	0	2	IV,VI	4,22	WD	PAL	PT,HC
Micaria formicaria (Sundevall, 1831)	X	X	1	2	3	VII	15,21	WD	PAL	PT,MT
Micaria fulgens (Walckenaer, 1802)			4	6	10	VI-VII	2,15,18,22	WD	WPA	PT,YPT,HC

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<i>Micaria pallipes</i> (Lucas, 1846)		X	0	2	2	VII	18	WD	MCA	YPT
<i>Micaria pulicaria</i> (Sundevall, 1831)			1	0	1	VI	20	WD	HOL	YPT
<i>Micaria rossica</i> Thorell, 1875	X	X	1	6	7	VIII	20	WD	HOL	YPT
<i>Nomisia exornata</i> (C.L.Koch, 1839)		X	2	11	13	VI-VII	1,2,4,12,15,18,19,22	WD	ECA	PT,MT,YPT,HC
<i>Poecilochroa variana</i> (C.L.Koch, 1839)			1	1	2	VI-VII	15	WD	ECA	PT,HC
<i>Scotophaeus scutulatus</i> (L.Koch, 1866)			1	0	1	VIII	5	WD	WPA	MT
<i>Trachyzelotes barbatus</i> (L.Koch, 1866)			0	1	1	VI	4	WD	MCA	HC
<i>Trachyzelotes malkini</i> Platnick & Murphy, 1984		X	0	1	1	VI	4	E	SET	HC
<i>Trachyzelotes pedestris</i> (C.L.Koch, 1837)			2	0	2	IV-VI	11,20	E	EUR	PT
<i>Urozelotes rusticus</i> (L.Koch, 1872)	X	X	1	1	2	VI	20	WD	COS	HC
<i>Zelotes apricorum</i> (L.Koch, 1876)			1	3	4	VI-VII,IX-X	2,15,17	WD	ETU	PT,YPT,HC
<i>Zelotes atrocaeruleus</i> (Simon, 1878)		X	1	3	4	VI	2,4,22	WD	PAL	YPT,HC
<i>Zelotes balcanicus</i> Deltshev, 2006			3	1	4	II-V	1	BK	BALK	PT
<i>Zelotes caucasicus</i> (L.Koch, 1866)		X	4	5	9	VI-VIII	4,18,19,26	WD	ECA	PT,HC
<i>Zelotes electus</i> (C.L.Koch, 1839)			3	4	7	VI-VII,IX	15	WD	ECA	PT,HC
<i>Zelotes erebeus</i> (Thorell, 1871)			2	0	2	IX	2,19	E	EUR	PT
<i>Zelotes eugeni</i> Kovblyuk, 2008	X	X	1	1	2	V	11	WD	ECA	PT
<i>Zelotes hermani</i> Chyzer, 1897	X	X	0	1	1	VI	22	E	EEU	HC
<i>Zelotes ilotarum</i> (Simon, 1884)		X	6	1	7	IX-X	1,18,19	E	SET	PT,MT
<i>Zelotes longipes</i> (L.Koch, 1866)			0	1	1	VI	5	WD	PAL	YPT
<i>Zelotes oblongus</i> (C.L.Koch, 1833)		X	0	9	9	VI	22	E	EUR	HC
<i>Zelotes segregatus</i> (Simon, 1878)		X	2	1	3	VI-VII	4,12,15	WD	PAL	YPT,HC
<i>Zelotes talpinus</i> (L.Koch, 1872)			0	1	1	VII-VIII	15	E	EUR	PT
<i>Zelotes tenuis</i> (L.Koch, 1866)		X	3	0	3	VI	15,20	WD	MCA	PT,HC
<b>Sparassidae (3)</b>										
<i>Micrommata ligurina</i> (C.L.Koch, 1845)		X	0	1	1	IV	20	WD	MCA	YPT
<i>Micrommata virescens</i> (Clerck, 1757)			1	3	4	IV-VI	10,15,17,24	WD	PAL	MT,YPT,SW,HC
<i>Olios argelasius</i> (Walckenaer, 1805)		X	3	1	4	V-VII	2,9,19,23	M	MED	MT,YPT,BT
<b>Philodromidae (13)</b>										
<i>Philodromus aureolus</i> (Clerck, 1757)		X	0	5	5	VI	17,22	WD	PAL	BT,HC

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<i>Philodromus cespitum</i> (Walckenaer, 1802)			10	12	22	V-VII	4,5,7,10,17,19,20,22,25	WD	HOL	MT,BT,SW,HC
<i>Philodromus dispar</i> Walckenaer, 1826		X	1	3	4	VI	17,22	WD	HOL	SW
<i>Philodromus longipalpis</i> Simon, 1870			7	6	13	VI	4,17,19,22	E	EUR	MT,BT,HC
<i>Philodromus praedatus</i> O.P.-Cambridge, 1871	X	X	0	3	3	VI	17,22	WD	EUS	BT,SW
<i>Philodromus pulchellus</i> Lucas, 1846		X	2	2	4	V-VI	5,10,20	M	MED	MT,YPT,SW
<i>Philodromus ruficapillus</i> Simon, 1885			1	1	2	VI	20	WD	MCA	BT
<i>Philodromus rufus</i> Walckenaer, 1826			1	1	2	V	2,5	WD	HOL	MT
<i>Thanatus atratus</i> Simon, 1875	X	X	26	11	37	VI-VIII	2,4,10,12,15,18,19,20,22,23	WD	EUS	PT,YPT,BT,HC
<i>Thanatus oblongiuseculus</i> (Lucas, 1846)			2	0	2	VI	12,18	WD	PAL	MT,HC
<i>Thanatus vulgaris</i> Simon, 1870			2	0	2	V	20	WD	HOL	YPT
<i>Tibellus maritimus</i> (Menge, 1875)	X	X	0	1	1	V	4	WD	HOL	MT
<i>Tibellus oblongus</i> (Walckenaer, 1802)			3	2	5	VI	20	WD	HOL	SW
<b>Thomisidae (23)</b>										
<i>Ebrechtella tricuspidata</i> (Fabricius, 1775)			1	3	4	IV-VII	8,11,20,25	WD	PAL	MT,YPT,SW
<i>Heriaraus orientalis</i> Simon, 1918		X	2	0	2	VI	18	WD	EET	YPT
<i>Heriaraus simoni</i> Kulczynski, 1903		X	2	0	2	VI	9,23	WD	PAL	YPT,BT
<i>Misumena vatia</i> (Clerck, 1757)			3	3	6	IV-VI	2,17,22	WD	HOL	SW
<i>Ozyptila claveata</i> (Walckenaer, 1837)			1	0	1	VI	15	WD	PAL	PT
<i>Ozyptila confluens</i> (C.L.Koch, 1845)			35	3	38	IX-X,XII	1,12,15,18,19	M	NME	PT,HC
<i>Ozyptila danubiana</i> Weiss, 1998	X	X	1	0	1	VI	20	E	EEU	HC
<i>Ozyptila praticola</i> (C.L.Koch, 1837)			0	7	7	VI,VIII	10,24	WD	HOL	MT,BT
<i>Ozyptila simplex</i> (O.P.-Cambridge, 1862)			1	0	1	VI	20	WD	PAL	PT
<i>Runcinia grammica</i> (C.L.Koch, 1837)			32	7	39	V-VII	1,3,4,5,9,17,20,23	WD	PAT	MT,YPT,BT,SW,HC
<i>Synema globosum</i> (Fabricius, 1775)			7	9	16	V-VII	2,12,16,17,18,19,20,24	WD	PAL	MT,YPT,BT,SW
<i>Synema plorator</i> (O.P.-Cambridge, 1872)			1	3	4	IV-VI	2,12,17	WD	ECA	BT,SW
<i>Thomisus onustus</i> Walckenaer, 1805			5	3	8	VI	2,12,16,17,18,24	WD	PAL	YPT,BT,SW
<i>Tmarus piger</i> (Walckenaer, 1802)			1	2	3	IV-V	10	WD	PAL	MT
<i>Tmarus piochardi</i> (Simon, 1866)		X	0	2	2	VI	23	M	MED	PT
<i>Xysticus caperatus</i> Simon, 1875			7	1	8	VI-VII	4,18,22	WD	MCA	PT,HC
<i>Xysticus embriki</i> Kolosvary, 1935		X	1	1	2	X,XII	18	WD	ECA	PT

Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<i>Xysticus kochi</i> Thorell, 1873			4	13	17	IV-VII	1,2,4,5,11,15,17,20	WD	PAL	PT,MT,YPT,SW,HC
<i>Xysticus laetus</i> Thorell, 1875	X		3	4	7	III,VI	1,4,6,24,25	WD	MCA	PT,MT,SW,HC
<i>Xysticus luctator</i> L.Koch, 1870			2	1	3	VI	10,24	WD	PAL	MT,SW
<i>Xysticus minni</i> (Thorell, 1872)			12	0	12	VI-VII	15,19,21	WD	PAL	PT,MT,HC
<i>Xysticus robustus</i> (Hahn, 1832)	X		1	0	1	VII	16	WD	ECA	PT
<i>Xysticus tenebrosus</i> Silhavy, 1944	X		0	1	1	VI	22	M	EME	HC
<b>Salticidae (54)</b>										
<i>Aelurillus v-insignitus</i> (Clerck, 1757)			28	6	34	V-VI	5,15,17,20,21,22	WD	PAL	YPT,HC
<i>Asianellus festivus</i> (C.L.Koch, 1834)			1	0	1	V	10	WD	PAL	YPT
<i>Ballus chalybeius</i> (Walckenaer, 1802)			11	7	18	IV-VI	5,10,11	WD	WPA	MT
<i>Ballus rufipes</i> (Simon, 1868)	X		0	2	2	VI	23	E	MSE	BT
<i>Bianor albomaculatus</i> (Lucas, 1846)			2	8	10	VI-VII	20	WD	MCA	PT,HC
<i>Carrhotus xanthogramma</i> (Latreille, 1868)			1	1	2	V-VI	2,4	WD	PAL	MT,BT
<i>Chalcoscirtus infimus</i> (Simon, 1868)			4	0	4	VI	2,18,22	WD	ECA	MT,YPT,HC
<i>Euophrys frontalis</i> (Walckenaer, 1802)			11	5	16	V-VI	2,7,10,15,16,20,22	WD	PAL	MT,BT,SW,HC
<i>Euophrys rufibarbis</i> (Simon, 1868)			0	2	2	VI	22	WD	PAL	HC
<i>Evarcha arcuata</i> (Clerck, 1775)			20	8	28	V-VI,VIII	4,5,10,20,24,25	WD	PAL	MT,YPT,BT,SW,HC
<i>Evarcha falcata</i> (Clerck, 1757)			1	1	2	VII	15	WD	PAL	PT,YPT
<i>Evarcha jucunda</i> (Lucas, 1846)			20	7	27	III,VI-VIII	1,2,5,9,10,15,18,23	M	MED	PT,MT,YPT,BT
<i>Heliophanus auratus</i> C.L.Koch, 1835			14	16	30	IV-VII	5,6,7,11,15,16,20,24	WD	PAL	MT,YPT,BT,SW,HC
<i>Heliophanus cupreus</i> (Walckenaer, 1802)			15	25	40	V-VIII	4,10,15,16,17,21,22	WD	PAL	PT,MT,YPT,BT,HC
<i>Heliophanus equester</i> L.Koch, 1867			5	0	5	V-VI	5,9,12,20,22	WD	ETU	MT,YPT,BT
<i>Heliophanus flavipes</i> (Hahn, 1832)			1	2	3	VI-VII	5,17	WD	PAL	MT,SW
<i>Heliophanus kochi</i> Simon, 1868			4	6	10	V-VI	4,5,19,22	WD	PAL	MT,BT,HC
<i>Heliophanus melinus</i> L.Koch, 1867			13	17	30	VI	2,3,4,12,16,17,18,22	WD	PAL	MT,YPT,BT,SW,HC
<i>Heliophanus simplex</i> Simon, 1868	X		2	2	4	V-VI	2,5,23	WD	PAL	MT,YPT,BT
<i>Leptorches betulinensis</i> (C.L.Koch, 1846)	X		1	1	2	V,VIII	9,19	WD	ETU	MT
<i>Leptorches mutilloides</i> (Lucas, 1846)	X		4	0	4	VI	20,22	M	MED	BT,SW
<i>Macaroeris flavicomis</i> (Simon, 1884)			0	1	1	VI	23	E	EEU	BT
<i>Macaroeris nidicolens</i> (Walckenaer, 1802)			5	0	5	VI	10,12,17,22	WD	ECA	YPT,BT
<i>Mendoza canestrinii</i> (Ninni, 1868)			1	1	2	IV	6	WD	PAL	MT



Table 2. Continued.

Family / Species	GR	MAC	Ma	Fe	Total	Phenology	Locality	COM	CAT	Method
<i>Menemerus semilimbatus</i> (Hahn, 1829)			3	4	7	V-VI	4,7,20	WD	COS	MT,HC
<i>Mogrus neglectus</i> (Simon, 1868)			1	1	2	V-VI	12, 20	WD	MCA	YPT,BT
<i>Myrmarachne formicaria</i> (DeGeer, 1778)			0	1	1	VI	17	WD	PAL	BT
<i>Neaetha absheronica</i> Logunov & Guseinov, 2002	X	X	5	0	5	V-VII	9,15,18,20,22	M	EME	YPT,HC
<i>Neon reticulatus</i> (Blackwall, 1853)	X	X	0	1	1	VI	22	WD	HOL	HC
<i>Pellenes arciger</i> (Walckenaer, 1837)			1	0	1	VII	18	M	NME	YPT
<i>Pellenes brevis</i> (Simon, 1868)			4	0	4	V-VI	10,20,22	E	EUR	YPT,HC
<i>Pellenes diagonalis</i> (Simon, 1868)			0	1	1	VI	18	M	EME	YPT
<i>Pellenes moreanus</i> Metzner, 1999		X	1	0	1	VI	22	BK	GRE	HC
<i>Pellenes nigrocollatus</i> (Simon 1875)			1	3	4	VI-VII	2,15,18	WD	PAL	PT,YPT
<i>Pellenes seriatus</i> (Thorell, 1875)			4	1	5	IV,VI	5,10,20,22	WD	ECA	YPT,BT
<i>Philaeus chryrops</i> (Poda, 1761)			10	5	15	V-VI	4,10,15,18,19,22	WD	PAL	MT,YPT,HC
<i>Phintella castriesiana</i> (Grube, 1861)			0	2	2	VI,VIII	10	WD	PAL	MT,YPT
<i>Phlegra fasciata</i> (Hahn, 1826)			17	5	22	V-VIII	2,9,11,15,18,19,20,22	WD	PAL	PT,YPT,HC
<i>Phlegra lineata</i> (C.L.koch, 1846)			0	3	3	VI	4,15	M	NEM	HC
<i>Plexippus devorans</i> (O.P.-Cambridge, 1872)		X	1	0	1	VI	20	WD	MCA	HC
<i>Pseudeuophrys erratica</i> (Walckenaer, 1826)		X	1	0	1	VI	15	WD	PAL	MT
<i>Pseudeuophrys obsoleta</i> (Simon, 1868)			15	12	27	VI,VIII	2,15,22	WD	PAL	PT,HC
<i>Pseudicius badius</i> (Simon, 1868)			1	0	1	IX	5	M	NME	MT
<i>Saitis taurica</i> Kulczynski, 1905		X	3	0	3	IV-VI	1,12	WD	EET	PT
<i>Salticus mutabilis</i> Lucas, 1846			0	1	1	VI	20	WD	COS	HC
<i>Salticus zebraneus</i> (C.L.koch, 1837)			3	5	8	VI-VII	4,7,10,17,19,23	WD	PAL	MT,BT,SW
<i>Sibianor tantulus</i> (Simon, 1868)			1	0	1	VII	10	WD	PAL	YPT
<i>Sitticus distinguendus</i> (Simon, 1868)			0	1	1	VII	3	WD	PAL	MT
<i>Sitticus floricola</i> (C.L.Koch, 1837)			0	1	1	VI	20	WD	PAL	SW
<i>Sitticus penicillatus</i> (Simon, 1875)		X	1	3	4	VI-VII	2,22,23,25	WD	PAL	PT,HC
<i>Sitticus pubescens</i> (Fabricius, 1775)		X	2	1	3	VI	12,17,22	WD	HOL	HC
<i>Synageles dalmaticus</i> (Keyserling, 1863)			0	3	3	VI	12,23	WD	MCA	BT
<i>Talavera acquires</i> (O.P.-Cambridge, 1871)			5	0	5	V-VI,VIII	5,15,20	WD	PAL	PT,MT,YPT

number is remarkably low considering the long sampling periods. Altogether, 1 family and 73 species are shown to be new to Greece and 169 species are new records for Macedonia. These numbers are not surprising considering the very few faunistic surveys that were carried out on Macedonian spider fauna (WOLF 2003; BUCHHOLZ 2007). In the latter category, Linyphiidae show the highest number of records (30 species) followed by Gnaphosidae (10 species).

Some interesting faunistic records are discussed:

- *Mysmenella jobi* (KRAUS 1967) – 1 male collected in Kerkini (21/IV-27/IV-2008) with a malaise trap and 1 in Megalochori (18/VI-22/VI-2008) with yellow pan traps in marshy areas. This rare and very small-sized species is the first representative of Mysmenidae in Greece. The species is known from about twenty localities in Central and Southern Europe (HAJDAMOWICZ *et al.* 2003). This is the southernmost citation until now.

- *Lepthyphantes christodeltshevi* VAN HELSDINGEN 2009 – 3 males were collected in Beles Mountains in Vironia (8/XII-14/XII-2008) with pitfall traps in mixed deciduous forest with a deep leaf-litter layer. The species is described from Mount Parnos, north of Athens (VAN HELSDINGEN 2009a). This is the second citation for Greece.

- *Walckenaeria extraterrestris* BOSMANS 1993 – 1 male captured in Beles Mountains in Vironia (8/XII-14/XII-2008) with pitfall traps in a reed field. Originally described from a single male from Algeria and mentioned for Greece by THALER (1996).

- *Zodarion blagoevi* BOSMANS 2009 – 54 males and 33 females collected at various sites (see Table 2) from April till August. Recently described from SW Bulgaria (BOSMANS 2009) and cited here for first time in Northern Greece where it seems to be rather common.

- *Cryptodrassus hungaricus* (BALOGH 1935) – 1 female at North Petritsi (11/VI/2009) with hand sampling in grassland with stones along a rivulet. The species is known from Hungary, the Czech Republic, Romania and France (PLATNICK, 2010). The species is new to Greece.

- *Haplodrassus bohemicus* MILLER & BUCAR 1977 – 2 females were captured at Hrisochorafa (12/

VI/2009) in a marshy grassland with stones by hand-catching. Up to now it was known from a few localities in the Czech Republic and FYR Macedonia (BUCHAR & RUZICKA 2002; STEFANOVSKA *et al.* 2008). This new locality extends its known range in south-easterly direction. The species is new to Greece.

- *Haplodrassus isaevi* PONOMAREV & TSVETKOV 2006 – 1 male sampled at Neo Petritsi (12/I-18/I-2009) by pitfall trapping on a dry hillside, subject to intermittent grazing by goats and horses. This species is described from Kazakhstan (PONOMAREV & TSVETKOV 2006) and mentioned from Russia (PITERKINA & OVTSHARENKO 2008). It is new to Europe and Greece.

- *Zelotes eugenei* KOVBLYUK 2009 – 1 male (14/V-20/V-2007) and 1 female (29/IV-5/V-2007) collected in Kerkini with pitfalls on rough grassland and in a stony substrate. Only known from Ukraine and the Crimea (KOVBLIUK, 2009) and thus new for Greek spider fauna.

- *Ozyptila danubiana* WEISS 1998 – 1 male was found at Strymonas marsh in Megalochori (10/VI/2009) by handcatching on the border of the river. Until now only known from the type locality in Eastern Romania (WEISS 1998). This record extends its known range in southerly direction. New to Greece.

- *Diplocephalus galilaea* LEVY & AMITAI 1981 – 1 female beaten from bushes along a rivulet at North Petritsi (11/VI/2009). Originally described from Israel and recently collected in Lesbos (BOSMANS *et al.* 2009). This is the second record for Greece and the northernmost location of the species.

## Conclusion

The use of different methods of collecting proved to be efficient and resulted in a high number of species. It is clear that Wetland Kerkini accommodates high diversity of spiders.

We are still lacking knowledge of the distribution pattern of a lot of these species. More faunistic surveys are needed and will contribute to a better knowledge of Greek spider fauna which in its whole is still rather poorly known.

Since the catalogue of BOSMANS, CHATZAKI (2005), which contains 856 species, 139 species were added to Greek spider list by various workers until now. The survey at hand adds another 73 species. This means 212 species are recorded as new for Greek spider fauna in five years time. Two species were found to be synonyms. In conclusion, Greece now counts with 1066 known species.

This number already exceeds the present number of the known spider fauna in neighbouring countries. Neighbouring Bulgaria, with which Kerkini fauna shows clear similarities, counts at present 1007 species (BLAGOEV *et al.* 2009). Only in 1999, this country counted 775 species (DELTSHEV 1999). Other countries in the region are harder to compare because of the often lower degree of exploration (DELTSHEV 1999). A lot of faunistic work is being done and we know a lot of species are still to be discovered in

these neighbouring countries, but this is also the case for Greece.

Interestingly enough, some thorough Greek island studies have shown overseas faunistic influences. Similarities between Cretan (e.g. BOSMANS, CHATZAKI, 2005) and North African spider fauna can be noticed, as well as similarities between Lesbos (BOSMANS *et al.* 2009) and Middle Eastern spider fauna. These quite different faunistic influences probably account for part of the high spider species diversity of Greece. Although recent faunistic studies clearly show that our knowledge of Greek spider fauna is yet far from complete, it is impossible to make an accurate estimate of the actual species diversity present.

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## Арахнофауна (Araneae) от влажната зона Керкини (Македония-Северна Гърция)

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### (Резюме)

Публикацията представя фаунистично изследване на паяците във влажната зона Керкини – Гръцки Национален парк, разположен в Централна Северна Гърция, Префектура Серес (провинция Македония). Събрани са общо 379 вида от 35 семейства. 73 вида и 1 семейство (Mysmenidae) са нови за гръцката фауна, 170 вида се съобщават за първи път от Македония. Най-интересните фаунистични съобщения са: *Mysmenella jobi* (KRAUS, 1967); *Lepthyphantes christodeltshev* VAN HELSDINGEN, 2009; *Walckenaeria extraterrestris* BOSMANS, 1993; *Zodarion blagoevi* BOSMANS, 2009; *Cryptodrassus hungaricus* (BALOGH, 1935); *Haplodrassus bohemicus* MILLER & BUCAR, 1977; *Zelotes eugenei* KOVBLYUK, 2009; *Dipoena galilaea* LEVY & AMITAI, 1982 and *Ozyptila danubiana* WEISS, 1998. *Haplodrassus isaevi* PONOMAREV & TSVETKOV, 2006 е нов за Европа.