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## **New faunistic and taxonomic data on the spider fauna of Albania (Arachnida: Araneae)**

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## New faunistic and taxonomic data on the spider fauna of Albania (Arachnida: Araneae)

Antonín Kůrka, Maria Naumova, Simeon Indzhov & Christo Deltshev



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**Abstract.** The goals of this study are 1) to present the results of a new faunistic survey carried out during short, mainly spring vacation trips, through four years (2012–2014 and 2017) in different sites in Albania; 2) to present digital images of some poorly illustrated and difficult to identify species; 3) to make a contribution to the available knowledge of the Albanian spider fauna. Despite the material being collected without prior methodology and almost exclusively by hand, overall, 1231 individuals were collected and identified. A total of 242 species were registered, belonging to 131 genera and 30 families. Two species (*Philodromus buchari* Kubcová, 2004 and *Synema ornatum* (Thorell, 1875)) are reported for the first time from the Balkan Peninsula, and 67 species and 15 genera are the first records for Albania. Thus, the actual number of Albanian spiders increased to 569 species.

**Keywords:** Balkan Peninsula, digital images, mapping, new records

**Zusammenfassung. Neue faunistische und taxonomische Daten zur Spinnenfauna Albanien (Arachnida: Araneae).** Ziele der vorliegenden Arbeit sind: 1) die Ergebnisse von Aufsammlungen aus kurzen Urlaubsaufenthalten in Albanien, meist aus dem Frühling, von verschiedenen Orten aus vier Jahren (2012–2014 und 2017) zu präsentieren; 2) von bisher wenig abgebildeten und schwierig bestimm- baren Arten Digitalfotos zur Verfügung zu stellen; 3) einen Beitrag zur Kenntnis der Spinnenfauna Albanien zu leisten. Obwohl das Ma- terial aus kursorischen Aufsammlungen, fast ausschließlich per Handfang, besteht, wurden insgesamt 1231 gesammelt und bestimmt. Insgesamt wurden 242 Arten, aus 131 Gattungen und 30 Familien erfasst. Zwei Arten (*Philodromus buchari* Kubcová, 2004 und *Synema ornatum* (Thorell, 1875)) sind Erstnachweise für den Balkan, 67 Arten und 15 Gattungen sind Erstnachweise für Albanien. Damit sind nun 569 Spinnenarten aus Albanien bekannt.

Although the first reports for Albanian spiders date from the 19<sup>th</sup> century (Simon 1878), the spider fauna of the country is still poorly investigated. Deltshev et al. (2011) compiled all available faunistic data about Albanian spiders and listed 335 species from 36 families. Significant contributions during the last decade were presented by Vrenozi (2012), Vrenozi & Deltshev (2012a, 2012b), Vrenozi & Jäger (2012, 2013), Vrenozi & Dunlop (2013), Helsdingen & IJland (2015), Naumova et al. (2016), Blick (2018), Helsdingen et al. (2018), Komnenov (2018), Deltshev & Indzhov (2018) and Naumova (2020), and the number of species reached 502. The goal of this study is to present the results of a new faunistic survey carried out during short vacation trips throughout four years, to present digital images of some poorly illustrated and difficult to identify species, and to make a contribution to the available knowledge of the Albanian spider fauna.

### Material and methods

The examined material was collected purposefully but without prior methodology, almost exclusively by hand and exceptionally by beating at different localities in Albania, between 28. May and 31. July in the years 2012, 2013, 2014 and 2017. The specimens were preserved in 70% ethanol and deposited in the collection of the National Museum – Natural History Museum, Prague (NMP). Nomenclature follows the World Spider Catalog (2019). The digital images of spiders were taken with a Lumix digital camera attached to Wild M5A stereomicroscope and prepared with Photoshop CS6 software. The list (alphabetically) of the localities (by districts)

and related data [such as approximate geographical coordinates (decimal), altitude, date, collector, UTM-code 10 km × 10 km, habitat and collecting method] are given in Tab. 1. In most localities the material was collected in total in two or more habitats or at the boundaries between them and they are marked as ‘div’ (Tab. 1, Figs 3–14). The sites were mapped on the basis of exact or approximate geographic coordinates and were visualized on the map of Albania (Figs 1, 2) in the projection coordinate system „WGS 84 UTM 34N“. When two (or more) localities were very close to each other, they were artificially separated (during the map visualization process) to enable a clearer presentation on the map. Mapping and visualization of the map were done with the software ArcGIS 10.1 (ESRI, Redlands, California, USA).

Abbreviations used in the text include: j/jj – juvenile/s, Mts – mountains.



Fig. 1: Location of Albania in Europe

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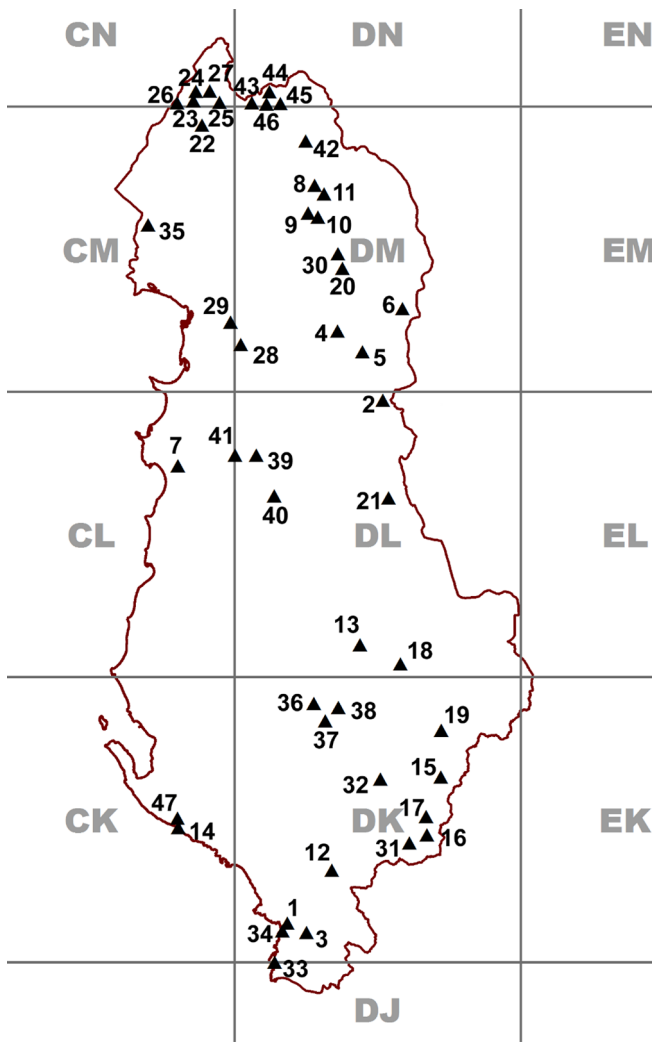


Fig. 2: UTM Map 100 km × 100 km, with the sites where spiders were collected. 1–47: localities (with number and details in the Tab. 1).



Fig. 3: Dibër district, Radomirë, Korab Mountains



Fig. 4: Fushë-Arrëz district, Truen, Krrabe Mountains

Tab. 1: The localities in Albania where spiders have been collected, the districts are in bold. Loc.N<sup>o</sup> – the number used in Fig. 2 and Tab. 2; Lat°N and Long°E – geographical coordinates (decimal); Alt – altitude in m a.s.l.; Leg – collectors: AK – A. Kûrka, IR – I. Rus, LB – L. Blažej, PM – P. Moravec; UTM – code 10 km × 10 km; div – material coming from diverse habitats; M – collecting method: b – beating, hp – hand picking.

Loc.N <sup>o</sup>	Locality	Lat°N	Long°E	Alt	Date	Leg	UTM	Habitat	M
<b>Bashkia Konispol</b>									
1	Vrinë	39.8456	20.0276	3	5. Jun. 2013	PM	DK 11	div	hp
<b>Bulqizë</b>									
2	Shupenzë, Zerkjani river	41.5234	20.4232	485	12. Jun. 2014	AK	DL 59	div	hp
<b>Delvinë</b>									
3	Dërmish	39.8404	20.1254	120	5. Jun. 2013	AK	DK 21	div	hp
<b>Dibër</b>									
4	Lurë NP	41.7414	20.2297	1400	29. Jun. 2017	AK	DM 32	div	hp
5	Mihurr	41.6766	20.3361	392	9. Jun. 2014	AK	DM 41	div	hp
6a	Radomirë, Korab Mts	41.8136	20.5026	1800–2200	11. Jun. 2014	LB	DM 52	div	hp
6b	Radomirë, Korab Mts	41.8136	20.5026	1200–1650	10. Jun. 2014	AK	DM 52	div	hp
<b>Durrës</b>									
7	Pjezë, Erzen river	41.3093	19.5689	19	4. Jul. 2012	AK	CL 87	field	hp
<b>Fushë-Arrëz</b>									
8	Mëzi, Krrabe Mts	42.2007	20.1279	782	4. Jun. 2014	AK	DM 27	pasture	hp
9a	Flet, Krrabe Mts	42.0969	20.1167	909	3. Jun. 2014	AK	DM 26	div	hp
9b	Flet, Krrabe Mts	42.1132	20.1015	850–900	6. Jun. 2014	AK	DM 26	beech forest	hp

Loc.N <sup>o</sup>	Locality	Lat°N	Long°E	Alt	Date	Leg	UTM	Habitat	M
10	Qafa e Malit pass near Lajthize, Fan Mts	42.1001	20.1430	950	2. Jun. 2014	AK	DM 26	div	hp
11	Truen, Krrabe Mts	42.1731	20.1676	628	3. Jun. 2014	AK	DM 36	div	hp
<b>Gjirokaštër</b>									
12	Libohovë	40.0381	20.2265	226	9. Jul. 2012	AK	DK 33	water reservoir bank	hp
<b>Gramsh</b>									
13	Bratilë	40.7504	20.3343	395	30. May 2013	AK	DL 41	river bank	hp
<b>Himarë</b>									
14a	Himarë	40.1669	19.5948	75	6. Jun. 2013	AK	CK 84	rocky slopes	hp
14b	Palasë	40.1669	19.5948	75	6. Jun. 2013	AK	CK 84	rocky slopes	b
<b>Kolonjë</b>									
15	Ersekë	40.3341	20.6714	1010	1. Jun. 2013	AK	DK 76	moist meadow	hp
16	Leskovik	40.1519	20.6154	997	10. Jul. 2012	IR	DK 64	div	hp
17	Radanj	40.2098	20.6113	1050	2. Jun. 2013	AK	DK 65	rocky steppe	hp
<b>Korçë</b>									
18a	Mesmal	40.6914	20.5022	1040	30.–31. May 2013	AK	DL 50	forest edge	hp
18b	Mesmal	40.6914	20.5022	1040	31. May 2013	AK	DL 50	meadow	hp
18c	Mesmal	40.6914	20.5022	1040	1. Jun. 2013	AK	DL 50	pasture	hp
18d	Mesmal	40.6914	20.5022	1040	31. May 2013	AK	DL 50	village	hp
19	Quarrit pass	40.4827	20.6724	1200	1. Jun. 2013	AK	DK 78	div	hp
<b>Kukës</b>									
20	Zebës Mts, Maja e Zebës peak	41.9389	20.2493	1500–1900	8. Jun. 2014	AK	DM 34	div	hp
<b>Librazhd</b>									
21	Shebenik – Jabllanicë NP	41.2147	20.4490	1800	1. Jul. 2017	AK	DL 56	beech forest	hp
<b>Malësi e Madhe</b>									
22	Bogë	42.4008	19.6602	986	31. Jul. 2012	AK	CM 89	div	hp
23	Kozhnjë	42.4592	19.6078	441	28. Jun. 2012	AK	CN 80	river bank	hp
24	Kozhnjë – Vukël	42.4592	19.6208	450–500	27. Jun. 2012	AK	CN 80	div	hp
25a	Nikç	42.4847	19.7172	1500	28. Jun. 2012	AK	CN 90	div	hp
25b	Nikç	42.4715	19.7372	2500	28. Jun. 2012	PM	CN 90	div	hp
26	Tamarë	42.4578	19.5614	264	29. Jun. 2012	AK	CN 80	div	hp
27	Vukël	42.4791	19.6493	546	27.–28. Jun. 2012	AK	CN 80	river bank	hp
<b>Mat</b>									
28	Shkopet, Mat river	41.6953	19.8255	44	3. Jul. 2012	AK	DM 01	div	hp
<b>Mirditë</b>									
29	Rubik	41.7653	19.7801	89	31. Jul. 2012	AK	CM 92	div	hp
30	Thirrë	41.9850	20.2291	1046	7. Jun. 2012	AK	DM 34	oak forest	hp
<b>Përmet</b>									
31a	Çarshovë	40.1312	20.5513	435	3. Jun. 2013	AK	DK 64	pasture	hp
31b	Çarshovë	40.1133	20.5519	570	3. Jun. 2013	AK	DK 64	rock cavities	hp
31c	Çarshovë	40.1263	20.5443	360	3. Jun. 2013	AK	DK 64	steppe	hp
32	Frashër, Bredhi i Hotovës – Dangëlli NP	40.3276	20.4227	1395	4. Jul. 2017		DK 56	forest	hp
<b>Sarandë</b>									
33a	Butrint	39.7456	20.0085	22	4. Jun. 2013	AK	DJ 10	olive orchard	hp
33b	Butrint	39.7464	19.9972	19	4. Jun. 2013	AK	DK 10	pasture and saline	hp
34a	Sarandë	39.8627	20.0375	11	8. Jul. 2012	AK	DK 11	div	hp
34b	Sarandë	39.8700	20.0469	9	4. Jun. 2013	AK	DK 11	pasture	h
<b>Shkodër</b>									
35	Shirokë – Zogaj, Shkodër lake	42.0677	19.4257	15	2. Jul. 2012	AK	CM 65	div	hp

Loc.N <sup>o</sup>	Locality	Lat°N	Long°E	Alt	Date	Leg	UTM	Habitat	M
<b>Skrapar</b>									
36	Bogovë, Osum river	40.5644	20.1458	221	4. Jul. 2012	AK	DK 29	div	hp
37a	Çorovodë	40.5460	20.2134	1161	5.–6. Jul. 2012	AK	DK 38	div	hp
37b	Çorovodë	40.5091	20.1946	259	6. Jul. 2012	AK	DK 38	river bank	hp
38a	Radesh	40.5334	20.2500	818	5. Jul. 2012	AK	DK 38	div	hp
38b	Radesh, Tomorrit Mts	40.5523	20.2472	1100–1200	5.–6. Jul. 2012	AK	DK 38	div	hp
<b>Tiranë</b>									
39	Dajti Mts	41.3466	19.8962	412	28. May 2013	AK	DL 07	forest edge near quarry	hp
40	Krrabe	41.2189	19.9735	400	29. May 2013	AK	DL 16	steppe	hp
41	Tiranë	41.3450	19.8077	101	28. May 2013	AK	DL 07	div	hp
<b>Tropojë</b>									
42	Bujan, Valbones river	42.3393	20.0889	220	6. Jun. 2014	AK	DM 28	div	hp
43a	Kukaj (Valbonë)	42.4536	19.8756	1093	4. Jun. 2014	AK	DN 00	pasture	hp
43b	Kukaj (Valbonë)	42.4528	19.8743	1267	4. Jun. 2014	AK	DN 00	river bank	hp
44	Valbonë, Hysen, Usufaj	42.4556	19.8929	950	5. Jun. 2014	AK	DN 00	div	hp
45	Maja e Rosit peak	42.4775	19.9091	2000–2200	5. Jun. 2014	AK	DN 10	div	hp
46	Valbonë, right tributary of Lumi river	42.4592	19.9220	749	5. Jun. 2014	AK	DN 10	div	hp
<b>Vlorë</b>									
47a	Llogara pass	40.1962	19.5908	1000	8. Jul. 2012	AK	CK 85	div	hp
47b	Llogara pass	40.1962	19.5908	1000	6. Jun. 2013	AK	CK 85	div	hp



**Fig. 5:** Gjirokastrë district, Libohovë, water reservoir (dam) bank



**Fig. 6:** Kolonjë district, Ersekë, moist meadow



**Fig. 7:** Korçë district, Mesmal



**Fig. 8:** Kukës district, Zebës Mountains: Maja e Zebës peak



**Fig. 9:** Malësi e Madhe district, Bogë



**Fig. 10:** Malësi e Madhe district, Tamarë



**Fig. 11:** Skrapar district, Bogovë, Osum river



**Fig. 12:** Skrapar district, Corovodë, river bank



**Fig. 13:** Tropojë district, Bujan, Valbones river



**Fig. 14:** Vlorë district, Llogara pass

## Results

Overall, 1231 spiders (439 ♂♂, 690 ♀♀ and 102 jj) were collected and identified. A total of 242 species were registered, belonging to 131 genera and 30 families (Tab. 2). Number of species per family: Agelenidae – 2, Araneidae – 18, Cheiracanthiidae – 4, Clubionidae – 1, Dictynidae – 1, Dysderidae – 6, Eresidae – 2, Gnaphosidae – 30, Hahniidae – 1, Linyphiidae – 34, Lycosidae – 33, Mimetidae – 1, Miturgidae – 3,

Oecobiidae – 1, Oxyopidae – 2, Philodromidae – 15, Pholcidae – 2, Phrurolithidae – 2, Pisauridae – 1, Salticidae – 26, Scytodidae – 1, Segestriidae – 1, Sparassidae – 2, Tetragnathidae – 4, Theridiidae – 21, Thomisidae – 20, Titanoecidae – 3, Trachelidae – 1, Uloboridae – 1 and Zodariidae – 3. One species was identified only to the genus level. Two species are reported from the Balkan Peninsula for the first time and 67 species and 15 genera are the first records for Albania.

**Tab. 2:** List of the recorded spider species in Albania, as a result of the present survey. Asterisk (\*) – species new to Albania. Families and species are listed alphabetically. See Tab. 1 for locality numbers.

Taxon	Locality (individuals/sex)	Taxon	Locality (individuals/sex)
<b>Agelenidae</b>		<i>*Harpactea srednagora</i>	9b (2 ♀♀)
<i>Histopona luxurians</i> (Kulczyński, 1897)	21 (6 ♂♂)	Dimitrov & Lazarov, 1999	
<i>Tegenaria parietina</i> (Fourcroy, 1785)	41 (1 ♀)	<b>Eresidae</b>	
<b>Araneidae</b>		<i>Eresus moravicus</i> Řezáč, 2008	4 (1 ♂), 38b (1 ♀)
<i>Aculepeira armida</i> (Audouin, 1826)	12 (2 ♀♀)	<i>*Eresus walckenaeri</i> Brullé, 1832	34a (1 ♀)
<i>Aculepeira ceropegia</i> (Walckenaer, 1802)	35 (1 ♀)	<b>Gnaphosidae</b>	
<i>Agalenatea redii</i> (Scopoli, 1763)	14b (1 ♂), 15 (1 ♀)	<i>Anagraphis ochracea</i> (L. Koch, 1867)	31b (1 ♀)
<i>Araneus angulatus</i> Clerck, 1757	33a (1 ♂, 1 ♀), 35 (1 ♂, 5 ♀♀), 47a (1 ♀)	<i>Callilepis nocturna</i> (Linnaeus, 1758)	10 (1 ♂)
<i>Araneus triguttatus</i> (Fabricius, 1775)	43a (1 ♀)	<i>Civizelotes caucasicus</i> (L. Koch, 1866)	14a (1 ♀)
<i>Araniella cucurbitina</i> (Clerck, 1757)	8 (2 ♂♂), 17 (2 ♂♂), 18b (2 ♂♂), 20 (1 ♂), 30 (1 ♂, 1 ♀)	<i>*Civizelotes pygmaeus</i> (Miller, 1943)	9b (1 ♂)
<i>Araniella inconspicua</i> (Simon, 1874)	30 (1 ♀)	<i>Drassodes cupreus</i> (Blackwall, 1834)	6a (2 ♂♂, 1 ♀), 6b (2 ♀♀), 9a (1 ♀), 19 (1 ♂), 38a (1 ♀), 39 (1 ♀), 47b (3 ♀♀)
<i>Araniella opisthographa</i> (Kulczyński, 1905)	17 (6 ♂♂), 18 (4 ♂♂, 5 ♀♀), 30 (1 ♂, 1 ♀), 31c (2 ♀♀), 43a (1 ♂)	<i>Drassodes lapidosus</i> (Walckenaer, 1802)	17 (1 ♂)
<i>Argiope bruennichi</i> (Scopoli, 1772)	36 (1 j), 37a (1 j)	<i>Drassyllus lutetianus</i> (L. Koch, 1866)	5 (1 ♀)
<i>Argiope lobata</i> (Pallas, 1772)	1 (1 j)	<i>Drassyllus praeficus</i> (L. Koch, 1866)	5 (1 ♀)
<i>Gibbaranea bituberculata</i> (Walckenaer, 1802)	18 (1 ♀)	<i>Drassyllus villicus</i> (Thorell, 1875)	18a (1 ♂), 32 (1 ♀)
<i>Hypsosinga albiovittata</i> (Westring, 1851)	8 (1 ♂), 31 (1 ♀)	<i>Echemus angustifrons</i> (Westring, 1861)	10 (1 ♀)
<i>*Hypsosinga pygmaea</i> (Sundevall, 1831)	11 (3 ♀♀), 15 (1 ♀)	<i>Gnaphosa lucifuga</i> (Walckenaer, 1802)	1 (1 ♂), 27 (3 ♀♀, 2 jj)
<i>Hypsosinga sanguinea</i> (C. L. Koch, 1844)	8 (1 ♀)	<i>Gnaphosa opaca</i> Herman, 1879	19 (2 ♂♂, 2 ♀♀)
<i>Larinioides suspicax</i> (O. P.-Cambridge, 1876)	12 (1 ♀), 15 (2 ♂♂, 2 ♀♀)	<i>Haplodrassus dalmatensis</i> (L. Koch, 1866)	14a (1 ♀)
<i>Mangora acalypha</i> (Walckenaer, 1802)	2 (2 ♀♀), 9a (2 ♂♂), 11 (2 ♂♂), 15 (3 ♂♂, 11 ♀♀), 17 (1 ♀), 18a (2 ♂♂, 1 j), (1 ♂, 4 ♀♀), 36 (1 ♀), 43a (1 ♂, 2 ♀♀, 1 j)	<i>Haplodrassus signifer</i> (C. L. Koch, 1839)	20 (1 ♂)
<i>Neoscona adianta</i> (Walckenaer, 1802)	1 (1 ♂), 31a (20 ♂♂, 2 ♀♀, 11 jj), 31c (5 ♂♂, 2 ♀♀, 5 jj), 35 (1 ♀), 38b (1 ♂, 1 ♀, 2 jj)	<i>Micaria albiovittata</i> (Lucas, 1846)	6b (4 ♂♂, 1 ♀), 18d (1 ♂, 1 ♀), 47b (2 ♂♂, 1 ♀, 3 jj)
<i>Singa nitidula</i> C. L. Koch, 1844	5 (2 ♀♀)	<i>*Micaria fulgens</i> (Walckenaer, 1802)	45 (1 ♀)
<b>Cheiracanthiidae</b>		<i>*Micaria pulicaria</i> (Sundevall, 1831)	5 (1 ♀)
<i>Cheiracanthium elegans</i> Thorell, 1875	17 (4 ♂♂, 1 ♀), 18b (2 ♀♀), 30 (1 ♂, 1 ♀, 1 j)	<i>Nomisia exornata</i> (C. L. Koch, 1839)	14a (3 ♀♀), 17 (2 ♂♂)
<i>Cheiracanthium mildei</i> L. Koch, 1864	14a (1 ♀), 36 (1 ♀)	<i>*Nomisia levyi</i> Chatzaki, 2010	11 (1 ♂, 1 ♀), 14a (2 ♀♀), 17 (4 ♂♂, 3 ♀♀, 1 j), 31b (1 ♂, 1 ♀), 39 (3 ♂♂)
<i>*Cheiracanthium pelasgicum</i> (C. L. Koch, 1837)	16 (1 ♀)	<i>*Nomisia peloponnesiaca</i> Chatzaki, 2010	14a (1 ♀)
<i>*Cheiracanthium pennyi</i> O. P.-Cambridge, 1873	31a (1 ♀)	<i>Trachyzelotes pedestris</i> (C. L. Koch, 1837)	47 (1 ♀)
<b>Clubionidae</b>		<i>*Trachyzelotes adriaticus</i> (Caporiacco, 1951)	1 (1 ♀)
<i>Porrhoclubiona genevensis</i> (L. Koch, 1866)	6b (1 ♀)	<i>Zelotes apricorum</i> (L. Koch, 1876)	45 (1 ♂)
<b>Dictynidae</b>		<i>Zelotes balcanicus</i> Deltchev, 2006	17 (1 ♀)
<i>Dictyna arundinacea</i> (Linnaeus, 1758)	15 (1 ♂, 1 ♀)	<i>Zelotes hermani</i> (Chyzer, 1897)	38a (2 ♀♀)
<b>Dysderidae</b>		<i>Zelotes metellus</i> (Roewer, 1928)	1 (1 ♂), 33b (1 ♀), 34b (1 ♀)
<i>Dysdera bellimundi</i> Deeleman-Reinhold, 1988	22 (2 ♀♀)	<i>Zelotes oblongus</i> (C. L. Koch, 1833)	11 (1 ♀), 17 (1 ♀), 47b (1 ♀)
<i>Dysdera crocata</i> C. L. Koch, 1838	41 (1 ♀)	<i>Zelotes segrex</i> (Simon, 1878)	31b (1 ♂), 40 (3 ♀♀)
<i>Dysderocrates storkani</i> (Kratohvíl, 1935)	6a (3 ♀♀, 1 j), 21 (1 ♂, 1 j), 47b (1 ♀)	<i>Zelotes similis</i> (Kulczyński, 1887)	6a (5 ♀♀), 44 (2 ♀♀), 45 (1 ♀)
<i>Harpactea nausicaae</i> Brignoli, 1976	18a (1 ♂), 22 (2 ♀♀), 32 (1 ♂), 39 (1 ♂, 1 ♀)	<i>Zelotes tenuis</i> (L. Koch, 1866)	33b (1 ♀)
<i>Harpactea saeva</i> (Herman, 1879)	18a (1 ♂), 39 (1 ♂)	<b>Hahniidae</b>	
		<i>Hahnia nava</i> (Blackwall, 1841)	20 (1 ♀)
		<b>Linyphiidae</b>	
		<i>*Agyneta affinis</i> (Kulczyński, 1898)	18a (1 ♀)
		<i>Agyneta rurestris</i> (C. L. Koch, 1836)	6b (1 ♂), 11 (1 ♀), 37a (1 ♀), 40 (1 ♀)
		<i>*Araeoncus humilis</i> (Blackwall, 1841)	1 (2 ♂♂), 2 (1 ♂), 45 (1 ♀)
		<i>*Dicymbium tibiale</i> (Blackwall, 1836)	25b (1 ♀)
		<i>*Diplocephalus cristatus</i> (Blackwall, 1833)	9a (1 ♂, 5 ♀♀), 21 (1 ♀), 25b (6 ♀♀), 45 (1 ♀)

Taxon	Locality (individuals/sex)	Taxon	Locality (individuals/sex)
<i>*Diplocephalus picinus</i> (Blackwall, 1841)	21 (1 ♀)	<i>Pardosa atomaria</i> (C. L. Koch, 1847)	9a (1 ♀), 23 (1 ♀), 24 (2 ♀♀), 27 (1 ♀), 37a (2 ♀♀), 40 (1 ♀), 42 (2 ♀♀)
<i>Diplostyla concolor</i> (Wider, 1834)	46 (1 ♀)	<i>*Pardosa blanda</i> (C. L. Koch, 1833)	6a (5 ♂♂, 4 ♀, 2 jj), 6b (1 ♂)
<i>*Entelecara acuminata</i> (Wider, 1834)	10 (1 ♀), 30 (1 ♂, 2 ♀♀), 46 (1 ♂, 1 ♀)	<i>Pardosa cavannae</i> Simon, 1881	35 (1 ♀)
<i>Erigone dentipalpis</i> (Wider, 1834)	2 (1 ♂), 5 (2 ♂♂), 43a (1 ♀)	<i>*Pardosa consimilis</i> Nosek, 1905	20 (1 ♂, 1 ♀)
<i>*Erigonoplus simplex</i> Millidge, 1979	39 (1 ♂)	<i>Pardosa cribrata</i> Simon, 1876	1 (1 ♂), 7 (4 ♀♀), 12 (1 ♂, 4 ♀♀), 33b (3 ♂♂, 1 ♀), 34b (8 ♂♂, 9 ♀♀)
<i>Erigonoplus spinifemuralis</i> Dimitrov, 2003	20 (1 ♀), 33b (1 ♂)	<i>Pardosa hortensis</i> (Thorell, 1872)	18a (4 ♀♀), 18d (2 ♀♀), 27 (1 ♀), 28 (2 ♂♂, 7 ♀♀, 3 jj), 37a (8 ♀♀), 43a (2 ♀♀), 44 (5 ♀♀), 46 (2 ♀♀), 47b (2 ♂♂, 9 ♀♀)
<i>Frontinellina frutetorum</i> (C. L. Koch, 1834)	30 (2 ♀♀), 35 (3 ♀♀), 43a (2 ♂♂, 6 ♀♀)	<i>Pardosa monticola</i> (Clerck, 1757)	6a (1 ♂, 5 ♀♀), 6b (3 ♀♀)
<i>Lepthyphantes leprosus</i> (Ohlert, 1865)	6b (1 ♀), 10 (1 ♀)	<i>*Pardosa morosa</i> (L. Koch, 1870)	43b (2 ♀♀)
<i>Linyphia hortensis</i> Sundevall, 1830	39 (1 ♀), 46 (1 ♂, 1 ♀)	<i>Pardosa prativaga</i> (L. Koch, 1870)	15 (1 ♀)
<i>Micrargus herbigradus</i> (Blackwall, 1854)	10 (1 ♂, 3 ♀♀), 46 (1 ♀)	<i>*Pardosa tasevi</i> Buchar, 1968	42 (1 ♂)
<i>Microneta viaria</i> (Blackwall, 1841)	9b (3 ♀♀), 10 (4 ♀♀), 21 (1 ♀)	<i>Pardosa vittata</i> (Keyserling, 1863)	33b (1 ♀)
<i>Neriere peltata</i> (Wider, 1834)	21 (1 ♀)	<i>*Pardosa wagleri</i> (Hahn, 1822)	43b (1 ♂, 5 ♀♀, 1 j)
<i>*Neriere radiata</i> (Walckenaer, 1841)	18a (1 ♀)	<i>Piratula knorri</i> (Scopoli, 1763)	9a (1 ♀), 14a (1 ♀)
<i>Oedothorax agrestis</i> (Blackwall, 1853)	18d (1 ♂)	<i>Piratula latitans</i> (Blackwall, 1841)	42 (2 ♀♀)
<i>Oedothorax apicatus</i> (Blackwall, 1850)	34b (1 ♀), 42 (1 ♂, 1 ♀), 46 (3 ♀♀)	<i>Trabea paradoxa</i> Simon, 1876	42 (1 ♀)
<i>*Oedothorax fuscus</i> (Blackwall, 1834)	5 (1 ♀)	<i>Trochosa hispanica</i> Simon, 1870	21 (1 ♀)
<i>*Oedothorax paludigena</i> Simon, 1926	1 (2 ♀♀), 34b (1 ♂, 7 ♀♀, 1 j)	<i>Trochosa ruricola</i> (De Geer, 1778)	9a (1 ♀), 42 (1 ♀), 46 (2 ♂♂)
<i>*Palliduphantes trnovensis</i> (Drensky, 1931)	9b (1 ♀), 10 (1 ♂, 1 ♀)	<i>Trochosa terricola</i> Thorell, 1856	22 (1 ♀)
<i>Pelecopsis elongata</i> (Wider, 1834)	39 (1 ♀)	<i>Xerolycosa miniata</i> (C. L. Koch, 1834)	37 (1 ♂)
<i>Prinerigone vagans</i> (Audouin, 1826)	1 (1 ♂, 1 ♀), 5 (1 ♂, 4 ♀♀), 34b (1 ♀), 42 (1 ♂, 2 ♀♀)	<i>*Xerolycosa nemoralis</i> (Westring, 1861)	27 (1 ♀), 35 (1 ♂), 46 (1 ♂)
<i>*Silometopus reussi</i> (Thorell, 1871)	1 (1 ♂, 2 ♀♀)		
<i>*Styloctetor romanus</i> (O. P.-Cambridge, 1873)	31a (1 ♂)	<b>Mimetidae</b>	
<i>*Tenuiphantes flavipes</i> (Blackwall, 1854)	10 (3 ♀♀), 21 (1 ♀), 46 (1 ♀)	<i>*Mimetus laevigatus</i> (Keyserling, 1863)	2 (1 ♀)
<i>Tenuiphantes floriana</i> (van Helsdingen, 1977)	9b (1 ♂)	<b>Miturgidae</b>	
<i>Tenuiphantes tenuis</i> (Blackwall, 1852)	10 (1 ♀), 46 (1 ♀)	<i>Zora nemoralis</i> (Blackwall, 1861)	9b (1 ♂, 2 ♀♀), 10 (1 ♀)
<i>*Trichoncoides piscator</i> (Simon, 1884)	33b (1 ♀)	<i>*Zora pardalis</i> Simon, 1878	39 (1 ♀)
<i>Trichoncus affinis</i> Kulczyński, 1894	10 (1 ♀), 18a (1 ♀)	<i>Zora spinimana</i> (Sundevall, 1833)	18a (1 ♂, 2 ♀♀), 21 (2 ♂♂), 32 (1 ♂, 1 ♀), 46 (1 ♂, 1 ♀)
<i>Trichoncus sordidus</i> Simon, 1884	1 (1 ♀)		
<i>Walckenaeria monoceros</i> (Wider, 1834)	45 (1 ♀)	<b>Oecobiidae</b>	
<b>Lycosidae</b>		<i>Uroctea durandi</i> (Latreille, 1809)	17 (1 j), 29 (1 j), 37b (1 ♀)
<i>Alopecosa albofasciata</i> (Brullé, 1832)	17 (2 ♀♀), 39 (1 ♀)	Oxyopidae	
<i>Alopecosa farinosa</i> (Herman, 1879)	6a (1 ♀), 11 (1 ♀), 25a (1 ♀), 45 (1 ♂)	<i>Oxyopes heterophthalmus</i> (Latreille, 1804)	2 (1 ♀), 9a (1 j), 15 (3 ♂♂), 18b (2 ♂♂, 4 ♀♀, 1 j), 31a (3 ♂♂, 4 ♀♀)
<i>*Alopecosa taeniata</i> (C. L. Koch, 1835)	25a (1 ♀)	<i>Oxyopes lineatus</i> Latreille, 1806	2 (1 ♂), 5 (1 j), 14a (1 j), 15 (6 jj), 31a (2 ♂♂, 3 ♀♀), 31b (1 ♂), 31c (4 ♂♂, 1 ♀, 5 jj), 36 (1 ♀), 37a (1 ♀)
<i>Arctosa cinerea</i> (Fabricius, 1777)	2 (1 ♀), 27 (2 ♀♀), 42 (1 ♀)		
<i>Arctosa leopardus</i> (Sundevall, 1833)	6b (2 ♀), 34b (1 ♂, 1 ♀)	<b>Philodromidae</b>	
<i>*Arctosa maculata</i> (Hahn, 1822)	32 (1 ♀)	<i>*Philodromus albidus</i> Kulczyński, 1911	17 (1 ♀)
<i>Geolycosa vultuosa</i> (C. L. Koch, 1838)	8 (1 ♀), 40 (1 ♀)	<i>*Philodromus buchari</i> Kubcová, 2004	30 (3 ♂♂)
<i>Hogna radiata</i> (Latreille, 1817)	3 (1 ♀), 12 (1 j), 22 (1 ♀), 29 (2 ♀♀), 31b (1 j), 35 (1 ♀)	<i>Philodromus cespitum</i> (Walckenaer, 1802)	15 (2 ♀♀)
<i>Lycosa praegrandis</i> C. L. Koch, 1836	10 (1 ♀), 13 (1 j), 35 (1 ♂), 37a (1 ♀)	<i>Philodromus dispar</i> Walckenaer, 1826	9b (1 ♀)
<i>Pardosa agrestis</i> (Westring, 1861)	6a (2 ♂♂, 1 ♀)	<i>*Philodromus emarginatus</i> (Schrank, 1803)	2 (1 ♂, 2 ♀♀)
<i>Pardosa alacris</i> (C. L. Koch, 1833)	10 (1 ♂), 21 (28 ♀♀), 46 (3 ♂♂, 2 ♀♀)	<i>*Philodromus fuscolumbatus</i> Lucas, 1846	8 (1 ♂), 9a (2 ♂♂), 30 (2 ♂♂)
<i>Pardosa albatula</i> (Roewer, 1951)	22 (2 ♂♂)	<i>*Philodromus krausi</i> Muster & Thaler, 2004	17 (1 ♂, 1 ♀), 18b (7 ♂♂, 9 ♀♀), 22 (1 ♀)
<i>*Pardosa amentata</i> (Clerck, 1757)	6a (1 ♀), 6b (1 ♀), 15 (1 ♀), 46 (1 ♀)	<i>*Philodromus longipalpis</i> Simon, 1870	14b (1 ♀)
		<i>*Philodromus lunatus</i> Muster & Thaler, 2004	14b (2 ♀♀)
		<i>Philodromus rufus</i> Walckenaer, 1826	8 (1 ♀), 18b (5 ♀♀), 30 (3 ♀♀)



Taxon	Locality (individuals/sex)	Taxon	Locality (individuals/sex)
<i>*Thanatus arenarius</i> L. Koch, 1872	37a (1 ♀), 38a (1 ♀)	<i>Saitis graecus</i> Kulczyński, 1905	47b (1 ♀)
<i>Thanatus atratus</i> Simon, 1875	31b (2 ♀♀)	<b>Scytodidae</b>	
<i>*Thanatus formicinus</i> (Clerck, 1757)	14a (1 ♀), 20 (1 ♀)	<i>Scytodes thoracica</i> (Latreille, 1802)	31b (1 j)
<i>Thanatus sabulosus</i> (Menge, 1875)	9b (1 ♀)	<b>*Segestriidae</b>	
<i>*Tibellus macellus</i> Simon, 1875	15 (1 ♂)	<i>*Ariadna</i> sp.	26 (1 j)
<b>Pholcidae</b>		<b>Sparassidae</b>	
<i>Holocnemus plucliei</i> (Scopoli, 1763)	14a (1 j)	<i>Micrommata virescens</i> (Clerck, 1757)	43a (1 ♂), 46 (1 j)
<i>Pholcus opilionoides</i> (Schrank, 1781)	11 (1 ♂)	<i>*Olios argelasius</i> (Walckenaer, 1806)	30 (2 ♀♀)
<b>Phrurolithidae</b>		<b>Tetragnathidae</b>	
<i>Phrurolithus festivus</i> (C. L. Koch, 1835)	6b (2 ♂♂, 1 ♀), 9b (3 ♀♀), 10 (2 ♂♂, 3 ♀♀), 11 (1 ♀), 18a (2 ♀♀), 20 (1 ♂, 2 ♀♀), 21 (1 ♀), 38a (2 ♀♀), 39 (1 ♂, 2 ♀♀), 46 (3 ♀♀)	<i>Metellina merianae</i> (Scopoli, 1763)	9b (1 j), 32 (1 ♂)
<i>Phrurolithus szilyi</i> Herman, 1879	39 (1 ♂, 2 ♀♀), 47b (1 ♂, 1 ♀)	<i>Tetragnatha extensa</i> (Linnaeus, 1758)	12 (1 ♀), 15 (1 ♀)
<b>Pisauridae</b>		<i>Tetragnatha montana</i> Simon, 1874	2 (3 ♂♂, 1 ♀)
<i>Pisaura mirabilis</i> (Clerck, 1757)	31a (1 ♀), 32 (1 ♂)	<i>*Tetragnatha obtusa</i> C. L. Koch, 1837	2 (2 ♂♂, 4 ♀♀), 32 (1 ♂)
<b>Salticidae</b>		<b>Theridiidae</b>	
<i>Aelurillus v-insignitus</i> (Clerck, 1757)	11 (1 ♂), 19 (1 ♀)	<i>Argyrodes argyroides</i> (Walckenaer, 1841)	35 (2 ♂♂, 2 ♀♀, 1 j)
<i>Ballus chalybeius</i> (Walckenaer, 1802)	2 (1 ♀), 10 (1 ♀), 30 (1 ♀), 31c (1 ♂, 1 ♀, 1 j)	<i>Asagena phalerata</i> (Panzer, 1801)	34a (1 ♀), 37a (1 ♀), 37b (1 j), 42 (1 ♂)
<i>Calositticus atricapillus</i> (Simon, 1882)	6a (1 ♀), 20 (1 ♂)	<i>Crustulina guttata</i> (Wider, 1834)	6b (2 ♀♀), 39 (1 ♂, 2 ♀♀, 4 jj)
<i>Chalcoscirtus infimus</i> (Simon, 1868)	5 (1 ♂), 34b (1 ♂), 47b (1 ♂)	<i>Dipoena braccata</i> (C. L. Koch, 1841)	18b (1 ♀), 39 (1 ♀)
<i>Euophrys frontalis</i> (Walckenaer, 1802)	39 (3 ♂♂, 1 ♀), 47b (1 ♂)	<i>Dipoena melanogaster</i> (C. L. Koch, 1837)	2 (1 ♀), 9a (1 ♂), 17 (1 ♂, 2 ♀♀), 18b (1 j)
<i>*Evarcha arcuata</i> (Clerck, 1757)	15 (2 ♂♂), 30 (1 j)	<i>Enoplognatha latimana</i> Hippa & Oksala, 1982	16 (1 ♀), 32 (1 ♂)
<i>Evarcha falcata</i> (Clerck, 1757)	17 (1 ♂), 46 (1 ♀)	<i>*Enoplognatha penelope</i> Hippa & Oksala, 1982	1 (1 ♂)
<i>Evarcha jucunda</i> (Lucas, 1846)	14b (2 ♂♂, 1 ♀), 31b (2 ♂♂), 31c (1 ♀)	<i>Heterotheridion nigrovariegatum</i> (Simon, 1873)	14b (1 ♀), 17 (1 ♂), 31c (1 ♂, 2 ♀♀)
<i>Heliophanus auratus</i> C. L. Koch, 1835	2 (1 ♂, 3 ♀♀), 24 (1 ♀), 46 (1 ♂), 47b (3 ♂♂, 5 ♀♀)	<i>*Latrodectus tredecimguttatus</i> (Rossi, 1790)	1 (1 j), 16 (1 ♂)
<i>Heliophanus cupreus</i> (Walckenaer, 1802)	6b (1 ♀), 10 (1 ♂, 1 ♀), 17 (1 ♂, 1 ♀), 30 (1 ♂), 43a (1 ♀), 46 (1 ♂)	<i>Paidiscura pallens</i> (Blackwall, 1834)	37a (1 ♀)
<i>Heliophanus equester</i> L. Koch, 1867	1 (1 ♀)	<i>*Parasteatoda lunata</i> (Clerck, 1757)	28 (1 ♀)
<i>Heliophanus kochii</i> Simon, 1868	17 (1 ♀)	<i>Phylloneta impressa</i> (L. Koch, 1881)	31c (1 ♂), 43a (1 ♀)
<i>Heliophanus lineiventris</i> Simon, 1868	20 (1 ♀)	<i>*Phylloneta sisypbia</i> (Clerck, 1757)	35 (2 ♀♀)
<i>Heliophanus melinus</i> L. Koch, 1867	14a (1 ♂, 1 ♀), 14b (1 ♀)	<i>Robertus frivaldszkyi</i> (Chyzer, 1894)	21 (1 ♂)
<i>Heliophanus simplex</i> Simon, 1868	2 (6 ♂♂, 2 ♀♀), 17 (2 ♂♂, 1 ♀), 18b (7 ♂♂, 3 ♀♀), 31c (1 ♂, 1 ♀), 43a (1 ♀)	<i>*Robertus lividus</i> (Blackwall, 1836)	45 (1 ♀)
<i>Heliophanus tribulosus</i> Simon, 1868	9a (2 ♂♂, 1 ♀), 17 (1 ♀)	<i>Simitidion simile</i> (C. L. Koch, 1836)	8 (2 ♂♂), 18b (1 ♂)
<i>Macaroeris nidicolens</i> (Walckenaer, 1802)	14b (2 ♀♀), 17 (3 ♂♂), 30 (2 ♂♂)	<i>Steatoda albomaculata</i> (De Geer, 1778)	11 (1 ♀)
<i>*Marpissa muscosa</i> (Clerck, 1757)	30 (1 ♀)	<i>Steatoda paykulliana</i> (Walckenaer, 1806)	10 (1 ♀)
<i>Neaetha absheronica</i> Logunov & Guseinov, 2002	47b (1 ♂)	<i>Theridion adrianopoli</i> Drensky, 1915	31b (1 ♀)
<i>Pellenes nigrociliatus</i> (Simon, 1875)	42 (2 ♀♀)	<i>Theridion betteni</i> Wiehle, 1960	30 (2 ♀♀)
<i>Philaeus chrysops</i> (Poda, 1761)	6b (2 ♀♀), 9a (1 ♂, 1 ♀), 17 (2 ♀♀), 18c (1 ♂), 19 (2 ♂♂, 1 ♀), 31c (1 ♂), 38a (1 ♀), 42 (1 ♀)	<i>Theridion varians</i> Hahn, 1833	30 (2 ♀♀), 43a (1 ♀)
<i>Phlegra fasciata</i> (Hahn, 1826)	8 (1 ♀)	<b>Thomisidae</b>	
<i>Pseudeuophrys erratica</i> (Walckenaer, 1826)	21 (1 ♂, 2 ♀♀)	<i>*Diaea dorsata</i> (Fabricius, 1777)	6 b (1 j), 32 (1 j)
<i>Pseudeuophrys obsoleta</i> (Simon, 1868)	10 (1 ♂), 18a (1 ♂), 39 (2 ♂♂, 3 ♀♀), 47b (1 ♂)	<i>Ebrechtella tricuspidata</i> (Fabricius, 1775)	2 (1 ♂), 15 (1 ♀)
<i>*Pseudicius picaceus</i> (Simon, 1868)	14b (1 ♂, 2 ♀♀)	<i>Misumena vatia</i> (Clerck, 1757)	15 (1 ♂), 37a (1 j), 43a (1 ♂)
		<i>*Ozyptila scabricula</i> (Westring, 1851)	30 (1 ♂)
		<i>Ozyptila simplex</i> (O. P.-Cambridge, 1862)	1 (2 ♂♂)
		<i>Pistius truncatus</i> (Pallas, 1772)	18b (1 j)
		<i>*Psammitis ninnii</i> (Thorell, 1872)	30 (1 ♀), 37a (1 ♂)
		<i>Runcinia grammica</i> (C. L. Koch, 1837)	36 (4 ♂♂)
		<i>Spiracme striatipes</i> (L. Koch, 1870)	38a (1 ♀)
		<i>Synema globosum</i> (Fabricius, 1775)	8 (2 ♂♂, 1 j), 14b (1 ♂, 3 ♀♀), 15 (1 ♀), 30 (2 ♂♂), 31c (1 ♀, 2 jj)

Taxon	Locality (individuals/sex)
* <i>Synema ornatum</i> (Thorell, 1875)	18b (1 ♂)
<i>Thomisus onustus</i> Walckenaer, 1805	1 (1 ♂), 15 (1 j), 18b (2 ♂♂), 31b (1 ♀), 37a (1 ♂, 1 ♀)
<i>Tmarus piochardi</i> (Simon, 1866)	14b (1 ♀)
<i>Xysticus acerbus</i> Thorell, 1872	11 (1 ♀)
<i>Xysticus brevidentatus</i> Wunderlich, 1995	10 (1 ♂)
* <i>Xysticus gallicus</i> Simon, 1875	20 (1 ♀)
<i>Xysticus kempeleni</i> Thorell, 1872	31a (1 ♀)
* <i>Xysticus laetus</i> Thorell, 1875	14b (1 ♀)
* <i>Xysticus macedonicus</i> , Šilhavý, 1944	6a (1 ♂)
<i>Xysticus thessalicus</i> Simon, 1916	18b (1 ♀)
<b>Titanoecidae</b>	
<i>Nurscia albomaculata</i> (Lucas, 1846)	33b (1 ♂, 1 j), 34b (2 ♂♂, 1 j)
<i>Titanoeca flavicoma</i> L. Koch, 1872	40 (1 ♀)
<i>Titanoeca quadriguttata</i> (Hahn, 1833)	11 (1 ♂)
<b>Trachelidae</b>	
* <i>Trachelas minor</i> O. P.-Cambridge, 1872	18b (1 ♀)
<b>Uloboridae</b>	
<i>Uloborus walckenaerius</i> Latreille, 1806	2 (1 ♀)
<b>Zodariidae</b>	
* <i>Zodarion aculeatum</i> Chyzer, 1897	10 (1 ♂)
<i>Zodarion graecum</i> (C. L. Koch, 1843)	31b (1 ♂)
<i>Zodarion obridense</i> Wunderlich, 1973	6b (1 ♀)

### Interesting and remarkable records

*Dysdera bellimundi* is a Balkan endemic, until now known only from Albania and Montenegro (Deeleman-Reinhold & Deeleman 1988, Naumova et al. 2019). Identification: Deeleman-Reinhold & Deeleman (1988).

*Dysderocrates storkani* is a Balkan endemic previously known from Albania, Croatia, Montenegro, North Macedonia and Serbia (Blagoev 2002, Deltshev et al. 2003, Deltshev et al. 2011, Grbac et al. 2019, Naumova et al. 2019). Identification: Deeleman-Reinhold & Deeleman (1988).

*Harpactea nausicaae* is also a Balkan endemic known from Albania, Greece and North Macedonia (Brignoli 1976, Komnenov 2017, Deltshev et al. 2011). Identification: Brignoli (1976), Lazarov (2004).

*Harpactea srednagora* was recorded from a few localities in Bulgaria: Belasitsa Mts, Ihtimanska & Sashtinska Sredna Gora Mts, Pirin Mts, Ruj Mts, Slavyanka Mts, Sofia plain, Vitosha Mts and Western Rhodopes Mts (Antov et al. 2004, Dimitrov & Lazarov 1999, Deltshev et al. 2011, 2012, Langourov et al. 2014), and North Macedonia: Osogovo Mts (Komnenov 2014). The new record from Krrabe Mts in Albania greatly expands the known distribution to the west. Identification: Lazarov (2007).

*Anagraphis ochracea* can be regarded as South Balkan endemic known from Albania, Greece, European Turkey and North Macedonia (Deltshev et al. 2011, Bosmans 2014, Demircan & Topçu 2015). Identification: Chatzaki et al. (2002).

*Civizelotes pygmaeus* is known from Europe to Kazakhstan (World Spider Catalog 2019). This is the second record for the Balkans, after North Macedonia (Komnenov 2014). Identification: Grimm (1985).

*Nomisia levyi* was hitherto known only from Greece. The species was described from Attika (Greece) from a single male. The female is described and illustrated with photos by Helsdingen et al. (2018). Our material corresponds well to the description of the species. Photos of the male (illustrated in the original description by drawings) are added (Fig. 15, Fig. 16). The species was found in different rocky habitats. Identification: Chatzaki (2010a), Helsdingen et al. (2018).

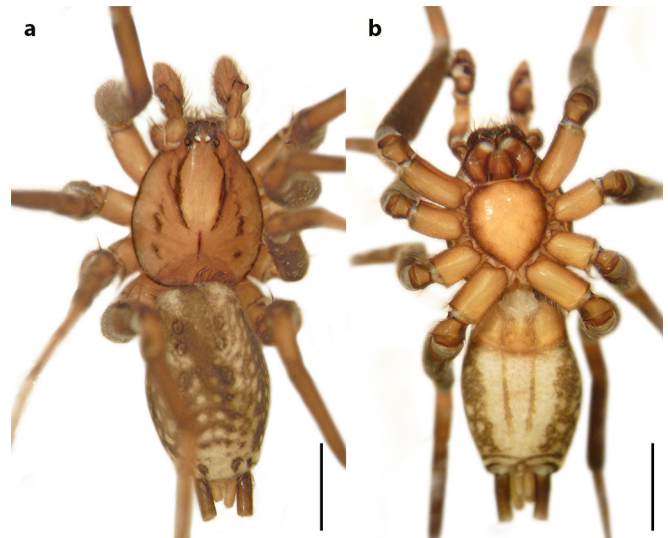


Fig. 15: *Nomisia levyi*, male habitus. a. dorsal; b. ventral; scale lines: 1.55 mm

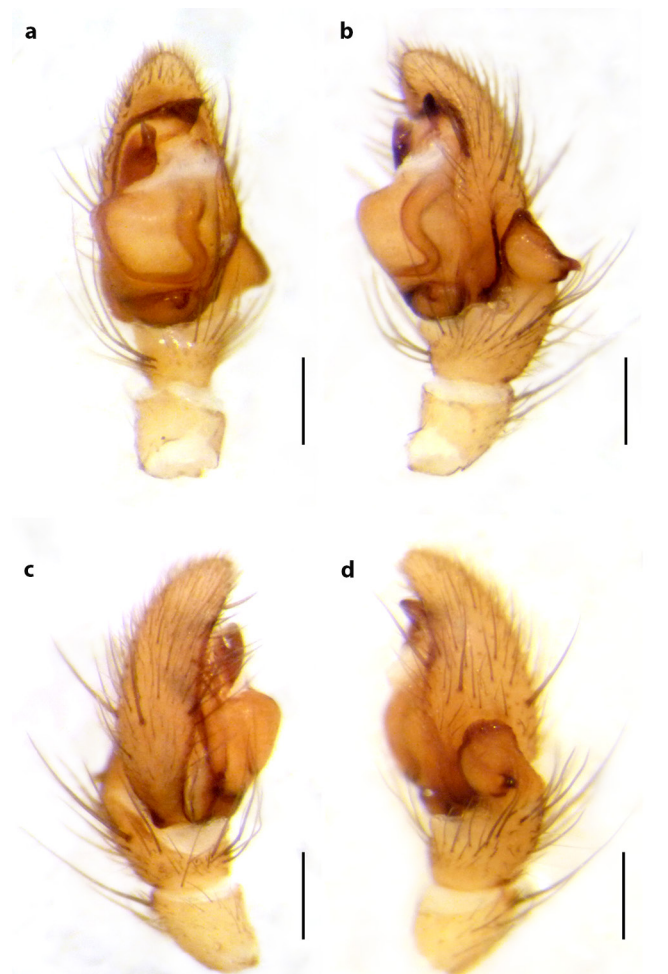
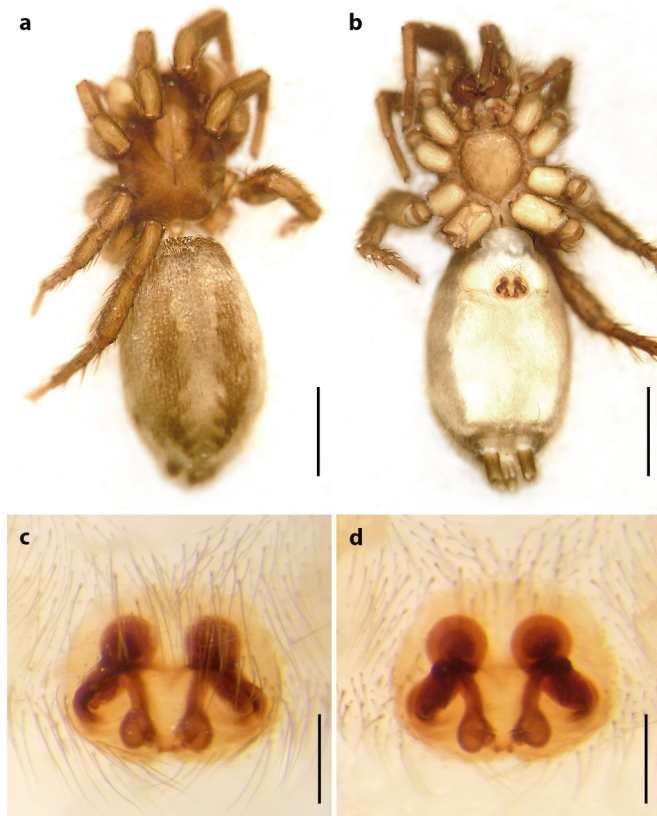


Fig. 16: *Nomisia levyi*: male palp. a. ventral; b. retroventral; c. prolateral; d. retrolateral; scale lines: 0.28 mm

*Nomisia peloponnesiaca* is described and known only from two localities in Peloponnese (Greece). The new record in Albania is about 500 km northward from the known localities and suggests that wider distribution within the Balkans can be expected. The presented photos of the female (Fig. 17) correspond well with the drawings in the description (Chatzaki 2010a). Found on rocky slopes together with *Nomisia levyi* and *N. exornata*. Identification: Chatzaki (2010a).



**Fig. 17:** *Nomisia peloponnesiaca*, female. **a.** dorsal; **b.** ventral view; scale lines: 1.7 mm; **c.** epigyne, ventral views; **d.** vulva, dorsal views; scale lines: 0.27 mm

*Trachyzelotes adriaticus* is distributed from Italy to China (World Spider Catalog 2019). In the Balkans it is known only from Croatia and Greece (Korfu isl.) (Platnick & Murphy 1984, Chatzaki 2010b). Identification: Platnick & Murphy (1984), Chatzaki (2010b).

*Araeoncus humilis* is a new genus and species for Albania. Distributed in Europe, North Africa, Russia (Europe to South Siberia), Japan; introduced to New Zealand (World Spider Catalog 2019). Identification: Wiehle (1960), Deltshv (1987).

*Dicymbium tibiale* is a new genus and species for Albania. Distributed in most European countries (World Spider Catalog 2019). Identification: Wiehle (1960).

*Entelecara acuminata* is a new genus and species for Albania. Known to occur in the USA, Europe, Russia (Europe to South Siberia), and Central Asia (World Spider Catalog 2019). Identification: Wiehle (1960).

*Erigonoplus simplex* is hitherto known from France, Italy, Bulgaria and Greece (Millidge 1979, Blagoev et al. 2018, Helsdingen et al. 2018, Pantini & Isaia 2019). Identification: Millidge (1979), Helsdingen et al. (2018)

*Oedothorax paludigena* is known from France (incl. Corsica), Italy (incl. Sardinia), Greece (Millidge 1975, Tanasevitch 2011, Bosmans & Colombo 2015, Pantini & Isaia 2019). Our material comes from different habitats close to the seaside, which seems to agree with the known habitats of the species (banks of lagoons, coastal and salt marshes (Tanasevitch 2011, Bosmans & Colombo 2015)). Identification: Millidge (1975), Bosmans (1985).

*Pallidophantes trnovensis* is a Balkan endemic, known mainly from the caves of Bulgaria, Kosovo, Montenegro, North Macedonia and Serbia (Deeleman-Reinhold 1986, Blagoev 2002, Deltshv et al. 2003, Vrenozi & Jäger 2013, Blagoev et al. 2018, Naumova et al. 2019). The species is regarded as troglophile (Deltshv 1972, 1976, Mammola et al. 2018), but was also found in the detritus of forests in Serbia and Montenegro (Deeleman-Reinhold 1986). Therefore, its establishment in forests in Albania is not surprising. Identification: Deltshv (1980).

*Trichoncoides piscator* is distributed in Europe, North Africa, Turkey, Caucasus, Russia (Europe to South Siberia), Kazakhstan, Iran, Central Asia (World Spider Catalog 2019). Identification: Tanasevitch & Piterkina (2012).

*Pardosa atomaria* is known from the Balkans, Italy, Turkey, Cyprus and Ukraine (World Spider Catalog 2019) and is a typical riparian species (Buchar & Thaler 2002, present paper). Herein is the second country report of the species (after Blagoev 2005), but because of the possible synonymy with *P. tatarica* (Thorell, 1875) with unclear validity of the latter (see Buchar & Thaler 2002, Helsdingen et al. 2018), we argue that the previous record of *P. tatarica* by Caporiacco (1932) is actually the first mention of *P. atomaria* for Albania. Identification: Buchar & Thaler (2002).

*Pardosa consimilis* is known from Bulgaria, North Macedonia, Georgia and Turkey (Deltshv et al. 2012, Komnenov 2014, Ponomarev & Komarov 2015, Uyar & Dolejš 2018). Identification: Tongiorgi (1966).

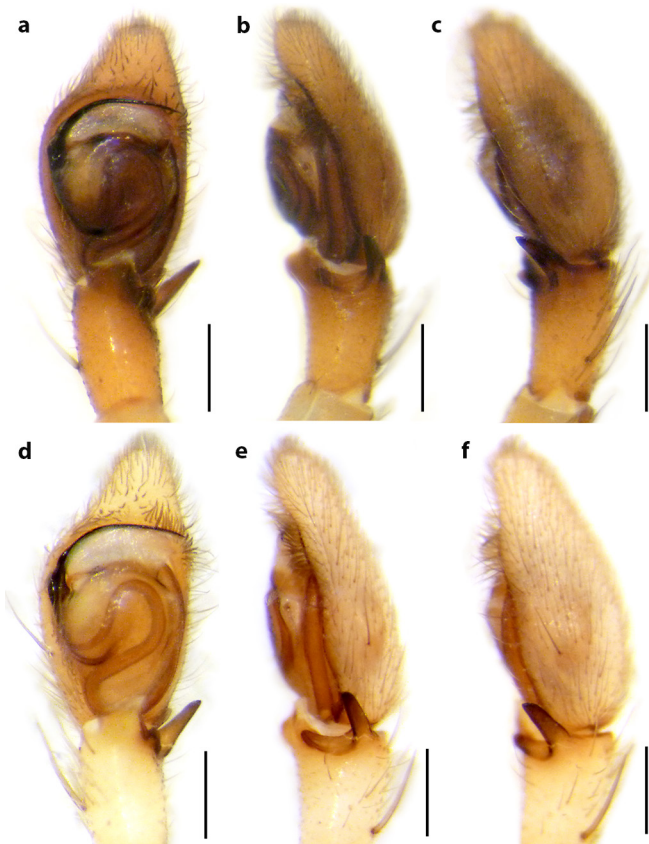
*Philodromus buchari* seems to be new for the Balkan Peninsula and consequently, for Albania. However, its occurrence is not unexpected given its presence in Austria (Milaszowsky et al. 2015), Czech Republic and Slovakia (Kubcová 2004), France (Lecigne 2018), Hungary (Mezőfi & Markó 2019), Spain (Crespo et al. 2018), Belgium, Denmark, Netherlands, United Kingdom (Nentwig et al. 2019), Germany and Turkey (Muster & Thaler 2004). Records in Central Europe assigned



**Fig. 18:** *Philodromus buchari*, male. **a.** ventral; **b.** retrolvental; **c.** retrodorsal; scale lines: 0.36 mm

to *P. longipalpis* belong to *P. buchari* (Blick 2011). The presented photos of the male correspond well with illustrations of Central European specimens in the taxonomic literature (Kubcová 2004, Mezőfi & Markó 2019) and will contribute to better knowledge of the species (Fig. 18). Found in an oak forest, like most of the data concerning Czech Republic (Kubcová 2004). Identification: Kubcová 2004, Muster & Thaler (2004), Mezőfi & Markó 2019.

*Philodromus fuscolimbatus* is found in Algeria, Croatia, Greece, France, Italy, Portugal, Romania, Slovakia and Turkey (Chyzer & Kulczyński 1891, Muster & Thaler 2004, Branco et al. 2019). The presented photos of the male correspond well with the drawings in Muster & Thaler (2004) and will contribute to better taxonomic knowledge of the species (Fig. 19). Identification: Muster & Thaler (2004).



**Fig. 19:** *Philodromus fuscolimbatus*, male palp of two different specimens from the same population. **a, d.** ventral; **b, e.** retrolateral; **c, f.** retrodorsal; scale lines: 0.3 mm

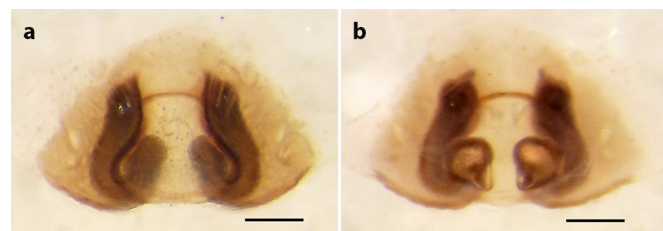
*Philodromus krausi* is known from Greece and Turkey (Muster & Thaler 2004, Komnenov et al. 2016). The examined females differ in some aspects both from the original diagnosis and the drawings but they were collected together with males of *P. krausi* and no other species were found at the site, so there is no doubt on their conspecificity (Fig. 20). Identification: Muster & Thaler (2004).

*Philodromus longipalpis* is known from Azerbaijan, Bulgaria, Crete, Croatia, France, Greece, Hungary, Iran, Italy, North Macedonia, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Switzerland and Turkey (Chyzer & Kulczyński 1891, Braun 1965, Segers 1992, Weiss & Petrișor 1999, Blagoev 2002, Muster & Thaler 2004, Kubcová 2004, Logunov & Huseynov 2008, Branco et al. 2019, Pfliegler 2014,



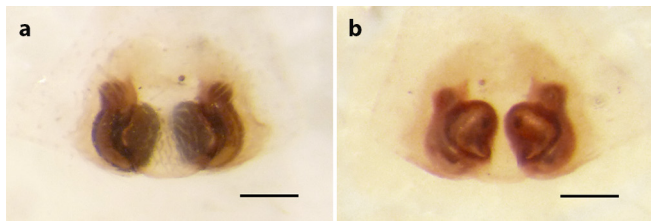
**Fig. 20:** *Philodromus krausi*. **a-c:** male palp; **a.** ventral; **b.** retrolateral; **c.** retrodorsal; **d-e:** epigyne/vulva; **d.** ventral; **e.** dorsal views; scale lines: 0.2 mm

Kostanjšek & Kuntner 2015, Ponomarev et al. 2018, Mezőfi & Markó 2019) and probably Serbia (as “Yugoslavia” in Kubcová (2004) without location). The examined specimen differs slightly from most typical *P. longipalpis* in having relatively smaller spermathecae with inwardly curved posterior parts and the distance between them standing at approximately half their width. However, the long, strongly curved and anteriorly converging copulatory ducts, the bottle shaped median plate and the low, moderately wide glandular mounds of the spermathecae, as well as the pale body coloration support its identification as *P. longipalpis* (Fig. 21). Found on rocky slopes together with *P. lunatus*. Identification: Segers (1992), Muster & Thaler (2004).



**Fig. 21:** *Philodromus longipalpis*, epigyne/vulva. **a.** ventral; **b.** dorsal views; scale lines: 0.15 mm

*Philodromus lunatus* is reported from Croatia, Cyprus, Greece and Turkey (Muster & Thaler 2004, Bosmans et al. 2019). The examined specimens completely lack a transverse ridge behind the atrium, visible even on an undissected epigyne. Both the vulva and the epigyne correspond well to the drawings in the original description so, even in the absence of males, the identification is certain (Fig. 22). Found on rocky slopes together with *P. longipalpis*. Identification: Muster & Thaler (2004).



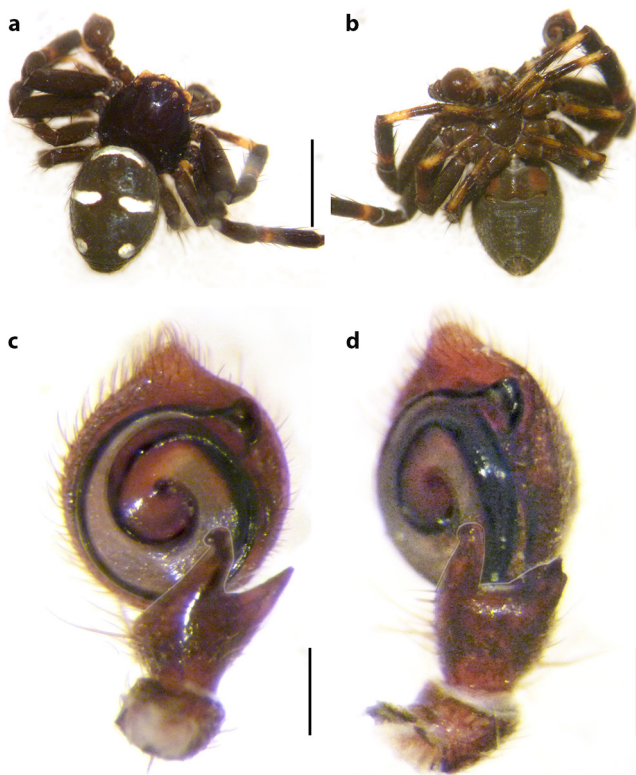
**Fig. 22:** *Philodromus lunatus*, epigyne/vulva. **a.** ventral; **b.** dorsal views; scale lines: 0.18 mm

*Ariadna* sp. is a new genus for Albania. According to the known distribution of the European *Ariadna* species, the subadult female from our material could belong to either *A. insidiatrix* Audouin, 1826 (Mediterranean) or *A. ionica* O. P.-Cambridge, 1873 (Korfu isl., Greece, known only from a single male) species. However, at this point we think it is more correct to leave the taxon at the genus level, until some adult specimens become available.

*Olios argelasius* is a new genus and species for Albania. It is a Mediterranean species introduced to the Netherlands, Switzerland, Germany and Poland (World Spider Catalog 2019). Identification: Jäger et al. (2011).

*Enoplognatha penelope* was known till now only from Bulgaria and Greece (incl. Crete) (Bosmans & Chatzaki 2005, Bosmans et al. 2013, Blagoev et al. 2018). Identification: Hippa & Oksala (1982).

*Synema ornatum* is described from southern European Russia and reported from Hungary, Ukraine, Russia (Europe, Caucasus) and Azerbaijan (World Spider Catalog 2019). The new record from Albania is the westernmost site of the species distribution and first record from the Balkans. Photos of the male which correspond well with the existing illustrations



**Fig. 23:** *Synema ornatum*, male. Habitus in **a.** dorsal; **b.** ventral views; scale lines: 1.55 mm; Palp in **c.** ventral; **d.** retroventral views; scale lines: 0.3 mm

(Utochkin 1960) are added (Fig. 23). Identification: Utochkin (1960).

*Trachelas minor* represents a new genus record for Albania. Distributed across the Mediterranean to Central Asia, West Africa and Cyprus (Bosmans et al. 2019). Identification: Marusik & Kovblyuk (2010).

## Discussion

As can be seen from the results above (Tab. 2), the families with most species new for Albania are Linyphiidae (15), followed by Philodromidae (10), Lycosidae (9), Thomisidae (7), Gnaphosidae (6) and Theridiidae (5). It may seem that the number of new records for Albania is very high, however the study area is large and diverse and most of the species were already known from the surrounding countries (Nentwig et al. 2019), thus the presence of the numerous species new to the fauna of Albania was expected. The range of some unrecorded species turned out to be much larger than was originally known, for instance *Synema ornatum* and *Philodromus buchari*, which are the first reports from the Balkan Peninsula. In addition to these species new to Albania, we also found several rare and under-recorded species, such as some Balkan endemics (*Anagraphis ochracea*, *Dysdera bellimundi*, *Harpactea nausicaea*), and subendemic (*Theridion adrianopoli*), for which there are still insufficient data.

## Conclusions

With the 67 species presented here as new to Albania, the actual number now equals 569, but these results represent only a part of what could be expected for the country. Currently, it is impossible to provide a correct estimate of real diversity of the Albanian spiders, but considering the climate and landscape diversity, and the moderate research intensity, we can expect at least twice as many species.

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