A collection of spiders (Araneae) in Albanian coastal areas

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doi: 10.5431/aramit4407

Abstract: The present study unites data from several excursions in typical Mediterranean lowland ecosystems in Albania during the years 2006 to 2009. Spiders from several different habitat types along the coast were analysed in six districts: Saranda, Fieri, Kavaja, Durrësi, Tirana and Lezha. In total 299 adult specimens were collected. They belong to 82 species, 60 genera and 22 families. Six species are new to the Albanian fauna: *Aculepeira armida* (Audouin, 1826), *Zygiella x-notata* (Clerck, 1757), *Histopona torpida* (C. L. Koch, 1837), *Malthonica campestris* (C. L. Koch, 1834), *Pellenes tripunctatus* (Walckenaer, 1802) and *Pseudeuophrys erratica* (Walckenaer, 1826). With respect to zoogeography, the spider fauna is mainly characterized by the presence of many Palaearctic species.

Keywords: Albanian west lowland, faunistics, Mediterranean

The spider fauna of Albania remains insufficiently studied. The first reports were published by SIMON (1884), STRAND (1919), CAPORIACCO (1932, 1949), GILTAY (1932), DRENSKY (1936), SCHENKEL (1947), TONGIORGI (1966) and DEELEMAN-REINHOLD & DEELEMAN (1988). New and additional data can be found in the papers of DELTSHEV (1999), BLAGOEV (2005), VRENOZI & HAXHIU (2008), and DELTSHEV et al. (2011). Considering the variety of habitats – and compared to records from other Mediterranean countries – many more spider species can be expected to occur in Albania. The present study builds upon a series of faunistic papers about the Albanian spider fauna (VRENOZI & HAXHIU 2008, DELTSHEV et al. 2011) and a zoogeographic analysis of the distribution of the recorded spider fauna from the coastal areas of Albania is presented.

Materials and methods

Field work was carried out between 2006 and 2009 in six districts of Albania listed from north to south in the western lowlands (Fig. 1). Data on latitude and longitude are taken from http://wikimapia.org :

1. **Lezha** – sandy coast of Shëngjini beach with *Pinus* sp., 0 m a.s.l., N 41°46'55", E 19°36'10", June–August 2007.
2. **Tirana** – Vora hill with *Olea europaea*, 144 m a.s.l., N 41°23'12", E 19°39'23", June 2007, April-May 2008; Botanic Garden, hill with shrubs, 106 m a.s.l., N 41°18'37", E 19°48'20", June 2007; Dajti Mountain, National Park with *Fagus sylvatica*, 1480 m, N 41°21'25", E 19°54'55", June 2007, June 2008.
3. **Durrësi** – hill with *Pinus* sp., 20 m a.s.l., N 41°13'56", E 19°31'30", June 2008.
4. **Kavaja** – mouth of river Shkumbini with *Phragmites australis*, *Tamarix* sp. and sandy dunes with *Echinophora spinosa*, 0 m a.s.l., N 41°2'39", E 19°27'8", August 2007.
5. **Fieri** – meadow, vineyards and buildings in Havaleas village, 0–15 m a.s.l., N 40°44'19", E 19°28'39", June–September 2007, April-May 2008.
6. **Saranda** – hill with *Pinus* sp. and bushes, stony coast with shrubs, buildings, 0–200 m a.s.l., N 39°52'16", E 20°1'7", July 2007 (Fig. 1, Tab. 1).

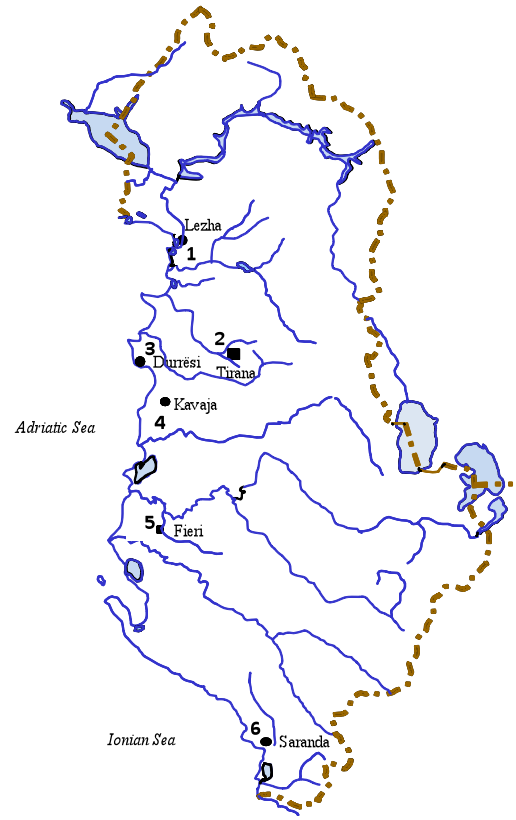

Fig. 1. Map of Albania with collection areas

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eingereicht: 9.4.2010, akzeptiert: 31.7.2012; online verfügbar: 28.12.2012

Vegetation, stones, rocks and ground, etc. were investigated for their spider content by hand collecting, sweeping with entomological nets and beating. Spiders were killed with ether or chloroform and preserved in ethanol (75 %). The material is deposited in the Museum of Natural Sciences in Tirana.

The primary literature used for identification included GRIMM (1985), HEIMER & NENTWIG (1991), MAURER (1992), METZNER (1999), NENTWIG et al. (2011), ROBERTS (1987, 1995), and TÜRKES & MERGEN (2008). In addition to these cited references, specialist literature was used for identifying some similar species: *Eresus kollari* Rossi, 1846 was distinguished from *Eresus moravicus* Rezác, 2008 following THALER & KNOFLACH (2002) and REZÁC et al. (2008); *Alopecosa pulverulenta* (Clerck, 1757) and *Trochosa robusta* (Simon, 1876) were identified using KRONESTEDT (1990), HEPNER & MILASOWSZKY (2006) and MILASOWSZKY et al. (1998) respectively. Comparative specimens of these latter species were subsequently reviewed by the author in the Senckenberg Naturmuseum, Frankfurt am Main and in the Institute of Zoology, Sofia.

The order of families and nomenclature follows PLATNICK (2011). Data concerning the general distribution of spiders are taken from PLATNICK (2011) and HELSDINGEN (2011).

Results

The present study yielded 82 species belonging to 60 genera and 22 families (256 females, 43 males) (see Tab. 1). Six species are recorded here for the first time from Albania; five of which were collected only in Saranda, the southern district of Albania:

Aculepeira armida (Audouin, 1826)
This species is widely distributed in the southern parts of the Palaearctic. The female of *A. armida* can be distinguished from *A. ceropegia* by the structure of the epigyne. Only one female was recorded in Saranda, 8. July 2007, in the Mirror beach, associated with rocky habitats and shrubs.

Zygiella x-notata (Clerck, 1757)
Z. x-notata has a Holarctic distribution and is probably also present in the Neotropics. In Europe it is synanthropic, so an introduction to other continents seems to be "easy". In Albania only one female was recorded in Saranda, 3. July 2007 on a hill with *Pinus* sp.

Histopona torpida (C. L. Koch, 1837)
A Palaearctic species, widespread in Europe and Russia. *H. torpida* was checked against *H. italica* and *H. luxurians*. In Albania three females were recorded in Saranda, 2. July 2007 on a hill with *Pinus* sp.

Malthonica campestris (C. L. Koch, 1834)
This species has a Central and Eastern European distribution with a few additional records in Azerbaijan. In Albania two females were recorded in Saranda, 7. July 2007 on the hill of Butrinti castle, on the walls of the castle and adjacent bushes.

Pellenes tripunctatus (Walckenaer, 1802)
This species has a Palaearctic distribution. Three females were recorded, 2. June 2008, in the meadows and forest with *Fagus sylvatica* of Dajti Mountain, Tirana District.

Pseudeuophrys erratica (Walckenaer, 1826)
This is a Palaearctic species. The only female was recorded in Saranda, 7. July 2007, on the hill of Butrinti castle, on walls and bushes.

According to their currently known distribution the established 83 species can be classified into seven chorotypes (TAGLIANTI et al. 1999), grouped into three chorological complexes: I, Cosmopolitan; II, Holarctic; III, European (Tab. 1 and 2).

The Cosmopolitan species complex (COS, SCO) includes six species (7.3 %). The most frequently recorded complex is the Holarctic one (HOL, OW, PAL, WPA, ECA) which comprises 68 species (82.9 %). The Palaearctic species (PAL, WPA, ECA) comprise 55 species (67.1 %), inhabiting both lowlands and mountains, followed by Holarctic species (HOL) with 11 species (13.4 %). Only two Old World species were recorded, *Argiope lobata* (Pallas, 1772), six females in the Saranda district, and *Runcinia grammica* (C. L. Koch, 1837), one female at the mouth of the river Shkumbini in the Kavaja district and two females in the Tirana district. The European species complex (EUR) species is also well represented and comprises eight species (9.8 %).

Tab. 1: Species composition and distribution of the spiders found in the study areas (* new species for Albania; LE–Lezha, TR–Tirana, DR–Durrësi, KV–Kavaja, FR–Fieri, SR–Saranda. COS–Cosmopolitan; SCO–Subcosmopolitan; HOL–Holarctic; OW–Old World; PAL–Palaearctic; WPA–West-Palaearctic; ECA–European-Central Asian; EUR–European).

List of Species	LE	TR	DR	KV	FR	SR	Zoogeographical distribution
Pholcidae							
Pholcus phalangoides (Fuesslin, 1775)		7♀			3♀	5♀	COS
Segestridae							
Segestria senoculata (Linnaeus, 1758)					1♀		PAL
Dysderidae							
Dysdera crocata (C. L. Koch, 1838)		1♀					COS
Dysdera erythrina (Walckenaer, 1802)		2♀					EUR
Oonopidae							
Oonops domesticus Dalmas, 1916		1♀					EUR
Eresidae							
Eresus kollari Rossi, 1846		3♂					ECA
Theridiidae							
Asagena phalerata (Panzer, 1801)		1♂,2♀					PAL
Steatoda paykulliana (Walckenaer, 1805)		5♀	1♀				WPA
Steatoda triangulosa (Walckenaer, 1802)					1♀		COS
Linyphiidae							
Agnyphantes expunctus (O. P.-Cambridge, 1875)					3♀	1♂,2♀	PAL
Bolyphantes luteolus (Blackwall, 1833)		2♀					PAL
Floronia bucculenta (Clerck, 1757)		1♀					EUR
Frontinellina frutetorum (C. L. Koch, 1834)		5♀	1♀				PAL
Lepthyphantes minutus (Blackwall, 1833)		2♀					HOL
Linyphia triangularis (Clerck, 1757)				5♀			PAL
Pityohyphantes phrygianus (C. L. Koch, 1836)				5♀	3♂	2♂	PAL
Tetragnathidae							
Tetragnatha extensa (Linnaeus, 1758)					9♀		HOL
Tetragnatha nigrita Lendl, 1886					5♀		PAL
Araneidae							
**Aculepeira armida* (Audouin, 1826)						1♀	PAL
Aculepeira ceropegia (Walckenaer, 1802)		1♀	1♀		1♀	1♀	PAL
Agalenatea redii (Scopoli, 1763)		2♀					PAL
Araneus angulatus Clerck, 1757					4♀	6♀	PAL
Araneus diadematus Clerck, 1757		8♀	1♀		4♀	6♀	HOL
Araneus quadratus Clerck, 1757					3♂		PAL
Araneus triguttatus (Fabricius, 1793)					1♀		PAL
Argiope bruennichi (Scopoli, 1772)		2♀	1♀		2♀	4♀	PAL
Argiope lobata (Pallas, 1772)						6♀	OW
Araniella cucurbitina (Clerck, 1757)		1♀	1♀				PAL
Cyclosa conica (Pallas, 1772)					7♀		HOL
Cyclosa insulana (Costa, 1834)				6♀			SCO
Cyclosa oculata (Walckenaer, 1802)				4♀			PAL
Hypsosinga heri (Hahn, 1831)					1♀		PAL
Larinioides cornutus (Clerck, 1757)		3♀	1♀		5♀	2♀	HOL
Larinioides ixobulus (Thorell, 1873)					1♀		PAL
Mangora acalypha (Walckenaer, 1802)					1♀		PAL
**Zygiella x-notata* Clerck, 1757						1♀	HOL
Lycosidae							
Alopecosa pulverulenta (Clerck, 1757)					2♀		PAL
Pardosa agricola (Thorell, 1856)		3♂					ECA
Pardosa pullata (Clerck, 1757)					1♀		ECA
Trochosa robusta (Simon, 1876)		1♀					PAL
Trochosa terricola Thorell, 1856		1♂,2♀		2♀			HOL
Pisauridae							
Pisaura mirabilis (Clerck, 1757)		1♀	1♀			1♀	PAL

List of Species	LE	TR	DR	KV	FR	SR	Zoogeographical distribution
Oxyopidae							
Oxyopes heterophthalmus Latreille, 1804		1♀					PAL
Oxyopes lineatus Latreille, 1806		1♀					PAL
Agelenidae							
Agelena labyrinthica (Clerck, 1757)						3♀	PAL
**Histopona torpida* (C. L. Koch, 1843)						3♀	PAL
**Malthonica campestris* (C. L. Koch, 1834)						2♀	EUR
Tegenaria domestica (Clerck, 1757)		1♂,3♀			4♀		COS
Textrix denticulata (Olivier, 1789)	1♀					1♀	EUR
Dictynidae							
Cicurina cicur (Fabricius, 1793)	1♀						ECA
Nigma puella (Simon, 1870)		1♀					EUR
Titanoecidae							
Titanoeca quadriguttata (Hahn, 1833)					1♀		PAL
Miturgidae							
Cheiracanthium punctorium (Villers, 1789)		1♀					ECA
Clubionidae							
Clubiona brevipes Blackwall, 1841					1♀		PAL
Clubiona caerulescens L. Koch, 1867		1♀					PAL
Clubiona corticalis (Walckenaer, 1802)		2♂,6♀					ECA
Clubiona diversa O. P.-Cambridge, 1862		1♀			1♂,1♀		PAL
Gnaphosidae							
Drassodes cupreus (Blackwall, 1834)		2♂,4♀					EUR
Drassyllus praeficus (L. Koch, 1866)		1♀					ECA
Scotophaeus blackwalli (Thorell, 1871)		1♂					COS
Scotophaeus scutulatus (L. Koch, 1866)		1♀					WPA
Sparassidae							
Micrommata virescens (Clerck, 1757)		1♂,2♀	1♀				PAL
Philodromidae							
Tibellus oblongus (Walckenaer, 1802)		1♀					HOL
Thomisidae							
Heriaeus hirtus (Latreille, 1819)					2♀		EUR
Misumena vatia (Clerck, 1757)					1♀		HOL
Runcinia grammica (C. L. Koch, 1837)		2♀		1♀			OW
Synema globosum (Fabricius, 1775)			4♀				PAL
Synema plorator (O. P.-Cambridge, 1872)		1♀					ECA
Thomisus onustus Walckenaer, 1805		2♂,10♀	1♀		1♀	1♀	PAL
Xysticus cristatus (Clerck, 1757)		5♂,7♀					PAL
Xysticus robustus (Hahn, 1832)					1♂		ECA
Salticidae							
Aelurillus v-insignitus (Clerck, 1757)		1♀				1♀	PAL
Carrhotus xanthogramma (Latreille, 1819)					1♀		PAL
Euophrys frontalis (Walckenaer, 1802)						4♂	PAL
Evarcha falcata (Clerck, 1757)						1♀	PAL
Heliophanus flavipes (Hahn, 1832)						1♀	PAL
Heliophanus tribulosus Simon, 1868					4♂		ECA
**Pellenes tripunctatus* (Walckenaer, 1802)		3♀					PAL
Philaeus chrysops (Poda, 1761)		2♂					PAL
**Pseudeuophrys erratica* (Walckenaer, 1826)						1♀	PAL
Salticus scenicus (Clerck, 1757)	8♀						HOL
Sitticus pubescens (Fabricius, 1775)					1♀		HOL
Number of species	**3**	**42**	**11**	**6**	**31**	**22**	
Number of individuals	**10**	**121**	**14**	**23**	**77**	**56**	

Tab. 2: Species number according to complexes and chorotypes. Abbreviations as in Tab. 1.

Complexes	Chorotypes	species number	%
COS	COS	5	6.1
	SCO	1	1.2
	Total	**6**	**7.3**
HOL	HOL	11	13.4
	OW	2	2.4
	PAL	43	52.4
	WPA	2	2.4
	ECA	10	12.2
	Total	**68**	**82.9**
EUR	EUR	8	9.8
	Total	**8**	**9.8**

Acknowledgements

I express my sincere appreciation to Prof. Dr. Idriz Haxhiu for his support during field work. I kindly acknowledge the Institute of Zoology in Sofia and the Senckenberg Research Institute in Frankfurt am Main which provided laboratory facilities for reviewing the spider material. I am grateful to Dr. Peter Jäger and Dr. Christo Deltshev who confirmed the identification of some species and helped to revise this paper. I express my sincere acknowledgements to Theo Blick and Dr. Ambros Hänggi, who gave important suggestions. The "ACE STUDY TOURS" offered partial financial support to accomplish this work and to present the results at the European Congress of Arachnology, Alexandroupolis, Greece 2009. The presentation of these results was also partly thanks to support from the ECA 2009.

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