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Comments to the checklist of Gnaphosidae and Liocranidae (Arachnida, Araneae) of the Baltic States, with remarks on species new to Lithuania

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Abstract
Until the present time, a total of 48 Gnaphosidae and 11 Liocranidae species were registered in the Baltic States. The records of *Gnaphosa sticta* and *Zelotes apricorum* are doubtful. Old records of *Micaria formicaria* and *Scotophaeus scutulatus* cannot be verified by recent data. Despite the given distribution in some sources, no published data on localities of *Drassodes hypocrita* and *Drassodes villosus* are available. It is suggested that these six species should not be included in the regional species checklist. Following this, the recent checklist of the Baltic States comprises 42 species of Gnaphosidae and 11 of Liocranidae: 29 species of Gnaphosidae and 9 of Liocranidae known in Lithuania, 31/10 in Estonia and 32/3 in Latvia. Only a few new species known in Central Europe can be expected to occur in this region (*Poecilochroa conspicua, Apostenus fuscus, Liocranum rupicola*). Some species are found only in one of these countries. *Gnaphosa microps, Haplodrassus moderatus, Zelotes aeneus, Agroeca dentigera, Agroeca lusatica, Phrurolithus minimus* and *Scotina palliardi* are new to the Lithuanian spider fauna.

Key words: spiders, Gnaphosidae, Liocranidae, Estonia, Latvia, Lithuania, zoogeography

INTRODUCTION

Grimm (1985, 1986) published one of the most comprehensive studies on European Gnaphosidae and Liocranidae. Only sparse data on spiders found in Lithuania, Latvia and Estonia (former USSR republics) were available at the time of the publication of these works. Some information dealing with spiders in Latvia and Estonia was published in local scientific journals and was not accessible for the mentioned revisions. For more references on these omitted data see Vilbaste (1987) and Spungis & Relys (1997). The data from this region used in the revision of Liocranidae and Gnaphosidae by Grimm were mainly based on Vilbaste (1980). Some information was taken from a synopsis by Tyshchenko (1971). New publications containing data about these families from the Baltic countries were published after 1986 (Vilbaste, 1987; Šternbergs, 1990). Recent studies of the Lithuanian spider fauna have revealed new data on these families. The main aim of this article is to present additional information on the distribution of Liocranidae and Gnaphosidae in the Baltic States.

MATERIAL

The data in the literature was analysed. Liocranidae and Gnaphosidae were well presented in the synopsis of the Estonian spiders

(Vilbaste, 1987). Publications dealing with the occurrence of these families in Latvia were also considered (Šternbergs, 1981, 1990). In addition, an article dealing with Latvian spiders published after 1990 (Šternbergs, 1995) was checked for new records of Gnaphosidae and Liocranidae species in this country. Unpublished diploma theses were checked at the Department of Zoology and Animal Ecology of the University of Latvia in Riga. The material of Gnaphosidae from the collection of M. Šternbergs seems to be lost, and all our efforts to find it were unsuccessful. All published data on these families in Lithuania were considered in this paper. Unpublished material collected in Lithuania during 1993-1999 was used as well. The nomenclature of spiders follows Platnick (1993).

RESULTS

The compiled list includes 48 species of Gnaphosidae and 11 species of Liocranidae registered in the Baltic States (33/10 in Lithuania, 33/3 in Latvia and 35/10 in Estonia). A wide number of species were registered only as single individuals, mainly females. Some of the registered species are known only from old records. Grimm (1985) mapped the two species *Drassodes hypocrita* and *Drassodes villosus* over the entire considered region. All published material on these families in the Baltic States was checked, but there was no original data on the localities of these two species in the region. Probably the distribution data of these spiders was taken from Tyshchenko (1971) who gave only approximate distribution data for these species. The list of Gnaphosidae and Liocranidae species registered in the Baltic States is given in the Table 1. Some of the doubtful records and species worthy of revision are separated in the table and discussed below.

Estonia

Vilbaste (1987) presented 35 Gnaphosidae and 10 Liocranidae species found in Estonia. *Zelotes longipes, Phaeocedus braccatus, Gnaphosa sticta, Gnaphosa leporina, Micaria silesiaca* and *Scotina gracilipes* were reported as female singletons. The other 8 Gnaphosidae and 5 Liocranidae species are known only as females. As to the three *Scotina* species, both sexes of only *Scotina palliardi* are registered. 1 female of *Scotina gracilipes* and 2 females of *Scotina celans* are known from Estonia. Only old records of *Trachyzelotes pedestris* and *Micaria formicaria* are available (Grube, 1859). According to the distribution pattern of *Zelotes apricorum* and *Zelotes subterraneus* in Europe (Grimm, 1985), the occurrence of four females of *Zelotes apricorum* in Estonia is doubtful. These specimens could belong to *Zelotes subterraneus* which is well known in the whole region. The identity of one female of *Gnaphosa sticta* inhabiting the northern regions (Koponen, pers. comm.) and not occurring in the southern part of Finland should be revised. This could have been *Gnaphosa microps*, well known from wetland habitats in Estonia and Lithuania. *Gnaphosa nigerrima* is included in the cheklist of Estonia as a synonym of *Gnaphosa lugubris*. They are currently regarded as separate species and one of these species might be overlooked. *Gnaphosa nigerrima* is well known in Lithuania and Finland and is suspected of occurring also in Estonia. Its inclusion in the list must be postponed, however, until new or revised records from Estonia are obtained. In any case, revision of the available material is required to solve these questions. We therefore suggest *Gnaphosa sticta, Zelotes apricorum, Trachyzelotes pedestris* and *Micaria formicaria* be omitted from the checklist. The precise data on *Gnaphosa nigerrima* and *Gnaphosa lugubris* as well as on two *Scotina* species are also doubtful.

Latvia

The analysis of data shows 33 species of Gnaphosidae and 3 species of Liocranidae registered in Latvia. *Gnaphosa bicolor, Haplodrassus soerenseni, Haplodrassus moderatus, Haplodrassus umbratilis, Zelotes petrensis*, and *Micaria romana* are reported as female singletons. Most of these species (except *M. romana*) are known in neighbouring Baltic countries and from both

Table 1. Gnaphosidae and Liocranidae of the Baltic States. ++: species registered in both sexes; +: registered in one sex; x: species not recorded during the last 40 years; ???: occurrence indicated by Grimm (1985) but no exact records available.

	Species	Estonia	Latvia	Lithuania
	Gnaphosidae			
1	*Berlandina cinerea* (Menge, 1872)			++
2	*Callilepis nocturna* (Linnaeus, 1758)	++	+	
3	*Drassodes lapidosus* (Walckenaer, 1802)	++	++	
4	*Drassodes pubescens* (Thorell, 1856)	++	++	++
5	*Drassyllus lutetianus* (L. Koch, 1866)	++	++	++
6	*Drassyllus praeficus* (L. Koch, 1866)	++	++	++
7	*Drassyllus pusillus* (C.L. Koch, 1839)	++	+	++
8	*Gnaphosa bicolor* (Hahn, 1833)	++	+	++
9	*Gnaphosa leporina* (L. Koch, 1866)	+	+	
10	*Gnaphosa lucifuga* (Walckenaer, 1802)		++	
11	*Gnaphosa lugubris* (C.L. Koch, 1839)	++	++	
12	*Gnaphosa microps* Holm, 1939	+		++
13	*Gnaphosa montana* (L. Koch, 1866)	+	++	x
14	*Gnaphosa muscorum* (L. Koch, 1866)		+	++
15	*Gnaphosa nigerrima* L. Koch, 1877			++
16	*Haplodrassus cognatus* (Westring, 1861)	+	++	++
17	*Haplodrassus dalmatensis* (L. Koch, 1866)			++
18	*Haplodrassus moderatus* (Kulczyński, 1897)	++	+	++
19	*Haplodrassus signifer* (C.L. Koch, 1839)	++	++	++
20	*Haplodrassus silvestris* (Blackwall, 1833)		++	++
21	*Haplodrassus soerenseni* (Strand, 1900)	++	+	++
22	*Haplodrassus umbratilis* (L. Koch, 1879)	+	+	++
23	*Micaria nivosa* L. Koch, 1866	++		
24	*Micaria fulgens* (Walckenaer, 1802)	+	++	++
25	*Micaria lenzi* Bösenberg, 1899			+
26	*Micaria pulicaria* (Sundevall, 1832)	++	++	++
27	*Micaria romana* L. Koch, 1866		+	
28	*Micaria silesiaca* L. Koch, 1875	+		+
29	*Micaria subopaca* Westring, 1861	+	++	x
30	*Phaeocedus braccatus* (L. Koch, 1866)	+	+	
31	*Poecilochroa variana* (C.L. Koch, 1839)	+	+	
32	*Scotophaeus quadripunctatus* (Linnaeus, 1758)	++	++	++
33	*Sosticus loricatus* (L. Koch, 1866)	+	++	x
34	*Trachyzelotes pedestris* (C.L. Koch, 1837)	x	+	
35	*Zelotes aeneus* (Simon, 1878)			++
36	*Zelotes clivicola* (L. Koch, 1870)	+	++	++
37	*Zelotes electus* (C.L. Koch, 1839)	++		++
38	*Zelotes exiguus* (Müller & Schenkel, 1895)			+
39	*Zelotes latreillei* (Simon, 1878)	+	++	++
40	*Zelotes longipes* (L. Koch, 1866)	+	+	++
41	*Zelotes petrensis* (C.L. Koch, 1839)	++	+	++
42	*Zelotes subterraneus* (C.L. Koch, 1833)	++	++	++
	Liocranidae			
1	*Agroeca brunnea* (Blackwall, 1833)	++	++	++
2	*Agroeca cuprea* Menge, 1873	+		++
3	*Agroeca dentigera* Kulczyński, 1913			++
4	*Agroeca lusatica* (L. Koch, 1875)	+		++
5	*Agroeca proxima* (O.P.-Cambridge, 1871)	+		++
6	*Agraecina striata* (Kulczyński, 1882)	+		++
7	*Phrurolithus festivus* (C.L. Koch, 1835)	++	++	++
8	*Phrurolithus minimus* C.L. Koch, 1839	+		++
9	*Scotina celans* (Blackwall, 1841)	+		
10	*Scotina gracilipes* (Blackwall, 1859)	+		
11	*Scotina palliardi* (L. Koch, 1881)	++	++	++
	Doubtful or old records			
	Gnaphosa sticta Kulczyński, 1908	+		
	Micaria formicaria (Sundevall, 1832)	x		
	Scotophaeus scutulatus (L. Koch, 1866)			x
	Zelotes apricorum (L. Koch, 1876)	+	++	
	Drassodes hypocrita (Simon, 1878)	???	???	???
	Drassodes villosus (Thorell, 1856)	???	???	???

sexes. Another three species, *Callilepis nocturna, Gnaphosa leporina* and *Gnaphosa muscorum*, are known in Latvia only from females. The occurrence of one male and one female of *Zelotes apricorum* is doubtful and revision of the material is necessary.

Lithuania

In comparison with Latvia and Estonia, some older data on Gnaphosidae from the Vilnius region are available (Pupiska, 1939). The main material of spiders was collected during the last 8 years (Relys, 1996, 2000). A total of 33 Gnaphosidae and 9 Liocranidae species were registered in Lithuania. *Gnaphosa montana, Micaria subopaca, Scotopaeus scutulatus,* and *Sosticus loricatus* are known only from old records. We suggest not including these species in the checklist before recent data are obtained. The absence of some species (*Callilepis nocturna, Phaeocedus braccatus* and *Poecilochroa variana*) which are common in the neighbouring countries could be explained by insufficient studies in specific habitats.

Gnaphosidae and Liocranidae species new to Lithuania

Seven species mentioned in this paper viz. *Gnaphosa microps, Haplodrassus moderatus, Zelotes aeneus, Agroeca dentigera, Agroeca lusatica, Phrurolithus minimus*, and *Scotina palliardi* have not previously been reported for Lithuania. Most of them were found during the investigations of Lithuanian peatbogs and peatlands using pitfall traps in 1999. A part of the data is given in papers by Koponen et al. (2001), Relys & Dapkus (2001). The data on *Agroeca lusatica* refer to the material collected in 1993 and 1998. In the present paper we will briefly summarise data about these new species in Lithuania.

Gnaphosa microps Holm, 1939

Species found in all investigated peatbogs: Čepkeliai (54°00'N, 24°30'E), Laukėnai (54° 00'N, 24°30'E), Baloša (54°54' N, 25°48' E) and Kertušas (53°56'N, 24°34'E). Main activity in July – August. Abundance in different peatbogs varied markedly. Highest abundances in communities in peatbogs overgrown with pines.

Material (total catches): Čepkeliai, 15.04.-12.11.1999, 81♂ 6♀; Laukėnai, 18.04.-14.11.1999, 3♂ 1♀; Baloša, 15.04.-03.11.1999, 4♂; Kertušas, 18.04.-14.11.1999, 45♂ 1♀.

Haplodrassus moderatus (Kulczyński, 1897)

Species often recorded from peatbogs and fenlands. Two records from Lithuania are known, one from Kertušas peatbog overgrown with pines, the other from a sage swamp by Ežeraitis lake, near village Puvočiai (54°07'N, 24°19'E).

Material: Kertušas, 16.05.–30.05.1999, 1♀; Puvočiai, 19.06.–02.07.1999, 1♂.

Zelotes aeneus (Simon, 1878)

Known only from two localities in Lithuania. One is a former peat exploitation site planted with birch in Palios peatland (54°35'N, 23°42'E). The litter layer consisted mainly of undecomposed birch leaves. The species was caught 5-7 years after the end of commercial exploitation of the peatland. The other locality was a two year old area of open gravel ground in the central part of Vilnius (54°42'N, 25°18'E). For this species a preference for dry, ruderal habitats with areas of open ground can be noticed.

Material: Palios peatland, 29.07.– 12.08.1999, 8♂ 3♀; Vilnius, 23.07.–15.08.2000, 7♂ 1♀; 15.08.-07.09.2000, 2♀.

Agroeca dentigera Kulczyński, 1913

Locally occurring in peatbogs. Main part of individuals was collected in autumn (September - November).

Material: Laukėnai, 16.05.-30.05.1999, 1♀; 18.09.-17.10.1999, 1♂; 17.10.-14.11.1999, 3♂; Baloša, 15.04.-20.04.1999, 1♂; 02.06.-15.06.1999, 1♀; 28.09.-03.11.1999, 5♂.

Agroeca lusatica (L. Koch, 1875)

Species found in dry, ruderal and agrocultural habitats with sparse vegetation and areas of open ground. One locality was a slope of old

sand and gravel quarry in the village Verkšionys (54°38'N, 24°55'E). The other locality was the undersized orchard of *Ribes* sp. in the Botanical Garden of Vilnius University in Kairėnai (54°44'N, 25°24'E).

Material: Verkšionys, 30.04.-22.05.1993, 1♂; 22.05.-07.06.1993, 1♀; Kairėnai, 26.06.-17.07. 1998, 1♂ 2♀.

Phrurolithus minimus C.L. Koch, 1839

The sparse records come from peatbogs. Due to insufficient investigations in other habitats in Lithuania it is difficult to state whether peatbogs are a typical habitat for this species in the region. Our data markedly contradict data about the habitat preferences of this species in Central Europe (Hänggi et al., 1995).

Material: Čepkeliai, 11.06.-06.07.1999, 2♂; 23.07.-23.08.1999, 1♀; Baloša, 20.05.-02.06.1999, 1♂; 12.08.-08.09.1999, 1♀.

Scotina palliardi (L. Koch, 1881)

Species found in all investigated peatbogs. Main activity in the end of April and May. This species often becomes dominant in spider communities in various peatbog habitats.

Material (total catches): Čepkeliai, 15.04.-12.11.1999, 135♂ 19♀; Laukėnai, 18.04.-14.11.1999, 147♂ 45♀; Baloša, 15.04.-03.11.1999, 2♂ 2♀; Kertušas, 18.04.-14.11.1999, 30♂ 8♀.

DISCUSSION

The three Baltic States present a narrow region bordering the eastern coast of the Baltic Sea. Due to insufficient arachnological data from some countries (especially Latvia and Lithuania), reliable patterns of the distribution of spider species in the region could not be distinguished. *Berlandina cinerea, Haplodrassus dalmatensis* and *Zelotes aeneus* are considered to be southern species missing in northern regions (Latvia, Estonia, Finland). Only older records of *Berlandina cinerea* in Finland (Koponen, pers. comm.) contradict this statement in the case of *B. cinerea*. In comparison with Central Europe, the Gnaphosidae and Liocranidae fauna in the Baltic region is very similar due to the occurrence of most common European species belonging to these families. 48 Gnaphosidae and 11 Liocranidae species were registered in the Baltic States until the present time. The records of *Gnaphosa sticta* and *Zelotes apricorum* are doubtful. We suggest they should be excluded from the regional species list, as well as *Micaria formicaria* and *Scotophaeus scutulatus* (due to the old records). For two species, *Drassodes hypocrita* and *Drassodes villosus*, mapped by Grimm (1985), no localities are known in this region. Following this, the current checklist of the Baltic States includes 42 Gnaphosidae and 11 Liocranidae species. Excluding some possible misidentifications and old records, 29 Gnaphosidae and 9 Liocranidae species are known in Lithuania, 31/10 in Estonia and 32/3 in Latvia. Only a few species known in Central Europe could be expected to be present in this region (*Poecilochroa conspicua, Apostenus fuscus, Liocranum rupicola*). The last two species are also known from Sweden (Kronestedt, pers. comm.). Also the possibility of the occurrence of some southern species cannot be rejected. Some species have not yet been found in one of the Baltic countries. It might be expected that *Gnaphosa microps* and *Zelotes electus* will be found in Latvia and *Drassodes lapidosus* in Lithuania. Elucidation of the status of *Gnaphosa lugubris* and *Gnaphosa nigerrima* in Latvia and Estonia requires revision of the whole material, because *G. lugubris* could be confused with *G. nigerrima*.

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