

Glimpsing at the rove beetle fauna of Vjosa River, Albania (Coleoptera: Staphylinidae)

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The determination of by-catches from a field trip to Vjosa River in April 2017 revealed 74 different species of staphylinid beetles. 28 species were reported for the first time for Albania, which impressively confirms the poor knowledge of Albania's rove beetle fauna. Further intensified investigations also considering specific catching methods are recommended to generate a well-founded data set of riverine staphylinidae from Vjosa River for detailed evaluation. The importance of staphylinidae as indicators in floodplain habitats is discussed.

DEGASPERI G., 2018: Einblicke in die Kurzflügelkäferfauna der Vjosa Auen, Albanien (Coleoptera: Staphylinidae).

Die Auswertung von Beifängen einer Vjosa Exkursion nach Albanien im April 2017 erbrachten 74 verschiedene Arten. 28 Arten Staphylinidae werden zum ersten Mal aus Albanien gemeldet, was den geringen Kenntnisstand der Staphyliniden Fauna Albanien demonstriert. Für eine ökologische Auswertung werden zusätzliche und intensivere Aufsammlungen unter Anwendung spezifischer Sammelmethoden empfohlen. Die zentrale Bedeutung von Kurzflügelkäfern als Indikatoren in Auen Lebensräumen wird diskutiert.

Keywords: Albania, floodplain, Staphylinidae, new records, riparian, river.

Introduction

Rove beetles are known to be highly diverse in natural floodplain habitats and include a high number of specialised stenotopic species (e.g. Fig 1) (e.g. SCHATZ 1996, KAHLEN 2003, 2010, DEGASPERI & ECKELT 2015). From the shoreline to the alluvial forests, rove beetles inhabit numerous different microhabitats, making them valuable and sensitive indicators (SCHATZ 2007, PAETZOLD et al. 2008).

Apart from regular reports from Greece and its islands (e.g. ASSING & WUNDERLE 1999, 2001) faunistic data from the Balkans is scarce and, aside from scattered records within taxonomic reviews, has hardly been published. The rove beetle fauna of Albania is poorly investigated (SCHÜLKE & SMETANA 2015).

Materials and Methods

The present material was collected between 24.–28.04.2017 and includes by-catches from pitfall traps (leg. PAILL W., GUNCZY J., FRANK T.) and hand catchings (leg. PAILL W., GUNCZY J., KUNZ G.). Sampling data and study sites are presented in PAILL et al. (2018 this volume). Detailed information about the investigated area is given in the introduction chapter. The material is currently stored in the author's collection.

For determination, the standard literature for Central European rove beetles was used (FREUDE et al. 1971, 1974, ASSING & SCHÜLKE 2011). Whenever plausible, additional literature was consulted for identifying taxa (ASSING 2007, 2016; PASSNIK 2006a, 2006b, 2010).



Fig. 1: *Bledius* cf. *bosnicus* burrowing in sand. Photo Gernot KUNZ. – Abb. 1: Der grabende *Bledius* cf. *bosnicus*. Foto: Gernot KUNZ.

Results

The pitfall traps and hand catchings provided 312 specimens. A total of 74 different species could be distinguished. 65 species could be determined to species level, of which 28 are new to the fauna of Albania (SCHÜLKE & SMETANA 2015) (Tab.1). Over 40 % of the determined species are considered stenotopic in Central Europe. Due to the small amount of material provided, no further evaluation of species assemblages was carried out. The determined specimens included four remarkable species that will be more closely described in the following.

Remarkable species:

Anaulacaspis flavomarginata ASSING 2016

The distribution of this recently described species was confined to only two localities in Albania and Greece (ASSING 2016). A further record can hereby be confirmed. According to present knowledge, *A. flavomarginata* is a highly stenotopic riparian species exclusively inhabiting gravel banks of rivers.

Anaulacaspis laevigata DUVIVIER, 1883

Confirmed records of this rare species are known from Turkey, Southern Italy, and the Balkans (ASSING 2016). As *A. flavomarginata*, *A. laevigata* is a riparian species preferably inhabiting riverbanks (ASSING 2016). This is the first record for Albania.

Thinobius cf. *brigittae* SCHÜLKE 1998

Thinobius species are sensitive indicators of natural riverbanks, and inhabit the interstitial space close to the shoreline. *Thinobius brigittae* is known from France, Austria, Czech

Tab. 1: Species list Staphylinidae. The site numbers refer to the pitfall collecting and hand catching sites (see PAILL et al. 2018 this volume); * refers to remarkable and discussed species. Species listed in bold are new records to the fauna of Albania. – Tab. 1: Artliste Staphylinidae. Die Standortnummern entsprechen den Handfang- und Bodenfallenstandorten bei PAILL et al. 2018 diese Ausgabe). * markiert die bemerkenswerten Arten im Text, fettgedruckte Arten bedeuten Neumeldungen für Albanien.

Species	Subfamily	Site	Specimens
<i>Biblopectus hellenicus</i> Besuchet, 1955	Pselaphinae	[27]	2
<i>Brachygluta</i> cf. <i>xanthoptera</i> Reichenbach, 1816	Pselaphinae	[28]	1
<i>Bryaxis</i> spec.	Pselaphinae	[21]	1
<i>Trimium brevicorne</i> (Reichenbach, 1816)	Pselaphinae	[20] [21] [27]	3
<i>Trissemus antennatus serricornis</i> (Schmidt-Goebel, 1838)	Pselaphinae	[25]	1
<i>Tychobythinus</i> spec.	Pselaphinae	[20]	1
<i>Tychus</i> spec.	Pselaphinae	[21]	1
<i>Ischnosoma longicorne</i> (Mäklin, 1847)	Tachyporinae	[25]	1
<i>Sepedophilus marshami</i> (Stephens, 1832)	Tachyporinae	[19]	1
<i>Tachyporus nitidulus</i> (Fabricius, 1781)	Tachyporinae	[28]	1
<i>Habrocerus capillaricornis</i> (Gravenhorst, 1806)	Habrocerinae	[24]	1
<i>Aloconota gregaria</i> (Erichson, 1839)	Aleocharinae	[18] [21] [25]	3
<i>Amarochara forticornis</i> (Lacordaire, 1835)	Aleocharinae	[25]	2
<i>Anaulacaspis flavomarginata</i> Assing 2016 *	Aleocharinae	[30]	1
<i>Anaulacaspis laevigata</i> (Eppelsheim, 1883) *	Aleocharinae	[25]	1
<i>Anaulacaspis</i> spec.	Aleocharinae	[30]	1
<i>Atheta</i> cf. <i>amplicollis</i> (Mulsant & Rey, 1873)	Aleocharinae	[19]	1
<i>Atheta elongatula</i> (Gravenhorst, 1802)	Aleocharinae	[27] [24] [25]	14
<i>Atheta</i> spec.	Aleocharinae	[28]	2
<i>Atheta triangulum</i> (Kraatz, 1856)	Aleocharinae	[6] [25]	2
<i>Cordalia obscura</i> (Gravenhorst, 1802)	Aleocharinae	[18] [27]	3
<i>Drusilla canaliculata</i> (Fabricius, 1787)	Aleocharinae	[18] [25] [27] [28]	7
<i>Gnypeta rubrior</i> Tottenham, 1939	Aleocharinae	[32/1]	1
<i>Ischnopoda umbratica</i> Erichson, 1837	Aleocharinae	[18] [24] [27]	5
<i>Meotica</i> cf. <i>filiformis</i> (Motschulsky, 1860)	Aleocharinae	[12]	1
<i>Oligota punctulata</i> Heer, 1839	Aleocharinae	[25]	1
<i>Oxypoda</i> cf. <i>lurida</i> Wollaston, 1857	Aleocharinae	[19]	1
<i>Pronomaea picea</i> Heer, 1841	Aleocharinae	[18]	1
<i>Tachyusa coarctata</i> Erichson, 1837	Aleocharinae	[32/1] [12] [13] [33]	7
<i>Tachyusa objecta</i> Mulsant & Rey, 1870	Aleocharinae	[24]	1
<i>Tetralaucopora longitarsis</i> (Erichson, 1837)	Aleocharinae	[28] [30]	2
<i>Tetralaucopora rubicunda</i> (Erichson, 1837)	Aleocharinae	[18]	1
<i>Anotylus inustus</i> (Gravenhorst, 1806)	Oxytelinae	[27]	1
<i>Anotylus tetracarinatus</i> (Block, 1799)	Oxytelinae	[5] [20] [24]	3
<i>Bledius</i> cf. <i>bosnicus</i> Bernhauer, 1902 *	Oxytelinae	[11] [12] [14] [16] [20] [22] [30] [40/3] [41/1] [42/2]	62
<i>Bledius cribricollis</i> Heer, 1839	Oxytelinae	[13] [14] [18] [24] [25] [27] [28] [33] [35]	29

Tab. 1 continued – Fortsetzung

Species	Subfamily	Site	Specimens
<i>Bledius frater</i> Kraatz, 1857	Oxytelinae	[5] [13]	2
<i>Bledius nanus</i> Erichson, 1840	Oxytelinae	[9] [16] [33]	4
<i>Bledius spec.</i>	Oxytelinae	[3] [6] [14]	3
<i>Carpelimus corticinus</i> (Gravenhorst, 1806)	Oxytelinae	[2] [12] [14] [24] [27]	5
<i>Carpelimus despectus</i> (Baudi, 1870)	Oxytelinae	[12] [14] [20]	5
<i>Carpelimus gracilis</i> (Mannerheim, 1830)	Oxytelinae	[6] [27]	3
<i>Platystethus alutaceus</i> Thomson, 1861	Oxytelinae	[18] [24] [25] [42/2]	18
<i>Platystethus capito</i> Heer, 1839	Oxytelinae	[18] [24] [25] [27] [29]	24
<i>Platystethus cornutus</i> (Gravenhorst, 1802)	Oxytelinae	[25] [27]	13
<i>Platystethus nitens</i> (C. Sahlberg, 1832)	Oxytelinae	[18] [24] [27] [29]	14
<i>Thinobius cf. brigittae</i> Schülke, 1998 *	Oxytelinae	[6] [12]	3
<i>Thinobius spec.</i>	Oxytelinae	[6]	1
<i>Euconnus intrusus</i> (Schaum, 1844)	Scydmaeninae	[27]	3
<i>Stenus ater</i> Mannerheim, 1830	Steninae	[17]	1
<i>Stenus biguttatus</i> (Linnaeus, 1758)	Steninae	[17]	1
<i>Stenus cf. pusillus</i> Stephens, 1833	Steninae	[24]	1
<i>Stenus longipes</i> Heer, 1839	Steninae	[12] [13] [14] [15] [18] [33] [42/2]	17
<i>Stenus morio</i> Gravenhorst, 1806	Steninae	[27]	1
<i>Stenus ruralis</i> Erichson, 1840	Steninae	[13] [14] [15]	3
<i>Stenus spec.</i>	Steninae	[24]	1
<i>Achenium depressum</i> (Gravenhorst, 1802)	Paederinae	[24]	2
<i>Astenus melanurus</i> (Küster, 1853)	Paederinae	[2]	1
<i>Paederidus rubrothoracicus</i> (Goeze, 1777)	Paederinae	Vjosa (no detailed information)	1
<i>Paederus balcanicus</i> Koch, 1938	Paederinae	[24]	1
<i>Paederus riparius</i> (Linnaeus, 1758)	Paederinae	[25] [28]	3
<i>Scopaeus debilis</i> Hochhuth, 1851	Paederinae	[27]	1
<i>Scopaeus laevigatus</i> (Gyllenhal, 1827)	Paederinae	[27]	1
<i>Scopaeus pusillus</i> Kiesenwetter, 1843	Paederinae	[29]	1
<i>Sunius cf. melanocephalus</i> (Fabricius, 1793)	Paederinae	[23]	1
<i>Neobisnius cf. lathrobioides</i> (Baudi, 1848)	Staphylininae	[1]	1
<i>Neobisnius prolixus</i> (Erichson, 1840)	Staphylininae	[6]	1
<i>Ocypus olens</i> (O. Müller, 1764)	Staphylininae	[28]	1
<i>Philonthus concinnus</i> (Gravenhorst, 1802)	Staphylininae	[28]	1
<i>Philonthus quisquiliarius</i> (Gyllenhal, 1810)	Staphylininae	[27]	1
<i>Philonthus rubripennis</i> (Stephens, 1832)	Staphylininae	[30]	1
<i>Platydacus fulvipes</i> (Scopoli, 1763)	Staphylininae	[28]	1
<i>Quedius spec.</i>	Staphylininae	[25]	2
<i>Stenistoderus cephalotes cephalotes</i> (Kraatz, 1858)	Staphylininae	[23]	1



Fig. 2: *Stenus longipes*. A characteristic species of natural gravel banks. Photo Gernot KUNZ. – Abb. 2: *Stenus longipes*. Ein typischer Vertreter naturnaher Schotterbänke. Photo: Gernot KUNZ.

Republic, Romania, and Slovakia. 3 specimens of *Thinobius brigittae* were available; unfortunately the samples only included females. The examined specimens were compared with paratypes at the Tiroler Landesmuseum Ferdinandeum, but a male specimen would be needed for final validation. This is the first record for Albania.

Bledius cf. bosnicus BERNHAUER 1902 (Fig. 1).

The taxonomy of *B. bosnicus* has not yet been sufficiently clarified. According to SCHÜLKE & SMETANA (2015), *B. bosnicus* is only reported from Austria, Norway, Sweden, and Bosnia Herzegovina. SCHÜLKE (2011) confines the distribution to the area between Hungary and Greece. However, the specimens collected at Pocem floodplains fit the description given in SCHÜLKE (2011) and are identical to specimens collected from Tagliamento River, Italy (KAHLEN 2003, 2010).

Discussion

The presented material must be treated as a first superficial insight into the staphylinid fauna of the Vjosa River. Referring to other studies, the total diversity of rove beetles living in the floodplains of Vjosa could reach 400 species or more (KAHLEN 2010). Taking that into account, it is clear how little is known so far about riparian Staphylinidae from the Vjosa River. The large number of new records, containing widespread as well as common species, confirms the poor knowledge-base regarding Albanian rove beetles in general. Further investigations can be considered highly promising as they might provide valuable faunistic data, potentially including hitherto unknown species.

The nature of the present material is somewhat limited due to the collection methods applied (i.e. pitfall traps, incidental hand catching). Additional selective catching methods (e.g. soil washing, flooding, sifting) would be more efficient and instrumental in obtaining samples of ecological guilds of riverine Staphylinidae, which might be underrepresented in the current material. This is particularly the case for species living close to the shoreline (*Platydomene* spp., *Thinodromus* spp., *Lesteva* spp., *Geodromicus* spp., etc.) including small and highly adapted rove beetles inhabiting the interstitial space of gravel and sand banks (*Thinobius* spp., *Hydrosmecta* spp., *Aloconota* spp.). Members of these ecological guilds are highly stenotopic, and most of them are vastly threatened by habitat loss in western industrialised countries (e.g. KAHLEN et al. 1994, KAHLEN 1995, NEUHÄUSER-HAPPE 1999, BUSSLER & HOFMANN 2003). On the basis of the findings of this small-scale study, a highly diverse assemblage of shoreline species can already be assumed for the Vjosa River area.

Further targeted and intensified investigations into the Staphylinidae of the Vjosa River are recommended for several reasons. On the one hand, together with ground beetles and spiders, rove beetles represent the majority of biodiversity in exposed riverine sediments (PLACHTER 1986, TOCKNER et al. 2006, SCHATZ et al. 2003, DEGASPERI & ECKELT 2015). Furthermore, their diversity is indicative of the quality and value of a given ecosystem, which makes research into these species particularly valuable for any conservation and assessment purposes (SCHATZ 2007, SCHATZ et al. 2003, 2006, PAETZOLD et al. 2008). Finally, the Vjosa River area constitutes one of Europe's last braided rivers and, thus, a hotspot of diversity. A well-founded data set from this area could provide important insights into species assemblages of riverine landscapes which have already been mostly destroyed across other parts of Europe (Tockner & Stanford 2002, TOCKNER et al. 2008).

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