Acta ZooBot Austria **155**, 2018, 251–256

Snapshot of the terrestrial true bug fauna of the Pocem floodplains (Insecta: Hemiptera: Heteroptera)

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61 terrestrial true bug (Heteroptera) species are reported from a short field trip in April 2017 along the river Vjosa in the Pocem floodplains, Albania. Five species are reported for the first time for Albania, indicating insufficient baseline information on the distribution of true bugs in the region. Future sampling designs should consider the interstitial habitats, river gravel and sand banks, and adjacent dry grassland areas. Certain difficulties aside, true bugs are a significant group of insect species with descriptive and indicative value.

Rabitsch W., 2018: Momentaufnahme der terrestrischen Wanzenfauna im Pocem Überschwemmungsgebiet (Insecta: Hemiptera: Heteroptera).
Während einer kurzen Exkursion im April 2017 entlang des Flusses Vjosa im Pocem Überschwemmungsgebiet, Albanien, wurden 61 terrestrische Wanzenarten (Heteroptera) festgestellt. Fünf Arten werden der erste Mal für Albanien gemeldet, ein Hinweis auf die unzureichende Datenlage der Verbreitung von Wanzen im Gebiet. Zukünftige Erhebungen sollten insbesondere die interstitiellen Habitate am Flussufer, Sandbänke und die angrenzenden Trockenrasenstandorte untersuchen. Trotz gewisser Schwierigkeiten sind Wanzen als Deskriptoren und Indikatoren der Lebensräume eine aussagekräftige Insektengruppe von hohem Wert.

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

Introduction

True bugs (Insecta: Hemiptera: Heteroptera) are well-known descriptors and indicators of terrestrial and aquatic habitats and their ecological quality (Duelli & Obrist 1998, Achtziger et al. 2007, Rabitsch 2008, Skern et al. 2010). Due to their diversity of feeding habits, life-histories, biology, and preferred habitats, true bugs are a meaningful addition to any Environmental Impact Assessment (e.g. Deckert & Hoffmann 1993). Most species live in terrestrial habitats, including brooksides, river banks, and transitional ecotones between land and water. A smaller fraction of species lives entirely aquatic (e.g. water boatman, Corixidae) or semi-aquatic on the water surface (e.g. water striders, Gerridae). While some species are predators of other insects, most terrestrial species feed on plants with different degrees of specialization from monophagous (feeding only on one specific host plant) to polyphagous (feeding on very many different host plants from different plant families).

Unfortunately, the usefulness of true bugs in Environmental Impact Assessments is limited by several factors. Determination at the species level can be a challenge and larvae (and females of some species) often cannot be identified. Because of the diverse ecology (habitats, host plants, phenology) any random sampling and collecting over just a short period of time can only provide a snapshot of the species inventory and more extended sampling is needed in space and time to make scientifically sound conclusions regarding the species inventory and its possible biogeographic significance. Finally, solid baseline data are needed to discuss possible implications of habitat loss or habitat deterioration at the local scale as well as in a wider context. The true bug fauna of Albania is less well known than that of neighbouring areas in the Balkan region, e.g. Bulgaria (Josifov & Simov 2006),

which is confirmed by the five first records reported for the country in this paper, in spite of the very limited collecting efforts. Currently there are more than 550 Heteroptera species known from Albania, but many more are to be expected. Sampling intensity clearly needs to be increased along the Vjosa catchment from its source to the estuary, including its tributaries, nearby standing waters and thermal springs, to evaluate species and population range dynamics.

Material and Methods

The material presented here was collected between 24.-26.04.2017 along the three transects described by PAILL et al. (2018 this volume) and in the surroundings of the village Kute (40°28'02.5"N 19°45'57.4"E) with sweeping nets, beating trays, and visual inspection on host plants and on the soil surface. Additionally, by-catches from pitfall traps between 24.-28.04.2017 (leg. FRANK, GUNCZY, PAILL) and from a suction sampler (inverted leaf blower) and sweeping nets between 23.–29.04.2017 (leg. GUNCZY, KUNZ) are included. The material is stored dry-mounted or in alcohol in the author's collection. For a general description of the river- floodplain landscape of the Vjosa see SCHIEMER et al. (2018 this volume).

Results

61 species from 11 families were recorded (Tab. 1). Five of these species are recorded for Albania for the first time. Because of the random and very limited collecting efforts, detailed analyses of species communities or habitat preferences cannot be made.

Tab. 1: List of collected terrestrial Heteroptera in the Pocem floodplain area. X = present; VJO refers to the pitfall collecting sites (see PAILL et al., this volume); * refers to comments on the species in the text. – Tab. 1: Liste der gesammelten terrestrischen Wanzen im Pocem Überschwemmungsgebiet. X = vorhanden; VJO entspricht den Standorten der Barberfallen (siehe PAILL et al., in diesem Heft); * kennzeichnet Arten mit Kommentaren im Text.

Species	Family	Transect 1	Transect 2	Transect 3	Kute env.	Pitfall traps	Suction samples
Aelia acuminata (LINNAEUS, 1758)	Pentatomidae	X			X		
**Agnocoris reclairei* (WAGNER, 1949)	Miridae		X				
Agramma atricapillum (SPINOLA, 1837)	Tingidae	X	X				X
**Belonochilus numenius* (SAY, 1832)	Lygaeidae	X					
Beosus quadripunctatus (MÜLLER, 1766)	Lygaeidae	X		X		VJO34	
Brachycarenus tigrinus (SCHILLING, 1829)	Rhopalidae			X			
Camptopus lateralis (GERMAR, 1817)	Alydidae	X		X	X		
Capsus ater (LINNAEUS, 1758)	Miridae	X					X
Carpocoris pudicus (PODA, 1761)	Pentatomidae						X
Carpocoris purpureipennis (DE GEER, 1773)	Pentatomidae			X			
Catoplatus carthusianus (GOEZE, 1778)	Tingidae			X			X
Centrocoris spiniger (FABRICIUS, 1803)	Coreidae						X
Closterotomus annulus (BRULLÉ, 1832)	Miridae		X				
Codophila varia (FABRICIUS, 1787)	Pentatomidae			X			

Tab. 1 continued – Fortsetzung

**Conostethus venustus* (Fieber, 1858)	Miridae			X			
Copium teucrii (Host, 1788)	Tingidae	X					X
Coranus griseus (Rossi, 1790)	Reduviidae			X		VJO8	
Corizus hyoscyami (Linnaeus, 1758)	Rhopalidae	X		X	X		X
**Cremnorrhinus basalis* Reuter, 1880	Miridae	X		X			
Cymus glandicolor Hahn, 1832	Lygaeidae	X					
Cymus melanocephalus Fieber, 1861	Lygaeidae	X				VJO42	
Dictyla echii (Schrank, 1782)	Tingidae			X			
Dictyla humuli (Fabricius, 1794)	Tingidae	X					
Dolycoris baccarum (Linnaeus, 1758)	Pentatomidae	X		X	X		
Ectomocoris ululans (Rossi, 1790)	Reduviidae					VJO20, 28	
Emblethis verbasci (Fabricius, 1803)	Lygaeidae		X				
Eurydema ornata (Linnaeus, 1758)	Pentatomidae				X		
Eysarcoris ventralis (Westwood, 1837)	Pentatomidae				X		
Geocoris erythrocephalus (Lepeletier & Serville, 1825)	Lygaeidae	X		X			X
Geocoris megacephalus (Rossi, 1790)	Lygaeidae	X					
Heterogaster urticae (Fabricius, 1775)	Lygaeidae	X					
**Holcocranum saturejae* (Kolenati, 1845)	Lygaeidae	X					
**Kalama tricornis* (Schrank, 1801)	Tingidae			X			X
Lygus pratensis (Linnaeus, 1758)	Miridae			X			
Maccevethus corsicus Signoret, 1862	Rhopalidae						X
**Metapterus caspicus* (Dohrn, 1863)	Reduviidae					VJO20	
Monosteira unicostata (Mulsant & Rey, 1852)	Tingidae		X	X			X
Mustha spinosula (Lefebvre, 1831)	Pentatomidae		X				
Nabis viridulus Spinola, 1837	Nabidae						X
Neides aduncus Fieber, 1859	Berytidae				X		
Nysius graminicola (Kolenati, 1845)	Lygaeidae					VJO21	
Oncocephalus pilicornis Reuter, 1882	Reduviidae	X	X				
Orthocephalus proserpinae (Mulsant & Rey, 1852)	Miridae	X		X			
Paraparomius leptopodoides (Bärensprung, 1859)	Lygaeidae						X
Paromius gracilis (Rambur, 1839)	Lygaeidae			X			X
Peirates hybridus (Scopoli, 1763)	Reduviidae					VJO24	
Peribalus strictus (Fabricius, 1803)	Pentatomidae		X				
Platyplax inermis (Rambur, 1839)	Lygaeidae			X			
Podops curvidens A. Costa, 1843	Pentatomidae					VJO34	
Rhopalus parumpunctatus Schilling, 1829	Rhopalidae	X					
Rhopalus subrufus (Gmelin, 1790)	Rhopalidae	X		X			
**Saldula melanoscela* (Fieber, 1859)	Saldidae			X		VJO24, 25	
**Saldula xanthochila* (Fieber, 1859)	Saldidae		X			VJO1, 2, 5, 6, 10, 12, 15	
Staria lunata (Hahn, 1835)	Pentatomidae		X				

Tab. 1 continued – Fortsetzung

Stenodema calcarata (FALLÉN, 1807)	Miridae			X			
Stictopleurus pictus (FIEBER, 1861)	Rhopalidae	X		X			
Strobilotoma typhaecornis (FABRICIUS, 1803)	Coreidae				X		
Tingis cardui (LINNAEUS, 1758)	Tingidae	X		X			
Tingis geniculata (FIEBER, 1844)	Tingidae			X			X
Tropistethus fasciatus FERRARI, 1874	Lygaeidae		X				
Tuponia hippophaes (FIEBER, 1861)	Miridae			X			X

Brief comments on selected species:

Agnocoris reclairei (WAGNER, 1949)

Widely distributed from Central Europe to the northern Mediterranean region, eastwards to Iran, with patchy documentation due to difficult separation, which requires genitalic dissection. The zoophytophagous plant bug lives on willow (*Salix* sp.). First record for Albania.

Belonochilus numenius (SAY, 1832)

This nearctic species, living on sycamore species (*Platanus* spp.), was introduced to Europe and first recorded in 2008 from the islands of Mallorca and has since spread across Europe (e.g. RABITSCH & HEISS 2015). Most records are confined to cultivated sycamore hybrid plants in urban and suburban habitats. Here, a single animal was collected with a sweeping net in proximity of a natural stand of sycamore trees (*Platanus orientalis*) that form a sparsely grown, and rarely flooded riparian floodplain forest. First record for Albania.

Conostethus venustus (FIEBER, 1858)

A holo-mediterranean species that prefers dry and hot meadow habitats, where it feeds on Asteraceae, preferably on *Matricaria* species. It has expanded its range into western Europe in the last decades (AUKEMA 2003) and – although it may have increased in abundance in the Balkan region as well – has probably been overlooked so far. First record for Albania.

Cremnorrhinus basalis REUTER, 1880

This plant bug species is endemic to the Balkan peninsula, where it is distributed from northern Greece to Bulgaria, Macedonia, Albania, and parts of Bosnia and Herzegovina and Croatia (JOSIFOV & SIMOV 2006). In Bulgaria it is found along river valleys, and apparently this monophagous species is restricted to *Geranium rotundifolium* (Geraniaceae) as host plant, although this plant has a very wide palaearctic distribution. In any case, this sexually dimorphic plant bug only has a short adult life in early spring between April and May, rarely early June, and disappears soon after.

Holcocranum saturejae (KOLENATI, 1845)

A west-palaearctic species, also known from tropical Africa, feeding on *Typha* species, where it is usually collected on and within the inflorescences, often hiding between (and sometimes transported with) the wind-dispersed fluff of ripe seeds. First record for Albania.

Kalama tricornis (Schrank, 1801)

Not included for Albania in the recent Catalogue of the Heteroptera of the Palaearctic Region (Péricart & Golub 1996, Aukema et al. 2013), although already mentioned for Albania by Josifov (1986).

Metapterus caspicus (Dohrn, 1863)

Due to possible confusion with *M. linearis*, the distribution of this slender, predatory assassin bug is insufficiently known in Europe. The species lives on the soil surface, is distributed in southeastern Europe and most likely was overlooked so far. First record for Albania.

Saldula melanoscela (Fieber, 1859) and *Saldula xanthochila* (Fieber, 1859)

Saldidae or shore bugs are predatory and live along rivers and lakes, shorelines, including the marine coastline, and only rarely occur at some distance from waters. They can be classified as being characteristic riparian species and therefore hold important information with regard to natural (or modified) habitat dynamics. Both recorded *Saldula* species are widespread and known from different habitats, including large river banks and regularly flooded sandy soils. Shore bugs are difficult to catch and to determine, but it is likely that more species occur in the Pocem floodplain area. Possible future investigations need to take a closer look at the shore bug species composition and abundances, including microhabitat preferences (e.g. flooding frequency, substrate conditions), preferably covering different gradients along the river course.

Discussion

The five new records despite the limited collecting efforts indicate that there is insufficient baseline information on the distribution of true bugs in Albania. More species, including new records for the country, must be expected in the Pocem floodplain area if collecting intensity is increased in space and time. Many true bug species have life histories with only short adult phases during the summer months, which means that repeated collecting efforts over the season are needed to complete the species inventory. Furthermore, the considerable size of the floodplain area, including adjoining meadows, and agricultural and ruderal habitats calls for an expanded sampling design, specifically taking into account habitats potentially lost due to the planned dam construction works.

Future sampling designs should therefore consider the interstitial habitats and riparian river gravel and sand banks as well as the adjacent dry grassland areas, which potentially harbour the highest terrestrial true bug species diversity.

Beside the difficulties in collecting and determining the species, true bugs are a meaningful addition to other terrestrial insect groups in providing a more comprehensive knowledge-base on the quality of habitats and possible impacts of man-made environmental changes.

Acknowledgments

I thank Thomas Frank, Wolfram Graf, Johanna Gunczy, Gernot Kunz, and Wolfgang Paill, for providing Heteroptera samples, Wolfram Graf, Friedrich Schiemer and Sajmir Beqiraj for the opportunity to visit this beautiful place and the people of Kute for their hospitality.

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Received: 2018 06 20

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