

## FIVE SPECIES OF PSELAPHINAE (COLEOPTERA: STAPHYLINIDAE) NEW FOR THE FAUNA OF ALBANIA

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### Abstract

Sixty-one adult individuals of 15 species (10 genera) and one subspecies of Pselaphinae were caught using a car-net during a single evening trip in the valley of the Lumnica River, village of Alipostivan, close to the town of Përmet, southern Albania, on 22.05.2018. The following five species are new for the beetle fauna of Albania: *Trimium expandum* Reitter, 1884, *Meliceria (Cyrtoplectus) stankoi* (Karaman, 1960), *Brachygluta (Brachygluta) epirotica* Sabella, 2004, *Bythinus tener* Reitter, 1884 and *Tychobythinus latifrons* (Müller, 1902). The prevailing weather (air) conditions between 7:00 and 8:30 pm on the day of collecting (at Gjirokastër, 30 km away), with a warm although decreasing temperature (27.2-25.6°C) and increasing humidity (46-53%), were obviously optimal for the car-net method.

KEY WORDS: pselaphine rove beetles, Albanian fauna, winged species, weather conditions

### Introduction

The car-net (CN) is a long-known method of entomological collection (Loy *et al.*, 1968), but it is not widely or regularly used. It is the most efficient method for collecting a large number of species in a specific area in a short time (Peck & Cook, 1992; Köhler, 1994). In particular, tiny beetle species living in hidden places are more strongly represented in a CN than larger, mostly open-habitat species. The records of Pselaphinae reported so far for Albania in the Catalogue of Palaearctic Coleoptera (Schülke & Smetana, 2015) are mostly based on notes or descriptions of single species or genus groups without a compilation by region. For this reason, the method was applied during a field trip (18-25.05.2018) in the vicinity of the town of Përmet in

southern Albania. The aim of this study is to report the first overview of the flying species of Pselaphinae (Coleoptera: Staphylinidae) in the area.

## Materials and Methods

The study area is located near the village of Alipostivan, which is situated in the Përmet District (929 km<sup>2</sup>) in the region of Gjirokaštër (2,884 km<sup>2</sup>), southern Albania (Seferkollari, 2009). The road SH 72, which was selected for the CN method, runs (coming from the main road SH 75) beside and over a smaller tributary of the Vjosa River, the Lumnica River (Fig. 1). The Vjosa watershed is rich in ground waters. The left bank area differs from the right one in that aquifers on the right shore side are poorer than those on the left. Thus, the area surrounding the Lumnica River is mainly composed of some water-repellent layers and low water-bearing capacity rocks. Accumulation in this area is flysch. The protected area, as part of the national park Bredhi i Hotovës - Dangëlli, consists of some small sections characterized by the presence of karstic limestone conglomerates.

On 22.05.2018, between 7:00 and 8:30 pm, we drove along the SH 72 for about 5.5 km (from 40°16'54.7"N 20°17'29.6"E to 40°18'59.8"N 20°19'16.5"E; from 300 to 400 m a.s.l.). A self-made CN (Fig. 1) consisting of a tent frame (width 1.2 m, height 0.83 m, area 1.6 m<sup>2</sup>) with an approximately 2-m-long net made of fine-meshed curtain fabric with a replaceable bag attached with Velcro fastener, was used. The prevailing weather (air) condition data for the year 2018 from a station at Gjirokaštër (30 km from the Lumnica River, 340 m a.s.l., Meteomanz, 2018), including that before and during the CN trip, were used.

All adult beetle specimens were collected by the first author and determined by the second author. The species listed below were identified with the help of the following literature: Reitter (1885), Karaman (1954, 1957, 1960, 1961, 1967), Besuchet (1974), Bekchiev & Hlaváč (2020), and Sabella *et al.* (2004). All specimens are deposited as dry beetles in the private collections of the authors.

The habitus image of one species was taken with a Canon EOS 760D SLR camera connected via a LMscope 1X-42 mm phototube to an Olympus SZX10 stereomicroscope. The camera was controlled by EOS Utility software v. 3.0. Thirty-six single shots of the beetle were stacked to one photo using Combine ZM v. 1.0. This photo was further edited with GIMP-2.10 software.

## Results and Discussion

During the ca. 1.5-hour trip with the CN a total of 61 adult individuals of 15 species and one subspecies of Pselaphinae were caught (Table I). The 10 genera are assigned to the respective tribes according to Schülke & Smetana (2015). Within each genus, species are sorted alphabetically. Five species are new for the fauna of Albania (Table I). All individuals reported as new for Albania are males.

The newly recorded specimens of *Tychobythinus latifrons* (Müller, 1902) from Albania are winged and have large compound eyes (Fig. 2). All specimens caught so far are apterous and small-eyed. The image of the aedeagus of *T. latifrons* from the vicinity of the town of Herceg Novi (southwestern Montenegro) by Karaman (1954) is consistent with that of Albanian male specimens of the same taxon.



Figure 1. A – Beginning of the trip using the car-net on the road H72 (photo by W.-P. Polzin); B – a view into the Lumnica River valley to the southwest along the path (the left side of the picture) (photo by W.-P. Polzin); C – a view to the north from the bridge, which was crossed several times during the trip (photo by M. Beyer).



Figure 2. Habitus of an adult of *Tychobythinus latifrons* (Müller, 1902) caught during a car-net trip along the Lumnica River, in vicinity of Përmet (southern Albania) (dorsal view). Scale: 0.5 mm.

Table I. A list of Pselaphinae taxa caught during a car-net trip in the vicinity of Përmet (southern Albania) and number of adult individuals deposited in the collections of Brachat (B) and Kleeberg (K).

Taxon scientific name	B	K	Reference to occurrence
<i>Protamaurops macrophthalmus</i> (Müller, 1944)		3	Endogean species, so far only found by sifting (soil, leaf litter) or turning over large stones; Albania, Greece, Bulgaria (Bekchiev & Hlaváč, 2020)
<i>Batrissodes</i> ( <i>Batrissodes</i> ) <i>oculatus</i> (Aubé, 1833)		1	Widely distributed in Europe, rarer in the north (Besuchet, 1974)
<i>Euplectus karstenii</i> (Reichenbach, 1816)		2	Widespread and common in Eurasia, North Africa, invasive Nearctic, Australia (Besuchet, 1974)
<i>Trimium expandum</i> Reitter, 1884		12	New for the fauna of Albania, common in Greece, Bulgaria, North Macedonia (Karaman, 1967)
<i>Meliceria</i> ( <i>Cyrtoplectus</i> ) <i>stankoi</i> (Karaman, 1960)	1		New for the fauna of Albania, only two ind. from the city of Skopje (northern North Macedonia) recorded so far (Karaman, 1960)
<i>Brachygluta</i> ( <i>Brachygluta</i> ) <i>epirotica</i> Sabella, 2004	1	1	New for the fauna of Albania, only one ind. was found in Greece (village of Ampelos, region of Epirus) so far; most likely a rare species (Sabella <i>et al.</i> , 2004)
<i>Brachygluta</i> ( <i>Brachygluta</i> ) <i>spinicoxis fuchsii</i> (Paganetti-Hummler, 1899)		2	Frequently found in the Balkans, Asia Minor (Karaman, 1961; as <i>Brachygluta bruneiventris</i> Motsch.)
<i>Brachygluta</i> ( <i>Brachygluta</i> ) <i>trigonoprocta</i> (Ganglbauer, 1895)		1	Common in Europe (Sabella <i>et al.</i> , 2004)
<i>Brachygluta</i> ( <i>Brachygluta</i> ) <i>vicaria</i> Besuchet, 1963		1	Albania, Bosnia and Herzegovina, France, Greece, Italia (Schülke & Smetana, 2015); xerothermic species, mostly single ind. gathered so far
<i>Bryaxis callipus</i> Apfelbeck, 1906		8	Common in Bosnia and Herzegovina, Albania, i.e. Balkan Peninsula, and northern Greece (Karaman, 1957; as <i>Argiobythus woerzi</i> Holdh.)
<i>Bryaxis convexus</i> (Kiesenwetter, 1858)		12	Common on the Balkan Peninsula (Karaman, 1957; as <i>Embolobythus convexus</i> Kiesw.)
<i>Bryaxis islamitus</i> (Reitter, 1885)		1	Common on the Balkan Peninsula (Reitter, 1885; as <i>Bythinus islamitus</i> Rtt.)
<i>Bythinus tener</i> Reitter, 1884		1	New for the fauna of Albania, widespread in northern Greece (Karaman, 1954)
<i>Tychobythinus latifrons</i> (Müller, 1902)	2	8	New for the fauna of Albania, reported from Croatia and Montenegro so far (Karaman, 1954)
<i>Enoptostomus globulicornis</i> (Motschulsky, 1851)		4	Xerothermic species, frequent under stones, inhabiting southern Europe, the Near East, Africa and oriental regions, frequent (Sabella, 1994)
Total number of individuals	4	57	

On the basis of additional material from other parts of Albania, and in direct comparison with other forms of endogean species, i.e. large-eyed and winged or small-eyed and unwinged (e.g. *Protamaurops macrophthalmus*), a new subspecies or species should be examined.

Due to the interesting yield of pselaphine rove beetles (Table I), it is worth assessing the weather conditions at time of the CN trip (Fig. 3). Albania lies in the Mediterranean climatic zone, characterized by a hot dry summer, strong sunshine and generally mild winter with abundant rainfall (Seferkolli, 2009). In 2018, the annual precipitation was 1152 mm, i.e. 22.2% less than the long-term average in Albania of 1480 mm (Seferkolli, 2009). In May, it rained a total of 79 mm (Fig. 3), which was 6.9% of the annual rainfall in 2018. The average air temperature in May did not change significantly, i.e.  $19.9 \pm 1.8^\circ\text{C}$ . The maximum recorded was  $30.8^\circ\text{C}$  on 28 May.

On 22.05.2018, the average air temperature was around  $20^\circ\text{C}$  and there was no wind. The lower air temperature accompanied by higher humidity during the night was reversed during the course of the day, so humidity during the CN trip increased to 60% and the air temperature slowly decreased. Moreover, it was evident that a few days before, i.e. on 15.05.2018, 30 mm had fallen, a circumstance that, with the rise in temperature afterwards, made for muggy-warm air conditions. Overall, these weather conditions were obviously favorable for the flight of even endogean pselaphine beetles, and thus optimal for the CN method.

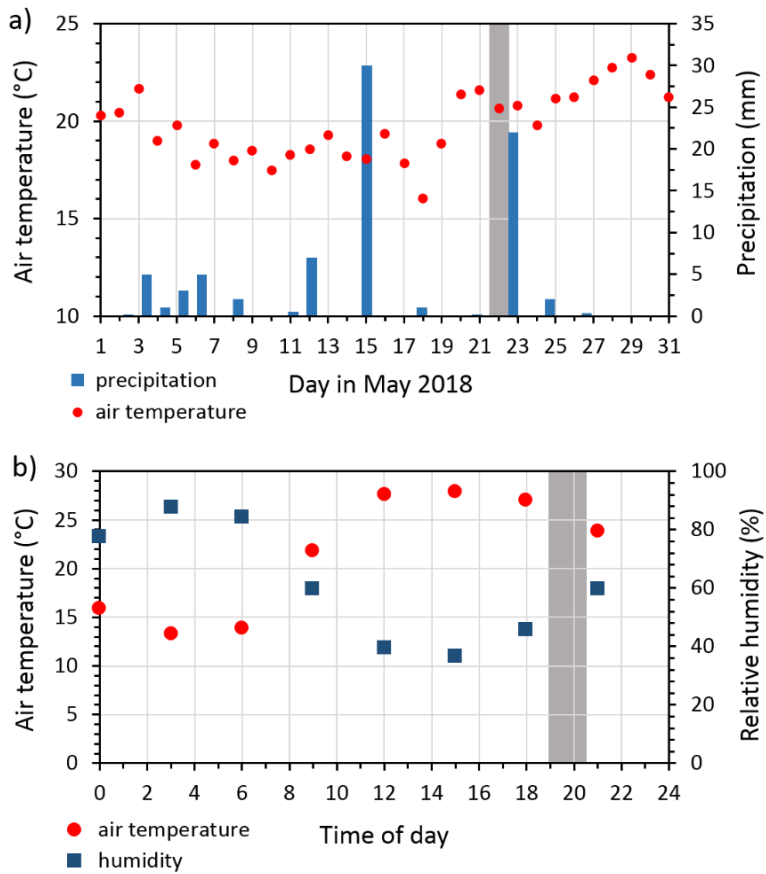


Figure 3. a) Course of mean air temperature and of precipitation in May 2018. The grey bar represents the day of the car-net trip, 22.05.2018. b) Course of air temperature and humidity on the day of the car-net trip. The grey bar represents its duration (data were drawn from [www.meteomanz.com](http://www.meteomanz.com).)

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## ПЕТ ВРСТА ПОТФАМИЛИЈЕ PSELAPHINAE (COLEOPTERA: STAPHYLINIDAE) НОВЕ ЗА ФАУНУ АЛБАНИЈЕ

АНДРЕАС КЛЕБЕРГ и ВОЛКЕР БРАХАТ

### Извод

Шездесет једна јединка потфамилије Pselaphinae је уловљена помоћу мреже монтиране на аутомобил. Регистровано је укупно 15 врста (из 10 родова) и једна подврста у долини реке Лумнице, у селу Алипостиван, у близини града Пермет, јужна Албанија, током једног вечерњег узорковања на дан 22.05.2018. Следећих пет врста је ново за фауну тврдокрилаца у Албанији: *Trimium expandum* Reitter, 1884, *Meliceria (Cyrtopectus) stankoi* (Karaman, 1960), *Brachygluta (Brachygluta) epirotica* Sabella, 2004, *Bythinus tener* Reitter, 1884, и *Tychobythinus latifrons* (Müller, 1902). Временски услови на дан сакупљања (између 7:00 и 20:30 сати у Гирокастеру, удаљеном 30 км), при температури 27,2-25,6°C, и влажности 46-53% су очигледно били оптималне за ову методу.

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