

New records of two rare neuropterans (Insecta: Neuroptera) in Slovenia

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Abstract. Two neuropteran species, the antlion *Neuroleon microstenus* (McLachlan 1898) and the mantispid *Mantispa aphavexelte* Aspöck & Aspöck 1994, are known as extremely rare in Slovenia. New records of the species are presented. Both neuropterans occur only in the Submediterranean region of the country. Due to the insufficient knowledge of its ecology, the threat status of *M. aphavexelte* is unknown, whilst *N. microstenus* should be considered as endangered considering that its habitats are shrinking.

Keywords: distribution, *Neuroleon microstenus*, *Mantispa aphavexelte*, Neuroptera, Slovenia

Izvleček. NOVI PODATKI O NAJDBAH REDKIH VRST MREŽEKILCEV (INSECTA: NEUROPTERA) V SLOVENIJI - Dve vrsti mrežekrilcev, volkec vrste *Neuroleon microstenus* (McLachlan 1898) in zapončica vrste *Mantispa aphavexelte* Aspöck & Aspöck 1994, veljata za izjemno redki v Sloveniji. Predstavljeni so novi podatki o razširjenosti obeh vrst, ki se v Sloveniji pojavljata le v submediteranski regiji. Zaradi slabega poznavanja ekologije je status ogroženosti za *M. aphavexelte* neznan. Vrsto *N. microstenus* pa lahko štejemo za ogroženo zaradi krčenja njenih habitatov.

Ključne besede: razširjenost, *Neuroleon microstenus*, *Mantispa aphavexelte*, mrežekrilci, Slovenija

Introduction

Neuroptera of Slovenia are still insufficiently investigated. There are some 100 species known from the country (Devetak 1992 and unpublished data). Two species, the antlion *Neuroleon microstenus* (McLachlan 1898) and the mantispid *Mantispa aphavexelte* Aspöck & Aspöck 1994, are considered extremely rare in Slovenia.

In 1990, *M. aphavexelte* was recorded for the first time in Slovenia (Devetak 1995). Knowledge of the species' ecology is poor and it was believed to be an extremely rare neuropteran. During the field studies carried out in the Submediterranean region of Slovenia in the recent years it has been revealed, however, that the species is not as rare as expected.

Neuroleon microstenus was found in Slovenia in 2001 (Devetak & Devetak 2004). Only scarce information is available on the biology of the species. It is a polycentric Mediterranean species (for review of its distribution see Aspöck *et al.* 2001). Morphology of the first instar larvae was described by Gepp (1974). It is a non-pit-building antlion species. Adults can easily be distinguished from other *Neuroleon* species following key-characters (Aspöck *et al.* 1980). Among the other characters, abdomen of males is much longer than the wings. Characteristic are also two dark pigmented spots in forewings. The only known finding-place of *N. microstenus* in Slovenia was destroyed in 2003, and consequently the species was considered to be extinct in Slovenia. In 2005, however, the occurrence of the species in the country was re-confirmed. Documentation of the recent records is presented in this paper.

Material and methods

Individuals were collected with sweep-net, and fluid-preserved specimens are deposited in Dušan Devetak's collection (Maribor). The nomenclature of the determined neuropterans follows Aspöck *et al.* (2001).

Results

***Neuroleon microstenus* (McLachlan, 1898)**

Literature records:

- Devetak & Devetak (2004): Srmin (UTM coordinate: VL04).

New records:

- Črni Kal, 185 m above sea level, flysch slope near the road, N 5412036 E 5046038 (UTM coordinate: VL14), 6. VIII. 2005, 5 males, 4 females, leg. P. Devetak.
- Hrastovlje, 190 m, N 5414158 E 5041757 (VL14), 5. VIII. 2005, 2 males, 2 females, leg. P. Devetak.
- Izola, Jagodje, 85 m, N 5394426 E 5043164 (UL94), 6. VIII. 2005, 2 males, 1 female, leg. P. Devetak.
- Sečovelje, 165 m, N 5393942 E 5037614 (UL93), 5. VIII. 2005, 2 females, leg. P. Devetak.

Distribution in Slovenia is shown in Fig. 1.

Ecology: The adults were collected in a grassland (near Izola and Sečovelje) and on eroded flysch slopes (Hrastovlje and Črni Kal).

***Mantispa aphavexelte* Aspöck & Aspöck, 1994**

Literature records:

- Devetak (1995): Osp (VL14); Sočerga: Mlini (VL13).

New records:

- Hrastovlje, 180 m, N 5414158 E 5041757 (VL14), 1. VIII. 2003, 1 male, leg. P. Devetak.
- Kraški rob: Kastelec, Socerb, 315 m, N 5411690 E 5048637 (VL14), 5. VIII. 2005, 5 males, 8 females, leg. P. Devetak.

Distribution in Slovenia is shown in Fig. 2.

Ecology: Individuals collected in Kastelec occurred on *Quercus pubescens*. On the same trees, individuals of closely related *Mantispa styriaca* (Poda 1761) were found.

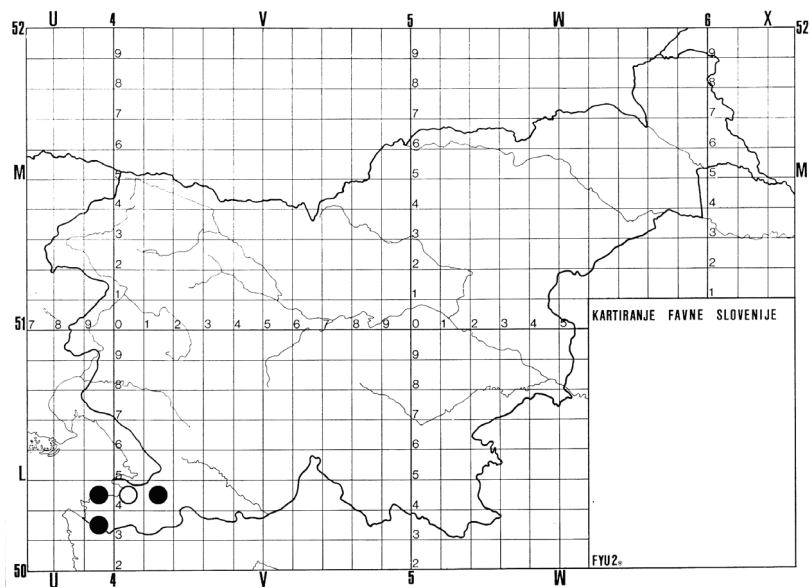


Figure 1. Known distribution of *Neuroleon microstenus* in Slovenia. Location of Srmin, where the habitat has been destroyed and the species is extinct, is marked with an open circle (o).
Slika 1. Znana razširjenost volkca vrste *Neuroleon microstenus* v Sloveniji. Položaj Srmina, kjer je habitat uničen in vrsta iztrebljena, je prikazan s praznim krogcem (o).

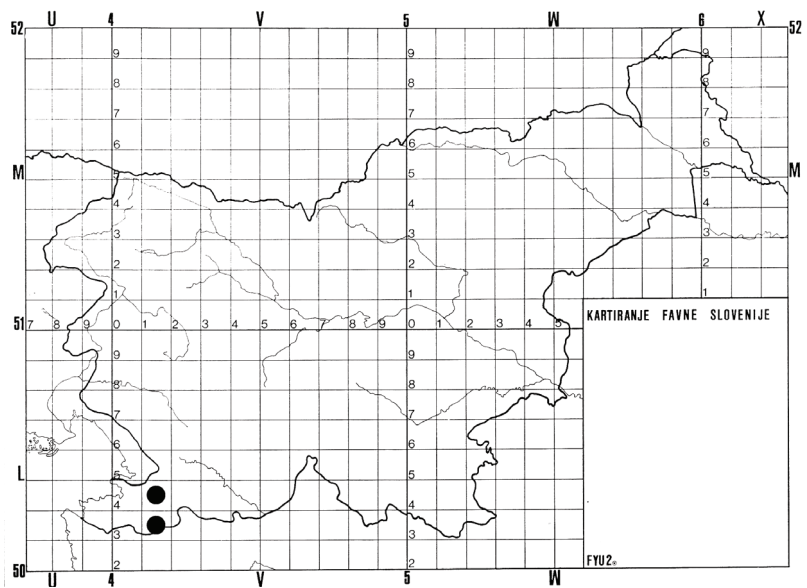


Figure 2. Known distribution of *Mantispa aphavexelte* in Slovenia.
Slika 2. Znana razširjenost zapončice vrste *Mantispa aphavexelte* v Sloveniji.

Discussion

The genus *Neuroleon* Navás, 1909 includes small non-pit-building antlions and is confined to Africa, southern Europe and large parts of Asia (Hölzel 1986). There are about 120 valid species of the genus, but only two of them occur in the western part of the Balkan Peninsula (Devetak & Devetak 2004).

Knowledge of ecology and distribution of *Neuroleon* species is poor; usually, only single animals have been collected in European countries. The only exception in this respect is France, where ecology and distribution of the genus was studied in detail by Steffan (1971). According to Aspöck *et al.* (1980), the typical habitats of the species are forests or macchia. My findings, however, do not confirm this statement. In Slovenia, *N. microstenus* populates habitats devoid of trees and bushes. In Hrastovlje and Črni Kal, a great number of adults was observed flying on dry eroded flysch slopes.

In 2003, the only known locality of *N. microstenus* at Srmin was destroyed, when the material excavated during road construction was deposited at this locality and the eroded flysch slopes were filled up. However, typical habitats of the species are endangered due to natural reforestation of grassland ecosystems. Reforestation is a phase of natural process of succession.

Despite the fact that in Slovenia *M. aphavexelte* is distributed only in its Submediterranean region, it is not considered an endangered species. In some places, like Kastelec, it occurs sympatrically with *M. styriaca*.

Povzetek

Favna mrežekrilcev Slovenije še vedno ni dovolj raziskana. V prispevku navajam podatke o razširjenosti dveh vrst mrežekrilcev, za kateri smo do sedaj domnevali, da sta izjemno redki. Vrsta volka *Neuroleon microstenus* (McLachlan 1898) je znana za Slovenijo le s štirih lokalitet iz submediteranske regije, na peti lokaliteti pa je izumrla. Vrsta je zaradi krčenja habitatov ogrožena. Vrsto zapončice *Mantispa aphavexelte* Aspöck & Aspöck 1994, znano tudi s štirih submediteranskih lokalitet, pa ne štejemo med ogrožene vrste, čeprav je v Sloveniji redka.

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