

## New record of *Leptophyes discoidalis* (Frivaldszky, 1867) – Transylvanian flower bush-cricket (Orthoptera, Tettigonnidae: Phaneropterinae) in Pannonicum (Debrecen, Hungary)

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**ABSTRACT:** This article presents a new record of the Eastern and Central European bush-cricket *Leptophyes discoidalis* (Frivaldszky, 1868) (Tettigoniidae: Phaneropterinae) from the Pannonian Plain: in Nagyerdő near Debrecen (Hungary) which is a protected area. The new occurrence has specific ecological parameters.

### Introduction

Nine of the 19 species of the genus *Leptophyes* Fieber, 1853 are found in Europe, excluding Turkey (CIGLIANO *et al.* 2013). Four species occur in Hungary (FRIVALDSZKY, J. 1868). The known distribution area of *Leptophyes discoidalis* (SKEJO & STANKOVIĆ 2013) includes Serbia, Romania (C and N Muntenia, C and N Oltenia, C and W Transylvania, Bánát and Crişana) (IORGU *et al.* 2008); Hungary (eastern and northeastern part of the country) (NAGY & RÁCZ 2007, NAGY & SZÖVÉNYI 1999, NAGY *et al.* 2008, SZÖVÉNYI *et al.* 2013), Ukraine (Nagyszőlős, Fekete-hegy) (STOROZHENKO & GOROCHOV 1992), Slovakia and Ukraine in coastal habitats near the Tisza (KRIŠTÍN & KAŇUCH 2013), respectively; Bulgaria (Vraca: HARZ 1969, Western Stara Planina and Struma Valley: POPOV 2007) and Montenegro (Durmator Mts) (INGRISCH & PAVIČEVIĆ, 2012) (Fig. 1). More recent occurrences were discovered by SKEJO & STANKOVIĆ (2013) in Vojvodina. This finding is today the westernmost locality of the species and a new species for the Orthoptera fauna of Croatia (*cf.* ADAMOVIĆ 1975, GRABER 1870, PONGRÁCZ 1944, US 1967).



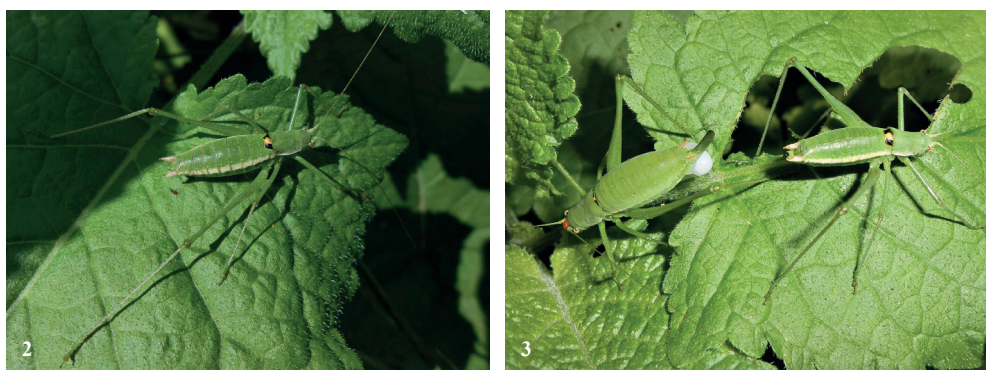
**Fig. 1.** General distribution of *Leptophyes discoidalis* based on published data, as well as the new locality in Hungary = D (modified after SKEJO & STANKOVIĆ 2013)

## Material and methods

Due to the protection of the species, only photographic documentation was done.

## Results and discussion

The new sighting of *T. Zilay* in Hungary took place for the first time in 2002, directly in the catchment area of Debrecen: not far from the „Debrecen” city sign on Pallagi út, approx. 25 meters away, on the small forest road turning left at a right angle, near the first forest fork (N 47.566496, E 21.626329), there was an adult female specimen on herbaceous vegetation. The population monitored for several years appears to be stable (in the last three years, 2021–2023, a total of 24 specimens were observed – 14 males: 7 adults, 7 larvae; 10 females: 6 adults, 4 larvae) (Figs 2, 3).



**Fig. 2.** *Leptophyes discoidalis* male; **Fig. 3.** *Leptophyes discoidalis* after copulation (photos: T. Zilay)

In terms of their habitat requirements, they primarily prefer forest areas with filtered light, i.e. forest edges with richer herbaceous vegetation. The sparser nature of the forest section and the nature of the border corresponds to the previously described occurrences. At the same time, while previously they were mainly observed on shrubs (e.g. at the edge of the Lónya forest or SKEJO & STANKOVIĆ 2013), here they occurred in semi-shaded, herbaceous undergrowth, mainly on the stems of *Salvia glutinosa* and *Lamium album*, and judging from the chewing marks, these also its food plants.

The widespread view in the literature, and this is confirmed by SKEJO & STANKOVIĆ (2013), is that the vegetation along small watercourses plays/can play an important role in its spread due to its specific habitat requirements (NAGY 2002). To some extent, its occurrence near Debrecen seems to contradict this. The occurrences registered on the website IZELTLA-BUAK.HU (2024) also indicate that the species is far from watercourses (Zemplén hg., Bózsva: 48.46879654855, 21.467644572258, Marcell Kárpáti, 2015, CC BY 4.0; Bükk-hg., Kurtabérc: 48.082821942611, 20.550588445184, Márk László, 2021, CC BY 4.0; Ukraine, Subcarpathia, Nagyberég: 48.234180631377, 22.744043066942, JoeGreat, 2022, CC BY 4.0).

We can therefore assume that, on the one hand, the vegetation accompanying the watercourses plays a role in the spread of the species, but on the other hand, the occurrences far from the watercourses are much more likely to be considered relict populations left behind as a result of the regression of a former, continuous distribution area. This, presumably opposite dynamic, further supports the domestic protected status of *Leptophyes discoidalis*.

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