

**A Mediterranean gatecrasher: *Neoliturus inscriptus* (Haupt, 1927)
new to the Carpathian Basin (Hemiptera: Auchenorrhyncha: Cicadellidae)**

Bence Péter SCHLITT^{1,3*}, Áron HORVÁTH² & András OROSZ³

¹ Eötvös Loránd University, Institute of Biology, H-1117, Budapest, Pázmány Péter sétány 1/A,
Hungary. E-mail: schlittbence@gmail.com

² H-3400 Mezőkövesd, Veréb utca 4/a. E-mail: horvath2006aron@gmail.com

³ Hungarian Natural History Museum Public Collection Centre – Hungarian Natural History
Museum, Department of Zoology, Hemiptera Collection, H-1088 Budapest, Baross utca 13,
Hungary. E-mail: orosz.andras@nhmus.hu

Abstract – *Neoliturus inscriptus* (Haupt, 1927) (Hemiptera: Auchenorrhyncha: Cicadellidae: Deltocephalinae: Opsiini: Circuliferina) is reported from Hungary and the Carpathian Basin for the first time.

Keywords – faunistics, new records, introduced species, distribution, pests

INTRODUCTION

The genus *Neoliturus* Distant, 1918 (Hemiptera: Auchenorrhyncha: Cicadellidae: Deltocephalinae: Opsiini: Circuliferina) includes 33 valid species, distributed worldwide (DMITRIEV *et al.* 2022). In Hungary two species of the genus have been recorded so far: *Neoliturus fenestratus* (Herrich-Schäffer, 1834) and *Neoliturus haematoceps* (Mulsant & Rey, 1855) (as *Circulifer haematoceps*) (GYÖRFFY *et al.* 2009).

The aim of this paper is to report the occurrence of a third species of the genus, *Neoliturus inscriptus* (Haupt, 1927) in Hungary and illustrate its diagnostic characters for facilitating its identification. The first specimen of *Neoliturus inscriptus* was collected at light (HQL 80W lamp) by the second author in Mezőkövesd in the author's own garden. The species was also collected by sweeping in large quantities in Nagyharsány, Szársomlyó Nature Conservation Area (Fig. 1) by the first author (collecting permit file number PE-KTFO/329-16/2019). The specimens were examined using a VEVOR 30x–90x stereomicroscope. Photographs were taken by a Raynox Super Macro

* Corresponding author.

Conversion Lens DCR–250 adapter set attached to a Nikon D7200 digital camera. The voucher specimens are deposited in the Hemiptera Collection of the Hungarian Natural History Museum Public Collection Centre – Hungarian Natural History Museum, Budapest (HNHM).



Fig. 1. Collecting site in Hungary, Nagyharsány, Szársomlyó Nature Conservation Area (photo by Bence Péter Schlitt)

RESULTS AND DISCUSSION

Neoliturus inscriptus (Haupt, 1927) (Figs 2–13)

Material examined – Hungary: one male, Borsod-Abaúj-Zemplén County, Mezőkövesd, 47°48'07.0"N, 20°33'17.4"E, 27.IX.2024, leg. Áron Horváth; 22 males, nine females, and three nymphs, Baranya County, Nagyharsány, Szársomlyó Nature Conservation Area, 45°50'57.2"N, 18°24'11.4"E, 27.X.2024, leg. Bence Péter Schlitt.

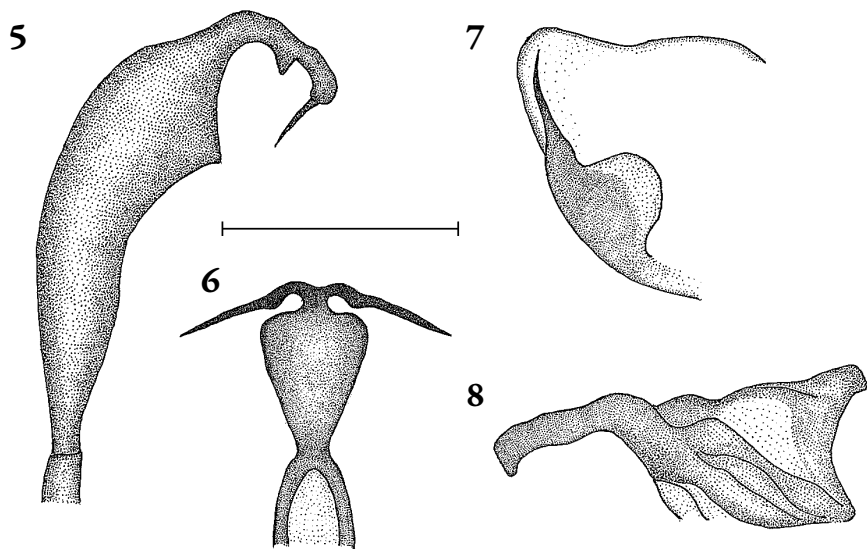
Remarks – First records of the species from Hungary and the Carpathian Basin. The Hungarian record is the northernmost one so far. The species was possibly introduced to the country either by human-mediated transport or by natural spread. The localities where the species was found are located not quite close to major trading roads (except European route E71 in Mezökövesd), therefore natural spread seems more likely. The Hungarian records indicate that the species could be more widespread in Europe than currently known, and its area might be actively expanding. The mass occurrence of the species in Nagyharsány indicates that the species is already established in the country.

Host plant – Individuals including males, females and nymphs of *Neoaliturus inscriptus* were found on *Lycium barbarum* L. (Solanaceae), growing on loess walls in the edge of vine plantations (Fig. 1). Congeners mostly feed on herbaceous plants in the family Asteraceae, usually in xeric grasslands, but are also found on Ulmaceae and Asclepiadaceae (WAGNER & FRANZ 1961, TISHECHKIN 2021).

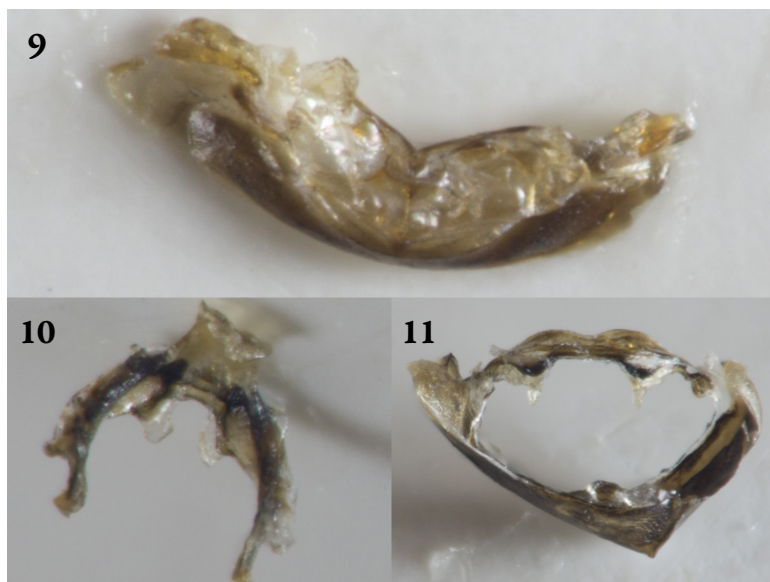
Identification – The original description (as *Thamnotettix inscriptus*) based on males from Palestine (HAUPT 1927) adequately detailed the external characteristics of the species and the structure of the genital plate. Our identification was based on the original description. The work of HAUPT (1927) is supplemented by habitus photos of the adult males and nymph (Figs 2–4), drawings of the male genitalia (Figs 5–8), the male apodemes (Figs 9–11), and the male and female anal segments (Figs 12–13).



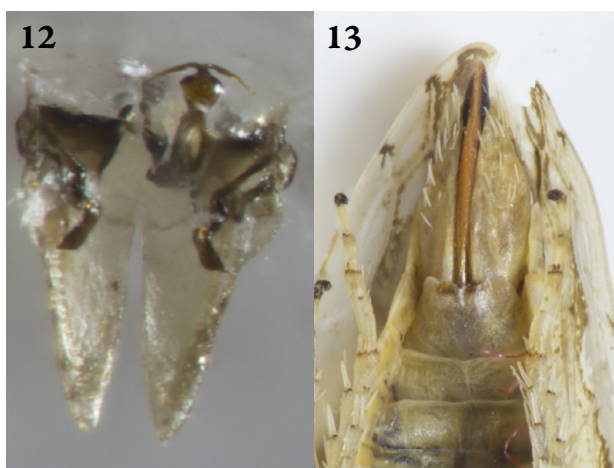
Figs 2–4. Adult males and the nymph of *Neoaliturus inscriptus* (Haupt, 1927), 2 = male dorsal view, 3 = male lateral view, 4 = nymph dorsal view (photos not to scale) (photos by Bence Péter Schlitt)



Figs 5–8. Male genital structures of *Neoliturus inscriptus* (Haupt, 1927), scale bar = 200 μ m, 5 = aedeagus in lateral view, 6 = aedeagus in dorso-caudal view, 7 = internal lobe of the left pygofer, 8 = style (line drawings by András Orosz)

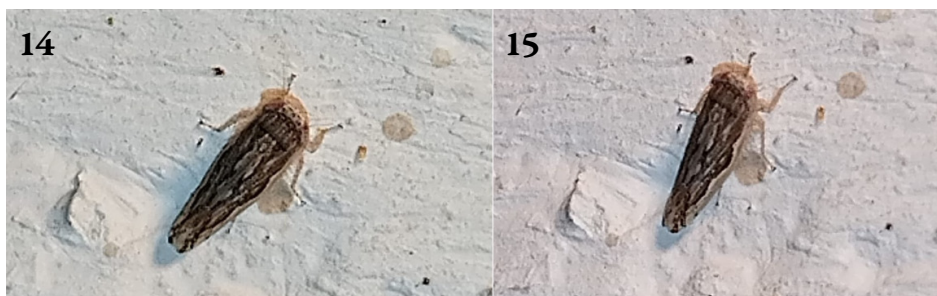


Figs 9–11. Male internal apodemes of *Neoliturus inscriptus* (Haupt, 1927), 9 = first tergal apodemes, 10 = first sternal apodemes, 11 = second sternal apodemes (photos by Anna Ágnes Somogyi)



Figs 12–13. Anal segments of male and female of *Neoaliturus inscriptus* (Haupt, 1927), 12 = male internal anal segment with the aedeagus, styles and subgenital plates, dorso-caudal view, 13 = female anal segment with the seventh sternal plate (pregenital sternite), ventral view (photos by Anna Ágnes Somogyi and Bence Péter Schlitt)

Distribution – Palestine (HAUPT 1927), Israel, North Africa, Cyprus (LINNAVUORI 1962), Morocco (NAST 1972), Saudi Arabia (DLABOLA 1979), Libya (HESSEIN 1981), Greece (NAST 1987), Hungary (present paper). *Neoaliturus inscriptus* is distributed in the Mediterranean area of the Western Palaearctic Region. The countries where the species has been previously recorded are relatively far from Hungary. However, in 5.IX.2024 photos were uploaded by Branko Rapajič to a thematic group (known as “True Hoppers (Hemiptera, Auchenorrhyncha) of Europe”) on a social media platform (Facebook), which may represent a specimen of this species (Figs 14–15). The record is from Serbia, Vojvodina Province, Bačka Region, Bački Brestovac. Nevertheless, Serbian researchers have not been able to catch any voucher specimen from the locality so far (Marko Šćiban and Branko Rapajič, personal communication). Since there is no available voucher specimen from Serbia, further faunistical investigations and detailed morphological comparison (focusing especially on the male genitalia) are needed in Serbia to confirm the occurrence of *Neoaliturus inscriptus* in the country.



Figs 14–15. Pictures of a possible specimen of *Neoliturus inscriptus* (Haupt, 1927) in Serbia, Vojvodina (photos by Branko Rapajić)

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Acknowledgements – The authors are grateful to Anna Ágnes Somogyi (HNHM) for taking photos of the specimens. Thanks to Marko Šćiban (Bird Protection and Study Society of Serbia) for the useful information about the Serbian record. Thanks to Branko Rapajić (Serbia) for the permission to use his record and photos. Special thanks to György Dudás (Duna-Dráva National Park Directorate) for his contribution to the collecting.

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