



New data on ant crickets from Serbia (Orthoptera: Myrmecophilidae)

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Abstract

This study reports new distributional data on ant crickets from Serbia, including the first national record of *Myrmecophilus myrmecophilus*. Field surveys conducted in 2022 and 2023 yielded several specimens of *M. myrmecophilus* and *M. nonveilleri* from multiple localities across central and southern Serbia. The presence of *M. myrmecophilus* extends the known range of the species into Serbia, while new localities of *M. nonveilleri* broaden its previously known distribution within the country.

Keywords: distribution, first record, *Myrmecophilus myrmecophilus*, *Myrmecophilus nonveilleri*

Zusammenfassung

Diese Studie berichtet über neue Verbreitungsdaten von Ameisengrillen aus Serbien, darunter den ersten Nachweis von *Myrmecophilus myrmecophilus* für das Land. Felduntersuchungen, die in den Jahren 2022 und 2023 durchgeführt wurden, ergaben mehrere Exemplare von *M. myrmecophilus* und *M. nonveilleri* aus verschiedenen Fundorten in Zentral- und Südserbien. Das Vorkommen von *M. myrmecophilus* erweitert das bekannte Verbreitungsgebiet der Art nach Serbien, während neue Fundorte von *M. nonveilleri* deren bislang bekannte Verbreitung im Land erweitern.

Schlüsselwörter: Erstnachweis, *Myrmecophilus myrmecophilus*, *Myrmecophilus nonveilleri*, Verbreitung

Introduction

Ant crickets of the genus *Myrmecophilus* Berthold, 1827 are small pale to dark brown orthopterans known to live as kleptoparasites in ant nests. The genus includes 624 valid species (Cigliano et al. 2025, Mérel et al. 2025). In Europe, nine species has been documented so far (Ivković et al. 2024, Mérel et al. 2025; Table 1), of which two are known from Serbia (Hochkirch et al. 2016; Chobanov et al. 2016). This paper reports the first record of *Myrmecophilus myrmecophilus* (Savi, 1819) and provides new distributional data for *M. nonveilleri* Ingrisch & Pavićević, 2008 in Serbia (Fig. 1).

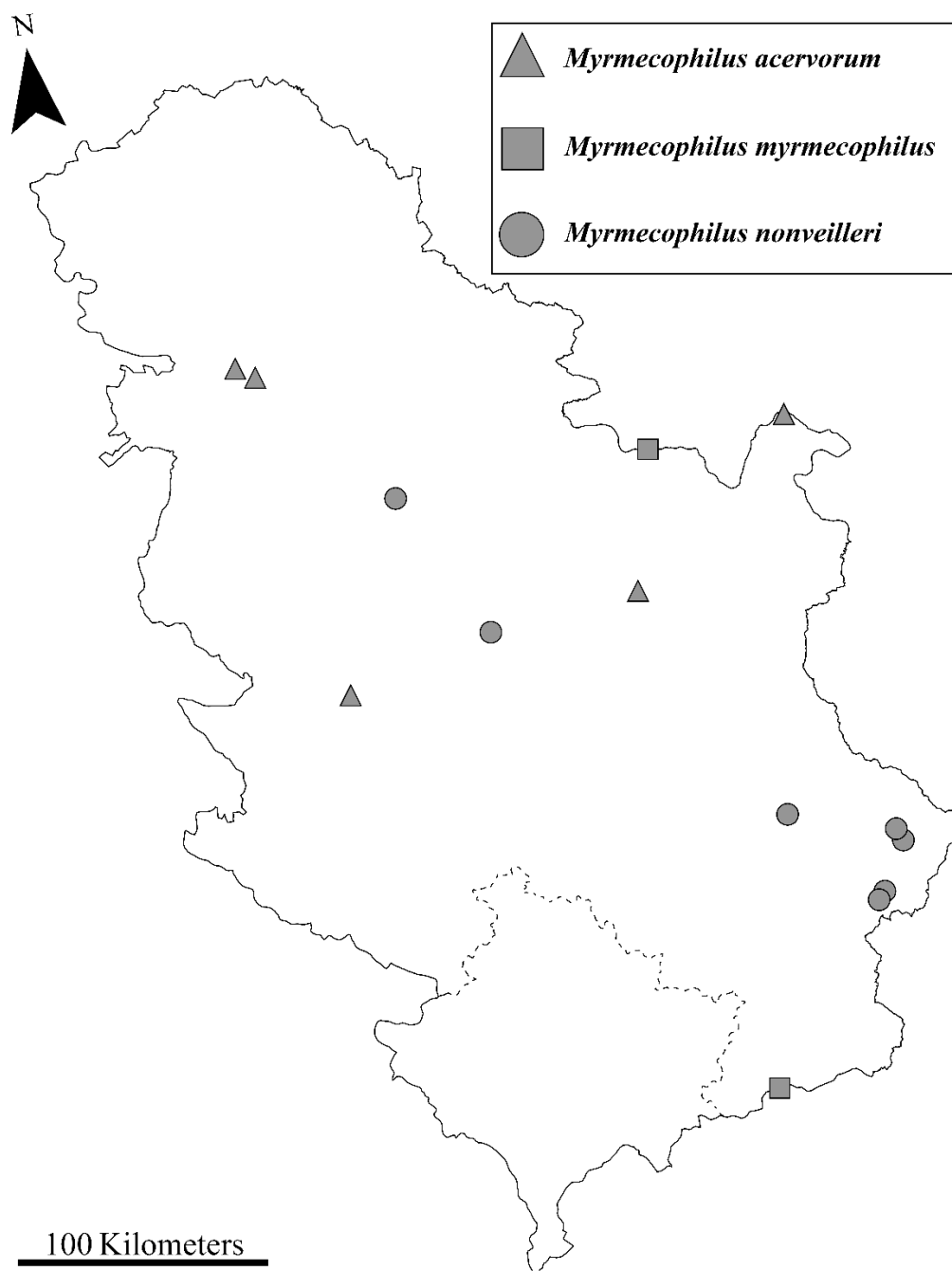


Fig. 1: Distribution map of *Myrmecophilus* species in Serbia based on literature and newly collected data.

Table 1: List of European ant crickets.

Species	Distribution area
<i>Myrmecophilus acervorum</i> (Panzer, [1799])	From Spain across the whole of Central Europe to Russia and Central Asia
<i>Myrmecophilus balcanicus</i> Stalling, 2013	Bulgaria; North Macedonia
<i>Myrmecophilus baronii</i> Baccetti, 1966	Italy; Malta; Tunisia
<i>Myrmecophilus cyprius</i> Stalling, 2017	Cyprus
<i>Myrmecophilus fuscus</i> Stalling, 2013	France; Croatia; Italy; Malta; Spain
<i>Myrmecophilus hirticaudus</i> Fischer von Waldheim, 1846	Bulgaria; Croatia; Georgia; Greece; North Macedonia; Russia; Ukraine
<i>Myrmecophilus myrmecophilus</i> (Savi, 1819)	Bulgaria; Croatia; France; Greece; Italy
<i>Myrmecophilus nonveilleri</i> Ingrisch & Pavićević, 2008	Bulgaria; Hungary; Serbia
<i>Myrmecophilus ochraceus</i> Fischer, 1853	Greece; Italy; Malta; Spain

Materials and methods

During several field trips in years 2022 and 2023, MV and TS checked ant nests for ant-loving crickets, by turning stones and dead wood trunks. As a result, several females in different stages were found and collected for detailed analyses. Specimens were preserved in 96% ethanol and later they were pinned and dried.

Results and discussion

Myrmecophilus acervorum (Panzer, [1799])

Literature data: Tekija (Đerdap Gorge), Pančić (1883); Sisevac (Kučaj Mt.), Osovlje (Fruška Gora), Vrdnik (Fruška Gora), Debelo Brdo (Ovčar-Kablar Gorge), Pavićević & Karaman (2001).

The authors could not verify any specimens. Whether it is actually this species or whether it is the *Myrmecophilus nonveilleri*, which was only described in 2008, remains to be clarified. However, the occurrence of this species in Serbia would be plausible in terms of distribution.

Myrmecophilus myrmecophilus (Savi, 1819)

New data: 1 nymph ♀, 4 V 2023, Kožica (N 44.638442°, E 21.749576°), leg. M. Vujić; 1 adult ♂, 1 adult ♀, 1 nymph ♀, 16 V 2023, Pčinja, Čivčije (N 42.312465°, E 21.880002°), leg. M. Vujić.

M. myrmecophilus is reported in Serbia for the first time.

Myrmecophilus nonveilleri Ingrisch & Pavićević, 2008 (Fig.2)

Literature data: Pirot (Vidlič Mt., 900 m), Pirot (Zvonačka Banja), Mt. Ruj (vicinity of the village Rakita, 870 m), Stara Planina Mt. (vicinity of the village Rsovci, Vladikine Ploče, 1000 m) Ingrisch & Pavićević (2008).

New data: 1 adult ♀, 1 nymph ♀, 1 nymph ♂ and 2 nymphs of unknown sex, 21 VII 2023, Pirot (Vidlič Mt.) (N 43.175083°, E 22.66725°), leg. T. Stalling; 3 adult ♀, 3 adult ♂, 1 nymph ♀, 3 nymph ♂ and 5 nymphs of unknown sex, 23 VII 2023, Pirot (Vidlič Mt.) (N 43.175556°, E 22.668639°), leg. T. Stalling; 1 adult ♀, 2 nymph ♀, 16 IV 2022, Babe (N 44.540265°, E 20.511045°), leg. M. Vujić; 1 adult ♀, 20 IV 2023, Kragujevac, Botanical Garden (N 44.023183°, E 20.886497°), leg. M. Vujić; 1 nymph ♀, 27 IV 2023, Sićevo (N 43.347715°, E 22.093507°), leg. M. Vujić.

Due to its hidden lifestyle, ant crickets are often overlooked. Future research is needed to provide more data on its distribution and status within Serbia.



Fig. 2: Adult female of *Myrmecophilus nonveilleri*, lateral view of the preserved specimen. Babe, Serbia, 16 IV 2022. Scale bar: 1 mm. Photo: T. Stalling.

Literature

- Chobanov DP, Hochkirch A, Iorgu IS, Ivkovic S, Kristin A, Lemonnier-Darcemont M, Pushkar T, Sirin D, Skejo J, Stalling T, Szovenyi G, Vedenina V, Willemse LPM (2016) *Myrmecophilus nonveilleri*. The IUCN Red List of Threatened Species 2016: e.T68441442A70217409.
- Cigliano MM, Braun H, Eades DC, Otte D (2025) *Myrmecophilus* Berthold, 1827. Orthoptera Species File. Retrieved on 2025-02-10 at <http://orthoptera.speciesfile.org/otus/837614/overview>.
- Hochkirch A, Stalling T, Willemse LPM, Rutschmann F, Chobanov DP, Kleukers R, Kristin A, Presa JJ, Szovenyi G (2016) *Myrmecophilus acervorum* (Europe assessment). The IUCN Red List of Threatened Species 2016: e.T68441140A74521979.
- Ingrisch S, Pavićević D (2008) A new species of *Myrmecophilus* from Serbia (Orthoptera, Grylloidea, Myrmecophilinae). Advances in the Studies of the Fauna of the Balkan Peninsula 22: 357-362.
- Ivković S, Husemann M, Tumbrinck J, Heller KG (2024) An updated checklist of European Orthoptera. Articulata Beiheft 39: 1-58.
- Mérel V, Vogel S, Lavanchy G, Dumas Z, Labédan M, Stalling T, Schwander T (2025) Recent neo-X and Y sex chromosomes in an ant cricket. Journal of Evolutionary Biology 38(7): 1000-1007.
- Pančić J (1883) Orthoptera in Serbia hucdum detecta. [Orthoptere u Srbiji]. Beograd, 172 pp.
- Pavićević D, Karaman I (2001) New evidence concerning Orthoptera of Serbia with reflection on the previously listed species (Insecta, Orthoptera). Protection of Nature 52 (2): 23-33.

