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Synonymy of the ant-loving cricket *Myrmecophilus termitophilus* Mařan, 1959 (Orthoptera: Myrmecophilidae)

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Abstract. *Myrmecophilus termitophilus* Mařan, 1959, which was originally described from Greece, is recognized as a junior synonym of *Myrmecophilus hirticaudus* Fischer von Waldheim, 1846.

Key words. Orthoptera, Myrmecophilidae, new synonymy, taxonomy, Greece, Palaearctic Region

Introduction

The ant-loving cricket *Myrmecophilus termitophilus* Mařan, 1959 was originally described by Mařan (1959) from the Taygetos Mountains in Greece. The type specimens were found together with the termite *Reticulitermes lucifugus* (Rossi, 1792) in dead wood. The identity of the type specimens was never revised so far, but the information in the original description suggested that they may actually belong to *Myrmecophilus hirticaudus* Fischer von Waldheim, 1846. In this study, the type specimens of *M. termitophilus* are reviewed, and the taxonomic status and occurrence of *M. hirticaudus* in Greece are discussed.

Taxonomy

Myrmecophilus hirticaudus Fischer von Waldheim, 1846

Myrmecophilus hirticaudus Fischer von Waldheim, 1846: 357, plate XXXIII.
Myrmecophilus ponticus Miram, 1927: 132–135. Synonymized by Gorochov (1984a).
Myrmecophilus tataricus Karawajew, 1929: 65–66. Synonymized by Gorochov (1984a).
Myrmecophilus termitophilus Mařan, 1959: 63, **syn. nov.**
Myrmecophilus zorae Karaman, 1963: 5–6. Synonymized by Stalling (2014).

Type material examined. *Myrmecophilus hirticaudus*: Not examined. The holotype (from the peninsula of Crimea) is lost and its fate is unknown. Therefore the specimens from Armenia, Croatia and the Republic of Macedonia

Fig. 1. Type specimens of *Myrmecophilus termitophilus* Mařan, 1959. a – habitus of male holotype (bottom) and female paratype (top) (scale bar 1 mm). b – detail of the metatarsus of the holotype with three spines (1–3) (scale bar 0.5 mm).

listed below were identified using the figure shown by Fischer von Waldheim (1846) showing the characteristic coloration of the species, and the information given by Fischer von Waldheim (1846), Miram (1927), Karawajew (1929) and Gorochov (1984a,b).

Myrmecophilus termitophilus: Holotype: ♂ (in coll. National Museum, Prague): '*Myrmecophilus* / *termitophilus* / n. sp. / ii 1954 Holotypus ♂ / Dr. J. Mařan det. // Taygetos v. 1935 / Mařan lgt. u *Reticulitermes lucifugus*'. Paratype: ♀ (in coll. National Museum, Prague): '*Myrmecophilus* / *termitophilus* / n. sp. / ii 1954 Allotypus ♀ / Dr. J. Mařan det. // Taygetos 1700 m / v. 35 / Mařan lgt. u *Reticulitermes lucifugus*'.

Additional material examined. ARMENIA: Lori province: Dzoraget, 40°56′57″N, 44°37′34″E, 1065 m, 4.viii.2011, 2 adult ♀♀, 1 adult ♂ in nest of *Camponotus* sp., 2 ♀♀ nymphs, 9 ♂♂ nymphs, 1 nymph of unknown sex in nests of *Myrmica* sp.; same locality, 5.viii.2011, 1 adult ♂ in nest of *Camponotus* sp., all leg. & coll. T. Stalling. **CROATIA: Island of Cres:** Primorje-Gorski Kotar county, Filožići, 45°04'N, 14°20'E, 11.v.2007, 1 adult ♀ in ant nest in dead wood, leg. & coll. S. Birrer; same locality, 24.iv.2009, 1 nymph of unknown sex in nest of *Crematogaster scutellaris* (Olivier, 1791) in dead wood, leg. & coll. T. Stalling; same locality, 2.x.2010, 1 adult ♂ in ant nest under a stone, leg. S. Birrer & T. Stalling, coll. S. Birrer; Sveti Petar, 45°04′N, 14°21′E, 2.x.2010, 1 adult ♀, 1 subadult ♀, 2 adult ♂♂ in nest of *Crematogaster scutellaris* in dead wood, leg. S. Birrer & T. Stalling, coll. T. Stalling. **REPUBLIC OF MACEDONIA:** Gevgelija, Smrdliva Voda, 41°11′19″N, 22°17′49″E, 665 m: 26.vii.2012, 1 adult ♂, 1 adult ♀ under stone without ants in a pine forest, leg. and coll. T. Stalling.

Taxonomic status of *M. termitophilus*. When describing the species, Mařan (1959) only knew *M. hirticaudus* from the description of Miram (1927; described under name *M. ponticus*) and he did not realize that his specimens belonged to this species. The adult male holotype of *M. termitophilus* (Figs 1a,b) and the adult female paratype (allotype, Fig. 1a) both show characteristics of *M. hirticaudus* (cf. Stalling & Birrer 2013), i.e., three spines on the metatarsus of each hind leg, which are positioned on the proximal, medial, and distal parts of the metatarsus (also shown by Mařan (1959: Fig. 1), and uniform dark brown coloration. The subgenital plate of the female is emarginated distally. The diagnostic characters of *M. termitophilus* given by Mařan (1959), i.e., three spines on the metatarsus instead of only two in *M. hirticaudus* and short cerci, are not helpful. *Myrmecophilus hirticaudus* usually has three spines on the metatarsus, but occasionally has only two (cf. Stalling & Birrer 2013). The length of cerci does not differ between all the examined adult specimens mentioned above, including the types of *M. termitophilus*. For these reasons, *Myrmecophilus termitophilus* is here recognized as a junior synonym of *Myrmecophilus hirticaudus*.

Discussion

The occurrence of *Myrmecophilus hirticaudus* in Greece fits with the known range of this species, which spans Croatia (Stalling & Birrer 2013), the Republic of Macedonia (Stalling 2014), Bulgaria (Popov 2007), Ukraine (Fischer von Waldheim 1846, Gorochov 1984a) and the Caucasus (Karawajew 1929; Gorochov 1984b; Stalling, pers. observ.). The only other record of *Myrmecophilus termitophilus* comes from Turkey (Önder et al. 1999), and these specimens can also be assumed to belong to *M. hirticaudus*. Thus, the known range of *M. hirticaudus* has been expanded in a south-east direction.

The assumption of Mařan (1959) that the termites were the host of the type specimens of *M. termitophilus* is doubtful. Indeed, he was uncertain of this conclusion. Moreover, *M. hirticaudus* can be found outside ant nests (Stalling 2014), which makes it likely that they were found together with termites by chance.

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