

First record of *Temnothorax nadigi* (Kutter, 1925) (Hymenoptera: Formicidae) in the Czech Republic

První nález *Temnothorax nadigi* (Kutter, 1925) (Hymenoptera: Formicidae) v České republice

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Abstract: In this paper, we present the first find of *Temnothorax nadigi* (Kutter, 1925) in the Czech Republic. During the processing of material from the 1980s, a collection of this species was identified in material originating from the locality of Stolová hora in the Pálava Protected Landscape Area, Czech Republic. This raises the number of outdoor ant species known from the Czech Republic from 111 to 112.

Abstrakt: V tomto příspěvku představujeme první nález *Temnothorax nadigi* (Kutter, 1925) v České republice. Při zpracovávání sběrů z 80. let 20. století byl identifikován jeden vzorek tohoto druhu v materiálu pocházejícím z lokality Stolová hora v CHKO Pálava, Česká republika. Zároveň se zvýšil počet volně žijících druhů mravenců známých z České republiky ze 111 na 112.

Key words: Hymenoptera, Formicidae, *Temnothorax nadigi*, first record, Central Europe, Czech Republic

INTRODUCTION

The hyperdiverse genus *Temnothorax* Mayr, 1861 (Hymenoptera: Formicidae: Myrmicinae: Crematogasterini) currently includes about 500 described species and subspecies (see Bolton 2023). It is widespread mainly in the Holarctic region (Prebus 2017) and, unlike other ant genera, its species richness decreases towards the tropics (Hamer et al. 2023).

Its members are generally tiny, inconspicuous ants living in small colonies, typically with a few dozen to several hundred individuals. For nesting, they often use small natural cavities and can be found e.g. in rock crevices, under tree bark, in hollow nuts or acorns, in dead twigs, or under stones (all Prebus 2017, Seifert 2018). They are found in a wide range of habitats from arid deserts to tropical rainforests, at altitudes from sea level to 4000 m above sea level (Prebus 2017).

In the Czech Republic, occurrence of 12 species presently classified in genus *Temnothorax* has been reported to this day: *T. affinis* (Mayr, 1855), *T. clypeatus* (Mayr, 1853), *T. corticalis* (Schenck, 1852), *T. crassispinus* (Karavaiev, 1926), *T. interruptus* (Schenck, 1852), *T. jailensis* (Arnoldi, 1977), *T. nigriceps* (Mayr, 1855), *T. parvulus* (Schenck, 1852), *T. saxonicus* (Seifert, 1995), *T. tuberosum* (Fabricius, 1775), *T. ravouxi* (André, 1896), and *T. unifasciatus* (Latreille, 1798), and presence of *T. albipennis* (Curtis, 1854) is likely (Werner et al. 2018).

Recently, we discovered a collection of *Temnothorax nadigi* (Kutter, 1925) while processing material collected by the first author in Moravia, Czech Republic in the 1980s. As far as we know, this find represents the first record of this species in the Czech Republic.

METHODS

Identification was performed by Petr Werner according to Czechowski et al. (2012), Seifert (2018), and by comparison

with voucher material from Slovakia identified by Michal Wiezik in Petr Werner's collection. Nomenclature follows Bolton (2023). The sample was taken directly from the nest by Pavel Bezděčka using hand collecting.

RESULTS AND DISCUSSION

MATERIAL EXAMINED:

Temnothorax nadigi (Kutter, 1925): Czech Rep., Moravia mer., 7265d, Klentnice, Stolová hora, 48°50'24.626"N, 16°38'22.830"E, 430 m a.s.l.; 21. 6. 1989; 1f, 10 w, P. Bezděčka lgt., P. Werner det. 2021, Muzeum Vysočiny Jihlava coll. and additional 5 w with the same data, P. Werner coll. The coordinates refer to the investigated site, as the exact location of the nest is unfortunately unknown.

T. nadigi was described by Kutter in 1925 (as *Leptothorax nadigi*) based on workers and queens found in Switzerland. More than 50 years, it was known only from the type locality (Czechowska et al. 1998). It was later reported from France (Kutter 1977) and Spain (Espadaler et Franch Battle 1978), followed by some other countries. More detailed information on its distribution, taxonomy and ecology was summarised by Czechowska et al. (1998).

T. nadigi is a Euro-Caucasian species presently known from Andorra (Bernadou et al. 2013), Armenia (Radchenko et al. 2015, Gratiashvili et Barjadze 2008), Bulgaria (Lapeva-Gjonova et Antonova 2022), France (Kutter 1977), Georgia (Gratiashvili et Barjadze 2008), Greece (Salata et Borowiec 2019), Iran (Paknia et al. 2010), Macedonia (Bracko et al. 2014), Poland (Czechowska et al. 1998), Slovakia (Wiezik 2005), Spain (Espadaler et Franch Battle 1978), Switzerland (type locality), Turkey (Kiran et Karaman 2012), and Turkmenistan (Radchenko et al. 2015). For details on distribution, see

Janicki et al. (2016) and Guénard et al. (2017). It nests usually in semidry xerothermic grasslands to light forests, in hollow stems of herbaceous plants, under the bark of *Pinus* stumps and more rarely also of a living *Pinus* tree (Seifert 2018).

In the Czech Republic, *T. nadigi* was collected in the current Tabulová National Natural Reserve and Stolová hora Special Area of Conservation in Pálava Protected Landscape Area, south Moravia. The location is of a steppe character, with rock communities, dry grasslands on limestone, oak stands and scree forests. It hosts populations of rare and endangered species of plants, such as *Dianthus lumnitzeri*, *Pulsatilla grandis*, and *Salvia aethiopsis*, and animals, including *Saga pedo*, *Callimorpha quadripunctaria*, *Lucanus cervus*, and *Carabus hungaricus* (Nature Conservation Agency 2023).

This discovery represents a record of a species so far unknown from the Czech Republic. Hence, the number of Czech outdoor ant species increases from 111 stated in the last critical check-list (Werner et al. 2018) to 112.

The find was made in 1989 and is therefore evidence of the presence of *T. nadigi* at the site more than thirty years ago, not a consequence of its current spread. It supports Seifert's (2018) assumption that the species is probably under-recorded due to nest site selection. Intensive field research and study of myrmecological collections could increase the number of known populations of *T. nadigi* and expand our knowledge of its global distribution.

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