

First record of invasive harvestman *Leiobunum* sp. A (Arachnida: Opiliones) in the Czech Republic

První nález invazního sekáče *Leiobunum* sp. A (Arachnida: Opiliones) v České republice

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Abstract: During the last two decades a yet unidentified invasive species of harvestmen known under the provisional name *Leiobunum* sp. A has been spreading over Europe. The occurrence of this species, remarkable by its long legs and tendency to form large aggregations, has so far been reported from several countries in western, central and northern Europe. In this paper we provide an information on the first record of this species in the Czech Republic. Given its current range with the core in the Benelux and the Rhineland, the discovery of a remote small population in the southeast of the Czech Republic is interesting.

Abstrakt: Během posledních dvou dekad se Evropou šíří dosud neidentifikovaný invazní druh sekáče známý pod provizorním jménem *Leiobunum* sp. A. Výskyt tohoto druhu, nápadného dlouhýma nohama a sklonem k tvorbě velkých shluků, byl dosud hlášen z několika zemí v západní, střední a severní Evropě. V tomto příspěvku přinášíme informace o prvním nálezů tohoto druhu na území České republiky. Vzhledem k jeho současnému areálu, jehož jádro se nachází v Beneluxu a v Porýní, je odlehlý nález malé populace na jihovýchodě České republiky zajímavý.

Key words: harvestmen, Opiliones, *Leiobunum* sp. A, distribution, invasive species, Czech Republic

INTRODUCTION

The first specimens of harvestmen belonging to a species previously unknown from Europe were discovered in Nijmegen, the Netherlands in 2004 (Wijnhoven 2005, Wijnhoven et al. 2007). This species, remarkable by its extremely large leg ‘span’ (up to 18 cm) and tendency to aggregate into massive clusters, was soon recognized as a member of the genus *Leiobunum* C. L. Koch, 1839 (Wijnhoven 2005, 2009). However, in spite of considerable effort, it could not be identified at the species level neither by studying available literature nor with the help of many specialists. Problems were mainly caused by the widespread distribution of the genus *Leiobunum* and the lack of its global revision (Wijnhoven et al. 2007). Over the following two years, further finds of this apparently invasive taxon, were reported not only from the Netherlands, but also from Germany, Switzerland and Austria (Wijnhoven et al. 2007).

Further data on its distribution and also detailed information on its morphology, habitat, phenology, life cycle and behaviour of this syntopic harvestman species were given by Wijnhoven et al. (2007) and Wijnhoven (2009, 2011a, b). However, the authors did not describe this taxon formally as a species, using only the provisional names *Leiobunum* sp. (Wijnhoven 2007, 2009, 2011a) and *Leiobunum* sp. A (Wijnhoven 2009, 2011b). This situation still persists, as no scientific name has been assigned to this taxon to date.

In effort to facilitate its future description and phylogenetic placement of *Leiobunum* sp. A, Brown (2019) presented genetic data for this taxon. Based on DNA barcoding, pre-

liminary phylogenetic analyses and morphological similarity, he concluded (Brown 2019) that *Leiobunum* sp. A could have a close affinity to *Leiobunum rotundum* (Latreille, 1798).

Since the first record, this species has been expanding in western Europe. To date, its known range includes the Netherlands, north-eastern France, Belgium, Luxembourg, northern regions of Switzerland, western Austria, Germany, Denmark, Poland and the United Kingdom (summarized in Rozwałka et al. 2017). In this paper we provide the first information on the presence of *Leiobunum* sp. A in the Czech Republic (Fig. 1).

RESULTS AND DISCUSSION

MATERIAL EXAMINED:

Czech Republic, South Moravia, Vlkoš, 48°59'20.401"N, 17°10'41.825"E, 200 m a.s.l., on the wall of a factory, 6 Oct 2021, 1♂, 1♀ leg. M. Pěnča, 25. Oct 2021, 1♂, 1♀ leg. P. Bezděčka et K. Bezděčková, all specimens det. P. Bezděčka, coll. Muzeum Vysočiny Jihlava.

Although the harvestman *Leiobunum* sp. A has been rapidly spreading in Europe for 17 years and many details about its life have been learned, this species remains slightly enigmatic. This is particularly so because it has not yet been possible to identify its taxonomic status precisely and give it a scientific name, and also the area of its origin remains unclear.

In the Czech Republic, *Leiobunum* sp. A was first observed on the walls of a small factory (Fig. 2–3) situated on the periphery of the village of Vlkoš, in southern Moravia.

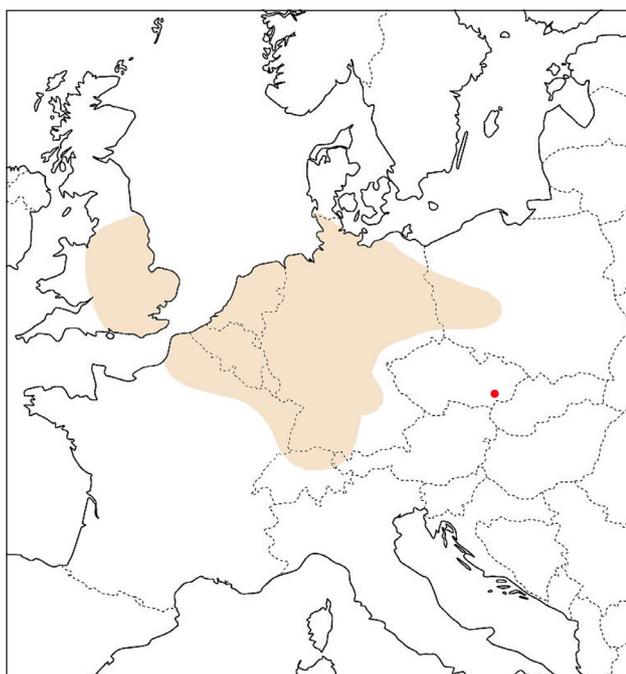


Fig. 1. Brown area = the current range of *Leiobunum* sp. A. red dot = locality Vlkoš.

Obr. 1. Hnědá oblast = aktuální rozšíření *Leiobunum* sp. A. Červená tečka = lokalita Vlkoš.

The site is located in one of the warmest areas of the Czech Republic with a mean annual air temperature of 9.1–10 °C (for the period 1981–2010) and mean annual precipitation of 551–600 mm (for the same period) (see data from CHMI 2021).

A total of up to twenty specimens of both sexes were found from 6 to 25 October 2021. They occupied exclusively east- and north-facing walls of two buildings, often low above the ground, on plaster, in the grouts of masonry or in the shade behind drainpipes. It supports the hypothesis of Wijnhoven et al. (2007) that negative phototaxis must play a role in the choice of daytime shelters of these harvestmen.

Unlike western Europe, but similarly to Poland, the harvestmen never clustered into distinct aggregations (cf. Wijnhoven et al. 2007, Rozwałka et al. 2017). They occurred mostly singly, in some cases forming a couple. However, the local population of *Leiobunum* sp. A in Vlkoš does not seem to be large and may have emerged only recently. It is possible that this species uses a different strategy when settling new or less suitable habitats than under optimal conditions. This finding is important mainly because the formation of huge clusters is often stated as one of the most conspicuous features of this species, so that populations behaving otherwise can be overlooked.

On the same walls as *Leiobunum* sp. A. other harvestmen species, namely five specimens (two males and three females) of *Opilio canestrinii* (Thorell, 1876) and two specimens (males) of *Phalangium opilio* Linnaeus, 1761 were observed on 25 Oct. 2021. Both species were sporadically found at margins of large aggregations of *Leiobunum* sp. A also by



Fig. 2–3. *Leiobunum* sp. A in the locality Vlkoš (Photo: K. Bezděčková).

Obr. 2–3. *Leiobunum* sp. A na lokalitě Vlkoš (Photo: K. Bezděčková).

Wijnhoven et al. (2007), but the authors emphasize the strong domination of the invasive species *Leiobunum* sp. A.

The village of Vlkoš lies relatively far from the currently known compact distribution area of *Leiobunum* sp. A. It may be assumed that the first specimens of this taxon were introduced by transport. The company on whose buildings the harvestmen lived has intensive business contacts with partners in Germany, especially in Passau. To the best of our knowledge, the presence of *Leiobunum* sp. A has not been recorded in Passau to this day. A survey of this city and its surroundings could reveal new localities of this taxon in Germany. In addition, further research focused on localities where companies trading with partners from its distribution area operate could not only help to reveal the pattern of its spread, but also to understand biological invasions as a whole.

The find of a small population of *Leiobunum* sp. A has expanded the list of harvestmen of the Czech Republic to 38 species.

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