



## New data on the spider genus *Troglohyphantes* (Araneae, Linyphiidae) in the Italian Alps, with the description of a new species and a new synonymy

MARCO ISAIA<sup>1,3</sup> & PAOLO PANTINI<sup>2</sup>

<sup>1</sup>Lab. Ecosistemi terrestri, Dipartimento di Biologia Animale e dell'Uomo, Università di Torino. Via Accademia Albertina, 13. I-10123 Torino, Italy. E-mail: marco.isaia@unito.it

<sup>2</sup>Museo civico di Scienze Naturali "E. Caffi". Piazza Cittadella, 10. I-24129 Bergamo, Italy. E-mail: ppantini@comune.bg.it

<sup>3</sup>Corresponding author

### Abstract

In this paper we describe *Troglohyphantes lanai* n. sp. from Pennine Alps and the unknown female of *T. bonzanoi*, from Ligurian Alps. Based on the collection of new material and on the examination of the paratypes, *T. delmastroi* Pesarini, 2001 is proposed as junior synonym of *T. iulianae* Brignoli, 1971 (new synonymy). We also provide new faunistic and ecological data on the Italian species of *Troglohyphantes*, focusing mainly on Central Italian Alps. Phenetic species groups previously proposed in literature for the Italian species have been updated in view of recent literature and new findings. Pesarini's complexes of species are used to map the species distribution in the Italian Alps.

**Key words:** cave-dwelling spiders, endemism, systematics

### Introduction

The linyphiid spider genus *Troglohyphantes* Joseph, 1881 is currently represented by 128 species (Platnick, 2010), predominantly distributed in the European mountain ranges: Cantabric Mountains, Pyrenees, Alps, Carpathians and Balkans. Moreover, four species are found in Northern Africa, two in Turkey, one in Iran, three in the Caucasus and one in the Canary Islands. Spiders belonging to this genus are found in a variety of habitats: caves, soil litter and rocks, moist and shaded situations - see Fage (1919) and Deeleman-Reinhold (1978) for a detailed description of the genus and information on the auto-ecology.

In Italy the linyphiid spider genus *Troglohyphantes* is represented by 36 species distributed all over the Italian Alpine range along with the Trieste Karst and the Northern part of the Apennines. The distribution of the different species is often confined to very narrow areas and several species are recorded from just one or a few localities. Knowledge of the genus in Italy has grown considerably in the last 20 years, mainly due to the contributions of Pesarini (1988a, 1988b, 1989, 2001) and to our previous studies on the Western Alpine species (Isaia & Pantini, 2008; Isaia *et al.*, 2010).

Within the genus *Troglohyphantes*, several authors have created species-groups on phenetic grounds (overall similarity) (Fage, 1919; Deeleman-Reinhold, 1978). In a study on the Italian species, Pesarini (2001) allocated the Italian species into 11 complexes that partially overlap with Deeleman-Reinhold's groups. Pesarini's phenetic partition does not provide a complete diagnosis for each complex and does not necessarily reflect real phylogenetic groups. In the frame of a collaborative project with Miquel Arnedo (University of Barcelona) that involves several arachnologists from all over Europe, a preliminary picture of the phylogeny of the genus based on molecular analyses is currently emerging. Preliminary results seem to support the system proposed by Pesarini for the Italian species (M. Arnedo, personal communication).

In this paper we describe *T. lanai*, new species and the unknown female of *T. bonzanoi* Brignoli, 1971. In addition, we provide a new synonymy and new data, focusing mainly on Central Alpine species. In view of recent literature and new findings we update Pesarini's complexes of species and use them to map the species distribution in the Italian Alps.