



Article

urn:lsid:zoobank.org:pub:6538EE39-26AA-4820-9A66-A23926FE3ACE

Simultaneous evidence for a new species of *Torrenticola* Piersig, 1896 (Acari, Hydrachnidia) from Montenegro

VLADIMIR PEŠIĆ¹, ANTONIO G. VALDECASAS² & RICARDO GARCÍA-JIMENEZ²

¹Department of Biology, University of Montenegro, Cetinjski put b.b., 81000 Podgorica, Montenegro. E-mail: vladopesic@gmail.com

²Museo Nacional del Ciencias Naturales, c/José Gutiérrez Abascal, 2. 28006-Madrid, Spain

Abstract

A new water mite, *Torrenticola lukai* n. sp. (Hydrachnidia, Torrenticolidae), is described from running waters in Northern Montenegro. The new species is probably a sister species of *Torrenticola lundbladi* (Viets, 1930), a little documented species known from central Spain, which is redescribed based on recently collected new material. Morphological data has been obtained with a bright field transmission microscopy and Laser Scanning Confocal Microscopy (LSCM), the latter allowing a realistic representation of the animals external morphology. Voucher specimens provided the DNA from which barcode sequences were obtained. External morphology and molecular data confirm that both species are clearly distinguishable and diagnosticable. A key is given for the males of European species characterized by shoulder platelets fused to the dorsal plate.

Key words: Acari, new species, *Torrenticola*, taxonomy, non-destructive DNA extraction, DNA barcoding

Introduction

More than 400 species of the family Torrenticolidae Piersig, 1902 have been discovered up to now (Zhang *et al.* 2011, Pešić & Smit 2012a,b, Pešić *et al.* 2012), but, as the family has its maximum diversity in the still strongly understudied tropical areas, the species number is possibly higher by one order of magnitude. In general, torrenticolid mites colonize fast flowing streams with well oxygenated interstitial habitats where proto- and tritonymphs can survive the quiescent phase of their life cycle (Di Sabatino *et al.* 2003).

In species-rich taxa, like *Torrenticola*, the discovery and description of new taxa is helped by the simultaneous analysis of different sources of homologous characters (Nixon & Carpenter 1993). This is the approach followed in this description of a new species which is characterized and distinguished from close relatives using bright field microscopy, Laser Scanning Confocal Microscopy (LSCM) and sequencing of a standardized region of the COI mitochondrial gene, popularly known as barcode of life (Hebert *et al.* 2003).

Material and methods

Sampling of water mites. Water mites from Montenegro were collected by the first author (VP) by hand netting and sorted on the spot from the living material. Most of them were preserved in Koenike's fluid, and in the laboratory dissected and slide-mounted in Hoyer's medium. The holotype of the new species will be deposited in the Naturhistorisches Museum Basel (NHMB). Two mounted paratypes are deposited in the Hydrachnidia collection of the Museo Nacional de Ciencias Naturales (MNCN), Madrid. Five additional specimens (4 males and 1 female) were preserved in absolute alcohol (VWR, BDH Prolabo) for confocal and molecular analysis.

Water mites from Spain were collected by the second author (AGV) by kicking the substrate in front of a square net 0.250 mm mesh size, and sieved through 3.5 mm and 0.250 mm sieves to discard twigs and medium and fine gravel. Mites were kept refrigerated until sorting in the lab. Water mites for traditional morphological analysis