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***Loricaseius lepontinus* gen. nov., sp. nov., a new genus and species of eviphidid mite from the Italian Alps (Acari: Mesostigmata), with an updated key to European genera of the family Eviphididae**

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Abstract

A new monotypic genus and a new free-living edaphic species of the family Eviphididae, *Loricaseius lepontinus* **gen. nov., sp. nov.**, are described on the basis of adults and deutonymphs collected from litter detritus in the Italian Lepontine Alps (Piemonte, Val d'Ossola). The new genus is characterized by a widened and truncate idiosomal vertex with widely spaced setae *j*₂, peritrematal shields extensively expanded laterally in adult stages, narrowed intercoxal region, tarsus I dorsally concave, and strong sexual dimorphism of some secondary sexual characters (dorsal sculpture, posteroventral sclerotization of soft integument, shape of anal shield, opisthogastric and posterodorsal chaetotaxy). Also, the female's anal shield is surrounded by a large area of strongly sclerotized skin that resembles a ventri-anal shield, with well-developed anterolateral extensions projecting between the dorsal and peritrematal shields, and posteriorly and laterally fused with the dorsal shield. We show that this may be an unusual type of age-related secondary sclerotization unknown in the family. An updated key to European genera of the family is presented.

Key words: Acari, Eviphididae, new genus, *Loricaseius*, secondary sclerotization, Alps

Introduction

The Eviphididae is a widespread family of mesostigmatic mites common in various types of habitats rich in decomposing organic matter, such as leaf litter and dung. Many species have established phoretic relationships with various arthropod groups that live in these habitats, especially scarab beetles and dipterans. According to a recent review of European genera by Mašán & Halliday (2010), 16 genera and 29 species of eviphidid mites are known from Europe. However, the family Eviphididae is still little-known globally, as highlighted by a series of recent studies that have led to the description of new genera and species (Kazemi *et al.* 2008; Mašán & Halliday 2009; Mašán & Halliday 2010; Halliday 2010; Joharchi *et al.* 2014). Despite the diversity of European fauna, only 15 species belonging to eight genera were listed in the Italian fauna checklist (Bernini *et al.* 1995; Stoch 2003), and after Mašán & Halliday (2010), only 12 eviphidid species are really well-known from Italy. Nevertheless, our knowledge about eviphidid mites occurring in this country is largely based on studies of Giovanni Canestrini and Antonio Berlese, published in the period between 1881 and 1921 and concerning a limited range of areas and habitats. It follows that the Italian eviphidid fauna has been little investigated and that more extensive collections from this country will reveal a greater number of taxa.

The mite fauna of the Lepontine Alps is one of the most poorly known in the Alpine system and studies concerning this region are currently not available. The Alpe Veglia–Devero Nature Park is a natural area located in the Val d'Ossola mountain valley, on the Italian-Swiss border, and, due to the presence of various high-altitude mountain habitats, it is a crucial area to investigate the biodiversity of the Lepontine Alps. In the course of a survey of the mesostigmatic mites occurring in this area, the senior author collected a sample of leaf litter with numerous specimens of an eviphidid mite that was recognised as belonging to a new species, and that we describe here on the basis of adults and deutonymphs. Since the new species shows an unusual combination of features unknown or

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