



Taxonomy of European Damaeidae (Acari: Oribatida) IV. Partial revision of *Metabelba* Grandjean, 1936 with proposal of one new subgenus, one new species and redescriptions of two known species

JAN MOUREK^{1,4} LADISLAV MIKO² & FABIO BERNINI³

¹ Charles University, Faculty of Science, Dept. of Teaching and Didactics of Biology, Viničná 7, CZ-128 44 Prague, Czech Republic.
E-mail: jan_mourek@yahoo.co.uk

² European Commission, DG Environment, Avenue de Beaulieu 9, 1160 Auderghem, Brussels, Belgium.
E-mail: ladislav.miko@ec.europa.eu

³ Department of Evolutionary Biology, University of Siena, via Aldo Moro, 2 - 53100 Siena, Italy. E-mail: bernini@unisi.it

⁴ Corresponding author

Table of contents

Abstract	1
Introduction	2
Material and methods	2
Review of <i>Metabelba</i> Grandjean, 1936	3
Development of the genus concept	3
Proposed classification of <i>Metabelba</i> Grandjean, 1936 and list of named species	4
Genus <i>Metabelba</i> Grandjean, 1936	4
Subgenus <i>Metabelba</i> (<i>Metabelba</i>) Grandjean, 1936	4
Subgenus <i>Metabelba</i> (<i>Pateribelba</i>) n. subg.	5
Description of species	7
<i>Metabelba</i> (<i>Pateribelba</i>) <i>denscanis</i> n. sp.	7
<i>Metabelba</i> (<i>Pateribelba</i>) <i>romandiolae</i> (Sellnick, 1943)	18
<i>Metabelba</i> (<i>Pateribelba</i>) <i>sphagni</i> Strenzke, 1950	27
Provisional key to adults of species of <i>Metabelba</i> (<i>Pateribelba</i>) subgen. n.	37
Acknowledgements	39
References	40

Abstract

We review the current state of taxonomy of the oribatid mite genus *Metabelba* Grandjean, 1936 (Damaeidae) and present an amended generic diagnosis. In contrast to Subías (2004) we consider *Allobelba* Kunst, 1961 and *Neobelba* Bulanova-Zachvatkina, 1967 as separate genera, not subgenera of *Metabelba*. We consider the subgenus *Metabelba* (*Parametabelba*) Mihelčič, 1964, to be a nomen nudum and propose a new subgenus—*Metabelba* (*Pateribelba*) **n. subg.**, with type species *Metabelba* (*Pateribelba*) *sphagni* Strenzke, 1950—to replace it. *Pateribelba* **n. subg.** includes species of *Metabelba* without the propodolateral apophysis. Together with the type species, the following named species (new combinations) belong to this subgenus: *Metabelba* (*Pateribelba*) *italica* (Sellnick, 1931); *M. (P.) romandiolae* (Sellnick, 1943); *M. (P.) platynotus* Grandjean, 1954; *M. (P.) ericius* Kunst, 1957; *M. (P.) rhodopeia* Kunst, 1961; *M. (P.) filippovi* Bulanova-Zachvatkina, 1965; *M. (P.) flagelliseta* Bulanova-Zachvatkina, 1965; *M. (P.) monilipeda* Bulanova-Zachvatkina, 1965; *M. (P.) pseudoitalica* Bulanova-Zachvatkina, 1965; *M. (P.) paraitalica* Kulijev, 1967, *M. (P.) glabriseta* Mahunka, 1982 and *M. (P.) machadoi* Pérez-Iñigo, 1986. A new species *Metabelba* (*Pateribelba*) *denscanis* **n. sp.** is described and illustrated; it is characterized mainly by the presence of a notogastral cornicle in the adult. It was found in Central Bohemia (Czech Republic), Upper Silesia (Poland) and South Tyrol (Italy). *Metabelba romandiolae* and *M. sphagni* are redescribed and illustrated. *Metabelba gladiator* Mihelčič, 1963 is considered to be junior synonym of *M. romandiolae*. *Metabelba lanceolata* van der Hammen, 1952 is considered to be a junior synonym of *M. sphagni*. We also provide a ten-

tative diagnostic key of the known species of *Metabelba* (*Pateribelba*) **n. subg.**, based on detailed study of available species and a review of literature data.

Key words: oribatid mite, new species, new subgenus, new combination, description, nomen nudum, leg setation, cerotegument, paedomorphy, SEM, Czech Republic, Central Europe, identification key

Introduction

This work is the fourth part of a series dealing with the taxonomic revision of European Damaeidae (Acari: Oribatida), following the works of Miko & Mourek (2008), Miko (2008) and Miko (2010). In the present part we review the development and current state of taxonomy of *Metabelba* Grandjean, 1936, which long has been in need of complete critical revision. Such revision is currently impossible, due to incomplete descriptions for many species and the lack of relevant material for some of them. However, our aim is to start the process by reviewing the available literature data and using it to provide a tentative diagnostic key to species.

Further, we describe a new species of *Metabelba* found in Central Bohemia (Czech Republic), Upper Silesia (Poland) and South Tyrol (Italy) and redescribe *Metabelba romandiola* (Sellnick, 1943) and *M. sphagni* Strenzke 1950. The redescription of *M. romandiola* is presented on the basis of the *neotype* designated by Bernini (1982), which in fact belongs to the original type series, and the more recently collected specimens. Further, we examined the type material of its junior synonym *M. gladiator* Mihelčič, 1963. The redescription of *M. sphagni* is based on the study of its type series and on recently collected material from South Bohemia (Czech Republic). We further examined the holotype of *M. lanceolata* van der Hammen, 1952 and substantiate that it is a junior synonym of *M. sphagni*.

The new species along with *M. romandiola* and *M. sphagni* belong to the group of *Metabelba* species that lack the propodolateral apophysis (*P*), which have been grouped by recent authors (Subías 2004, 2008; Miko 2006) as the subgenus *Metabelba* (*Parametabelba*) Mihelčič, 1964. As we discuss below, *Parametabelba* cannot be considered a valid name, so we propose a new replacement name. Redescriptions of further European species of *Metabelba* will follow in subsequent parts of this series.

Material and methods

We follow mostly the conventions of morphological terminology and abbreviations developed by Grandjean (1960) and modified by subsequent authors (see Miko & Mourek 2008 for complete references and a list of abbreviations). For the leg chaetotaxy we used Grandjean's notation, reviewed by Norton (1977a). Setal formulas of appendages are given as numbers per segment (from trochanter to tarsus), famulus included, and solenidia in parentheses. Epimeral setal formulas are given as numbers per epimere (I-IV).

For each species, the number of specimens, locality and habitat description is given in the "material examined" section. Fresh specimens of given mite species were extracted with modified Berlese-Tullgren funnels and fixed in 80% ethanol. They were cleared in pure lactic acid and mounted in temporary microscopic slides with a central excavation for light microscopic observation. Additionally, permanent slides and unmounted specimens of different origin deposited in museum collections were studied.

The first author prepared the figures, except as noted in respective figure captions (Fig. 11). Observations, measurements and drawings of both species were made with a compound microscope equipped with a camera lucida.

All measurements are given in μm as a range, usually followed with a mean in parentheses and number of measured specimens (*n*). Instead of the total body length we used the ventral length, measured in lateral view from the tip of the rostrum to the posterior edge of the ventral plate, to avoid discrepancies due to different degrees of notogastral distension (see also Bayartogtokh & Norton, 2007). This could not be applied in specimens mounted in permanent slides, for which only approximate values of total body length measured in ventral or dorsal view are given.

The maximal notogastral width was measured in dorsal view. Legs I and II were measured without trochanters, legs III and IV were measured including the trochanters. The length of individual leg segments was measured including the proximal part immersed in the previous segment and the total length of a given leg is given as a sum