



Description of a new species of cave mite, *Miracarus grootaerti*, and comparison with *M. abeloosi*, Lions, 1978 (Acari, Oribatida)

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Abstract

Miracarus grootaerti, new species, is described from a cave in South Belgium. It is compared with another species, *M. abeloosi*. *Miracarus grootaerti* shows the following unique or very uncommon apomorphic traits: (1) postero-lateral carinae *kx* on the prodorsum in contact with the pteromorphs; (2) an anterior shift of the sejugal stigmata; and (3) a rutellar microtube.

Key words: oribatid mites, Microzetidae, Brachypylina, taxonomy, description, cave, Belgium

Introduction

The genus *Miracarus* Kunst, 1959, which belongs to the family Microzetidae Grandjean, 1936 (Lions, 1978), consists of five species described from South Europe (Spain, France, Italy and Bulgaria): *M. abeloosi*, Lions, 1978; *M. discrepans*, Mahunka, 1966; *M. hurkai*, Kunst, 1959, type of the genus; and *M. similis*, Subías & Iturrondobeitia, 1977, have been mainly found in the soil whereas *M. senensis* Bernini, 1975, was discovered in a cave in Italy. *Miracarus grootaerti* was collected exclusively in four caves in South Belgium (Ducarme *et al.* 2003), which makes it the northernmost *Miracarus* species.

A key to the species and some comments on new and uncommon characters detected in this species are provided in the discussion below. The new species is dedicated to Patrick Grootaert, head of Department of Entomology, Royal Belgian Institute of Natural Sciences.

Material and methods

The studied individuals originate from the grotto of the 'Vieux Banc' located in the park of Freyr, village of Hastière, near Dinant, Belgium. They were collected in earth deposits on elevated benches in May, July and October 2006. Some thirty specimens were used for dissections and examinations in light microscopy (LM). Some fifteen other specimens were intended for observations in scanning electron microscopy (SEM) and, in collaboration with Prof. G. Alberti, in transmission electron microscopy (TEM). Immatures are unknown.

The terminology used follows F. Grandjean (see van der Hammen, 1980, for definitions and references). Note that: (i) the terms 'adaxial' and 'abaxial' used for an element (a structure, a segment or a phanere) mean 'drawn up to' and 'moved away from' the plane of symmetry, respectively; (ii) the prime (') and double prime (") symbols are equivalent to the terms anterior and posterior, respectively; in the appendages, a ' phanere is anterior of the plane of pseudosymmetry, and a " phanere is posterior; in addition, due to the destruction of the plesiomorphic, perpendicular parallelism of appendages (see Grandjean, 1961a: 210, for a discussion), the ' phaneres are adaxial in the pedipalps and legs I and II, and abaxial in the legs III and IV, and the " phaneres are abaxial in the pedipalps