



Revision of the genera *Interrhodeus*, *Pennarhodeus* and *Poropodalius* (Acari: Rhodacaridae)

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Abstract

The genera *Interrhodeus* Karg, *Pennarhodeus* Karg and *Poropodalius* Karg are redescribed on the basis of one species of *Interrhodeus*, four species of *Pennarhodeus* and five species of *Poropodalius*, including the type species of each genus. All species are redescribed on the basis of the type specimens, and keys for the separation of the species of the latter two genera are provided. Re-examination of these species shows that these three genera are correctly placed in the family Rhodacaridae.

Keywords: Rhodacaroidea, soil mites, taxonomy

Introduction

The Rhodacaridae Oudemans is a family of free living edaphic mites found mainly in the top few centimetres of the soil surface. They have been commonly mentioned in the literature as predators (Lee, 1970; Lindquist *et al.*, 2009). The limited information available in the literature shows that they can feed on insect larvae, springtails, nematodes and mites (Karg, 1971; Lee, 1974; Walter *et al.*, 1988; Castilho *et al.*, 2009).

The genera of Rhodacaridae have often been confused with each other and with genera in several related families. That instability has been partly caused by incomplete descriptions that do not define important diagnostic features of the taxa. The genera *Interrhodeus* Karg, *Pennarhodeus* Karg and *Poropodalius* Karg consist of one, four and five described species respectively. All of these species have been reported only from Central or South America (Karg, 2000a, 2000b; Karg & Schorlemmer, 2009). The original descriptions of these species and their respective genera are not sufficiently detailed, making it difficult to decide whether these genera really belong to the Rhodacaridae. Thus, a re-examination of the types of those species was considered necessary to allow the completion of a catalogue of the Rhodacaridae (Castilho *et al.*, 2012), and to allow the correct identification of mites of those groups in the American continent. The objective of this paper is to provide redescrptions of these genera and their included species, and the preparation of keys for identification of species of *Pennarhodeus* and *Poropodalius*.

Material and methods

The type specimens of species of these genera were borrowed from the Arachnologische Sammlung des Museums für Naturkunde der Humboldt-Universität, Berlin (MNHB) and the Staatliches Museum für Naturkunde Görlitz, Görlitz (SMNG), both in Germany. They were examined under a phase contrast microscope provided with a camera lucida, in the University of Amsterdam, The Netherlands. The specimens were illustrated and measurements were taken of structures considered taxonomically important. In the following redescrptions, setal nomenclature is based on Lindquist & Evans (1965). Measurements of each structure are given in micrometres (µm) and as a range