



Intraspecific morphological variation of *Scutovertex sculptus* Michael (Acari: Oribatida: Scutoverticidae) and description of its juvenile stages

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Abstract

This paper provides a detailed redescription of the adult and the first morphological description of all juvenile stages of *Scutovertex sculptus*. Specimens from four European countries, Austria, Germany, France and Spain were investigated. The species specific characters are the broadened posterior notogastral setae (lp , h_1 – h_3), the slightly broadened anterior notogastral seta (dm), the gastronomic cuticle with irregularly distributed foveae and a thick layer of secretion forming blocs with color dispersive qualities on the posterior half of notogastral region. Minor differences in the shape of notogastral setae and in the thickness of the secreted layer on the posterior gastronomic region were found in specimens from different countries. The investigation of the juveniles of *S. sculptus* showed that the larva and nymphs can be easily distinguished from those of *S. minutus*; the lateral setae on tibia I are leaf-shaped in *S. sculptus* and knife-shaped in *S. minutus*.

Key words: taxonomy, morphology, development, *Provertex*

Introduction

Scutovertex sculptus Michael, 1879 is a member of the family Scutoverticidae, which belongs, within higher Oribatida, to the subgroup of “Circumdehiscentiae with wrinkled nymphs and adults without pteromorphae” (Grandjean 1953). Woas (2002) supposed this family to be an “archeopterogasterine” group. Since Michael’s description of this species (Michael 1879), several diagnoses in keys (Ghilarov & Krivolutsky 1975, Pérez-Iñigo 1993, Sellnick 1960 and Strenzke 1943) and one redescription of adults (Woas 1998) were published. All of them do not accord in certain characters, such as in the shape of some notogastral setae or the length of cuspides. Furthermore, the knowledge of juvenile Scutoverticidae is still very poor. Scattered and fragmentary information is available for the juveniles of *Scutovertex* sp. (Grandjean 1949), *Provertex delamarei* Travé, 1962, and *Argentinoververtex coineaui* Fernandez & Cleva, 2002. Comprehensive data on all stages are published only for *S. minutus* (Schäffer & Krisper 2007). The aim of this paper is to provide a detailed redescription of *S. sculptus* and to prove the morphological variation in this species from different European locations as well as to perform the description of all juvenile stages.

Materials and methods

Mite collection

Specimens of *S. sculptus* were extracted from moss samples using Berlese-Tullgren funnels. The samples were collected from rocky habitats of Styria, North Tyrol and Lower Austria, as well as from pannonian soils of eastern Austria (Burgenland), from habitats of southern France and from Spain. Additional material from