

Article

***Acroseius weiri* sp. nov. (Acari: Trachytidae), a new species of Uropodina from eastern Australia, with notes on the biogeography of the genus**

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Abstract

We describe a new species in the endemic Australian mite genus *Acroseius* Błoszyk *et al.*, 2005. *Acroseius weiri* sp. nov. is distinguished from the other two species in the genus by the presence of a row of greatly expanded leaf-like setae on the caudal margin of the idiosoma. New locality records substantially increase the known range of the other two species, *A. tuberculatus* and *A. womersleyi*. The three species show disjunct distributions on the east coast of Australia, each species associated with a different forest type and climate. This appears to be the result of geographic speciation associated with increasing aridity and habitat fragmentation.

Key words: *Acroseius weiri*, Trachytidae, rainforest, Australia, vicariance, areas of endemism

Introduction

This paper continues our long-term study of the systematics of the Australian Uropodina (Błoszyk *et al.*, 2005; Dylewska *et al.*, 2006, 2010). As part of that program we described the endemic Australian genus *Acroseius* Błoszyk *et al.*, 2005, on the basis of two species, *A. tuberculatus* (Womersley, 1961) from northern New South Wales and southern Queensland, and *A. womersleyi* Błoszyk *et al.*, 2005, from Victoria and southern New South Wales. In order to clarify the relationship between these species, we have now examined a much larger number of specimens from all over Australia. That survey included a collection of Uropodina from rainforest litter in north Queensland, which contained a third species of *Acroseius*. This new species provides some new insights into the geographical distribution and evolutionary history of the genus, and shows that the three species are geographically separate and associated with different types of forest. Preliminary results of this study were presented in a conference paper by Błoszyk *et al.* (2008). We now extend the study by formally describing the new species and providing some new data on the other two species.

Materials and methods

We have examined 468 samples of mites from most areas of Australia, which form part of the very large amount of material kept in the Australian National Insect Collection, in CSIRO Ecosystem Sciences, Canberra (ANIC). This material was supplemented by 142 new samples from New South