



## Oribatid mites (Acari: Oribatida) from *Austrocedrus chilensis* and *Nothofagus* forests of Northwestern Patagonia (Argentina)

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### Abstract

Forest sites in Northwestern Argentinean Patagonia were surveyed to determine the oribatid mite fauna. A taxonomic inventory of oribatid mites was carried out in Northwestern Argentinean Patagonia to establish the taxonomic diversity, for increasing the knowledge of their distribution, detecting new species and assessing environmental effects on the oribatid mite community. Eleven sampling sites in nearly pure forests of *Austrocedrus chilensis*, *Nothofagus dombeyi*, *Nothofagus antarctica* were selected as these are among the most recurrent arboreal species found in this region. Samples of leaf litter, soil and pitfall traps contents were taken from each forest. Fifty-five oribatid species, belonging to 46 genera in 28 families, were found. Nine species are new records for Argentina and one for continental Argentina. Thirty-two species were recorded in *A. chilensis* forests, 35 in *N. dombeyi* forests and 20 in *N. antarctica* forests. Fifty species were found in leaf litter, 35 in soil and eight in pitfall traps. Fourteen species were recorded exclusively in leaf litter, one in soil and four in pitfall traps. A high level of endemism is confirmed as nearly 62 % of collected species have previously been found only in Southern Andes supporting the existence of an associated autochthonous oribatid fauna.

**Key words:** soil, leaf litter, pitfall trap, Oribatid mites, forest, Andes, Patagonia, Taxonomy

### Introduction

The cold temperate forests in Andean North Patagonia (Argentina) occupy a thin strip of 75 km maximum width that spreads along the mountain range of the Andes from Neuquén up to Tierra del Fuego. Biodiversity in these temperate forests takes intermediate values compared to tropical forests of Argentina, however the number of endemic species is very high (Bertonatti & Corcuera 2000). The level of degradation of the Andean Patagonian forests is in general low, with exception of the transition zone with the steppe, where the forests of *Austrocedrus chilensis* have lost 95 % of his original range surface. At the other side of the mountain range (i.e. Chile) the *A. chilensis* forests are scarce due to ancient intense harvesting practices since colony times when even the wood was exported to Peru for building or furniture manufacturing purposes, intense wood exploitation until the end of XX century and contemporary illegal harvesting (Donoso Zegers 2006), consequently conservation strategies are required to protect the cold temperate forests including the recovery of the *A. chilensis* forests.

The impact of habitat loss and degradation on invertebrates is particularly important as they make up the bulk of biodiversity and play an integral role in many ecosystem processes (Groombridge & Jenkins 2000; Miller 1993). A good knowledge of the arthropod species inhabiting these forests is basic to monitor forest degradation and to plan adequate forest conservation measures (Hanski *et al.* 2007). For example, litter arthropods like ants (Nakamura *et al.* 2007) and mites (Culvik 2007) have been used as bio-indicators of the impacts of rainforest clearing. Particularly the oribatid mites inhabit the soil-litter system and are often the dominant arthropod group in highly organic soils of temperate forests (Norton & Behan-Pelletier 2009).