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Phytoseiid mites (Acari: Phytoseiidae) from Patagonia and Tierra del Fuego

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Abstract

Predatory phytoseiid mites have been intensively studied and surveyed in the last decades because of their economic importance as biocontrol agents of agricultural pests. However, many regions of the world remain unexplored and the diversity of the family worldwide is still fragmentary. Up to date no phytoseiid species have been collected in the southernmost part of the Earth down to latitude 45° S. In this study Phytoseiidae were sampled from native vegetation in southern Argentina and Chile in the regions of Patagonia and Tierra del Fuego Island. Thirteen species were collected, five of which were previously described and eight, *Chileseius australis* n. sp., *Neoseiulus mapuche* n. sp., *Typhlodromips valdivianus* n. sp., *T. fissuratus* n. sp., *Amblyseius grandiporus* n. sp., *A. caliginosus* n. sp., *Typhlodromus (Anthoseius) anomalus* n. sp. and *Metaseiulus parabrevicollis* n. sp. are proposed as new to science and are described and diagnosed.

Key words: Acari, Phytoseiidae, taxonomy, new species, Argentina, Chile

Introduction

Because of their economic importance as biological control agents of crop pests, phytoseiid mites (Acari: Phytoseiidae) have been extensively studied during the last 50 years and about 2700 species have been described to date (Moraes *et al.*, 2004; Prasad, 2012; Demite *et al.* 2014). Phytoseiids have been collected from all biogeographical regions (Tixier *et al.*, 2008; Tixier & Kreiter, 2009). However, some extensive areas in the world are still unexplored or remain poorly known including tropical forests and other biodiversity hotspots which surely account for most of the biodiversity and high endemism levels in this group. In particular, southern South America has been scarcely surveyed and no phytoseiid species have been collected down to latitude 40° S in this continent. This study reports the results of a survey conducted in Argentina and Chile, in the vast region known as Patagonia, comprising the large area from the Rio Colorado in the north to the southernmost point of the American continent, Tierra del Fuego Island, in Argentina and from Valdivia southwards in Chile. From northern Argentina and Chile the Cordillera de los Andes divides the Patagonia into two completely different regions. Western (Chilean) Patagonia may receive up to 4000 mm annually due to the predominant humid western winds. The most characteristic vegetation includes the evergreen Valdivian rain forest, the deciduous forests with *Nothofagus* species (Fagaceae) and the shrubby communities (Barthelemy *et al.*, 2008; Gut, 2008). On the Eastern (Argentine) Patagonia, rains diminish rapidly from west to east and forests can only be found on the slopes of the Andes. The rest of the territory is occupied by grassland and shrubby steppes (Barthelemy *et al.*, 2008; Gut, 2008). In most Patagonian forests, the predominant tree species belong to the genus *Nothofagus* (Southern Beeches).

Material and methods

Phytoseiid mites were collected from native vegetation at three sites representing diverse climatic, topographical and botanical characteristics. The sites were: (i) Nahuel-Huapi Lake, near the city of Bariloche (Argentina), about