



The limits of polymorphism in *Liolaemus rothi*: Molecular and phenotypic evidence for a new species of the *Liolaemus boulengeri* clade (Iguanidae, Liolaemini) from boreal Patagonia of Chile

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Abstract

Studies conducted over the last few years in Andean boreal Patagonia along the border of Argentina and Chile (36°50'S–37°53'S) have shown that its reptile diversity is comprised of several endemic lizards. Increasing research has led to recognize a number of cryptic iguanian species from previously named taxa. In this area is common the only known Chilean population of the Patagonian *Liolaemus rothi*, considered as a polymorphic species with wide geographical distribution. In this paper, we provide evidence to support the hypothesis that such population represents a new taxon, herein described as *Liolaemus hermannunezi*. This new species occurs in the southeastern areas of Laguna del Laja, in the Los Barros and Río de Los Pinos basins of Antuco Volcano (1428–1521 m) in the Bio Bio Region. *Liolaemus hermannunezi* is closely related to *L. rothi*, from which is significantly differentiated by molecular variables. In addition, this new species appears to be related to *L. lobo*i and *L. sagei*, from which differs in having a smaller body size, a distinctive colour pattern and an isolated geographical distribution. *Liolaemus hermannunezi* is known from the boreal Patagonia of Chile, whereas *L. lobo*i, *L. rothi*, and *L. sagei* are endemic to Argentinean Patagonia. The new species is a member of the *boulengeri* clade, diagnosed by the presence of a patch of abruptly enlarged scales on the posterior medial surface of the thigh, a character that is more conspicuous in adult males. Finally, a phylogenetic hypothesis for 67 Liolaemini taxa based on DNA sequences is presented.

Key words: *Liolaemus* phylogeny, *Liolaemus hermannunezi*, *Liolaemus rothi*, *boulengeri* clade, *Liolaemus*, Patagonia, Chile

Resumen

Diversos estudios desarrollados durante los últimos años en la Patagonia boreal Andina localizada en la frontera común a Argentina y Chile (36°50'S–37°53'S) han demostrado que su diversidad de reptiles está formada por varias lagartijas endémicas. La evidencia acumulada ha llevado a reconocer numerosas especies crípticas de iguanianos a partir de taxa descritos previamente. En esta área es común la única población chilena de la forma patagónica *Liolaemus rothi*, considerada una especie polimórfica con amplia distribución geográfica. En el presente estudio, presentamos evidencia a favor de la hipótesis de que esta población representa un nuevo taxón, descrito acá como *Liolaemus hermannunezi*. Esta nueva especie está distribuida al sureste de la Laguna del Laja, en las áreas de Los Barros y del Río Los Pinos, Volcán Antuco (1428–1521 m), en la región del Bío Bío. *Liolaemus hermannunezi* está filogenéticamente relacionado con *L. rothi*, del cual difiere significativamente en variables moleculares. Adicionalmente, esta nueva especie parece estar relacionada con *L. lobo*i y *L. sagei*, de las cuales difiere debido a un tamaño corporal más pequeño, un patrón de coloración diferente y una distribución geográfica aislada. *Liolaemus hermannunezi* es conocido únicamente de la Patagonia boreal de Chile,