

ZOOTAXA

1800

**A monographic catalogue on the systematics and phylogeny of
the South American iguanian lizard family Liolaemidae
(Squamata, Iguania)**

DANIEL PINCHEIRA-DONOSO, J. ALEJANDRO SCOLARO & PIOTR SURA



Magnolia Press
Auckland, New Zealand

Daniel Pincheira-Donoso, J. Alejandro Scolaro & Piotr Sura

A monographic catalogue on the systematics and phylogeny of the South American iguanian lizard family Liolaemidae (Squamata, Iguania)

(*Zootaxa* 1800)

85 pp.; 30 cm.

16 June 2008

ISBN 978-1-86977-237-6 (paperback)

ISBN 978-1-86977-238-3 (Online edition)

FIRST PUBLISHED IN 2008 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: zootaxa@mapress.com

<http://www.mapress.com/zootaxa/>

© 2008 Magnolia Press

All rights reserved.

No part of this publication may be reproduced, stored, transmitted or disseminated, in any form, or by any means, without prior written permission from the publisher, to whom all requests to reproduce copyright material should be directed in writing.

This authorization does not extend to any other kind of copying, by any means, in any form, and for any purpose other than private research use.

ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)



A monographic catalogue on the systematics and phylogeny of the South American iguanian lizard family Liolaemidae (Squamata, Iguania)

DANIEL PINCHEIRA-DONOSO^{1,4}, J. ALEJANDRO SCOLARO² & PIOTR SURA³

¹Centre for Ecology and Conservation, Department of Biological Sciences, University of Exeter, Cornwall Campus, Penryn, TR10 9EZ, Cornwall, United Kingdom

²Facultad de Ciencias Naturales, Sede Trelew, Universidad Nacional de la Patagonia, H. L. Jones 143, 9120 Puerto Madryn, Provincia de Chubut, Argentina

³Department of Human Developmental Biology, Collegium Medicum, Jagiellonian University, Kopernika 7, 31-034 Krakow, Poland

⁴Corresponding author. E-mail: D.PincheiraDonoso@exeter.ac.uk

Table of contents

Abstract	4
Resumen	4
Introduction	5
Classification and phylogeny of Liolaemidae lizards	15
Systematic account of the family Liolaemidae	18
Family Liolaemidae Frost & Etheridge 1989	18
Genus <i>Ctenoblepharys</i> Tschudi	18
Genus <i>Liolaemus</i> Wiegmann	19
Subgenus <i>Liolaemus</i> (sensu stricto) Wiegmann	19
Series <i>signifer</i>	34
Subgenus <i>Donosolaemus</i> Pincheira-Donoso & Núñez	34
Line <i>magellanicus</i>	37
Subgenus <i>Vilcunia</i> Donoso-Barros & Cei	37
Subgenus <i>Eulaemus</i> Girard	39
Clade <i>montanus</i>	39
Group <i>reichei</i>	45
Clade <i>anomalus</i>	47
Complex <i>boulengeri</i>	48
Clade <i>fitzingerii</i>	48
Clade <i>wiegmannii</i>	54
Genus <i>Phymaturus</i> Gravenhorst	56
Clade <i>flagellifer</i>	56
Clade <i>patagonicus</i>	58
Discussion	59
Acknowledgements	64
References	64

Abstract

Iguanian lizards comprise two of the most species-rich vertebrate genera on Earth (*Anolis* and *Liolaemus*). Therefore, studies with the aim of understanding their diversity and phylogenetic relationships may have major significance for ecological and evolutionary research. However, difficulties are often associated with these diverse groups. For example, adaptive radiations may lead to the evolution of conspicuous patterns of intraspecific (interpopulational) variation in response to local environmental conditions, in the absence of real speciation events. This can lead to the taxonomic recognition of new species in the absence of true reproductive isolation. In addition, although diverse taxa are appropriate models to evaluate comparatively the effects of selection on ecological and life-history traits, it is often a major challenge to gather all the available information on the distribution of these characteristics across species. This necessitates the development of synthetic works. Here we present a monographic catalogue of the diversity and phylogenetic structure of the entire South American iguanian family Liolaemidae, based on previously published studies. We also provide a complete table to summarize the distribution by country, elevational range, diet and reproductive mode of each species for which this information is available. The Liolaemidae family currently consists of a total of 229 species and subspecies belonging to the genera *Ctenoblepharys*, *Liolaemus* and *Phymaturus*. Remarkably, the genus *Liolaemus* alone comprises 209 of these taxa, consisting of 200 species, five of them polytypic, and recognized on the basis of 14 subspecies. *Liolaemus* species occur in Argentina, Bolivia, Brazil, Chile, Paraguay, Peru and Uruguay, representing the widest range of environments occupied by a single lizard genus. In contrast, the genus *Ctenoblepharys* is monotypic (*Ctenoblepharys adspersa*) and endemic to Peru, while 19 species of *Phymaturus* are distributed in Argentina and Chile. In these lizards, plant consumption and viviparity are strikingly common. Among *Liolaemus*, dietary information was available for 153 taxa. We found that 76 are arthropofagous, 71 omnivorous and six strictly herbivorous. Reproductive information was gathered for 136 species of this genus: 73 are viviparous and 63 oviparous. In *Phymaturus*, all species are viviparous and dietary information for 17 species revealed that 16 are herbivorous and only one omnivorous. *Ctenoblepharys adspersa* is arthropofagous and oviparous. As previously supported both theoretically and empirically, plant consumption and viviparity are associated with high latitudes and elevations. Finally, we suggest that the recently proposed species *Phymaturus dorsimaculatus* Lobo & Quinteros is conspecific to *P. vociferator* Pincheira-Donoso, from which the former taxon does not differ in morphology, coloration, patterns of sexual dimorphism or geographical distribution.

Key words: Systematics, taxonomic inflation, phylogeny, diet, oviparity, viviparity, lizards, Liolaemidae, *Ctenoblepharys*, *Liolaemus*, *Phymaturus*, South America

Resumen

Los lagartos iguanianos concentran dos de los géneros de vertebrados más diversificados del planeta (*Anolis* y *Liolaemus*). Por lo tanto, el desarrollo de estudios enfocados en conocer su diversidad y entender sus relaciones filogenéticas puede resultar de fundamental importancia para la investigación en ecología y biología evolutiva. Sin embargo, al mismo tiempo, numerosas dificultades están asociadas con grupos altamente especiosos. Por ejemplo, el impacto de la radiación adaptativa puede generar el surgimiento de notables patrones de variación intraespecífica (interpoblacional) en respuesta a condiciones ambientales locales, en ausencia de reales eventos de especiación, que pueden llevar al reconocimiento taxonómico de nuevas especies carentes de claros signos de aislamiento reproductivo. Adicionalmente, aunque los grupos diversificados representan apropiados modelos para evaluar comparativamente los efectos de la selección sobre caracteres ecológicos e historias de vida, la reunión de información sobre la distribución de estas características a través de las especies conocidas suele resultar un desafío significativo. Esto hace deseable el desarrollo de trabajos de síntesis. En este estudio, presentamos un catálogo monográfico de la diversidad y estructura filogenética de la totalidad de la familia sudamericana de iguanianos Liolaemidae, sobre la base de previas publicaciones. Además, entregamos una tabla integradora para reunir la distribución por país, rango altitudinal, dieta y modo reproductivo de cada especie para la cual esta información está disponible. La familia Liolaemidae está compuesta de un total de 229 especies y subspecies pertenecientes a los géneros *Ctenoblepharys*, *Liolaemus* y *Phymaturus*. Notablemente, sin embargo, sólo el género *Liolaemus* concentra 209 de estos taxa, estando conformado por 200 especies, cinco de ellas politípicas, y reconocidas sobre la base de 14 subspecies. *Liolaemus* se distribuye en Argentina, Bolivia, Brasil, Chile, Paraguay, Perú y Uruguay, representando la más amplia diversidad de condiciones ambientales registrada para cualquier linaje de lagartos. En contraste, el género *Ctenoblepharys* es monotípico (*Ctenoblepharys adspersa*) y endémico de Perú, mientras *Phymaturus* es conocido sobre la base de 19 especies distribuidas en Argentina y Chile. En estos lagartos, el consumo de plantas y la viv-

iparidad son sorprendentemente comunes. En *Liolaemus*, existe información dietaria disponible para 153 taxa. Encontramos que 76 son artropófagos, 71 omnívoros y seis estrictamente herbívoros. Información reproductiva fue reunida para 136 especies de este género, de las cuales 73 son vivíparas y 63 ovíparas. En *Phymaturus*, la información dietaria disponible para 17 especies reveló que 16 son herbívoras y sólo una omnívora. En relación a su modo reproductivo, la totalidad son vivíparas. *Ctenoblepharys adpersa* es artropófago y ovíparo. Como ha sido sostenido teórica y empíricamente, el consumo de plantas y la viviparidad están directamente asociados con la distribución en áreas australes o de altura. Finalmente, sugerimos que la recientemente propuesta especie *Phymaturus dorsimaculatus* Lobo & Quinteros es conespecífica con *P. vociferator* Pincheira-Donoso. Ambos taxa no difieren en morfología, coloración, patrones de dimorfismo sexual ni distribución geográfica.

Palabras clave: Sistemática, inflación taxonómica, filogenia, dieta, oviparidad, viviparidad, lagartos, Liolaemidae, *Ctenoblepharys*, *Liolaemus*, *Phymaturus*, Sudamérica

Introduction

The reptile fauna of South America exhibits a striking diversity, including some of the most species-rich vertebrate clades on earth (Peters & Donoso-Barros 1970; Losos 1994; Avila-Pires 1995; Roughgarden 1995). Many aspects of the geological and climatic history of this continent have played a fundamental role in shaping its remarkable reptile richness. For example, the geographical fusion between Central and South America through the Isthmus of Panama allowed active dispersal of boreal fauna into this last region (Ceï 1986; Savage 2002). Also, the existence of the Amazonian system promoted the evolution of an extraordinary diversity of freshwater reptiles, consisting of several tropical and subtropical widespread groups of high ecological significance, such as turtles and crocodylians (Dunn 1945; Medem 1953, 1955, 1958a, b, c, 1962, 1967, 1969, 1980, 1981, 1983; Medem & Marx 1955; Donoso-Barros 1965a, b, 1966b, c, 1968, 1974c; Carrillo de Espinoza 1970; Pritchard & Trebbau 1984; Williams & Francini 1991; Vanzolini 1993; Avila-Pires 1995). Nevertheless, the uplift of the Andes range has often been recognized as one of the main factors involved in the proliferation of South American reptile clades, particularly in the central southern and southern areas of this continent (Laurent 1992; Ceï 1993; Núñez *et al.* 2004; Schulte *et al.* 2000; Pincheira-Donoso & Núñez 2003). Tertiary lineages with broad, continual distributional ranges were separated by these mountains into two main biogeographical groups, one restricted to the occidental valleys and one to the orientals (Ceï 1986, 1993; Schulte *et al.* 2000). Remarkably, many reptile lineages have remained strongly isolated by the Andes until the present. For example, lizard groups such as geckonids, teiids, and leiosaurids are currently represented by occidental and oriental diagnosable lines primarily restricted to moderate elevations (Peters & Donoso-Barros 1970; Donoso-Barros 1966a; Etheridge & Williams 1985; Ceï 1986, 1978c; Lamborot & Diaz 1987; Abdala 1992, 1995, 1997; Pincheira-Donoso 2006a, b). In striking contrast, most lizard groups that experienced geographical radiations from both oriental and occidental slopes of these mountains toward high altitude environments belong to the family Liolaemidae, one of the most conspicuous lizard lineages of this continent. Indeed, more than one hundred species of this clade have been documented so far in high elevations (*e.g.* Peters & Donoso-Barros 1970; Ceï 1993; Laurent 1998; Lobo & Espinoza 1999, 2004; Pincheira-Donoso 2005; Pincheira-Donoso & Núñez 2005; see also Duellman 1979a, b; Table 1). Similarly, austral South American lizard communities (*e.g.* in Patagonia, in austral forests) are almost completely dominated by members of this family (Donoso-Barros 1966a; Ceï 1986; Cruz *et al.* 2005; Sclaro 2005, 2006). Major exceptions in these southern areas are represented by populations of the leiosaurid genera *Diplolaemus* and *Pristidactylus* (Etheridge & Williams 1985; Ceï 1986; Núñez *et al.* 1992; Ceï *et al.* 2001, 2003). Interestingly, the largest proportion of known Liolaemidae species occur at high latitude and elevation environments, where many taxa appear to be still underscribed (Hernández & Espinoza 2004; Pincheira-Donoso *et al.* 2007a). According to current hypotheses, in these cold habitats the establishment of Pleistocenic icefields would have been responsible for active speciation events, and would, therefore, explain the high species richness observed (Ceï 1982c, 1986;

see also Simpson-Vuilleumier 1971). A widely accepted model suggests that reptile populations retreated toward warmer and isolated valleys (lower altitude valleys in the Andes; see Núñez *et al.* 2000), which imposed barriers for gene flow between populations, and led eventually to lineage divergence by allopatric speciation (Fuentes & Jaksic 1979; Jaksic 1998; Núñez *et al.* 2000, 2004; Pincheira-Donoso & Núñez 2003). More recently, Scolaro *et al.* (2003) discussed on some additional diversification events involved in the origin of *Liolaemus* species in patagonian communities. However, despite the fact that these biogeographical models might explain different events of cladogenesis at high latitudes and elevations (an not only in reptiles, *e.g.* Elgueta 1988), many aspects of the evolution of these organisms are still almost entirely unknown (Pincheira-Donoso & Núñez 2005; Pincheira-Donoso *et al.* 2008a).

The family Liolaemidae consists of more than 200 species belonging to the genera *Ctenoblepharys*, *Liolaemus* and *Phymaturus* (Etheridge 1995; Etheridge & Espinoza 2000; Schulte *et al.* 2003; Espinoza *et al.* 2004). However, although the diversity of this lineage is appreciable, the distribution of such species-richness is strongly asymmetrical among these three genera (Table 1). *Ctenoblepharys* is known on the basis of the single species *C. adspersa*, restricted to the deserts of central and central-southern Peru (Peters & Donoso-Barros 1970; Etheridge 1995). In remarkable contrast, *Liolaemus* concentrates most of the known Liolaemidae taxa. This genus consists of 200 full species, five of them recognized as polytypic taxa diversified in 14 subspecies, leading to a total richness of 209 species and subspecies (Núñez & Jaksic 1992; Etheridge 1995; Etheridge & Espinoza 2000; Pincheira-Donoso & Núñez 2005; Table 1). The origin and adaptive radiation of *Liolaemus* lizards have been associated with the Andes range for at least ten or twelve million years (Ceï 1986, 1993; Schulte *et al.* 2000; see also Díaz & Lobo 2006). As mentioned above, multiple events of dispersal to different latitudinal and altitudinal environments promoted active cladogenesis in this genus at a quite constant evolutionary rate along its phylogenetic history (Schulte *et al.* 2000; Harmon *et al.* 2003). Extant *Liolaemus* species have colonized almost all available habitat in central southern and southern South America (Donoso-Barros 1966a; Ceï 1986, 1993; Etheridge 2000; Schulte *et al.* 2004; Pincheira-Donoso 2005). The latitudinal distribution of these lizards extends from deserts of central southern Peru (~ 12°50'S) to Tierra del Fuego in Argentina and Chile (~ 53°50'S), the southernmost place where reptiles have been recorded (Laurent 1995a, 1998; Ceï 1986; Scolaro 2005; Fig. 1). This gives a geographical range of more than 4500 km. These latitudinal limits encompass an extraordinary diversity of habitats, such as the Atacama Desert (the driest place on Earth), austral forests, austral Patagonia, Andes, coastal dunes and subtropical forests, representing the widest environmental diversity occupied by a single iguanian genus (Ceï 1986, 1993; Etheridge 2000; Pincheira-Donoso & Núñez 2005). The altitudinal distribution of *Liolaemus* lizards extends from sea level to more than 5000 m in the high Andes (Donoso-Barros 1970a; Ceï 1993; Pincheira-Donoso 2005; Pincheira-Donoso *et al.* 2008b), an elevational range only recorded in a few lizard genera (*e.g.* Zhao 1999; Pang *et al.* 2003). Finally, the genus *Phymaturus* comprises 19 species distributed in Andean and Patagonian habitats in Argentina and Chile (Ceï 1986, 1993; Pincheira-Donoso 2004a; Lobo & Quinteros 2005b; Scolaro & Ibarquengoytía 2007; see above discussions provided for this genus). Ecologically, the species of this genus are similar, being primarily saxicolous and herbivorous (*e.g.* Ceï 1986).

The wide geographical and environmental distribution of Liolaemidae lizards has promoted the evolution of an extraordinary diversity of morphologies, colorations, ecologies, life-histories and patterns of sexual dimorphism and sexual dichromatism (Donoso-Barros 1966a; Ceï 1986, 1993; Jaksic 1998; Schulte *et al.* 2000; Espinoza *et al.* 2004; Cruz *et al.* 2005; Pincheira-Donoso & Núñez 2005; Pincheira-Donoso *et al.* 2008b). At the present, however, it is almost entirely unknown how this diversity has proliferated.

The evolution of functional morphology in Liolaemidae has only been evaluated in the genus *Liolaemus* (Jaksic & Núñez 1979; Jaksic *et al.* 1979, 1980; Núñez *et al.* 1981; Jaksic 1998; Schulte *et al.* 2004). Both phylogenetically-controlled and -uncontrolled studies have revealed that microhabitat preferences appear not to promote predictable patterns of variation in their body proportions. The first known works on this extent suggested that limb length in *Liolaemus* populations decrease with increasing latitude (Hellmich 1951, 1952,

1953). However, this author did not provide major details on the ecological specializations of the studied taxa (see Jaksic 1998). Later, in a series of nonphylogenetic studies, Jaksic *et al.* (1979, 1980) and Núñez *et al.* (1981) observed that *Liolaemus* species occurring in central Chile (they did not study species from other geographical areas) exhibit in general a clear homogeneity in body shape (but see Jaksic & Núñez 1979 for leg differences between *L. fuscus* and *L. lemniscatus*). This led Jaksic *et al.* (1979, 1980) to postulate the existence of a rather constant “*Liolaemus* [morphological] plan”. More recently, a phylogenetic comparative analysis revealed similar results. Schulte *et al.* (2004) studied 14 body proportions in 25 *Liolaemus* species belonging to different clades. As reported in previous research, they found that microhabitat structure does not predict patterns of body shape across these species, in contrast to many previous studies in different squamate reptiles (*e.g.* Losos, 1990a, 1990b; Melville & Swain, 2000; Kohlsdorf *et al.*, 2001; Herrel *et al.*, 2002; Losos *et al.*, 2006; see also Losos 1994). Nevertheless, significant relationships were observed between morphology and escaping behaviour, and between escaping behaviour and habitat structure. Schulte *et al.* (2004) proposed that these morphological patterns of variation might be explained by the “Bogert effect” hypothesis, which suggests that behavioural responses may replace evolutionary change in morphological traits (Bogert 1949; Huey *et al.* 2003; but see Losos *et al.* 2004).

An additional biological feature that makes Liolaemidae lizards an interesting group, is the evolution of their trophic niches in relation to morphological and thermoregulatory traits. In general for lizards, it has often been observed that herbivory has evolved many times in different clades (Cooper & Vitt 2002; Pianka & Vitt 2003), mostly in species characterized by large body size and high preferred metabolic temperatures, and occurring in warm environments, a pattern summarized by the so called “rules of herbivory” (Pough 1973; King 1996; Alexander 1999; Espinoza *et al.* 2004). Nevertheless, a recent study by Espinoza *et al.* (2004) revealed that omnivory and herbivory in Liolaemidae has evolved more independent times than in any other lizard group (see Vitt 2004). But more interestingly, in contrast to predictions, omnivorous and herbivorous species of this clade tend to show small body size, low preferred metabolic temperatures and inhabit high latitudes and elevations (Espinoza *et al.* 2004; Table 1; see also Pincheira-Donoso 2008 for additional discussions on the problem of trophic niche analysis).

Over the last century, only limited general systematic studies focusing on this entire group of lizards have been published (Donoso-Barros 1970a; Peters & Donoso-Barros 1970; Etheridge 1995; Etheridge & Espinoza 2000; see *e.g.* Donoso-Barros 1970b; Cei 1986, 1993; Veloso & Navarro 1988; Laurent 1992; Núñez & Jaksic 1992; Pincheira-Donoso & Núñez 2005, for works restricted to specific countries or to specific genera). Indeed, the last available monographic work on the species-richness of the clade Liolaemidae is that of Etheridge & Espinoza (2000), which summarized the main aspects concerning the nomenclatural history of these reptiles, but nothing explicit about their phylogenetic structure. It also included an impressive section detailing probably almost every publication on Liolaemidae species. However, after Etheridge & Espinoza’s (2000) work, more than fifty new *Liolaemus* and *Phymaturus* taxa have been recognized and named, several (although not all) of them on the basis of powerful distinctive evidence. Also, before 2000, almost nothing was known about the phylogenetic relationships between these lizards (see below). Finally, since that year, many nomenclatural arrangements have been made, many species have been considered synonymous of previously named taxa, and many others have been revived after studying type series or new field samples. Therefore, a global study summarizing diversity, phylogenetic relationships among clades and species, and some central aspects of their biology (*e.g.* diet and reproductive adaptations; never done before), is currently needed. In this monograph, we present a general catalogue including all this information. Our main aims are to fill this gap, and to contribute to make this clade a more suitable group on which to perform modern comparative analyses, in order to increase the current understanding about the impact of selection on the evolution of phylogenetic and adaptive biodiversity.

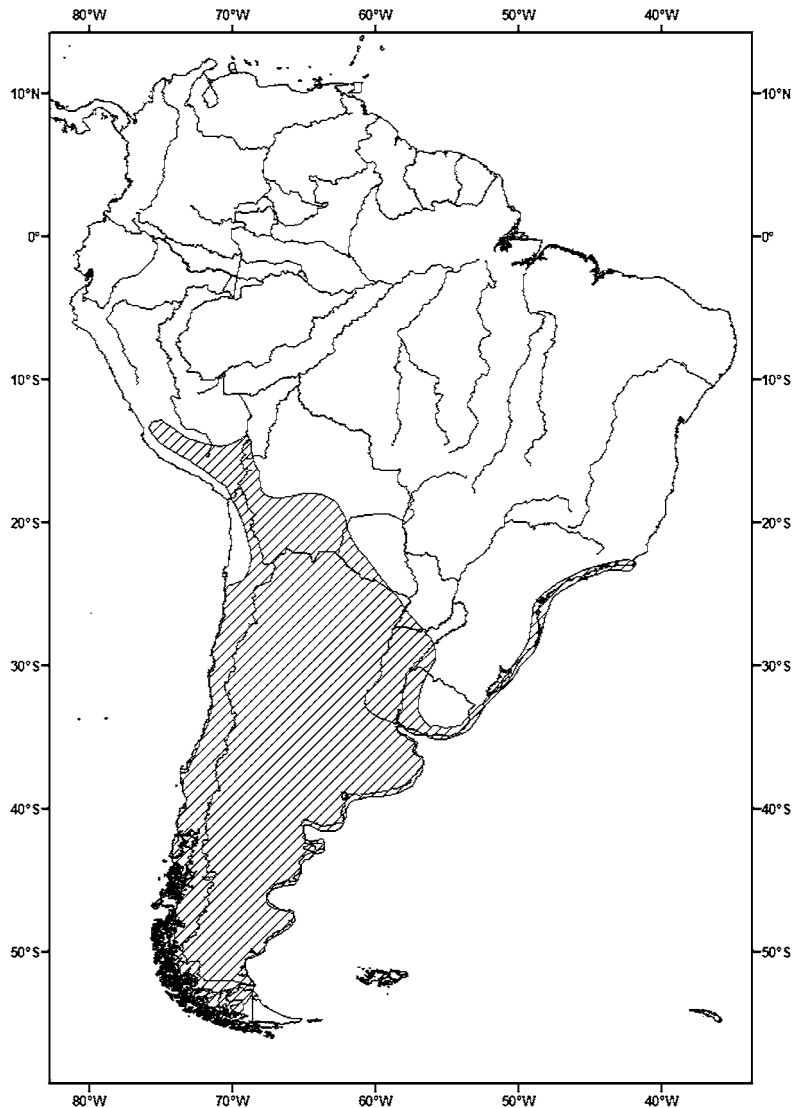


FIGURE 1. Distributional range of the family Liolaemidae in the South American continent.

Classification and phylogeny of Liolaemidae lizards

The systematics of Liolaemidae lizards is, and has always been, notoriously controversial. Most of these controversies have concentrated only in the genus *Liolaemus*. In contrast, since the low number of species known in the genera *Ctenoblepharys* and *Phymaturus* (see Table 1), their classification has not been a matter of major debate (see below, also Etheridge & Espinoza 2000; Etheridge & Savage 2003; Cei & Scolaro 2006, for nomenclatural discussions). Although numerous generic or subgeneric names assigned to this family were recognized over the last two centuries on the basis of specific and sometimes weak morphological justification, modern phylogenetic approaches have led to place almost all of them within the synonymy of *Liolaemus* (Etheridge 1995). Those *Liolaemus* groups supported by phylogenetic evidence, however, have been recognized as subgenera of this clade by different authors (e.g. Schulte *et al.* 2000; Pincheira-Donoso 2005; Pincheira-Donoso & Núñez 2005). At present, only the genera *Ctenoblepharys*, *Liolaemus* and *Phymaturus* are widely accepted (Etheridge & de Queiroz 1988; Frost & Etheridge 1989; Etheridge 1995; Etheridge & Espinoza 2000; Espinoza *et al.* 2004). Most phylogenetic hypotheses suggest that *Liolaemus* and *Phymaturus* are likely to form a pair of sister clades, which is in turn the major sister clade of the genus *Ctenoblepharys* (e.g. Schulte *et al.* 1998; Espinoza *et al.* 2004; Fig. 2).

TABLE 1. Diversity, distribution, dietary patterns and reproductive modes in the species and subspecies of the family Liolaemidae. Abbreviations for countries are Argentina (Ar), Bolivia (Bo), Brazil (Br), Chile (Ch), Paraguay (Py), Peru (Pe), Uruguay (Uy). Some differences from the altitudinal ranges provided by Pincheira-Donoso *et al.* (2008a, b) are explained by the record of new localities at lower or higher elevations, obtained when these studies were already in press.

Species	Country	Altitudinal Distribution	Diet	Reproductive Mode	References
<i>Ctenoblepharys</i> genus					
<i>C. adspersa</i>	Pe	0–300	Arthr	Oviparous	1,2,39
<i>Liolaemus</i> genus					
<i>Liolaemus</i> subgenus					
<i>L. alticolor</i>	Bo, Ch, Pe	3000–4800	Omn	Viviparous	3,4,5,6,7,18
<i>L. araucaniensis</i>	Ar, Ch	1400–1700	Omn	Viviparous	3,5,6,8,38,100,126
<i>L. atacamensis</i>	Ch	0–2000	?	Oviparous	3,5,6
<i>L. austromendocinus</i>	Ar	900–2310	Arthr	Viviparous	9,10
<i>L. barbarae</i>	Ch	3050–4500	Omn	Viviparous	3,6,11
<i>L. bellii</i>	Ch	2100–3500	Omn	Viviparous	3,4,5,6,10,27
<i>L. bibronii</i>	Ar, C	0–3000	Arthr	Oviparous ^m	6,7,9,91
<i>L. bisignatus</i>	Ch	0–500	?	Oviparous	3,4,5,6
<i>L. bitaeniatus</i>	Ar	700–2800	Arthr	Oviparous	7,12,39,80,95
<i>L. brattstroemi</i>	Ch	0–110	Arthr ⁱ	?	3,4,5,6
<i>L. buergeri</i>	Ar, Ch	1500–3000	Omn ^u	Viviparous	4,6,9,10
<i>L. ceii</i>	Ar, Ch	1000–2300	Omn	Viviparous	6,9,10,13
<i>L. chaltin</i>	Ar	3400–3750	Omn	Oviparous	18
<i>L. chiliensis</i>	Ar, Ch	0–2100	Arthr ^v	Oviparous	3,4,5,6,9,10
<i>L. c. chillanensis</i>	Ch	1500–2300	Omn	Oviparous	3,5,6
<i>L. c. villaricensis</i>	Ch	1300–1600	Herb	Oviparous	3,5,6
<i>L. coeruleus</i>	Ar, Ch	1500–2100	Arthr	Oviparous	6,9,10,39
<i>L. confusus</i>	Ch	400–750	Arthr ⁱ	?	14
<i>L. c. constanzae</i>	Ar, Ch	2200–3900	Omn	Oviparous	3,5,6,11,12
<i>L. c. donosoi</i>	Ch	1400–1400	Omn	?	6,15
<i>L. cristiani</i>	Ch	2436–2460	?	?	6,16
<i>L. curicensis</i>	Ch	1520–1950	Arthr	Viviparous	6,17
<i>L. curis</i>	Ch	1520–2100	Arthr	Viviparous	6,17
<i>L. cyanogaster</i>	Ar,Ch	0–800	Arthr	Viviparous	3,6,10
<i>L. dicktracyi</i>	Ar	2600–2800	Arthr	? ⁱ	19
<i>L. elongatus</i>	Ar, Ch	700–3000	Omn	Viviparous	6,9,19,59,60,119
<i>L. exploratorum</i>	Ar	250–700	?	?	9
<i>L. fitzgeraldi</i>	Ar, Ch	2400–3200	?	?	3,4,6,9,137
<i>L. flavipiceus</i>	Ar	2500–2500	?	?	16,20
<i>L. fuscus</i>	Ch	500–2100	Arthr	Oviparous	3,6,27
<i>L. gracilis</i>	Ar	0–1380	Arthr	Oviparous	7,9,10,98
<i>L. gravenhorstii</i>	Ch ^e	100–730	Arthr	Viviparous	3,4,6
<i>L. gununakuna</i>	Ar	500–1000	?	? ^p	78
<i>L. helioderms</i>	Ar	2820–2820	Omn	?	19,39
<i>L. hellmichi</i>	Ch	1785–1785	Arthr	?	6

<i>L. incaicus</i>	Pe	3360–3554	?	?	139
<i>L. isabelae</i>	Ch	2850–3672	Arthr ⁱ	Viviparous	6,37
<i>L. juanortizi</i>	Ch	3800–3800	Omn	?	6,21
<i>L. kriegi</i>	Ar, Ch	950–2000	Omn	Viviparous	6,9
<i>L. lemniscatus</i>	Ar, Ch	0–2100	Arthr	Oviparous	3,4,6,9
<i>L. leopardinus</i>	Ch	1800–3000	Omn	Viviparous	3,5,6,27
<i>L. lorenzmuelleri</i>	Ch	3200–3500	?	Oviparous	3,6,22
<i>L. major</i>	Ar	2500–4000	Omn	Viviparous	9,10,12,39
<i>L. maldonadae</i>	Ch	2600–2800	Arthr ⁱ	Viviparous	6
<i>L. melaniceps</i>	Ch	0–30	Omn	?	6
<i>L. melanopleurus</i>	Ch	? ^k	?	?	6
<i>L. monticola</i>	Ch ^b	1500–2500	Arthr ^r	Oviparous	3,6,23,24
<i>L. moradoensis</i>	Ch	2400–3600	?	?	3,6
<i>L. neuquensis</i>	Ar	1800–2200	Omn	Oviparous	9,16
<i>L. nigromaculatus</i>	Ch	0–250	?	Oviparous	3,6
<i>L. nigroviridis</i>	Ch	500–3370	Omn	Viviparous	3,6,39
<i>L. nitidus</i>	Ch	0–3153	Omn	Oviparous	3,6,10,24
<i>L. pagaburoi</i>	Ar	3000–4700	Omn	Viviparous	7,18,39,80
<i>L. paulinae</i>	Ch	2200–2300	Arthr	?	3,6,11,99
<i>L. petrophilus</i>	Ar	600–1400	Omn	Viviparous	9,10,19,39,93,129
<i>L. p. pictus</i>	Ar,Ch	0–1600	Omn	Viviparous	3,6,9,56
<i>L. p. argentinus</i>	Ar, Ch	800–1500	Arthr	Viviparous	3,6,9
<i>L. p. chiloeensis</i>	Ch	0–100	Arthr	Viviparous	3,6
<i>L. p. codoceae</i>	Ch	0–50	Arthr ⁱ	Viviparous	3,6
<i>L. p. talcanensis</i>	Ch	0–50	Omn	Viviparous	6,25
<i>L. platei</i>	Ch	0–1050	Arthr	Oviparous	3,6
<i>L. pseudolemniscatus</i>	Ch	50–800	Arthr	Oviparous	6,26
<i>L. puna</i>	Ar ^e	3680–4400	Omn	Viviparous	18
<i>L. punmahuida</i>	Ar	2900–3000	Omn	? ^s	83
<i>L. ramirezae</i>	Ar	2820–3300	Omn	Oviparous	7,18,80
<i>L. ramonensis</i>	Ch	2500–3000	Omn	Viviparous	3,6
<i>L. robertmertensi</i>	Ar	690–2600	Arthr	Oviparous	9,10,95
<i>L. sanjuanensis</i>	Ar	3000–3200	Arthr	Oviparous	9,130
<i>L. saxatilis</i>	Ar	700–1100	Arthr	Oviparous	12,90
<i>L. schroederi</i>	Ch	500–2590	Arthr	Viviparous	3,6,24,27
<i>L. septentrionalis</i>	Ch	1200–1200	?	?	6
<i>L. silvai</i>	Ch	140–150	Arthr	Oviparous	6,28
<i>L. tacnae</i>	Ch, Pe	2438–4080	?	? ^h	6,7,18,80
<i>L. talampaya</i>	Ar	1200–1300	?	?	78
<i>L. tandiliensis</i>	Ar	0–300	Arthr	Oviparous	142
<i>L. tenuis</i>	Ar, Ch	0–1800	Arthr	Oviparous	3,6,24,125, 143
<i>L. thermarum</i>	Ar	2400–2500	Arthr	?	16,19,29
<i>L. tregenzai</i>	Ar	2150–2150	Herb	?	16

<i>L. umbrifer</i>	Ar	3190–3490	Omn	? ⁱ	19
<i>L. valdesianus</i>	Ch	1800–3500	Omn	Viviparous	3,6
<i>L. variegatus</i>	Bo	1800–4000	?	? ^h	7,18,80
<i>L. velosoi</i>	Ch	0–750	Arthr	Oviparous	6,30
<i>L. walkeri</i>	Pe	3048–4755	Omn	Viviparous	7,18,80
<i>L. yanalcu</i>	Ar	3730–4305	Arthr	Oviparous	18,39,80
<i>L. z. zapallarensis</i>	Ch	0–800	Omn ^u	Oviparous	3,6
<i>L. z. ater</i>	Ch	0–20	Arthr ^f	Oviparous	3,6
<i>L. z. sieversii</i>	Ch	0–20	Arthr	Oviparous	3,6
signifer series					
Donosolaemus subgenus					
<i>L. archeforus</i>	Ar	610–1600	Omn	Viviparous	9,31,32
<i>L. baguali</i>	Ar	600–700	Arthr	Viviparous	9,32
<i>L. escarchadosi</i>	Ar, Ch	800–1100	Arthr ^f	Viviparous	6,32
<i>L. gallardoi</i>	Ar	1000–1300	Omn	Viviparous	9,32,39
<i>L. kingii</i>	Ar, Ch	0–1340	Omn	Viviparous	3,6,9,32,39
<i>L. sarmientoi</i>	Ar, Ch	0–900	Omn	Viviparous	3,6,9,32
<i>L. scolaroi</i>	Ar, Ch	850–920	Arthr ^f	Viviparous	6
<i>L. somuncurae</i>	Ar	1200–1400	Omn	Viviparous	9,10,32,33
<i>L. tari</i>	Ar	280–1200	Arthr	Viviparous	32,39
<i>L. tristis</i>	Ar	700–1000	Arthr	Viviparous	32
<i>L. uptoni</i>	Ar	600–800	Arthr	Viviparous	33
<i>L. zullyi</i>	Ar, Ch	820–1400	Arthr	Viviparous	32,34
magellanicus line					
<i>L. magellanicus</i>	Ar, Ch	0–1100	Omn	Viviparous	3,6,9,24,35
Vilcunia subgenus					
<i>L. hatcheri</i>	Ar	1000–1200	Herb	Viviparous	9,16,39
<i>L. kolengh</i>	Ar, Ch	1000–1485	Arthr	Viviparous	16,36
<i>L. lineomaculatus</i>	Ar, Ch	780–1500	Omn	Viviparous	3,6,9,10,16
<i>L. silvanae</i>	Ar	1300–1600	Herb	Viviparous	9,16,31
Eulaemus subgenus					
montanus clade					
<i>L. andinus</i>	Ar, Bo ^o , Ch	3500–4900	Omn	Viviparous	6,10,12
<i>L. annectens</i>	Pe	3500–3800	Omn	Viviparous	1,12,40
<i>L. disjunctus</i>	Pe	2950–3300	?	?	12,42
<i>L. dorbignyi</i>	Ar	3000–4400	Omn	Viviparous	12,39
<i>L. eleodori</i>	Ar	2500–3500	?	?	9,43
<i>L. erguetae</i>	Bo, Ch	4300–4570	?	?	6,44
<i>L. etheridgei</i>	Pe	900–1600	?	?	45
<i>L. fabiani</i>	Ch	2300–2450	Omn	Viviparous	6,11,46
<i>L. famatinae</i>	Ar	3700–4200	Omn ^w	Viviparous	9,10
<i>L. filiorum</i>	Ch	2600–3500	Omn	?	47
<i>L. fittkaui</i>	Bo	2900–3900 ^k	?	?	48

<i>L. forsteri</i>	Bo	4700–4700	?	?	49
<i>L. foxi</i>	Ch	3200–3600	Arthr ^f	?	6,11,50
<i>L. griseus</i>	Ar	4500–4600	?	?	12
<i>L. hajeki</i>	Ch	3500–3900	Arthr	?	47
<i>L. huacahuasicus</i>	Ar	4250–4500	Herb	Viviparous	12,51,52
<i>L. insolitus</i>	Pe	2500–3050	?	?	9,45,53
<i>L. jamesi</i>	Ch	3300–4700	Omn	Viviparous	1,3,5,6,15,54
<i>L. melanogaster</i>	Pe	4570–4570	?	?	45
<i>L. montanus</i>	Ar	3900–3900	?	?	12
<i>L. multicolor</i>	Ar, Ch ^c	3600–4400	Omn	Viviparous	6,11,12,39
<i>L. nigriceps</i>	Ar, Ch	3200–5100	Omn	Viviparous	3,5,6,11,12
<i>L. o. orientalis</i>	Ar, Bo	4000–4320	?	Viviparous	10,12
<i>L. o. chlorostictus</i>	Ar, Bo	3720–4450	Herb	?	12,41
<i>L. ortizi</i>	Pe	3700–4100 ^k	?	?	49
<i>L. pachecoi</i>	Bo	4500–4500	?	?	44
<i>L. pantherinus</i>	Bo, Ch, Pe	3650–4600	Omn	Viviparous	3,4,5,6,11
<i>L. patriciaiturrae</i>	Ch	2850–3500	Arthr	Viviparous	6,55
<i>L. pleopholis</i>	Ch	4240–4400	?	Viviparous	6,11,45
<i>L. polystictus</i>	Pe	4500–4800	?	?	40
<i>L. pulcherrimus</i>	Ar	2600–2800	?	?	12,41
<i>L. puritamensis</i>	Ch ^d	2400–3500	Omn	Viviparous	3,6,11
<i>L. robertoi</i>	Ch	2400–3700	Arthr	Viviparous	6,22,43
<i>L. robustus</i>	Pe	4000–4400	?	?	40
<i>L. rosenmanni</i>	Ch	1960–4200	Arthr	Viviparous	6,13
<i>L. ruibali</i>	Ar	2370–3000	Omn	Viviparous	9,39,57
<i>L. scrocchii</i>	Ar	4000–4900	Omn	Viviparous	141
<i>L. signifer</i>	Bo, Ch, Pe	4000–4500	Omn	Viviparous	3,4,5,6,11
<i>L. stoltzmanni</i>	Ch, Pe	3700–4300	Omn	Viviparous	3,5,6,11
<i>L. thomasi</i>	Pe	4450–4450	?	?	45
<i>L. tropidonotus</i>	Pe	3960–3960	?	?	123, 124
<i>L. vallecurensis</i>	Ar	2050–2800	Omn	Viviparous	43,58
<i>L. williamsi</i>	Pe	2900–4200	?	?	40
reichei group					
<i>L. audituvelatus</i>	Ch	2300–3200	Arthr	Viviparous	11,61
<i>L. erroneus</i>	Ch	4130–4130 ^k	?	?	11,62
<i>L. manueli</i>	Ch	700–800	Arthr ^f	?	63
<i>L. poconchilensis</i>	Ch	750–1150	Arthr	?	64
<i>L. reichei</i>	Ch	580–1350	Arthr	Oviparous	1,3,5,63,65
<i>L. torresi</i>	Ch	2100–2500	Arthr	Viviparous	11,63
anomalus clade					
<i>L. anomalus</i>	Ar	380–1975	Arthr	Oviparous	9,12
<i>L. ditadai</i>	Ar	170–400	Arthr	Oviparous	12,121
<i>L. duellmani</i>	Ar	2260–2260	Omn	Viviparous	9,39,43

<i>L. pseudoanomalous</i>	Ar	990–1700	Arthr	Oviparous	9,10,12,39,86,133
<i>boulengeri</i> complex					
<i>fitzingerii</i> clade					
<i>L. abaucan</i>	Ar	1200–1900	Omn	Oviparous	10,12,39,66
<i>L. albiceps</i>	Ar	3060–4020	Herb	Viviparous	10,12,39
<i>L. boulengeri</i>	Ar, Ch	0–2000	Arthr	Oviparous	6,10,12,67
<i>L. calchaqui</i>	Ar	3600–3600	Omn	Oviparous	68,73
<i>L. canqueli</i>	Ar	600–900	Omn ^u	Oviparous	9
<i>L. chacoensis</i>	Ar, Bo, Py	690–820	Arthr	Oviparous	9,10,12,39,69,136
<i>L. chehuachekenk</i>	Ar	817–986	Omn	? ^l	140
<i>L. cinereus</i>	Ar	2270–2288	Arthr	?	70
<i>L. crepuscularis</i>	Ar	2800–3100	?	Viviparous	71
<i>L. cuyanus</i>	Ar	400–2000	Omn	Oviparous	9,10,12,39,85
<i>L. darwinii</i>	Ar	800–3000	Arthr	Oviparous	9,12,39,66,122
<i>L. donosobarrosi</i>	Ar	1000–1000	Arthr	?	9,39,72,92
<i>L. enigmaticus</i>	Ch	4500–4650	?	?	6,72
<i>L. espinozai</i>	Ar	2620–2800	Arthr	Viviparous	73
<i>L. fitzingerii</i>	Ar, Ch	0–1100	Omn ^u	Oviparous	3,4,5,6,9,10
<i>L. goetschi</i>	Ar	0–200	Omn	Oviparous	9,127
<i>L. grosseorum</i>	Ar	600–1200	Arthr	Oviparous	74,39
<i>L. hermannunezi</i>	Ch ^u	1428–1521	?	?	6,72,100
<i>L. inacayali</i>	Ar	898–904	Arthr	?	76
<i>L. irregularis</i>	Ar	3060–5000	Omn	Viviparous	10,39
<i>L. josei</i>	Ar	900–2500	?	?	67
<i>L. koslowskyi</i>	Ar	800–2450	Arthr ^r	Oviparous	10,89
<i>L. laurenti</i>	Ar	800–1100	Omn	Oviparous	39
<i>L. lavillai</i>	Ar	2800–4100	?	Viviparous	77
<i>L. lobo</i>	Ar	914–1041	?	?	72,76
<i>L. mapuche</i>	Ar	610–1029	Arthr ^l	? ^r	72,81
<i>L. martorii</i>	Ar	0–200	Omn	Oviparous	76
<i>L. melanops</i>	Ar	900–2070	Omn ^u	Oviparous	9,94
<i>L. montanezi</i>	Ar	2288–2288	?	?	82
<i>L. morenoi</i>	Ar	740–1023	Omn	?	72,101
<i>L. olongasta</i>	Ar	900–1770	Omn	Oviparous	10,12,39,66,88,13 1
<i>L. ornatus</i>	Ar, Bo, Ch	3500–4800	Omn	Viviparous	3,6,12,39,66,2
<i>L. puelche</i>	Ar	1600–1600	? ^a	? ^r	79
<i>L. quilmes</i>	Ar	1600–3000	Arthr	Oviparous	10,12,39,66
<i>L. rothi</i>	Ar	500–1903	Omn	Oviparous	9,39,72,100,101
<i>L. sagei</i>	Ar	931–1355	?	Oviparous	72,100,101
<i>L. senguer</i>	Ar	500–650	Arthr ^l	?	67
<i>L. tehuelche</i>	Ar	990–1014	Arthr ^l	?	72,76
<i>L. telsen</i>	Ar	800–1400	Arthr	Oviparous	102

<i>L. uspallatensis</i>	Ar	1830–2200	Arthr	Oviparous	9,10,39,66,73,132
<i>L. xanthoviridis</i>	Ar	0–100	Arthr	Oviparous	96,103
wiegmannii clade					
<i>L. arambarensis</i>	Br	0–20	Omn	Oviparous	84
<i>L. azarai</i>	Ar, Py	70–250	Arthr	Oviparous	104,105
<i>L. cranwelli</i>	Bo	370–370	?	?	106
<i>L. lutzae</i>	Br	0–1200	Omn ^x	Oviparous	39,106,107,108
<i>L. multimaculatus</i>	Ar	0–1000	Arthr	Oviparous	9,12,106
<i>L. occipitalis</i>	Br, Uy	0–250	Arthr	Oviparous	10,39,84,106
<i>L. rabinoi</i>	Ar	1800–1800	?	?	9,106
<i>L. riojanus</i>	Ar	500–1000	Arthr	Oviparous	9,87,103,106
<i>L. salinicola</i>	Ar	0–2050	Arthr	Oviparous	10,12,39,106
<i>L. scapularis</i>	Ar	1000–2100	Arthr	Oviparous	10,12,103,106,109
<i>L. wiegmannii</i>	Ar, Br, Uy	0–2600	Arthr	Oviparous	9,10,12,97,106
Phymaturus genus					
flagellifer clade					
<i>P. antofagastensis</i>	Ar	3800–4200	Herb	Viviparous	12
<i>P. flagellifer</i>	Ar, Ch	2500–3500	Herb	Viviparous	1,3,9,113
<i>P. mallimaccii</i>	Ar	3800–4800	Herb	Viviparous	9
<i>P. punae</i>	Ar	3500–3600	Herb	Viviparous	9,39,134
<i>P. roigorum</i>	Ar	1500–2128	?	?	138
<i>P. verdugo</i>	Ar	2700–2900	Herb	Viviparous	115
<i>P. vociferator</i>	Ar ^c , Ch	1700–1750	Herb	Viviparous	114
patagonicus clade					
<i>P. ceii</i>	Ar	1000–1200	Herb	Viviparous	128
<i>P. calcogaster</i>	Ar	680–680	Herb	Viviparous	110,111
<i>P. excelsus</i>	Ar	1141–1141	Herb ^f	Viviparous	113
<i>P. indistinctus</i>	Ar	800–900	Herb	Viviparous	9,116
<i>P. nevadoi</i>	Ar	1700–2000	?	Viviparous	9,117
<i>P. patagonicus</i>	Ar	500–1800	Herb	Viviparous	9,60,112,118,135
<i>P. payunia</i>	Ar	1800–2000	Herb	Viviparous	9,116
<i>P. somuncurensis</i>	Ar	1200–1400	Herb	Viviparous	9,116
<i>P. spectabilis</i>	Ar	1100–1200	Herb ^f	Viviparous	113
<i>P. spurcus</i>	Ar	1230–1230	Herb ^f	Viviparous	112,113
<i>P. tenebrosus</i>	Ar	900–1100	Herb ^f	Viviparous	113
<i>P. zapalensis</i>	Ar	1100–1200	Omn	Viviparous	9,116

¹Peters & Donoso-Barros (1970); ²Etheridge (1995); ³Donoso-Barros (1966a), ⁴(1970a), ⁵(1970b); ⁶Pincheira-Donoso & Núñez (2005); ⁷Lobo & Espinoza (1999); ⁸Pincheira-Donoso (2003b); ⁹Cei (1986); ¹⁰Schulte *et al.* (2000); ¹¹Pincheira-Donoso (2005); ¹²Cei (1993); ¹³Núñez & Torres-Mura (1992); ¹⁴Núñez & Pincheira-Donoso (2006); ¹⁵Veloso *et al.* (1982); ¹⁶Pincheira-Donoso & Sclaro (2007); ¹⁷Núñez (1996); ¹⁸Lobo & Espinoza (2004); ¹⁹Espinoza & Lobo (2003); ²⁰Cei & Videla (2003a); ²¹Young-Downey & Moreno (2001); ²²Cortés *et al.* (1995); ²³Fuentes & Ipinza (1979); ²⁴Jaksic (1998); ²⁵Urbina & Zúñiga (1977); ²⁶Lambrot & Ortiz (1990); ²⁷Fox & Shipman (2003); ²⁸Ortiz (1989); ²⁹Videla & Cei (1996); ³⁰Núñez *et al.* (2001); ³¹Donoso-Barros & Cei (1971); ³²Sclaro & Cei (1997), ³³(2006); ³⁴Cei & Sclaro (1996); ³⁵Jaksic & Schwenk (1983); ³⁶Abdala & Lobo (2006b); ³⁷Pincheira-Donoso & Núñez (2007); ³⁸Pflaumer (1944);

³⁹Espinoza *et al.* (2004); ⁴⁰Laurent (1992); ⁴¹(1991); ⁴²(1990); ⁴³Pincheira-Donoso & Núñez (2003); ⁴⁴Laurent (1995b); ⁴⁵(1998); ⁴⁶Escobar *et al.* (2001); ⁴⁷Pincheira-Donoso & Ramírez (2005); ⁴⁸Laurent (1986), ⁴⁹(1982a); ⁵⁰Núñez *et al.* (2000); ⁵¹Ramírez-Pinilla (1991); ⁵²Halloy & Laurent (1988); ⁵³Cei & Péfaur (1982); ⁵⁴Donoso-Barros (1958b); ⁵⁵Navarro & Núñez (1993); ⁵⁶Ibargüengoytía & Cussac (1996); ⁵⁷Marcus & Laurent (1994); ⁵⁸Pereyra (1992); ⁵⁹Ibargüengoytía & Cussac (1998); ⁶⁰Ibargüengoytía (2005); ⁶¹Núñez & Yáñez (1983), ⁶²(1984a); ⁶³Núñez *et al.* (2003); ⁶⁴Valladares (2004); ⁶⁵Donoso-Barros (1958a); ⁶⁶Etheridge (1993); ⁶⁷Abdala (2005a); ⁶⁸Lobo & Kretzschmar (1996); ⁶⁹Cruz & Ramírez-Pinilla (1996); ⁷⁰Monguillot *et al.* (2006); ⁷¹Abdala & Díaz-Gomez (2006); ⁷²Pincheira-Donoso *et al.* (2007b); ⁷³Abdala (2005b); ⁷⁴Etheridge (2001); ⁷⁵Pincheira-Donoso *et al.* (2007a); ⁷⁶Abdala (2003); ⁷⁷Abdala & Lobo (2006a); ⁷⁸Avila *et al.* (2004), ⁷⁹(2007); ⁸⁰Martínez-Oliver & Lobo (2002); ⁸¹Abdala (2002); ⁸²Cabrera & Monguillot (2006); ⁸³Avila *et al.* (2003); ⁸⁴Verrastro *et al.* (2003); ⁸⁵Etheridge & Espinoza (1997); ⁸⁶Acosta & Murúa (1997), ⁸⁷(2000); ⁸⁸Acosta *et al.* (1996b); ⁸⁹Aun & Martori (1998); ⁹⁰Avila (1995), ⁹¹(1996a), ⁹²(1996b), ⁹³(1996c); ⁹⁴Avila & Morando (1998); ⁹⁵Avila & Lobo (1999); ⁹⁶Cruz *et al.* (1999); ⁹⁷Gudynas (1981); ⁹⁸Morando & Avila (1999); ⁹⁹Scolaro (1993); ¹⁰⁰Pincheira-Donoso (2003a); ¹⁰¹Etheridge & Christie (2003); ¹⁰²Cei & Scolaro (1999); ¹⁰³Cruz *et al.* (2005); ¹⁰⁴Tedesco *et al.* (1992); ¹⁰⁵Avila (2003); ¹⁰⁶Etheridge (2000); ¹⁰⁷Rocha (1986), ¹⁰⁸(1989); ¹⁰⁹Ramírez-Pinilla (1994); ¹¹⁰Scolaro & Cei (2003); ¹¹¹Scolaro *et al.* (2005); ¹¹²Lobo & Quinteros (2005a), ¹¹³(2005b); ¹¹⁴Pincheira-Donoso (2004a); ¹¹⁵Cei & Videla (2003b); ¹¹⁶Cei & Castro (1973); ¹¹⁷Cei & Roig (1975); ¹¹⁸Avila *et al.* (1999); ¹¹⁹Bottari (1975b), ¹²⁰(1975c); ¹²¹Cabrera (1992); ¹²²de Viana *et al.* (1994b); ¹²³Boulenger (1902); ¹²⁴Núñez (2004); ¹²⁵Christie & Sage (2002); ¹²⁶Scolaro (2006); ¹²⁷Cei & Scolaro (2003); ¹²⁸Scolaro & Ibargüengoytía (2007); ¹²⁹see also Avila & Morando (2002); ¹³⁰Marinero *et al.* (2005); ¹³¹Canovas *et al.* (2006); ¹³²Laspiur & Acosta (2006); ¹³³Villavicencio *et al.* (2007); ¹³⁴Boretto *et al.* (2007); ¹³⁵see also Chiszar *et al.* (1999); ¹³⁶Gonzales *et al.* (2006); ¹³⁷Avila & Soto (1997); ¹³⁸Lobo & Abdala (2007); ¹³⁹Lobo *et al.* (2007); ¹⁴⁰Avila *et al.* (2008); ¹⁴¹Quinteros *et al.* (2008); ¹⁴²Vega *et al.* (2008); ¹⁴³Pincheira-Donoso (2008).

^aCei (1986), Cei & Videla (2002) and Chebez *et al.* (2005) suggest that this species might occur in Argentina, however, no definitive evidence supports these claims; ^bChebez *et al.* (2005) listed this species for Argentina, however, no clear proofs have yet been provided; ^csee observations provided for this species in the main text of this work; ^dThis species might be distributed in NW Argentina (C.S. Abdala, com. pers.); ^eSince we include *Phymaturus dorsimaculatus* in the synonymy of *P. vociferator*, this last species would also occur in Argentina (see Pincheira-Donoso 2004a; Lobo & Quinteros 2005b); ^fNúñez *et al.* (2000) suggested that this species would be viviparous; ^gPincheira-Donoso (2005) and Pincheira-Donoso & Núñez (2005) suggested that the Chilean *L. puna* populations indicated by Lobo & Espinoza (2004) are *L. barbarae*, therefore, *L. puna* would be endemic to Argentina; ^hLobo & Espinoza (2004) suggest that this species might be viviparous; ⁱEspinoza & Lobo (2003) predicted that this species might be viviparous; ^jInferred from limited preliminary data; ^kThere is no clear information on the exact type locality of this species; ^lSee Lobo & Quinteros's (2005b) observations for the genus *Phymaturus*; ^mAccording to Donoso-Barros (1966a) this species would be viviparous, however, Cei (1986) referred a series of direct observations on *L. bibronii* laying eggs; ⁿA sample collected by C.S. Abdala (com. pers.) in the Neuquén Province, Argentina, is assignable to *L. hermannunezi*; ^oThis species has been documented in Bolivia under the name *L. schmidtii* (Fugler 1989; Pincheira-Donoso 2002b); ^pAvila *et al.* (2004) suggest that this species might be viviparous; ^qAvila *et al.* (2007) suggest that this species might be omnivorous; ^rAvila *et al.* (2007) suggest that this species might be oviparous; ^sAvila *et al.* (2003) suggest that this species might be viviparous; ^tAbdala (2002) suggests that this species might be oviparous; ^uAccording to Espinoza *et al.* (2004) this species would be herbivorous; ^vAccording to Espinoza *et al.* (2004) this species would be omnivorous; ^wAccording to Espinoza *et al.* (2004) this species would be insectivorous; ^xRocha (1992c) reported cannibalism in this species; ^yPincheira-Donoso (2000) observed intraspecific predation of adults on juveniles in this species; ^zAvila & Belver (2000) reported saurophagy in this species; ^{z'}Avila *et al.* (2008) suggest that this species might be oviparous.

***Liolaemus* genus**

In the recent decades, Laurent (1983, 1985b, 1992) was the first author that formulated an explicit and powerful hypothesis on the phylogenetic relationships of higher groups among *Liolaemus* lizards. After performing a series of statistical analyses on previously overlooked and underestimated morphological traits, he found that these lizards can be separated into two major groups, one mainly Andean-occidental and one Andean-oriental. Morphologically, the occidental group, called by Laurent (1985b, 1992) "Chilean group", includes species characterized by narrow supralabial scales, usually four or fewer, the last one elongated and

upturned in its posterior margin, and with a low number of precloacal glands (= preanal pores), usually four or fewer (see Etheridge 1995). This group of taxa was placed by Laurent (1985b, 1992) into the subgenus *Liolaemus (sensu stricto)*. Species belonging to the oriental group, called “Argentinean group”, exhibit short supralabial scales, usually five or more, the last one is not upturned posteriorly, a high number of precloacal glands, usually five or more (up to 12), the puboischiotibialis muscle (flexor tibialis internus *vide* Abdala, V. *et al.* 2006) hypertrophied, and a conspicuous sharp, blade-like process on the tibia (see Etheridge 1995; also Núñez *et al.* 2000). This complex of species was recognized under the subgenus *Eulaemus* (Laurent 1992; see also Etheridge 1995). More recently, additional morphological evidence led Etheridge (1995) to support this classification model, who also recognized that a series of species grouped into the *Eulaemus* subgenus exhibit a unique patch of enlarged scales on the posterior surface of the thigh. These lizards were then recognized as the *boulengeri* complex (see Cei 1993; Etheridge 1995, 2000; Halloy *et al.* 1998; Pincheira-Donoso & Núñez 2005; Abdala 2007, for details). Remarkably, these groups of species have remained largely accepted, and more importantly, have recently been supported by phylogenetic hypotheses constructed on both morphological and molecular evidence (*e.g.* Etheridge 2000; Schulte *et al.* 2000; Espinoza *et al.* 2004; Cruz *et al.* 2005; Abdala 2007).

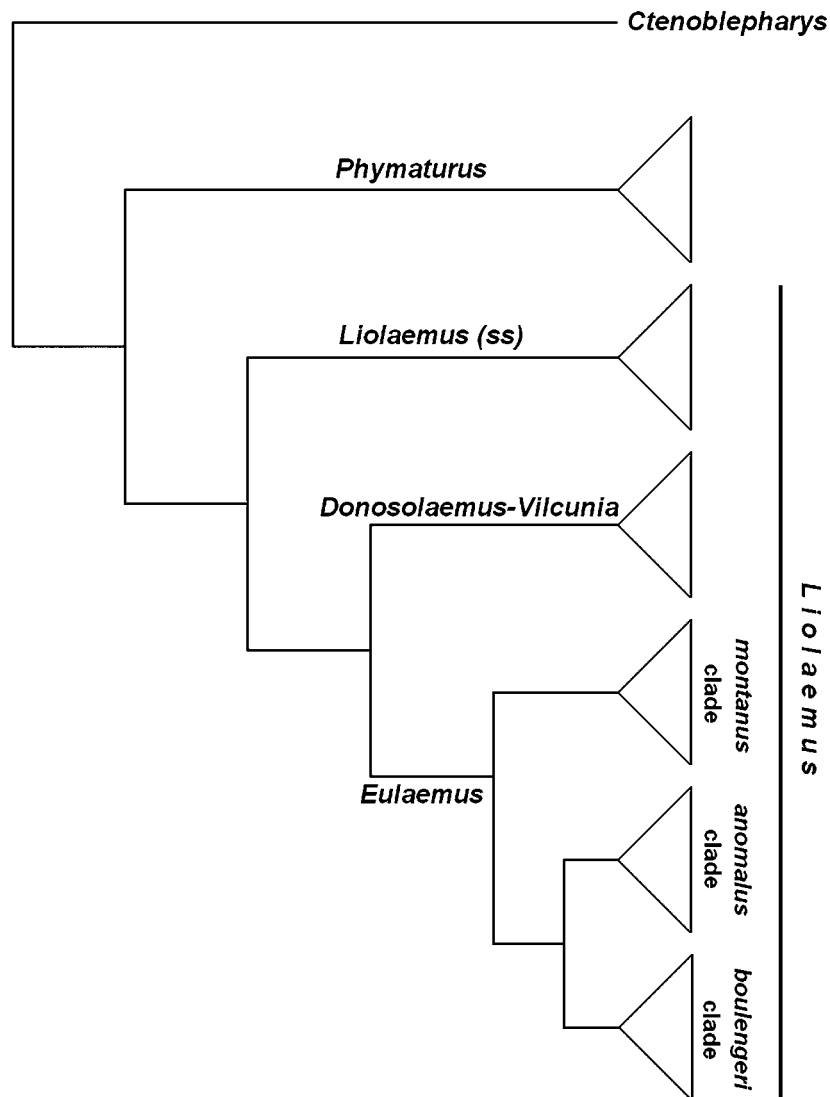


FIGURE 2. Phylogenetic relationships between the major clades forming the family Liolaemidae. The phylogenetic structure of the tree is primarily based on Schulte *et al.* (2000, 2004), Espinoza *et al.* (2004) and Cruz *et al.* (2005). The line *magellanicus* is not shown in this figure (it is part of the *Donosolaemus-Vilcunia* clade), but see figure 4 for details on its phylogenetic position within the *Liolaemus* genus.

Even though Laurent (1983, 1985b, 1992) and Etheridge (1995) reported pioneer evidence to hypothesize relationships among higher-level groups within *Liolaemus*, the first explicit phylogenetic study focusing on the relationships among species within these clades was only recently published (Schulte *et al.* 2000; see also Schulte *et al.* 1998). Schulte *et al.*'s (2000) molecular phylogeny supported substantially the hypothesis of a major event of *Liolaemus* diversification into two main clades, the subgenus *Liolaemus* and the series *signifier* (indicated by Schulte *et al.* as subgenus *Eulaemus*). In addition, this phylogenetic study provided the first empirical evidence to test the hypothesis that austral *Liolaemus* species recognized as members of the groups *archeforus* and *kingii* (Scolaro & Cei 1997) may represent primitive Patagonian states in the evolutionary history of this genus (Laurent 1985b; see also Cei 1986). According to Laurent (1985b), morphological peculiarities observed in these austral species would be indicative of their ancestral position within *Liolaemus* (see also Etheridge 1995). However, Schulte *et al.*'s (2000) results rejected such claims. Indeed, this phylogeny revealed that the *archeforus-kingii* line (i.e. subgenus *Donosolaemus*) would be related to the *Eulaemus* subgenus, and therefore, that it originated after the first main diversification event experienced by this genus, during the Tertiary (e.g. Pincheira-Donoso & Núñez 2003). Later phylogenetic studies have provided, in general, similar results in relation to the relationships among subgenera, among clades within subgenera (e.g. groups *alticolor*, *elongatus-kriegi*, *boulengeri*), and among series of species (e.g. Avila *et al.* 2004; Espinoza *et al.* 2004; Morando *et al.* 2004; Cruz *et al.* 2005; Abdala 2007; Pincheira-Donoso *et al.* 2007a; see also Lobo 2001; Díaz & Lobo 2006, for morphological based phylogenies).

In spite of an increasing number of studies exploring relationships among *Liolaemus* taxa published over the last few years, many aspects of the phylogeny of this lineage remain still controversial. For example, the position in the phylogenetic structure of the genus *Liolaemus* of *L. pseudoanomalus*, a species recognized by Cei (e.g. 1986, 1993; see also Laurent 1984a; Núñez & Yáñez 1984b) as a member of the *anomalus* group, tends to show substantial discordance among different studies (e.g. Schulte *et al.* 2004; Espinoza *et al.* 2004; Abdala 2007; Pincheira-Donoso *et al.* 2007a). More importantly, the phylogenetic relationships between a large number of *Liolaemus* species remain to be studied for the first time.

***Phymaturus* genus**

Most phylogenetic information available on *Phymaturus* species has commonly been provided in studies focusing on other lizard clades (often *Liolaemus*), in which a limited number of taxa belonging to this genus are used as outgroups (e.g. Schulte *et al.* 2000; Valladares *et al.* 2002; Díaz & Lobo 2006; Pincheira-Donoso *et al.* 2007a). The first phylogenetic hypothesis to include a proportionally large number of *Phymaturus* species was recently developed by Espinoza *et al.* (2004). In a comparative analysis exploring the evolution of trophic niche in Liolaemidae lizards, these authors reconstructed, on the basis of both morphological and molecular data, the phylogenetic relationships between seven *Phymaturus* taxa (when only 12 of the current 19 species were recognized; see below). A major achievement of Espinoza *et al.*'s (2004) results was that they provided the first support to the hypothesis that these robust lizards are grouped into two main clades (Fig. 5), one primarily austral and Patagonian (*patagonicus* clade) and one essentially boreal and Andean (*flagellifer* clade = *palluma* clade; see Etheridge & Savage 2003 and Cei & Scolaro 2006, for nomenclatural details) as had previously been proposed by Etheridge (1995; see also Cei & Castro 1973; Cei 1986).

More recently, Lobo & Quinteros (2005b) presented the only known explicit study focused on the phylogenetic relationships within the genus *Phymaturus* (Fig. 5). Lobo & Quinteros's (2005b) phylogenetic hypothesis, entirely based on morphological data, incorporated the analysis of 15 *Phymaturus* species, when a total of 17 were known (in the same work, these authors provided the description of four new taxa; see below for details). Only *P. calcogaster* (Scolaro & Cei 2003), *P. verdugo* (Cei & Videla 2003b) and *P. vociferator* (Pincheira-Donoso 2004a) were excluded from that study (although *P. dorsimaculatus* – included in that study – and *P. vociferator* appear to be conspecific; see below). Even though Lobo & Quinteros's (2005b) phylogeny differs importantly in some aspects from Espinoza *et al.*'s (2004) tree (Fig. 5), it also supported substan-

tially the hypothesis of two major clades forming the genus *Phymaturus*. In both phylogenetic hypotheses, the same Patagonian and Andean groups previously mentioned were found as independent evolutionary lines, consisting of the same subset of species (Espinoza *et al.* 2004; Lobo & Quinteros 2005b; Fig. 4).

These recent attempts to clarify the phylogenetic relationships among *Phymaturus* species represent substantial progress for future phylogenetic-based systematic and evolutionary research (*e.g.* see Wiens 2004, for details on the value of morphological based phylogenies). Nevertheless, it is also worth noting that further studies are still needed to provide additional evidence on this matter. Indeed, different authors have recognized some of the limitations that morphological-based phylogenies may imply (Pimentel & Riggins 1987; Campbell & Frost 1993; Thiele 1993; Pleijel 1995; Wiens 1995, 1998, 2001; Strong & Lipscomb 1999; Scotland *et al.* 2003). For example, whereas delimitation and definition of morphological character states are difficult and sometimes arbitrary, this is not a problem for molecular variables, whose delimitation and definition is practically automatic (Wiens 2001). Consequently, the elaboration of *Phymaturus* phylogenetic hypotheses based on molecular dataset are desirable.

In this work, we recognize within the Liolaemidae family the main clades and groups detailed in figs. 2, 3, 4 and 5, and as follows

Family **Liolaemidae** Frost & Etheridge 1989 (family status according to Frost *et al.* 2001)

Genus *Ctenoblepharys* Tschudi

Genus *Liolaemus* Wiegmann

Subgenus *Liolaemus* Wiegmann (clade *chiliensis*)

Series *signifer* (see Pincheira-Donoso & Núñez 2005; also Etheridge 1995; Schulte *et al.* 2000; Espinoza *et al.* 2004)

Subgenus *Donosolaemus* Pincheira-Donoso & Núñez (2005) (clade *archeforus-kingii*)

Line *magellanicus*

Subgenus *Vilcunia* Donoso-Barros & Cei (1971) (clade *lineomaculatus*)

Subgenus *Eulaemus* Girard (Schulte *et al.* 2000; Pincheira-Donoso & Núñez 2005)

Clade *montanus* (Etheridge 1995; Schulte *et al.* 2000)

Group *reichei* (Núñez *et al.* 1998, 2003)

Clade *anomalus* (see Espinoza *et al.* 2004; Abdala 2007)

Complex *boulengeri* (Etheridge 1995, 2000)

Clade *fitzingerii* (Etheridge 1995; Espinoza *et al.* 2004; Pincheira-Donoso & Núñez 2005)

Clade *wiegmannii* (Etheridge 1995, 2000; Cruz *et al.* 2005)

Genus *Phymaturus* Gravenhorst

Clade *flagellifer* (Etheridge 1995; Lobo & Quinteros 2005b; Cei & Scolaro 2006)

Clade *patagonicus* (Etheridge 1995; Lobo & Quinteros 2005b)

Systematic account of the family Liolaemidae

Family Liolaemidae Frost & Etheridge 1989

Genus *Ctenoblepharys* Tschudi

Ctenoblepharys Tschudi 1845: 158 (type species: *Ctenoblepharys adpersa* Tschudi 1845).

Ctenoblepharys adpersa Tschudi

Ctenoblepharys adpersa Tschudi 1845: 158 (type locality: Hacienda Acaray, Huacho, Peru); Mertens 1956: 320; Pear-

son & Ralph 1978: 21; Tiedemann & Häupl 1980: 17; Etheridge 1995: 6; Etheridge & Espinoza 2000: 4; Sura 2005: 428.

Ctenoblepharis adspersus Boulenger 1885a: 136; Peters & Donoso-Barros 1970: 103.

Ctenoblepharis adspersa Vanzolini 1986: 8; Carrillo de Espinoza & Icochea 1995: 9.

Genus *Liolaemus* Wiegmann

Liolaemus Wiegmann 1834c: 18 (type species: *Calotes chiliensis* Lesson 1830).

Subgenus *Liolaemus (sensu stricto)* Wiegmann

Liolaemus Wiegmann 1834c: 18 (type species: *Calotes chiliensis* Lesson 1830).

Liodeira Fitzinger 1843: 74 (type species: *Proctotretus pictus* Duméril & Bibron 1837).

Leiodera Gray 1845: 211 (substitute name for *Liodeira*).

Chrysosaurus Gay 1848 (in Guichenot 1848): 47 (type species: *Chrysosaurus morio* Gay 1848).

Rhytidodeira Girard 1858a: 198 (type species: *Proctotretus bibronii* Bell 1843; designated by Donoso-Barros 1970b).

Liolaemus alticolor Barbour

Liolaemus lativittatus Werner 1904: 8 (?) (probably conspecific *vide* Müller & Hellmich 1938a; Donoso-Barros 1966a; see also Etheridge & Espinoza 2000).

Liolaemus alticolor Barbour 1909: 51 (type locality: Tiahuanacu, Bolivia); Burt & Burt 1931: 273; Laurent 1992: 30; Núñez & Jaksic 1992: 69; Etheridge 1995: 33; Carrillo de Espinoza & Icochea 1995: 9; Etheridge & Espinoza 2000: 4; Escobar *et al.* 2001: 1679; Martínez-Oliver & Lobo 2002: 53; Lobo & Espinoza 2004: 852; Chebez *et al.* 2005: 28; Sura 2005: 428; Díaz & Lobo 2006: 264.

Liolaemus alticolor alticolor Hellmich 1961: 2; Donoso-Barros 1964: 7, 1966a: 198, 1970a: 178, 1970b: 88; Vanzolini 1986: 12; Veloso & Navarro 1988: 499; Baudoin *et al.* 1990: 429.

Liolaemus (Liolaemus) alticolor Pincheira-Donoso & Núñez 2005: 193.

Observations: Diverse aspects of the systematics, geographical distribution and reproductive biology of this species and its related taxa have largely been debated. See Lobo & Espinoza (1999, 2004), Pincheira-Donoso (2005), Pincheira-Donoso & Núñez (2005) and Lobo *et al.* (2007) for recent discussions and additional details.

Liolaemus araucaniensis Müller & Hellmich

Liolaemus altissimus araucaniensis Müller & Hellmich 1932b: 205 (type locality: Villarrica Volcano, 1400 m, Araucanía Region, Chile); Hellmich 1934: 72; Donoso-Barros 1966a: 305, 1970a: 180, 1970b: 89; Webb & Greer 1969: 193; Veloso & Navarro 1988: 500; Núñez & Jaksic 1992: 70; Pincheira-Donoso 2003a: 284.

Liolaemus bibronii Donoso-Barros 1974a: 287 (see Pincheira-Donoso 2003a, b, d).

Liolaemus bellii araucaniensis Vanzolini 1986: 13; Laurent 1992: 31; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5.

Liolaemus cf. *hernani* Schulte *et al.* 2004: 410.

Liolaemus araucaniensis Pincheira-Donoso 2003b: 5; Sclaro 2006: 27.

Liolaemus (Liolaemus) araucaniensis Pincheira-Donoso & Núñez 2005: 196.

L[iolaemus] araucanensis Díaz & Lobo 2006: 265.

Liolaemus atacamensis Müller & Hellmich

Liolaemus nigromaculatus atacamensis Müller & Hellmich 1933b: 129 (type locality: Atacama, NE Copiapó, Atacama Region, Chile); Hellmich 1934: 50; Donoso-Barros 1966a: 252, 1970a: 189, 1970b: 96; Veloso & Navarro 1988: 508.

Liolaemus atacamensis Simonetti & Núñez 1986: 474; Laurent 1992: 30; Núñez & Jaksic 1992: 70; Etheridge 1995: 33; Etheridge & Espinoza 2000: 4; Lobo 2001: 139; Sura 2005: 428; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) atacamensis Pincheira-Donoso & Núñez 2005: 390.

***Liolaemus austromendocinus* Cei**

Liolaemus austromendocinus Cei 1973c: 1, 1974b: 224 (type locality: 70 km S Nihuil Lake, 1600 m, Mendoza Province, Argentina), 1986: 246; Cei & Roig 1976: 69; Vanzolini 1986: 12; Laurent 1992: 30; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Lobo 2001: 139; Avila *et al.* 2003: 534; Chebez *et al.* 2005: 29; Sura 2005: 428; Díaz & Lobo 2006: 264; Scolaro 2006: 28.

***Liolaemus barbarae* Pincheira-Donoso & Núñez**

Liolaemus alticolor walkeri Hellmich 1961: 5; Donoso-Barros 1964: 7, 1966a: 201, 1970a: 179 (in part), 1970b: 88; Veloso & Navarro 1988: 499.

Liolaemus walkeri Laurent 1992: 33 (in part); Núñez & Jaksic 1992: 76.

Liolaemus puna Lobo & Espinoza 2004: 857 (in part, see Pincheira-Donoso & Núñez 2005).

Liolaemus (Liolaemus) barbarae Pincheira-Donoso & Núñez 2005: 201 (type locality: On the Azufrera Road to Licanabur Volcano, 3000 m, E San Pedro de Atacama, Antofagasta Region, Chile); Pincheira-Donoso 2005: 120.

***Liolaemus bellii* Gray**

Leiolaemus bellii Gray 1845: 212 (type locality: San Francisco River, 2700 m, nearby Cerro El Plomo, Los Andes range of Santiago, Metropolitan Region, Chile); Núñez 2004: 30; Schulte *et al.* 2004: 410; Sura 2005: 428.

Proctotretus modestus Philippi 1860: 166.

Liolaemus chilensis Boulenger 1885a: 141 (in part).

Liolaemus altissimus altissimus Müller & Hellmich 1932b: 197; Burt & Burt 1933: 30; Donoso-Barros & Candiani 1950: 489; Donoso-Barros 1966a: 299, 1970a: 180, 1970b: 89; Veloso & Navarro 1988: 499; Núñez & Jaksic 1992: 70

Liolaemus bellii altissimus Vanzolini 1986: 12.

Liolaemus bellii bellii Laurent 1992: 31; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5.

Liolaemus altissimus Pflaumer 1944: 113; Bertonatti 1994: 169; Díaz & Lobo 2006: 265.

Liolaemus bellii Schulte *et al.* 2000: 78; Escobar *et al.* 2001: 1679; Labra *et al.* 2001: 51; Fox & Shipman 2003: 321.

Liolaemus (Liolaemus) bellii Pincheira-Donoso & Núñez 2005: 178.

***Liolaemus bibronii* (Bell)**

Proctotretus bibronii Bell 1843: 6 (type locality: Puerto Deseado, Santa Cruz Province, Argentina).

Leiolaemus bibronii Gray 1845: 212.

Rhytidodeira bibroni Girard 1858a: 198, 1858b: 352.

Liolaemus bitaeniatus Vanzolini 1986: 13 (in part).

Liolaemus bibronii Boulenger 1885a: 146; Koslowsky 1896: 445; Andersson 1898: 461; Burt & Burt 1933: 31; Hellmich 1934: 111, 1960: 37; Liebermann 1939: 69; Donoso-Barros & Codoceo 1962: 16; Donoso-Barros 1966a: 204, 1970a: 180, 1970b: 89; Daciuk 1968: 275; Cei 1973b: 459, 1986: 256; Cei & Roig 1976: 69; Péfaur & Duellman 1980: 45; Christie 1984a: 526; Vanzolini 1986: 13; Laurent 1992: 31; Núñez & Jaksic 1992: 70; Etheridge 1995: 33; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 5; Lobo 2001: 139; Pincheira-Donoso 2004b: 13; Chebez *et al.* 2005: 29; Scolaro 2005: 27; Sura 2005: 428; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) bibronii Pincheira-Donoso & Núñez 2005: 207.

***Liolaemus bisignatus* (Philippi)**

Proctotretus bisignatus Philippi 1860: 166 (type locality: Caldera, Atacama Desert, Atacama Region, Chile).

Liolaemus nigromaculatus bisignatus Müller & Hellmich 1933b: 132; Hellmich 1934: 53; Donoso-Barros 1966a: 170; 1970a: 189, 1970b: 96.

Liolaemus nigromaculatus copiapensis Müller & Hellmich 1933b: 135 (synonym *fide* Pincheira-Donoso & Núñez 2005); Hellmich 1934: 55 (in part); Donoso-Barros 1970a: 189 (in part).

Liolaemus nigromaculatus copiapensis Donoso-Barros 1966a: 255 (*nomen emendatum*; in part); 1970b: 96 (in part).

Liolaemus bisignatus Ortiz 1981: 251; Vanzolini 1986: 13; Veloso & Navarro 1988: 500; Laurent 1992: 31; Núñez & Jaksic 1992: 71; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Escobar *et al.* 2001: 1679; Lobo 2001: 139; Sura 2005: 428; Díaz & Lobo 2006: 264.

Liolaemus copiapensis Ortiz 1981: 251 (in part); Vanzolini 1986: 13 (in part); Laurent 1992: 31 (in part); Etheridge 1995: 33 (in part); Etheridge & Espinoza 2000: 5 (in part); Lobo 2001: 139 (in part); Sura 2005: 428 (in part); Díaz & Lobo 2006: 264 (in part).

Liolaemus copiapensis Veloso & Navarro 1988: 501 (in part); Núñez & Jaksic 1992: 71 (in part).

Liolaemus (Liolaemus) bisignatus Pincheira-Donoso & Núñez 2005: 394.

***Liolaemus bitaeniatus* Laurent**

Liolaemus bitaeniatus Laurent 1984b: 275 (type locality: La Angostura, Tafi del Valle, 1900 m, Tucumán Province, Argentina); Cei 1986: 256, 1993: 286; Ramírez-Pinilla 1995: 256; Espinoza & Lobo 1996: 65; Schulte *et al.* 2000: 78; Lobo 2001: 139; Martínez-Oliver & Lobo 2002: 50; Lobo & Espinoza 2004: 852; Chebez *et al.* 2005: 29; Sura 2005: 428; Díaz & Lobo 2006: 264; Díaz 2007: 114.

***Liolaemus brattstroemi* Donoso-Barros**

Liolaemus cyanogaster brattstroemi Donoso-Barros 1961b: 486 (type locality: Lechagua Forests, Chiloé Island, Los Lagos Region, Chile), 1966a: 187, 1970a: 182, 1970b: 90; Vanzolini 1986: 13; Veloso & Navarro 1988: 502; Laurent 1992: 31; Núñez & Jaksic 1992: 72; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Lobo 2001: 139.

Liolaemus (Liolaemus) brattstroemi Pincheira-Donoso & Núñez 2005: 343.

[Liolaemus] brattstroemi Díaz & Lobo 2006: 264.

***Liolaemus buergeri* Werner**

Liolaemus buergeri Werner 1907 (*in* Bürger 1907): 6 (type locality: El Planchón, Los Andes of Curicó, El Maule Region, Chile); Burt & Burt 1933: 31; Müller & Hellmich 1935: 122; Pflaumer 1944: 113; Hellmich 1950: 138; Donoso-Barros 1966a: 287, 1970a: 180, 1970b: 89; Cei & Roig 1976: 69; Christie 1984a: 526; Cei 1986: 229; Vanzolini 1986: 13; Laurent 1992: 31; Núñez & Jaksic 1992: 71; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Lobo 2001: 139; Pincheira-Donoso 2001: 8; Avila *et al.* 2003: 534; Chebez *et al.* 2005: 29; Sura 2005: 428; Scolaro 2006: 29.

Liolaemus bürgeri Donoso-Barros 1947: 107.

Liolaemus (Liolaemus) buergeri Pincheira-Donoso & Núñez 2005: 282.

[Liolaemus] buergeri Díaz & Lobo 2006: 264.

***Liolaemus ceii* Donoso-Barros**

Liolaemus ceii Donoso-Barros 1971a: 50 (type locality: Lonco Luan, Neuquén Province, Argentina); Cei 1973c: 1, 1974c: 183, 1986: 231; Vanzolini 1986: 13; Laurent 1992: 31; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Chebez *et al.* 2005: 30; Díaz & Lobo 2006: 264; Scolaro 2005: 30; Sura 2005: 428.

Liolaemus cf. ceii Núñez & Jaksic 1992: 71.

Liolaemus (Liolaemus) ceii Pincheira-Donoso & Núñez 2005: 286.

***Liolaemus chaltin* Lobo & Espinoza**

Liolaemus chaltin Lobo & Espinoza 2004: 853 (type locality: Provincial Road 71, 4.2 km W of Abra Pampa [22°42'24.4"S, 65°43'12.4"W], 3360 m, Cochinos Department, Jujuy Province, Argentina); Lobo & Espinoza 2004: 852; Sura 2005: 428; Díaz & Lobo 2006: 264; Díaz 2007: 113.

***Liolaemus chiliensis* (Lesson)**

Calotes chiliensis Lesson 1830: 36 (type locality: Talcahuano, Concepción Province, Bío Bío Region, Chile).

Tropidurus chilensis Wiegmann 1834a: 233, 1835: 290.

Tropidurus olivaceus (chiliensis var. B) Wiegmann 1834b: 268.

Tropidurus chiliensis Wiegmann 1834c: 18.

Proctotretus chiliensis Duméril & Bibron 1837: 269; Duméril & Duméril 1851: 71.

Proctotretus chilensis Bell 1843: 2; Guichenot 1848: 24; Joseph 1930: 282.

Liolaemus olivaceus Fitzinger 1843: 74 (in part).

Liolaemus chiliensis Fitzinger 1843: 75; Boulenger 1885a: 141; Burt & Burt 1931: 134; Pflaumer 1944: 113; Donoso-Barros 1970a: 181, 1970b: 89; Webb & Greer 1969: 193; Christie 1984a: 526; Cei 1986: 250; Vanzolini 1986: 13; Veloso & Navarro 1988: 501; Brygoo 1989: 25; Lamborot & Alvarez-Sarret 1989: 393; Laurent 1992: 31; Núñez & Jaksic 1992: 71; Pereyra *et al.* 1992: 277; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Escobar *et al.* 2001: 1679; Lobo 2001: 139; Chebez *et al.* 2005: 30; Sura 2005: 428; Díaz & Lobo 2006: 264; Scolaro 2006: 30.

Liopera gravenhorsti Gray 1845: 211 (in part).

Liolaemus (Liolaemus) chilensis Girard 1858b: 340.

Liolaemus chilensis Boettger 1893: 61; Berg 1898: 4; Donoso-Barros 1966a: 170.

Liolaemus (Liolaemus) chiliensis Pincheira-Donoso & Núñez 2005: 231.

***Liolaemus chillanensis* Müller & Hellmich**

Liolaemus monticola chillanensis Müller & Hellmich 1932c: 183.

Content: Two subspecies restricted to central-southern and southern Chile. In a recent study, Pincheira-Donoso & Núñez (2005) recognized these two taxa as geographical populations of *Liolaemus chillanensis*, providing full species category to *L. monticola*. In the same work, Pincheira-Donoso & Núñez (2005) suggested that *L. chillanensis chillanensis* and *L. chillanensis villaricensis* might be a single taxon (*L. chillanensis*) with no clear limits to be considered formal subspecies. Both populations not only exhibit substantial overlap of phenotypic traits, but also appear to have continuous geographical ranges. Therefore, their status need to be studied in more detail in order to determine their, if any, phylogenetic boundaries (see also Pincheira-Donoso 2003b).

***Liolaemus chillanensis chillanensis* Müller & Hellmich**

Liolaemus monticola chillanensis Müller & Hellmich 1932c: 183 (type locality: Termas de Chillán, 1700 m, Ñuble Province, Bío Bío Region, Chile); Burt & Burt 1933: 34; Hellmich 1934: 92; Donoso-Barros 1966a: 229, 1970a: 186, 1970b: 94; Webb & Greer 1969: 193; Vanzolini 1986: 15; Veloso & Navarro 1988: 507; Laurent 1992: 32; Núñez & Jaksic 1992: 74; Etheridge 1995: 33; Etheridge & Espinoza 2000: 7; Pincheira-Donoso 2003b: 5.

Liolaemus (Liolaemus) chillanensis chillanensis Pincheira-Donoso & Núñez 2005: 252.

Liolaemus chillanensis Núñez 2004: 29.

Liolaemus monticola Schulte *et al.* 2004: 410 (in part).

L[iolaemus] chillanensis Díaz & Lobo 2006: 265.

***Liolaemus chillanensis villaricensis* Müller & Hellmich**

Liolaemus monticola villaricensis Müller & Hellmich 1932c: 189 (type locality: Villarrica Volcano, La Araucanía Region, Chile); Burt & Burt 1933: 34; Hellmich 1934: 94; Donoso-Barros 1966a: 231, 1970a: 186, 1970b: 94; Vanzolini 1986: 15; Veloso & Navarro 1988: 507; Laurent 1992: 32; Núñez & Jaksic 1992: 74; Etheridge 1995: 33; Etheridge & Espinoza 2000: 7; Pincheira-Donoso 2003b: 5.

Liolaemus (Liolaemus) chillanensis villaricensis Pincheira-Donoso & Núñez 2005: 279 (*nomina dubia*).

L[iolaemus] villaricensis Díaz & Lobo 2006: 265.

***Liolaemus coeruleus* Cei & Ortiz**

Liolaemus coeruleus Cei & Ortiz 1983: 35 (type locality: 10 km W Primero Pinos, 1700 m, Zapala, Neuquén Province, Argentina); Cei 1986: 249; Vanzolini 1986: 13; Brygoo 1989: 29; Laurent 1992: 31; Bertoniatti 1994: 169; Etheridge 1995: 33; Videla & Cei 1998: 63; Etheridge & Espinoza 2000: 5; Schulte *et al.* 2000: 78; Lobo 2001: 139; Cei & Videla 2003a: 278; Chebez *et al.* 2005: 30; Sura 2005: 428; Díaz & Lobo 2006: 264; Scolaro 2006: 31; Pincheira-Donoso & Scolaro 2007: 57.

Liolaemus (Liolaemus) coeruleus Pincheira-Donoso & Núñez 2005: 303.

***Liolaemus confusus* Núñez & Pincheira-Donoso**

Liolaemus confusus Núñez & Pincheira-Donoso 2006: 77 (Type locality: Cerro Los Robles, Lolol, Libertador Bernardo O'Higgins Region, Chile).

***Liolaemus constanzae* Donoso-Barros**

Liolaemus constanzae Donoso-Barros 1961a: 389.

Content: Two subspecies restricted to the Atacama Desert in northern Chile (Donoso-Barros 1966a, 1970b; Cei 1993; Pincheira-Donoso & Núñez 2005; Pincheira-Donoso 2005). Although *Liolaemus donosoi* was recently resurrected as a subspecies of *L. constanzae* (Pincheira-Donoso & Núñez 2005; see previous discussions in Núñez & Jaksic 1992; Etheridge & Espinoza 2000), it is still needed to evaluate with modern analytical procedures (*e.g.* molecular variables) the status of these two taxa. Indeed, at this time, limited morphological data and their fully isolated geographical ranges (separated by the preandean Domeyko mountain chain; see Ramírez & Pincheira-Donoso 2005) are the only available evidence supporting the subspecific rank of these lizards.

***Liolaemus constanzae constanzae* Donoso-Barros**

Liolaemus constanzae Donoso-Barros 1961a: 389 (type locality: Peine, San Pedro de Atacama, Antofagasta Region, Chile), 1966a: 239, 1970a: 181, 1970b: 90; Vanzolini 1986: 13; Veloso & Navarro 1988: 501; Laurent 1992: 31; Núñez & Jaksic 1992: 71; Cei 1993: 284; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Escobar *et al.* 2001: 1679; Lobo 2001: 139; Chebez *et al.* 2005: 30; Sura 2005: 428; Díaz & Lobo 2006: 265.

Liolaemus nigroviridis nigroroseus Donoso-Barros 1966a: 170 (synonym *fide* Núñez & Jaksic 1992); Vanzolini 1986: 15; Lobo 2001: 139 (in part).

Liolaemus (Liolaemus) constanzae Pincheira-Donoso 2005: 122.

Liolaemus (Liolaemus) constanzae constanzae Pincheira-Donoso & Núñez 2005: 310.

Liolaemus nigroroseus Escobar *et al.* 2001: 1684 (in part); Díaz & Lobo 2006: 265 (in part).

***Liolaemus constanzae donosoi* Ortiz**

Liolaemus donosoi Ortiz 1975: 62 (type locality: Agua Verde, Quebrada de Taltal, 1400 m, Antofagasta Region, Chile); Veloso *et al.* 1982: 212; Vanzolini 1986: 14; Veloso & Navarro 1988: 502; Laurent 1992: 31; Núñez & Jaksic 1992: 80 (*nomina dubia*); Etheridge 1995: 33; Lobo 2001: 139; Díaz & Lobo 2006: 264.

Liolaemus constanzae Etheridge & Espinoza 2000: 5 (in part).

Liolaemus donosoi Núñez *et al.* 2001: 104 (*nomen emendatum*).

Liolaemus (Liolaemus) constanzae donosoi Pincheira-Donoso & Núñez 2005: 314.

***Liolaemus cristiani* Navarro, Núñez & Loyola**

Liolaemus cristiani Navarro, Núñez & Loyola (*in* Núñez *et al.* 1991): 84 (type locality: Cerro El Peine, El Maule Region, Chile); Núñez & Jaksic 1992: 71; Navarro & Núñez 1992: 35; Etheridge 1995: 33; Videla & Cei 1998: 63; Etheridge & Espinoza 2000: 5; Lobo 2001: 139; Cei & Videla 2003a: 278; Sura 2005: 428; Díaz & Lobo 2006: 265; Pincheira-Donoso & Scolaro 2007: 57.

Liolaemus (Liolaemus) cristiani Pincheira-Donoso & Núñez 2005: 307.

***Liolaemus curicensis* Müller & Hellmich**

Liolaemus platei curicensis Müller & Hellmich 1938a: 231 (type locality: Los Queñes, Curicó, El Maule Region, Chile); Donoso-Barros 1966a: 237, 1970a: 193, 1970b: 100; Veloso & Navarro 1988: 511; Lamborot & Alvarez-Sarret 1989: 393.

Liolaemus hernani Sallaberry *et al.* 1982: 93 (synonym *fide* Pincheira-Donoso & Núñez 2005); Veloso & Navarro 1988: 504 (in part); Laurent 1992: 31; Núñez & Jaksic 1992: 80 (*nomina dubia*); Etheridge 1995: 33 (in part); Núñez 1996: 5; Etheridge & Espinoza 2000: 6 (in part); Lobo 2001: 139 (in part); Sura 2005: 429 (in part); Díaz & Lobo 2006: 264 (in part).

Liolaemus curicensis Vanzolini 1986: 13; Laurent 1992: 31; Núñez & Jaksic 1992: 71; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Lobo 2001: 139; Sura 2005: 428; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) curicensis Pincheira-Donoso & Núñez 2005: 211.

***Liolaemus curis* Núñez & Labra**

Liolaemus curis Núñez & Labra 1985: 557 (type locality: Termas de El Flaco, southern side of Tinguiririca River, Los Andes of Libertador Bernardo O'Higgins Region, Chile); Vanzolini 1986: 13; Veloso & Navarro 1988: 502; Laurent 1992: 31; Núñez & Jaksic 1992: 71; Etheridge 1995: 33; Núñez 1996: 5; Etheridge & Espinoza 2000: 5; Lobo 2001: 139; Sura 2005: 428; Díaz & Lobo 2006: 265.

Liolaemus (Liolaemus) curis Pincheira-Donoso & Núñez 2005: 256.

***Liolaemus cyanogaster* (Duméril & Bibron)**

Proctotretus cyanogaster Duméril & Bibron 1837: 273 (type locality: Valdivia, Los Lagos Region, Chile, *fide* Donoso-Barros 1966a); Bell 1843: 12; Guichenot 1848: 28; Duméril & Duméril 1851: 72.

Liolaemus (Liodeira) cyanogaster Fitzinger 1843: 74.

Liolaemus cyanogaster Gray 1845: 212; Boulenger 1885a: 145; Berg 1898: 5; Quijada 1916: 8; Burt & Burt 1931: 274; Liebermann 1939: 69; Pflaumer 1944: 113; Schulte *et al.* 2004: 410; Chebez *et al.* 2005: 30; Sura 2005: 428; Díaz & Lobo 2006: 264; Scolaro 2006: 32.

Proctotretus intermedius Duméril 1855: 290 (synonym *fide* Boulenger 1885a).

Liolaemus (Ptychodeira) cyanogaster Girard 1858b: 347.

Liolaemus (Ptychodeira) intermedia Girard 1858b: 348.

Liolaemus gravenhorsti Codoceo 1954: 69.

Liolaemus cyanogaster cyanogaster Donoso-Barros 1961b: 486, 1966a: 182, 1970a: 181, 1970b: 90; Cei 1986: 253; Vanzolini 1986: 13; Veloso & Navarro 1988: 502; Brygoo 1989: 35; Laurent 1992: 31; Núñez & Jaksic 1992: 71; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Lobo 2001: 139.

Liolaemus (Liolaemus) cyanogaster Pincheira-Donoso & Núñez 2005: 236.

***Liolaemus dicktracyi* Espinoza & Lobo**

Liolaemus dicktracyi Espinoza & Lobo 2003: 92 (type locality: Portezuelo Blanco, 26.5 km W Famatina, on the road to Cueva de Perez, Sierra de Famatina, Famatina Department, La Rioja Province, Argentina); Avila *et al.* 2003: 534; Sura 2005: 428; Díaz & Lobo 2006: 264; Díaz 2007: 114.

***Liolaemus elongatus* Koslowsky**

Liolaemus elongatus Koslowsky 1896: 450 (type locality: "Territorio del Chubut cerca de las Cordilleras", Argentina); Liebermann 1939: 69; Péfaur & Duellman 1980: 45; Christie 1984a: 526; Etheridge & Espinoza 2000: 5; Lobo 2001: 139; Avila *et al.* 2003: 534; Chebez *et al.* 2005: 31; Scolaro 2005: 32; Sura 2005: 428; Díaz & Lobo 2006: 264.

Liolaemus elongatus elongatus Donoso-Barros & Cei 1971: 95; Cei 1974b: 220, 1974c: 183, 1975b: 203, 1986: 243; Vanzolini 1986: 14; Laurent 1992: 31; Etheridge 1995: 33; Avila *et al.* 1998: 11.

Liolaemus buergeri Pincheira-Donoso 2001: 8 (in part).

Liolaemus (Liolaemus) elongatus Pincheira-Donoso & Núñez 2005: 260.

***Liolaemus exploratorum* Cei & Williams**

Liolaemus exploratorum Cei & Williams 1984: 187 (type locality: Buenos Aires Lake, Santa Cruz Province, Argentina); Cei 1986: 259; Vanzolini 1986: 14; Laurent 1992: 31; Bertonatti 1994: 169; Etheridge 1995: 33; Etheridge & Espinoza 2000: 6; Lobo 2001: 139; Chebez *et al.* 2005: 31; Scolaro 2005: 34; Sura 2005: 428; Díaz & Lobo 2006: 264.

***Liolaemus fitzgeraldi* Boulenger**

Liolaemus fitzgeraldi Boulenger 1899: 355 (type locality: Puente del Inca, Argentina); Burt & Burt 1933: 32; Donoso-Barros 1966a: 307, 1970a: 182, 1970b: 91; Cei & Roig 1976: 69; Cei 1986: 248; Vanzolini 1986: 14; Veloso & Navarro 1988: 503; Laurent 1992: 31; Núñez & Jaksic 1992: 72; Etheridge 1995: 33; Avila & Soto 1997: 96; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 6; Escobar *et al.* 2001: 1679; Lobo 2001: 139; Núñez 2004: 32; Chebez *et al.* 2005: 31; Sura 2005: 428; Díaz & Lobo 2006: 265.

Liolaemus (Liolaemus) fitzgeraldi Pincheira-Donoso & Núñez 2005: 182.

***Liolaemus flavipiceus* Cei & Videla**

Liolaemus flavipiceus Cei & Videla 2003a: 277 (type locality: Near Pehuenche Pass, rocky streamlets, 2500 m, Malargüe Department, Mendoza Province, Argentina); Pincheira-Donoso & Scolaro 2007: 57.

***Liolaemus fuscus* Boulenger**

Liolaemus fuscus Boulenger 1885a: 144 (type locality: Valparaíso, Valparaíso Region, Chile); Hellmich 1934: 36; Donoso-Barros & Candiani 1950: 485; Donoso-Barros 1966a: 195, 1970a: 182, 1970b: 91; Porter 1972: 401; Fuentes & Ipinza 1979: 123; Jaksic & Núñez 1979: 119; Jaksic *et al.* 1979, 1980; Vanzolini 1986: 14; Veloso & Navarro 1988: 503; Laurent 1992: 31; Núñez & Jaksic 1992: 72; Iturra *et al.* 1994: 171; Etheridge 1995: 33; Etheridge & Espinoza 2000: 6; Escobar *et al.* 2001: 1679; Lobo 2001: 139; Fox & Shipman 2003: 321; Pincheira-Donoso 2004b: 11; Sura 2005: 429; Díaz & Lobo 2006: 265.

Liolaemus erythrogaster Werner 1898: 250 (synonym *fide* Donoso-Barros 1966a); Burt & Burt 1933: 32.

Liolaemus lemniscatus Burt & Burt 1930: 16 (in part), 1931: 274 (in part).

Liolaemus (Liolaemus) fuscus Pincheira-Donoso & Núñez 2005: 216.

***Liolaemus gracilis* (Bell)**

Proctotretus gracilis Bell 1843: 4 (type locality: Puerto Deseado, Santa Cruz Province, Argentina); Duméril & Duméril 1851: 73; Duméril 1856: 542.

Liodera gracilis Gray 1845: 211.

Liolaemus (Ptychodeira) gracilis Girard 1858b: 341.

Liolaemus gracilis Boulenger 1885a: 145; Gallardo 1966: 22; Donoso-Barros 1970a: 183; Blair *et al.* 1976: 4; Cei &

Roig 1976: 69; Gallardo 1977; Cei 1986: 255, 1993: 287; Vanzolini 1986: 14; Laurent 1992: 31; Martori & Aun 1994: 97; Videla & Puig 1994: 99; Etheridge 1995: 33; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 6; Lobo 2001: 139; Pincheira-Donoso 2004b: 13; Chebez *et al.* 2005: 31; Scolaro 2005: 38; Sura 2005: 429; Díaz & Lobo 2006: 264.

***Liolaemus gravenhorstii* (Gray)**

Leiodera gravenhorstii Gray 1845: 211 (type locality: Santiago, Metropolitan Region, Chile, *fide* Hellmich 1934).

Proctotretus stantoni Girard 1854: 227 (synonym *fide* Donoso-Barros 1969b), 1855: 207.

Liolaemus (Ptychoideira) stantoni Girard 1858b: 374.

Liolaemus gravenhorstii Boulenger 1885a: 142; Hellmich 1934: 21; Pflaumer 1944: 113; Donoso-Barros & Candiani 1950: 485; Donoso-Barros 1966a: 180, 1970a: 183, 1970b: 91; Porter 1972: 401; Cei 1986: 252; Vanzolini 1986: 14; Veloso & Navarro 1988: 503; Laurent 1992: 31; Núñez & Jaksic 1992: 73; Etheridge 1995: 33; Lamborot & Vásquez 1998: 617; Etheridge & Espinoza 2000: 6; Lobo 2001: 139; Sura 2005: 429; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) gravenhorstii Pincheira-Donoso & Núñez 2005: 241.

***Liolaemus gununakuna* Avila, Morando, Perez & Sites**

Liolaemus gununakuna Avila *et al.* 2004: 190 (type locality: 2 km SE La Amarga [39°06'S, 69°34'W], Zapala Department, Neuquen Province, Argentina); Sura 2005: 429; Scolaro 2006: 35.

***Liolaemus heliodermis* Espinoza, Lobo & Cruz**

Liolaemus heliodermis Espinoza *et al.* 2000: 509 (type locality: Provincial Road 307, about 32 km from Tafí del Valle, Tafí del Valle Department, Tucumán Province, Argentina); Etheridge & Espinoza 2000: 6; Avila *et al.* 2003: 534; Hernández & Espinoza 2004: 227; Chebez *et al.* 2005: 32; Sura 2005: 429; Díaz & Lobo 2006: 264; Díaz 2007: 114.

***Liolaemus hellmichi* Donoso-Barros**

Liolaemus hellmichi Donoso-Barros 1974b: 224 (type locality: Cerro Moreno, Antofagasta, Antofagasta Region, Chile); Vanzolini 1986: 14; Veloso & Navarro 1988: 504; Laurent 1992: 31; Núñez & Jaksic 1992: 73; Etheridge 1995: 33; Etheridge & Espinoza 2000: 6; Escobar *et al.* 2001: 1679; Lobo 2001: 139; Sura 2005: 429; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) hellmichi Pincheira-Donoso & Núñez 2005: 422.

***Liolaemus incaicus* Lobo, Quinteros & Díaz**

Liolaemus alticolor Burt & Burt 1931: 227–395; Lobo & Espinoza 1999: 122 (in part), 2004: 850 (in part); Lehr 2002 (in part); Martínez-Oliver & Lobo 2002: 47–64 (in part).

Liolaemus incaicus Lobo *et al.* 2007: 538 (type locality: Near Calca, Hacienda Urco, 2895 m, Cuzco Province, Peru).

***Liolaemus isabelae* Navarro & Núñez**

Liolaemus isabelae Navarro & Núñez 1993: 103 (type locality: El Cerrito, 12 km NW La Ola, nearby Salar de Pedernales, Atacama Region, Chile); Etheridge 1995: 34; Etheridge & Espinoza 2000: 6; Lobo 2001: 139; Sura 2005: 429; Díaz & Lobo 2006: 265.

Liolaemus nigroventrolateralis Ortiz 1994: 192 (synonym *fide* Pincheira-Donoso & Núñez 2007).

Liolaemus (Liolaemus) isabelae Pincheira-Donoso & Núñez 2005: 317.

***Liolaemus juanortizi* Young-Downey & Moreno**

Liolaemus juanortizi Young-Downey & Moreno 1991: 392 (type locality: Quebrada Aguas Blancas, 3800 m, Copiapó, Atacama Region, Chile); Etheridge & Espinoza 2000: 6; Sura 2005: 429.

Liolaemus (Liolaemus) juanortizi Pincheira-Donoso & Núñez 2005: 322.

***Liolaemus kriegi* Müller & Hellmich**

Liolaemus kriegi Müller & Hellmich 1939b: 44 (type locality: Bariloche, Argentina); Hellmich 1960: 39; Donoso-Barros 1966a: 289, 1970a: 183, 1970b: 92, 1974a: 287; Daciuk 1968: 275; Péfaur & Duellman 1980: 45; Cei 1986: 230; Vanzolini 1986: 15; Laurent 1992: 31; Núñez & Jaksic 1992: 73; Etheridge 1995: 33; Cruz *et al.* 1999: 182; Etheridge & Espinoza 2000: 6; Lobo 2001: 139; Pincheira-Donoso 2001: 10; Avila *et al.* 2003: 534; Chebez *et al.* 2005: 32; Scolaro 2005: 40; Sura 2005: 40; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) kriegi Pincheira-Donoso & Núñez 2005: 289.

***Liolaemus lemniscatus* Gravenhorst**

Liolaemus lemniscatus Gravenhorst 1838: 731 (type locality: Valparaiso, Valparaíso Region, Chile); Boulenger 1885a: 143; Koslowsky 1896: 449, 1898: 171; Quijada 1916: 8; Burt & Burt 1930: 16, 1931: 274, 1933: 33; Hellmich 1934: 29; Donoso-Barros & Candiani 1950: 486; Donoso-Barros 1966a: 191, 1970a: 183, 1970b: 92; Webb & Greer 1969: 193; Jaksic & Núñez 1979: 119; Jaksic *et al.* 1979, 1980; Christie 1984a: 526; Cei 1986: 260; Vanzolini 1986: 15; Veloso & Navarro 1988: 505; Brygoo 1989: 71; Lamborot & Alvarez-Sarret 1989: 393; Laurent 1992: 32; Núñez & Jaksic 1992: 73; Müller 1994: 35; Etheridge 1995: 33; Etheridge & Espinoza 2000: 6; Escobar *et al.* 2001: 1679; Lobo 2001: 139; Fox & Shipman 2003: 321; Pincheira-Donoso 2004b: 11; Chebez *et al.* 2005: 32; Sura 2005: 429; Díaz & Lobo 2006: 265; Scolaro 2006: 38.

Liolaemus hieroglyphicus Gravenhorst 1838: 732 (synonym *fide* Boulenger 1885a).

Liolaemus (Liolaemus) elegans Tschudi 1845: 157 (synonym *fide* Roux 1907).

Leiodera gracilis Gray 1845: 211 (in part).

Proctotretus mosaicus Hombron & Jacquinot 1847: 11 (synonym *fide* Boulenger 1885a); Guichenot 1848: 26; Duméril & Duméril 1851: 72; Jacquinot & Guichenot 1853: Pl. 2, fig. 1.

Proctotretus femoratus Girard 1854: 227 (synonym *fide* Boulenger 1885a), 1855: 207.

Liolaemus (Ptychodeira) femorata Girard 1858b: 344.

Liolaemus (Ptychodeira) mosaica Girard 1858b: 349.

Liolaemus elegans Vanzolini 1986: 14 (in part).

Liolaemus (Liolaemus) lemniscatus Pincheira-Donoso & Núñez 2005: 220.

***Liolaemus leopardinus* Müller & Hellmich**

Liolaemus leopardinus leopardinus Müller & Hellmich 1932a: 308 (type locality: Fierro Carrera, San Francisco River, Cerro El Plomo, 2700 m, Los Andes Range, Metropolitan Region, Chile); Hellmich 1934: 96; Donoso-Barros & Candiani 1950: 489; Donoso-Barros 1966a: 311, 1970a: 184, 1970b: 92; Vanzolini 1986: 15; Veloso & Navarro 1988: 505; Laurent 1992: 32.

Liolaemus leopardinus Núñez & Jaksic 1992: 73; Etheridge 1995: 33; Etheridge & Espinoza 2000: 7; Fox & Shipman 2003: 321; Sura 2005: 429; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) leopardinus Pincheira-Donoso & Núñez 2005: 265.

***Liolaemus lorenzmuelleri* Hellmich**

Liolaemus lorenzmülleri Hellmich 1950: 144 (type locality: Los Andes of Nueva Elqui, 2300 m, Coquimbo Region, Chile); Donoso-Barros 1966a: 297, 1970b: 93; Veloso & Navarro 1988: 506.

Liolaemus lorenzmuelleri Donoso-Barros 1970a: 185; Vanzolini 1986: 15; Laurent 1992: 32; Núñez & Jaksic 1992: 74; Cortés *et al.* 1995: 19.

Liolaemus lorenzmulleri Etheridge 1995: 33; Etheridge & Espinoza 2000: 7; Lobo 2001: 139; Sura 2005: 429; Díaz & Lobo 2006: 265.

Liolaemus (Liolaemus) lorenzmuelleri Pincheira-Donoso & Núñez 2005: 326.

***Liolaemus major* Boulenger**

Liolaemus pictus var. *major* Boulenger 1885a: 152 (type locality: “Chili”).

Liolaemus capillitas Hulse 1979: 204 (synonymy *fide* Núñez 2004); McCoy & Censky 1982: 326; Vanzolini 1986: 13; Laurent 1992: 31; Cei 1993: 280; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5; Lobo 2001: 139; Avila *et al.* 2003: 534; Chebez *et al.* 2005: 29; Sura 2005: 428; Díaz & Lobo 2006: 264; Díaz 2007: 114.

Liolaemus major Núñez 2004: 32.

Observations: After studying the collection of Liolaemidae types housed in the British Museum of Natural History of London, Núñez (2004) concluded that the type specimens originally named *Liolaemus pictus* var. *major* by Boulenger (1885a) are the species currently known as *L. capillitas*, from Argentina (Cei 1993). This type material is labeled as collected from “Chili” (Chile). Nevertheless, when Núñez (2004) reassessed the taxonomic status of these individuals, he did not propose a new type locality in accordance with the distribution of its synonymous *L. capillitas* (now *L. major fide* Núñez 2004). Consequently, although *L. major* (= *L. capillitas*) would be endemic to Argentina (see Cei 1993), its type locality is still recognized as “Chili”.

***Liolaemus maldonadae* Navarro & Núñez**

Liolaemus maldonadae Navarro & Núñez (*in* Núñez *et al.* 1991): 80 (type locality: Los Molles, Los Andes Range of Coquimbo Region, Chile); Núñez & Jaksic 1992: 74; Etheridge 1995: 33; Etheridge & Espinoza 2000: 7; Lobo 2001: 139; Sura 2005: 429; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) maldonadae Pincheira-Donoso & Núñez 2005: 329.

***Liolaemus melaniceps* Pincheira-Donoso & Núñez**

Liolaemus (Liolaemus) melaniceps Pincheira-Donoso & Núñez 2005: 398 (type locality: Chungungo Island [29°24'S, 71°21'W], Coquimbo Region, Chile).

***Liolaemus melanopleurus* (Philippi)**

Proctotretus melanopleurus Philippi 1860: 166 (type locality: "Atacama Desert, Chile").

Liolaemus melanopleurus Etheridge 1995: 34; Etheridge & Espinoza 2000: 7; Sura 2005: 429.

Liolaemus (Liolaemus) melanopleurus Pincheira-Donoso & Núñez 2005: 338.

***Liolaemus monticola* Müller & Hellmich**

Liolaemus monticola monticola Müller & Hellmich 1932c: 177 (type locality: Río San Francisco Valley, Santiago, Metropolitan Region, Chile); Burt & Burt 1933: 34; Hellmich 1934: 87; Donoso-Barros & Candiani 1950: 488; Donoso-Barros 1966a: 226, 1970a: 186, 1970b: 94; Fuentes & Ipinza 1979: 123; Vanzolini 1986: 15; Veloso & Navarro 1988: 507; Laurent 1992: 32; Núñez & Jaksic 1992: 74; Etheridge 1995: 33; Etheridge & Espinoza 2000: 7.

Liolaemus (Liolaemus) monticola Pincheira-Donoso & Núñez 2005: 372.

Liolaemus monticola Pflaumer 1944: 113; Porter 1972: 401; Mattison 1999: 60; Escobar *et al.* 2001: 1679; Fox & Shipman 2003: 321; Sura 2005: 429; Díaz & Lobo 2006: 264; Labra 2006: 993.

Observations: Over the last two decades, a series of karyotypic studies conducted in different apparently isolated populations assigned to *L. monticola* have suggested that they might have experienced processes of genetic diversification (Lamborot *et al.* 1979, 1981, 2003; Lamborot 1985a, b, 1991, 1993, 1998, 2001; Lamborot & Eaton 1992, 1997; Lamborot & Alvarez-Sarret 1993). Nevertheless, although karyological aspects have been explored thoroughly, additional detailed studies are needed to evaluate the impact of geographical barriers, such as rivers, in driving incipient differentiation in these lizard populations (Núñez & Pincheira-Donoso 2006; see Lamborot & Eaton 1992, 1997; Lamborot *et al.* 2003 for morphological information). Since it is not entirely clear whether all these studied populations are indeed *L. monticola* (Pincheira-Donoso & Núñez 2005), we do not refer most of these studies in the nomenclatural history of this taxon.

***Liolaemus moradoensis* Hellmich**

Liolaemus altissimus altissimus Müller & Hellmich 1932b: 205 (in part); Hellmich 1934: 68.

Liolaemus altissimus moradoensis Hellmich 1950: 136 (type locality: El Morado Lagoon, 2400 m, Lo Valdés, Los Andes range of Santiago, Metropolitan Region, Chile); Donoso-Barros 1966a: 302, 1970a: 180, 1970b: 89; Veloso & Navarro 1988: 500; Núñez & Jaksic 1992: 70.

Liolaemus bellii moradoensis Vanzolini 1986: 13; Laurent 1992: 31; Etheridge 1995: 33; Etheridge & Espinoza 2000: 5.

Liolaemus (Liolaemus) moradoensis Pincheira-Donoso & Núñez 2005: 186.

[Liolaemus] moradoensis Díaz & Lobo 2006: 265.

***Liolaemus neuquensis* Müller & Hellmich**

Liolaemus altissimus neuquensis Müller & Hellmich 1939a: 113 (type locality: Copahue Volcano, near Baños de Copahue, 1800 m, Neuquén Province, Argentina); Donoso-Barros 1970a: 180; Cei 1986: 247.

Liolaemus bellii neuquensis Vanzolini 1986: 13; Laurent 1992: 31; Etheridge 1995: 33.

Liolaemus neuquensis Videla & Cei 1996: 511, 1998: 63; Etheridge & Espinoza 2000: 7; Cei & Videla 2003a: 278; Chebez *et al.* 2005: 33; Sura 2005: 429; Díaz & Lobo 2006: 264; Scolaro 2006: 44; Pincheira-Donoso & Scolaro 2007: 57.

Observations: *Liolaemus neuquensis* remains one of the less known species of the genus *Liolaemus*. So far, only limited information has been provided in general monographs (*e.g.* Cei 1986). For example, nothing is

known about detailed aspects of its ecology (*e.g.* Cei 1986). Also, hypotheses focusing on the systematic relationships of this lizard with other boreal patagonian species lacking precloacal glands have just recently been developed (Videla & Cei 1996; Cei & Videla 2002, 2003a). Furthermore, the limited general information available on this lizard has also led to indicate that its variation, and hence its specific boundaries, are poorly documented, and that it might be conspecific to *L. coeruleus* Cei & Ortiz (Pincheira-Donoso & Scolaro 2007). In a recent study, Pincheira-Donoso & Scolaro (2007) compared a series of phenotypic traits measured in *L. coeruleus*, *L. neuquensis* and *L. tregenzai*. These authors observed that only *L. tregenzai* differed significantly from the other two species in most of these variables, which, in contrast (including aspects of their colour patterns) do not differ clearly between *L. coeruleus* and *L. neuquensis*. Although Pincheira-Donoso & Scolaro (2007) suggested that such trait overlap is not powerful enough to consider that *L. coeruleus* and *L. neuquensis* are actually the same species, they claimed that their similar patterns of trait variation may be indicative of potential conspecificity. A detailed study is therefore needed to clarify the status of these taxa.

***Liolaemus nigromaculatus* (Wiegmann)**

Tropidurus nigromaculatus Wiegmann 1834a: 229 (type locality: "Chile". Restricted to Huasco, Atacama Region, Chile, by Donoso-Barros 1970b), 1834c: 18, 1835: 290.

Tropidurus oxycephalus Wiegmann 1834a: 232 (synonym *fide* Boulenger 1885a), 1834c: 18, 1835: 290.

Proctotretus nigromaculatus Duméril & Bibron 1837: 281; Bell 1843: 10; Guichenot 1848: 34; Duméril & Duméril 1851: 74.

Liolaemus conspersus Gravenhorst 1838: 737 (synonym *fide* Boulenger 1885a; see also Etheridge & Espinoza 2000).

Ptychodeira nigromaculata Fitzinger 1843: 73.

Ptychodeira nigromaculatus Tschudi 1846: 32.

Leiolaemus nigromaculatus Gray 1845: 213; Gigoux 1928: 182.

Leiolaemus inconspicuus Gray 1845: 213 (synonym *fide* Boulenger 1885a).

Rhytidodeira nigromaculata Girard 1858a: 198, 1858b: 353.

Rhytidodeira oxycephalus Girard 1858b: 353.

Proctotretus pallidus Philippi 1860: 166; Tiedemann & Häupl 1980: 45.

Liolaemus nigromaculatus Boulenger 1885a: 147; Werner 1898: 251; Burt & Burt 1930: 17, 1933: 35; Pflaumer 1944: 113; Fuentes 1977: 169; Fuentes & Cancino 1979: 343; Vanzolini 1986: 15; Lamborot & Alvarez-Sarret 1989: 393; Laurent 1992: 32; Núñez & Jaksic 1992: 74; Etheridge 1995: 33; Etheridge & Espinoza 2000: 7; Lobo 2001: 139; Sura 2005: 429; Díaz & Lobo 2006: 264.

Liolaemus nigromaculatus nigromaculatus Müller & Hellmich 1933b: 127; Hellmich 1934: 48; Donoso-Barros 1966a: 242, 1970a: 189, 1970b: 96; Veloso & Navarro 1988: 507.

Liolaemus (Liolaemus) nigromaculatus Pincheira-Donoso & Núñez 2005: 403.

***Liolaemus nigroviridis* Müller & Hellmich**

Leiolaemus lineatus Gray 1845: 213 (synonym of *L. bibronii* *fide* Boulenger 1885a; synonym of *L. nigroviridis* *fide* Núñez 2004).

Liolaemus nigroviridis nigroviridis Müller & Hellmich 1932a: 318 (type locality: Río San Francisco Valley, 2400 m, Los Andes range of Santiago, Metropolitan Region, Chile); Hellmich 1934: 63; Donoso-Barros & Candiani 1950: 488; Donoso-Barros 1966a: 261, 1970a: 190, 1970b: 97; Valencia *et al.* 1975: 209; Vanzolini 1986: 15; Veloso & Navarro 1988: 508; Laurent 1992: 32; Etheridge 1995: 33.

Liolaemus nigroviridis minor Müller & Hellmich 1932a: 326; Hellmich 1934: 66; Donoso-Barros 1966a: 264, 1970a: 191; 1970b: 98; Valencia *et al.* 1975: 209; Vanzolini 1986: 15; Veloso & Navarro 1988: 508; Laurent 1992: 32; Etheridge 1995: 33.

Liolaemus nigroviridis campanae Hellmich 1950: 152; Donoso-Barros 1966a: 267, 1970a: 191, 1970b: 97; Valencia *et al.* 1975: 209; Veloso & Navarro 1988: 508; Etheridge 1995: 33; Laurent 1992: 32.

Liolaemus nigroviridis Núñez & Jaksic 1992: 74; Etheridge & Espinoza 2000: 7; Escobar *et al.* 2001: 1679; Sura 2005: 429; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) nigroviridis Pincheira-Donoso & Núñez 2005: 334.

L[iolaemus] campanae Díaz & Lobo 2006: 264 (in part).

***Liolaemus nitidus* (Wiegmann)**

Tropidurus nitidus Wiegmann 1834a: 206 (*nomen nudum*).

Tropidurus nitidus Wiegmann 1834a: 234 (type locality: Valparaíso, Valparaíso Region, Chile), 1834c: 18, 1835: 290.
Tropidurus chilensis Wiegmann 1834a: 233 (in part).
Proctotretus chilensis var A Duméril & Bibron 1837: 269.
Liolaemus lineatus Gravenhorst 1838: 723 (synonym *fide* Boulenger 1885a).
Liolaemus nitidus Gravenhorst 1838: 727; Burt & Burt 1930: 17, 1931: 278, 1933: 36; Hellmich 1934: 9; Pflaumer 1944: 113; Donoso-Barros & Candiani 1950: 483; Donoso-Barros 1966a: 173, 1970a: 191, 1970b: 98; Jaksic & Fuentes 1980: 109; Vanzolini 1986: 15; Veloso & Navarro 1988: 509; Brygoo 1989: 25; Lamborot & Alvarez-Sarret 1989: 393; Laurent 1992: 32; Núñez & Jaksic 1992: 74; Etheridge 1995: 33; Etheridge & Espinoza 2000: 7; Escobar *et al.* 2001: 1679; Lobo 2001: 139; Fox & Shipman 2003: 321; Sura 2005: 429; Díaz & Lobo 2006: 264.
Liolaemus unicolor Gravenhorst 1838: 728 (synonym *fide* Boulenger 1885a).
Liolaemus marmoratus Gravenhorst 1838: 729 (synonym *fide* Boulenger 1885a).
Leioderia chilensis Gray 1845: 210.
Proctotretus marmoratus Philippi 1860: 163 (see Etheridge & Espinoza 2000).
Liolaemus (Liolaemus) nitidus Pincheira-Donoso & Núñez 2005: 383.

***Liolaemus pagaburoi* Lobo & Espinoza**

Liolaemus alticolor alticolor Cei 1993: 282 (in part).
Liolaemus pagaburoi Lobo & Espinoza 1999: 131 (type locality: Abra de El Infiernillo, Provincial Road 307, Tafí del Valle Department, Tucumán Province, Argentina); Etheridge & Espinoza 2000: 8; Lobo 2001: 139; Martínez-Oliver & Lobo 2002: 50; Lobo & Espinoza 2004: 852; Chebez *et al.* 2005: 34; Sura 2005: 429; Díaz & Lobo 2006: 265; Díaz 2007: 113.

***Liolaemus paulinae* Donoso-Barros**

Liolaemus paulinae Donoso-Barros 1961a: 387 (type locality: Rio Loa, Calama, El Loa Province, Antofagasta Region, Chile), 1966a: 189, 1970a: 192; 1970b: 98; Vanzolini 1986: 16; Veloso & Navarro 1988: 509; Laurent 1992: 32; Núñez & Jaksic 1992: 74; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8; Lobo 2001: 139; Núñez & Torres-Mura 2002: 27; Sura 2005: 429; Díaz & Lobo 2006: 264.
Liolaemus (Liolaemus) paulinae Pincheira-Donoso 2005: 124; Pincheira-Donoso & Núñez 2005: 225.

***Liolaemus petrophilus* Donoso-Barros & Cei**

Liolaemus elongatus petrophilus Donoso-Barros & Cei 1971: 94 (type locality: between Laguna Raimundo and Laguna Chara, Meseta de Somuncurá, Río Negro Province, Argentina); Cei 1973c: 1, 1974b: 224, 1986: 245; Vanzolini 1986: 14; Laurent 1992: 31; Etheridge 1995: 33.
Liolaemus petrophilus Espinoza *et al.* 2000: 508; Etheridge & Espinoza 2000: 8; Avila *et al.* 2003: 534; Chebez *et al.* 2005: 34; Scolaro 2005: 45; Sura 2005: 429; Díaz & Lobo 2006: 264.

***Liolaemus pictus* (Duméril & Bibron)**

Proctotretus pictus Duméril & Bibron 1837: 276.

Content: Five subspecies occurring in the austral forests of Argentina and Chile, including the archipelago of Chiloé in the last country (Donoso-Barros 1966a; Cei 1986; Pincheira-Donoso & Núñez 2005).

***Liolaemus pictus pictus* (Duméril & Bibron)**

Proctotretus pictus Duméril & Bibron 1837: 276 (type locality: "Chile". Restricted to Valdivia, Los Lagos Region, Chile, Müller & Hellmich 1939); Bell 1843: 5; Guichenot 1848: 30.
Liolaemus (Liodera) pictus Fitzinger 1843: 74.
Liolaemus pictus Gray 1845: 213; Boulenger 1885a: 151; Pflaumer 1944: 113; Díaz & Lobo 2006: 264.
Chrysosaurus morio Guichenot 1848: 47 (synonym *fide* Donoso-Barros 1966).
Eulaemus pictus Girard 1858a: 198.
Liolaemus (Eulaemus) pictus Girard 1858b: 364.
Proctotretus prasinus Cope 1868: 120 (synonym *fide* Boulenger 1885a).
Liolaemus pictus pictus Burt & Burt 1930: 17, 1931: 268, 1933: 36; Hellmich 1934: 135; Liebermann 1939: 70; Donoso-Barros 1966a: 215, 1970a: 192, 1970b: 99; Webb & Greer 1969: 193; Cei 1986: 240; Vanzolini 1986: 16; Veloso & Navarro 1988: 510; Laurent 1992: 32; Núñez & Jaksic 1992: 75; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8; Lobo 2001: 139; Scolaro 2006: 45.

Liolaemus morio Burt & Burt 1933: 34 (in part).

Liolaemus (Liolaemus) pictus pictus Pincheira-Donoso & Núñez 2005: 347.

***Liolaemus pictus argentinus* Müller & Hellmich**

Liolaemus pictus argentinus Müller & Hellmich 1939c: 7 (type locality: Estancia El Cóndor, near Lago Nahuel Huapi, Río Negro Province, Argentina); Hellmich 1950: 176, 1960: 39; Donoso-Barros 1966a: 224, 1970a: 192, 1970b: 99; Cei 1986: 242; Vanzolini 1986: 16; Veloso & Navarro 1988: 510; Laurent 1992: 32; Núñez & Jaksic 1992: 75; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8; Lobo 2001: 139; Scolaro 2005: 46.

Liolaemus (Liolaemus) pictus argentinus Pincheira-Donoso & Núñez 2005: 352.

L[iolaemus] argentinus Díaz & Lobo 2006: 264.

***Liolaemus pictus chiloensis* Müller & Hellmich**

Liolaemus pictus Quijada 1916: 9 (in part).

Liolaemus pictus pictus Hellmich 1934: 135 (in part).

Liolaemus pictus chiloensis Müller & Hellmich 1939c: 12 (type locality: Ancud, Chiloé Island, Los Lagos Region, Chile); Donoso-Barros 1961: 486, 1966a: 219.

Liolaemus pictus chiloensis Donoso-Barros 1970a: 193, 1970b: 99; Vanzolini 1986: 16; Laurent 1992: 32; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8.

Liolaemus pictus chiloensis Veloso & Navarro 1988: 510; Núñez & Jaksic 1992: 75; Lobo 2001: 139.

Liolaemus (Liolaemus) pictus chiloensis Pincheira-Donoso & Núñez 2005: 356.

L[iolaemus] chiloensis Díaz & Lobo 2006: 264.

***Liolaemus pictus codoceae* Pincheira-Donoso & Núñez**

Liolaemus pictus major Burt & Burt 1931: 278, 1933: 36; Hellmich 1934: 80; Müller & Hellmich 1939c: 13; Donoso-Barros 1966a: 222, 1970a: 193, 1970b: 100; Vanzolini 1986: 16; Veloso & Navarro 1988: 510; Laurent 1992: 32; Núñez & Jaksic 1992: 75; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8.

Liolaemus (Liolaemus) pictus codoceae Pincheira-Donoso & Núñez 2005: 360 (type locality: Guafo Island, Los Lagos Region, Chile).

***Liolaemus pictus talcanensis* Urbina & Zúñiga**

Liolaemus pictus talcanensis Urbina & Zúñiga 1977: 70 (type locality: Sector Tendedor, Talcán Island, Chiloé Archipelago, Los Lagos Region, Chile); Cekalovic & Artigas 1981: 221; Vanzolini 1986: 16; Laurent 1992: 32; Núñez & Jaksic 1992: 75; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8; Lobo 2001: 139.

Liolaemus (Liolaemus) pictus talcanensis Pincheira-Donoso & Núñez 2005: 368.

L[iolaemus] talcanensis Díaz & Lobo 2006: 264.

***Liolaemus platei* Werner**

Liolaemus platei Werner 1898: 255 (type locality: Coquimbo, Coquimbo Region, Chile); Burt & Burt 1931: 279; 1933: 36; Hellmich 1934: 24; Pflaumer 1944: 113; Fuentes & Cancino 1979: 343; Vanzolini 1986: 16; Lamborot & Alvarez-Sarret 1989: 393; Laurent 1992: 32; Núñez & Jaksic 1992: 75; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8; Escobar *et al.* 2001: 1679; Lobo 2001: 139; Sura 2005: 429; Díaz & Lobo 2006: 264.

Liolaemus platei platei Müller & Hellmich 1938a: 231; Donoso-Barros 1966a: 234, 1970a: 193, 1970b: 100; Veloso & Navarro 1988: 511.

Liolaemus (Liolaemus) platei Pincheira-Donoso & Núñez 2005: 425

***Liolaemus pseudolemniscatus* Lamborot & Ortiz**

Liolaemus pseudolemniscatus Lamborot & Ortiz 1990: 136 (type locality: Las Mollacas, Choapa Province, Coquimbo Region, Chile); Núñez & Jaksic 1992: 75; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8; Lobo 2001: 139; Sura 2005: 429; Díaz & Lobo 2006: 265.

Liolaemus (Liolaemus) pseudolemniscatus Pincheira-Donoso & Núñez 2005: 433.

***Liolaemus puna* Lobo & Espinoza**

Liolaemus puna Lobo & Espinoza 2004: 857 (type locality: Quebrada Los Berros [24°08.35'S, 66°42.05'W], approximately 4200 m, approximately 5 km E Olacapato, Los Andes Department, Salta Province, Argentina); Lobo & Espinoza 2004: 852; Pincheira-Donoso & Núñez 2005: 203; Sura 2005: 429; Díaz & Lobo 2006: 264; Díaz 2007: 113.

***Liolaemus punmahuida* Avila, Perez & Morando**

Liolaemus punmahuida Avila *et al.* 2003: 535 (type locality: Tromen Volcano [37°06'S, 70°08'W], 3000 m, Chos Malal Department, Neuquen Province, Argentina); Scolaro 2006: 46.

***Liolaemus ramirezae* Lobo & Espinoza**

Liolaemus ramirezae Lobo & Espinoza 1999: 126 (type locality: km 95 in the Provincial Road 307, Tafí del Valle Department, Tucumán Province, Argentina); Etheridge & Espinoza 2000: 8; Lobo 2001: 139; Martínez-Oliver & Lobo 2002: 50; Lobo & Espinoza 2004: 852; Chebez *et al.* 2005: 34; Sura 2005: 429; Díaz & Lobo 2006: 264; Díaz 2007: 113.

***Liolaemus ramonensis* Müller & Hellmich**

Liolaemus leopardinus ramonensis Müller & Hellmich 1932a: 314 (type locality: Cerro San Ramón, 2600 m, Los Andes range, Metropolitan Region, Chile); Hellmich 1934: 98; Donoso-Barros & Candiani 1950: 489; Donoso-Barros 1966a: 315, 1970a: 184, 1970b: 93; Vanzolini 1986: 15; Veloso & Navarro 1988: 505; Laurent 1992: 32.

Liolaemus ramonensis Núñez & Jaksic 1992: 76; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8; Sura 2005: 429; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) ramonensis Pincheira-Donoso & Núñez 2005: 269.

***Liolaemus robertmertensi* Hellmich**

Liolaemus robertmertensi Hellmich 1964: 505 (type locality: Mountains in the region of Belém, Catamarca Province, Argentina); Donoso-Barros 1970a: 193; Blair *et al.* 1976: 4; Vanzolini 1986: 16; Laurent 1992: 32; Cei 1993: 291; Etheridge 1995: 33; Etheridge & Espinoza 2000: 8; Lobo 2001: 139; Chebez *et al.* 2005: 35; Sura 2005: 429; Díaz & Lobo 2006: 264; Díaz 2007: 118.

***Liolaemus sanjuanensis* Cei**

Liolaemus sanjuanensis Cei 1982a: 179 (type locality: Mogote Corralitos, Sierra Pie de Palo, 3200 m, San Juan Province, Argentina), 1986: 258; Vanzolini 1986: 16; Laurent 1992: 32; Bertonatti 1994: 169; Etheridge 1995: 33; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 9; Lobo 2001: 139; Pincheira-Donoso 2004b: 13; Chebez *et al.* 2005: 35; Sura 2005: 430; Díaz & Lobo 2006: 265.

***Liolaemus saxatilis* Avila, Cei, Martori & Acosta**

Liolaemus saxatilis Avila *et al.* 1992: 101 (type locality: In uplifted rocks 5 km W of Achiras town [33°00'S, 64°51'W], Río Cuarto Department, Córdoba Province, Argentina); Cei 1993: 289; Martori & Aun 1994: 97, 1995: 94; Cabrera 1996: 219; Etheridge & Espinoza 2000: 9; Lobo 2001: 139; Chebez *et al.* 2005: 35; Sura 2005: 430; Díaz & Lobo 2006: 264.

Liolaemus saxatilis Etheridge 1995: 33.

***Liolaemus schroederi* Müller & Hellmich**

Liolaemus schröderi Müller & Hellmich 1938a: 225 (type locality: Los Queñes, Los Andes range of Curicó, 1600 m, El Maule Region, Chile); Donoso-Barros 1966a: 177, 1970b: 100; Veloso & Navarro 1988: 511.

Liolaemus schroederi Donoso-Barros 1970a: 194; Jaksic *et al.* 1979, 1980; Vanzolini 1986: 16; Laurent 1992: 32; Núñez & Jaksic 1992: 76; Etheridge 1995: 33; Etheridge & Espinoza 2000: 9; Lobo 2001: 139; Fox & Shipman 2003: 321; Núñez 2004: 32; Sura 2005: 430; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) schroederi Pincheira-Donoso & Núñez 2005: 245.

***Liolaemus septentrionalis* Pincheira-Donoso & Núñez**

Liolaemus (Liolaemus) pictus septentrionalis Pincheira-Donoso & Núñez 2005: 364 (type locality: Altos de Vilches, 1200 m, El Maule Region, Chile).

***Liolaemus silvai* Ortiz**

Liolaemus silvai Ortiz 1989: 247 (type locality: Carrizalillo, Atacama Region, Chile); Núñez & Jaksic 1992: 76; Etheridge 1995: 33; Etheridge & Espinoza 2000: 9; Lobo 2001: 139; Sura 2005: 430; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) silvai Pincheira-Donoso & Núñez 2005: 408.

***Liolaemus tacnae* (Shreve)**

Stenocercus tacnae Shreve 1941: 73 (type locality: Tacna, Perú).

Liolaemus tacnae Duellman 1979b: 458; Vanzolini 1986: 16; Laurent 1992: 32; Etheridge 1995: 33; Carrillo de Espinoza & Icochea 1995: 10; Etheridge & Espinoza 2000: 9; Lobo 2001: 139; Martínez-Oliver & Lobo 2002: 53; Lobo & Espinoza 2004: 852; Sura 2005: 430; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) tacnae Pincheira-Donoso & Núñez 2005: 229.

***Liolaemus talampaya* Avila, Morando, Perez & Sites**

Liolaemus talampaya Avila *et al.* 2004: 194 (type locality: Rio Las Yeguas, Sierra de Los Tarjados, National Park Talampaya [29°44'S, 67°45'W], 1200 m, Felipe Varela Department, La Rioja Province, Argentina); Sura 2005: 430.

***Liolaemus tandiliensis* Vega, Bellagamba & Lobo**

Liolaemus tandiliensis Vega *et al.* 2008: 84 (type locality: Sierra Los Difuntos, Partido General Pueyrredon [37°53'30"S, 57°50'30"W], Buenos Aires Province, Argentina).

***Liolaemus tenuis* (Duméril & Bibron)**

Proctotretus tenuis Duméril & Bibron 1837: 279 (type locality: "Chile". Restricted to Santiago, Metropolitan Region, Chile, Donoso-Barros 1966a); Bell 1843: 7; Guichenot 1848: 32; Duméril & Duméril 1851: 73; Girard 1855: 207.

Liolaemus (Liodeira) tenuis Fitzinger 1843: 74.

Leiolaemus maculatus Gray 1845: 214 (synonym *fide* Boulenger 1885a).

Proctotretus niger Hallowell 1856: 233 (synonym *fide* Donoso-Barros 1970a, see also Etheridge & Espinoza 2000); Etheridge & Espinoza 2000: 9 (in part).

Tropidurus ptychopleurus Lichtenstein 1856: 23 (synonym *fide* Donoso-Barros 1966a).

Eulaemus tenuis Girard 1858a: 198.

Liolaemus (Eulaemus) tenuis Girard 1858b: 357.

Liolaemus (Eulaemus) maculatus Girard 1858b: 367.

Liolaemus (Ptychodeira) tenuis Steindachner 1867: 37.

Liolaemus tenuis Boulenger 1885a: 152; Boettger 1893: 61; Burt & Burt 1931: 279; Guibé 1954: 47; Porter 1972: 401; Jaksic *et al.* 1979, 1980; Medel *et al.* 1988: 567; Núñez & Jaksic 1992: 76; Labra & Niemeyer 1999: 1799; Etheridge & Espinoza 2000: 9; Escobar *et al.* 2001: 1679; Christie & Sage 2002: 80; Labra *et al.* 2002: 141; Chebez *et al.* 2005: 36; Sura 2005: 430; Díaz & Lobo 2006: 264; Scolaro 2006: 50.

Liolaemus tenuis tenuis Goetsch & Hellmich 1932: 70; Hellmich 1934: 80; Donoso-Barros & Candiani 1950: 486; Donoso-Barros 1966a: 207, 1970a: 195, 1970b: 101; Webb & Greer 1969: 193; Vanzolini 1986: 16; Veloso & Navarro 1988: 512; Laurent 1992: 32; Etheridge 1995: 33; Lobo 2001: 139.

Liolaemus tenuis micropunctatus Goetsch & Hellmich 1932: 70 (*nomen nudum*, synonym *fide* Donoso-Barros 1966a).

Liolaemus tenuis punctatissimus Müller & Hellmich 1933c: 307 (sinónimo *fide* Núñez & Jaksic 1992); Hellmich 1934: 86 (in part); Donoso-Barros 1966a: 212 (in part), 1970a: 195 (in part), 1970b: 101 (in part); Vanzolini 1986: 16 (in part); Veloso & Navarro 1988: 512 (in part); Laurent 1992: 32 (in part); Etheridge 1995: 33 (in part); Lobo 2001: 139 (in part).

Liolaemus (Liolaemus) tenuis Pincheira-Donoso & Núñez 2005: 376.

[Liolaemus] punctatissimus Díaz & Lobo 2006: 264.

***Liolaemus thermanum* Videla & Cei**

Liolaemus thermanum Videla & Cei 1996: 506 (type locality: Baños del Azufre, 2500 m, 10 km from Peteroa Volcano, Malargüe Department, Mendoza Province, Argentina), 1998: 63; Etheridge & Espinoza 2000: 9; Avila *et al.* 2003: 534; Cei & Videla 2003a: 278; Chebez *et al.* 2005: 36; Sura 2005: 430; Pincheira-Donoso & Scolaro 2007: 57.

***Liolaemus tregenzai* Pincheira-Donoso & Scolaro**

Liolaemus tregenzai Pincheira-Donoso & Scolaro 2007: 59 (type locality: Copahue Volcano slopes [37°50'S; 71°06'W], 2150 m, near Termas del Copahue, Ñorquín Department, Neuquén Province, Argentina).

***Liolaemus umbrifer* Espinoza & Lobo**

Liolaemus umbrifer Espinoza & Lobo 2003: 96 (type locality: Quebrada de Randolpho, Provincial Road 43, 60.3 km NW intersection Provincial Road 4 and Provincial Road 43, 166 km SE Antofagasta de la Sierra, Antofagasta Department, Catamarca Province, Argentina); Avila *et al.* 2003: 534; Sura 2005: 430; Díaz & Lobo 2006: 264; Díaz 2007: 114.

***Liolaemus valdesianus* Hellmich**

Liolaemus leopardinus valdesianus Hellmich 1950: 142 (type locality: Baños Morales, Lo Valdés, Cajón del Maipo, Los Andes Range, Metropolitan Region, Chile); Donoso-Barros 1966a: 313, 1970a: 185, 1970b: 93; Vanzolini 1986: 15; Veloso & Navarro 1988: 506; Laurent 1992: 32.

Liolaemus kriegi Donoso-Barros 1966a: 289 (in part, see Pincheira-Donoso 2001).

Liolaemus valdesianus Núñez & Jaksic 1992: 76; Etheridge 1995: 33; Etheridge & Espinoza 2000: 9; Sura 2005: 430; Díaz & Lobo 2006: 264.

Liolaemus (Liolaemus) valdesianus Pincheira-Donoso & Núñez 2005: 274.

***Liolaemus variegatus* Laurent**

Liolaemus variegatus Laurent 1984b: 273 (type locality: Tiraque, 3100 m, Cochabamba Department, Bolivia), 1992: 33; Vanzolini 1986: 16; Etheridge 1995: 33; Etheridge & Espinoza 2000: 9; Lobo 2001: 139; Martínez-Oliver & Lobo 2002: 53; Pincheira-Donoso 2002b: 21; Lobo & Espinoza 2004: 852; Sura 2005: 430; Díaz & Lobo 2006: 264.

***Liolaemus velosoi* Ortiz**

Liolaemus velosoi Ortiz 1987: 265 (type locality: Desvío Cerro Imán, Copiapó, Atacama Region, Chile); Veloso & Navarro 1988: 512; Brygoo 1989: 102; Laurent 1992: 33; Núñez & Jaksic 1992: 76; Etheridge 1995: 33; Etheridge & Espinoza 2000: 9; Lobo 2001: 139; Sura 2005: 430; Díaz & Lobo 2006: 264.

Liolaemus josephorum Núñez *et al.* 2001: 93 (synonym *fide* Pincheira-Donoso & Núñez 2005); Sura 2005: 429 (in part).

Liolaemus velosi Núñez *et al.* 2001: 104 (*nomen emendatum*).

Liolaemus (Liolaemus) velosoi Pincheira-Donoso & Núñez 2005: 429.

***Liolaemus walkeri* Shreve**

Liolaemus walkeri Shreve 1938: 404 (type locality: Llocllapampa, Junín Department, Perú); Barbour & Loveridge 1946: 145; Vanzolini 1986: 16; Laurent 1992: 33; Etheridge 1995: 33; Carrillo de Espinoza & Icochea 1995: 10; Etheridge & Espinoza 2000: 9; Martínez-Oliver & Lobo 2002: 53; Lobo & Espinoza 2004: 852; Sura 2005: 430; Díaz & Lobo 2006: 264.

Liolaemus alticolor walkeri Hellmich 1961: 5; Donoso-Barros 1966a: 201, 1970a: 179, 1970b: 88; Vanzolini 1986: 12; Veloso & Navarro 1988: 499; Baudoin *et al.* 1990: 429; Ibish & Böhme 1993: 18.

***Liolaemus yanalcu* Martínez-Oliver & Lobo**

Liolaemus yanalcu Martínez-Oliver & Lobo 2002: 49 (type locality: On the road to El Acay from Estacion Muñano [24°18'S, 66°09'W], 4027 m, 5–6 km S from Provincial Road 51, La Poma Department, Salta Province, Argentina); Lobo & Espinoza 2004: 852; Sura 2005: 430; Díaz & Lobo 2006: 264; Díaz 2007: 113.

***Liolaemus zapallarensis* Müller & Hellmich**

Liolaemus nigromaculatus zapallarensis Müller & Hellmich 1933b: 137.

Content: Three subspecies. The nominal distributed in mainlands of northern Chile, while the remaining two are restricted to islands (Veloso & Navarro 1988; Núñez & Jaksic 1992; Pincheira-Donoso & Núñez 2005).

***Liolaemus zapallarensis zapallarensis* Müller & Hellmich**

Proctotretus nigromaculatus Duméril 1855: 293 (in part).

Liolaemus nigromaculatus kuhlmanni Goetsch & Hellmich 1932 (*nomen nudum*).

Liolaemus nigromaculatus zapallarensis Müller & Hellmich 1933b: 137 (type locality: Zapallar, Valparaíso, Valparaíso Region, Chile); Hellmich 1934: 58; Donoso-Barros 1954: 3, 1960: 65, 1966a: 247, 1970a: 190, 1970b: 97.

Liolaemus nigromaculatus kuhlmanni Müller & Hellmich 1933b: 139 (synonym *fide* Pincheira-Donoso & Núñez 2005); Hellmich 1934: 60 (in part); Donoso-Barros 1960: 65 (in part), 1966a: 245 (in part), 1970a: 190 (in part), 1970b: 96 (in part).

Liolaemus zapallarensis zapallarensis Ortiz 1981: 257; Vanzolini 1986: 17; Veloso & Navarro 1988: 513; Laurent 1992: 33; Núñez & Jaksic 1992: 76; Etheridge 1995: 34; Etheridge & Espinoza 2000: 9; Lobo 2001: 139.

Liolaemus kuhlmanni Ortiz 1981: 251 (in part); Vanzolini 1986: 15 (in part); Veloso & Navarro 1988: 505 (in part); Lambert & Alvarez-Sarret 1989: 393 (in part); Laurent 1992: 31 (in part); Núñez & Jaksic 1992: 73 (in part); Etheridge 1995: 33 (in part); Etheridge & Espinoza 2000: 6 (in part); Lobo 2001: 139 (in part); Sura 2005: 429 (in part); Díaz & Lobo 2006: 264 (in part).

Liolaemus zapallarensis Lamborot & Alvarez-Sarret 1989: 393.
Liolaemus (Liolaemus) zapallarensis zapallarensis Pincheira-Donoso & Núñez 2005:410.
L[iolaemus] zapallarensis Díaz & Lobo 2006: 264.

***Liolaemus zapallarensis ater* Müller & Hellmich**

Liolaemus nigromaculatus Werner 1898: 251.
Liolaemus nigromaculatus ater Müller & Hellmich 1933a: 129 (type locality: Pájaros Island, on the sea coast of Coquimbo, Coquimbo Region, Chile), 1933b: 138; Hellmich 1934: 57; Donoso-Barros 1954: 4, 1966a: 261, 1970a: 189, 1970b: 96.
Liolaemus zapallarensis ater Vanzolini 1986: 17; Veloso & Navarro 1988: 513; Laurent 1992: 33; Núñez & Jaksic 1992: 76; Etheridge 1995: 34; Etheridge & Espinoza 2000: 9; Lobo 2001: 139.
Liolaemus (Liolaemus) zapallarensis ater Pincheira-Donoso & Núñez 2005: 415.
L[iolaemus] ater Díaz & Lobo 2006: 264.

***Liolaemus zapallarensis sieversi* Donoso-Barros**

Liolaemus nigromaculatus sieversi Donoso-Barros 1954: 4 (type locality: Locos Island, Pichidangui, Coquimbo Region, Chile), 1966a: 259, 1970a: 190, 1970b: 97.
Liolaemus zapallarensis sieversi Ortiz 1981: 257; Vanzolini 1986: 17; Veloso & Navarro 1988: 513; Laurent 1992: 33; Núñez & Jaksic 1992: 77; Etheridge 1995: 34; Etheridge & Espinoza: 9; Lobo 2001: 139.
Liolaemus (Liolaemus) zapallarensis sieversi Pincheira-Donoso & Núñez 2005: 419.
L[iolaemus] sieversi Díaz & Lobo 2006: 264.

Series *signifer*

The *signifer* series (also called *lineomaculatus* series) consists of all the *Liolaemus* genus clades, except the *Liolaemus* subgenus or *chiliensis* group, concentrating the largest proportion of the species known for the entire Liolaemidae clade (see Schulte *et al.* 2000; Espinoza *et al.* 2004 for phylogenetic details).

Subgenus *Donosolaemus* Pincheira-Donoso & Núñez

Rhytidodeira Laurent 1985b: 7 (invalid designation; see below).
Liolaemus Cei 1986: 187; Etheridge 1995: 32; Etheridge & Espinoza 2000: 5.
Donosolaemus Pincheira-Donoso & Núñez 2005: 59 (type species: *Liolaemus archeforus* Donoso-Barros & Cei 1971).

This group of patagonian lizards, commonly recognized as *archeforus-kingii* group (see Scolaro & Cei 1997; Pincheira-Donoso & Núñez 2005), has a controversial and complex nomenclatural and systematic history. Over the last few decades, some authors have identified a series of phenotypic traits observed in a unique combination in these species (Laurent 1985b; Cei 1986; Scolaro & Cei 1997; Pincheira-Donoso & Núñez 2005). Interestingly, recent phylogenetic hypotheses based on both molecular and morphological variables have also suggested that lizards belonging to the groups *archeforus* and *kingii* would represent a monophyletic clade within the genus *Liolaemus* (e.g. Schulte *et al.* 2000; Espinoza *et al.* 2004).

The first explicit proposal suggesting that the groups *archeforus* and *kingii* should be formally placed in a separate lineage was provided by Laurent (1985b), who resurrected the genus *Rhytidodeira* established long before by Girard (1858a) for a series of *Liolaemus* species (Etheridge 1995). Laurent (1985b) designated *Liolaemus kingii* (Bell) as the type species for this genus, in which also included *L. archeforus* and *L. ruizleali* (see Donoso-Barros & Cei 1971), this last taxon conspecific to *L. rothi* (Cei & Scolaro 1987; see also Etheridge & Espinoza 2000) and belonging to the unrelated clade *fitzingerii* (Schulte *et al.* 2000; Pincheira-Donoso *et al.* 2007a; Fig. 4). However, Etheridge (1995) returned *Rhytidodeira* to the synonymy of the

Liolaemus genus, arguing that “*Liolaemus kingii* and *L. archeforus* have all of the synapomorphies that diagnose *Liolaemus*, and, according to Laurent (1985b), differ from other *Liolaemus* in being "primitive." No derived characters are known to unite *L. kingii* and *L. archeforus*, the species assigned to *Rhytidodeira* by Laurent (1985)”.

More recently, Pincheira-Donoso & Núñez (2005) studied a large subset of exomorphological, anatomical and biogeographical characteristics of the groups *archeforus* and *kingii*, and concluded that they should be placed in a separate lineage, in agreement with Laurent (1985b). Nevertheless, in contrast to Laurent’s (1985b) opinion, these authors suggested that the subgenus *Rhytidodeira* may not be valid for *L. kingii* and for the remaining species belonging to the *archeforus* and *kingii* groups, because in a previous study Donoso-Barros (1970b) had already designated *Liolaemus bibronii* as the type taxon for *Rhytidodeira*, a species belonging to the *Liolaemus* subgenus (or *chiliensis* clade; see above). According to the article 69.1 of the International Code for Zoological Nomenclature (2000), if an author establishes a genus or subgenus with no official designation of a type species, the first later explicit designation of a type species from one of the taxa originally included as members of that genus or subgenus is the only valid type species for that genus or subgenus, and any other type species designated later is not valid. Consequently, the only valid type species for *Rhytidodeira* is *Liolaemus bibronii* (included in this genus by Girard 1858a, as *Proctotretus bibronii*). Since *Rhytidodeira* is therefore a synonym of the subgenus *Liolaemus*, Pincheira-Donoso & Núñez (2005) proposed for the species belonging to the groups *archeforus* and *kingii* (see Scolaro & Cei 1997) the subgenus *Donosolaemus*. These authors designated *Liolaemus archeforus* Donoso-Barros & Cei as the type species for *Donosolaemus*, in which also included *L. baguali* Cei & Scolaro, *L. escarchadosi* Scolaro & Cei, *L. gallardoi* Cei & Scolaro, *L. kingii* (Bell), *L. sarmientoi* Donoso-Barros, *L. scolaroi* Pincheira-Donoso & Núñez, *L. somuncurae* Cei & Scolaro, *L. tari* Scolaro & Cei, *L. tristis* Scolaro & Cei, and *L. zullyi* Cei & Scolaro (it was also recently included in this lineage the species *L. uptoni* Scolaro & Cei 2006; see below). Due to these nomenclatural aspects established in the International Code for Zoological Nomenclature, the valid subgeneric name for these Patagonian *Liolaemus* lizards is *Donosolaemus*.

***Liolaemus archeforus* Donoso-Barros & Cei**

Liolaemus archeforus Donoso-Barros & Cei 1971: 93 (type locality: Puesto Lebrún, Meseta Lago Buenos Aires, Santa Cruz Province, Argentina); Cei 1973c: 1; Vanzolini 1986: 12; Etheridge & Espinoza 2000: 4; Lobo 2001: 139; Chebez *et al.* 2005: 29; Scolaro 2005: 25; Sura 2005: 428.

Liolaemus archeforus archeforus Cei 1975d: 112, 1986: 236; Etheridge 1995: 32.

***Liolaemus baguali* Cei & Scolaro**

Liolaemus kingi baguali Cei & Scolaro 1983b: 209 (type locality: Sierra Bagual, 40 km S Lago Cardiel, 600 m, Santa Cruz Province, Argentina); Cei 1986: 235; Etheridge 1995: 33.

Liolaemus baguali Scolaro & Cei 1997: 374; Etheridge & Espinoza 2000: 5; Chebez *et al.* 2005: 29; Scolaro 2005: 26; Sura 2005: 428.

***Liolaemus escarchadosi* Scolaro & Cei**

Liolaemus escarchadosi Scolaro & Cei 1997: 387 (type locality: Cordón de los Escarchados, 850 m, near Laguna Los Escarchados, 50 km SE Calafate, Santa Cruz Province, Argentina); Etheridge & Espinoza 2000: 6; Chebez *et al.* 2005: 31; Scolaro 2005: 33; Sura 2005: 428.

Liolaemus (Donosolaemus) escarchadosi Pincheira-Donoso & Núñez 2005: 62.

***Liolaemus gallardoi* Cei & Scolaro**

Liolaemus archeforus gallardoi Cei & Scolaro 1982b: 260 (type locality: Lago Guitarra, 1300 m, Meseta Aguila-Asador, Santa Cruz Province, Argentina); Cei 1986: 237; Brygoo 1989: 50; Etheridge 1995: 32.

Liolaemus gallardoi Cei & Scolaro 1996: 391; Scolaro & Cei 1997: 385; Etheridge & Espinoza 2000: 6; Chebez *et al.* 2005: 31; Scolaro 2005: 36; Sura 2005: 429.

***Liolaemus kingii* (Bell)**

Proctotretus kingii Bell 1843: 13 (type locality: Puerto Deseado, Patagonia, Argentina).

Liolaemus kingi Gray 1845: 215.

Rhytidodeira kingi Girard 1858b: 350.

Liolaemus kingii Boulenger 1885a: 149; Koslowsky 1896: 448, 1898: 173; Burt & Burt 1931: 274; Liebermann 1939: 70; Donoso-Barros & Codoceo 1962: 22; Donoso-Barros 1966a: 273, 1970a: 183, 1970b: 91; Cei 1975d: 111; Scolaro & Cei 1987: 343; Veloso & Navarro 1988: 504; Brygoo 1989: 46; Pereyra *et al.* 1992: 277; Bertoniatti 1994: 169; Scolaro & Cei 1997: 374; Etheridge & Espinoza 2000: 6; Lobo 2001: 139; Chebez *et al.* 2005: 32; Scolaro 2005:39; Sura 2005: 429.

Liolaemus hatcheri Stejneger 1909: 218 (see Scolaro & Cei 2002).

Liolaemus kingii kingii Cei & Scolaro 1981: 207; Cei 1986: 232; Vanzolini 1986: 15; Núñez & Jaksic 1992: 73; Etheridge 1995: 33.

Liolaemus (Donosolaemus) kingii Pincheira-Donoso & Núñez 2005: 79.

***Liolaemus sarmientoi* Donoso-Barros**

Liolaemus d'orbigny Donoso-Barros & Codoceo 1962: 26; Donoso-Barros 1966a: 285.

Liolaemus dorbignyi Donoso-Barros 1970a: 182 (in part); 1970b: 91 (in part).

Liolaemus sarmientoi Donoso-Barros 1973b: 163 (type locality: Monte Aymond, Magallanes Region, Chile); Cei & Scolaro 1996: 391; Scolaro & Cei 1997: 376; Etheridge & Espinoza 2000: 9; Lobo 2001: 139; Chebez *et al.* 2005: 35; Scolaro 2005: 48; Sura 2005: 430.

Liolaemus archeforus sarmientoi Cei 1975d: 113, 1986: 238; Vanzolini 1986: 16; Veloso & Navarro 1988: 500; Núñez & Jaksic 1992: 70; Etheridge 1995: 32.

Liolaemus (Donosolaemus) sarmientoi Pincheira-Donoso & Núñez 2005: 66.

***Liolaemus scolaroi* Pincheira-Donoso & Núñez**

Liolaemus darwini Donoso-Barros & Codoceo 1962: 20; Donoso-Barros 1966a: 281, 1970a: 182 (in part), 1970b: 90.

Liolaemus zullyi Moore *et al.* 2003: 166.

Liolaemus (Donosolaemus) scolaroi Pincheira-Donoso & Núñez 2005: 70 (type locality: Jeinimeni Natural Reserve, Aysen Region, Chile).

Liolaemus scolaroi Scolaro 2006: 95.

***Liolaemus somuncurae* Cei & Scolaro**

Liolaemus ruizleali Donoso-Barros & Cei 1971: 93 (see Cei & Scolaro 1987).

Liolaemus kingii somuncurae Cei & Scolaro 1981: 207 (type locality: Meseta de Somuncurá, near Laguna Raimundo, 1400 m, Río Negro Province, Argentina); Cei 1985: 15, 1986: 234; Vanzolini 1986: 15; Etheridge 1995: 33.

Liolaemus somuncurae Scolaro & Cei 1997: 374; Etheridge & Espinoza 2000: 9; Schulte *et al.* 2000: 78; Chebez *et al.* 2005: 35; Sura 2005: 430; Scolaro 2006: 48.

***Liolaemus tari* Scolaro & Cei**

Liolaemus tari Scolaro & Cei 1997: 383 (type locality: Meseta del Viento, 1150 m, 20 km SW from Lago Tar, Santa Cruz Province, Argentina); Etheridge & Espinoza 2000: 9; Chebez *et al.* 2005: 36; Scolaro 2005: 50; Sura 2005: 430.

***Liolaemus tristis* Scolaro & Cei**

Liolaemus tristis Scolaro & Cei 1997: 377 (type locality: Meseta de las Lagunas Sin Fondo, 70-80 kms S Las Heras, W side of the Provincial Road 501 of Pico Truncado a Laguna Madre e Hija, E Santa Cruz Province, Argentina); Etheridge & Espinoza 2000: 9; Chebez *et al.* 2005: 36; Scolaro 2005: 52; Sura 2005: 430.

***Liolaemus uptoni* Scolaro & Cei**

Liolaemus uptoni Scolaro & Cei 2006: 62 (type locality: Bajada del Buey [42°23'46''S, 68°57'56''W], 815 m, W Pampa de Sacanana, Provincial Road 4, km 360, Chubut Province, Argentina); Scolaro 2006: 97.

***Liolaemus zullyi* Cei & Scolaro**

Liolaemus zullyi Cei & Scolaro 1996: 393 (type locality: Río Zeballos Valley, Río Jeinemeni, Santa Cruz Province, Argentina); Scolaro & Cei 1997: 374; Etheridge & Espinoza 2000: 9; Chebez *et al.* 2005: 36; Scolaro 2005: 54.

Liolaemus (Donosolaemus) zullyi Pincheira-Donoso & Núñez 2005: 74.
Liolaemus zullyae Sura 2005: 430.

Line *magellanicus*

Laurent (1995a) proposed the monotypic subgenus *Austroleamus* for *L. magellanicus* (which was therefore designated as the type species). However, in later studies (*e.g.* Etheridge & Espinoza 2000) it has been considered a synonym of *Liolaemus*. Even though available evidence suggests that *Liolaemus magellanicus* would represent a phylogenetically independent line within the *Liolaemus* genus (see Fig. 4), additional evidence may be still required to recognize *Austroleamus* as a valid subgenus. Following a strict phylogenetic criteria, *Austroleamus* should indeed be validated.

***Liolaemus magellanicus* (Hombron & Jacquinet)**

Proctotretus magellanicus Hombron & Jacquinet 1847: Pl. 2 (type locality: Havre Pecquet, Estrecho de Magallanes, Magallanes Region, Chile); Duméril & Duméril 1851: 75; Duméril 1856: 543; Guichenot 1848: 46.

Rhytidodeira magellanicus Girard 1858a: 198.

Rhytidodeira magellanica Girard 1858b: 349.

Liolaemus magellanicus Boulenger 1885a: 148, 1885c: 80; Koslowsky 1898: 173; Andersson 1898: 461; Quijada 1916: 29; Burt & Burt 1931: 275, 1933: 33; Liebermann 1939: 70; Guibé 1954: 48; Donoso-Barros & Codoceo 1962: 32; Donoso-Barros 1966a: 277, 1970a: 185; 1970b: 93; Porter 1972: 401; Bottari 1975a: 211; Jaksic & Schwenk 1983: 457; Cei 1986: 263; Vanzolini 1986: 15; Veloso & Navarro 1988: 506; Núñez & Jaksic 1992: 74; Pereyra *et al.* 1992: 277; Scolaro 1992: 287; Etheridge 1995: 33; Etheridge & Espinoza 2000: 7; Schulte *et al.* 2000: 78; Chebez *et al.* 2005: 32; Scolaro 2005: 42; Sura 2005: 429.

Liolaemus (Saccodeira) proximus Werner 1904: 12 (synonym *fide* Hellmich 1934).

Saccodeira arenaria Werner 1910: 26 (synonym *fide* Donoso-Barros 1970b; see also Etheridge & Espinoza 2000).

Liolaemus (Liolaemus) magellanicus Pincheira-Donoso & Núñez 2005: 298.

Subgenus *Vilcunia* Donoso-Barros & Cei

Vilcunia Donoso-Barros & Cei 1971: 90 (type species: *Vilcunia silvanae* Donoso-Barros & Cei 1971).

As most of major-level clades within the *Liolaemus* genus, the clade *Vilcunia* shows a controversial history. While some authors have recognized this group of Patagonian lizards as a valid subgenus (Cei 1986; Pincheira-Donoso & Núñez 2005), others have suggested that it does not exhibit clear signals of differentiation from *Liolaemus* (Etheridge 1995; Etheridge & Espinoza 2000). The development of phylogenetic hypotheses has recently provided support to the idea that these lizards form a monophyletic clade closely related to the *Donosolaemus* subgenus and the *magellanicus* line (*e.g.* Espinoza *et al.* 2004; also Fig. 4).

***Liolaemus hatcheri* Stejneger**

Liolaemus hatcheri Stejneger 1909: 218; Liebermann 1939: 72; Etheridge 1998: 31; Etheridge & Espinoza 2000: 8; Chebez *et al.* 2005: 31; Sura 2005: 429; International Commission on Zoological Nomenclature 2005 (Opinion 2103, case 3219).

Liolaemus magellanicus Donoso-Barros 1970a: 185 (in part; see also Donoso-Barros 1970b; Cei 1986).

Vilcunia periglacialis Cei & Scolaro 1982a: 357 (type locality: 6 km E Estancia Lago Belgrano, 1000 m, Santa Cruz Province, Argentina); Cei 1986: 269.

Liolaemus periglacialis Etheridge 1995: 33; Videla & Cei 1998: 63; Scolaro & Cei 2002: 275; Scolaro 2005: 44; Pincheira-Donoso & Scolaro 2007: 57.

Observations: A major nomenclatural debate has surrounded this patagonian species. Over many decades the name *Liolaemus hatcheri* Stejneger (1909) was considered a synonym of *L. magellanicus*, in agreement with Donoso-Barros's (1970a; see also Donoso-Barros 1970b; Cei 1986) suggestions. More recently, discussions

on the valid name of this taxon increased with the redescription of *L. hatcheri* provided by Etheridge (1998). This author proposed that *L. hatcheri* and *L. periglacialis* are the same species, and hence that the specific name *hatcheri* has precedence in relation to *periglacialis* (Ceï & Scolaro 1982a), described many decades later. However, Scolaro & Ceï (2002) claimed that the original description of *L. hatcheri* was based on a series of *Liolaemus* individuals belonging to three different species (*L. hatcheri*, *L. lineomaculatus* and *L. kingii*), with limited or no details on the collection locality. Also, the name *periglacialis* had largely been used in many herpetological studies, in contrast to the name *hatcheri*, cited in only a few works (Burt & Burt 1930, 1933; Liebermann 1939; more recent references include Etheridge & Espinoza 2000; Chebez *et al.* 2005; Sura 2005). Therefore, the name *periglacialis* (commonly under the genus *Vilcunia* Donoso-Barros & Ceï 1971) was not only based on an official type series with exact details on the type locality (see above), but also has been widely used in several publications (Scolaro & Ceï 2002). Scolaro & Ceï (2002) presented the case to the International Commission on Zoological Nomenclature, which accepted these criteria, recognizing the name *Liolaemus periglacialis* instead of *Liolaemus hatcheri*. Nevertheless, in a more recent resolution presented by this commission (International Commission on Zoological Nomenclature 2005, Opinion 2103, case 3219), the name *L. hatcheri* was revalidated, with the following declaration: “The Commission has ruled that priority should be maintained for the Patagonian tropidurine lizard name *Liolaemus hatcheri* Stejneger, 1909. A proposal had been made to give precedence to the junior subjective synonym *Liolaemus periglacialis* Ceï & Scolaro, 1982”. Therefore, we consider that the officially valid name for this austral species is *Liolaemus hatcheri* Stejneger 1909, which is used in this systematic catalogue.

***Liolaemus kolengh* Abdala & Lobo**

Liolaemus kolengh Abdala & Lobo 2006b: 2 (type locality: Ceballos Hill way, near to Río Ceballos [47°01.542'S, 71°48.475'W], 1485 m, Lago Buenos Aires Department, Santa Cruz Province, Argentina); Pincheira-Donoso & Scolaro 2007: 57.

***Liolaemus lineomaculatus* Boulenger**

Proctotretus kingii Bell 1843: 13 (in part, *fide* Donoso-Barros 1966a); Gray 1845: 215 (in part, *fide* Donoso-Barros 1966a).

Liolaemus lineomaculatus Boulenger 1885a: 149 (type locality: “Patagonia”. Restricted to Puerto Deseado, Patagonia, Argentina, by Donoso-Barros 1966a); Koslowsky 1895: 363, 1896: 450; Andersson 1898: 461; Stejneger 1909: 217; Burt & Burt 1931: 275, 1933: 33; Liebermann 1939: 72; Donoso-Barros & Codoceo 1962: 28; Donoso-Barros 1966a: 275, 1970a: 185; 1970b: 93; Ceï 1971b: 417, 1974c: 183, 1986: 264; Porter 1972: 401; Vanzolini 1986: 15; Veloso & Navarro 1988: 506; Núñez & Jaksic 1992: 74; Pereyra *et al.* 1992: 277; Scolaro 1992: 287; Etheridge 1995: 33; Videla & Ceï 1998: 63; Etheridge & Espinoza 2000: 7; Schulte *et al.* 2000: 78; Lobo 2001: 139; Chebez *et al.* 2005: 32; Scolaro 2005: 41; Sura 2005: 429; Pincheira-Donoso & Scolaro 2007: 57.

Liolaemus hatcheri Stejneger 1909: 218 (see Scolaro & Ceï 2002).

Vilcunia lineomaculatus Laurent 1985b: 7.

Liolaemus (Liolaemus) lineomaculatus Pincheira-Donoso & Núñez 2005: 293.

***Liolaemus silvanae* (Donoso-Barros & Ceï)**

Vilcunia silvanae Donoso-Barros & Ceï 1971: 91 (type locality: Puesto Lebrún, 1400 m, Meseta Lago Buenos Aires, Santa Cruz Province, Argentina); Ceï 1973c: 1, 1982c: 213, 1986: 266; Ceï & Scolaro 1982a: 360; Christie 1984b: 541.

Liolaemus sylvanae Etheridge 1995: 33; Etheridge & Espinoza 2000: 9; Sura 2005: 430.

Liolaemus silvanae Chebez *et al.* 2005: 35; Scolaro 2005: 49; Pincheira-Donoso & Scolaro 2007: 57.

Subgenus *Eulaemus* Girard

Ptychodeira Fitzinger 1843: 78 (type species: *Proctotretus Fitzingerii* Duméril & Bibron 1837).

Ptygoderes Gray 1845: 216 (substitute name for *Ptychodeira*).

Eulaemus Girard 1858a: 198 (type species: *Proctotretus fitzingerii* Duméril & Bibron 1837).

Ortholaemus Girard 1858a: 198 (type species: *Ortholaemus Beaglyi* Girard 1858a).
Helocephalus Philippi 1860: 167 (type species: *Helocephalus nigriceps* Philippi 1860).
Pelusaerus Donoso-Barros 1973a: 132 (type species: *Pelusaerus cranwelli* Donoso-Barros 1973a).
Ceiolaemus Laurent 1984a: 359 (type species: *Liolaemus pseudoanomalus* Cei 1981).
Abas Núñez & Yáñez 1984b: 99 (type species: *Liolaemus fabiani* Yáñez & Núñez 1983).
Velosaura Núñez & Yáñez 1984b: 100 (type species: *Liolaemus aymararum* Veloso, Sallaberry, Navarro, Iturra, Valencia, Penna & Díaz 1982).
Mesolaemus Laurent 1985a: 3 (type species: *Liolaemus cuyanus* Cei & Scolaro 1980).

Clade montanus

***Liolaemus andinus* Koslowsky**

Liolaemus andinus Koslowsky 1895: 338 (type locality: Andes of Catamarca, between 3000 and 4000 m, Catamarca Province, Argentina); Laurent 1982b: 89; Vanzolini 1986: 12; Núñez 2004: 30; Chebez *et al.* 2005: 28; Sura 2005: 428.
Liolaemus signifer var. *nigriceps* Koslowsky 1898: 180 (see Cei 1993).
Ctenoblepharis schmidtii Marx 1960: 407 (synonym *fide* Pincheira-Donoso & Núñez 2005); Donoso-Barros 1966a: 342, 1970a: 104 (in part); Yáñez & Núñez 1982: 12.
Liolaemus multiformis multiformis Donoso-Barros 1970a: 187 (in part).
Ctenoblepharis schmidtii Donoso-Barros 1970b: 85 (in part).
Liolaemus multiformis multiformis Donoso-Barros 1970b: 94 (in part).
Liolaemus schmidtii Vanzolini 1986: 16; Veloso & Navarro 1988: 511; Núñez & Jaksic 1992: 76; Sura 2005: 430 (in part).
Liolaemus poecilochromus Laurent 1986: 100 (synonym *fide* Pincheira-Donoso & Núñez 2005); Schulte *et al.* 2000: 78. (in part); Díaz 2007: 117.
Liolaemus andinus andinus Laurent 1992: 30; Cei 1993: 245; Etheridge 1995: 34; Etheridge & Espinoza 2000: 4.
Liolaemus andinus poecilochromus Halloy *et al.* 1991: 61; Laurent 1992: 30 (in part); Cei 1993: 248 (in part); Etheridge 1995: 34 (in part); Etheridge & Espinoza 2000: 4 (in part).
Liolaemus molinai Valladares *et al.* 2002: 477 (synonym *fide* Pincheira-Donoso & Núñez 2005); Sura 2005: 429 (in part).
Liolaemus (Eulaemus) andinus Pincheira-Donoso 2005: 126; Pincheira-Donoso & Núñez 2005: 152.

***Liolaemus annectens* Boulenger**

Liolaemus annectens Boulenger 1901: 546 (type locality: Caylloma and Sumbay, Andes of Perú); Vanzolini 1986: 12; Carrillo de Espinoza & Icochea 1995: 9.
Liolaemus multiformis Hellmich 1962: 2.
Liolaemus multiformis multiformis Donoso-Barros 1970a: 187.
Liolaemus signifer annectens Laurent 1992: 31; Cei 1993: Lam 15, figs 1, 2, 3; Etheridge 1995: 34; Etheridge & Espinoza 2000: 9.

***Liolaemus disjunctus* Laurent**

Liolaemus disjunctus Laurent 1990: 79 (type locality: Huamachuco, La Libertad Department, Perú), 1992: 31; Etheridge 1995: 34; Etheridge & Espinoza 2000: 5; Sura 2005: 428.

***Liolaemus dorbignyi* Koslowsky**

Liolaemus d'orbignyi Koslowsky 1898: 174 (type locality: Catamarca Province, Argentina).
Liolaemus dorbignyi Donoso-Barros 1970a: 182; Vanzolini 1986: 14; Laurent 1992: 31; Etheridge 1995: 34; Etheridge & Espinoza 2000: 5; Chebez *et al.* 2005: 30; Sura 2005: 428; Díaz 2007: 118; Quinteros *et al.* 2008: 52.
Liolaemus dorbignyi Cei 1993: 239.
Liolaemus dorbignyi Díaz 2007: 117.

***Liolaemus eleodori* Cei, Etheridge & Videla**

Liolaemus eleodori Cei *et al.* 1983: 317 (type locality: Llanos de Los Hoyos, 7 km SE Refuge Provincial Reserve San Guillermo, 3500 m, San Juan Province, Argentina); Cei 1986: 225; Vanzolini 1986: 14; Laurent 1992: 31; Etheridge 1995: 34; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 5; Pincheira-Donoso & Núñez 2003: 13; Chebez *et al.* 2005: 30; Sura 2005: 428.

***Liolaemus erguetae* Laurent**

Liolaemus islugensis erguetae Laurent 1995b: 2 (type locality: Laguna Colorada, Potosí, Bolivia); Etheridge & Espinoza 2000: 6.

Liolaemus erguetae Pincheira-Donoso & Núñez 2002: 41.

Liolaemus (Eulaemus) erguetae Pincheira-Donoso 2005: 128; Pincheira-Donoso & Núñez 2005: 157.

***Liolaemus etheridgei* Laurent**

Liolaemus (Eulaemus) etheridgei Laurent 1998: 17 (type locality: 3.5 km W Pocsi, Arequipa Department, Perú).

Liolaemus etheridgei Etheridge & Espinoza 2000: 6; Sura 2005: 428.

***Liolaemus fabiani* Yáñez & Núñez**

Liolaemus ornatus Donoso-Barros 1966a: 323.

Liolaemus fabiani Yáñez & Núñez 1983: 788 (type locality: 10 Km E San Pedro de Atacama, Llano de Vilama, on the road to Volcán Licancabur, Antofagasta Region, Chile); Vanzolini 1986: 14; Laurent 1992: 31; Núñez & Jaksic 1992: 72; Etheridge 1995: 34; Etheridge & Espinoza 2000: 6; Escobar *et al.* 2001: 1679; Escobar *et al.* 2003: 629; Sura 2005: 428.

Abas fabiani Núñez & Yáñez 1984b: 99.

Ceiolaemus fabiani Veloso & Navarro 1988: 497.

Liolaemus (Eulaemus) fabiani Pincheira-Donoso 2005: 129; Pincheira-Donoso & Núñez 2005: 103.

***Liolaemus famatinae* Cei**

Liolaemus famatinae Cei 1980d: 60 (type locality: 2 km E Cueva de Pérez, 4100 m, Sierra de Famatina, La Rioja Province, Argentina), 1982b: 643, 1986: 224; Vanzolini 1986: 14; Laurent 1992: 31; Etheridge 1995: 34; Etheridge & Espinoza 2000: 6; Chebez *et al.* 2005: 31; Sura 2005: 428; Díaz 2007: 117.

***Liolaemus filiorum* Pincheira-Donoso & Ramírez**

Liolaemus (Eulaemus) filiorum Pincheira-Donoso & Ramírez 2005: 353 (type locality: Cerro Las Papas, S of Lequena, El Loa Province, Antofagasta Region, Chile); Pincheira-Donoso 2005: 131.

***Liolaemus fittkai* Laurent**

Liolaemus fittkai Laurent 1986: 94 (type locality: Cochabamba Region, Bolivia), 1992: 31; Etheridge 1995: 34; Etheridge & Espinoza 2000: 6; Pincheira-Donoso 2002b: 21; Sura 2005: 428.

***Liolaemus forsteri* Laurent**

Liolaemus forsteri Laurent 1982a: 139 (type locality: Chacaltaya, 4700 m, near La Paz, Bolivia), 1992: 31; Vanzolini 1986: 14; Baudoin *et al.* 1990: 429; Etheridge 1995: 34; Etheridge & Espinoza 2000: 6; Pincheira-Donoso 2002b: 21; Sura 2005: 428.

***Liolaemus foxi* Núñez, Navarro & Veloso**

Liolaemus foxi Núñez *et al.* 2000: 118 (type locality: Cuesta Barros Arana, 60 km SE Calama, Antofagasta Region, Chile); Núñez & Veloso 2001: 111; Pincheira-Donoso & Núñez 2003: 13; Sura 2005: 428.

Liolaemus (Eulaemus) foxi Pincheira-Donoso 2005: 132; Pincheira-Donoso & Núñez 2005: 126.

***Liolaemus griseus* Laurent**

Liolaemus griseus Laurent 1984b: 278 (type locality: East slope, near northern area of Cerro Isabel, 4600 m, Cumbres Calchaquies, Tafí Department, Tucumán Province, Argentina); Vanzolini 1986: 14; Laurent 1992: 31; Cei 1993: 253; Etheridge 1995: 34; Etheridge & Espinoza 2000: 6; Chebez *et al.* 2005: 31; Sura 2005: 429.

***Liolaemus hajeki* Núñez, Pincheira-Donoso & Garín**

Liolaemus hajeki Núñez *et al.* 2004: 86 (type locality: Turi, El Loa Province, Antofagasta Region, Chile); Sura 2005: 429.

Liolaemus (Eulaemus) hajeki Pincheira-Donoso 2005: 134; Pincheira-Donoso & Núñez 2005: 107.

***Liolaemus huacahuasicus* Laurent**

Liolaemus huacahuasicus Laurent 1984b: 280 (*nomen nudum*), 1985c: 241 (type locality: Lagunas de Huaca-Huasi, Cumbres Calchaquies, 4250 m, Tucumán Province, Argentina), 1992: 31; Halloy & Laurent 1988: 137; Ramírez-Pinilla 1991: 205; Cei 1993: 253; Etheridge 1995: 34; Halloy & Halloy 1997: 139; Etheridge & Espinoza 2000: 6; Chebez *et al.* 2005: 32; Sura 2005: 429; Díaz 2007: 117.

***Liolaemus insolitus* Cei & Péfaur**

Liolaemus insolitus Cei & Péfaur 1982: 573 (type locality: Arequipa, Perú); Cei 1986: 200; Etheridge 1995: 34; Carrillo de Espinoza & Icochea 1995: 10; Etheridge & Espinoza 2000: 6; Sura 2005: 429.
Abas insolitus Núñez & Yáñez 1984b: 99.

***Liolaemus jamesi* (Boulenger)**

Ctenoblepharis jamesi Boulenger 1891: 3 (type locality: Andes Range of Tarapacá, 3300-4000 m, Tarapaca Region, Chile), 1895: 723; Donoso-Barros 1958b: 254, 1960: 65, 1964: 7, 1966a: 337; Peters & Donoso-Barros 1970: 103.
Liolaemus multiformis Codoceo 1950: 15 (see Donoso-Barros 1966a).
Ctenoblepharis jamesi Donoso-Barros 1970b: 85.
Liolaemus jamesi Leyton *et al.* 1982: 293; Veloso *et al.* 1982: 225; Vanzolini 1986: 14; Laurent 1992: 31; Escobar *et al.* 2001: 1679; Sura 2005: 429.
Liolaemus aymararum Veloso *et al.* 1982: 230 (synonym *fide* Pincheira-Donoso & Núñez 2005); Leyton *et al.* 1982: 293 (in part); Laurent 1992: 30.
Velosaura aymararum Núñez & Yáñez 1984b: 100; Veloso & Navarro 1988: 516; Núñez & Jaksic 1992: 79.
Velosaura jamesi Núñez & Yáñez 1984b: 100; Veloso & Navarro 1988: 517; Núñez & Jaksic 1992: 79.
Liolaemus jamesi jamesi Etheridge & Espinoza 2000: 6.
Liolaemus jamesi aymararum Laurent 1995b: 2; Etheridge & Espinoza 2000: 6.
Liolaemus (Eulaemus) jamesi Pincheira-Donoso & Núñez 2005: 113.

***Liolaemus melanogaster* Laurent**

Liolaemus (Eulaemus) melanogaster Laurent 1998: 5 (type locality: 45 km E Puquio, 4570 m, Ayacucho Department, Perú).
Liolaemus melanogaster Etheridge & Espinoza 2000: 7; Sura 2005: 429.

***Liolaemus montanus* Koslowsky**

Liolaemus signifer var. *montanus* Koslowsky 1898: 182 (Base Norte Cerro Manchao, 3000 m, Catamarca Province, Argentina, see Laurent 1982b).
Liolaemus multiformis simonsii Donoso-Barros 1970a: 187.
Liolaemus montanus Laurent 1982b: 94, 1992: 31; Vanzolini 1986: 15; Cei 1993: 256; Etheridge 1995: 34; Etheridge & Espinoza 2000: 7; Chebez *et al.* 2005: 33; Sura 2005: 429; Díaz 2007: 118.

***Liolaemus multicolor* Koslowsky**

Liolaemus signifer var. *multicolor* Koslowsky 1898: 182 (type locality: "Jujuy Province". Restricted to Valle de Guayatayoc, Argentina, Laurent 1982b).
Liolaemus ornatus Donoso-Barros 1970a: 191.
Liolaemus multicolor Laurent 1982b: 91, 1992: 31; Vanzolini 1986: 15; Etheridge 1995: 34; Etheridge & Espinoza 2000: 7; Núñez & Veloso 2001: 111; Chebez *et al.* 2005: 33; Sura 2005: 429; Díaz 2007: 116.
Liolaemus (Eulaemus) multicolor Pincheira-Donoso 2005: 135; Pincheira-Donoso & Núñez 2005: 161.

Observations: Núñez & Veloso (2001) provided the first record of *L. multicolor* from Chilean territory (Salar de Aguas Calientes, 4200 m, El Loa Province, Antofagasta Region). In later studies, Pincheira-Donoso (2005) and Pincheira-Donoso & Núñez (2005) cited the species for the northeastern high Andes of this country, following Núñez & Veloso (2001). Nevertheless, a recent reassessments of the only specimen studied by Núñez & Veloso (2001) suggests that it might be a subadult of *L. andinus*. In addition, field observations conducted in the populations recognized as *L. multicolor* by Pincheira-Donoso (2005) appear to support the idea that further analyses are needed to proof the existence of this species in Chile. Since available information as well as lizard samples are still limited, definitive conclusions are not possible at this time. Yet, the problem deserves to be reevaluated.

***Liolaemus nigriceps* (Philippi)**

Helocephalus nigriceps Philippi 1860: 167 (type locality: "Pajonal", Atacama, Chile); Boulenger 1885a: 137; Koslowsky 1895: 363; Quijada 1916: 28.

Ctenoblepharis adspersus Lataste 1891: 24 (*fide* Donoso-Barros 1966a).

Ctenoblepharis nigriceps Donoso-Barros 1964: 7, 1966a: 335; Peters & Donoso-Barros 1970: 104; Veloso & Navarro 1988: 497.

Liolaemus signifer var. *nigriceps* Koslowsky 1898: 180.

Liolaemus signifer nigriceps Burt & Burt 1933: 37.

Liolaemus (Helocephalus) nigriceps Hellmich 1934: 100.

Ctenoblepharys nigriceps Donoso-Barros 1970b: 85.

Liolaemus nigriceps Vanzolini 1986: 15; Laurent 1992: 31; Núñez & Jaksic 1992: 74; Cei 1993: 242, 1998: 59; Etheridge 1995: 34; Etheridge & Espinoza 2000: 7; Pincheira-Donoso & Núñez 2003: 13; Chebez *et al.* 2005: 33; Sura 2005: 429; Díaz 2007: 117.

Liolaemus (Eulaemus) nigriceps Pincheira-Donoso 2005: 137; Pincheira-Donoso & Núñez 2005: 131.

***Liolaemus orientalis* Müller**

Liolaemus annectens orientalis Müller 1924: 81.

Content: Two subspecies distributed in northwestern Argentina and southwestern Bolivia (Laurent 1991; Cei 1993).

***Liolaemus orientalis orientalis* Müller**

Liolaemus annectens orientalis Müller 1924: 81 (type locality: Río Pilcomayo, between Tarija and San Francisco, Bolivia).

Liolaemus multiformis simonsii Donoso-Barros 1970a: 187.

Liolaemus orientalis Laurent 1992: 31; Cei 1993: 243; Pincheira-Donoso 2002b: 21; Chebez *et al.* 2005: 33; Sura 2005: 429; Díaz 2007: 117.

Liolaemus orientalis orientalis Etheridge 1995: 34; Etheridge & Espinoza 2000: 8.

***Liolaemus orientalis chlorostictus* Laurent**

Liolaemus orientalis chlorostictus Laurent 1991: 98 (type locality: 42 km from Pirquitas, cuesta Fundiciones, 4150 m, Rinconada Department, Jujuy Province, Argentina), 1995b: 1; Cei 1993: 746; Etheridge 1995: 34; Etheridge & Espinoza 2000: 8.

Liolaemus chlorostictus Díaz 2007: 117.

***Liolaemus ortizi* Laurent**

Liolaemus ortizi Laurent 1982a: 142 (type locality: Cuzco Department, Perú), 1992: 31; Vanzolini 1986: 16; Etheridge 1995: 34; Carrillo de Espinoza & Icochea 1995: 10; Etheridge & Espinoza 2000: 8; Sura 2005: 429.

***Liolaemus pachecoi* Laurent**

Liolaemus (Eulaemus) jamesi pachecoi Laurent 1995b: 1 (type locality: Laguna Colorada, Potosí, Bolivia).

Liolaemus jamesi pachecoi Etheridge & Espinoza 2000: 6.

***Liolaemus pantherinus* Pellegrin**

Liolaemus pantherinus Pellegrin 1909: 324 (type locality: High Andes in Perú and Bolivia, near Lago Titicaca, *fide* Donoso-Barros 1966a, 1970b); Donoso-Barros 1966a: 327, 1970a: 192, 1970b: 98; Pearson & Ralph 1978: 24; Vanzolini 1986: 16; Núñez & Jaksic 1992: 75; Carrillo de Espinoza & Icochea 1995:10; Etheridge & Espinoza 2000: 8; Pincheira-Donoso & Núñez 2002: 38; Sura 2005: 429.

Liolaemus islugensis Ortiz & Marquet 1987: 59 (synonym *fide* Pincheira-Donoso & Núñez 2002; see also Pincheira-Donoso & Núñez 2005); Sura 2005: 429 (in part).

Liolaemus islugensis islugensis Etheridge & Espinoza 2000: 6.

Liolaemus (Eulaemus) pantherinus Pincheira-Donoso 2005: 139; Pincheira-Donoso & Núñez 2005: 164.

***Liolaemus patriciaturrae* Núñez & Navarro**

Ctenoblepharis nigriceps Donoso-Barros 1966a: 336 (in part).

Liolaemus patriciaturrae Núñez & Navarro (in Navarro & Núñez 1993): 101 (type locality: El Cerrito, 12 km NW La Ola, near Salar de Pedernales, Atacama Region, Chile); Etheridge 1995: 34; Etheridge & Espinoza 2000: 8; Pincheira-Donoso & Núñez 2003: 13; Sura 2005: 429.

Liolaemus (Eulaemus) patriciaturrae Pincheira-Donoso & Núñez 2005: 136.

***Liolaemus pleopholis* Laurent**

Liolaemus multiformis Leyton *et al.* 1982: 293; Veloso *et al.* 1982: 220.

Liolaemus (Eulaemus) pleopholis Laurent 1998: 13 (type locality: Pampa Chucuyo, 10 km from Parinacota, SE Pallachata, 4240 m, Tarapaca Region, Chile)

Liolaemus pleopholis Etheridge & Espinoza 2000: 8; Núñez 2004: 30; Sura 2005: 429.

Liolaemus (Eulaemus) pleopholis Pincheira-Donoso & Núñez 2005: 168.

***Liolaemus polystictus* Laurent**

Liolaemus polystictus Laurent 1992: 15 (type locality: Santa Inez, around 100 km S Huancavelica, Huancavelica Department, Perú); Etheridge 1995: 34; Carrillo de Espinoza & Icochea 1995: 10; Etheridge & Espinoza 2000: 8; Sura 2005: 429.

***Liolaemus pulcherrimus* Laurent**

Liolaemus pulcherrimus Laurent 1991: 102 (type locality: Mudana, near Río Caleta, Humahuaca Department, Jujuy Province, Argentina); Cei 1993: 746; Etheridge 1995: 34; Etheridge & Espinoza 2000: 8; Chebez *et al.* 2005: 34; Sura 2005: 429; Díaz 2007: 117.

***Liolaemus puritamensis* Núñez & Fox**

Liolaemus multiformis multiformis Donoso-Barros 1966a: 317 (in part, see Pincheira-Donoso & Núñez 2005).

Liolaemus puritamensis Núñez & Fox 1989: 457 (type locality: Puritama, E San Pedro de Atacama, Antofagasta Region, Chile).

Liolaemus dorbignyi Núñez 1992: 8; Núñez & Jaksic 1992: 72; Etheridge & Espinoza 2000: 5 (in part).

Liolaemus dorbigni Escobar *et al.* 2001: 1679.

Liolaemus (Eulaemus) puritamensis Pincheira-Donoso 2005: 141; Pincheira-Donoso & Núñez 2005: 118.

***Liolaemus robertoi* Pincheira-Donoso & Núñez**

Liolaemus cf. vallecurensis Núñez & Torres-Mura 1992: 6.

Liolaemus vallecurensis Cortés *et al.* 1995: 20.

Liolaemus robertoi Pincheira-Donoso & Núñez 2003: 3 (type locality: Estero Tambo, Piedra Colgada, El Indio, 3700 m, Coquimbo Region, Chile); Sura 2005: 429.

Liolaemus (Eulaemus) robertoi Pincheira-Donoso & Núñez 2005: 141.

***Liolaemus robustus* Laurent**

Liolaemus robustus Laurent 1992: 8 (type locality: Junin, Junin Department, Peru); Etheridge 1995: 34; Carrillo de Espinoza & Icochea 1995: 10; Etheridge & Espinoza 2000: 8; Sura 2005: 429.

***Liolaemus rosenmanni* Núñez & Navarro**

Liolaemus rosenmanni Núñez & Navarro 1992: 56 (type locality: Pastos Largos, Chimberos, Atacama Region, Chile); Núñez & Jaksic 1992: 76; Etheridge 1995: 34; Etheridge & Espinoza 2000: 8; Pincheira-Donoso & Núñez 2003: 13; Sura 2005: 430.

Liolaemus eleodori Núñez & Torres-Mura 1992: 3 (see Pincheira-Donoso & Núñez 2005); Núñez & Jaksic 1992: 72 (in part); Escobar *et al.* 2001: 1679.

Liolaemus (Eulaemus) rosenmanni Pincheira-Donoso & Núñez 2005: 146.

***Liolaemus ruibali* Donoso-Barros**

Liolaemus ruibali Donoso-Barros 1961a: 390 (type locality: between Villavicencio and Uspallata, 3000 m, Andes range of Mendoza Province, Argentina), 1970a: 194; Cei & Roig 1976: 69; Péfaur & Duellman 1980: 45; Cei 1986: 223;

Vanzolini 1986: 16; Laurent 1992: 31; Marcus & Laurent 1994: 46; Etheridge 1995: 34; Etheridge & Espinoza 2000: 8; Pincheira-Donoso & Núñez 2003: 13; Chebez *et al.* 2005: 35; Sura 2005: 430.

***Liolaemus scrocchii* Quinteros, Abdala & Lobo**

Liolaemus dorbignyi (see references in Quinteros *et al.* 2008: 59).

Liolaemus scrocchii Quinteros *et al.* 2008: 59 (type locality: Two km SE of Susques on National Road 52, Susques Department, Jujuy Province, Argentina).

***Liolaemus signifer* (Dumeril & Bibron)**

Proctotretus signifer Duméril & Bibron 1837: 288 (terra typica: “Chile”); Bell 1843: 8; Guichenot 1848: 40; Duméril & Duméril 1851: 74.

Ptychodeira signifera Fitzinger 1843: 73.

Ptychodeira signifer Tschudi 1846: 32.

Liolaemus signifer Gray 1845: 214; Boulenger 1885a: 154; Quijada 1916: 9; Burt & Burt 1931: 279; Hellmich 1934: 111; Liebermann 1939: 72; Donoso-Barros 1966a: 329, 1970a: 194, 1970b: 100; Vanzolini 1986: 16; Veloso & Navarro 1988: 512; Brygoo 1989: 16; de la Viña *et al.* 1992: 216; Núñez & Jaksic 1992: 76; Carrillo de Espinoza & Icochea 1995: 10; Pincheira-Donoso 2002b: 21; Sura 2005: 430.

Proctotretus multiformis Cope 1876: 173 (synonym *fide* Halloy & Laurent 1988; Laurent 1992).

Eulaemus signifer Girard 1858a: 198.

Liolaemus (Eulaemus) signifer Girard 1858b: 366.

Liolaemus multiformis Boulenger 1885a: 153; Porter 1972: 401; Pearson 1977: 353; Péfaur & Duellman 1980: 45; Vanzolini 1986: 15 (in part); Baudoin *et al.* 1990: 429; Ibish & Böhme 1993: 18; Mattison 1999: 47.

Liolaemus lenzi Boettger 1891: 344 (synonym *fide* Laurent 1992), 1893: 61.

Liolaemus signifer signifer Koslowsky 1898: 180; Burt & Burt 1933: 37; Laurent 1992: 31; Etheridge 1995: 34; Etheridge & Espinoza 2000: 9.

Liolaemus variabilis var. *crequii* Pellegrin 1909: 327 (synonym *fide* Laurent 1992; see also Hellmich 1962; Etheridge & Espinoza 2000).

Liolaemus variabilis var. *neveui* Pellegrin 1909: 327 (synonym *fide* Laurent 1992; see also Hellmich 1962; Etheridge & Espinoza 2000).

Liolaemus variabilis var. *courtyi* Pellegrin 1909: 328 (synonym *fide* Laurent 1992; see also Hellmich 1962; Etheridge & Espinoza 2000).

Liolaemus bolivianus Pellegrin 1909: 328 (synonym *fide* Hellmich 1934, 1962).

Liolaemus multiformis multiformis Burt & Burt 1930: 17; Pearson 1954: 111; Donoso-Barros 1966a: 317 (in part), 1970a: 187 (in part), 1970b: 94 (in part); Veloso & Navarro 1988: 507 (in part).

Liolaemus (Eulaemus) signifer Pincheira-Donoso 2005: 142; Pincheira-Donoso & Núñez 2005: 172.

***Liolaemus stolzmanni* (Steindachner)**

Ctenoblepharis stolzmanni Steindachner 1891: 143 (type locality: “Andes of Peru”); Peters & Donoso-Barros 1970: 104; Tiedemann & Häupl 1980: 17; Veloso & Navarro 1988: 498.

Ctenoblepharis stolzmani Burt & Burt 1933: 23; Donoso-Barros 1966a: 341.

Ctenoblepharys stolzmani Donoso-Barros 1970b: 86.

Phrynosaura stolzmanni Laurent 1984a: 371; Núñez & Jaksic 1992: 79.

Phrynosaura stolzmani Carrillo de Espinoza & Icochea 1995: 10.

Liolaemus stolzmanni Etheridge 1995: 34; Etheridge & Espinoza 2000: 9; Sura 2005: 430.

Liolaemus (Eulaemus) stolzmanni Pincheira-Donoso 2005: 143; Pincheira-Donoso & Núñez 2005: 121.

***Liolaemus thomasi* Laurent**

Liolaemus (Eulaemus) thomasi Laurent 1998: 10 (type locality: Hualla Hualla, 49 km from Oncogate, 4450 m, Cuzco Department, Perú).

Liolaemus thomasi Etheridge & Espinoza 2000: 9; Sura 2005: 430.

***Liolaemus tropidonotus* Boulenger**

Liolaemus tropidonotus Boulenger 1902: 397 (type locality: “Tirapata, E Peru, 13000 feet”, see Núñez 2004: 33).

Liolaemus multiformis Burt & Burt 1931: 227 (see Núñez 2004).

Observations: *Liolaemus tropidonotus* represents an additional controversial species apparently related to *L.*

annectens and *L. signifer*. After its original description (Boulenger 1902), Burt & Burt (1931) placed this taxon into the synonymy of *L. multiformis* (which is in turn a synonym of *L. annectens* *vide* Laurent 1992; see also Etheridge & Espinoza 2000). However, in a recent taxonomic reassessment, Núñez (2004) suggested that the type series of *L. tropidonotus* (preserved in the British Museum of Natural History of London) exhibits substantial patterns of morphological differentiation from the group of Andean species consisting of *L. annectens*, *L. pleopholis* and *L. signifer* (see Cei 1993; Pincheira-Donoso & Núñez 2005). This author concluded that the distinctive traits observed among these taxa do not support the idea of their synonymy, and that therefore, *L. tropidonotus* should be revalidated, at least while a more detailed evaluation provides contrary evidence. Since no other study has so far been presented, we follow Núñez's (2004) criteria, and recognize *L. tropidonotus* as a species different from *L. annectens* and *L. signifer*. We believe that these morphological contrasts (see Núñez 2004, for details) may be the result of independent adaptive radiations leading to fully segregated phylogenetic lines.

***Liolaemus vallecurensis* Pereyra**

Liolaemus vallecurensis Pereyra 1992: 11 (type locality: La Sepultura, 3815 m, Valle del Cura, Iglesia Department, San Juan Province, Argentina); Etheridge 1995: 34; Etheridge & Espinoza 2000: 9; Pincheira-Donoso & Núñez 2003: 13; Chebez *et al.* 2005: 36; Sura 2005: 430.

***Liolaemus williamsi* Laurent**

Liolaemus williamsi Laurent 1992: 22 (type locality: Pampas Galeras, between Nazca and Puquio, Ayacucho Department, Perú), 1992: 31; Etheridge 1995: 34; Carrillo de Espinoza & Icochea 1995: 10; Etheridge & Espinoza 2000: 9; Sura 2005: 430.

Group *reichei*

The species herein included in the group *reichei* have commonly been recognized as members of the controversial genus *Phrynosaura* (Werner 1907; Donoso-Barros 1966a, b, 1972; Núñez & Jaksic 1992; Núñez *et al.* 2003). Over the last century, many authors have suggested that clear patterns of differentiation in osteological and cytogenetical traits observed exclusively in *L. audituvelatus*, *L. erroneous*, *L. manueli*, *L. poconchilensis*, *L. reichei* and *L. torresi* would support the hypothesis that these species represent a discrete evolutionary line (*e.g.* Núñez *et al.* 1998, 2003). Yet, on the other hand, some studies conclude that these traits may not be sufficient evidence to separate this still hypothetical group of species from the *Liolaemus* genus (Frost & Etheridge 1989; Etheridge 1995; Etheridge & Espinoza 2000; Valladares 2004). Recent molecular phylogenies have contributed to clarify in part this problem. This research reveals that at least the two "*Phrynosaura*" species analysed phylogenetically so far, are nested within *Liolaemus* (Valladares *et al.* 2002; Schulte *et al.* 2004). Therefore, these findings appear to support Frost & Etheridge's (1989) and Etheridge's (1995) proposal that *Phrynosaura* is a synonym of the genus *Liolaemus*. Nevertheless, it still remains unknown whether the currently six species assigned to *Phrynosaura* (or alternatively to the group *reichei*; see Núñez *et al.* 2003; Valladares 2004) actually form a monophyletic clade within this genus (phylogenetic evidence suggest that these species are members of the series *signifer*; see above). Since the anatomical and cytogenetical evidence reported in previous papers suggests that these six species would be closely related taxa (Núñez *et al.* 2003), we include them into the group *reichei* (*e.g.* Valladares 2004). However, further phylogenetic studies are needed to test the validity of this classification criterion.

***Liolaemus audituvelatus* (Núñez & Yáñez)**

Ctenoblepharis audituvelatus Núñez & Yáñez 1983: 454 (type locality: Llanos de Vilama, 10 km E San Pedro de Atacama, Antofagasta Region, Chile).

Phrynosaura audituvelatus Núñez & Yáñez 1984b: 101; Vanzolini 1986: 8; Veloso & Navarro 1988: 514.

Phrynosaura audituvelata Núñez & Jaksic 1992: 79; Núñez *et al.* 1998: 12; Pincheira-Donoso 2005: 145.
Liolaemus audituvelatus Etheridge 1995: 34; Etheridge & Espinoza 2000: 5; Sura 2005: 428.

***Liolaemus erroneus* (Núñez & Yáñez)**

Ctenoblepharis schmidti Donoso-Barros 1966a: 342.

Ctenoblepharis erroneus Núñez & Yáñez 1984a: 92 (type locality: On the road to Tumbre, E San Pedro de Atacama, Antofagasta Region, Chile); Veloso & Navarro 1988: 498.

“*Ctenoblepharys*” *erroneus* Núñez & Jaksic 1992: 71 (*incertae sedis*).

Liolaemus erroneus Etheridge & Espinoza 2000: 6; Sura 2005: 428.

Phrynosaura erronea Pincheira-Donoso 2005: 147.

***Liolaemus manueli* (Núñez, Navarro, Garín, Pincheira-Donoso & Meriggio)**

Phrynosaura cf. *audituvelata* Núñez *et al.* 1998: 12.

Phrynosaura manueli Núñez *et al.* 2003: 69 (type locality: Diego de Almagro [26°23'S, 70°02'W], 750 m, Atacama Region, Chile).

Liolaemus manueli Schulte *et al.* 2004 : 410.

***Liolaemus poconchilensis* Valladares**

Phrynosaura reichei Núñez *et al.* 1998: 11.

Liolaemus cf. *reichei* Valladares *et al.* 2002: 483.

Liolaemus poconchilensis Valladares 2004: 42 (type locality: Poconchile [18°26'S, 70°05'W], 1100 m, Arica Province, Tarapacá Region, Chile).

Observations: The type locality of this species needs to be rectified. In the original description, Valladares (2004) pointed out that the type series of *L. poconchilensis* was collected in Poconchile (see above). However, active field work conducted on that zone has repeatedly failed to provide any record of this lizard. In contrast, the species is relatively common in the plateau located between the Valle de Azapa and Valle de Lluta, in the old road from Arica to Poconchile. Also, according to Valladares (2004) and our own field observations, *L. poconchilensis* is a species living in open and sandy deserts, with dispersed and scarce vegetation. Yet, the locality of Poconchile is a river valley characterized by dense vegetation, including small boreal forests (*e.g.* Donoso-Barros 1966a). Therefore, it seems to be very unlikely the existence of this taxon in the area recognized as type locality (Poconchile, Valladares 2004).

In this work, we propose formally the following type locality for *L. poconchilensis*: Sandy deserts on the old road (“camino viejo”) from Arica to Poconchile, between Valle de Azapa and Valle de Lluta, 1100m, Arica Province, Tarapaca Region, Chile.

Regarding another aspect on the distribution of this species, in a recent study of the Liolaemidae collection housed in the British Museum of Natural History of London, Núñez (2004) documented a specimen collected in “Arequiba” (presumably Arequipa), Peru, which would represent the northernmost known individual of *L. poconchilensis*. The same sample was previously identified as *Phrynosaura marmorata* by Etheridge (Núñez 2004). If Núñez’s (2004) suggestions are correct, *L. poconchilensis* should be included in the reptilian fauna of Peru. However, it is worth noting that many lizard specimens preserved in old herpetological collections (including the British Museum of Natural History’s collection) exhibit very limited or mistaken information in the original labels (*e.g.* Donoso-Barros 1966a, 1970b; Núñez 2004). Therefore, old distributional data should be supported by modern field records.

***Liolaemus reichei* (Werner)**

Phrynosaura reichei Werner (*in* Bürger 1907): 151 (type locality: “Iquique”. Oasis de Pica, Tarapacá Region, Chile, *fide* Donoso-Barros 1970b); Burt & Burt 1933: 39; Donoso-Barros 1958a: 220, 1960: 65, 1964: 7, 1966a: 345, 1970b: 102; Peters & Donoso-Barros 1970: 221; Veloso & Navarro 1988: 513; Núñez & Jaksic 1992: 79; Núñez *et al.* 1998: 13.

Ctenoblepharis reichei Donoso-Barros 1972: 132; Cei 1979b: 297.

Liolaemus reichei Etheridge 1995: 34; Etheridge & Espinoza 2000: 8; Sura 2005: 429.

***Liolaemus torresi* (Núñez, Navarro, Garín, Pincheira-Donoso & Meriggio) (nov. comb.)**

Phrynosaura reichei Donoso-Barros 1969c: 86 (in part).

Phrynosaura torresi Núñez *et al.* 2003: 77 (type locality: Salar del Indio [22°23'S, 68°52'W], 2430 m, SW Chuquicamata, Antofagasta Region, Chile); Pincheira-Donoso 2005: 148.

Clade *anomalus*

Recent phylogenetic evidence (e.g. Espinoza *et al.* 2004, Abdala 2007) suggests that *L. anomalus*, *L. ditadai*, *L. duellmani* and *L. pseudoanomalus* might form a natural group closely related to the *boulengeri* complex (or even a phylogenetic line nested within this complex; e.g. Pincheira-Donoso *et al.* 2007a; see also Abdala 2007). Although we recognize that further studies might be needed to support Espinoza *et al.*'s (2004) and Abdala's (2007) phylogenetic hypotheses with additional evidence, we also recognize their value, and hence, this is the position we adopt in our work.

***Liolaemus anomalus* Koslowsky**

Liolaemus anomalus Koslowsky 1896: 452 (type locality: La Rioja Province, Argentina); Liebermann 1939: 72; Cei 1979a: 183; Williams & Cei 1983: 7; Tiranti & Avila 1994: 40; Avila *et al.* 1998: 11; Chebez *et al.* 2005: 28.

Phrynosaura wernerii Müller 1928: 64 (synonym *fide* Cei 1979a); Donoso-Barros 1966a: 345; Peters & Donoso-Barros 1970: 221.

Liolaemus lentus Gallardo 1966: 17 (synonym *fide* Donoso-Barros 1969a), 1968: 7; Abdala 2007: 44.

Ctenoblepharis anomalus Donoso-Barros 1969a: 94; Peters & Donoso-Barros 1970: 103.

Ctenoblepharis wernerii Cei 1974a: 71.

Ceiolema anomalus Laurent 1984a: 359.

Liolaemus anomalus anomalus Cei 1986: 201; Etheridge 1995: 34; Etheridge & Espinoza 2000: 4.

Ceiolema anomalus anomalus Cabrera 1993: 27.

Liolaemus anomalus Abdala 2007: 39.

Observations: In a recent phylogenetic study, Abdala (2007) suggested full species status for *L. anomalus anomalus* and *L. anomalus ditadai* (Abdala 2007: 39). Since *L. anomalus* and the taxon *ditadai* exhibit clear patterns of divergence in a series of morphological and coloration traits, we accept Abdala's (2007) suggestions.

***Liolaemus ditadai* Cei**

Liolaemus anomalus ditadai Cei 1983: 193 (type locality: Salinas Grandes, 4 km from the limit between Córdoba and Catamarca, Argentina), 1986: 202, 1993: 293; Etheridge 1995: 34; Etheridge & Espinoza 2000: 4.

Ceiolema anomalus ditadai Cabrera & Bee de Speroni 1986: 5; Cabrera 1996: 219.

Liolaemus ditadai Abdala 2007: 39.

Observations: After morphological comparisons, Abdala (2007: 39) suggested that *L. anomalus ditadai* should be given full species status (see above comments for *L. anomalus*).

***Liolaemus duellmani* Cei**

Liolaemus duellmani Cei 1978b: 1 (type locality: Paso El Choique, 50 km SO El Manzano, 2260 m, Mendoza Province, Argentina), 1986: 226; Vanzolini 1986: 14; Laurent 1992: 31; Bertoni 1994: 169; Etheridge 1995: 34; Etheridge & Espinoza 2000: 5; Pincheira-Donoso & Núñez 2003: 13; Chebez *et al.* 2005: 30; Sura 2005: 428.

***Liolaemus pseudoanomalus* Cei**

Leiosaurus marmoratus Burmeister 1861: 524 (type locality: Quebrada de La Troya, northern Anillaco, western of Catamarca Province, Argentina).

Phrynosaura marmorata Müller 1928: 62; Peters & Donoso-Barros 1970: 221.
Ctenoblepharis marmorata Donoso-Barros 1971b: 85.
Liolaemus multimaculatus Cei 1979a: 184.
Liolaemus marmoratus Cei 1979b: 297, 1980c: 192.
Liolaemus pseudoanomalus Cei 1981: 253; Etheridge 1995: 34; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 8; Schulte *et al.* 2000: 79; Sura 2005: 429.
Ceiolaemus marmoratus Laurent 1984a: 359; Cabrera 1993: 27.
Abas pseudoanomalus Núñez & Yáñez 1984b: 99.
Liolaemus pseudanomalus Cei 1986: 203, 1993: 294; Chebez *et al.* 2005: 34.

Complex *boulengeri*

An appreciable amount of research has been devoted to understand the diversity, biogeography and phylogenetic relationships of the *Liolaemus* species belonging to the complex *boulengeri* (Etheridge 1993, 1995, 2000; Morando *et al.* 2004; Abdala 2007; see also Halloy *et al.* 1998; Cruz *et al.* 2005). Indeed, this group of *Liolaemus* is perhaps the best known phylogenetically within the entire family Liolaemidae. In general, most phylogenetic hypotheses support the idea that two major clades form this large complex of species, one recognized as *wiegmannii* clade or subgenus *Ortholaemus* (Cei 1993; Etheridge 1995, 2000; Espinoza *et al.* 2004; Cruz *et al.* 2005), and the other as *fitzingerii* clade (Pincheira-Donoso & Núñez 2005; see Etheridge 1995; Schulte *et al.* 2000, for phylogenetic details).

Clade *fitzingerii*

***Liolaemus abaucan* Etheridge**

Liolaemus abaucan Etheridge 1993: 165 (type locality: 12 km S Palo Blanco, 1900 mts, Provincial Road 34, Tinogasta Department, Catamarca Province, Argentina), 1995: 34; Cei 1993: 738; Etheridge & Espinoza 2000: 4; Chebez *et al.* 2005: 28; Sura 2005: 428; Abdala 2007: 44; Díaz 2007: 114.
Liolaemus darwinii (*sensu lato*) Cei 1993: 258.

***Liolaemus albiceps* Lobo & Laurent**

Liolaemus (Eulaemus) albiceps Lobo & Laurent 1995: 107 (type locality: 10 km S Estación Muñano, near Nevados de Acay, San Antonio de los Cobres, Los Andes Department, Salta Province, Argentina).
Liolaemus albiceps Etheridge 2000: 331; Etheridge & Espinoza 2000: 4; Chebez *et al.* 2005: 28; Sura 2005: 428; Abdala 2007: 44; Díaz 2007: 115.

***Liolaemus boulengeri* Koslowsky**

Liolaemus boulengeri Koslowsky 1898: 176 (type locality: “Territories of Chubut and Neuquén, Argentina”, restricted to the area between Esquel, Trevelín, Tecka and Gobernador Costa, Chubut Province, Argentina, by Abdala 2005a); Liebermann 1939: 71; Donoso-Barros 1970a: 180; Cei 1973a: 464, 1986: 220; Laurent 1992: 31; Núñez & Jaksic 1992: 71; Martori & Aun 1994: 97; Etheridge 1995: 34; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 5; Abdala 2005a: 5; Chebez *et al.* 2005: 29; Scolaro 2005: 28; Sura 2005: 428; Abdala 2007: 44.
Liolaemus micropholis Werner 1909 (synonym *fide* Donoso-Barros 1970a); Etheridge & Espinoza 2000: 6.

***Liolaemus calchaqui* Lobo & Kretzschmar**

Liolaemus calchaqui Lobo & Kretzschmar 1996: 34 (type locality: Punta de Agua, 3600 m, Trancas Department, Tucumán Province, Argentina); Etheridge & Espinoza 2000: 5; Chebez *et al.* 2005: 29; Sura 2005: 428; Abdala 2007: 44; Díaz 2007: 116.

***Liolaemus canqueli* Cei**

Liolaemus fitzingeri melanops Cei 1973a: 447.
Liolaemus fitzingeri canqueli Cei 1973c: 1, 1975c: 220 (type locality: Callejas, 900 mts, N Meseta Canquel, Chubut

Province, Argentina), 1986: 209; Scolaro *et al.* 1985: 13; Vanzolini 1986: 14; Laurent 1992: 31.
Liolaemus melanops canqueli Cei y Scolaro 1983a: 15; Vanzolini 1986: 15.
Liolaemus canqueli Etheridge 1993: 139, 1995: 34; Etheridge & Espinoza 2000: 5; Chebez *et al.* 2005: 29; Scolaro 2005: 29; Sura 2005: 428; Abdala 2007: 44.

***Liolaemus chacoensis* Shreve**

Liolaemus chacoensis Shreve 1948: 111 (type locality: Fortin Guachalla, Río Pilcomayo, 580 km W Asunción, Chaco Paraguayo, Paraguay); Hellmich 1960: 38; Donoso-Barros 1970a: 181; Cei 1980a: 936, 1986: 219, 1993: 277; Vanzolini 1986: 13; Alvarez *et al.* 1988: 85; Ramírez-Pinilla & Cruz 1991: 10; Laurent 1992: 31; Cabrera 1993: 27, 1996: 219; Cruz *et al.* 1993: 101; Martori & Aun 1994: 97, 1995: 94; Etheridge 1995: 33; Lavilla *et al.* 1995: 117; Aquino *et al.* 1996: 331; Cruz & Ramírez-Pinilla 1996: 33; Avila *et al.* 1998: 11; Fitzgerald *et al.* 1999: 536; Etheridge & Espinoza 2000: 5; Lobo 2001: 139; Chebez *et al.* 2005: 30; Sura 2005: 428; Abdala 2007: 44.

Liolaemus emmae Donoso-Barros 1970c: 23 (synonym *fide* Cei 1980a); Cei 1973d: 223.

Liolaemus (Eulaemus) chacoensis Cabrera & Bee de Speroni 1986: 5.

***Liolaemus chehuachekenk* Avila, Morando & Sites**

Liolaemus chehuachekenk Avila *et al.* 2008: 188 (type locality: Southwest slope of Calcatapul Mountains, Ruta Provincial 13, 8 km north of El Molle [42°10'S, 69°32'W], 900 m, Cushamen Department, Chubut Province, Argentina).

***Liolaemus cinereus* Monguillot, Cabrera, Acosta & Villavicencio**

Liolaemus cinereus Monguillot *et al.* 2006: 34 (type locality: Flood plain of the northern margin of the Río Blanco, Quebrada Alcaparrosa [29°30'47.5"S, 69°10'27.3"W], 2270 m, southern section of the San Guillermo National Park, Iglesia Department, San Juan Province, Argentina).

***Liolaemus crepuscularis* Abdala & Díaz**

Liolaemus ornatus Etheridge 1993: 171 (in part).

Liolaemus sp. Abdala & Lobo 2006a: 3.

Liolaemus crepuscularis Abdala & Díaz 2006: 22 (type locality: Puesto Flores, 2 km South from Mina Capillitas, Provincial Road 47, km 50–52, 3100 m, Andalgalá Department, Catamarca Province, Argentina); Abdala 2007: 44; Díaz 2007: 116.

***Liolaemus cuyanus* Cei & Scolaro**

Liolaemus fitzingeri cuyanus Cei & Scolaro 1980: 38 (type locality: 10 km E Caucete, San Juan Province, Argentina).

Liolaemus cuyanus Laurent 1982c: 9; Cei & Scolaro 1983a: 15; Cei 1986: 212, 1993: 267; Vanzolini 1986: 13; Pereyra *et al.* 1992: 277; Cabrera 1993: 27; Etheridge 1995: 34, 2000: 331; Cruz *et al.* 1999: 182; Etheridge & Espinoza 2000: 5; Schulte *et al.* 2000: 79; Chebez *et al.* 2005: 30; Sura 2005: 428; Abdala 2007: 44.

***Liolaemus darwinii* (Bell)**

Proctotretus darwinii Bell 1843: 14 (type locality: Bahía Blanca, Northern Patagonia, Argentina).

Leiolaemus darwinii Gray 1845: 215.

Eulaemus darwini Girard 1858a: 198.

Liolaemus (Eulaemus) darwini Girard 1858b: 361.

Liolaemus darwinii Boulenger 1885a: 155; Müller & Hellmich 1938b: 136; Milstead 1956: 321; Hellmich 1960: 38; Donoso-Barros 1970a: 182; Cei 1986: 217; Vanzolini 1986: 13; Laurent 1992: 31; Etheridge 1993: 148, 1995: 34, 2000: 331; de Viana *et al.* 1994a: 281; Martori & Aun 1994: 97, 1995: 94; Tiranti & Avila 1994: 40; Videla & Puig 1994: 99; Cabrera 1996: 219; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 5; Chebez *et al.* 2005: 30; Scolaro 2005: 31; Sura 2005: 428; Abdala 2007: 44.

Liolaemus darwinii (sensu lato) Cei 1993: 258.

***Liolaemus donosobarrosi* (Cei)**

Ctenoblepahrhis donosobarrosi Cei 1973c: 1, 1974a: 72 (type locality: Médanos de Matancilla, 1000 m, SE Mendoza Province, Argentina).

Liolaemus donosobarrosi Cei & Roig 1976: 69; Cei 1979b: 298, 1986: 205; Vanzolini 1986: 13; Laurent 1992: 31; Cabrera 1993: 27; Etheridge 1995: 34, 2000: 331; Etheridge & Espinoza 2000; Chebez *et al.* 2005: 30; Sura 2005: 428; Scolaro 2006: 33; Abdala 2007: 44.

***Liolaemus enigmaticus* Pincheira-Donoso & Núñez**

Liolaemus (Eulaemus) enigmaticus Pincheira-Donoso & Núñez 2005: 85 (type locality: Chungará, 4650 m, Tarapacá Region, Chile).

Liolaemus enigmaticus Pincheira-Donoso *et al.* 2007b.

***Liolaemus espinozai* Abdala**

Liolaemus quilmes Etheridge 1993: 152 (in part).

Liolaemus espinozai Abdala 2005b: 6 (type locality: El Ingenio, Campo El Arenal, 67 km S Santa Maria, Provincial Road 47, 2620 m, Andalgalá Department, Catamarca Province, Argentina), 2007: 44.

***Liolaemus fitzingerii* (Duméril & Bibron)**

Proctotretus fitzingerii Duméril & Bibron 1837: 286 (type locality: Puerto Deseado, Santa Cruz Province, Argentina, *fide* Cei 1986; Chile Chico, Aysén Province, Chile, *fide* Donoso-Barros 1966a); Bell 1843: 11; Guichenot 1848: 38; Duméril & Duméril 1851: 74.

Ptychodeira fitzingerii Fitzinger 1843: 73.

Eulaemus affinis Girard 1858a: 198 (see Bell 1843; Etheridge & Espinoza 2000), 1858b: 366.

Liolaemus (Eulaemus) fitzingerii Girard 1858b: 365.

Liolaemus fitzingerii Boulenger 1885a: 150; Andersson 1898: 461; Berg 1898: 6; Burt & Burt 1931: 274; Liebermann 1939: 70; Hellmich 1950: 346; Donoso-Barros & Codoceo 1962: 9; Donoso-Barros 1966a: 293, 1970a: 182, 1970b: 91; Cei & Scolaro 1977b: 223, 1983a: 15; Scolaro & Cei 1977: 219; Núñez & Jaksic 1992: 72; Pereyra *et al.* 1992: 277; Etheridge 1995: 34; Etheridge & Espinoza 2000: 6; Chebez *et al.* 2005: 31; Scolaro 2005: 35; Sura 2005: 428; Abdala 2007: 44.

Liolaemus fitzingeri fitzingeri Cei 1973a: 447, 1980b: 317, 1986: 208; Vanzolini 1986: 14; Veloso & Navarro 1988: 503; Brygoo 1989: 46; Laurent 1992: 31.

Liolaemus (Eulaemus) fitzingerii Pincheira-Donoso & Núñez 2005: 95.

***Liolaemus goetschi* Müller & Hellmich**

Liolaemus goetschi Müller & Hellmich 1938b: 130 (type locality: Quele Cura or Sierra Colorada, about 50 km NE Telsen, Chubut Province, Argentina; see Cei & Scolaro 2003); Hellmich 1960: 39; Donoso-Barros 1970a: 183; Cei 1975a: 199; Blair *et al.* 1976: 4; Cei & Scolaro 2003: 163; Scolaro 2005: 37; Abdala 2007: 44.

Liolaemus melanops Etheridge 1993: 139 (in part), 1995: 34 (in part), 2000: 331 (in part); Etheridge & Espinoza 2000: 7 (in part); Sura 2005: 429 (in part).

Liolaemus fitzingeri melanops Cei & Scolaro 1977a: 225; Vanzolini 1986: 14 (in part).

Liolaemus melanops melanops Cei & Scolaro 1983a: 15; Cei 1986: 210 (in part); Vanzolini 1986: 15 (in part); Laurent 1992: 31 (in part); Vega & Bellagamba 1994: 142.

Observations: The nomenclatural history of this species is highly controversial. In early studies, Cei & Scolaro (1977a, 1983a) placed this taxon into the synonymy of *L. melanops* (see Etheridge & Espinoza *et al.* 2000). However, in a recent work, Cei & Scolaro (2003) provided evidence to support the idea that *L. goetschi* is a valid species independent from *L. melanops* (see Abdala 2007). See also comments provided below for *Liolaemus martorii*.

***Liolaemus grosseorum* Etheridge**

Liolaemus darwini Cei 1986: 217 (in part).

Liolaemus darwini Etheridge 1993: 148 (in part); Schulte *et al.* 2000: 75 (in part).

Liolaemus sp. Halloy *et al.* 1998: 4; Etheridge 2000: 338.

Liolaemus grosseorum Etheridge 2001: 4 (type locality: Southeastern area of Nihuil Lake, San Rafael Department, Mendoza Province, Argentina); Chebez *et al.* 2005: 31; Sura 2005: 429; Scolaro 2006: 34; Abdala 2007: 44.

***Liolaemus hermannunezi* Pincheira-Donoso, Scolaro & Schulte**

Liolaemus rothi Donoso-Barros 1974a: 287; Núñez & Jaksic 1992: 76; Pincheira-Donoso 2003c: 18; Schulte *et al.* 2004: 410.

Liolaemus (Eulaemus) rothi Pincheira-Donoso & Núñez 2005: 99.

Liolaemus hermannunezi Pincheira-Donoso *et al.* 2007a: 30 (type locality: 10 km E from Los Barros [37°31'S, 71°15'W], on the road to Pichachén Pass, Bío Bío Region, Chile), 2007b: 2068.

***Liolaemus inacayali* Abdala**

Liolaemus boulengeri Cei 1986: 217 (in part); Acosta *et al.* 1996c: 100 (?).
Liolaemus inacayali Abdala 2003: 9 (type locality: 2.3 km S from intersection Provincial Road 76 and Provincial Road 23, in Provincial Road 76, 3.4 km S Ingeniero Jacobacci, [41°20.022'S, 69°28.233'W], 898 m, 25 de Mayo Department, Rio Negro Province, Argentina), 2007: 44; Scolaro 2006: 36.

***Liolaemus irregularis* Laurent**

Liolaemus irregularis Laurent 1986: 97 (type locality: San Antonio de Los Cobres, Salta Province, Argentina), 1992: 31; Cei 1993: 253; Etheridge 1995: 34, 2000: 331; Lobo & Laurent 1995: 115; Etheridge & Espinoza 2000: 6; Chebez *et al.* 2005: 32; Sura 2005: 429; Abdala 2007: 44; Díaz 2007: 116.

***Liolaemus josei* Abdala**

Liolaemus boulengeri Cei 1973a: 459 (in part), 1986: 220 (in part).
Liolaemus josei Abdala 2005a: 19 (type locality: El Zampal Bridge, on Nacional Road 40, medianos of Rio Grande, Malargüe Department, Mendoza Province, Argentina), 2007: 44; Scolaro 2006: 37.

***Liolaemus koslowskyi* Etheridge**

Liolaemus nigromaculatus (?) Koslowsky 1895: 363 (*vide* Etheridge 1993).
Liolaemus darwini Koslowsky 1895: 364.
Liolaemus darwini (*sensu lato*) Cei 1993: 258 (in part).
Liolaemus koslowskyi Etheridge 1993: 159 (type locality: 9.2 km E Plaza Central de Pituñf, Provincial Road 11, Famatina Department, Catamarca Province, Argentina), 1995: 34, 2000: 331; Cei 1993: 736; Etheridge & Espinoza 2000: 6; Chebez *et al.* 2005: 32; Sura 2005: 429; Abdala 2007: 44; Díaz 2007: 115.

***Liolaemus laurenti* Etheridge**

Liolaemus darwini Cei 1986: 218 (in part).
Liolaemus laurenti Etheridge 1992: 2 (type locality: 12 km E Plaza Central de Pituñf, Provincial Road 11, Famatina Department, Catamarca Province, Argentina), 1993: 179, 1995: 34, 2000: 331; Cei 1993: 262; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 6; Chebez *et al.* 2005: 32; Sura 2005: 429; Abdala 2007: 44.

***Liolaemus lavillai* Abdala & Lobo**

Liolaemus ornatus Etheridge 1993: 171 (in part); Morando *et al.* 2004: 842 (in part).
Liolaemus lavillai Abdala & Lobo 2006a: 5 (type locality: Cuesta del Acay, 3800 m, La Poma Department, Salta Province, Argentina); Abdala 2007: 44; Díaz 2007: 116.

***Liolaemus lobo* Abdala**

Liolaemus rothi Ubeda *et al.* 1994: 156.
Liolaemus lobo Abdala 2003: 21 (type locality: Intersection National Roads 237 and 231, Los Lagos Department, Neuquén Province, Argentina), 2007: 44; Scolaro 2006: 39; Pincheira-Donoso *et al.* 2007a: 28.

***Liolaemus mapuche* Abdala**

Liolaemus mapuche Abdala 2002: 5 (type locality: 15 km S Paso de Indios, Provincial Road 10, Zapala Department, Neuquén Province, Argentina), 2007: 44; Chebez *et al.* 2005: 33; Sura 2005: 429; Scolaro 2006: 40.

***Liolaemus martorii* Abdala**

Liolaemus boulengeri Vega & Bellagamba 1994: 142.
Liolaemus martorii Abdala 2003: 15 (type locality: Las Grutas, Western San Antonio Department, Río Negro Province, Argentina), 2007: 44.

Observations: The taxonomic status of this species should be reevaluated on the basis of comparative evidence between its type series and specimens of the Patagonian species *Liolaemus goetschi*. When Abdala (2003) proposed *L. martorii* as a new species, the taxon *L. goetschi* was still considered a synonym of *L. melanops* (*e.g.* Cei 1986). Nevertheless, Cei & Scolaro (2003) suggested that *L. goetschi* and *L. melanops* repre-

sent two different species. This might explain why Abdala (2003) did not provide comparisons between the populations identified as *L. goetschi* and *L. martorii*. Morphological and field observations between these two taxa carried out by one of us (JAS) suggest that they may be conspecific. Distribution, morphology and coloration exhibit strong overlap between *L. goetschi* and *L. martorii*. The problem should be reassessed using appropriate statistical analyses.

***Liolaemus melanops* Burmeister**

Liolaemus melanops Burmeister 1888: 252 (type locality: Quelé Curá, Sierra Colorada, Chubut Province, Argentina); Berg 1898: 6; Etheridge 1993: 139, 1995: 34, 2000: 331; Martori & Aun 1994: 97; Etheridge & Espinoza 2000: 7; Chebez *et al.* 2005: 33; Scolaro 2005: 43; Sura 2005: 429; Abdala 2007: 44.
Liolaemus fitzingerii Donoso-Barros 1970a: 182 (in part).
Liolaemus fitzingeri melanops Cei 1973c: 1, 1975c: 219; Cei & Scolaro 1977a: 225; Vanzolini 1986: 14.
Liolaemus melanops melanops Cei & Scolaro 1983a: 15; Cei 1986: 210; Vanzolini 1986: 15; Laurent 1992: 31.

***Liolaemus montanezi* Cabrera & Monguillot**

Liolaemus montanezi Cabrera & Monguillot 2006: 36 (type locality: Western margin of Rio Blanco, 1.5 km S Quebrada Alcaparrosa, between this and the confluence of Rio La Palca and Rio Blanco [29°31'28''S, 69°11'08''W], 2288 m, San Guillermo National Park, Iglesia Department, San Juan Province, Argentina).

***Liolaemus morenoi* Etheridge & Christie**

Liolaemus morenoi Etheridge & Christie 2003: 336 (type locality: Sand dunes near National Road 40, 2 km S Cerrito Piñon, 650 m, Collón Curá Department, Neuquén Province, Argentina); Sura 2005: 429; Scolaro 2006: 42; Abdala 2007: 44.

***Liolaemus olongasta* Etheridge**

Liolaemus darwini (*sensu lato*) Cei 1993: 258.
Liolaemus olongasta Etheridge 1993: 167 (type locality: 51.3 km S Villa Unión, Provincial Road 26, General Lavalle Department, La Rioja Province, Argentina), 1995: 34, 2000: 331; Cei 1993: 741; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 8; Chebez *et al.* 2005: 33; Sura 2005: 429; Abdala 2007: 44; Díaz 2007: 115.

***Liolaemus ornatus* Koslowsky**

Liolaemus ornatus Koslowsky 1898: 178 (type locality: Andean mountains in the Province of Jujuy, Argentina); Liebermann 1939: 71; Donoso-Barros 1966a: 323, 1970a: 191, 1970b: 98; Laurent 1982b: 88, 1986: 87, 1992: 32; Pereyra 1986: 1; Vanzolini 1986: 15; Veloso & Navarro 1988: 509; Brygoo 1989: 81; de la Viña *et al.* 1992: 216; Núñez & Jaksic 1992: 81 (*nomina dubia*); Cei 1993: 265; Etheridge 1993: 171, 1995: 34; Carrillo de Espinoza & Icochea 1995: 10; Etheridge & Espinoza 2000: 8; Escobar *et al.* 2001: 1679; Pincheira-Donoso 2002b: 21; Pincheira-Donoso & Núñez 2002: 38; Chebez *et al.* 2005: 34; Sura 2005: 429; Abdala 2007: 44; Díaz 2007: 115.
Liolaemus signifer var. *zonatus* Koslowsky 1898: 181 (synonym *fide* Laurent 1982b).
Liolaemus simonsii Boulenger 1902: 398 (synonym *fide* Laurent 1982b); Vanzolini 1986: 16 (in part).
Liolaemus pulcher Pellegrin 1909: 325 (synonym *fide* Laurent 1992; Pincheira-Donoso & Núñez 2002); Burt & Burt 1933: 36; Tiedemann & Häupl 1980: 41; Vanzolini 1986: 16 (in part).
Liolaemus mocquardi Pellegrin 1909: 326 (synonym *fide* Laurent 1992; Pincheira-Donoso & Núñez 2002); Burt & Burt 1933: 34; Donoso-Barros 1966a: 325 (in part), 1970a: 185 (in part), 1970b: 93 (in part); Vanzolini 1986: 15 (in part).
Liolaemus (Eulaemus) ornatus Pincheira-Donoso 2005: 138; Pincheira-Donoso & Núñez 2005: 90.

***Liolaemus puelche* Avila, Morando, Perez & Sites**

Liolaemus puelche Avila *et al.* 2007: 45 (type locality: National Road 40, 3 km N Ranquil Norte [36°38'S, 69°49'W], 1600 m, Malargüe Department, Mendoza Province, Argentina).

***Liolaemus quilmes* Etheridge**

Liolaemus darwini (*sensu lato*) Cei 1993: 258.
Liolaemus quilmes Etheridge 1993: 152 (terra typica: 3.2 km S Animaná, 1695 m, National Road 40, Cafayate Department, Salta Province, Argentina), 1995: 34, 2000: 331; Cei 1993: 734; Etheridge & Espinoza 2000: 8; Chebez *et al.* 2005: 34; Sura 2005: 429; Abdala 2007: 44; Díaz 2007: 115.

***Liolaemus rothi* Koslowsky**

Liolaemus rothi Koslowsky 1898: 177 (type locality: “Neuquén Territory”, Argentina; restricted to Southwestern Neuquén Province, west of the Rio Collon Cura, between Junin de los Andes and Nahuel Huapi, Argentina, by Etheridge & Christie 2003); Liebermann 1939: 71; Hellmich 1960: 40; Donoso-Barros 1970a: 193; Cei 1986: 214; Vanzolini 1986: 16; Laurent 1992: 32; Ubeda *et al.* 1994: 156; Etheridge 1995: 34; Etheridge & Espinoza 2000: 8; Etheridge & Christie 2003: 327; Pincheira-Donoso *et al.* 2007a: 28; Chebez *et al.* 2005: 35; Scolaro 2005: 47; Sura 2005: 430; Abdala 2007: 44.

Liolaemus ruizleali Donoso-Barros & Cei 1971: 93 (synonym *fide* Cei & Scolaro 1987); Cei 1973c: 1, 1990: 45; Vanzolini 1986: 16 (in part).

***Liolaemus sagei* Etheridge & Christie**

Liolaemus sagei Etheridge & Christie 2003: 332 (type locality: Northeastern shore of Laguna del Toro [= Laguna Barra Tom Curá], 7 km S, 3.5 km E Cerro Mesa, Collón Curá Department, Neuquén Province, Argentina); Sura 2005: 430; Scolaro 2006: 47; Abdala 2007: 44; Pincheira-Donoso *et al.* 2007a: 28.

***Liolaemus senguer* Abdala**

Liolaemus boulengeri Cei 1973a: 459, 1986: 220 (in part); Morando *et al.* 2004: 842 (in part).

Liolaemus senguer Abdala 2005a: 13 (type locality: 26 km N Alto Río Senguer, on National Road 40, Río Senguer Department, Chubut Province, Argentina), 2007: 44; Scolaro 2006: 96.

***Liolaemus tehuelche* Abdala**

Liolaemus tehuelche Abdala 2003: 5 (type locality: Cerro Alto, on National Road 40, 54 km NW Pilcaniyeu, Pilcaniyeu Department, [40°44.074'S, 70°34.696'W], 1014 m, Río Negro Province, Argentina); 2007: 44; Scolaro 2006: 49; Pincheira-Donoso *et al.* 2007a: 30.

***Liolaemus telsen* Cei & Scolaro**

Liolaemus telsen Cei & Scolaro 1999: 79 (type locality: 80 km W from Telsen town [42°22'19"S, 67°41'49"W], Chubut Province, Argentina); Etheridge 2001: 3; Chebez *et al.* 2005: 36; Scolaro 2005: 51; Sura 2005: 430; Abdala 2007: 44.

***Liolaemus uspallatensis* Macola & Castro**

Liolaemus uspallatensis Macola & Castro 1982: 1 (type locality: 25 km N Uspallata, Las Heras, Mendoza Province, Argentina); Laurent 1984c: 52, 1992: 32; Pereyra 1985b: 4; Cei 1986: 222; Vanzolini 1986: 16; Scolaro & Cei 1991: 91; Etheridge 1993: 180, 1995: 34; Bertonatti 1994: 169; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 9; Chebez *et al.* 2005: 36; Sura 2005: 430; Abdala 2007: 44.

***Liolaemus xanthoviridis* Cei & Scolaro**

Liolaemus fitzingeri xanthoviridis Cei & Scolaro 1980: 38 (type locality: 18 km NW Dos Pozos, Chubut Province, Argentina).

Liolaemus melanops xanthoviridis Cei & Scolaro 1983a: 15; Cei 1986: 212; Vanzolini 1986: 15; Laurent 1992: 32.

Liolaemus xanthoviridis Etheridge 1993: 139, 1995: 34, 2000: 331; Cruz *et al.* 1999: 182; Etheridge & Espinoza 2000: 9; Chebez *et al.* 2005: 36; Scolaro 2005: 53; Sura 2005: 430.

Clade *wiegmannii*

This clade was recently reviewed in deep detail by Etheridge (2000). Information on the diagnostic traits, distribution, natural history, morphological-based phylogenetic relationships and nomenclatural history of almost every species belonging to this group (except *L. arambarensis* and *L. azarai*, described in later studies; see below) can be found in this paper.

***Liolaemus arambarensis* Verrastro, Veronese, Bujes & Martins Dias Filho**

Liolaemus arambarensis Verrastro *et al.* 2003: 107 (type locality: Municipality of Arambare [30°55'S, 51°30'W], State of Rio Grande do Sul, Brazil).

***Liolaemus azarai* Avila**

Liolaemus wiegmanii Tedesco *et al.* 1992: 117; Alvarez & Lions 1996: 32; Etheridge 2000: 310 (in part).
Liolaemus azarai Avila 2003: 284 (type locality: Sand dunes from the northwestern of Yacyretá Island [27°34'S, 56°41'W], 243 m, Paraná River, Itapúa Department, San Cosme and Damian District, Paraguay); Sura 2005: 428.

***Liolaemus cranwelli* (Donoso-Barros)**

Pelusaurus cranwelli Donoso-Barros 1973a: 133 (type locality: Nueva Moka, Santa Cruz, Bolivia); Vanzolini 1986: 13; Fugler 1989: 61; Etheridge 1995: 34; Etheridge & Espinoza 2000: 5; Pincheira-Donoso 2002b: 21.
Liolaemus cranwelli Laurent 1982c: 9; Verrastro *et al.* 2003: 109; Sura 2005: 428.
Liolaemus wiegmannii Etheridge 2000: 310 (*nomina dubia*).

Observations: *Liolaemus cranwelli* is one of the most controversial species of the genus, mainly because it was established on the basis of a single male museum specimen (Donoso-Barros 1973a; Etheridge 2000). There is no information on the living colour pattern of the species and the female is entirely unknown. Over the last decade, the debate on the validity of this species has increased (Etheridge 2000; see also Etheridge & Espinoza 2000). Etheridge (2000) suggested that *L. cranwelli* may be a synonym of *L. wiegmannii*. Nevertheless, further studies are needed to clarify the problem. Unfortunately, because it is currently unfeasible to gather information on the variation of *L. cranwelli*, powerful conclusions might not be possible yet.

Additionally, it is necessary to clarify some aspects concerning the exact type locality of this species. In his monograph, Etheridge (2000) pointed out that the only known specimen of *L. cranwelli* was collected in “Macho Moka, Santa Cruz, Bolivia”, and that the distribution of this taxon would be “about 470 km north of the Sierra de Santa Bárbara....., from Macho, Nueva Moka, in the department of Santa Cruz, southeastern Bolivia”. However, this information is partially misleading, because “Macho” is not a geographical point, but the Spanish word “male”. In the original publication, Donoso-Barros (1973a) detailed “Holotipo: 3632 M.A.C.N. Macho, Nueva Moka, Santa Cruz, Bolivia”, which really means “Holotype: 3632 M.A.C.N. Male [individual], [collected in] Nueva Moka, Santa Cruz, Bolivia”. Consequently, the type locality of *L. cranwelli* is “Nueva Moka, Santa Cruz, Bolivia”, and the proposed distribution provided by Etheridge (2000) should be “about 470 km north of the Sierra de Santa Bárbara....., from Nueva Moka, in the department of Santa Cruz, southeastern Bolivia”.

***Liolaemus lutzae* Mertens**

Liolaemus lutzae Mertens 1938: 221 (type locality: Recreio dos Bandeirantes, Rio de Janeiro, Brazil); Dansereau 1947: 448; Vanzolini & Absaber 1968: 205; Müller & Steiniger 1978: 429; Junior 1979: 201; Rand 1982: 173; Rocha 1986: 163, 1988: 269, 1989: 292, 1990: 1203, 1991: 839, 1992a: 3, 1992b: 17, 1993: 116, 1995a: 257, 1995b: 481, 1996a: 264, 1996b: 131, 1998a: 274, 1998b: 446, 1999: 125, 2000: 14; Arujo 1991: 857; Rocha & Bergallo 1992: 52; Etheridge 1995: 34. 2000: 297; Etheridge & Espinoza 2000: 7; Verrastro *et al.* 2003: 109; Sura 2005: 429.
Liolaemus (Ortholaemus) lutzae Laurent 1984a: 370.

***Liolaemus multimaculatus* Duméril & Bibron**

Liolaemus multimaculatus Duméril & Bibron 1837: 290 (type locality: “Chili”. Coastal zones of the Buenos Aires Province and northern Río Negro Province, Argentina, see Etheridge 2000); Darwin 1854; Boulenger 1885a: 157; Liebermann 1939: 72; Gallardo 1966: 21, 1977; Donoso-Barros 1970a: 187; Cei 1978a: 1; Etheridge 1993: 139, 1995: 34, 2000: 299; Martori & Aun 1994: 97; Vega 1997: 49; Etheridge & Espinoza 2000: 7; Verrastro *et al.* 2003: 109; Chebez *et al.* 2005: 33; Sura 2005: 429; Scolaro 2006: 43; Abdala 2007: 44.
Liolaemus (Liodeira) multimaculatus Fitzinger 1843: 74.
Liolaemus (Proctotretus) multimaculatus Tschudi 1845: 157.
Proctotretus multimaculatus Bell 1843: 17; Duméril & Duméril 1851: 75.
Ortholaemus beaglii Girard 1858a: 199 (substitute name for *multimaculatus*, Bell 1843; Etheridge & Espinoza 2000).
Liolaemus (Ortholaemus) beaglii Girard 1858b: 369.
Ctenoblepharis multimaculatus Cei *et al.* 1975: 101.
Liolaemus multimaculatus multimaculatus Cei 1979b: 302, 1986: 192; Vanzolini 1986: 15; Vega & Bellagamba 1994: 142.

Liolaemus (Ortholaemus) multimaculatus Girard 1858b: 372; Laurent 1984a: 370.

Liolaemus (multimaculatus) multimaculatus Cei 1993: 272.

***Liolaemus occipitalis* Boulenger**

Liolaemus occipitalis Boulenger 1885b: 192 (type locality: Near city of Rio Grande, Rio Grande do Sul, Brazil), 1886: 426; Gliesh 1923; Mertens 1928: 302, 1938: 220; Amaral 1938: 179; Vanzolini & Absaber 1968: 205; Böhler & Müller 1970: 130; Müller 1975: 57; Müller & Steiniger 1978: 429; Gómez & Krause 1982: 74; Frost 1992: 19; Verrastro & Krause 1994: 99, 1999: 227; Etheridge 1995: 34, 2000: 301; Verrastro & Bujes 1998: 913; Etheridge & Espinoza 2000: 8; Verrastro *et al.* 2003: 109; Sura 2005: 429.

Liolaemus gleischi Ahl 1925: 88 (synonym *fide* Mertens 1938); Amaral 1938: 178 (in part).

Liolaemus (Ortholaemus) occipitalis Laurent 1984a: 370.

***Liolaemus rabinoi* (Cei)**

Ctenoblepharis rabinoi Cei 1973c: 1 (*nomen nudum*), 1974a: 73 (type locality: Sands in Lago Nihuil, 1200 m, Mendoza Province, Argentina).

Liolaemus rabinoi Cei & Roig 1976: 69; Cei 1978a: 1, 1979b: 297, 1986: 197; Vanzolini 1986: 16; Etheridge 1993: 139, 1995: 34, 2000: 303; Bertonatti 1994: 169; Etheridge & Espinoza 2000: 8; Verrastro *et al.* 2003: 109; Chebez *et al.* 2005: 34; Sura 2005: 429.

Liolaemus (Ortholaemus) rabinoi Laurent 1984a: 370.

***Liolaemus riojanus* Cei**

Liolaemus multimaculatus riojanus Cei 1979b: 299 (type locality: Baldecitos, La Rioja Province, Argentina); Cei 1986: 196; Vanzolini 1986: 15; Cabrera 1993: 27.

Liolaemus (Ortholaemus) multimaculatus riojanus Laurent 1984a: 370.

Liolaemus (multimaculatus) riojanus Cei 1993: 273.

Liolaemus riojanus Etheridge 1993: 139, 1995: 34, 2000: 305; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 8; Verrastro *et al.* 2003: 109; Chebez *et al.* 2005: 34; Sura 2005: 429.

***Liolaemus salinicola* Laurent**

Liolaemus (Ortholaemus) salinicola Laurent 1986: 92 (type locality: Salar de Pipanaco, 950 m, Pomán Department, Catamarca Province, Argentina).

Liolaemus salinicola Cei 1993: 274; Etheridge 1995: 34, 2000: 306; Etheridge & Espinoza 2000: 9; Verrastro *et al.* 2003: 109; Chebez *et al.* 2005: 35; Sura 2005: 430; Abdala 2007: 44.

***Liolaemus scapularis* Laurent**

Liolaemus scapularis Laurent 1982a: 144 (type locality: Nacimiento, Catamarca Province, Argentina); Vanzolini 1986: 16; Cei 1993: 275; Ramírez-Pinilla 1994: 521; Etheridge 1995: 34, 2000: 308; Etheridge & Espinoza 2000: 9; Verrastro *et al.* 2003: 109; Chebez *et al.* 2005: 35; Sura 2005: 430; Abdala 2007: 44; Díaz 2007: 116.

Liolaemus (Ortholaemus) scapularis Laurent 1984a: 370.

***Liolaemus wiegmanni* (Duméril & Bibron)**

Proctotretus wiegmanni Duméril & Bibron 1837: 284 (type locality: "Chili"; probably Carmen del Patagon, about 35 km northwest of the mouth of the Rio Negro, Rio Negro Province, Argentina; see Etheridge 2000); Bell 1843: 15; Duméril & Duméril 1851: 74; Burmeister 1861: 525.

Ptychodeira wiegmanni Fitzinger 1843: 73.

Leiolaemus wiegmanni Gray 1845: 216.

Rhytidodeira wiegmanni Girard 1858a: 198, 1858b: 352.

Ortholaemus fitzroyi Girard 1858a: 198 (substitute name for *wiegmanni*, Bell 1843; see also Etheridge & Espinoza 2000).

Liolaemus (Ortholaemus) fitzroyi Girard 1858b: 373.

Ortholaemus fitzroyi Cope 1862: 351.

Liolaemus (Ptychodeira) wiegmanni Steindachner 1867: 37.

Liolaemus wiegmanni Boulenger 1885a: 156; Boettger 1893: 61; Amaral 1938: 179; Loveridge 1959: 69; Gallardo 1969: 75, 1977, 1980: 346; Donoso-Barros 1970a: 195; Müller & Steiniger 1978: 429; Cei 1979c: 1, 1986: 198, 1993: 270; Rand 1982: 173; Pereyra *et al.* 1992: 277; Cruz *et al.* 1993: 101; Tiranti & Avila 1994: 40; Etheridge 1995: 34, 2000: 310; Martori & Aun 1995: 94; Acosta *et al.* 1996a: 74; Cabrera 1996: 219; Fitzgerald *et al.* 1999:

536; Etheridge & Espinoza 2000: 9; Verrastro *et al.* 2003: 109; Chebez *et al.* 2005: 36; Sura 2005: 430; Scolaro 2006: 51; Abdala 2007: 44.

Liolaemus wiegmani Liebermann 1939: 71.

Liolaemus (Ortholaemus) wiegmani Laurent 1984a: 370; Cabrera & Bee de Speroni 1986: 6.

Genus *Phymaturus* Gravenhorst

Phymaturus Gravenhorst 1838: 749 (type species: *Lacerta palluma* (no Molina 1782); see Etheridge & Espinoza 2000).
Centrura Bell 1843: 25 (type species: *Centrura flagellifer* Bell 1843).

A major debate on the correct nomination of the genus *Phymaturus* (= *Centrura* Bell 1843) and its first recorded species, *Phymaturus flagellifer* (= *Phymaturus palluma*), has surrounded the taxonomic history of this lineage over the last two decades (Ceï & Lescure 1985; Ceï 1986, 1993; Lescure & Ceï 1991; Etheridge 1995; Etheridge & Espinoza 2000; Etheridge & Savage 2003; Ceï & Scolaro 2006). However, since decisions concerning this complex topic should be determined by the International Commission on Zoological Nomenclature, we will not provide specific discussions. A clear summary with details on this nomenclatural issue was presented by Etheridge & Espinoza (2000). In this work, we keep the use of the binomial name *Phymaturus flagellifer* (Bell 1843), following Ceï (1993; see also Ceï & Scolaro 2006).

Clade *flagellifer*

Phymaturus antofagastensis Pereyra

Phymaturus antofagastensis Pereyra 1985a: 4 (type locality: Antofagasta de La Sierra, Los Nacimientos, W of Catamarca Province, Argentina), 1991: 24; Ceï 1993: 297; Etheridge 1995: 32; Etheridge & Espinoza 2000: 10; Chebez *et al.* 2005: 37; Sura 2005: 430.

Centrura flagellifer Ceï 1986: 170 (in part).

Phymaturus flagellifer (Bell)

Lucerta palluma (?) Molina 1782: 217.

Lacerta palluma (?) Molina 1782: 345, 1810: 189.

Lacerta pelluma Gmelin 1789: 1060.

Cordylus paeluma Meyer 1795: 217.

Stellio pelluma Daudin 1802: 46; Latreille 1802: 38.

Phymaturus palluma Gravenhorst 1838: 750; Gray 1845: 226; Boulenger 1885a: 184; Liebermann 1939: 74; Donoso-Barros 1970b: 89; Ceï & Castro 1973: 237; Péfaur & Duellman 1980: 45; Lamborot & Navarro-Suárez 1984: 258; Pereyra 1985a: 4; Brygoo 1989: 13; Etheridge & Espinoza 2000: 10; Schulte *et al.* 2000: 78; Chebez *et al.* 2005: 37; Sura 2005: 430 (in part).

Centrura flagellifer Bell 1843: 25 (type locality: "Chili"); Duméril 1856: 557; Ceï & Lescure 1985: 175; Ceï 1986: 177.

Urocentron (Phymaturus) palluma Tschudi 1845: 158.

Urocentron palluma Tschudi 1846: 36.

Oplurus bibronii Guichenot 1848: 53; Duméril & Duméril 1851: 84.

Phymaturus palluma palluma Burt & Burt 1931: 281; Donoso-Barros 1966a: 349; Peters & Donoso-Barros 1970: 227.

Phymaturus flagellifer Lescure & Ceï 1991: 173; Núñez & Jaksic 1992: 79; Sura 2005: 430; Ceï & Scolaro 2006: 17.

Phymaturus mallimaccii Ceï

Phymaturus mallimaccii Ceï 1980d: 58 (type locality: Cueva de Perez, 4200 m, Sierra Famatina, La Rioja Province, Argentina), 1982b: 643; Pereyra 1985a: 4; Vanzolini 1986: 19; Etheridge 1995: 32; Etheridge & Espinoza 2000: 10; Chebez *et al.* 2005: 37; Sura 2005: 430.

Centrura mallimaccii Ceï 1986: 180.

***Phymaturus punae* Cei, Etheridge & Videla**

Phymaturus punae Cei *et al.* 1983: 320 (type locality: Reserva Provincial San Guillermo, near Río San Guillermo, 3500 m, San Juan Province, Argentina); Pereyra 1985a: 4; Vanzolini 1986: 20; Etheridge 1995: 32; Avila *et al.* 1998: 11; Etheridge & Espinoza 2000: 10; Chebez *et al.* 2005: 37; Sura 2005: 430.
Centrura punae Cei 1986: 181.

***Phymaturus roigorum* Lobo & Abdala**

Centrura flagellifer Cei 1986: 220 (in part).
Phymaturus sp. Cei & Videla 2003b: 291.
Phymaturus palluma Pa (Payunia) Lobo & Quinteros 2005b: 143-177.
Phymaturus roigorum Lobo & Abdala 2007: 104 (type locality: Puesto Rojas, 16 km from Provincial Road 180, El Nevado, San Rafael Department, Mendoza Province, Argentina).

***Phymaturus verdugo* Cei & Videla**

Phymaturus verdugo Cei & Videla 2003b: 295 (type locality: Rocky areas in the Río Grande [35°24'S, 70°15'W], near Peteroa Volcano, Malargüe Department, Mendoza Province, Argentina); Pincheira-Donoso 2004a: 61; Lobo & Quinteros 2005b: 144; Scolaro 2005: 60.

***Phymaturus vociferator* Pincheira-Donoso**

Phymaturus palluma Donoso-Barros 1974a: 286.
Phymaturus palluma palluma Troncoso & Ortiz 1987: 17.
Phymaturus flagellifer Habit & Ortiz 1994: 149, 1996: 7; Pincheira-Donoso 2002a: 8.
Phymaturus vociferator Pincheira-Donoso 2004a: 60 (type locality: El Refugio [37°20'S, 71°18'W], 1700 m, National Park Laguna del Laja, Antuco, Bío Bío Region, Chile).
Phymaturus dorsimaculatus Lobo & Quinteros 2005b: 146 (**nov. synonym.**); Scolaro 2006: 52.

Observations: In a recent study of *Phymaturus* lizards, Lobo & Quinteros (2005b) described the new taxon *Phymaturus dorsimaculatus* from Copahue, Ñorquin (37°49'S, 71°06'W), in the Neuquen Province, Argentina. The diagnostic traits and the phylogenetic evidence detailed by these authors provided powerful support to the hypothesis that this *Phymaturus* population differs from any of the remaining species included in their work (*i.e.* 15 of the 17 species known until then; see above). However, Lobo & Quinteros (2005b) did not discuss the relationships between the new lizard, *P. dorsimaculatus*, and the recently described species *Phymaturus vociferator* from boreal Patagonia of Chile (Pincheira-Donoso 2004a). An analysis conducted on the original descriptions of both *Phymaturus* species (Pincheira-Donoso 2004a; Lobo & Quinteros 2005b), as well as on living samples collected in Laguna del Laja (type locality of *P. vociferator*) and Copahue (type locality of *P. dorsimaculatus*), suggested that they might be conspecific. Indeed, the morphological and chromatical traits provided as diagnostic traits for both *P. dorsimaculatus* and *P. vociferator* exhibit strong overlap, even when comparing patterns of population variation (*e.g.* body size, scale countings, precloacal pores, coloration in males and females, and patterns of sexual dimorphism and dichromatism; see *e.g.* Figs. 1 and 2 in Pincheira-Donoso 2004a, and Fig. 1a and 1b in Lobo and Quinteros 2005b; see also description of diagnostic traits and variation).

Furthermore, the type localities of *P. dorsimaculatus* and *P. vociferator* are closely situated into the same area recently recognized as a zone of lizard endemism in the boreal Patagonia of Argentinean and Chilean borders, between 36°50'S–37°53'S, and 70°35'W–71°30'W (Pincheira-Donoso *et al.* 2007a). Consequently, the available evidence cannot support the status of *P. dorsimaculatus* as a taxon different from *P. vociferator*, which we consider to be conspecific. Since *P. vociferator* was proposed before, on the basis of an official type series and locality (Museo Nacional de Historia Natural de Chile, Pincheira-Donoso 2004a), *P. dorsimaculatus* is herein considered a synonym of this species. It additionally means that *P. vociferator* would not be endemic to Chile, but would also occur in the northwestern Patagonia of Argentina.

In a previous work, Scolaro (2006) had already suggested that *P. dorsimaculatus* might be closely related to *P. vociferator*.

Clade *patagonicus*

***Phymaturus calcogaster* Scolaro & Cei**

Phymaturus calcogaster Scolaro & Cei 2003: 108 (type locality: Laguna de La Vaca [42°28'45''S, 67°21'54''W], 680 m, Telsen Department, Chubut Province, Argentina, see Scolaro *et al.* 2005); Scolaro *et al.* 2005: 30.

Observations: In its original description, Scolaro & Cei (2003) suggested that *Phymaturus calcogaster* should be placed within the clade *flagellifer*. However, in a recent reassessment supported on a larger sample, Scolaro & Ibagüengoytía (2007) claimed that this species exhibits the diagnostic morphological traits of the clade *patagonicus*, and that therefore should be placed in this lineage.

***Phymaturus ceii* Scolaro & Ibagüengoytía**

Phymaturus ceii Scolaro & Ibagüengoytía 2007: 48 (type locality: Open rocky outcrops near Chasico [40°23'02''S, 69°00'33''W], 1150 m, south of El Cuy Plateau, Río Negro Province, Argentina).

***Phymaturus excelsus* Lobo & Quinteros**

Phymaturus excelsus Lobo & Quinteros 2005b: 148 (type locality: Provincial Road 6, 1 km NW of Ojo de Agua, [41°32'30''S, 69°51'33''W], 1141 m, Ñorquinco Department, Río Negro Province, Argentina); Scolaro 2006: 53.

***Phymaturus indistinctus* Cei & Castro**

Phymaturus patagonicus indistinctus Cei & Castro 1973: 241 (type locality: Las Pulgas, 800 m, 50 km SW Lago Musters, Chubut Province, Argentina); Cei 1973c: 1; Vanzolini 1986: 19.

Centrura patagonica indistincta Cei 1986: 184.

Phymaturus indistinctus Etheridge 1995: 32; Etheridge & Espinoza 2000: 10; Chebez *et al.* 2005: 37; Scolaro 2005: 56; Sura 2005: 430.

***Phymaturus nevadoi* Cei & Roig**

Phymaturus patagonicus nevadoi Cei 1973c: 1 (*nomen nudum*); Cei & Roig 1975: 256 (type locality: Agua de la India Muerta, Sierra del Nevada, 1750 m, San Rafael Department, Mendoza Province, Argentina), 1976: 69; Vanzolini 1986: 20.

Centrura patagonica nevadoi Cei 1986: 185.

Phymaturus nevadoi Etheridge 1995: 32; Etheridge & Espinoza 2000: 10; Chebez *et al.* 2005: 37; Sura 2005: 430; Scolaro 2006: 55.

***Phymaturus patagonicus* Koslowsky**

Phymaturus patagonicus Koslowsky 1898: 187 (type locality: Chubut Territories, Patagonia, Argentina; restricted to Dolavon, Chubut Province, Argentina by Lobo & Quinteros 2005a); Liebermann 1939: 74; Cei 1971a: 37; Vanzolini 1986: 19; Etheridge 1995: 32; Chiszar *et al.* 1999: 98; Etheridge & Espinoza 2000: 10; Chebez *et al.* 2005: 37; Lobo & Quinteros 2005a: 534; Scolaro 2005: 57; Sura 2005: 430.

Phymaturus palluma patagonicus Burt & Burt 1931: 281; Donoso-Barros 1966a: 349; Peters & Donoso-Barros 1970: 227.

Phymaturus patagonicus patagonicus Cei & Castro 1973: 237.

Centrura patagonica patagonica Cei 1986: 182.

***Phymaturus payuniae* Cei & Castro**

Phymaturus patagonicus payuniae Cei & Castro 1973: 244 (type locality: Payún Highplateau, 5 km from Volcán Payún, 2000 m, Southern Mendoza Province, Argentina); Cei 1973c: 1; Cei & Roig 1976: 69; Vanzolini 1986: 20.

Centrura patagonica payuniae Cei 1986: 185.

Phymaturus payunae Etheridge 1995: 32.

Phymaturus payunia Etheridge & Espinoza 2000: 10; Chebez *et al.* 2005: 37; Sura 2005: 430; Scolaro 2006: 56.

***Phymaturus somuncurensis* Cei & Castro**

Phymaturus patagonicus somuncurensis Cei & Castro 1973: 242 (type locality: Laguna Raimundo, 1400 m, meseta de Somuncurá, Río Negro Province, Argentina); Cei 1973c: 1; Vanzolini 1986: 20.

Centrura patagonica somuncurensis Cei 1986: 186.

Phymaturus somuncurensis Etheridge 1995: 32; Etheridge & Espinoza 2000: 10; Schulte *et al.* 2000: 78; Chebez *et al.* 2005: 37; Scolaro 2005: 58; Sura 2005: 430.

***Phymaturus spectabilis* Lobo & Quinteros**

Phymaturus spectabilis Lobo & Quinteros 2005b: 149 (type locality: Provincial Road 6, 28 km S of Ingeniero Jacobacci, Río Negro Province, Argentina); Scolaro 2006: 57.

***Phymaturus spurcus* Barbour**

Phymaturus spurcus Barbour 1921: 139 (type locality: Huanuluan, Río Negro Province, Argentina; see Lobo & Quinteros 2005a); Lobo & Quinteros 2005a: 537, 2005b: 145; Scolaro 2006: 58.

Phymaturus palluma patagonicus Burt & Burt 1931: 281 (in part).

***Phymaturus tenebrosus* Lobo & Quinteros**

Phymaturus tenebrosus Lobo & Quinteros 2005b: 153 (type locality: 20 km S of Cerro Alto, National Road 40, Río Negro Province, Argentina); Scolaro 2006: 59.

***Phymaturus zapalensis* Cei & Castro**

Phymaturus patagonicus zapalensis Cei & Castro 1973: 243 (type locality: Laguna Teru, 1200 m, 40 km W Zapala, Neuquén Province, Argentina); Cei 1973c: 1; Vanzolini 1986: 20.

Centrura patagonica zapalensis Cei 1986: 187.

Phymaturus zapalensis Etheridge 1995: 32; Etheridge & Espinoza 2000: 10; Chebez *et al.* 2005: 37; Sura 2005: 430; Scolaro 2006: 61.

Discussion

This review summarizes, to the best of our knowledge, all the available information on the diversity, phylogenetic relationships, patterns of distribution, trophic niche generalities, reproductive mode, and nomenclatural history of the entire family Liolaemidae. Previous monographic studies have detailed separately for phylogenetic (*e.g.* a genus, a small clade) or geographic groups (*e.g.* the species occurring in a certain country), most of those biological aspects (*e.g.* Hellmich 1934; Donoso-Barros 1966a, 1970a, 1970b; Donoso-Barros & Codoceo 1962; Cei 1986, 1993; Frost & Etheridge 1989; Núñez & Jaksic 1992; Etheridge 1993, 1995, 2000; Jaksic 1998; Laurent 1998; Etheridge & Espinoza 2000; Schulte *et al.* 2000; Lobo & Quinteros 2005b; Pincheira-Donoso 2005; Pincheira-Donoso & Núñez 2005; Scolaro 2005, 2006; see also Table 1, for detailed references). However, no similar catalogue has been published with all this information on Liolaemidae lizards concentrated in the same work.

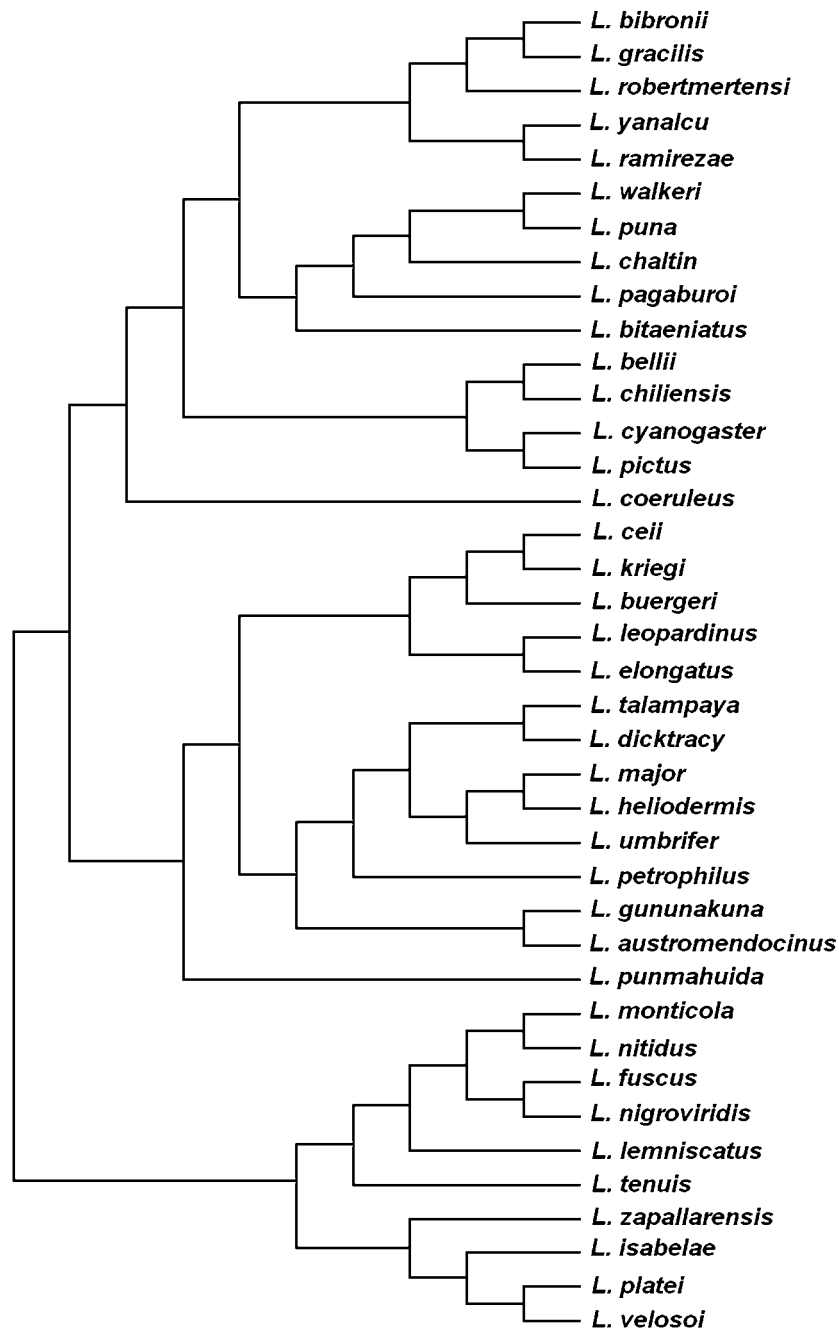


FIGURE 3. Phylogenetic relationships between the *Liolaemus* species of the *Liolaemus* subgenus or *chiliensis* group. The main structure of the tree is based on Schulte *et al.*'s (2000, 2004) and Espinoza *et al.*'s (2004) phylogenetic hypotheses. Additional details on phylogenetic relationships between species within each clade have been taken from specific phylogenetic studies (e.g. Avila *et al.* 2003, 2004).

Although the study of phylogenetic relationships within Liolaemidae has experienced an extraordinary progress over the last few years, it is clear that much additional research is still needed. For instance, a powerful body of evidence has allowed us to understand the relationships between higher level clades, such as genera, subgenera and some species groups (e.g. Schulte *et al.* 2000; Espinoza *et al.* 2004). Yet, on the other hand, many phylogenetic gaps concerning relationships at the level of species are still to be filled. One of the clearest examples is the *montanus* clade (genus *Liolaemus*, subgenus *Eulaemus*). This lineage is known on the basis of 42 species and subspecies (excluding the *reichei* group; Table 1). However, a limited number have

been studied phylogenetically so far (*e.g.* Schulte *et al.* 2000; Valladares *et al.* 2002; Espinoza *et al.* 2004). Indeed, the phylogeny shown in figure 4 includes only eight taxa belonging to this clade, in striking contrast to the remaining lineages for which a much higher proportion of species have been analyzed phylogenetically (Figs. 3 and 4; Table 1). In addition, the species currently recognized as members of the *nigromaculatus* complex (groups *nigromaculatus* and *platei*; Pincheira-Donoso & Núñez 2005) are an interesting subject to be studied phylogenetically. The evolutionary radiation of these taxa in a vast area of the Atacama Desert has not only determined a number of conspicuous adaptations to life in dunes (similar adaptations are known in the *wiegmannii* clade, also psamphilous; see Cei 1993; Etheridge 2000), but has also led to the establishment of peculiar cytogenetic characteristics. Members of this group of desert lizards exhibit a diploid number of chromosomes higher than 38, while the remaining species of the entire genus *Liolaemus* exhibit often 34 or fewer (see table 1 in Pincheira-Donoso & Núñez 2005, and references). The only exception to this pattern is represented by a series of populations from central Chile currently identified as *L. monticola* (Lamborot *et al.* 1979, 1981, 2003; Lamborot 1985a, b, 1991, 1993, 1998, 2001; Lamborot & Eaton 1992, 1997; Lamborot & Alvarez-Sarret 1993), but whose status needs to be clarified (Pincheira-Donoso & Núñez 2005). Evidence on their phylogenetic relationships may contribute to understand how phenotypic and cytogenetic models have evolved through their evolutionary history.

Taxonomic inflation

The number of Liolaemidae taxa, particularly those assignable to the genus *Liolaemus*, increases dramatically every year (see Etheridge & Espinoza 2000; Pincheira-Donoso & Núñez 2005, for recent details). Different factors may explain this trend. Perhaps the primary one is that the adaptive radiation experienced by these reptiles has promoted the origin of an extraordinary diversity of readily diagnosable populations, many of them probably still awaiting official description (Hernández & Espinoza 2004; Pincheira-Donoso *et al.* 2007a). Nevertheless, taxonomic inflation, the opposite scenario (the recognition of new species on the basis of some unreliable and ambiguous traits), has also largely been considered as a major factor involved in this increment of Linnean names. Recent discussions suggest that, in general for different living organisms, a large proportion of the populations recognized and named as new species is expected to be the result of taxonomic inflation (Isaac *et al.* 2004; see also May 1988) and of the uncertainty in delimiting species boundaries (*e.g.* Cracraft 1989; Hudson & Coyne 2002; Lee 2003; Coyne & Orr 2004). Indeed, it is certainly true that describing and discovering are strikingly different facts. The recognition of populations as new species, through official descriptions and nominations, does not mean that these populations are actually new.

Even though the recognition of new taxa may be substantially affected by the problem of defining clearly what the limits of species are (Coyne & Orr 2004; see also above), the risk of naming previously nominated species may be reduced. The most obvious way to reduce this risk is to describe and name a new species only when its status is supported by powerful and unambiguous evidence (which eventually depends on the researcher's criteria). For example, when molecular analyses suggest that the studied populations thought to be new exhibit clear genetic divergence from their closest phylogenetic and biogeographic relatives. It may represent reasonable evidence to support the occurrence of reproductive isolation among the known populations (coexisting or geographically isolated), and hence, it serves to accept new biological species (Mayr 1942, 1963; Coyne & Orr 2004). Or, when differentiation in phenotypic traits between populations assignable to the same group suggests that divergent selection in the environments they inhabit and the resources they exploit (directly in sympatry or as a byproduct of geographic isolation) has promoted the evolution of clear alternative adaptive strategies (therefore, divergent pathways of gene fixation), and eventually the split of an ancestor into new identifiable lineages (see *e.g.* Schluter 2000; Coyne & Orr 2004). In a broad sense, it implies that the occurrence of a single differentiated trait (*e.g.* trivial coloration differences), especially when it is recognized as liable to environmental variation, should not be considered sufficient evidence to hypothesize a new species. For instance, ecomorphological information accumulated over the last few years shows

that limb lengths (used as a distinctive trait in new species descriptions in many papers focusing on lizards) may not necessarily reflect a speciation event. Field observations conducted in *Anolis* lizards have revealed that within a single generation or in very short periods of time (*e.g.* less than 12 months), individuals from the same population experience significant differentiation in limb length in response to contrasting substrate openness or to changes in use of surfaces in response to the introduction of predators (Losos *et al.* 2000, 2004, 2006).

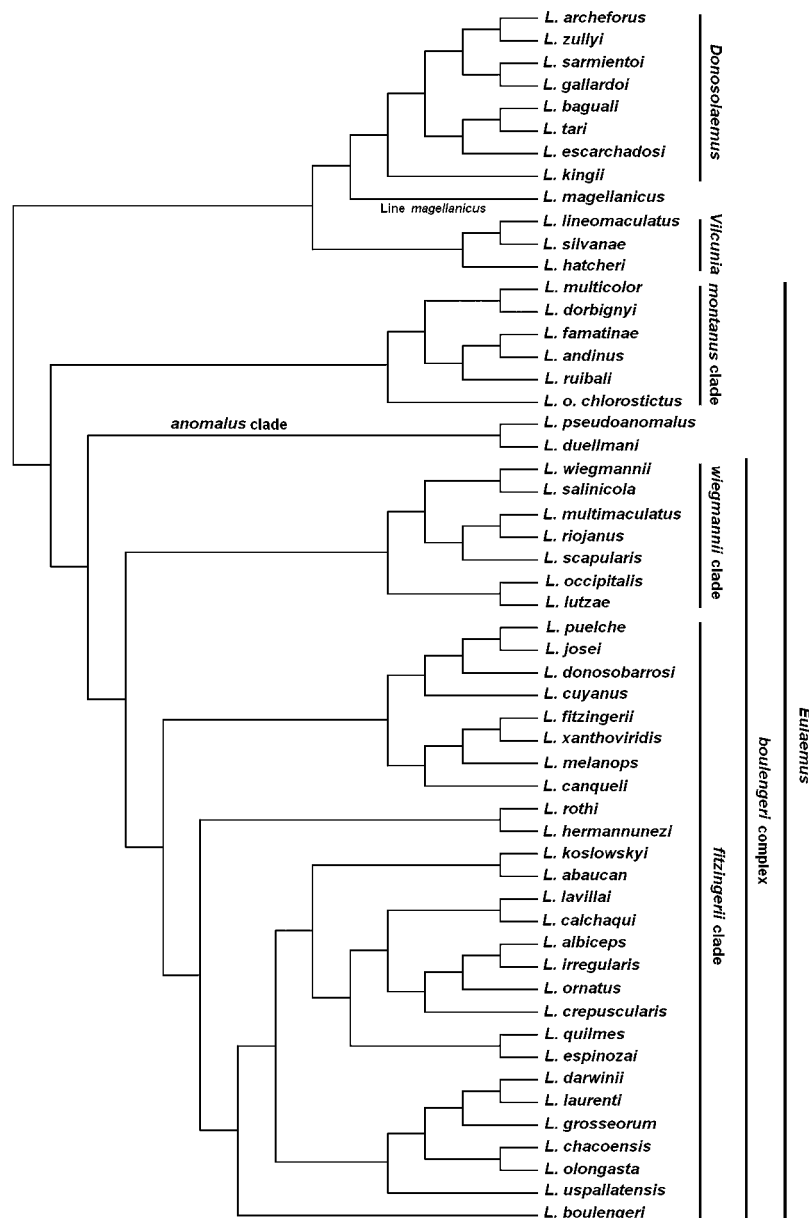


FIGURE 4. Phylogenetic relationships between the *Liolaemus* species of the series *signifer* (subgenera *Donosolaemus*, *Vicunia* and *Eulaemus*, and line *magellanicus*). The main structure of the tree is based on Schulte *et al.*'s (2000, 2004) and Espinoza *et al.*'s (2004) phylogenetic hypotheses. Additional details on phylogenetic relationships between species within each clade have been taken from specific phylogenetic studies (*e.g.* Avila *et al.* 2007; Pincheira-Donoso *et al.* 2007a).

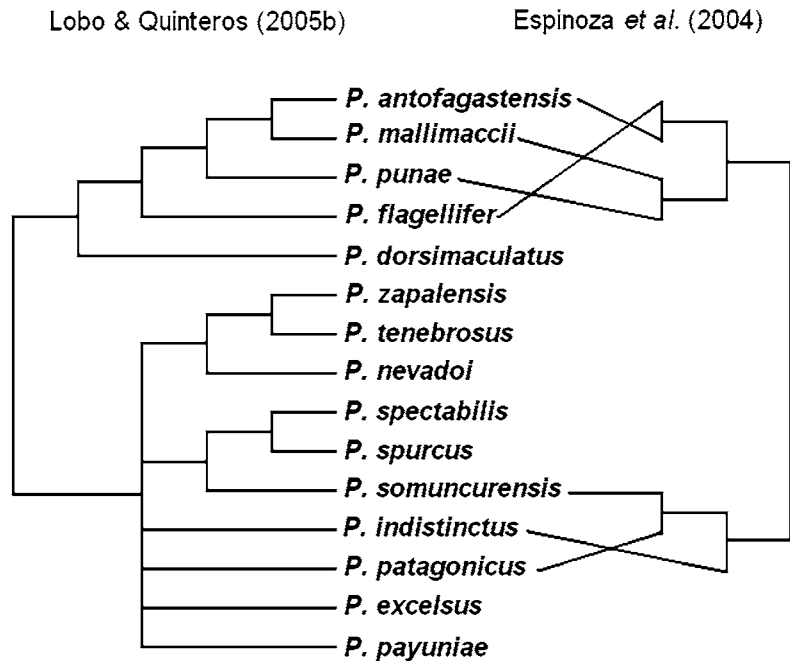


FIGURE 5. Phylogenetic relationships between the species of the genus *Phymaturus*. Note contrasts between the structure of the phylogenetic hypotheses proposed by Lobo & Quinteros (2005b) and Espinoza *et al.* (2004). Although we consider that *P. dorsimaculatus* is a synonym of *P. vociferator*, the figure shows the nomenclature used in the original work (Lobo & Quinteros 2005).

Similar criteria should also be applied in systematic studies of allopatric populations. This means that populations believed to be fully isolated geographically (*i.e.* the fraction of breeding individuals in a population that are immigrants from other populations is effectively zero; see Coyne & Orr 2004) should not be considered different species only because they are believed to be isolated. Pervasive problems such as insufficient samples for studies, or unavoidable difficulties to access areas located between known populations (as occurs in many huge geographical extensions in the Andes for example) might mistakenly indicate that two groups of specimens represent two isolated populations. Consequently, if proper molecular evidence is not available in these cases, the nomination of new species should not be carried out unless phenotypic evidence suggests powerfully the potential phylogenetic independence of both populations.

The persistent nomination of new species on the basis of uninformative and meaningless traits (see above) can raise drastically the risk of taxonomic inflation. It not only may affect the reputation of researchers, but more importantly, may have serious consequences for ecology, conservation and evolutionary research (*e.g.* Alroy 2003; Isaac *et al.* 2004, and references therein). Therefore, the systematic study of poorly known populations should be conducted cautiously. Comparative analyses supported by appropriate samples of other species considered phylogenetic or biogeographically related should be considered a primary requirement. These procedures may substantially contribute to increase the understanding of biodiversity and the extrinsic and intrinsic factors involved in their proliferation. Liolaemidae lizards (particularly *Liolaemus*) represent an extraordinary example of evolution in action, and its study may offer fundamental answers concerning a wide range of fascinating fields of research. Consequently, building up the knowledge on the species-richness (and all the remaining ecological and evolutionary patterns relying on this information) of this group (and others) on mindful and convincing evidence should be considered a critical first step.

Acknowledgements

We thank J.M. Cei, P. Espejo, C. Garín, P. Iturra, A. Marcus, J. Navarro, H. Núñez, E.A. Pereyra, J.C. Torres-Mura, J.P. Valladares, A. Vejar, A. Veloso, for valuable discussions concerning many different aspects of this work. J. Artigas, M. Contreras and E. Solar (Museum of Zoology, Universidad de Concepción, Chile), J.M. Cei (José Miguel Cei-Diagnostic Collection), I. Ineich (Department of Systematics and Evolutionary Biology, National Museum of Natural History of Paris, France), C. McCarthy (Darwin Centre, British Museum of Natural History, London), J. Navarro and P. Iturra (ex collection Departamento de Biología Celular y Genética, School of Medicine, Universidad de Chile, Santiago) H. Núñez (Sección Zoología, Museo Nacional de Historia Natural de Santiago, Chile), E.A. Pereyra (Instituto de Biología Animal, Universidad Nacional de Cuyo, Mendoza, Argentina), J.F. Troncoso (Museo de Historia Natural de Concepción, Chile), F. Videla (Instituto Argentino de Investigación de las Zonas Áridas, Mendoza, Argentina), for permission to develop visiting research in their institutions. R. Etheridge provided valuable photographic material from *Liolaemus* individuals housed in the Department of Biology of the San Diego State University, USA. C.S. Abdala, J.M. Cei, I. de la Riva, R. Espinoza, R. Etheridge, C. Garín, F.M. Jaksic, E.A. Pereyra, V.H. Ruíz, J.A. Schulte II, J.C. Torres-Mura, P.E. Vanzolini, F. Videla provided essential literature, specific information on different taxa, or another source of valuable collaboration and advice. Dave J. Hodgson, Tom Tregenza and four anonymous referees provided valuable comments that greatly improved this work. We also want to acknowledge the very valuable bibliographic collaboration of P. Iribarren, from the School of Biology Library of the University of Concepción. DP-D thanks to Tom Tregenza (Centre for Ecology and Conservation, University of Exeter, United Kingdom) and Herman Núñez (Museo Nacional de Historia Natural de Chile) for valuable academic support and permanent encouragement. Also, the financial support for research provided by the Universities UK through an Overseas Research Student Award, by the University of Exeter (United Kingdom) through an Exeter Research Student Award and a School of Biological and Chemical Sciences PhD Scholarship, by Phrynosaura Chile and by Oxford University Press in the United Kingdom.

References

- Abdala, C.S. (2002) Nuevo *Liolaemus* (Iguania: Liolaemidae) perteneciente al grupo *boulengeri* de la Provincia de Neuquén, Argentina. *Cuadernos de Herpetología*, 16, 3–13.
- Abdala, C.S. (2003) Cuatro nuevas especies del género *Liolaemus* (Iguania: Liolaemidae), pertenecientes al grupo *boulengeri*, de la Patagonia, Argentina. *Cuadernos de Herpetología*, 17, 3–32.
- Abdala, C.S. (2005a) Dos nuevas especies del género *Liolaemus* (Iguania: Liolaemidae) y redescrpcion de *Liolaemus boulengeri* (Koslowky, 1898). *Cuadernos de Herpetología*, 19, 3–33.
- Abdala, C.S. (2005b) Una nueva especie del género *Liolaemus* perteneciente al complejo *darwinii* (Iguania: Liolaemidae) de la provincia de Catamarca, Argentina. *Revista Española de Herpetología*, 19, 5–17.
- Abdala, C.S. (2007) Phylogeny of the *boulengeri* group (Iguania: Liolaemidae, *Liolaemus*) based on morphological and molecular characters. *Zootaxa*, 1538, 1–84.
- Abdala, C.S. & Díaz Gomez, J.M. (2006) A new species of the *Liolaemus darwinii* group (Iguania: Liolaemidae) from Catamarca Province, Argentina. *Zootaxa*, 1317, 21–33.
- Abdala, C.S. & Lobo, F. (2006a) Nueva especie del grupo de *Liolaemus darwinii* (Iguania: Liolaemidae) del noroeste de Argentina. *Cuadernos de Herpetología*, 19, 3–18.
- Abdala, C.S. & Lobo, F. (2006b) Description of a new Patagonian lizard species of the *Liolaemus silvanae* group (Iguania: Liolaemidae). *South American Journal of Herpetology*, 1, 1–8.
- Abdala, V. (1992) Aportes a la osteología comparada en el género *Homonota* (Sauria: Gekkonidae) I. Cráneo. *Acta Zoológica Lilloana*, 41, 247–256.
- Abdala, V. (1995) Aportes a la osteología comparada en el género *Homonota* (Sauria: Gekkonidae) II. Postcráneo. *Acta Zoológica Lilloana*, 43, 125–130.
- Abdala, V. (1997) Los geocos de Argentina. *Serie Monográfica y Didáctica, Facultad de Ciencias Naturales e Instituto Miguel Lillo, Universidad Nacional de Tucumán*, 29, 1–44.
- Abdala, V., Abdala, C. & Tulli, M.J. (2006) Muscular characters in the phylogeny of *Liolaemus* (Squamata: Iguania:

- Liolaemidae): a reappraisal. *Zootaxa*, 1205, 55–68.
- Acosta, J.C. & Murúa, F. (1997) Geographic distribution. *Liolaemus pseudoanomalus*. *Herpetological Review*, 28, 51.
- Acosta, J.C. & Murúa, F. (2000) Geographic distribution. *Liolaemus riojanus*. *Herpetological Review*, 31, 53.
- Acosta, J.C., Avila, L.J. & Blanco, G. (1996c) Ecología de *Liolaemus boulengeri* (Sauria: Tropicuridae) en el noroeste de la estepa patagónica (Ing. Jacobacci, Rio Negro, Argentina). *Cuadernos de Herpetología*, 9, 100–107.
- Acosta, J.C., Murúa, F. & Ortiz, G. (1996a) Primera cita de *Liolaemus wiegmanni* (Sauria: Tropicuridae) para la provincia de San Juan, Argentina. *Cuadernos de Herpetología*, 10, 74–75.
- Acosta, J.C., Murúa, F. & Ortiz, G. (1996b). Geographic distribution. *Liolaemus olongasta*. *Herpetological Review*, 27, 32.
- Ahl, E. (1925) Neue Iguaniden aus dem Zoologischen Museum Berlin. *Zoologischer Anzeiger*, 62, 85–88.
- Albino, M.A. (1994) Estado actual del registrado de escamados extinguidos de America del Sur y sus implicancias paleoambientales. *Cuadernos de Herpetología*, 8, 146–154.
- Alexander, R.M. (1999) *Energy for animal life*, Oxford University Press, Oxford, 176 pp.
- Alroy, J. (2003) Taxonomic inflation and body mass distributions in North American fossil mammals. *Journal of Mammalogy*, 84, 431–443.
- Alvarez, B.B. & Lions, M.L. (1996) Geographic distribution. *Liolaemus wiegmanni*. *Herpetological Review*, 27, 32.
- Alvarez, B.B., Tedesco, M.E. & Hernando, A.B. (1988) Nota preliminar sobre la composición y distribución de la lacertofauna de Corrientes, Chaco y Formosa (Argentina). *Revista de la Asociación de Ciencias Naturales del Litoral*, 19, 79–89.
- Amaral, A. (1938) Estudos sobre lacertílios neotrópicos. 4. Lista remissiva dos lacertílios do Brasil. *Memorias del Instituto Butantan*, 11, 167–204.
- Andersson, L.G. (1898) List of reptiles and batrachians collected by the Swedish Expedition to Tierra del Fuego (1895–1896) under direction of Dr. Otto Nordenskiöld. *Öfversigt af K. Vetenskaps-Akademiens Förhandlingar*, 1898, 457–462.
- Aquino, A.L., Scott, N.J. & Motte, M. (1996) Lista de anfibios y reptiles del Museo Nacional de Historia Natural del Paraguay (marzo, 1980-septiembre 1995). Pp. 331–400, in: MNHNP, Colecciones de fauna y flora del Museo Nacional de Historia Natural del Paraguay. Ministerio de Agricultura y Ganadería, Asunción, Paraguay.
- Arujo, A.F.B. (1991) Structure of a white sand-dune lizard community of coastal Brazil. *Revista Brasileira de Biología*, 51, 857–865.
- Aun, L. & Martori, R. (1998) Reproducción y dieta de *Liolaemus koslowskyi* Etheridge 1993. *Cuadernos de Herpetología*, 12, 1–9.
- Avila, L.J. (1995) Nuevas localidades para *Liolaemus saxatilis* y comentarios sobre su distribución. *Facena*, 11, 105–108.
- Avila, L.J. (1996a) Geographic distribution. *Liolaemus bibroni*. *Herpetological Review*, 27, 87.
- Avila, L.J. (1996b) *Liolaemus donosobarrosi*: ampliación de su distribución geográfica y primera cita para la provincia de Neuquén. *Cuadernos de Herpetología*, 9, 109–110.
- Avila, L.J. (1996c) *Liolaemus elongatus petrophilus*: ampliación de su distribución geográfica y primera cita para la provincia de Neuquén. *Facena*, 12, 139–140.
- Avila, L.J. (2003) A new species of *Liolaemus* (Squamata: Liolaemidae) from northeastern Argentina and southern Paraguay. *Herpetologica*, 59, 283–292.
- Avila, L.J., Acosta, J.C. & Murúa, A.F. (1998) Herpetofauna de la provincia de San Juan, Argentina: lista comentada y distribución geográfica. *Cuadernos de Herpetología*, 12, 11–29.
- Avila, L.J. & Belver, L. (2000) *Liolaemus koslowskyi*. Saurophagy. *Herpetological Review*, 31, 174.
- Avila, L.J., Cei, J.M., Martori, R.A. & Acosta, J.A. (1992) A new species of *Liolaemus* of the *bibroni* group from granitic ravines of Achiras, Sierra de Comechingones, Córdoba, Argentina (Reptilia, Tropicuridae). *Bollettino del Museo Regionale di Scienze Naturali di Torino*, 10, 101–111.
- Avila, L.J. & Lobo, F. (1999) New lizard records for La Rioja and Catamarca Provinces, northwestern Argentina. *Herpetological Review*, 30, 115–117.
- Avila, L.J. & Morando, M. (1998) Geographic distribution. *Liolaemus melanops*. *Herpetological Review*, 29, 174–175.
- Avila, L.J. & Morando, M. (2002) *Liolaemus petrophilus*. Saurophagy. *Herpetological Review*, 33, 52.
- Avila, L.J., Morando, M. & Perez, D.R. (1999) Geographic distribution. *Phymaturus patagonica*. *Herpetological Review*, 30, 174.
- Avila, L.J., Morando, M., Perez, C.H.F. & Sites, J.W., Jr. (2004) Phylogenetic relationships of lizards of the *Liolaemus petrophilus* group (Squamata, Liolaemidae), with description of two new species from western Argentina. *Herpetologica*, 60, 187–203.
- Avila, L.J., Morando, M., Perez, C.H.F. & Sites, J.W., Jr. (2007) A new species of *Liolaemus* (Reptilia: Squamata: Liolaemini) from southern Mendoza province, Argentina. *Zootaxa*, 1452, 43–54.
- Avila, L.J., Morando, M. & Sites, J.W., Jr. (2008) New species of the iguanian lizard genus *Liolaemus* (Squamata, Iguania, Liolaemini) from Central Patagonia, Argentina. *Journal of Herpetology*, 42, 186–196.
- Avila, L.J., Perez, C.H.F. & Morando, M. (2003) A new species of *Liolaemus* (Squamata: Iguania: Liolaemidae) from

- northwestern Patagonia (Neuquen, Argentina). *Herpetologica*, 59, 532–543.
- Avila, L.J. & Soto, E. (1997) Geographic distribution. *Liolaemus fitzgeraldi*. *Herpetological Review*, 28, 96.
- Avila-Pires, T.C.S. (1995) Lizards of Brazilian Amazonia (Reptilia: Squamata). *Zoologische Verhandelingen*, 299, 1–706.
- Barbour, T. (1909) Some new South American cold-blooded vertebrates. *Proceedings of the New England Zoological Club*, 4, 47–52.
- Barbour, T. (1921) On a small collection of reptiles from Argentina. *Proceedings of the Biological Society of Washington*, 34, 139–142.
- Barbour, T. & Loveridge, A. (1946) First supplement to typical reptiles and amphibians. *Bulletin of the Museum of Comparative Zoology*, 96, 57–214.
- Baudoin, W., Pacheco, M.J. Pacheco, L. (1990) Reptiles. In: Forno, E. & Boudoin, M. (Ed.), *Historia Natural de un valle en Los Andes: La Paz*. Servicio Gráfico Quipus, La Paz, 421–452.
- Bell, T. (1843) Reptiles, Part V. In: Darwin, C. (Ed.), *The Zoology of the voyage of H. M. S. Beagle, under command of Captain Fitzroy, R. N., during the years 1832 to 1836*. Smith, Elder & Co., London, 1–55.
- Berg, C. (1898) Contribuciones al conocimiento de la fauna erpetológica argentina y de los países limítrofes. *Anales del Museo Nacional de Historia Natural de Buenos Aires*, 6, 1–35.
- Bertonatti, C. (1994) Lista propuesta de anfibios y reptiles amenazados de extinción. *Cuadernos de Herpetología*, 8, 164–171.
- Blair, W.F., Hulse, A.C. & Mares, M.A. (1976) Origins and affinities of vertebrates of the North American Sonoran Desert and the Monte Desert of northwestern Argentina. *Journal of Biogeography*, 3, 1–18.
- Boettger, O. (1891) Reptilien und Batrachier aus Bolivia. *Zoologischer Anzeiger*, 14, 343–347.
- Boettger, O. (1893) Katalog der Reptilien-Sammlung im Museum der Senckenbergischen Naturforschenden Gesellschaft im Frankfurt am Maim. I. Teir (Rhynchocephalen, Shildkröten, Krocodile, Eidechsen, Chamäleons). *Gebrüder, Knauer, Frankfurt*, 1–140.
- Bogert, C.M. (1949) Thermoregulation in reptiles, a factor in evolution. *Evolution*, 3, 195–211.
- Böhler, E. & Müller, P. (1970) Bemerkungen zur Variabilität von *Liolaemus occipitalis*. *Salamandra*, 6, 130–131.
- Boretto, J.M., Ibargüengoytía, N.R., Acosta, J.C., Blanco, G.M., Villavicencio, J. & Marinero, J.A. (2007) Reproductive biology and sexual dimorphism of a high-altitude population of the viviparous lizard *Phymaturus punae* from the Andes in Argentina. *Amphibia-Reptilia*, 28, 427–432.
- Bottari, C.V. (1975a) Sobre la presencia de *Liolaemus magellanicus* en Tierra del Fuego, Argentina (Reptilia Iguanidae). *Physis, Buenos Aires*, 34, 211–213.
- Bottari, C.V. (1975b) Poblaciones altitudinarias aisladas de *Liolaemus elongatus* del Volcán Payún Liso relaciones taxoserológicas y biogeográficas con el conjunto *elongatus-austromendocinus* del Sureste árido de Mendoza. *Deserta*, 4, 185–194.
- Bottari, C.V. (1975c) Curiosa distribución de nuevos nichos ecológicos de origen antrópico en los saurios de ambientes costeros del Chubut, Argentina. *Physis, Buenos Aires*, 34, 111–112.
- Boulenger, G.A. (1885a) *Catalogue of the lizards in the British Museum (Natural History)*, London, 497 pp.
- Boulenger, G.A. (1885b) A list of reptiles and batrachians from the province Rio Grande do Sul, Brazil, sent to the Natural-History Museum by Dr. H. von Ihering. *Annals and Magazine of Natural History of London*, 15, 191–196.
- Boulenger, G.A. (1885c) Remarks on the geographical distribution of the Lacertilia. *Annals and Magazine of Natural History of London*, 16, 77–85.
- Boulenger, G.A. (1886) A synopsis of the reptiles and batrachians of the province Rio Grande do Sul Brazil. *Annals and Magazine of Natural History of London*, 18, 423–445.
- Boulenger, G.A. (1891) Description of a new lizard of the genus *Ctenoblepharis* from Chile. *Proceedings of the Zoological Society of London*, 1891, 3.
- Boulenger, G.A. (1895) Second report on additions to the lizard collection in the Natural-History Museum. *Proceedings of the Zoological Society of London*, 1894, 722–736.
- Boulenger, G.A. (1899) Reptiles, Part III. In: Fitzgerald, E.A. (Ed.), *The highest Andes*. Methuen and Co., London, 1–390.
- Boulenger, G.A. (1901) Further descriptions of new reptiles collected by Mr. P. O. Simons in Peru and Bolivia. *Annals and Magazine of Natural History of London*, 7, 546–549.
- Boulenger, G.A. (1902) Descriptions of new batrachians and reptiles from the Andes of Peru and Bolivia. *Annals and Magazine of Natural History of London*, 10, 394–402.
- Brygoo, É.R. (1989) Les types d'Iguanidés (Reptiles, Sauriens) du Muséum national d'Histoire naturelle Catalogue critique. *Bulletin Museum National d'Histoire Naturelle Paris*, Ser. 4, Sec. A(3): 1–112.
- Bürger, O. (1907) Estudios sobre reptiles chilenos. *Anales de la Universidad de Chile*, 121, 149–155.
- Burmeister, C.V. (1888) Algunas noticias sobre la fauna de la Patagonia. *Anales del Museo de Buenos Aires*, 3, 237–252.
- Burmeister, H. (1861) *Reise durch die La Plata Staaten mit besonderer Rücksicht auf die physische Beschaffenheit und den Culturzustand der Argentinische Republik. Ausgeführt in den Jahren 1857, 1858, 1859 und 1860*, Halle, H. W.

Schmidt, 538 pp.

- Burt, C.E. & Burt, M.D. (1930) The South American lizards in the collection of the United States National Museum. *Proceedings of the United States National Museum*, 78, 1–52.
- Burt, C.E. & Burt, M.D. (1931) South American lizards in the collection of the American Museum of Natural History. *Bulletin of the American Museum of Natural History*, 61, 227–395.
- Burt, C.E. & Burt, M.D. (1933) A preliminary check list of the lizards of South America. *Transactions of the Academy of Science of St. Louis*, 28, 1–104.
- Cabrera, M.R. (1992) Dentición y su relación con la dieta y el ambiente en tres iguánidos sudamericanos. *Acta Zoológica Lilloana*, 41, 235–246.
- Cabrera, M.R. (1993) Los saurios del espinal y su presencia en provincias biogeográficas vecinas. *Revista del Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” e Instituto Nacional de Investigación de las Ciencias Naturales*, 4, 17–34.
- Cabrera, M.R. (1996) Lista y distribución geográfica de saurios, anfisbenas y tortugas (Amniota, Reptilia) de la provincia de Córdoba. In: di Tada, I.E. & Bucher, E.H. (Ed.), *Biodiversidad de Provincia Córdoba. I. Fauna*. Universidad Nacional de Río Cuarto, Río Cuarto, Córdoba, 215–238.
- Cabrera, M.R. & Bee de Speroni, N.T. (1986) Composición y distribución de la lacertofauna de la provincia de Córdoba, Argentina. II. Amphisbaenidae, Anguidae e Iguanidae. *Historia Natural en Corrientes, Argentina*, 6, 1–12.
- Cabrera, M.R. & Monguillot, J.C. (2006) A new Andean species of *Liolaemus* of the *darwinii* complex (Reptilia: Iguanidae). *Zootaxa*, 1106, 35–43.
- Campbell, J.A. & Frost, D.R. (1993) Anguid lizards of the genus *Abronia*: revisionary notes, descriptions of four new species, phylogenetic analysis, and key. *Bulletin of the American Museum of Natural History*, 216, 1–121.
- Cánovas, M.G., Villavicencio, H.J., Acosta, J.C. & Marinero, J.A. (2006) *Liolaemus olongasta*. Reproduction. *Herpetological Review*, 37, 467–468.
- Carrillo de Espinoza, N. (1970) Contribución al conocimiento de los reptiles de Perú (Squamata, Crocodylia, Testudinata, Reptilia). *Publicaciones del Museo de Historia Natural “Javier Prado”, Universidad Nacional Mayor de San Marcos, Serie A, Zoología*, 22, 1–63.
- Carrillo de Espinoza, N. & Icochea, J. (1995) Lista taxonómica preliminar de los reptiles vivientes del Perú. *Publicaciones del Museo de Historia Natural “Javier Prado”, Universidad Nacional Mayor de San Marcos, Serie A, Zoología*, 49, 1–27.
- Cei, J.M. (1971a) Consideraciones sobre las relaciones taxonómicas de *Phymaturus patagonicus* y *Phymaturus palluma*. *Acta Zoológica Lilloana*, 28, 37–46.
- Cei, J.M. (1971b) Herpetología patagónica. I. *Liolaemus* del grupo *magellanicus*. Características taxonómicas y genéticas. *Physis, Buenos Aires*, 30, 417–424.
- Cei, J.M. (1973a) Herpetología patagónica. VI. Los *Liolaemus* del grupo *fitzingeri* en Santa Cruz y Chubut (Sauria, Iguanidae). *Physis, Buenos Aires*, 32, 447–458.
- Cei, J.M. (1973b) Herpetología patagónica. VII. Notas ecológicas y morfológicas sobre *Liolaemus bibroni* y *L. boulengeri* (Sauria, Iguanidae). *Physis, Buenos Aires*, 32, 459–469.
- Cei, J.M. (1973c) Lista de los ejemplares tipos de la colección herpetológica del Instituto de Biología Animal, Facultad de Ciencias Agrarias de la Universidad Nacional de Cuyo. *Revista de la Facultad de Ciencias Agrarias*, 19, 1–9.
- Cei, J.M. (1973d) Comentarios sobre una nueva especie Argentina de saurio: *Liolaemus emmae* Donoso Barros (1970). *Boletín Sociedad de Biología de Concepción*, 46, 223–225.
- Cei, J.M. (1974a) Two new species of *Ctenoblepharis* (Reptilia, Iguanidae) from the arid environments of the central Argentina (Mendoza Province). *Journal of Herpetology*, 8, 71–75.
- Cei, J.M. (1974b) Revision of the patagonian iguanids of the *Liolaemus elongatus* complex. *Journal of Herpetology*, 8, 219–229.
- Cei, J.M. (1974c) Herpetología patagónica VIII. La altiplancie volcánica entre Primos Pinos y Río Kilka, Neuquén: notas Herpetológicas. *Physis, Buenos Aires*, 33, 183–185.
- Cei, J.M. (1975a) Herpetología patagónica. IX. *Liolaemus goetschi* y el conjunto *Liolaemus darwini-boulengeri*. *Physis, Buenos Aires*, 34, 199–202.
- Cei, J.M. (1975b) Herpetología patagónica. X. El conjunto evolutivo de *Liolaemus elongatus*: análisis serológico. *Physis, Buenos Aires*, 34, 203–208.
- Cei, J.M. (1975c) *Liolaemus melanops* (Burmeister) and the subspecific status of the *Liolaemus fitzingeri* group (Sauria, Iguanidae). *Journal of Herpetology*, 9, 217–222.
- Cei, J.M. (1975d) Southern patagonian iguanid lizards of the *Liolaemus kingi* group. *Herpetologica*, 31, 109–116.
- Cei, J.M. (1978a) Un grupo de reptiles excepcionalmente adaptados a condiciones de vida en ambientes arenosos y erémicos: los iguánidos Tropicodurinos argentinos del grupo “*Ortholaemus*” (*Liolaemus multimaculatus* - *L. rabinoi*). *Publicaciones Ocasionales del Instituto de Biología Animal, Universidad Nacional de Cuyo, Serie Científica*, 7, 1–4.
- Cei, J.M. (1978b) A new species of *Liolaemus* (Sauria: Iguanidae) from the Andean mountains of the southern Mendoza

- volcanic region of Argentina. *Occasional Papers of the Museum of Natural History, University of Kansas*, 76, 1–6.
- Cei, J.M. (1978c) Estado taxonómico y distribución geográfica de las especies del género *Homonota* (Sauria, Gekkonidae). *Publicaciones Ocasionales del Instituto de Biología Animal, Universidad Nacional de Cuyo*, 9, 1–4.
- Cei, J.M. (1979a) Remarks on the South American lizard *Liolaemus anomolus* Koslowsky, and the synonymy of *Phrynosaura werneri* Müller (Reptilia, Lacertilia, Iguanidae). *Journal of Herpetology*, 13, 183–186.
- Cei, J.M. (1979b) A reassessment of the genus *Ctenoblepharis* (Reptilia, Sauria, Iguanidae) with a description of a new subspecies of *Liolaemus multimaculatus* from western Argentina. *Journal of Herpetology*, 13, 297–302.
- Cei, J.M. (1979c) Nota preliminar sobre la distribución geográfica de *Liolaemus wiegmanni* (Dum. et Bibr.) (Sauria, Iguanidae). *Publicaciones Ocasionales del Instituto de Biología Animal, Universidad Nacional de Cuyo, Serie Científica*, 14, 1–4.
- Cei, J.M. (1980a) The conspecificity of the iguanid lizard *Liolaemus chacoensis* Shreve, 1948 and *Liolaemus emmae* Donoso Barros, 1970. *Copeia*, 1980, 936–937.
- Cei, J.M. (1980b) L'identité des syntypes de *Proctotretus fitzingeri* Duméril et Bibron, 1837. *Bulletin Museum National d'Histoire Naturelle Paris*, Ser. 4, A2, 317–320.
- Cei, J.M. (1980c) Remarks on taxonomic status and specific characters of *Liolaemus marmoratus* (Burmeister). *Journal of Herpetology*, 14, 192–193.
- Cei, J.M. (1980d) New endemic iguanid lizards from the Famatina Mountains of western Argentina. *Journal of Herpetology*, 14, 57–64.
- Cei, J.M. (1981) *Liolaemus pseudoanomalus* a substitute name for *Liolaemus marmoratus* (Burmeister 1861). *Journal of Herpetology*, 15, 253–254.
- Cei, J.M. (1982a) A new endemic lizard from Sierra Pie de Palo in western Argentina. *Journal of Herpetology*, 16, 179–182.
- Cei, J.M. (1982b) Aspetti geo-biogeografici inediti della Sierra di Famatina, il più elevato massiccio d'America del Sud dopo le cordigliere andine (Argentina centro-occidentale). *Rivista Bimestrale dell'Istituto Geografico Militare di Firenze*, 62, 643–672.
- Cei, J.M. (1982c) Reliquias y refugios, al sur del trópico, de la herpetofauna austral pleistocénica sudamericana. *Actas VII Congreso Latinoamericano, Zoología, Mérida, Venezuela*, 1982, 213–221.
- Cei, J.M. (1983) Una nueva subespecie de *Liolaemus anomolus* de la región árida halófila de Salinas Grandes (Provincia de Córdoba, Argentina). *Deserta*, 7, 172–178.
- Cei, J.M. (1985) Notas sobre especies de *Liolaemus* de la meseta de Somuncurá, Río Negro, y rectificación de los números museológicos de los tipos de *Liolaemus kingi somuncurae*. *Boletín de la Asociación Herpetológica Argentina*, 2, 15–16.
- Cei, J.M. (1986) *Reptiles del centro, centro-oeste y sur de la Argentina. Herpetofauna de las zonas áridas y semiáridas*. Museo Regionale di Scienze Naturali di Torino, Monografie 4, 528 pp.
- Cei, J.M. (1990) Further comments on the holotype of *Liolaemus ruizleali* Donoso-Barros and Cei, 1971 from Patagonia, Argentina (Reptilia, Iguanidae). *Bolletino Museo Regionale di Scienze Naturali di Torino*, 8, 45–52.
- Cei, J.M. (1993) *Reptiles del noroeste, nordeste y este de la Argentina. Herpetofauna de las selvas subtropicales, Puna y Pampas*. Museo Regionale di Scienze Naturali di Torino, Monografie 14, 949 pp.
- Cei, J.M. (1998) La mélanocéphalie chez les lézards liolaemines et redécouverte de l'holotype de *Liolaemus melanops* Burmeister, 1888 longtemps considéré comme perdu (Reptilia: Squamata: Iguania: Tropiduridae). *Revue Française de Aquariologie*, 25, 59–62.
- Cei, J.M. & Castro, L.P. (1973) Taxonomic and serological researches on the *Phymaturus patagonicus* complex. *Journal of Herpetology*, 7, 237–247.
- Cei, J.M., Etheridge, R. & Videla, F. (1983) Especies nuevas de iguánidos del noroeste de la Provincia de San Juan (Reserva provincial San Guillermo), Argentina. *Deserta*, 7, 316–323.
- Cei, J.M., Lanza, B. & Poggesi, M. (1975) On the morphology and taxonomy of *Ctenoblepharis rabinoi* Cei and *Liolaemus multimaculatus* (Duméril et Bibron) from central and eastern Argentina. *Natura, Milano*, 66, 101–113.
- Cei, J.M. & Lescure, J. (1985) Identité de *Lacerta palluma* Molina 1782, et révalidation de *Centrura flagellifer* Bell, 1843 (Reptilia, Sauria). *Bulletin Museum National d'Histoire Naturelle Paris*, Ser. 4, Sect. A, 175–183.
- Cei, J.M. & Ortiz, J.C. (1983) Descripción de una nueva especie de lagarto *Liolaemus coeruleus* n. sp. para Argentina. (Sauria, Iguanidae). *Boletín de la Sociedad de Biología de Concepción*, 54, 35–41.
- Cei, J.M. & Péfaur, J.E. (1982) Una nueva especie de *Liolaemus* (Iguanidae: Squamata): su sistemática, ecología y distribución. *Actas del VIII Congreso Latinoamericano de Zoología, Mérida, Venezuela*, 1980, 573–586.
- Cei, J.M. & Roig, V.G. (1975) A new lizard from the Sierra del Nevado Mountains, central Argentina. *Journal of Herpetology*, 9, 256.
- Cei, J.M. & Roig, V.G. (1976) Fauna y ecosistemas del Oeste árido Argentino. I. Reptiles de la Provincia de Mendoza. *Deserta*, 4, 69–91.
- Cei, J.M. & Scolaro, J.A. (1977a) Herpetología patagónica. XIII. La identidad de *Liolaemus goetschi* y de la forma *melanops* del grupo *Liolaemus fitzingeri*, en Río Negro y Chubut. *Physis, Buenos Aires*, 36, 225–226.

- Cei, J.M. & Scolaro, J.A. (1977b) Herpetología patagónica. XIV. Nuevos datos inmunológicos sobre iguánidos argentinos del grupo *Liolaemus fitzingeri*. *Physis, Buenos Aires*, 37, 223–226.
- Cei, J.M. & Scolaro, J.A. (1980) Two new subspecies of the *Liolaemus fitzingeri* complex from Argentina. *Journal of Herpetology*, 14, 37–43.
- Cei, J.M. & Scolaro, J.A. (1981) A new northern subspecies of *Liolaemus kingi* in Argentina. *Journal of Herpetology*, 15, 207–210.
- Cei, J.M. & Scolaro, J.A. (1982a) A new species of the Patagonian genus *Vilcunia*, with remarks on its morphology, ecology and distribution. *Journal of Herpetology*, 16, 354–363.
- Cei, J.M. & Scolaro, J.A. (1982b) Un nuevo iguánido tropidurino del género *Liolaemus*, grupo *kingi-archeforus*, de la región del Lago Belgrano, Santa Cruz, Argentina. *Revista de la Universidad Nacional de Río Cuarto*, 2, 257–268.
- Cei, J.M. & Scolaro, J.A. (1983a) Un nuevo arreglo taxonómico para los *Liolaemus* del grupo *fitzingeri*. *Boletín de la Asociación Herpetológica Argentina*, 1, 15–16.
- Cei, J.M. & Scolaro, J.A. (1983b) Una nueva forma geográfica de *Liolaemus kingi* de Santa Cruz, Argentina (Lacertilia, Iguanidae). *Neotrópica*, 29, 209–214.
- Cei, J.M. & Scolaro, J.A. (1987) The true systematic status of *Liolaemus ruisleali* [sic] Donoso-Barros and Cei, 1971, from northern Patagonia, Argentina (Reptilia, Iguanidae). *Bolletino Museo Regionale di Scienze Naturali di Torino*, 5, 179–187.
- Cei, J.M. & Scolaro, J.A. (1996) A new species of *Liolaemus* of the *archeforus* group from the precordilleran valley of the Zeballos river, Santa Cruz Province, Argentina (Reptilia, Tropiduridae). *Bollettino del Museo Regionale di Scienze Naturali di Torino*, 14, 389–401.
- Cei, J.M. & Scolaro, J.A. (1999) Speciation of the “*darwinii* complex” (genus *Liolaemus*, “patch group”) in the southernmost area of its distribution (Reptilia: Tropiduridae). *Revue Française de Aquariologie*, 26, 79–82.
- Cei, J.M. & Scolaro, J.A. (2003) Rectificación taxonómica y nomenclatural del presente status del taxón *Liolaemus melanops* Burmeister 1888. *Facena*, 19, 163–164.
- Cei, J.M. & Scolaro, J.A. (2006) The neotype of the type species of the neotropical iguanian genus *Phymaturus*: A critical commentary on a recent opinion of the International Commission on Zoological Nomenclature. *Zootaxa*, 1297, 17–22.
- Cei, J.M., Scolaro, J.A. & Videla, F. (2001) The present Status of Argentinean polychrotid species of the genus *Pristidactylus* and description of its southernmost taxon as a new species. *Journal of Herpetology*, 35, 597–605.
- Cei, J.M., Scolaro, J.A. & Videla, F. (2003) A taxonomic revision of recognized Argentine species of the leiosaurid genus *Diplolaemus* (Reptilia, Squamata, Leiosauridae). *Facena*, 19, 87–106.
- Cei, J.M. & Videla, F. (2002) Singulares hallazgos evolutivos y taxonómicos en géneros de iguánidos relevantes de la herpetofauna andina y de zonas limítrofes. *Multequina, Latin American Journal of Natural Resources*, 11, 65–73.
- Cei, J.M. & Videla, F. (2003a) A new species of *Liolaemus* lacking preloacal pores in males from the Andean southeastern mountains of Mendoza Province, Argentina (Liolaemidae, Iguania, Lacertilia, Reptilia). *Bollettino del Museo Regionale di Scienze Naturali di Torino*, 20, 275–290.
- Cei, J.M. & Videla, F. (2003b) A new *Phymaturus* species from volcanic cordilleran mountains of the southwestern Mendoza Province, Argentina (Liolaemidae, Iguania, Lacertilia, Reptilia). *Bolletino Museo Regionale di Scienze Naturali di Torino*, 20, 291–314.
- Cei, J.M. & Williams, J.D. (1984) Las colecciones Herpetológicas de la expedición patagónica del Perito Moreno y las formas argentinas de *Liolaemus* del grupo *pictus*. *Revista del Museo de La Plata, sección Zoología*, 139, 183–194.
- Cekalovic, T. & Artigas, J.N. (1981) Catálogo de los tipos depositados en las colecciones del departamento de zoología de la Universidad de Concepción, Chile. *Boletín de la Sociedad de Biología de Concepción*, 52, 203–224.
- Chebez, J.C., Rey, N.R. & Williams, J.D. (2005) *Reptiles de los parques nacionales de la Argentina*. Literatura of Latin America, Buenos Aires, 37 pp.
- Chiszar, D., Gingery, T., Gingery, B. & Smith, H.M. (1999) *Phymaturus patagonicus* (Argentine chuckwalla). Facultative parthenogenesis. *Herpetological Review*, 30, 98.
- Christie, M.I. (1984a) Inventario de la fauna de vertebrados del Parque Nacional Nahuel Huapi. *Revistas del Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” e Instituto Nacional de Investigaciones de las Ciencias Naturales, Zoología*, 13, 523–534.
- Christie, M.I. (1984b) Determinación de prioridades conservacionistas para la fauna de vertebrados patagónicos. *Revistas del Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” e Instituto Nacional de Investigaciones de las Ciencias Naturales, Zoología*, 13, 535–544.
- Christie, M.I. & Sage, R.D. (2002) Confirmación de *Liolaemus tenuis* (Iguania: Liolaemidae) en Neuquén, Argentina, con notas ecológicas. *Cuadernos de Herpetología*, 16, 80–82.
- Codoceo, M. (1950) Reptiles de Tarapacá (Nota preliminar). *Investigaciones Zoológicas Chilenas*, 1, 15.
- Codoceo, M. (1954) Reptiles de la región de Los Lagos Valdivianos. *Investigaciones Zoológicas Chilenas*, 2, 69–71.
- Cooper, W.E. & Vitt, L.J. (2002) Distribution, extent, and evolution of plant consumption by lizards. *Journal of Zoology*, 257, 487–517.

- Cope, E.D. (1862) Catalogues of the reptiles obtained during the explorations of the Parana, Paraguay, Bermejo and Uruguay Rivers by Capt. Thos. J. Page, U.S.N., and of those procured by Lieut. N. Michler, U.S. Top. Eng., commander of the expedition conducting the survey of the Atrato River. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 14, 346–359.
- Cope, E.D. (1868) Additional descriptions of Neotropical Reptilia and Batrachia not previously known. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 20, 96–140.
- Cope, E.D. (1876) Report on the reptiles brought by Professor James Orton from the middle and upper Amazon and western Peru. *Journal of the Academy of Natural Sciences of Philadelphia*, 8, 159–188.
- Cortés, A., Torres-Mura, J.C., Contreras, L. & Pino, C. (1995) *Fauna de vertebrados de Los Andes de Coquimbo: Cordillera de Doña Ana*, Ediciones Universidad de La Serena, Chile, 125 pp.
- Coyne, J.A. & Orr, H.A. (2004) *Speciation*, Sinauer Associates, Massachusetts, 545 pp.
- Cracraft, J. (1989) Speciation and its ontology: the empirical consequences of alternative species concepts for understanding patterns and processes of differentiation. In: Otte, D. & Endler, J.A. (Ed.), *Speciation and its consequences*. Sinauer Associates, Sunderland, Massachusetts, 28–59.
- Cruz, F.B., Fitzgerald, L.A., Espinoza, R.E. & Schulte II, J.A. (2005). The importance of phylogenetic scale in tests of Bergmann's and Rapoport's rules: lessons from a clade of South American lizards. *Journal of Evolutionary Biology*, 18, 1559–1574.
- Cruz, F.B., Perotti, M.G. & Fitzgerald, L.A. (1993) Lista de anfibios y reptiles colectados en una localidad del chaco Salteño. *Acta Zoológica Lilloana*, 42, 101–107.
- Cruz, F.B. & Ramírez Pinilla, M. (1996) Actividad reproductiva en el lagarto *Liolaemus chacoensis* (Sauria: Tropiduridae), del Chaco occidental, Salta, Argentina. *Revista Española de Herpetología*, 10, 33–39.
- Cruz, F.B., Schulte II, J.A. & Bellagamba, P. (1999) New distributional records and natural history notes for reptiles from southern Argentina. *Herpetological Review*, 30, 182.
- Daciuk, J. (1968) La fauna del Parque Nacional Laguna Blanca (Estudio zoo-ecológico preliminar). *Anales de Parques Nacionales, Buenos Aires*, 11, 225–304.
- Dansereau, P. (1947) Zonation et succession sur la restinga de Rio de Janeiro. I. Halosère. *Revue Canadienne Biologie*, 6, 448–477.
- Darwin, C. (1854) *A journal of researches*, Ward, Lock and Co., London, 587 pp.
- Daudin, F.M. (1802) *Histoire Naturelle, générale et particulière des reptiles*, F. Dufax, Paris, 397 pp.
- de la Viña, I., Bolibar, J.C. & Nieves, J.C. (1992) *Pseustes sulphureus* (Wagler, 1824) (Serpentes: Colubridae) nueva especie para Bolivia y datos sobre la herpetofauna Boliviana. *Acta Zoológica Lilloana*, 41, 215–218.
- de Viana, M.L., Jovanovich, C. & Valdés, P. (1994a) Densidad, proporción de sexos y utilización del espacio de *Liolaemus darwini* (Sauria: Iguanidae) en el Valle de Tin Tin, Argentina. *Revista de Biología Tropical*, 42, 281–287.
- de Viana, M.L., Jovanovich, C. & Valdés, P. (1994b) Hábitos alimentarios de *Liolaemus darwini* (Sauria: Iguanidae) en el Valle de Tin Tin, Argentina. *Revista de Biología Tropical*, 42, 379–381.
- Díaz, J.M. (2007) Reptilia, Iguania, Liolaeminae, *Liolaemus*, Puna, Prepuna, and mountain ranges, northwestern Argentina. *Check List*, 3, 105–118.
- Díaz, J.M. & Lobo, F. (2006) Historical biogeography of a clade of *Liolaemus* (Iguania: Liolaemidae) based on ancestral areas and dispersal-vicariance analysis (DIVA). *Papéis Avulsos de Zoologia*, 46, 261–274.
- Donoso-Barros, R. (1947) Breves notas sobre reptiles chilenos. *Boletín del Museo Nacional de Historia Natural de Chile*, 27, 107–111.
- Donoso-Barros, R. (1954) Consideraciones sobre la ecología de los reptiles del sur de Coquimbo, (Santiago). *Zooiatría*, 3, 3–5.
- Donoso-Barros, R. (1958a) *Phrynosaura reichei* Werner, 1907, una especie en extinción? *Investigaciones Zoológicas Chilenas*, 4, 220–222.
- Donoso-Barros, R. (1958b) El género *Ctenoblepharis* Tschudi en Chile (Reptilia, Squamata, Iguanidae). *Investigaciones Zoológicas Chilenas*, 4, 253–257.
- Donoso-Barros, R. (1960) Ecología de los reptiles chilenos. *Investigaciones Zoológicas Chilenas*, 6, 65–72.
- Donoso-Barros, R. (1961a) Three new lizards of the genus *Liolaemus* from the highest Andes of Chile and Argentina. *Copeia*, 1961, 387–391.
- Donoso-Barros, R. (1961b) The reptiles of the Lund University Chile Expedition. *Copeia*, 1961, 486–488.
- Donoso-Barros, R. (1964) Ecología herpetológica del Norte Grande de Chile. *Noticiario Mensual del Museo Nacional de Historia Natural de Chile*, 101, 6–7.
- Donoso-Barros, R. (1965a) Los cocodrilos. *Noticiario Mensual del Museo Nacional de Historia Natural de Chile*, 9, no page numbers.
- Donoso-Barros, R. (1965b) Contribución al conocimiento de los cocodrilos de Venezuela. *Physis, Buenos Aires*, 25, 387–400.
- Donoso-Barros, R. (1966a) *Reptiles de Chile*. Ediciones de la Universidad de Chile, Santiago, 458 pp.
- Donoso-Barros, R. (1966b) Contribución al conocimiento de los cocodrilos de Venezuela. Continuación. *Physis, Buenos*

- Aires, 26, 15–32.
- Donoso-Barros, R. (1966c) Contribución al conocimiento de los cocodrilos de Venezuela. Conclusión. *Physis, Buenos Aires*, 26, 263–274.
- Donoso-Barros, R. (1968) Sinopsis de la fauna de cocodrilos de Venezuela. *Investigaciones Zoológicas Chilenas*, 13, 109–116.
- Donoso-Barros, R. (1969a) Consideraciones nomenclaturales sobre dos lagartijas Argentinas. *Boletín Sociedad de Biología de Concepción*, 41, 93–94.
- Donoso-Barros, R. (1969b) Nota sistemática sobre *Liolaemus stantoni* (Girard). *Boletín de la Sociedad de Biología de Concepción*, 41, 95–96.
- Donoso-Barros, R. (1969c) Observaciones in vivo sobre *Phrynosaura reichei* Werner (Sauria-Iguanidae). *Boletín Sociedad de Biología de Concepción*, 41, 85–87.
- Donoso-Barros, R. (1970a) *Liolaemus*. In: Peters, J.A. & Donoso-Barros, R. (Ed.), *Catalogue of the Neotropical Squamata. Part II. Lizards and Amphisbaenians*. Bulletin United States National Museum, 297, 170–195.
- Donoso-Barros, R. (1970b) Catálogo herpetológico chileno. *Boletín del Museo Nacional de Historia Natural de Chile*, 31, 49–124.
- Donoso-Barros, R. (1970c) Un nuevo reptil de Argentina, *Liolaemus emmae* (Sauria, Iguanidae). *Boletín de la Sociedad de Biología de Concepción*, 42, 23–26.
- Donoso-Barros, R. (1971a) A new *Liolaemus* from Neuquén (Argentina). *Herpetologica*, 27, 49–51.
- Donoso-Barros, R. (1971b) The genera *Ctenoblepharis* and *Phrynosaura*. *Herpetological Review*, 3, 85.
- Donoso-Barros, R. (1972) Contribución al conocimiento del género *Ctenoblepharis* Tschudi y *Phrynosaura* Werner (Sauria, Iguanidae). *Boletín Sociedad de Biología de Concepción*, 44, 129–134.
- Donoso-Barros, R. (1973a) Un nuevo saurio de Bolivia (Lacertilia, Iguanidae). *Neotrópica*, 19, 132–134.
- Donoso-Barros, R. (1973b) Una nueva lagartija magallánica (Reptilia, Iguanidae). *Neotrópica*, 19, 163–164.
- Donoso-Barros, R. (1974a) Notas herpetológicas. *Boletín de la Sociedad de Biología de Concepción*, 47, 285–287.
- Donoso-Barros, R. (1974b) Nuevos reptiles y anfibios de Chile. *Boletín de la Sociedad de Biología de Concepción*, 48, 217–229.
- Donoso-Barros, R. (1974c) Contribución al conocimiento de los cocodrilos de Bolivia. *Caiman yacare medemi* nuevo Aligatórido. *Boletín de la Sociedad de Biología de Concepción*, 47, 131–143.
- Donoso-Barros, R. & Candiani, H.S. (1950) Reptiles de la provincia de Santiago. *Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales de Bogotá*, 7, 482–489.
- Donoso-Barros, R. & Cei, J.M. (1971) New lizards from the volcanic Patagonian plateau of Argentina. *Journal of Herpetology*, 5, 89–95.
- Donoso-Barros, R. & Codoceo, M. (1962) Reptiles de Aysén y Magallanes. *Boletín del Museo Nacional de Historia Natural de Chile*, 28, 1–45.
- Duellman, W.E. (1979a) *The South American herpetofauna: its origin, evolution and dispersal*, Monograph of the Museum of Natural History, University of Kansas, Kansas, 459 pp.
- Duellman, W.E. (1979b) The herpetofauna of the Andes: patterns of distribution, origin, differentiation, and present communities. In: Duellman, W.E. (Ed.), *The South American herpetofauna: its origin, evolution and dispersal*. Monograph of the Museum of Natural History, University of Kansas, 371–459.
- Duméril, A. (1856) Description des reptiles nouveaux ou imparfaitement connus de la collection du Muséum d'Histoire Naturelle et remarques sur la classification et les caractères des reptiles. Deuxième Mémoire. Troisième, quatrième familles des l'ordre des Sauriens (Geckotiens, Varaniens et Iguaniens). *Archives de la Muséum d'Histoire Naturelle de Paris*, 8, 437–588.
- Duméril, A.M.C. (1855) Voyage autour du monde sur la frégate La Vénus commandée par Abel du Petit-Thouars, Zoologie (Mammifères, Oiseaux, Reptiles et Poissons). Paris, Gide et J. Baudry, Paris, 285–296.
- Duméril, A.M.C. & Bibron, G. (1837) *Erpétologie générale ou histoire naturelle complète des reptiles*, Edicion Roret, Paris, 4, 571 pp.
- Duméril, A.M.C. & Duméril, A. (1851) *Catalogue méthodique de la collection des reptiles (Muséum d'Histoire Naturelle de Paris)*, Gide et Baudry, Paris, 224 pp.
- Dunn, E.R. (1945) Los géneros de anfibios y reptiles de Colombia, IV. Cuarta y última parte: Reptiles, órdenes Testudines y Crocodylidos. *Caldasia*, 3, 307–335.
- Elgueta, M. (1988) Insectos epigeos de insectos de ambientes altimontanos en Chile central: algunas consideraciones biogeográficas con especial referencia a Tenebrionidae y Curculionidae (Coleoptera). *Boletín del Museo Nacional de Historia Natural de Chile*, 41, 125–144.
- Escobar, C.A., Labra, A. & Niemeyer, H.M. (2001) Chemical composition of precloacal secretions of *Liolaemus* lizards. *Journal of Chemical Ecology*, 27, 1677–1690.
- Escobar, C.M., Escobar, C.A., Labra, A. & Niemeyer, H.M. (2003) Chemical composition of precloacal secretions of two *Liolaemus fabiani* populations: Are they different? *Journal of Chemical Ecology*, 29, 629–638.
- Espinoza, R.E. & Lobo, F. (1996) Possible communal nesting in two species of *Liolaemus* lizards (Iguania: Tropidu-

- ridae) from northern Argentina. *Herpetological Natural History*, 4, 65–68.
- Espinoza, R.E. & Lobo, F. (2003) Two new species of *Liolaemus* lizards from northwestern Argentina: speciation within the northern subclade of the *elongatus* group (Iguania: Liolaemidae). *Herpetologica*, 59, 89–105.
- Espinoza, R.E., Lobo, F. & Cruz, F.B. (2000) *Liolaemus heliodermis*, a new lizard from northwestern Argentina with remarks on the content of the *elongatus* group (Iguania: Tropicuridae). *Herpetologica*, 56, 235–244.
- Espinoza, R.E., Wiens, J.J. & Tracy, C.R. (2004) Recurrent evolution of herbivory in small, cold-climate lizards: Breaking the ecophysiological rules or reptilian herbivory. *Proceedings of the National Academy of Sciences, USA*, 101, 16819–16824.
- Etheridge, R. (1992) A new psammophilus lizard of the genus *Liolaemus* (Squamata: Tropicuridae) from northwestern Argentina. *Bollettino del Museo Regionale di Scienze Naturali di Torino*, 10, 1–19.
- Etheridge, R. (1993) Lizards of the *Liolaemus darwini* Complex (Squamata: Iguania: Tropicuridae) in Northern Argentina. *Bollettino del Museo Regionale di Scienze Naturali di Torino*, 11, 137–199.
- Etheridge, R. (1995) Redescription of *Ctenoblepharys adspersa* Tschudi, 1845, and the taxonomy of Liolaeminae (Reptilia: Squamata: Tropicuridae). *American Museum Novitates*, 3142, 1–34.
- Etheridge, R. (1998) Redescription and status of *Liolaemus hatcheri* Stejneger, 1909 (Reptilia: Squamata: Tropicuridae). *Cuadernos de Herpetología*, 12, 31–36.
- Etheridge, R. (2000) A review of lizards of the *Liolaemus wiegmanni* group (Squamata, Iguania, Tropicuridae), and a history of morphological change in the sand-dwelling species. *Herpetological Monographs*, 14, 293–352.
- Etheridge, R. (2001) A new species of *Liolaemus* (Reptilia: Squamata: Tropicuridae) from Mendoza Province, Argentina. *Cuadernos de Herpetología*, 15, 3–15.
- Etheridge, R. & Christie, M.I. (2003) Two new species of the lizard genus *Liolaemus* (Squamata: Liolaemidae) from northern Patagonia, with comments on *Liolaemus rothi*. *Journal of Herpetology*, 37, 325–341.
- Etheridge, R. & de Queiroz, K. (1988) A phylogeny of Iguanidae. In: Estes, R. & Pregill, G. (Ed.), *Phylogenetic Relationships of the Lizard Families, Essays Commemorating Charles L. Camp*. Stanford University Press, Stanford, 283–368.
- Etheridge, R. & Espinoza, R.E. (1997) New records and natural history notes for lizards from northwestern Argentina. *Herpetological Review*, 28, 160–161.
- Etheridge, R. & Espinoza, R.E. (2000) Taxonomy of the Liolaeminae (Squamata: Iguania: Tropicuridae) and a semi-annotated bibliography. *Smithsonian Herpetological Information Service*, 126, 1–64.
- Etheridge, R. & Savage, J.M. (2003) *Phymaturus* Gravenhorst, 1837 and *Lacerta palluma* Molina, 1782 (currently *Phymaturus palluma*; Reptilia, Sauria): proposed conservation of usage of the names by designation of a neotype for *Lacerta palluma* Molina, 1782. *Bulletin of Zoological Nomenclature*, 60, 38–41.
- Etheridge, R. & Williams, E.E. (1985) Notes on *Pristidactylus* (Squamata: Iguanidae). *Breviora*, 483, 1–18.
- Fitzgerald, L.A., Cruz, F.B. & Perotti, G. (1999) Phenology of a lizard assemblage in the dry Chaco of Argentina. *Journal of Herpetology*, 33, 536–535.
- Fitzinger, L. (1843) *Systema Reptilium. Fasciculus primus, Amblyglossae*, Society for the Study of Amphibians and Reptiles, 282 pp.
- Fox, S.F. & Shipman, P.A. (2003) Social behavior at high and low elevations. Environmental release and phylogenetic effects in *Liolaemus*. In: Fox, S.F., McCoy, J.K. & Baird, T.A. (Ed.), *Lizard social behavior*. Johns Hopkins University Press, Baltimore & London, 310–355.
- Frost, D.R. (1992) Phylogenetic analysis and taxonomy of the *Tropicurus* group of lizards (Iguania: Tropicuridae). *American Museum Novitates*, 3033, 1–68.
- Frost, D.R. & Etheridge, R. (1989) A phylogenetic analysis and taxonomy of iguanian lizards (Reptilia: Squamata). *University of Kansas Museum Natural History, Miscellaneous Publications*, 81, 1–65.
- Frost, D.R., Etheridge, R., Janies, D. & Titus, T.A. (2001) Total evidence, sequence alignment, evolution of Polychrotid lizards, and a reclassification of the Iguania (Squamata: Iguania). *American Museum Novitates*, 3343, 1–38.
- Fuentes, E.R. (1977) Autoecología de *Liolaemus nigromaculatus* (Lacertilia, Iguanidae). *Anales del Museo de Historia Natural de Valparaíso*, 10, 169–177.
- Fuentes, E.R. & Cancino, J. (1979) Rock-ground patchiness in a simple *Liolaemus* lizard community (Reptilia, Lacertilia, Iguanidae). *Journal of Herpetology*, 13, 343–350.
- Fuentes, E.R. & Jaksic, F.M. (1979) Lizards and rodents: an explanation for their relative species diversity in Chile. *Archivos de Biología y Medicina Experimental*, 12, 179–190.
- Fuentes, E.R. & Ipinza, J. (1979) A note on the diet of *Liolaemus monticola* (Reptilia, Lacertilia, Iguanidae). *Journal of Herpetology*, 13, 123–124.
- Fugler, C.M. (1989) Lista preliminar de los saurios. *Ecología en Bolivia* 13, 57–75.
- Gallardo, J.M. (1966) *Liolaemus lentus* nov. sp. (Iguanidae) de la pampa y algunas observaciones sobre los saurios de dicha provincia argentina y del oeste de Buenos Aires. *Neotrópica*, 12, 15–29.
- Gallardo, J.M. (1968) Dos nuevas especies de Iguanidae (Sauria) de la Argentina. *Neotrópica*, 14, 1–8.
- Gallardo, J.M. (1969) Las especies de saurios (Reptilia) de la provincia de Santa Fé, Argentina, y consideraciones sobre

- su ecología y zoogeografía. *Neotrópica*, 15, 73–81.
- Gallardo, J.M. (1977) *Reptiles de los alrededores de Buenos Aires*, Editorial Universitaria, Buenos Aires, 213 pp.
- Gallardo, J.M. (1980) Estudio ecológico sobre anfibios y reptiles del noroeste de la provincia de Buenos Aires (Argentina). *I Reunión Iberoamericano de Zoología Vertebrado, La Rábida*, 1980, 331–349.
- Gasparini, Z., de la Fuente, M. & Donadio, O. (1986) Los reptiles cenozoicos de la Argentina: implicancias paleoambientales y evolución biogeográfica. *Acta IV Congreso Argentino de Paleontología y Bioestratigrafía, Mendoza*, 1986, 119–130.
- Gigoux, E.E. (1928) El *Leiolaemus nigromaculatus*. *Revista Chilena de Historia Natural*, 31, 182–185.
- Girard, C. (1854) Abstract of a report to Lieut. James M. Gilliss, U. S. N., upon the reptiles collected during the U. S. Astronomical Expedition to Chili. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 1854, 226–227.
- Girard, C. (1855) Reptiles. In: Gilliss, J.M. (Ed.), *The U.S. Naval Astronomical Expedition to the southern hemisphere during the years 1849-50-51-52*. Washington, 207–229.
- Girard, C. (1858a) Descriptions of some new reptiles collected by the U. S. Exploring Expedition, under the command of Captain Charles Wilkes, U.S.N., Fourth part. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 9, 195–199.
- Girard, C. (1858b) *United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842, under the command of Charles Wilkes, U.S.N.*, Volume 20, Herpetology, Philadelphia, J. B. Lippincott, 496 pp.
- Gliesch, R. (1923) *Die Tierwelt von Torres*, Neue Deutsche Zeitung, Porto Alegre, 23 pp.
- Gmelin, J.F. (1789) *Caroli a Linné Systema Naturae*, 1, 1035–1514.
- Goetsch, W. & Hellmich, W. (1932) Variabilität bei chilenischen Eidechsen un Fröschen. *Zeitschrift für Inductive Abstammungsunas. Vererbungslehre*, 62, 67–72.
- Gómez, N. & Krause, L. (1982) Lista preliminar de répteis de Estação Ecológica do Taim, Rio Grande do Sul. *Revista Brasileira de Zoologia*, 1, 71–77.
- Gonzales, L., Muñoz, A. & Cortez, E. (2006) Primer reporte sobre la herpetofauna de la reserva natural “El Corbalan”, Tarija, Bolivia. *Kempffiana*, 2, 72–94.
- Gravenhorst, J.L.C. (1838) Beiträge zur genauern Kenntniss einiger EidechsenGattungen. *Nova Acta Academiae Caesareae Leopoldina Carolinae Germanicae Naturae Curisorum*, 18, 712–784.
- Gray, J.E. (1845) *Catalogue of the specimens of lizards in the collection of the British Museum*, Trustees of the British Museum, London, 289 pp.
- Gudynas, E. (1981) New departmental records of *Liolaemus wiegmanni* from Uruguay. *Herpetological Review*, 12, 84.
- Guibé, J. (1954) *Catalogue des types de lézards du Muséum National d’Histoire Naturelle, Paris, Bayeux*, Imp Colas, Paris, 119 pp.
- Guichenot, A. (1848) Reptilia. In: Gay, C. (Ed.), *Historia física y política de Chile. Tomo segundo, Zoológia. Casa del Autor, Paris*. Museo Nacional de Historia Natural, Santiago, 18–136.
- Habit, E.M. & Ortiz, J. (1994) Ámbito de hogar en *Phymaturus flagellifer* (Reptilia: Tropicuridae). *Boletín de la Sociedad de Biología de Concepción*, 65, 191–195.
- Habit, E.M. & Ortiz, J. (1996) Ciclo reproductivo de *Phymaturus flagellifer* (Reptilia: Tropicuridae). *Boletín de la Sociedad de Biología de Concepción*, 67, 7–14.
- Hallowell, E. (1856) Notes on the reptiles in the collection of the Academy of Natural Sciences of Philadelphia. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 8, 221–237.
- Halloy, M., Etheridge, R. & Burghardt, G.M. (1998) To bury in the sand: phylogenetic relationships among lizard species of the *boulengeri* group, *Liolaemus* (Reptilia: Squamata: Tropicuridae), based on behavioral characters. *Herpetological Monographs*, 12, 1–37.
- Halloy, M., Grosse, C. & Laurent, R.F. (1991) *Liolaemus andinus* (Iguanidae) de deux côtés des Andes. *Revue Française de Aquariologie*, 18, 61–64.
- Halloy, M. & Halloy, S. (1997) An indirect form of parental care in a high altitude viviparous lizard, *Liolaemus huacahuasicus* (Tropicuridae). *Bulletin of the Maryland Herpetological Society*, 33, 139.
- Halloy, S. & Laurent, R.F. (1988) Notes éco-éthologiques sur *Liolaemus huacahuasicus* Laurent (Iguanidae) du Nord-Ouest argentin. *Revue Française de Aquariologie*, 14, 137–144.
- Harmon, L.J., Schulte II, J.A., Larson, L. & Losos, J.B. (2003) Tempo and mode of evolutionary radiation in iguanian lizards. *Science*, 301, 961–964.
- Hellmich, W. (1934) *Die Eidechsen Chiles insbesondere die Gattung Liolaemus*, Nach den Sammlungen Goetsch-Hellmich, Abhandlungen Bayerische Akademie der Wissenschaften, 24, 140 pp.
- Hellmich, W. (1950) Die Eidechsen der Ausbeute Schröder (Gattung *Liolaemus*, Iguan.) (Beiträge zur Kenntnis der Herpetofauna Chiles XIII). *Veröffentlichungen Zoologische Staatsammlung, München*, 1, 129–194.
- Hellmich, W. (1951) On ecotypic and autotypic characters, a contribution to the knowledge of the evolution of the genus *Liolaemus* (Iguanidae). *Evolution*, 5, 359–369.
- Hellmich, W. (1952) Contribución al conocimiento de la sistemática y evolución del género *Liolaemus*. *Investigaciones Zoológicas Chilenas*, 1, 7–15.

- Hellmich, W. (1953) Contribución al conocimiento de la sistemática y evolución del género *Liolaemus*. Bibliografía. *Investigaciones Zoológicas Chilenas*, 1, 16.
- Hellmich, W. (1960) Die Sauria der Gran Chaco und seiner Randgebiete. *Abhandlungen Bayerische Akademie der Wissenschaften*, 101, 1–131.
- Hellmich, W. (1961) Bemerkungen zur geographischen Variabilität von *Liolaemus alticolor* Barbour. *Opuscula Zoologica*, 58, 1–6.
- Hellmich, W. (1962) Bemerkungen zur individuellen Variabilität von *Liolaemus multiformis* (Cope). *Opuscula Zoologica*, 67, 1–10.
- Hellmich, W. (1964) Über eine neue *Liolaemus* - Art aus den Bergen von Catamarca, Argentinien (Reptilia, Iguanidae). *Senckenbergiana Biologica*, 45, 505–507.
- Hernández, R.A. & Espinoza, R.E. (2004) Description of the female of the enigmatic lizard, *Liolaemus heliodermis* (Iguania: Liolaemidae). *Herpetological Review* 35, 227–229.
- Herrel, A., Meyers, J.J. & Vanhooydonck, B. (2002) Relations between microhabitat use and limb shape in phrynosomatid lizards. *Biological Journal of the Linnean Society*, 77, 149–163.
- Hombron, J. & Jacquinot, H. (1847) Reptiles. In: Dumont d'Urville, M.J. (Ed.), *Voyage au Pole Sud et dans l'Océanie sur les corvettes l'Astrolabe et la Zelee, 1837–1840*. Paris, Plates 1–3.
- Hudson, R.R. & Coyne, J.A. (2002) Mathematical consequences of the genealogical species concept. *Evolution*, 56, 1557–1565.
- Huey, R.B., Hertz, P.E. & Sinervo, B. (2003) Behavioral drive versus behavioral inertia in evolution: a null model approach. *American Naturalist*, 161, 357–366.
- Hulse, A.C. (1979) A new *Liolaemus* (Sauria, Iguanidae) from the high Andes of Argentina, with ecological comments. *Annals of the Carnegie Museum*, 48, 203–209.
- Ibargüengoytía, N.R. (2005) Field, selected body temperature and thermal tolerance of the syntopic lizards *Phymaturus patagonicus* and *Liolaemus elongatus* (Iguania: Liolaemidae). *Journal of Arid Environments*, 62, 435–448.
- Ibargüengoytía, N.R. & Cussac, V.E. (1996) Reproductive biology of the viviparous lizard, *Liolaemus pictus* (Tropiduridae): biennial female reproductive cycle? *Herpetological Journal*, 6, 137–143.
- Ibargüengoytía, N.R. & Cussac, V.E. (1998) Reproduction of the viviparous lizard *Liolaemus elongatus* in the highlands of southern South America: plastic cycles in response to climate? *Herpetological Journal*, 8, 99–105.
- Ibish, P. & Böhme, W. (1993) Zur Kenntnis der innerandinen Herpetofauna Boliviens (Provinz Arque, Departamento Cochabamba). *Herpetofauna*, 15, 15–26.
- International Commission on Zoological Nomenclature. (2005) *Vilcunia periglacialis* Cei & Scolaro, 1982 (currently *Liolaemus periglacialis*; Reptilia, Sauria): not given priority over *Liolaemus hatcheri* Stejneger, 1909. *Bulletin of Zoological Nomenclature*, 62, Opinion 2103, case 3219.
- Isaac, N.J.B., Mallet, J. & Mace G.M. (2004) Taxonomic inflation: its influence on macroecology and conservation. *Trends in Ecology and Evolution*, 19, 464–469.
- Iturra, P., Veloso, A., Espejo, P. & Navarro, J. (1994) Karyotypic and meiotic evidence for a Robertsonian chromosome polymorphism in the lizard *Liolaemus fuscus* (Tropiduridae, Sauria). *Revista Brasileira de Genética*, 17, 171–174.
- Jacquinot, H. & Guichenot, A. (1853) *Voyage au Pol Sud et dans l'océanie sur les corvettes l'Astrolabe et la Zelée, ...pendant les années 1837-1838-1839-1840, sous le commandement de M. J. Dumont-D'Urville...Zoologie, par MM. Hombron et Jacquinot*, Tome Troisième, Reptiles et Poissons, Gide et J. Baudry, Paris.
- Jaksic, F.M. (1998) *Ecología de los vertebrados de Chile*, Ediciones Universidad Católica de Chile, Santiago, 262 pp.
- Jaksic, F.M. & Fuentes, E.R. (1980) Observaciones autoecológicas en *Liolaemus nitidus* (Lacertilia: Iguanidae). *Studies on Neotropical Fauna and Environment*, 15, 109–124.
- Jaksic, F.M. & Núñez, H. (1979) Escaping behavior and morphological correlates in two *Liolaemus* species of central Chile (Lacertilia: Iguanidae). *Oecologia*, 42, 119–122.
- Jaksic, F.M., Núñez, H. & Ojeda, F.P. (1979) Proporciones corporales y utilización del hábitat en doce especies de *Liolaemus* de Chile central (Lacertilia, Iguanidae). *Anales del Museo de Historia Natural de Valparaíso*, 12, 59–68.
- Jaksic, F.M., Núñez, H. & Ojeda, F.P. (1980) Body proportions, microhabitat selection, and adaptive radiation in *Liolaemus* lizards in central Chile. *Oecologia*, 45, 178–181.
- Jaksic, F.M. & Schwenk, K. (1983) Natural history observations on *Liolaemus magellanicus*, the southernmost lizard in the world. *Herpetologica*, 39, 457–461.
- Joseph, C. (1930) Un lagarto vivíparo (*Proctotretus chilensis* Dum. et Bibr.). *Revista Chilena de Historia Natural*, 34, 282–285.
- Junior, M.P. (1979) Notas biométricas sobre *Liolaemus lutzae* Mertens, 1938 (Sauria, Iguanidae). *Papéis Avulsos de Zoologia*, 32, 201–204.
- King, G. (1996) *Reptiles and herbivory*, Chapman and Hall, New York, 168 pp.
- Kohlsdorf, T., Garland, T. & Navas, C.A. (2001) Limb and tail lengths in relation to substrate usage in *Tropidurus* lizards. *Journal of Morphology*, 248, 151–164.
- Koslowsky, J. (1895) Batracios y reptiles de La Rioja y Catamarca (República Argentina) recogidos durante los meses de

- Febrero a Mayo de 1895 (expedición del Director del Museo). *Revista Museo La Plata*, 6, 357–370.
- Koslowsky, J. (1896) Sobre algunos reptiles de patagonia y otras regiones argentinas. *Revista del Museo de La Plata*, 7, 447–457.
- Koslowsky, J. (1898) Enumeración sistemática y distribución geográfica de los reptiles argentinos. *Revista del Museo de La Plata*, 8, 161–200.
- Labra, A. (2006) Chemoreception and the assessment of fighting abilities in the lizard *Liolaemus monticola*. *Ethology*, 112, 993–999.
- Labra, A., Beltrán, S. & Niemeyer, H.M. (2001) Chemical exploratory behavior in the lizard *Liolaemus bellii*. *Journal of Herpetology*, 35, 51–55.
- Labra, A., Escobar, C.A., Aguilar, P.M. & Niemeyer, H.M. (2002) Sources of pheromones in the lizard *Liolaemus tenuis*. *Revista Chilena de Historia Natural*, 75, 141–147.
- Labra, A. & Niemeyer, H.M. (1999) Intraspecific chemical recognition in the lizard *Liolaemus tenuis*. *Journal of Chemical Ecology*, 25, 1799–1811.
- Lambrot, M. (1985a) Ríos como barrera al flujo génico en poblaciones naturales de *Liolaemus monticola* Müller and Hellmich (Iguanidae). *Archivos de Biología y Medicina Experimentales*, 18, R-70.
- Lambrot, M. (1985b) Variación morfológica dentro y entre dos razas cromosómicas de *Liolaemus monticola* (Iguanidae) separadas por una barrera biogeográfica. *Archivos de Biología y Medicina Experimentales*, 18, R-143.
- Lambrot, M. (1991) Karyotypic variation among populations of *Liolaemus monticola* (Tropiduridae) separated by riverine barriers in the Andean Range. *Copeia*, 1991, 1044–1059.
- Lambrot, M. (1993) Chromosomal evolution and speciation in some Chilean lizards. *Evolución Biológica, Bogotá*, 7, 133–151.
- Lambrot, M. (1998) A new derived and highly polymorphic chromosomal race of *Liolaemus monticola* (Iguanidae) from the “Norte Chico” of Chile. *Chromosomal Research*, 6, 247–254.
- Lambrot, M. (2001) Karyotypic polymorphism and evolution within and between the *Liolaemus monticola* (Iguanidae) “northern $2n = 38-40$ ” chromosome race populations in central Chile. *Revista Chilena de Historia Natural*, 74, 121–138.
- Lambrot, M. & Alvarez-Sarret, E. (1989) Karyotypic characterization of some *Liolaemus* lizards in Chile (Iguanidae). *Genome*, 32, 393–403.
- Lambrot, M. & Alvarez-Sarret, E. (1993) Karyotypic variation within and between populations of *Liolaemus monticola* (Tropiduridae) separated by the Maipo River in the coastal range of central Chile. *Herpetologica*, 49, 435–449.
- Lambrot, M., Alvarez-Starret, E., Campos, I. & Espinoza, A. (1981) Karyotypic characterization of three Chilean subspecies of *Liolaemus monticola*. *Journal of Heredity*, 72, 328–334.
- Lambrot, M. & Diaz, N.F. (1987) A new species of *Pristidactylus* (Sauria: Iguanidae) from central Chile and comments on the speciation in the genus. *Journal of Herpetology*, 21, 29–37.
- Lambrot, M. & Eaton, L. (1992) Concordance of morphological variation and chromosomal races of *Liolaemus monticola* (Tropiduridae) separated by riverine barriers in the Andes. *Zeitschrift fuer Zoologische Systematik und Evolutionsforschung*, 30, 189–200.
- Lambrot, M. & Eaton, L.C. (1997) The Maipo River as a biogeographical barrier to *Liolaemus monticola* (Tropiduridae) in the mountain ranges of central Chile. *Journal of Zoological Systematics and Evolutionary Research*, 35, 105–111.
- Lambrot, M., Eaton, L.C. & Carrasco, B. (2003) The Aconcagua river as another barrier to *Liolaemus monticola* (Sauria: Iguanidae) chromosomal races of central Chile. *Revista Chilena de Historia Natural*, 76, 23–24.
- Lambrot, M., Espinoza, A. & Alvarez, E.E. (1979) Karyotypic variation in Chilean lizards of the genus *Liolaemus* (Iguanidae). *Experientia*, 35, 593–595.
- Lambrot, M. & Navarro-Suarez, M. (1984) Karyotypes and sex determination in *Phymaturus palluma* Molina (Iguanidae). *Herpetologica*, 40, 258–264.
- Lambrot, M. & Ortiz, J.C. (1990) *Liolaemus pseudolemniscatus*, una nueva especie de lagarto del Norte Chico de Chile (Sauria: Tropiduridae). *Gayana Zoológica*, 54, 135–142.
- Lambrot, M. & Vásquez, M. (1998) A triploid lizard (*Liolaemus gravenhorsti*) from Chile. *Journal of Herpetology*, 32, 617–620.
- Laspiur, A. & Acosta, J.C. (2006) *Liolaemus uspallatensis*. Clutch size. *Herpetological Review*, 37, 469.
- Lataste, F. (1891) Etudes sur la faune chilienne. *Actas Sociedad Científica du Chili*, 1, 3–40.
- Latreille, P.A. (1802) ...des Lézards. In: Sonnini, C.S. & Latreille, P.A. (Ed.), *Histoire Naturelle des Reptiles. Volume 1*. Paris, 1–332.
- Laurent, R.F. (1982a) Description de trois espèces nouvelles du genre *Liolaemus* (Sauria, Iguanidae). *Spixiana*, 5, 139–147.
- Laurent, R.F. (1982b) Las especies y “variedades” de *Liolaemus* descritas por J. Koslowsky (Sauria Iguanidae). *Neotrópica*, 28, 87–96.
- Laurent, R.F. (1982c) Sinonimia del género *Pelusaurus* Donoso-Barros con *Liolaemus* (Sauria, Iguanidae). *Boletín de la*

- Asociación Herpetológica Argentina*, 1, 9–10.
- Laurent, R.F. (1983) Contribución al conocimiento de la estructura taxonómica del género *Liolaemus* Wiegmann (Iguanidae). *Boletín de la Asociación Herpetológica Argentina*, 1, 15–18.
- Laurent, R.F. (1984a) On some iguanid genera related to or previously confused with *Liolaemus* Wiegmann. *Journal of Herpetology*, 18, 357–373.
- Laurent, R.F. (1984b) Tres especies nuevas del género *Liolaemus* (Reptilia, Iguanidae). *Acta Zoológica Lilloana*, 37, 273–294.
- Laurent, R.F. (1984c) Redescripción de *Liolaemus uspallatensis* Macola y Castro (Iguanidae). *Boletín del Museo de Ciencias Naturales y Antropológicas, “Juan Cornelio Moyano”, Mendoza*, 4, 51–55.
- Laurent, R.F. (1985a) Relaciones entre algunos taxa tradicionalmente incluidos en el género *Liolaemus* Wiegmann (Iguanidae). *Boletín de la Asociación Herpetológica Argentina*, 2, 3.
- Laurent, R.F. (1985b) Segunda contribución al conocimiento de la estructura taxonómica del género *Liolaemus* Wiegmann (Iguanidae). *Cuadernos de Herpetología*, 1, 1–37.
- Laurent, R.F. (1985c) Descripción de *Liolaemus huacahuasicus* spec. nov. (Iguanidae, Reptilia) des Cumbres Calchaquies, Province de Tucumán, Argentine. *Spixiana*, 8, 241–249.
- Laurent, R.F. (1986) Descripciones de nuevos Iguanidae del género *Liolaemus*. *Acta Zoológica Lilloana*, 38, 87–105.
- Laurent, R.F. (1990) Una especie apartada del género *Liolaemus* Wiegmann (Iguanidae, Lacertilia). *Acta Zoológica Lilloana*, 39, 79–84.
- Laurent, R.F. (1991) Sobre algunas especies nuevas y poco conocidas de *Liolaemus* (Iguanidae) de la Provincia de Jujuy, Argentina. *Acta Zoológica Lilloana*, 40, 91–108.
- Laurent, R.F. (1992) On some overlooked species of the genus *Liolaemus* Wiegmann (Reptilia-Tropiduridae) from Peru. *Breviora*, 494, 1–33.
- Laurent, R.F. (1995a) A tentative arrangement of subgenera of the genus *Liolaemus* Wiegmann (Reptilia: Squamata: Tropiduridae). *Bulletin of the Maryland Herpetological Society*, 31, 10–14.
- Laurent, R.F. (1995b) Sobre una pequeña colección de lagartos del género *Liolaemus* (Tropiduridae) proveniente del extremo suroeste de Bolivia. *Cuadernos de Herpetología*, 9, 1–6.
- Laurent, R.F. (1998) New forms of lizards of the subgenus *Eulaemus* of the genus *Liolaemus* (Reptilia: Squamata: Tropiduridae) from Perú and northern Chile. *Acta Zoológica Lilloana*, 44, 1–26.
- Lavilla, E.O., Cruz, F.B. & Scrocchi, G.J. (1995) Amphibiens et reptiles de la Station Biologique “Los Colorados” dan la provincia de Salta, Argentina (2e partie). *Revue Française de Aquariologie*, 22, 117–128.
- Lee, M.S.Y. (2003) Species concepts and species reality: salvaging a Linnaean rank. *Journal of Evolutionary Biology*, 16, 179–188.
- Lehr, E. (2002) *Amphibien und reptilien in Peru*, Natur-und Tier-Verlag, Naturwissenschaft, Münster, 208 pp.
- Lescure, J. & Cei, J.M. (1991) L'espece-type du genre *Phymaturus* Gravenhorst 1838 (Reptilia, Sauria). *Bollettino del Museo Regionale di Scienze Naturali di Torino* 9, 173–175.
- Lesson, R.P. (1830) Observations générales sur les reptiles recueillis dan la voyage de la corvette La Coquille. In: Duperrey, M.L.I. (Ed.), *Voyage autour du monde exécuté par ordre du Roi sur la corvette da Sa Majesté La Coquille pendant les années 1822, 1823, 1824 et 1825...par M. L. I. Duperrey...Zoologie. Tom. II, Partie 1, Chapter 9*. Arthus Bertrand, Paris, 1–66.
- Leyton, V., Veloso, A. & Bustos-Obregon, E. (1982) Modalidad reproductiva y actividad cíclica gonadal en lagartos iguánidos de distintos pisos altitudinales del interior de Arica (lat. 18°10' S). Contribución sistemática al conocimiento de la herpetofauna del extremo norte de Chile. In: *El hombre y los ecosistemas de montaña*. Oficina Regional de Ciencias y Tecnología de la UNESCO para América Latina y el Caribe, Montevideo, Uruguay, 293–315.
- Lichtenstein, H. (1856) *Nomenclator Reptilium et Amphibiorum Musei Zoologici Berolinensis. Namenverzeichnis der in der zoologischen sammlung der Königlichen Universität zu Berlin aufgestellten arten von reptilien und amphibien nach ihren Ordnungen, Familien und Gattungen*, Königlichlichen Akademie Wissenschaften, Berlin, 48 pp.
- Liebermann, J. (1939) Catalogo sistematico y zoogeografico de los Lacertilidos argentinos. *Physis*, 16, 61–82.
- Lobo, F. (2001) A phylogenetic analysis of lizards of the *Liolaemus chiliensis* group (Iguania: Tropiduridae). *Herpetological Journal*, 11, 137–150.
- Lobo, F. & Abdala, C.S. (2007) Descripción de una nueva especie de *Phymaturus* del grupo de *P. palluma* de la Provincia de Mendoza, Argentina. *Cuadernos de Herpetología*, 21, 103–113.
- Lobo, F., & Espinoza, R.E. (1999) Two new cryptic species of *Liolaemus* (Iguania: Tropiduridae) from northwestern Argentina: resolution of the purported reproductive bimodality of *Liolaemus alticolor*. *Copeia*, 1999, 122–140.
- Lobo, F. & Espinoza, R.E. (2004) Two new *Liolaemus* from the Puna Region of Argentina and Chile: further resolution of purported reproductive bimodality in *Liolaemus alticolor* (Iguania: Liolaemidae). *Copeia*, 2004, 850–867.
- Lobo, F. & Kretzschmar, S. (1996) Descripción de una nueva especie de *Liolaemus* (Iguania: Tropiduridae) de la provincia de Tucumán, Argentina. *Neotrópica*, 42, 33–40.
- Lobo, F. & Laurent, R.F. (1995) Un nouveau *Liolaemus* Andin (Tropiduridae). *Revue Française de Aquariologie*, 22,

- Lobo, F. & Quinteros, S. (2005a) Taxonomic studies of the genus *Phymaturus* (Iguania: Liolaemidae): Redescription of *Phymaturus patagonicus* Koslowsky 1898, and revalidation and redescription of *Phymaturus spurcus* Barbour 1921. *Journal of Herpetology*, 39, 533–540.
- Lobo, F. & Quinteros, S. (2005b) A morphology-based phylogeny of *Phymaturus* (Iguania: Liolaemidae) with the description of four new species from Argentina. *Papéis Avulsos de Zoologia*, 45, 143–177.
- Lobo, F., Quinteros, S. & Díaz, J. M. (2007) Description of a new species of the *Liolaemus alticolor* group (Iguania: Liolaemidae) from Cuzco, Perú. *Herpetologica*, 63, 537–543.
- Losos, J.B. (1990a) Ecomorphology, performance capability, and scaling of West Indian *Anolis* lizards: an evolutionary analysis. *Ecological Monographs*, 60, 369–388.
- Losos, J.B. (1990b) The evolution of form and function: morphology and locomotor performance in West Indian *Anolis* lizards. *Evolution*, 44, 1189–1203.
- Losos, J.B. (1994) Integrative approaches to evolutionary ecology: *Anolis* lizards as model systems. *Annual Review of Ecology and Systematics*, 25, 467–493.
- Losos, J.B., Creer, D.A., Glossip, D., Goellner, R., Hampton, A., Roberts, G., Haskell, N., Taylor, P. & Ettlign, J. (2000) Evolutionary implications of phenotypic plasticity in the hindlimb of the lizard *Anolis sagrei*. *Evolution*, 54, 301–305.
- Losos, J.B., Schoener, T.W., Langerhans, R.B. & Spiller, D.A. (2006) Rapid temporal reversal in predator-driven natural selection. *Science*, 314, 1111.
- Losos, J.B., Schoener, T.W. & Spiller, D.A. (2004) Predator-induced behaviour shifts and natural selection in field-experimental lizard populations. *Nature*, 432, 505–508.
- Loveridge, A. (1959) Notes on the present herpetofauna of Ascension Island. *Copeia*, 1959, 69–70.
- Macola, G.S. & Castro, L.P. (1982) Una nueva especie del género *Liolaemus* del área aubandina, Uspallata, Mendoza, Argentina. *Liolaemus uspallatensis* n. sp. (Iguanidae). *Publicaciones Ocasionales del Instituto de Biología Animal, Universidad Nacional de Cuyo, Serie Científica*, 15, 1–6.
- Marcus, A. & Laurent, R.F. (1994) Nuevos datos de distribución geográfica de *Liolaemus ruibali* (Sauria: Tropiduridae). *Boletín de la Asociación Herpetológica Argentina*, 10, 46.
- Marinero, J.A., Acosta, J.C., Buff, R. & Gomez, P. (2005) *Liolaemus sanjuanensis*. Reproduction. *Herpetological Review*, 36, 452.
- Martínez-Oliver, I. & Lobo, F. (2002) Una nueva especie de *Liolaemus* del grupo *alticolor* (Iguania: Liolaemidae) de la Puna Salteña, Argentina. *Cuadernos de Herpetología*, 16, 47–64.
- Martori, R. & Aun, L. (1994) Análisis comparativo de la composición de tres comunidades de Squamata de la Sierra Grande de Córdoba, Argentina. *Cuadernos de Herpetología*, 8, 97–103.
- Martori, R. & Aun, L. (1995) Relevamiento de la herpetofauna de las Sierras Pampeanas del este en la provincia de Córdoba (Argentina) (registro de taxa y comentarios taxonómicos). *Acta Zoológica Lilloana*, 43, 87–97.
- Marx, H. (1960) A new iguanid lizard of the genus *Ctenoblepharis*. *Fieldiana Zoology*, 39, 407–409.
- Mattison, C. (1999) *Lizards of the world*, Blandford, London, 192 pp.
- May, R.M. (1988) How many species are there on Earth? *Science*, 241, 1441–1449.
- Mayr, E. (1942) *Systematics and the origin of species*, Columbia University Press, New York, 372 pp.
- Mayr, E. (1963) *Animal species and evolution*, Harvard University Press, Cambridge, Massachusetts, 811 pp.
- McCoy, C.J. & Censky, E.J. (1982) Herpetological type specimens in Carnegie Museum of Natural History. *Annals of the Carnegie Museum*, 51, 317–330.
- Medel, R., Marquet, P.A. & Jaksic, F.M. (1988) Microhabitat shifts of lizards under different contexts of sympatry: a case study with South American *Liolaemus*. *Oecologia*, 76, 567–569.
- Medem, F. (1953) Contribuciones a la taxonomía y distribución del Yacaré Negro, *Paleosuchus palpebrosus* (Cuvier) en Colombia. *Revista Colombiana de Antropología*, 1, 409–419.
- Medem, F. (1955) A new subspecies of *Caiman sclerops* from Colombia. *Fieldiana Zoology*, 37, 339–344.
- Medem, F. (1958a) The crocodylian genus *Paleosuchus*. *Fieldiana Zoology*, 39, 227–247.
- Medem, F. (1958b) Informe sobre reptiles colombianos. III. Investigaciones sobre la anatomía craneal, distribución geográfica y ecología de *Crocodylus intermedius* (Graves) en Colombia. *Caldasia*, 8, 175–215.
- Medem, F. (1958c) Problemas faunísticos de Colombia. El conocimiento actual sobre la distribución geográfica y ecológica de los Crocodylia en Colombia. *Revista Universidad Nacional de Colombia*, 23, 37–57.
- Medem, F. (1962) La distribución geográfica y ecología de los Crocodylia y Testudinata en el Departamento del Chocó. *Revista Academia Colombiana de Ciencias*, 11, 279–303.
- Medem, F. (1967) El género *Paleosuchus* en Amazonia. *Atas do Simposio sobre a Biota Amazônica*, 3, 141–162.
- Medem, F. (1969) Estudios adicionales sobre los Crocodylia y Testudinata del Alto Caquetá y Río Caguán. *Caldasia*, 10, 329–535.
- Medem, F. (1980) Caimans and crocodiles, a tale of destruction. *Oryx*, 15, 39–191.
- Medem, F. (1981) *Los Crocodylia de Sur América*, Volumen I, Editorial Carrera, Bogotá, 354 pp.

- Medem, F. (1983) *Los Crocodylia de Sur América*, Volumen II, Editorial Carrera, Bogotá, 254 pp.
- Medem, F. & Marx, H. (1955) An artificial key to the New-World species of crocodylians. *Copeia*, 1955, 1–2.
- Melville, J. & Swain, R. (2000) Evolutionary relationships between morphology, performance and habitat openness in the lizard genus *Niveoscincus* (Scincidae: Lygosominae). *Biological Journal of the Linnean Society*, 70, 667–683.
- Mertens, R. (1928) Die herpetologische Ausbeute der letzten Reise Dr. H. Rohde's nach Brasilien. *Aquarien Terrarien*, 39, 295–302.
- Mertens, R. (1938) Bemerkungen über die brasilianischen Arten der Gattung *Liolaemus*. *Zoologischer Anzeiger*, 123, 220–222.
- Mertens, R. (1956) Biologische Reiseskizzen aus Peru. II. In den Wüste Perus. *Natur und Volk*, 86, 318–327.
- Meyer, F.A.A. (1795) Synopsis Reptilium, novam ipsorum sistens generum methodum Gottingensium huius ordinis animalium enumerationem. *Vandenhoek et Ruprecht, Gottinga*, 32 pp.
- Milstead, W.W. (1956) A small collection of amphibians and reptiles from Argentina. *Revista Brasileira de Biología*, 16, 321–325.
- Molina, J.I. (1782) *Saggio sulla Storia Naturale del Chili*, Stamperia di S. Tommaso d'Aquino, Bologne, 368 pp.
- Molina, J.I. (1810) *Saggio sulla Storia Naturale del Chili di Gio. Marie, Fratell*, Bologne, 308 pp.
- Monguillot, J.C., Cabrera, M.R., Acosta, J.C. & Villavicencio, J. (2006) A new species of *Liolaemus* (Reptilia: Iguanidae) from San Guillermo National Park, western Argentina. *Zootaxa*, 1361, 33–43.
- Moore, R.D., Young, S.L., Garín, C. & Pincheira-Donoso, D. (2003) *Liolaemus zullyi*. Geographic distribution. *Herpetological Review*, 34, 166.
- Morando, M. & Avila, L.J. (1999) *Liolaemus gracilis*. Geographic distribution. *Herpetological Review*, 30, 110.
- Morando, M., Avila, L.J., Baker, J. & Sites, J.W. (2004) Phylogeny and phylogeography of the *Liolaemus darwini* complex (Squamata: Liolaemidae): evidence for introgression and incomplete lineage sorting. *Evolution*, 58, 842–861.
- Müller, J. (1994) Zur besseren Kenntnis des Gestreiften Erdleguans *Liolaemus lemniscatus* Gravenhorst, 1830. *Sauria*, 16, 35–38.
- Müller, L. (1924) Ueber neue oder seltene Mittel- und südamerikanische Amphibien und Reptilien. *Mitteilugen aus dem Zoologisches Museum in Berlin*, 11, 75–93.
- Müller, L. (1928) Herpetologische Mitteilungen. *Zoologischer Anzeiger*, 77, 61–84.
- Müller, L. & Hellmich, W. (1932a) Beiträge zur Kenntnis der Herpetofauna Chiles. II. Neue *Liolaemus* Arten und Rassen aus den Hoch-Anden Chiles. *Zoologischer Anzeiger*, 97, 307–329.
- Müller, L. & Hellmich, W. (1932b) Beiträge zur Kenntnis der Herpetofauna Chiles. III. *Liolaemus altissimus altissimus*, *Liolaemus altissimus araucaniensis*. *Zoologischer Anzeiger*, 98, 197–208.
- Müller, L. & Hellmich, W. (1932c) Beiträge zur Kenntnis der Herpetofauna Chiles. IV. *Liolaemus monticola*, ein weiterer neuer Rassenkreis aus den Hochanden Chiles. *Zoologischer Anzeiger*, 99, 177–192.
- Müller, L. & Hellmich, W. (1933a) Beiträge zur Kenntnis der Herpetofauna Chiles. VI. Ueber einige *Liolaemus* Arten des Berliner Naturkundlichen Museums. *Zoologischer Anzeiger*, 101, 121–134.
- Müller, L. & Hellmich, W. (1933b) Beiträge zur Kenntnis der Herpetofauna Chiles. VII. Der Rassenkreis des *Liolaemus nigromaculatus*. *Zoologischer Anzeiger*, 103, 128–142.
- Müller, L. & Hellmich, W. (1933c) Beiträge zur Kenntnis der Herpetofauna Chiles. VIII. Bemerkungwen über *Liolaemus tenuis* (Duméril et Bibron). *Zoologischer Anzeiger*, 104, 304–310.
- Müller, L. & Hellmich, W. (1935) Beiträge zur Kenntnis der Herpetofauna Chiles. IX. Über *Liolaemus buergeri* Werner. *Zoologischer Anzeiger*, 109, 121–128.
- Müller, L. & Hellmich, W. (1938a) Beiträge zur Kenntnis der Herpetofauna Chiles. XI. Über zwei neue *Liolaemus* Formen aus der chilenischen Kordillere (Sammlung Schröder). *Zoologischer Anzeiger*, 122, 225–237.
- Müller, L. & Hellmich, W. (1938b) *Liolaemus* -Arten aus den Westlichen Argentinien. Ergebnisse de Argentinienreise von Prof. Dr. W. Goetsch, Breslau. I. *Liolaemus darwini* und *Liolaemus goetschi* n. sp. *Zoologischer Anzeiger*, 123, 130–142.
- Müller, L. & Hellmich, W. (1939a) *Liolaemus* -Arten aus den Westlichen Argentinien. II. Über eine neue *Liolaemus altissimus* -Rasse von Volcan Copahue. *Zoologischer Anzeiger*, 125, 113–119.
- Müller, L. & Hellmich, W. (1939b) *Liolaemus* -Arten aus den westlichen Argentinien. III. Ueber *Liolaemus kriegi*, eine neue *Liolaemus* -Art aus des gegend der Lago Nahuel Huapi. *Zoologischer Anzeiger*, 127, 44–47.
- Müller, L. & Hellmich, W. (1939c) *Liolaemus* -Arten aus den westlichen Argentinien. IV. Über *Liolaemus* -Arten aus dem Territorien Rio Negro und Neuquen. *Zoologischer Anzeiger*, 128, 1–17.
- Müller, P. (1975) Zum Vorkommen von *Liolaemus occipitalis* im Staat von Santa Catarina (Brasilien) (Sauria, Iguanidae). *Salamandra*, 11, 57–59.
- Müller, P. & Steiniger, H. (1978) Chorologie und Differenzierungsgeschwindigkeit brasilienianischer *Liolaemus* Arten (Sauria-Iguanidae). *Verhandlungen Gesselshaft für Ökologie*, 7, 429–440.
- Navarro, J. & Núñez, H. (1992) Acerca de la ausencia de poros prelocales en *Liolaemus cristiani*, nominación del alotipo y cariotipo de la especie. *Noticiario Mensual del Museo Nacional de Historia Natural de Chile*, 323, 35–38.
- Navarro, J. & Núñez, H. (1993) *Liolaemus patriciaturrae* y *Liolaemus isabelae*, dos nuevas especies de lagartijas para el

- norte de Chile. Aspectos biogeográficos y citotaxonómicos (Squamata, Tropicuridae). *Boletín del Museo Nacional de Historia Natural de Chile*, 44, 99–113.
- Núñez, H. (1992) Geographical data of Chilean lizards and snakes in the Museo Nacional de Historia Natural Santiago, Chile. *Smithsonian Herpetological Information Service*, 91, 1–29.
- Núñez, H. (1996) Autecología comparada de dos lagartijas de Chile Central. *Publicación Ocasional Museo Nacional de Historia Natural de Chile*, 50, 5–60.
- Núñez, H. (2004) Cambios taxonómicos para la herpetofauna de Argentina, Bolivia y Chile. *Noticiario Mensual Museo Nacional de Historia Natural de Chile*, 353, 28–34.
- Núñez, H. & Fox, S.F. (1989) *Liolaemus puritamensis*, a new species of iguanid lizard previously confused with *Liolaemus multiformis* (Squamata: Iguanidae). *Copeia*, 1989, 456–460.
- Núñez, H. & Jaksic, F.M. (1992) Lista comentada de los reptiles terrestres de Chile continental. *Boletín del Museo Nacional de Historia Natural de Chile*, 43, 63–91.
- Núñez, H. & Labra, A. (1985) *Liolaemus curis*, a new lizard from the Los Andes Range, central Chile. *Copeia*, 1985, 556–559.
- Núñez, H. & Navarro, J. (1992) *Liolaemus rosenmanni*, una nueva especie chilena de lagartija relacionada al grupo “ruibali”. *Boletín del Museo Nacional de Historia Natural de Chile*, 43, 55–62.
- Núñez, H., Navarro, J., Garín, C., Pincheira-Donoso, D. & V. Meriggio, D. (2003) *Phrynosaura manueli* y *Phrynosaura torresi*, nuevas especies de lagartijas para el norte de Chile (Squamata: Sauria). *Boletín del Museo Nacional de Historia Natural de Chile*, 52, 67–88.
- Núñez, H., Navarro, J. & Loyola, J. (1991) *Liolaemus maldonadae* y *Liolaemus cristiani*, dos especies nuevas de lagartijas para Chile (Reptilia, Squamata). *Boletín del Museo Nacional de Historia Natural de Chile*, 42, 79–88.
- Núñez, H., Navarro, J., Sufan, J. & Galaz, J.L. (1998) Distribucion geografica de *Phrynosaura* (Reptilia, Tropicuridae). *Noticiario Mensual Museo Nacional de Historia Natural*, 334, 11–14.
- Núñez, H., Navarro, J. & Veloso, A. (2000) *Liolaemus foxi*, una nueva especie de lagarto para el norte de Chile (Squamata: Reptilia: Sauria). *Boletín del Museo Nacional de Historia Natural de Chile*, 49, 117–130.
- Núñez, H. & Pincheira-Donoso, D. (2006) *Liolaemus confusus*, una nueva especie de lagartija de la cordillera de la Costa de Chile central (Sauria, Liolaeminae): evidencia fenética y citogenética. *Boletín del Museo Nacional de Historia Natural de Chile*, 55, 75–86.
- Núñez, H., Pincheira-Donoso, D. & Garín, C. (2004) *Liolaemus hajeki*, nueva especie de lagartija de Chile (Squamata, Sauria). *Boletín del Museo Nacional de Historia Natural de Chile*, 53, 85–97.
- Núñez, H., Schulte II, J.A. & Garín, C. (2001) *Liolaemus josephorum*, nueva especie de lagartija para el norte de Chile. *Boletín del Museo Nacional de Historia Natural de Chile*, 50, 91–107.
- Núñez, H., Sufán, J., Torres, H., Carothers, J. & Jaksic, J.M. (1992) Autoecological observations on the endemic central Chilean lizard *Pristidactylus volcanensis*. *Journal of Herpetology*, 26, 228–230.
- Núñez, H. & Torres-Mura, J.C. (1992) Adiciones a la herpetofauna de Chile. *Noticiario Mensual del Museo Nacional de Historia Natural de Chile*, 322, 3–8.
- Núñez, H. & Torres-Mura, J.C. (2002) *Liolaemus paulinae*. *Noticiario Mensual del Museo Nacional de Historia Natural de Chile*, 349, 27.
- Núñez, H. & Veloso, A. (2001) Distribución geográfica de las especies de lagartos de la Región de Antofagasta, Chile. *Boletín del Museo Nacional de Historia Natural de Chile* 50, 109–120.
- Núñez, H. & Yáñez, J. (1983) *Ctenoblepharis audituvelatus* new species, a lizard from northern Chile (Reptilia: Iguanidae). *Copeia*, 1983, 454–457.
- Núñez, H. & Yáñez, J. (1984a) *Ctenoblepharis erroneus* nov. sp. de Iguanidae para la zona norte de Chile. *Boletín del Museo Nacional de Historia Natural de Chile*, 40, 91–95.
- Núñez, H. & Yáñez, J. (1984b) *Abas* y *Velosaura* nuevos géneros de lagartos Iguanidae y proposiciones sistemáticas respecto de los grupos aliados (Reptilia: Squamata). *Boletín del Museo Nacional de Historia Natural de Chile*, 40, 97–105.
- Núñez, H., Yáñez, J. & Jaksic, F.M. (1981) Proporciones corporales y utilización del hábitat en dos poblaciones contiguas de *Liolaemus lemniscatus* Gravenhorst. *Boletín del Museo Nacional de Historia Natural de Chile*, 38, 73–76.
- Ortiz, J. (1975) Una nueva especie de lagartija chilena, *Liolaemus donoso* sp. nov. (Squamata-Iguanidae). *Anales del Museo de Historia Natural de Valparaíso*, 8, 62–65.
- Ortiz, J. (1981) Estudio multivariado de las especies de *Liolaemus* del grupo *nigromaculatus* (Squamata, Iguanidae). *Anales del Museo de Historia Natural de Valparaíso*, 14, 247–265.
- Ortiz, J. (1987) Une nouvelle espèce de *Liolaemus* (Sauria, Iguanidae) du Chili. *Bulletin Museum National d'Histoire Naturelle, Paris*, ser. 9, A, 265–270.
- Ortiz, J. (1989) Description de *Liolaemus silvai* sp. nov. (Sauria, Iguanidae) du “Norte Chico” du Chili. *Bulletin Museum National d'Histoire Naturelle, Paris*, ser. 11, A, 247–252.
- Ortiz, J. (1994) Una nueva especie de lagarto altoandino del género *Liolaemus* (Sauria, Tropicuridae). *Boletín de la Sociedad de Biología de Concepción*, 65, 191–195.

- Ortiz, J. & Marquet, P. (1987) Una nueva especie de lagarto altoandino: *Liolaemus islugensis* (Reptilia-Iguanidae). *Gayana Zoología*, 51, 59–63.
- Pang, J., Wang, Y., Zhong, Y., Hoelzel, A.R., Papenfuss, T.J., Zeng, X., Ananjeva, N.B. & Zhang, Y. (2003) A Phylogeny of Chinese species in the genus *Phrynocephalus* (Agamidae) inferred from mitochondrial DNA sequences. *Molecular Phylogenetics and Evolution*, 27, 398–409.
- Pearson, O.P. (1954) Habits of the lizard *Liolaemus multififormis multififormis* at high altitudes in southern Peru. *Copeia*, 1954, 111–116.
- Pearson, O.P. (1977) The effect of substrate and of skin color on thermoregulation of a lizard. *Comparative Biochemistry and Physiology*, 58, 353–358.
- Pearson, O.P. & Ralph, C.P. (1978) The diversity and abundance of vertebrates along an altitudinal gradient in Peru. *Memorias del Museo de Historia Natural Javier Prado*, 18, 1–97.
- Péfaur, J.E. & Duellman, W.E. (1980) Community structure in high Andean herpetofaunas. *Transactions of the Kansas Academy of Sciences*, 83, 45–65.
- Pellegrin, J. (1909) Description de cinq lézards nouveaux des hauts plateaux du Pérou et de la Bolivie, appartenant au genre *Liolaemus*. *Bulletin Musee d'Histoire Naturelle de Paris*, 11, 324–329.
- Pereyra, E.A. (1985a) Nuevo iguánido del género *Phymaturus* del noroeste Argentino. *Boletín de la Asociación Herpetológica Argentina*, 2, 3–4.
- Pereyra, E.A. (1985b) *Liolaemus uspallatensis* Macola-Castro, nuevo dato de colecta ampliando su distribución geográfica. *Boletín de la Asociación Herpetológica Argentina*, 2, 4.
- Pereyra, E.A. (1986) Variación geográfica en *Liolaemus ornatus* Koslowsky (Sauria: Iguanidae). *Cuadernos de Herpetología*, 2, 1–21.
- Pereyra, E.A. (1991) *Phymaturus antofagastensis* (Pereyra 1986) (Tropiduridae, Liolaeminae): ampliación descriptiva. *Boletín de la Asociación Herpetológica Argentina*, 7, 24–47.
- Pereyra, E.A. (1992) Nueva especie de lagarto andino: *Liolaemus vallecurensis* (Tropiduridae: Liolaeminae). *Noticuario Mensual del Museo Nacional de Historia Natural de Chile*, 321, 10–14.
- Pereyra, E.A., Mella, J. & Díaz, N.F. (1992) Análisis merístico preliminar de la estructura taxonómica del género *Liolaemus* Wiegmann. *Acta Zoológica Lilloana*, 41, 277–286.
- Peters, J.A. & Donoso-Barros, R. (1970) Catalogue of the Neotropical Squamata. Part II. Lizards and Amphisbaenians. *Bulletin United States National Museum*, 297, 1–293.
- Pflaumer, C. (1944) Las lagartijas vivíparas del género *Liolaemus* (Fam. Iguanidae). *Anales de la Academia Chilena de Ciencias Naturales*, 29, 113–116.
- Philippi, R.A. (1860) *Reise durch die Wüste Atacama, auf Befehl der chilenischen Regierung in Sommer 1853–1854*, Libería de Eduard Anton, Halle, 192 pp.
- Pianka, E.R. & Vitt, L.J. (2003) *Lizards. A windows to the evolution of diversity*, University of California Press, Berkeley, Los Angeles & London, 348 pp.
- Pimentel, R. & Riggins, R. (1987) The nature of cladistic data. *Cladistics*, 3, 201–209.
- Pincheira-Donoso, D. (2000) Hallazgo de predación intraespecífica en *Liolaemus chilensis* (Lesson, 1831) (Sauria-Tropiduridae). *Revista de Integración Biológica de Concepción*, 1, 33–35.
- Pincheira-Donoso, D. (2001) Distribución geográfica de *Liolaemus buergeri* Werner, 1907 (Reptilia-Tropiduridae) en Chile y Argentina. Nuevos datos y comentarios. *Noticuario Mensual Museo Nacional de Historia Natural de Chile*, 346, 8–11.
- Pincheira-Donoso, D. (2002a) Nota sobre una emisión de sonidos en *Phymaturus flagellifer* (Bell, 1843) (Sauria - Tropiduridae - Liolaeminae). *Noticuario Mensual Museo Nacional de Historia Natural de Chile*, 348, 8–9.
- Pincheira-Donoso, D. (2002b) Lista Sistemática de los reptiles de Bolivia. *Noticuario Mensual Museo Nacional de Historia Natural de Chile*, 350, 18–27.
- Pincheira-Donoso, D. (2003a) *Liolaemus altissimus araucaniensis* en Antuco, Octava Región del Bío Bío, Chile (Sauria: Tropiduridae). *Revista de Biología Tropical*, 51, 284.
- Pincheira-Donoso, D. (2003b) Sistemática y biogeografía de *Liolaemus altissimus araucaniensis* Müller y Hellmich de Chile, y sus vinculaciones con la taxonomía de *Liolaemus monticola chillanensis* y *Liolaemus monticola villaricensis* (Iguania: Tropiduridae: Liolaeminae). *Noticuario Mensual Museo Nacional de Historia Natural de Chile*, 352, 1–8.
- Pincheira-Donoso, D. (2003c) Primer registro para Chile de *Liolaemus coeruleus* Cei y Ortiz, 1983 (Iguania: Tropiduridae: Liolaeminae), con comentarios adicionales sobre sus relaciones sistemáticas. *Multequina, Latin American Journal of Natural Resources*, 12, 16–22.
- Pincheira-Donoso, D. (2003d) *Liolaemus altissimus araucaniensis*: Geographic distribution. *Herpetological Review*, 34, 262.
- Pincheira-Donoso, D. (2004a) Una nueva especie del genero *Phymaturus* (Iguania: Tropiduridae: Liolaemini) del centro-sur de Chile. *Multequina, Latin American Journal of Natural Resources*, 13, 57–70.
- Pincheira-Donoso, D. (2004b) Relaciones sistemáticas de *Liolaemus fuscus* Boulenger y *Liolaemus lemniscatus* Graven-

- horst con la especie de *Liolaemus* del grupo *bibronii* (Iguania, Tropicuridae, Liolaeminae). *Noticiario Mensual Museo Nacional de Historia Natural de Chile*, 353, 10–15.
- Pincheira-Donoso, D. (2005) Anfibios y reptiles de la Provincia de El Loa. In: Ramírez, G.M. & Pincheira-Donoso, D. (Ed.), *Fauna del Altiplano y Desierto de Atacama. Vertebrados de la Provincia de El Loa*. Phrynosaura Ediciones, Calama, 93–150.
- Pincheira-Donoso, D. (2006a) Los geckos de Chile (Scleroglossa, Gekkonidae, Gekkoninae). I Parte. Síntesis histórica de los estudios taxonómicos y sistemáticos. *Noticiario Mensual Museo Nacional de Historia Natural de Chile*, 358, 3–11.
- Pincheira-Donoso, D. (2006b) Los geckos de Chile (Scleroglossa, Gekkonidae, Gekkoninae). II Parte. Biogeografía y cambios ontogenéticos en el patrón de coloración de *Phyllodactylus gerrhopygus*. Puede la evidencia sostener la presencia de *Phyllodactylus inaequalis* en Chile? *Multequina, Latin American Journal of Natural Resources*, 15, 37–48.
- Pincheira-Donoso, D. (2008) Testing the accuracy of fecal-based analyses in studies of trophic ecology in lizards. *Copeia*, 2008, 322–325.
- Pincheira-Donoso, D. & Núñez, H. (2002) Situación taxonómica de *Liolaemus ornatus* Koslowsky, 1898 y *Liolaemus pantherinus* Pellegrin, 1909 (Sauria, Tropicuridae, Liolaeminae). *Noticiario Mensual Museo Nacional de Historia Natural de Chile*, 350, 38–42.
- Pincheira-Donoso, D. & Núñez, H. (2003) *Liolaemus robertoi*, una nueva especie de Los Andes del norte de Chile perteneciente al grupo *ruibali* (Iguania: Tropicuridae: Liolaeminae). *Multequina, Latin American Journal of Natural Resources*, 12, 1–15.
- Pincheira-Donoso, D. & Núñez, H. (2005) *Las especies chilenas del género Liolaemus (Iguania, Tropicuridae, Liolaeminae)*. *Taxonomía, sistemática y evolución*, Publicación Ocasional del Museo Nacional de Historia Natural de Chile, Santiago, 486 pp.
- Pincheira-Donoso, D. & Núñez, H. (2007) Conspecificity of *Liolaemus isabellae* Navarro & Núñez, 1993 and *Liolaemus nigroventrolateralis* Ortiz, 1994 (Iguania: Tropicuridae: Liolaeminae) from Northern Chile. *Herpetological Journal*, 17, 65–67.
- Pincheira-Donoso, D. & Ramírez, G.M. (2005) Desplazamiento de caracteres como evidencias de un posible caso de especiación simpátrica entre dos *Liolaemus* del grupo *jamesi* en la Provincia de El Loa, con la descripción de una nueva especie. In: Ramírez, G.M. & Pincheira-Donoso, D. (Ed.), *Fauna del Altiplano y Desierto de Atacama. Vertebrados de la Provincia de El Loa*. Phrynosaura Ediciones, Calama, 350–365.
- Pincheira-Donoso, D. & Scolaro, J.A. (2007) Iguanian species-richness in the Andes of boreal Patagonia: evidence for an additional new *Liolaemus* lizard from Argentina lacking precloacal glands (Iguania, Liolaeminae). *Zootaxa*, 1452, 55–68.
- Pincheira-Donoso, D., Scolaro, J.A. & Schulte II, J.A. (2007a) 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. *Zootaxa*, 1452, 25–42.
- Pincheira-Donoso, D., Tregenza, T. & Hodgson, D.J. (2007b) Body size evolution in South American *Liolaemus* lizards of the *boulengeri* clade: a contrasting reassessment. *Journal of Evolutionary Biology*, 20, 2067–2071.
- Pincheira-Donoso, D., Hodgson, D.J. & Tregenza, T. (2008a) Comparative evidence for strong phylogenetic inertia in precloacal signalling glands in a species-rich lizard clade. *Evolutionary Ecology Research*, 10, 11–28.
- Pincheira-Donoso, D., Hodgson, D.J. & Tregenza, T. (2008b) The evolution of body size under environmental gradients in ectotherms: why should Bergmann's rule apply to lizards? *BMC Evolutionary Biology*, 8, e68.
- Pleijel, F. (1995) On character coding for phylogeny reconstruction. *Cladistics*, 11, 309–315.
- Porter, K.R. (1972) *Herpetology*, W.B. Saunders Co, Philadelphia, 523 pp.
- Pough, F.H. (1973) Lizard energetics and diet. *Ecology*, 54, 837–844.
- Pough, F.H., Andrews, R.M., Cadle, J.E., Crump, M.L., Savitzky, A.H. & Wells, K.D. (2004) *Herpetology*, Pearson, Prentice Hall, New Jersey, 736 pp.
- Pritchard, P.C.H. & Trebbau, P. (1984) *The turtles of Venezuela*, Society for the Study of Amphibians and Reptiles, 403 pp.
- Quijada, B. (1916) Catálogo sistemático de los reptiles chilenos i extranjeros conservados en el Museo Nacional de Historia Natural. *Boletín del Museo Nacional de Historia Natural de Chile*, 9, 22–47.
- Quinteros, A.S., Abdala, C.S. & Lobo, F.J. (2008) Redescription of *Liolaemus dorbignyi* Koslowskyi, 1898 and description of a new species of *Liolaemus* (Iguania: Liolaemidae). *Zootaxa*, 1717, 51–67.
- Ramírez, G.M. & Pincheira-Donoso, D. (2005) *Fauna del altiplano y desierto de Atacama. Vertebrados de la Provincia de El Loa*, Phrynosaura Ediciones, Chile, 396 pp.
- Ramírez Pinilla, M.P. (1991) Reproductive and fat body cycles of the viviparous lizard *Liolaemus huacahuasicus*. *Journal of Herpetology*, 25, 205–208.
- Ramírez Pinilla, M.P. (1994) Reproductive and fat body cycles of the oviparous lizard *Liolaemus scapularis*. *Journal of Herpetology*, 28, 521–524.

- Ramírez Pinilla, M.P. (1995) Reproductive and fat body cycles of the oviparous lizard *Liolaemus bitaeniatus* (Sauria: Tropiduridae). *Journal of Herpetology*, 29, 256–260.
- Ramírez Pinilla, M.P. & Cruz, F.B. (1991) Actividad reproductiva y poblacional en el lagarto *Liolaemus chacoensis* (Sauria: Iguanidae). *Boletín de la Asociación Herpetológica Argentina*, 7, 10–11.
- Rand, A.S. (1982) Clutch size in Brazilian iguanid lizards. *Herpetologica*, 38, 171–178.
- Rocha, C.F.D. (1986) Distribuição geográfica de *Liolaemus lutzae* (Sauria: Iguanidae), um lagarto endêmico do Estado do Rio de Janeiro. *Boletim Fundação Brasileira para a Conservação da Natureza*, 21, 163–167.
- Rocha, C.F.D. (1988) Ritmo de atividade e microclimatologia do habitat de *Liolaemus lutzae* (Sauria: Iguanidae). *Anais do Seminário Regional de Ecologia de São Carlos*, 6, 269–281.
- Rocha, C.F.D. (1989) Diet of a tropical lizard (*Liolaemus lutzae*) of southeastern Brazil. *Journal of Herpetology*, 23, 292–294.
- Rocha, C.F.D. (1990) Reproductive effort in the Brazilian sand lizard *Liolaemus lutzae* (Sauria: Iguanidae). *Ciência e Cultura, São Paulo*, 42, 1203–1206.
- Rocha, C.F.D. (1991) Composição do habitat e uso do espaço por *Liolaemus lutzae* (Sauria: Tropiduridae) em uma área de restinga. *Revista Brasileira de Biologia*, 51, 839–846.
- Rocha, C.F.D. (1992a) A ecologia da lagartixa-da-areia (*Liolaemus lutzae*), uma espécie típica do estado do Rio de Janeiro, Coordenação de Comunicação Social e Publicações, Universidade do Estado do Rio de Janeiro, 16 pp.
- Rocha, C.F.D. (1992b) Reproductive and fat body cycles of the tropical sand lizard (*Liolaemus lutzae*) of southeastern Brazil. *Journal of Herpetology*, 26, 17–23.
- Rocha, C.F.D. (1992c) *Liolaemus lutzae* (Sand Lizard). Cannibalism. *Herpetological Review*, 23, 60.
- Rocha, C.F.D. (1993) The set of defence mechanisms in a tropical sand lizard (*Liolaemus lutzae*) of southeastern Brazil. *Ciência e Cultura, São Paulo*, 45, 116–122.
- Rocha, C.F.D. (1995a) Growth of the tropical sand lizard *Liolaemus lutzae* in southeastern Brazil. *Amphibia-Reptilia*, 16, 257–264.
- Rocha, C.F.D. (1995b) Ecologia termal de *Liolaemus lutzae* (Sauria: Tropiduridae) em uma área de restinga do sudeste do Brasil. *Revista Brasileira de Biologia*, 55, 481–489.
- Rocha, C.F.D. (1996a) Seasonal shift in lizard diet: the seasonality in food resources affecting the diet of *Liolaemus lutzae* (Tropiduridae). *Ciência e Cultura, São Paulo*, 48, 264–269.
- Rocha, C.F.D. (1996b) Sexual dimorphism in the sand lizard *Liolaemus lutzae* of southeastern Brazil. In: Péfaur, J.E. (Ed.), *Herpetología Neotropical*. Consejo de Publicaciones, Universidad de Los Andes, Mérida, Venezuela, 131–140.
- Rocha, C.F.D. (1998a) Ontogenetic shift in the rate of plant consumption in a tropical lizard (*Liolaemus lutzae*). *Journal of Herpetology*, 32, 274–279.
- Rocha, C.F.D. (1998b) Population dynamics of the endemic tropidurid lizard *Liolaemus lutzae* in a tropical seasonal restinga habitat. *Ciência e Cultura, São Paulo*, 50, 446–451.
- Rocha, C.F.D. (1999) Home range of the tropidurid lizard *Liolaemus lutzae*: sexual and body size differences. *Revista Brasileira de Biologia*, 59, 125–130.
- Rocha, C.F.D. (2000) Selectivity in plant food consumption in the lizard *Liolaemus lutzae* from southeastern Brazil. *Studies of the Neotropical Fauna and Environment*, 35, 14–18.
- Rocha, C.F.D. & Bergallo, H.G. (1992) Population decrease: the case of *Liolaemus lutzae*, an endemic lizard of southeastern Brazil. *Ciência e Cultura, São Paulo*, 44, 52–54.
- Roughgarden, J. (1995) *Anolis lizards of the Caribbean: ecology, evolution, and plate tectonics*, Oxford University Press, Oxford, 214 pp.
- Roux, J. (1907) Revision de quelques espèces de reptiles et amphibiens du Pérou décrites par Tschudi en 1844–1846. *Revue Suisse de Zoologie*, 15, 293–303.
- Sallaberry, M., Núñez, H. & Yáñez, J. (1982) *Liolaemus hernani* n. sp. de Iguanidae de la zona central de Chile. *Boletín del Museo Nacional de Historia Natural de Chile*, 39, 93–99.
- Savage, J.M. (2002) *The amphibians and reptiles of Costa Rica. A herpetofauna between two continents, between two seas*, University of Chicago Press, Chicago & London, 934 pp.
- Schluter, D. (2000) *The ecology of adaptive radiation*, Oxford University Press, Oxford, 288 pp.
- Schulte II, J.A., Losos, J.B., Cruz, F.B. & Núñez, H. (2004) The relationship between morphology, escape behaviour and microhabitat occupation in the lizard clade *Liolaemus* (Iguanidae: Tropidurinae: Liolaemini). *Journal of Evolutionary Biology*, 17, 408–420.
- Schulte II, J.A., Macey, J.R., Espinoza, R.E. & Larson, A. (2000) Phylogenetic relationships in the iguanid lizard genus *Liolaemus*: multiple origins of viviparous reproduction and evidence for recurring Andean vicariance and dispersal. *Biological Journal of the Linnean Society*, 69, 75–102.
- Schulte II, J.A., Macey, J.R., Larson, A. & Papenfuss, T.J. (1998) Molecular tests of phylogenetic taxonomies: a general procedure and example using four subfamilies of the lizard family Iguanidae. *Molecular Phylogenetics and Evolution*, 10, 367–376.

- Schulte II, J.A., Valladares, J.P. & Larson, A. (2003) Phylogenetic relationships within Iguanidae inferred using molecular and morphological data and a phylogenetic taxonomy of iguanian lizards. *Herpetologica*, 59, 399–419.
- Scolaro, J.A. (1992) Morphological differences between *Vilcunia* and *Liolaemus magellanicus* and *L. lineomaculatus*: a discriminant analysis. *Acta Zoológica Lilloana*, 41, 287–293.
- Scolaro, J.A. (1993) *Liolaemus elongatus petrophilus* (Stone-loving Lizard). Geographic distribution. *Herpetological Review*, 24, 109.
- Scolaro, J.A. (2005) *Reptiles patagónicos: Sur. Una guía de campo*. Ediciones Universidad Nacional de la Patagonia San Juan Bosco, Trelew, 80 p.
- Scolaro, J.A. (2006) *Reptiles patagónicos: Norte. Una guía de campo*, Ediciones Universidad Nacional de la Patagonia San Juan Bosco, Comodoro Rivadavia, 112 p.
- Scolaro, J.A. & Ceí, J.M. (1977) Herpetología patagónica. XII. Los iguánidos del grupo *Liolaemus fitzingeri* en Chubut: datos serológicos y posición taxonómica. *Physis, Buenos Aires*, 36, 219–223.
- Scolaro, J.A. & Ceí, J.M. (1987) A multivariate analysis of morphometric and exosomatic characters of iguanid lizards of the Patagonian *Liolaemus kingi* complex. *Journal of Herpetology*, 21, 343–348.
- Scolaro, J.A. & Ceí, J.M. (1991) The poorly known Andean lizard *Liolaemus uspallatensis* Macola and Castro 1982, and its intrageneric relationships: a taxonumerical approach (Reptilia, Iguanidae). *Bolletino Museo Regionale di Scienze Naturali di Torino*, 9, 91–103.
- Scolaro, J.A. & Ceí, J.M. (1997) Systematic status and relationships of *Liolaemus* species of the *archeforus* and *kingii* groups: a morphological and taxonumerical approach (Reptilia: Tropicuridae). *Bolletino Museo Regionale di Scienze Naturali di Torino*, 15, 369–406.
- Scolaro, J.A. & Ceí, J.M. (2002) *Vilcunia periglacialis* Ceí & Scolaro, 1982 (currently *Liolaemus periglacialis*; Reptilia, Sauria): proposed precedence over *Liolaemus hatcheri* Stejneger, 1909. *Bulletin of Zoological Nomenclature*, 59, 275–277.
- Scolaro, J.A. & Ceí, J.M. (2003) Una excepcional nueva especie de *Phymaturus* de la precordillera de Chubut, Argentina (*Liolaemidae*, Iguania, Lacertilia, Reptilia). *Facena*, 19, 107–112.
- Scolaro, J.A. & Ceí, J.M. (2006) A new species of *Liolaemus* from central steppes of Chubut, Patagonia Argentina (Reptilia: Iguania: Iguanidae). *Zootaxa*, 1133, 61–68.
- Scolaro, J.A., Ceí, J.M. & Arias de Reyna, L. (1985) La identidad de las especies del grupo *Liolaemus fitzingeri-melanops* por medio del análisis discriminante de caracteres morfológicos (Sauria: Iguanidae). *Historia Natural*, 5, 13–22.
- Scolaro, J.A. & Ibargüengoytia, N.R. (2007) A new species of *Phymaturus* from rocky outcrops in the central steppe of Rio Negro province, Patagonia Argentina (Reptilia: Iguania: *Liolaemidae*). *Zootaxa*, 1524, 47–55.
- Scolaro, J.A., Tapari, F. & González, C. (2005) *Phymaturus calcogaster*: rectificación de la localidad tipo y descripción de la hembra (Reptilia, Iguania, *Liolaemidae*). *Facena*, 21, 29–36.
- Scolaro, J.A., Videla, F. & Ceí, J.M. (2003) Algunos modelos de especiación geográfica que interpretan aspectos de la diversidad herpetológica Andino-Patagónica. *Historia Natural*, 2, 73–83.
- Scotland, R.W., Olmstead, R.G. & Bennett, J.R. (2003) Phylogeny reconstruction: the role of morphology. *Systematic Biology*, 52, 539–548.
- Shreve, B. (1938) A new *Liolaemus* and two new *Syrhropus* from Peru. *Journal of the Washington Academy of Sciences*, 28, 404–407.
- Shreve, B. (1941) Notes on Ecuadorian and Peruvian reptiles and amphibians with descriptions of new forms. *Proceedings of the New England Zoological Club*, 18, 71–83.
- Shreve, B. (1948) A new *Liolaemus* from Paraguay. *Copeia*, 1948, 111–112.
- Simonetti, J. & Núñez, H. (1986) Sympatry and taxonomy of two lizards of the *Liolaemus nigromaculatus* group in northern Chile. *Journal of Herpetology*, 20, 474–475.
- Simpson-Vuilleumier, B.B. (1971) Pleistocene changes in the fauna and flora of South America. *Science*, 173, 771–780.
- Steindachner, F. (1867) *Reise der österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859. Zoologischer Theil. Erster Band (Wirbelthiere)*. 3. Reptilien, K. K. Hof und Staatsdruckerei, Wien, 98 pp.
- Steindachner, F. (1891) Ueber einige neue und seltene Reptilien- und Amphibien-Arten. *Sitzungsberichte Akademie der Wissenschaften in Wien*, 100, 291–316.
- Stejneger, L. (1909) Batrachians and reptiles. Part II. In: Scott, W.B. (Ed.), *Reports of the Princeton University expeditions to Patagonia, 1896–1899. Zoology*, Princeton University, Princeton, 211–224.
- Strong, E.E. & Lipscomb, D. (1999) Charactercoding and inapplicable data. *Cladistics*, 15, 363–371.
- Sura, P. 2005. *Encyclopedia of extant amphibians and reptiles*, Wydawnictwo Fundacja, Nowy Sacz, 544 pp.
- Tedesco, M.E., Hernando, A. & Alvarez, B.B. (1992) Hallazgo de *Liolaemus wiegmanni* (Duméril y Bibron 1837) (Iguania, *Liolaemidae*) en la provincia de Corrientes (República Argentina). *Facena*, 9, 117–122.
- Thiele, K. (1993) The Holy Grail of the perfect character: the cladistic treatment of morphometric data. *Cladistics*, 9, 275–304.
- Tiedemann, F. & Häupl, M. (1980) Typenkatalog der Herpetologischen Sammlung Teil II: Reptilia. *Kataloge der wissenschaftlichen Sammlung des Naturhistorischen Museums in Wien*, 4, Vertebrata 2, 5–79.

- Tiranti, S. & Avila, L.J. (1994) Aportes a la herpetología de la provincia de La Pampa. I. Lista de los taxa de presencia segura en la provincia. *Boletín de la Asociación Herpetológica Argentina*, 10, 39–41.
- Troncoso, J.F. & Ortiz, J. (1987) Catálogo herpetológico del Museo Regional de Concepción. *Museo Regional de Concepción Comunicaciones*, 1, 9–19.
- Tschudi, J.J. von. (1845) Reptilium conspectus quae in Republica Peruana reperiuntur et pleraque observata vel collecta sunt in itinere a Dr. J. de Tschudi. *Archiv fuer Naturgeschichte*, 11, 150–170.
- Tschudi, J.J. von. (1846) *Untersuchungen über die Fauna Peruana*. *Herpetologie*, Scheitlin und Zollikofer, St. Gallen, 80 pp.
- Ubeda, C.A., Grigera, D. & Reca, A.R. (1994) Estado de conservación de la herpetofauna del Parque y Reserva Nacional Hahuel Huapi, Argentina. *Cuadernos de Herpetología*, 8, 155–163.
- Urbina, M. & Zúñiga, O. (1977) *Liolaemus pictus talcanensis* nov. subsp. (Squamata, Iguanidae), nuevo reptil para el Archipiélago de Chiloé. *Anales del Museo de Historia Natural de Valparaíso*, 10, 69–74.
- Valencia, J., Veloso, A. & Sallaberry, M. (1975) Análisis biométrico y cromosómico en poblaciones de *Liolaemus nigroviridis* Müller y Hellmich (Squamata, Iguanidae). *Archivos de Biología y Medicina Experimentales*, 12, 209–220.
- Valladares, J.P. (2004) Nueva especie de lagarto del género *Liolaemus* (Reptilia: Liolaemidae) del norte de Chile, previamente confundido con *Liolaemus* (= *Phrynosaura*) *reichei*. *Cuadernos de Herpetología*, 18, 41–51.
- Valladares, J.P., Etheridge, R., Schulte II, J.A., Manríquez, G. & Spotorno, A. (2002). Nueva especie de lagartija del norte de Chile, *Liolaemus molinai* (Reptilia: Liolaeminae). *Revista Chilena de Historia Natural*, 75, 473–489.
- Vanzolini, P.E. (1986) Addenda and corrigenda to the Catalogue of Neotropical Squamata. *Smithsonian Herpetological Information Service*, 70, 1–25.
- Vanzolini, P.E. (1993) Catálogo bibliográfico dos Crocodylia da América do Sul. *Papeis Avulsos Zoología, Sao Paulo*, 38, 107–154.
- Vanzolini, P.E. & Absaber, A.N. (1968) Divergence rate in South American lizards of the genus *Liolaemus* (Sauria, Iguanidae). *Papeis Avulsos de Zoología, São Paulo*, 21, 205–208.
- Vega, L.E. (1997) Reproductive activity and sexual dimorphism of *Liolaemus multimaculatus* (Sauria: Tropiduridae). *Herpetological Journal*, 7, 49–53.
- Vega, L.E. & Bellagamba, P.J. (1994) Reptiles de la Reserva de Usos Múltiples Caleta de los Loros, Río Negro, Argentina. *Cuadernos de Herpetología*, 8, 141–145.
- Vega, L.E., Bellagamba, P.J. & Lobo, F. (2008) A new endemic species of *Liolaemus* (Iguania: Liolaemidae) from the mountain range of Tandilia, Buenos Aires Province, Argentina. *Herpetologica*, 64, 81–91.
- Veloso, A. & Navarro, J. (1988) Lista sistemática y distribución geográfica de anfibios y reptiles de Chile. *Bollettino del Museo Regionale di Scienze Naturali di Torino*, 6, 481–539.
- Veloso, A., Sallaberry, M., Navarro, J., Iturra, P., Valencia, J., Penna, M. & Díaz, N. (1982) Contribución sistemática al conocimiento de la herpetofauna del extremo norte de Chile. In: *El hombre y los ecosistemas de montaña*. Oficina Regional de Ciencias y Tecnología de la UNESCO para América Latina y el Caribe, Montevideo, Uruguay, 135–268.
- Verrastro, L. & Bujes, C. (1998) Ritmo de actividade de *Liolaemus occipitalis* Boulenger (Sauria, Tropiduridae) na Praia de Quintão, Rio Grande do Sul, Brasil. *Revista Brasileira de Zoologia*, 15, 913–920.
- Verrastro, L. & Krause, L. (1994) Analysis of growth in a population of *Liolaemus occipitalis* Boul. 1885, from the coastal sand-dunes of Tramandai, RS, Brazil (Reptilia, Tropiduridae). *Studies on Neotropical Fauna and Environment*, 29, 99–111.
- Verrastro, L. & Krause, L. (1999) Ciclo reproductivo de machos de *Liolaemus occipitalis* Boulenger (Sauria, Tropiduridae). *Revista Brasileira de Zoologia*, 16, 227–231.
- Verrastro, L., Veronese, L., Bujes, C. & Martins Dias Filho, M. (2003) A new species of *Liolaemus* from southern Brazil (Iguania: Tropiduridae). *Herpetologica*, 59, 105–118.
- Videla, F. & Ceí, J.M. (1996) A new peculiar *Liolaemus* species of the “*chiliensis*” phyletic group from the volcanic Cordilleran landscapes of southern Mendoza Province, Argentina (Iguania, Lacertilia, Reptilia). *Bollettino del Museo Regionale di Scienze Naturali di Torino*, 14, 505–516.
- Videla, F. & Ceí, J.M. (1998) Espèces de *Liolaemus* sans pores précloacaux chez les mâles, le long des Andes méridionales (Reptilia: Squamata: Iguania: Tropiduridae). *Revue Française de Aquariologie*, 25, 63–68.
- Videla, F. & Puig, S. (1994) Estructura de una comunidad de lagartos del monte. Patrones de uso espacial y temporal. *Multequina, Latin American Journal of Natural Resources*, 3, 99–112.
- Villavicencio, H.J., Acosta, J.C., Cánovas, M.G. & Marinero, J.A. (2007) *Liolaemus pseudoanomalus*. Reproduction. *Herpetological Review*, 38, 79–80.
- Vitt, L.J. (2004) Shifting paradigms: herbivory and body size in lizards. *Proceedings of the National Academy of Sciences, USA*, 101, 16713–16714.
- Webb, R.G. & Greer, J.K. (1969) Amphibians and reptiles of Malleco Province, Chile. *Publications of the Museum, Michigan State University Biology Series*, 4, 193–226.

- Werner, F. (1898) Die Reptilien und Batrachier der Sammlung Plate. *Zoologischen Jahrbüchern Supplement*, 4, 244–278.
- Werner, F. (1904) *Ergebnisse der Hamburger Magalhaensischen Sammelreise. I. Band. Allgemeines, Chordonier, Echinodermen und Coelenteraten. IV. Reptilien und Batrachier*, L. Friedrichsen and Co., Hamburg, 21 pp.
- Werner, F. (1907) In: Bürger, O. (Ed.), *Estudios sobre reptiles chilenos*. Anales Universidad de Chile, 121, 147–155.
- Werner, F. (1909) Neue oder seltenere Reptilien des Musée Royal d’Histoire Naturelle de Belgique in Brüssel. *Zoologischen Jahrbüchern*, 28, 263–288.
- Werner, F. (1910) Über neue oder seltene Reptilien des Naturhistorischen Museums in Hamburg II. Eidechsen. *Mitteilungen Naturhistorischen Museum in Hamburg*, 27, 1–46.
- Wiegmann, A.F.A. (1834a) Beiträge zur Zoologie gesammelt auf einer Reise um die Erde, von Dr. F. J. F. Meyen. Siebente Abhandlung. Amphibien. *Nova Acta Academiae Caesararum Leopoldinae Carolinae Germanicae Naturae Curisorum*, 17, 184–268.
- Wiegmann, A.F.A. (1834b) Nachträgliche Bemerkungen zur Beschreibung der Amphibien in Meyen’s Beiträge zur Zoologie. *Nova Acta Academiae Caesararum Leopoldinae Carolinae Germanicae Naturae Curisorum*, 17, 268–268.
- Wiegmann, A.F.A. (1834c) *Herpetologica Mexicana seu descriptio amphibiorum Novae Hispaniae quae itineribus comitis de Sack, Ferdinandi Deppe et Chr. Guil. Schiede in Museum Zoologicum Berolinense pervenerunt. Pars prima, Saurorum species amplectens, adiecto Systematis Saurorum Prodromo, additisque multis in hunc amphibiorum ordinem observationibus*, C.G. Lüderitz, Berlin, 54 pp.
- Wiegmann, A.F.A. (1835) Bericht über die Fortschritte der Zoologie in Jahre 1834. Amphibien. *Archive für Naturgeschichte*, 1, 273–296.
- Wiens, J.J. (1995) Polymorphic characters in phylogenetic systematics. *Systematic Biology*, 44, 482–500.
- Wiens, J.J. (1998) Testing phylogenetic methods with tree-congruence: phylogenetic analysis of polymorphic morphological characters in phrynosomatid lizards. *Systematic Biology*, 47, 411–428.
- Wiens, J.J. (2001). Character analysis in morphological phylogenetics: problems and solutions. *Systematic Biology*, 50, 689–699.
- Wiens, J.J. (2004) The role of morphological data in phylogeny reconstruction. *Systematic Biology*, 53, 653–661.
- Williams, J.D. & Cei, J.M. (1983) Redescubrimiento de los sintipos de *Liolaemus anomalus* Koslowsky, 1896: comentarios sobre la distribución de la especie. *Boletín de la Asociación Herpetológica Argentina*, 1, 7–8.
- Williams, J.D. & Francini, F. (1991) A checklist of the Argentine snakes. *Bollettino del Museo Regionale di Scienze Naturali di Torino*, 9, 55–90.
- Yáñez, J. & Núñez, H. (1982) Segundo registro de *Liolaemus schmidti* (Marx, 1960) (Lacertilia: Iguanidae). *Noticiario Mensual del Museo Nacional de Historia Natural de Chile*, 26, 12.
- Yáñez, J. & Núñez, H. (1983) *Liolaemus fabiani*, a new species of lizard from northern Chile (Reptilia: Iguanidae). *Copeia*, 1983, 788–790.
- Young-Downey, A. & Moreno, J. (1991) A new species of tropidurine lizard (Squamata: Tropiduridae) from Los Andes of northern Chile. *Gayana*, 55, 391–396.
- Zhao, K.T. (1999) *Phrynocephalus* Kaup, 1825. In: Zhao, E.M., Zha, K.T. & Zhou, K.Y. (Ed.), *Fauna Sinica. Reptilia Volume 2. Squamata. Lacertilia*. Science Press, Beijing, 151–193.