

## On the taxonomic status of *Liolaemus filiorum* Pincheira-Donoso & Ramírez, 2005 (Iguania: Liolaemidae): A response to Pincheira-Donoso

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**Abstract.** I discuss the arguments put forth recently by Pincheira-Donoso, in which the author attempts to revalidate *Liolaemus filiorum* Pincheira-Donoso & Ramírez, 2005, a species which I had previously considered a junior synonym of *L. puritamensis*. The author of this revalidation omitted important information including: 1) the description was published without peer review, 2) one of the two types was deposited in a personal collection, 3) the diagnosis is weak and unclear, 4) the holotype was not explicitly described or illustrated. Additionally, the author did not discuss key aspects of my paper, most particularly, the incorrect designation of the holotype of *L. filiorum*.

**Keywords.** Holotype, species description, synonymy, *Liolaemus*, ICZN.

The lizard *Liolaemus filiorum* Pincheira-Donoso & Ramírez, 2005 was described in a book entitled “Fauna del Altiplano y Desierto de Atacama” edited by the authors themselves (Pincheira-Donoso and Ramírez, 2005). The species description was not subjected to peer review, contains several errors and omissions and has created taxonomic instability in *Liolaemus*. The practice of publishing without peer review is generally strongly discouraged by the systematic community and may sometimes lead to taxonomic instability (Iverson et al., 2001; Kaiser et al., 2013).

The description of *L. filiorum* is based on two specimens collected in the Antofagasta Region of Chile, at two different localities: the holotype was listed using the specimen number MNHN-3829 and was said to be from Cerro Las Papas and deposited in the Museo Nacional de Historia Natural de Chile (MNHN) in Santiago. The paratype, from Taira, was listed as CHDPD-01069, indicating that it had been deposited in the private collection of the book’s senior author, Daniel Pincheira-Donoso. Deposit of specimens in private collections is also discouraged and has been criticized (ICZN, 1999; Kaiser et al., 2013), and some journals, e.g., *Acta Herpetologica*,

reject this practice. In the species description, no photograph, specific scalation data or snout-vent length of the holotype is provided.

In 2013, eight years after the description of *L. filiorum*, together with Mr. Herman Núñez, collection manager and curator at the MNHN, I attempted to locate the holotype of *L. filiorum*. We thoroughly searched for the specimen (MNHN-3829) on both the type specimen shelf and in the general collection. We found only one specimen with the label number 3829, a paratype of *Liolaemus puritamensis*. At no time did Pincheira-Donoso and Ramírez (2005) indicate that a paratype of *L. puritamensis* had also been designated as the holotype of *L. filiorum*. Mr. Núñez indicated to me that there is no other MNHN-3829 and that no other specimen referable to the “holotype” of *L. filiorum* is present in the MNHN collection (pers. comm.). Although it is of course possible to designate a paratype of one species as the holotype of another, this implies that an inadvertent error was made in the assignment of the paratype, and this is certainly an important fact for the taxonomy of the older species. I also reviewed the entire database of the MNHN herpetological collection available at that time (GBIF,

2013). Although I found five specimens from the Cerro Las Papas (MNHN 4087-89, 4218-19) none of them is indicated as a specimen examined by Pincheira-Donoso and Ramírez (2005) and also only one MNHN 3829 was found (indicated as *L. puritamensis*).

In a recent peer-reviewed publication (Troncoso-Palacios, 2014), I therefore proposed that *Liolaemus filiorum* is a junior synonym of *L. puritamensis* Núñez & Fox, 1989 because the putative holotype of the former nominal taxon (MNHN-3829) is part of the type series of the latter and indistinguishable from it (Troncoso-Palacios, 2014). This was a taxonomic decision facilitated by the fact that in the original description of *L. filiorum*, the holotype is identified only by a specimen number; no photographs or specimen specific data are provided. Pincheira-Donoso and Ramírez (2005) rather described variation within the species. For example, Pincheira-Donoso and Ramírez (2005: 354) indicated that *L. filiorum* may exceed 80 mm in SVL and on the same page they stated that it may exceed 85 mm, with no indication of the actual SVL of the holotype. The diagnosis is confusing, indicating that size comparisons between *L. filiorum* ( $n = 2$ ) and *L. hajeki* Núñez, Pincheira-Donoso & Garín 2004 (sample size not indicated) were performed with a Student's t-test after confirming normality using a Shapiro-Wilk test (Pincheira-Donoso and Ramírez, 2005:353). Without indication of sample size, such a diagnosis is extremely weak.

Shortly after my publication appeared, Pincheira-Donoso (2014) replied to my synonymisation, arguing that my work was an example of “negligent observations” and proposed to revalidate *Liolaemus filiorum*. In this paper, Pincheira-Donoso (2014) claimed that “this specimen was recently transferred to the Museo Nacional de Historia Natural de Chile collection from another collection” (without specifying which collection, although this may refer to the Collection of the Departamento de Biología Celular y Genética of the Universidad de Chile, DBCUCH, where several paratypes of *L. puritamensis* were previously located) and claimed that the MNHN-3829 number was duplicated. Although, in fact, MNHN-3829 also has an older DBCUCH label, the duplication of “MNHN-3829” is highly unlikely for several reasons. First, our search for MNHN-3829 specimens in 2013 ascertained that only one specimen with that number was present in the entire collection and even in the online database there was only one MNHN-3829 (GBIF, 2013). Furthermore, the timeline for the transfer of DBCUCH specimens to the MNHN negates the argument that an error was committed by anyone other than Pincheira-Donoso and Ramírez (2005). Whereas Ortiz and Díaz-Páez (2006) only stated that the trans-

fers occurred “recently”, the dates become clearer when examining additional specimen accessions. For example, Pincheira-Donoso and Núñez (2005:261) studied MNHN-3810 a specimen of *L. ubaghsi* Esquerré, Troncoso-Palacios, Núñez & Garín 2013 (Esquerré et al., 2014). They (2005:190) also studied MNHN 3833–3837, specimens of *L. cf. moradoensis*, currently *L. bellii* (Esquerré et al., 2014). Thus, specimens bracketing the registration number of the holotype of *L. filiorum* were unambiguously present in 2005. Thus, when Pincheira-Donoso and Ramírez (2005) described *L. filiorum*, MNHN-3829 must have already been deposited in the national collection.

To counter the argument that the holotype should be illustrated in the species description “when it is possible” (ICZN, 1999: Recommendation 16F), Pincheira-Donoso (2014) provided a photograph of another specimen (not the MNHN-3829 that I had examined) that he stated was the holotype, claiming that the collection number of the figured specimen was MNHN-3829. Unfortunately, it is not possible to independently verify that this specimen is indeed the holotype of *L. filiorum*, because no photograph or specific data for the holotype were provided in the original description (Pincheira-Donoso and Ramírez, 2005). Several of Pincheira-Donoso's taxonomic works have been noted as at least “controversial” by some authors, because they presented cases of inappropriate descriptions of species (Lobo et al., 2010, 2012). Examples include the assignment of paratype specimens of *L. puna* Lobo & Espinoza, 2004 as paratypes of *L. barbarae* Pincheira-Donoso and Núñez, 2005 without an appropriate diagnosis (Quinteros and Lobo, 2009) and listing a frog specimen as a paratype of the lizard *L. hermannunzei* Pincheira-Donoso, Scolaro & Schulte, 2007 (Troncoso-Palacios, 2014). Even if the specimen illustrated by Pincheira-Donoso (2014) is the true holotype, it is unclear why it was not deposited in the collection indicated in the original description for more than eight years post-publication and why it was not possible to illustrate it in the original description.

Pincheira-Donoso (2014) has criticized the peer review process of the journal Cuadernos de Herpetología, where I published my work (Troncoso-Palacios, 2014), claiming it did not meet an adequate scientific standard, even though the description of *L. filiorum* (Pincheira-Donoso and Ramírez, 2005) was not subjected to peer-review in the first place. I strongly disagree with this criticism, given that Cuadernos de Herpetología is one of the most prestigious South American herpetology journals, where the most prominent specialists in the taxonomy of Liolaemidae have published (e.g., Avila, 1995; Laurent, 1995; Etheridge, 1998; Lobo, 2000; Abdala and Quinteros, 2014; Breitman et al., 2014); the journal has highly quali-

fied editors and reviewers. It is also especially remarkable that Pincheira-Donoso (2014), whose publication was narrowly focused on criticizing my work (Troncoso-Palacios, 2014), misspelled my name throughout the entire manuscript (“Troncoso-Palacio”) and indicated incorrect pagination: “1-7” (see References in this paper for the correct citation and pages).

In conclusion, as attested to by the positive reviews of my earlier paper and the narrative regarding specimen numbers and timelines presented herein, my original conclusion to consider *Liolaemus filiorum* as a junior synonym of *L. puritamensis* due to inappropriate description and designation of the holotype should be considered correct.

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