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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

JOSÉ MIGUEL CEI[1] & JOSÉ ALEJANDRO SCOLARO[2,3]

[1]*Universidad Nacional de Cuyo, Facultad de Ciencias Agrarias, Mendoza. Dirección particular: Hilario Cuadros 81 - 5501 Godoy Cruz, Mendoza, Argentina*

[2]*Universidad Nacional de la Patagonia San Juan Bosco, Facultad de Ciencias Naturales, Julio A. Roca 115, 1º Piso - 9100 Trelew, Chubut, Argentina*

[3]*Centro Nacional Patagónico, CONICET. Dirección particular: H.L. Jones 143 - 9120 Puerto Madryn, Chubut, Argentina. E-mail: scolaro@cenpat.edu.ar*

Abstract

The fundamental weakness of the Opinion 2118 (Case 3225) of the International Commission on Zoological Nomenclature is discussed. A former documented research established the Teiid identity of *Lacerta palluma* Molina 1782, a misidentified type species of the Iguanian genus *Phymaturus*, now confirmed by the Opinion. The holotype of the iguanian synonym *Centrura flagellifer* (Bell, 1843) is proposed as neotype of *Phymaturus palluma* (Molina, 1782), the misidentified type species of Gravenhorst 1837. Such a neotype should be named *Phymaturus flagellifer* (Bell, 1843) in agreement to the real taxonomic position of the Molina's species, a Teiid *Callopistes*, a lacertilian genus strikingly distant from the iguanid genus *Phymaturus*.

Key words: *Phymaturus*, Iguania, Type species, stability, taxonomy

Resumen

El Neotipo de la especie Tipo del iguánido neotropical género *Phymaturus*: comentario crítico acerca de una reciente opinión de la Comisión Internacional de Nomenclatura Zoológica.

Se destaca la fragilidad argumental de la Opinión 2118 (Caso 3225) de la Comisión Internacional sobre Nomenclatura Zoológica. Una investigación inicial documentada estableció la identidad del Teiido *Lacerta palluma* Molina 1782, erróneamente identificada como especie Tipo del género iguánido *Phymaturus*, ahora confirmada por la Opinión. El holotipo del sinónimo *Centrura flagellifer* (Bell, 1843) es propuesto como neotipo de *Phymaturus palluma* (Molina, 1782), la erróneamente identificada especie Tipo por Gravenhorst 1837. Tal neotipo debería ser denominado *Phymaturus flagellifer* (Bell, 1843) de acuerdo con la real posición taxonómica de la

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especie de Molina, el Teiido *Callopistes*, un género de lacertilio notablemente distante del género iguanídeo *Phymaturus*.

Palabras claves: *Phymaturus*, Iguania, especie Tipo, estabilidad, taxonomía

Introduction and discussion

Before developing our commentary we would like to state that nobody should show little recognition for the distinguished herpetologists R. Etheridge and J.M. Savage, promoters of the Case 3225-ICZN, and origin of this note. On the other hand, many of their contributions to different fields of herpetological research must be held in consideration. But nonetheless, we are constrained to express our disappointment on Opinion 2118 (Case 3225) recently issued by the International Commission on Zoological Nomenclature (ICZN, 2005) where, under the framework of a deliberation on 1 March 2005 (18 members of the Commission for the proposal of the case, 3 against), the nominal species *Lacerta palluma* Molina 1782 was recognized as the Type species of *Phymaturus* Gravenhorst 1837 and designated the holotype of *Centrura flagellifer* Bell 1843 (specimen: BMHN 1946.8.29.84) as the neotype of *Lacerta palluma*, due to the unavailability of any original type specimen of *Lacerta palluma* Molina 1782. Bearing in mind that a fundamental aim of the Case 3225 was to conserve and to promote stability -a principle to which we fully agree- by fixing the current use of the name *palluma* Molina 1782 as the type species of *Phymaturus* Gravenhorst 1837, was surely intended in this perspective by the 18 commissioners voting for the proposals of the Case 3225, none of them being herpetologist, no vote being received from Prof. Böhme the only commissioner and distinguished herpetologist. In fact, in Opinion 2118, this species was presented as an established old synonym of the type species of *Phymaturus* Gravenhorst, 1837 and also of *Centrura flagellifer* Bell, 1843.

However, the original descriptions provided by Molina (1782, 1810) were carefully analysed by Cei & Lescure (1985) and Lescure & Cei (1991) in the Laboratoire de Zoologie at the Muséum National d'Histoire Naturelle de Paris, and unquestionably recognized as an adult specimen of *Callopistes* (Family Teiidae: Autarchoglossa) measuring 320 mm snout-vent length, whose general somatic characters were stressed by Molina in the textual expression "the peasants use its skin to make bags for their coins…", a picturesque statement reported by Daudin (1802) in his later deficient description, apparently disregarded by the promoters of the Case 3225.

Therefore, the unquestionable findings of Cei & Lescure (1985) and Lescure & Cei (1991), gave to the original Molina's description a documented identification as the first description of the Chilean teiid *Callopistes*. Such evidence strongly suggests that the original taxon *palluma* Molina can not be recognized as the type species of *Phymaturus* Gravenhorst, 1837, a genus of medium-sized iguanian lizards, established on the basis of a

specimen collected by the German settler Scholtz in the Andes of Chile, a locality unfortunately non-detailed in the Gravenhorst's (1837) study. That reported specimen corresponds to the description of *Centrura flagellifer* Bell, 1843, now designated as neotype of the type species of *Phymaturus* in the Opinion 2118 (Case 3225). The strength of such a designation can be put in evidence, being the most remarkable ruling of the Opinion. Lastly the designed neotype of the type species of an iguanian genus as *Phymaturus* is also an iguanian lizard as the specimen BMNH 1946.8.29.84. The poorly detailed Chilean locality of the Gravenhorst's specimen is moreover in suggestive accordance with the adult lizard collected by Darwin during his Andean field trip and concisely labelled "Chile" (Fig. 1).

We are thus in agreement with Ruling (1) of the Opinion, but however, we again insist in our discordance with the Ruling (2)a, (3)a, concerning the condition of *Lacerta palluma* as the type species of *Phymaturus* Gravenhorst 1837. The application of the promoters of Case 3225 could be justified being *Lacerta palluma* Molina, 1782, an ancient still taxonomically controversial species, but their strong pressure to conserve an artificial nomenclatural identity of iguanid taxon for a well defined ancient description of a big Teiid, from a very different reptilian line and family, sounds really astonishing and inexplicable.

The artificial and grotesque taxonomy of Daudin's (1802) work could be understood given his behavioural difficulties and the very limited information at his time. However, the information accumulated during the last two centuries suggests stronger supportive evidence when accepting old proposals. Evidently, in voting for the Case 3225, the 18 commissioners of the ICZN should neglect to take into account the previously commented taxonomic (not nomenclatural) situation for the discussed *Lacerta palluma* Molina 1782.

Concluding, while supporting the identity of the teiid *Lacerta palluma* Molina, 1782, a neotype *Phymaturus flagellifer* (Bell, 1843) can be proposed and accepted, bearing in mind the still unavailable specimen examined by Gravenhorst (1837) in his description of the genus *Phymaturus*, and as the first available specific name "*flagellifer*", from the designed taxon *Centrura flagellifer* Bell, 1843 given to the neotype BMNH 1946.8.29.84. *Phymaturus palluma* could likely be considered as a misidentified type species (art. 65.2 and 67.9 of the Code) to which the provisions of the art. 70.3 of the Code may apply.

In addition to the "*Vexata quaestio*" of the discussed nomenclatural status to be applied for the type species of *Phymaturus*, other puzzling problems still belong this such genus, considered as monotypic in the Catalogue of Peters and Donoso Barros (1970), but currently consisting by more than fifteen taxa distributed along the Andean and Patagonian ecosystems, between 28°S and 44°S approximately. At the moment, not only comparisons conducted on morphological traits play a fundamental role when structuring differential diagnosis at the species level, but also the analysis of karyological information represents a remarkable biological tool for purposes of classification in systematic herpetology. Thus, a number of interesting karyotipic data are available for comparative

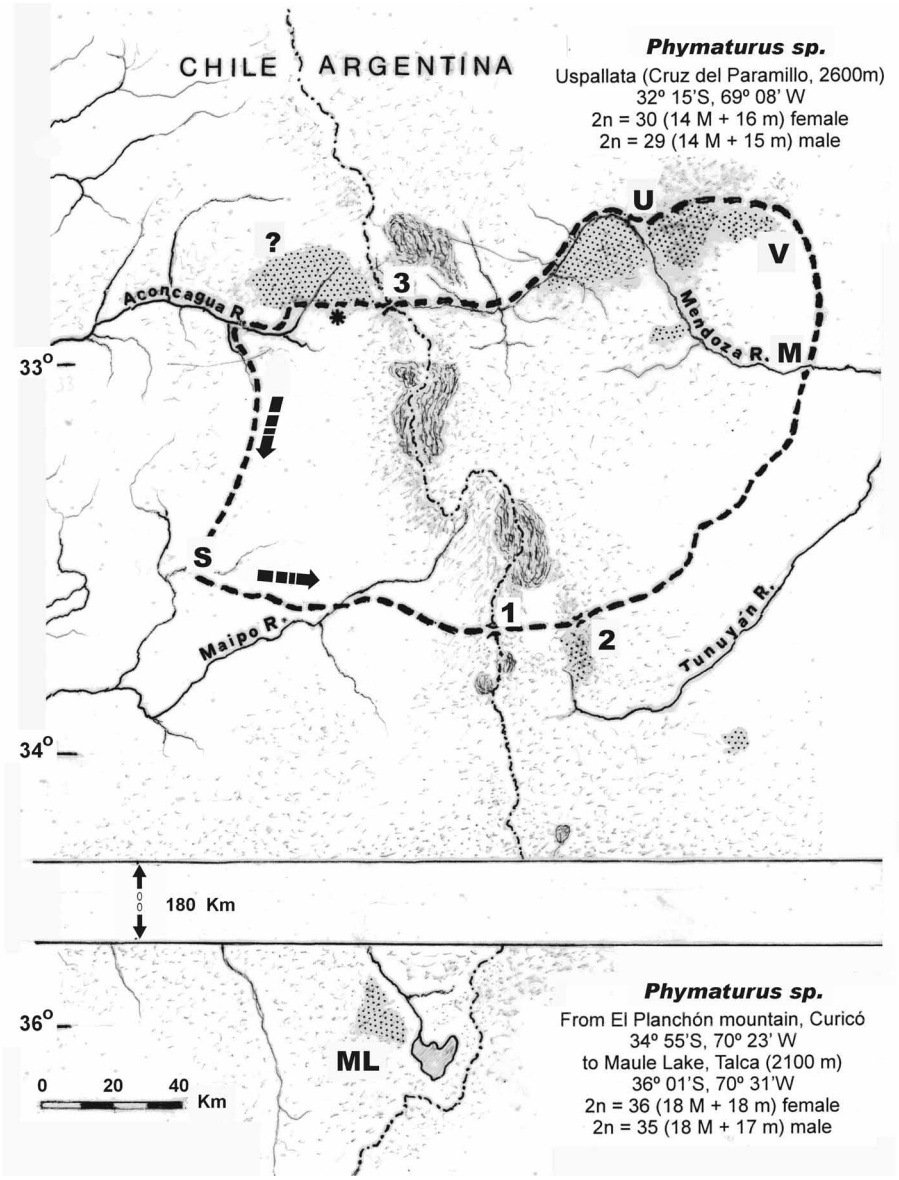

FIGURE 1. Draft of the historical Andean field trip conducted by Charles Darwin (1835) and his collection of the specimen BMNH 1946.8.29.84. labelled "Chile", now neotype of the type species of the iguanian genus *Phymaturus*. The probable collection area is indicated by an asterisk. Localities of the Darwin's itinerary are indicated in the map as: **S** = Santiago de Chile; **M** = Mendoza; **V** = Villavicencio Valley; **U** = Uspallata plateau; **1** = Piuquenes pass; **2** = Portillo Argentino pass; **3** = Las Cuevas pass. Along the Chile-Argentina frontier the major ice covered high embossments and glaciers are schematically reported. Localities where populations of *Phymaturus* have been found are tentatively indicated in the dotted spaces of the map. Records of unnamed species identified by morphological and karyological evidence are detailed for Uspallata highlands and for the Chilean mountain districts of Talca (**ML**), some hundreds of kilometres south of Santiago (shown by the cut in the map).

interspecific studies (Morando, 2005), in spite of the inevitable gaps hindering when general comparisons or relationships are carried out, as yet tentatively. Taking into account the above considered nomenclatural difficulties concerning the type species of the genus *Phymaturus*, the lack of some even preliminary information about their karyotypes must be pointed out.

The specimen collected by Darwin through his itinerary is labelled "Chile" but a simple look to a general draft of his cis-trans Andean overhauling (Fig 1) provides a general overview about the high variability of environments where *Phymaturus* populations occurred. Several references on karyotypes were given for Argentinean populations from Uspallata and Andean localities of Mendoza (Pereyra, 1991). In relation to the Chilean Andean slopes, very different karyological reports by Lamborot et al. (1984) are currently available, e.g. for the Maule region, about 220 km from Santiago southwards. Both samples have been suggested as belonging to the same species *Phymaturus palluma*, one photographically, by Etheridge and Savage in their Case 3225 (ICZN, 2003).

Additionally to the necessary development of studies based in the integrative comparison of morphological traits, detailed karyological research is still indispensable for the Chilean populations referred to the neotype of the type species of *Phymaturus* recognized in Ruling 1 of the Opinion 2118-ICZN (*Phymaturus flagellifer* in our proposal). If its karyotype is different from the karyotype observed in the Uspallata population, not officially named yet (2n = 30; 14M + 16m, female; 2n = 29; 14M + 15m, male), as well as from the karyotype of the southern Chilean population, as from Maule region (2n = 36; 18M + 18m, female; 2n = 35; 18M + 17m, male), both these populations must be recognized and described as new species. If the karyotype of the Chilean populations occurred in the zone where Darwin developed field work is identical to that of the Uspallata population, a cis-trans Andean taxon may be recognized, corresponding to the neotype of the type-species of the Gravenhorst's genus. We expect that such a step on systematic research on *Phymaturus* could be soon overtaken.

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