



Morphometric and morphological variation in *Myotis simus* Thomas (Chiroptera, Vespertilionidae), with an appraisal of the identity of *Myotis guaycuru* Proença based on the analysis of the type material

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Abstract

Twelve species are recognized in the South American bat genus *Myotis* Kaup (Vespertilionidae, Myotinae), with several nominal forms currently regarded as synonyms, among them *Myotis guaycuru* Proença, 1943. Its holotype, so far the only specimen assigned to the species, has not been examined in recent taxonomic reviews. To address the taxonomic status of *M. guaycuru*, we located and redescribed its holotype and compared it to representatives and/or descriptions of all South American species in the genus. Qualitative traits, namely the plagiopatagium attached at ankles, the short and wooly fur and the lingually displaced P3, unambiguously assign the holotype of *M. guaycuru* to *Myotis simus* Thomas (1901). The analysis of cranial variation and pelage color across a wide geographical range of *M. simus* reveals morphometric and morphological discontinuity between Bolivian and Amazonian/Peruvian samples, the latter including topotypes of *M. simus*. The holotype of *M. guaycuru* was found to be morphometrically and morphologically more similar to these Amazonian samples than to the geographically nearer Bolivian sample, preventing the use of this nominal form to refer to the Bolivian population if its distinction suggested by morphometric analyses is confirmed by the analyses of other character systems.

Key words: *Myotis*, Myotinae, taxonomy, synonymy, multivariate analyses, South America

Introduction

Based primarily on LaVal's (1973) revisionary work on Neotropical *Myotis* Kaup, 1829 (Vespertilionidae, Myotinae), Wilson (2008) has recently recognized 12 valid names to South American species. Several other proposed names have been regarded as synonyms, among them, *Myotis guaycuru*, described by Proença (1943) on the basis of one specimen collected in 1940 in Salobra, Paraguay Basin, Mato Grosso do Sul, Brazil (Travassos 1940). The taxonomic status of *M. guaycuru* was first questioned by LaVal (1973), who tentatively regarded this taxon as a probably senior synonym of *Myotis riparius* Handley, 1960. Subsequently, López-González *et al.* (2001) considered *Myotis guaycuru* a junior synonym of *Myotis simus* Thomas, 1901, an assignment followed by Wilson (2008). However, neither LaVal (1973) nor López-González *et al.* (2001) examined the holotype.

Myotis simus was described by Thomas (1901) based on one female specimen from Loreto, Peru. According to Thomas (1901) description, no recognized species resembles *M. simus* in external traits, the main diagnostic characters being the wings attached at the toes or at ankles by a narrow band of membrane and the very short fur (Baud and Menu 1993; López-González *et al.* 2001; López-González 2005). *Myotis riparius* was described by Handley (1960) for a series from Darien, Panama. It was originally proposed as a subspecies of *M. simus*, but was subsequently raised to the species level by LaVal (1973). *Myotis riparius* can be distinguished from *M. simus* by the attachment of its plagiopatagium to the base of the toes by a broad band of membrane, by its longer and generally bicolored fur, and by the P3 not crowded to the lingual side (LaVal 1973; López-González *et al.* 2001; López-González 2005).