



Description of two new species of *Rhinella* (Anura: Bufonidae) from the lowlands of the Guiana shield

ANTOINE FOUQUET^{1,5*}, PHILIPPE GAUCHER², MICHEL BLANC³, CLAUDIA M. VELEZ-RODRIGUEZ⁴

* Corresponding author: afo23@student.canterbury.ac.nz

¹ Molecular Ecology Laboratory, School of Biological Sciences, University of Canterbury, Private Bag 4800, Christchurch, New Zealand.

² CNRS-Guyane, UPS 2561, Résidence Le Relais, 16 avenue André Aron, 97300, Cayenne, Guyane Française

³ Pointe Maripa, RN2/PK35, 97311 Roura

⁴ J.J. Vallejos 1508B, San Miguel, Santiago, Chile

⁵ EA 3781 EGEE Evolution Genome Environment, Université de Provence, Centre St Charles, 3 place Victor Hugo, 13331 Marseille, France.

Abstract

The *Rhinella margaritifera* complex is characterized by the presence of many cryptic species throughout its wide distribution, ranging from Panama to Bolivia and almost entire Amazonia. French Guiana has long been thought to harbor two species of this group (*Rhinella margaritifera* and one unnamed species), though a recent survey using molecular data indicated as many as five lineages. At least three of these lineages do not appear to interbreed despite broad sympatry and thus could be easily regarded as distinct species according to both the biological and phylogenetic species concepts. We examined morphological variation of four of these lineages, along with acoustic data to determine whether these characters discriminate these groups. These analyses, combined with published data of other *Rhinella* species, indicated that two of these lineages represent previously unnamed species. Two of the remainings are allocable to *R. margaritifera* while the status of the fifth is still unclear because so far it is morphologically indistinguishable from *R. castaneotica*.

Key words: Systematics, discriminant analysis, morphology, vocalisation, *Rhinella martyi* sp. nov., *Rhinella lescurei* sp. nov.

Introduction

The *Rhinella margaritifera* complex is a group of bufonid toads supported by two morphological characters (Vélez-Rodríguez 2004), the depressor mandibulae muscle formed by two slips (the first originating on the posterior region of the otic ramus of the squamosal, and the second originating on the anterior region of the otic ramus of the squamosal and the annulus tympanicus), and the presence of a thickening on the ventrolateral border of the quadratojugal that can be seen as a process on the extreme forms. Frost *et al.* (2006) proposed to resurrect the name *Rhinella* (Fitzinger 1826) to group the species of this clade, previously referred to as *Bufo margaritifera* complex or group. In that study *Rhinella margaritifera* was found to be closer to the genus *Rhombophryne* than any other group of the Bufonidae. This clade includes 12 species: *R. acutirostris* (Spix), *R. alata* (Thomiot), *R. castaneotica* (Caldwell), *R. dapsilis* (Myers & Carvalho), *R. hoogmoedi* (Caramaschi & Pombal), *R. magnussoni* (Lima, Menin & de Araújo), *R. margaritifera* (Laurenti), *R. sclerocephala* (Mijares-Urrutia & Arends), *R. roqueana* (Melin), and numerous undescribed species, across its distribution, from Panama to northern Bolivia. *Rhinella stanlani* (Lötters & Köhler), *R. proboscidea* (Spix)