



## Molecular systematics of Malagasy poison frogs in the *Mantella betsileo* and *M. laevigata* species groups

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### Abstract

Malagasy poison frogs of the genus *Mantella* with its 16 species are currently sub-divided into 5 major groups. Of these, the *Mantella betsileo* group is traditionally understood as containing four species, *Mantella betsileo*, *M. expectata*, *M. viridis* and *M. manery*, while the *M. laevigata* group is considered to be monospecific. A phylogenetic analysis of samples from multiple localities of all species in these two groups, based on sequences of the mitochondrial cytochrome *b* gene, shows the existence of several well-distinct clades in what is currently considered to be *Mantella betsileo*: (1) central-western populations from Kirindy, Isalo, and near Antsirabe close to the Betsileo region, to which the name *M. betsileo* is to be applied, (2) populations of the north-east and north-west, which are closely related to *M. viridis* and to which the name *M. ebenau* is to be applied, and (3) a clade from southernmost Madagascar and from the Tsingy de Bemaraha, which is sister to *M. expectata* and furthermore includes important intra-clade variation, therefore probably representing one or two undescribed species. Our data also support a large genetic distance of *M. manery* to all other species and its probable sister-group relationship to the sympatric *M. laevigata*; *M. manery* is consequently transferred from the *M. betsileo* group to the *M. laevigata* group.

**Key words:** Anura, Mantellidae, *Mantella betsileo*, *Mantella ebenau*, *Mantella expectata*, *Mantella laevigata*, *Mantella manery*, *Mantella viridis*, Madagascar

### Introduction

Vis-à-vis of the world amphibian decline (Kiesecker *et al.* 2001; Pounds *et al.* 2006; Stuart *et al.* 2004), an increased knowledge on genetic data and their interpretations are needed for conservation purposes (e.g. Moritz & Faith 1998; Frankham *et al.* 2002; DeSalle & Amato 2004). Mainly due to fast deforestation, the amphibian biodiversity of the fourth largest island of the world, Madagascar, is heavily threatened (Andreone