



Phylogenetic position of *Dendropsophus gaucheri* (Lescure and Marty 2000) highlights the need for an in-depth investigation of the phylogenetic relationships of *Dendropsophus* (Anura: Hylidae)

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Abstract

Dendropsophus gaucheri is a recently described species which inhabits open areas of the eastern part of the Guiana Shield and is currently assigned to the *D. parviceps* species group based on the presence of a subocular cream spot. Herein we investigate its phylogenetic position including material from the type locality and newly documented populations from Suriname and Brazil based on mtDNA sequences. The species, as well as *D. riveroi* which is assigned to the *D. minimus* species group, were recovered nested within the *D. microcephalus* species group which implies the paraphyly of the three *Dendropsophus* species groups. Such result, along with other evidences, highlights the need for a thorough revision of the genus. The genetic distances among *D. gaucheri* samples studied are low confirming their conspecificity and suggesting recent connections among populations from open areas currently isolated by rainforest in the lowlands of the Guiana Shield.

Key words: Amazonia, *Dendropsophus parviceps* group; *Dendropsophus microcephalus* group; Distribution; Guiana Shield

Introduction

Dendropsophus gaucheri (Lescure & Marty 2000) is a small hylid known only from the type series (three males) from Sinnamary (5.374133, -52.951412), French Guiana (Lescure & Marty 2000) and by the recent report of nine specimens collected in ESEC Grão-Pará South (-0.165556, -55.186389), northern Pará, Brazil (Ávila-Pires *et al.* 2010).

The phylogenetic position of *D. gaucheri* remains enigmatic. In the original publication the authors stated that *D. gaucheri*, *D. luteoocellatus* (Roux 1927) and another small yet undescribed species of “*Hyla*” (“*Hyla* sp. 1” Lescure & Marty 2000); of French Guiana were part of the *D. luteoocellatus* group whose diagnostic characteristic was the presence of a subocular cream spot. However, Salducci *et al.* (2005) recovered “*Hyla* sp. 1” as allied to *D. minusculus* and *D. nanus*, two members of the *D. microcephalus* species group. As noted by Faivovich *et al.* (2005) the presence of a subocular cream spot is one of the diagnostic characters of the *D. parviceps* group as defined by Duellman (1970) and Duellman and Crump (1974). Therefore, Faivovich *et al.* (2005) retained *D. gaucheri* and *D. luteoocellatus* in the *D. parviceps* group. Nevertheless, the monophyly of the *D. parviceps* group is dubious according to Faivovich *et al.* (2005).

Wiens *et al.* (2006; 2010), Moen and Wiens (2009) and Pyron and Wiens (2011), using molecular data, found the *D. parviceps* species group to be in fact paraphyletic given species assigned to it grouped with various other species groups. To find some species previously assigned to *D. parviceps* species group in fact related to members