



Phylogenetic relationships within the genus *Cynanthus* (Aves: Trochilidae), with emphasis on *C. doubledayi*

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Abstract

We investigated the phylogeny of the genus *Cynanthus* and the taxonomic status of *C. doubledayi* using partial sequences of the mitochondrial DNA gene ND2 and three phylogenetic approaches: maximum parsimony, maximum likelihood, and Bayesian inference. Our results corroborate the monophyly of the genus and provide preliminary support for the validity of *C. doubledayi* as a full species (not a subspecies of *C. latirostris*, as traditionally considered). As an endemic of the coastal plain of southwestern Mexico, *C. doubledayi* corroborates the importance of this region for *in situ* speciation of birds and other taxa.

Key words: *Cynanthus doubledayi*, Species limits, Phylogeny, ND2 gene, Southwestern Mexico

Introduction

The hummingbird genus *Cynanthus* is currently composed of two species, the Broad-billed Hummingbird *C. latirostris* and the Dusky Hummingbird *C. sordidus* (AOU 1998), that are endemic to Mexico and the extreme southwestern United States (Fig. 1). Although the congeneric relationship of these two species has seldom been questioned, regardless of the genus to which they were assigned (e.g. Ridgway 1911), Navarro & Peterson (1999), based in morphological differences, suggested that two additional taxa deserve to be elevated to full species: *C. doubledayi* and the Tres Mariás Islands Hummingbird *C. lawrencei*, rather than being included as subspecies of the Broad-billed Hummingbird, along with *C. l. latirostris*, *C. l. magicus*, *C. l. toroi*, and *C. l. propinquus* (Peters 1945; Friedmann *et al.* 1950; Schuchmann 1999; Dickinson 2003).

Cynanthus l. doubledayi is endemic to the coastal plain of southwestern Mexico from western Guerrero, Oaxaca, and, probably, to the western part of Chiapas (Howell & Webb 1995; Navarro & Peterson 1999; Schuchmann 1999; Dickinson 2003). *C. l. doubledayi* is similar overall to nominate *C. l. latirostris* but the forehead of the male is iridescent turquoise blue, the throat is deeper violet-blue, the under parts are generally more blue and the under tail coverts are black (Montes de Oca 1875; Ridgway 1911; Berlioz 1937; Moore 1939; Howell & Webb 1995; Navarro & Peterson 1999; Schuchmann 1999). The taxon was originally described by Bourcier in 1847 as *Trochilus doubledayi* with an erroneous type locality of Chiantla, Puebla. Cory (1918) corrected the type locality to Guerrero, after which Navarro and Peterson (1999) restricted it to Acapulco. Following its description, subsequent authors assigned *doubledayi* to various genera such as *Iache*, *Circe*, or *Hylocharis* (Ridgway 1911). *Iache nitida* Salvin and Godman (1899, type locality Chinautla, Puebla,