



## Phylogenetic position of *Electrostrymon picoloro*, a new high elevation hairstreak from western Colombia (Lepidoptera: Lycaenidae: Eumaeini)

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### Abstract

The phylogenetic position of a new high-elevation butterfly species, which we describe as *Electrostrymon picoloro* Prieto & Robbins, **new species**, is assessed. The ventral wing pattern and genitalic structures of this species are unique among *Electrostrymon*. This species is also unique among *Electrostrymon* in that it occurs, so far as is known, only in habitats above 2800 m elevation. A phylogenetic analysis places this species in *Electrostrymon* as the sister of a multi-species clade. The ancestors of *E. picoloro* appear to have colonized its high elevation habitat relatively early in the phylogenetic history of *Electrostrymon*, but the species then did not recolonize lower elevation habitats nor did it diversify into other extant species.

**Key words:** butterfly, cloud forest, diversification, evolutionary stasis, Farallones de Cali, Pico de Loro

### Introduction

The widespread Neotropical butterfly genus *Electrostrymon* Clench (Lycaenidae: Eumaeini) occurs from the southern United States to southern Brazil, Paraguay, and Argentina, including the Antilles. It contains eleven described species and belongs to the Calycopidina, a subtribe of detritivorous hairstreaks (Duarte & Robbins 2010). The genus is characterized by genitalic structures and by orange-copper scales on the male dorsal surface of the wings, the latter character secondarily lost in three species (Duarte & Robbins 2010). Most *Electrostrymon* inhabit lowlands, but two described members of the autapomorphic *E. guzanta* (Schaus) species complex (sensu Duarte & Robbins 2010) differ from the remainder of the genus in that they occur in montane habitats from 1300 m to 2550 m elevation (Thompson & Robbins in prep.) and lack orange-copper scales on the dorsal surface of the wings in males. We discovered in western Colombia a species of *Electrostrymon* that occurs above 2800 m elevation and lacks male orange-copper scales. The Andes have been hypothesized to be an area of increased diversification rates (Hall 2005 and included references). The hypothesis tested by this paper is whether the new species plus the *E. guzanta* species complex represent a case of increased montane diversification. The purposes of this paper are to name the newly discovered *Electrostrymon* and to determine its phylogenetic position so that we can assess its evolutionary history.

### Material and methods

Terminology for genitalia and wing pattern follows Klots (1970), Robbins (1991), and Duarte & Robbins (2010). Genitalia were dissected according to standard techniques (Winter 2000). Terminology for wing veins follows Comstock (1918). Images of adults were taken with a Nikon Coolpix 4500 camera; images of genital structures were taken with an Olympus SZX9 stereomicroscope equipped with a Nikon DS-Fi1 digital camera. The new species description follows the rules of the ICZN (1999). The illustrated genitalia are from specimens marked with an asterisk (\*) in the materials examined section.