



Revised species definitions and nomenclature of the rose colored *Cithaerias* butterflies (Lepidoptera, Nymphalidae, Satyrinae)

CARLA M. PENZ¹, LAURA G. ALEXANDER² & PHILIP J. DEVRIES³

Department of Biological Sciences, University of New Orleans, 2000 Lakeshore Dr. New Orleans, LA 70148, USA.

E-mail: ¹cpenz@uno.edu; ²lgalexan@uno.edu; ³pdevries@uno.edu

Abstract

This study provides updated species definitions for five rose-colored *Cithaerias* butterflies, starting with a historical overview of their taxonomy. Given their mostly transparent wings, genitalia morphology yielded the most reliable characters for species definition and identification. Genitalic divergence is more pronounced when multiple species occur in sympatry than between parapatric taxa. *Cithaerias aurorina* is granted full species status, *C. cliftoni* is reinstated as a full species, and one new combination is proposed, i.e. *C. aurora tambopata*. Two new synonyms are proposed, *Callitaera phantoma* and *Callitaera aura* = *Cithaerias aurora*.

Key words: *pireta*, *menander*, *aurorina*, *cliftoni*, *aurora*, *aura*, *phantoma*, *pyritosa*

Introduction

Some of the most visually striking Neotropical butterflies belong to the genus *Cithaerias* Hübner (Satyrinae, Haeterini), which inhabit sea level to mid-elevation rainforests from Mexico through Central and South America. A characteristic of all *Cithaerias* species is their mostly transparent wings with the distal portions of the hind wing overlaid with partially lustrous rose, purple or blue scales. These butterflies glide through the understory along the forest floor (Alexander & DeVries 2012), and it is during flight that the hind wing colors are most conspicuous. Considered as a whole *Cithaerias* can be roughly divided into three color groups (based on similarity, not necessarily common ancestry). The list below is based on the checklist by Lamas (2004), but some of this nomenclature is revised here:

(1) blue group: small body size, includes the type species *C. andromeda andromeda* (Fabricius) and its subspecies *C. andromeda azurina* (J. Zikán), *C. andromeda bandusia* Staudinger, and *C. andromeda esmeralda* (Doubleday);

(2) purple/rose group: large body size, includes *C. pyropina pyropina* (Salvin & Godman), and its subspecies *C. pyropina songoana* (Langer);

(3) rose group: medium body-size, includes *C. pyritosa* (J. Zikán); *C. phantoma* (Fassl); plus *C. pireta pireta* (Stoll), and its subspecies *C. pireta aura* (Langer), *C. pireta aurora* (C. Felder & R. Felder), *C. pireta aurorina* (Weymer), *C. pireta magdalenensis* Constantino, and *C. pireta tambopata* Lamas.

Although they are well represented in collections, historically there has been considerable confusion with respect to species identification of the rose colored *Cithaerias*. This stems primarily from similarity among taxa, intra-specific variation in color patterns, lost type specimens (or corresponding dissections), and dubious or unreported type localities. This study seeks to clarify some of the confusion in several ways. First we use historical information and comparative morphology to demonstrate that *C. pireta* as currently defined (Lamas 2004) includes more than one species. Genitalia morphology provided the main character set for species delimitation, allowing us to identify intra-specific variation in wing color that helps explain difficulties in species identification. Second we provide illustrations, diagnoses and geographical distributions for each rose colored *Cithaerias* species, propose new synonyms, and illustrate female genitalia for the first time. We also discuss the importance of genitalia morphology and precise collecting locality for identification of these butterflies.

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