



A new *Orobrassolis* butterfly (Nymphalidae, Brassolini): a casualty of habitat destruction?

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Abstract

A new species of the brassoline genus *Orobrassolis* (Lepidoptera, Nymphalidae, Satyrinae) is described based on specimens collected in the early 1900's from the highland grasslands of Paraná, Brazil. The geological history of these highland grasslands suggests that they underwent climatic fluctuations, with warm climate periods leading to contraction and fragmentation. This fragmentation may have led to the isolation and divergence of southern *Orobrassolis* populations. Human impact to these areas may have led to the extinction of the species described here.

Key words: *campos de altitude*, Southern Brazil, Atlantic Forest, euphragma

Introduction

The process of recognizing and describing a new species includes the selection of a suitable genus to accommodate it. *Brassolis ornamentalis* Stichel, 1906 was described from a single specimen and, as noted in the original description, the type specimen has prosthetic antennae drawn with a rendition of *B. sophorae* (Linnaeus, 1758) antennae in the illustration that accompanied the text (see also Fig. 1). Although body size and narrow wings might have influenced generic placement, the wing color pattern of Stichel's (1906) new taxon was lighter and more ornate than *Brassolis*, hence the species name. Within Brassolini *ornamentalis* is distinctive and unmistakable, but it did not belong in *Brassolis*. Recognizing that *ornamentalis* has male abdominal scent organs, a gnathos, and well-developed female signa (structures that are absent in *Brassolis*), Casagrande (1982) appropriately removed *ornamentalis* from *Brassolis*, and described the monotypic genus *Orobrassolis* to accommodate it. Subsequently, Penz (2007) placed *Orobrassolis* as a sister genus to *Blepolenis*+*Opsiphanes*, a group that shares such male and female characters and well separated from *Brassolis*. Although the genitalia of *Orobrassolis* are closest to the *Opsiphanes*-group, its wing shape and color pattern are unique.

Monotypic genera have historically been erected to single out species that do not appear to fit elsewhere, and the members of Brassolini do not differ from other groups in this respect. The monotypic genera in Casagrande (2004) correspond to six species with unusual wing shape, color pattern, or apomorphic morphological characters. The phylogenetic analysis by Penz (2007) indicated that the single species in *Mimoblepia* fits within *Opoptera*, and that *Aponarope* is nested within *Narope*. The remaining monotypic genera, *Caligopsis*, *Penetes*, *Mielkella* and *Orobrassolis*, however, appear as isolated branches in the Brassolini tree (Penz 2007). Given these results we need to ask, do these genera truly hold a single species, or have we failed to identify cryptic, sibling species?

In the course of studying *Orobrassolis* it became apparent that it is not monotypic. The purpose of this paper is, therefore, to redescribe *Orobrassolis*, provide a diagnosis of *O. ornamentalis*, describe a new species of *Orobrassolis*, and discuss possible mechanisms of speciation and the potential extinction of the newly described species due to habitat destruction.