



Phylogeny of *Dynastor* and *Brassolis* butterflies (Lepidoptera: Nymphalidae): a tough nut to crack

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Abstract

This study examines the phylogenetic relationships among species of the butterfly genera *Dynastor* and *Brassolis* using 57 characters from adult morphology and wing coloration. We provide evidence for the monophyly of both genera. The relationships among *Dynastor* species are well resolved, but we were unable to find informative characters that could resolve the relationships inside *Brassolis*. We provide diagnoses for *Dynastor* and *Brassolis* and all species included in these genera, including illustrations that show geographical variation in wing color. The status of one subspecies is changed to species; *Brassolis dinizi* d'Almeida, 1956, **NEW STATUS**.

Key words: Brassolini, morphological homogeneity, *dinizi*

Introduction

The idea of a close association between *Brassolis* and *Dynastor* dates back to the early 20th century catalogues. The classification by Stichel (1904) listed *Brassolis* and *Dynastor* sequentially, and in works of that time this normally indicated either morphological or evolutionary affinities. Stichel (1925, 1932) revised his earlier classification and segregated *Brassolis* and *Penetes* into the subtribe Brassolidi, while *Dynastor* and eight other genera were included in the Caliginidi. Stichel's association of *Brassolis* and *Penetes* was based on wing color: species of both genera have a broad, colorful dorsal forewing postmedial band on a contrasting dark brown background, and the hindwing eyespots are small in *Brassolis* and absent in *Penetes* (the latter being unique within Brassolina *sensu* Casagrande 2004). Fruhstorfer (1912) did not follow Stichel's (1904) classification. Instead, he grouped *Brassolis*, *Dynastor* and *Penetes* under his Brassolininae based on a premature generalization that caterpillars in these three genera lack head scoli and caudae, which is true only for *Brassolis*. Casagrande (1995, 2004) included *Brassolis* and *Dynastor* (plus 13 other genera) within the subtribe Brassolina, but did not discuss their relationships. The study by Freitas & Brown (2004) indicated that *Brassolis* and *Dynastor* are closely related, although not sister taxa. Penz' (2007) analysis of Brassolini suggested that these two genera are sister taxa, and distantly related to the *Opsiphanes*-group, including *Penetes*.

Species of *Dynastor* are the only members of Brassolini known to use bromeliads (Bromeliaceae) as larval host plants (Penz *et al.* 1999 and references therein). Females lay eggs sparingly – 12 eggs in three days for captive *D. darius darius* (Fabricius) (Aiello & Silberglied 1978), and 42 eggs in six days for *D. darius stygianus* Butler (Romero *et al.* 2004). Caterpillars have well-developed head scoli and caudae, conforming to a characteristic brassoline morphology (Casagrande 1995). Adult *Dynastor* are crepuscular, and it is likely that these butterflies have a short lifespan; *D. darius* females lasted about one week in captivity (P. DeVries, C. Penz, unpubl. observations). The proboscis of *Dynastor* is typical of fruit-feeding butterflies (Krenn *et al.* 2001), and although rarely attracted to fruit-baited traps (e.g., Moss 1935, DeVries 1988) they have been