



## Apaturinae (Lepidoptera: Nymphalidae) from the Korean Peninsula: Synonymic Lists and Keys to Tribes, Genera and Species

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### Abstract

This paper provides keys to tribes, genera and species and synonymic lists for the 12 butterfly species belonging to eight genera of Apaturinae (Lepidoptera: Nymphalidae) from the Korean Peninsula: *Apatura ilia* (Denis and Schiffermüller), *Apatura metis* Freyer, *Apatura iris* (Linnaeus), *Hestina japonica* (Felder and Felder), *Hestina assimilis* (Linnaeus), *Sasakia charonda* (Hewitson), *Mimathyma schrenckii* (Ménétrières), *Mimathyma nycteis* (Ménétrières), *Sephisa princeps* (Fixsen), *Chitoria ulupi* (Doherty), *Dilipa fenestra* (Leech) and *Dichorragia nesimachus* (Doyère). Species accounts include brief summaries of each taxon's biology, taxonomy and life history. The distributional ranges of the *Hestina persimilis* species complex are discussed and illustrated.

**Key words:** taxonomy, Apaturini, Pseudergolini, *Hestina persimilis* species complex, biology, distribution

### Introduction

The Apaturinae is one of ten widely recognized subfamilies of the Nymphalidae (Lepidoptera: Papilionoidea) along with Libytheinae, Danainae, Morphinae, Satyrinae, Calinaginae, Heliconiinae, Limenitidinae, Charaxinae and Nymphalinae (Kristensen *et al.* 2007). The taxonomic position of the nymphalid tribe Pseudergolini has been the subject of much debate and has to date been placed in either Limenitidinae (cf. Bollow 1930) or an independent subfamily Pseudergolinae (cf. Chou 1994), depending on author. Recently, Wahlberg *et al.* (2003) classified Pseudergolini under Cyrestinae. However, Freitas and Brown Jr. (2004) placed Cyrestini, one of the two tribes of Cyrestinae, in Limenitidinae, leaving Pseudergolini with unclear affiliation. Later, in a molecular phylogenetic analysis of the Nymphalidae, Wahlberg *et al.* (2005) found that Pseudergolini is the sistergroup to Apaturinae. Indeed, Cyrestini seems to be an inappropriate sister group for the Pseudergolini because the two tribes apparently do not share synapomorphies. In general, the Cyrestini have thin bodies and comparatively large, delicate wings. The Pseudogerlini share significant morphological and ecological attributes (discussed below) with the butterflies in the Apaturinae, and therefore the Pseudogerlini are tentatively placed in the subfamily Apaturinae until its higher taxonomic position is determined by phylogenetic analyses.

The butterflies in the Apaturinae are strong fliers with robust bodies and comparatively short, tough wings. Adults are often seen feeding on decomposing organisms or fermenting sap flows. In many species, males are territorial and engage in “hilltopping”, darting after objects that pass through their territories. Morphological attributes common to Apaturinae include the following: vein  $R_4$  of forewing directly derived from costal vein; discal cells of forewing and hind wing open toward 4th apical cell (except for the tribe Pseudergolini and the genus *Dilipa* Moore, [1858] of the tribe Apaturini, which have a delicate vein between the bases of  $M_2$  and  $M_3$  in both wings) (Chou 1998); phallus and saccus of male genitalia usually long; aedeagus much longer than valve (Gorbunov 2001); saccus longer than tegumen plus uncus (Gorbunov 2001);