



A new hidden species of the *Cymothoe caenis*-complex (Lepidoptera: Nymphalidae) from western Africa

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Abstract

Butterflies of the Afrotropical genus *Cymothoe* are characterised by sexual dimorphism. Females of the most common species of the genus, *Cymothoe caenis* Drury, occur in many different forms in the equatorial zone, while only a single form is present west of the Niger Delta in Nigeria, raising the question as to whether the two populations need taxonomic recognition. We present molecular and genitalic evidence that the western populations of *C. caenis* s.l. comprise a distinct species: *Cymothoe druryi* **sp. nov.**

Key words: Biogeography, butterflies, classification, cryptic species, *Cymothoe druryi* **sp. nov.**, Dahomey Gap, DNA barcoding, Limenitidinae, morphology, mtDNA, Niger Delta, Nigeria, sexual dimorphism, taxonomy, west Africa

Introduction

The ‘Gliders’ (*Cymothoe* Hübner) are a large, entirely Afrotropical butterfly genus of 75 forest species (Ackery *et al.*, 1995; Aurivillius, 1912; Larsen, 2005). Members of the genus are strongly sexually dimorphic (Aurivillius, 1898, 1912) and especially the females can be morphologically variable within species (Aurivillius, 1898, 1912; Schultze, 1917).

The most common and widespread species of the genus is *Cymothoe caenis* Drury (1773), which penetrates open country more effectively than other species and is more at home in secondary habitats than in primary forest (Aurivillius, 1912; Berger, 1981; Larsen, 2005). The female of *C. caenis* is morphologically highly variable within the equatorial zone (Aurivillius, 1912; Birket-Smith, 1960; Larsen, 2005), and this led to the description of almost 20 infraspecific forms (Ackery *et al.*, 1995; Berger, 1981). Conversely, west of the Niger Delta in Nigeria *C. caenis* females are monomorphic, which led Larsen (2005) to hypothesise that this western population needs taxonomic recognition.

Here we present DNA and male genitalic evidence that the western populations of *C. caenis* s.l. constitute a distinct species. The data result from an ongoing genus-wide DNA barcoding project aimed at exploring cryptic species diversity (van Velzen *et al.*, 2007) and at developing DNA barcodes in order to associate immature and adult stages. We assess intra- and interspecific COI DNA sequence divergence of *C. caenis* s.l. and related species, and associate this with their biogeographical distributions, female morphological variation, and male genital differences. A description of *Cymothoe druryi* **sp. nov.** is given here, with prospects for future research on its genetic variation, morphology, biogeography and ecology.