Zootaxa 3198: 1–28 (2012)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Head Morphology of some Neotropical Hesperiidae (Lepidoptera)

EDUARDO CARNEIRO[1], OLAF H.H. MIELKE[2] & MIRNA M. CASAGRANDE[3]
Laboratório de Estudos de Lepidoptera Neotropical, Departamento de Zoologia, UFPR. Caixa Postal 19020, 81531-980 Curitiba, Paraná, Brasil. E-mail: [1]carneiroeduardo@hotmail.com; [2]omhesp@ufpr.br; [3]mibras@ufpr.br

Abstract

Using standardized dissection and observation methods, we describe and illustrate the external surface of the head and its appendices of four Neotropical Hesperiidae species classified in different subfamilies or tribes. Here we discuss the differential characters encountered in these species which appear to be capable of providing information for improving the classification of the family and its subgroups.

Key words: *head morphology; exoskeleton*, *Neotropica*l, *skippers*

Resumo

Utilizando técnicas tradicionais de dissecção, foi descrita e ilustrada a morfologia externa da cabeça e apêndices de quatro espécies de Hesperiidae neotropicais, classificadas em diferentes subfamílias ou tribos. São discutidos os caracteres diferenciais encontrados e sua capacidade em fornecer novas informações a fimde aprimorar a classificação da família e seus subgrupos.

Palavras-chave: morfologia da cabeça*;* exoesqueleto, neotropical, borboletas

Introduction

While molecular techniques and phylogenetic hypotheses have progressed, important morphological aspects of many zoological groups remain unexplored or neglected. Lepidoptera lack much of this kind of morphological information as the body is totally covered with scales, hiding the shape and/or presence of useful systematic characters (Kristensen 2003, 2007). This lack of knowledge is also mentioned as one of the reasons for the frequent changes in classification of groups belonging to this order (Heppner 1996). Additionally, the use of only molecular data in an attempt to establish butterfly relationships has been criticized for yielding trees that contain implausible clades strongly supported with high indices (Wahlberg *et al*. 2005). Likewise, phylogenies based only on molecular data also present weakly supported nodes in higher groups of the Lepidoptera, resulting in ambiguous conclusions (Regier *et al*. 2009).

The number of descriptive external morphology studies that illustrate Lepidoptera heads may still be considered small, due to the scarcity of studies in the majority of the families. Among the main studies, there are representatives of Heterobathmiidae (Kristensen 2003), Lophocoronidae (Nielsen & Kristensen 1979), Pyralidae (Camargo 1977), Tortricidae (Freeman 1947), Sphingidae (Eaton 1939; Madden 1944), Saturniidae (Michener 1952; Lemaire 1971; Camargo *et al*. 2005), Papilionidae (Srivastava 1957; Leite *et al*. 2010), Pieridae (Eassa 1963), Lycaenidae (Sorensen 1980; Duarte *et al*. 2001), Nymphalidae: Danainae (Ehrlich 1958a), Brassolinae (Casagrande 1979), Morphinae (Bilotta 1992), Ithomiinae (Bizarro *et al*. 2003), Charaxinae (C. Mielke *et al*. 2004; Dias et al. 2010) and Hesperiidae (Ehrlich 1960; Miller 1971).

Indicated as a sister-group of the Papilionoidea (Kristensen 1976; De Jong *et al*. 1996; Wahlberg *et al*. 2005), Hesperioidea presents some peculiarities which are responsible for being the least studied group among all butter-

Accepted by M.E. Toliver: 23 Dec. 2011; published: 20 Feb. 2012