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**Observations on the biology of Afrotropical Hesperiiidae
(Lepidoptera) principally from Kenya.
Part 3. Pyrginae: Celaenorrhinini**

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Abstract

Partial life histories for 15 species and two subspecies of Afrotropical *Celaenorrhinini* (Hesperiidae: Pyrginae) are described and illustrated: *Celaenorrhinus plagiatus* Berger, *C.* undescribed nr. *dargei* Berger, *C. proxima proxima* (Mabille), *C. proxima maesseni* Berger, *C. zanqua* Evans, *C. humbloti* (Mabille), *C. sanjeensis* Kielland, *C. galenus opalinus* Butler, *C. galenus biseriata* Butler, *C. handmani* Collins & Congdon, *Eretis umbra maculifera* Mabille & Boulet, *E. lugens* (Rogenhofer), *Sarangesa phidyle* (Walker), *S. motozi* (Wallengren), *S. haplopa* Swinhoe, *S. maculata* (Mabille) and *Triskelionia compacta* (Evans). The published information on other species of the tribe is summarised, and generalisations are made for the tribe in Africa. All species of *Celaenorrhinus*, *Eretis* and *Sarangesa* spp. reared to date use Acanthaceae as food plants, but *T. compacta* feeds on a Fabaceae and *Ortholexis hollandi* Druce feeds on an Apocynaceae. Three groups of *Celaenorrhinus* spp. are recognised based on their pupae: Group 1 having brown pupae with cephalic projections, Group 2 having green pupae, with no cephalic projections, and a very long proboscis sheath, and a third group based on published illustrations of the life history of *C. mokeezi* (Wallengren), in which the pupa is generally covered with white powder, and has just a short blunt frontal projection. *Loxolexis* Karsch is returned to synonymy with *Katreus* Watson, **stat.**

rev. and *Ortholexis* Karsh **stat rev.** is reinstated for the species which had been placed in *Loxolexis*: *O. holocausta* (Mabille) **comb. nov.**, *O. dimidia* (Holland) **comb. nov.** and *O. hollandi* Druce **comb. rev.**

Key words: *Ortholexis*, *Katreus*, *Loxolexis*, *Celaenorrhinus*, *Eretis*, *Sarangesa*, *Triskelionia*, food plant, life history, leaf shelter, parasitoid

Introduction

This is the third of a series of papers on the biology of Afrotropical HesperIIDae. Part 1 covered a general introduction and methods and the subfamily Coeliadinae (Cock 2010), while Part 2 covered the tribe Tagiadini of the Pyrginae (Cock & Congdon 2011) as established by Warren *et al.* (2008, 2009). In this paper we cover the second tribe of Pyrginae in Warren *et al.*'s classification: Celaenorrhinini. Coverage of the Pyrginae will be completed with Part 4 (Cock, in prep.), which will cover the tribe Carcharodini. Given the comprehensive introduction in Cock (2010), which was supplemented in Cock & Congdon (2011), we have no additional information to add at this point.

Material referred to as TCEC in this paper reflects the outputs of the Butterfly/Host Plant Research Programme which has run in Tanzania and neighbouring countries for over 20 years under the auspices of the African Butterfly Research Institute. The key researchers have been T.C.E. Congdon, I. Bampton (deceased May 2010) and S.C. Collins. TCEC did much of his rearing in collaboration with the late Ivan Bampton, and it is no longer possible to separate the efforts of these co-workers. However, TCEC did all the photography and writing up of what they reared together. Hence, reference to TCEC collections in this paper should automatically be considered to include Bampton. All material collected and reared under the ABRI programme is, or will be, deposited in the ABRI collection in Nairobi.

PYRGINAE: CELAENORRHININI

Warren *et al.* (2009) found that monophyly of Celaenorrhinini was strongly supported by their data, and its position as sister to Tagiadini + Pyrrhopygini receives good support. Their Celaenorrhinini includes “*Celaenorrhinus*, plus some of Evans’ *Tagiades* group (*Eretis*, *Sarangesa*), *Alenia* from Evans’ *Pyrgus* (*Gomalia*) group, and the supposedly monotypic *Pseudocoladenia* (formerly in *Coladenia*). In the current circumscription, Celaenorrhinini are African, other than American and Asian members of the pantropical *Celaenorrhinus*, two Asian species of *Sarangesa* (Evans 1949) and the Asian *Pseudocoladenia*”. Warren *et al.* (2009) also point out that “most authors have assumed a close relationship among the genera we place in Tagiadini and Celaenorrhinini, and more research is needed to elucidate their relationship to each other.” Our observations, particularly the food plant specialisation on Acanthaceae, offer significant support to the African members of this tribe being closely related to each other, rather than to the Tagiadini, which itself comprises two equally distinct groups (Cock & Congdon 2011).

Warren *et al.* (2009) did not identify any morphological synapomorphy for Celaenorrhinini. We had thought that the use of Acanthaceae as food plants might provide one, but found several exceptions to this. Nevertheless, at the moment, this food plant family unites three of the African genera, *Celaenorrhinus*, *Eretis* and *Sarangesa*, containing the majority of the African Celaenorrhinini.

The genus *Pseudocoladenia* Shirôzu & Saigusa is restricted to Asia. Observations and an excellent photographic record from Singapore show that the ovum and caterpillars of *P. dan dhyana* (Fruhstorfer) resemble those of *Celaenorrhinus* spp., the pupa differs in that although green with black spiracles (similar to *Celaenorrhinus* Group 2 below), it is also hairy unlike any *Celaenorrhinus* spp. so far known, and the food plant is *Cyathula prostrata* (Amaranthaceae) (Tan 2008). Plant species of this family are used by some *Staphylus* spp. (Pyrginae: Carcharodini) in the Neotropical Region (Cock 1996; Beccaloni *et al.* 2008), but otherwise they are seldom used as food plants by HesperIIDae.

In this paper we present partial life histories of eight species of *Celaenorrhinus*, two species of *Eretis*, four species of *Sarangesa* and one of *Triskelionia*, newly described, partly based on the observations reported here (Larsen & Congdon 2011). All the species reared by MJWC are noted to have very short, pale or translucent stellate setae on petioles on the body, although to the naked eye or using a hand lens, they may appear smooth. Equally, although the head capsules may appear smooth, they also have very small hair-like setae, which vary between genera and to