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A CONCISE OVERVIEW OF THE COLOMBIAN MEMBERS OF THE SUBTRIBE MESOSEMIINA STICHEL, 1910 (LEPIDOPTERA: RIODINIDAE)*

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Abstract

This article briefly considers some historical and taxonomic aspects of the members of the *Mesosemiina* (Lepidoptera: Riodinidae: Riodininae) subtribe in Colombia. The following genera are recorded for Colombia with the probable number of species found: *Eunogyra* Westwood, 1851 (2); *Leucochimona* Stichel, 1909 (5); *Mesophthalma* Westwood, 1851 (1); *Mesosemia* Hübner, 1819 (59), *Perophthalma* Westwood, 1851 (2), *Semomesia* Westwood, 1851 (4) and *Teratophthalma* Stichel, 1909 (5). *Eunogyra satyrus infernalis* Salazar & Constantino, a new subspecies originating from Santa Rosa – Rio Villalobos, Cauca, 1350 m is described.

Key words: Colombia, composition, *Mesosemiina*, Riodinidae, records, kinship, taxonomy.

CONCISA MIRADA A LA SUBTRIBU MESOSEMIINA STICHEL, 1910, EN COLOMBIA (LEPIDOPTERA: RIODINIDAE)

Resumen

En este artículo se consideran brevemente algunos aspectos históricos y taxonómicos de los miembros de la subtribu Mesosemiina en Colombia. Se registran para el país los siguientes géneros con su probable especiación: *Eunogyra* Westwood, 1851 (2); *Leucochimona* Stichel, 1909 (5); *Mesophthalma* Westewood, 1851 (1); *Mesosemia* Hübner, 1819 (59), *Perophthalma* Westwod, 1851 (2), *Semomesia* Westwood, 1851 (4) y *Teratophthalma* Stichel, 1909 (5). Se describe a *Eunogyra satyrus infernalis* Salazar & Constantino, nueva subespecie, procedente de Cauca, Santa Rosa- Río Villalobos, piedemonte este de la Cordillera Oriental de Colombia.

Palabras clave: Colombia, composición, Mesosemiina, Riodinidae, registros, parentesco, taxonomía.

INTRODUCTION

The family Riodinidae Grote, 1895, comprises small to medium sized butterflies, all brightly coloured, with a generalized pattern which is hiperdiverse in the group. There are a large amount of described species, representing some 140 genera, distributed worldwide but with the greatest diversity in the neotropics (ACKERY *et al*., 1999). In Colombia there are 1324 riodinid species represented by 126 genera placed in seven tribes and an *incertae sedis* group of twenty genera waiting for a proper taxonomic and systematic review (CALLAGHAN & LAMAS, 2004). Some of the taxa considered *incertae sedis* from a systematic point of view have been placed in the subtribe Napaeina by HALL (2003).

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Amongst the diverse riodinid groups the subtribe *Mesosemiina* is one of the most distinctive ones harboring the type genus *Mesosemia* Hübner, 1819, a conspicuous cluster of riodinids with 122 species known (LAMAS, 2003). This subtribe is represented by seven genera in Colombia, inhabiting both sides of the Andes and also lowland forest habitats. The present paper has the aim to provide some data to the knowledge of this subtribe (*sensu stricto*) focusing on taxonomy, diversity, relationships of the genera and species recorded in Colombia.

MATERIAL AND METHODS

Material containing voucher specimens was examined in various private and public collections listed in alphabetical order (for the public institutes I follow HEPPNER & LAMAS, 1982, in using acronyms they proposed):

ERH-C: Efraín R. Henao Collection, Villamaria, Caldas; GR-C: Gabriel Rodríguez collection, Envigado, Antioquia; JIV-C: José Ignacio Vargas collection, Villamaría, Caldas; JS-C: Julián Salazar collection, Manizales, Caldas; LMC-C: Luis Miguel Constantino collection, Cali, Valle; MHN-UC: Natural History Museum, Caldas University, Manizales, Caldas; ICN-MHN: Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá.

Genital dissections were prepared by L. Constantino after macerating and cleaning abdomens in hot 10% KOH solution. The organs were mounted in euparal on slides and examined under optical microscope.

Digital images of the adult specimens were taken by J. Salazar using cameras Nikon D-300, 12 megapixels and Canon power shot A470 of 7.1 megapixels.

The following literature were examined and information gathered concerning riodinids occurring in Colombia: GODMAN & SALVIN (1885), SEITZ (1916, 1924), STICHEL (1910, 1930) and the recent papers by HALL & WILLMOTT (1996), BREVIGNON & GALLARD (1997), DE VRIES (1997), HALL (1999) and HALL & HARVEY (2002).

HISTORICAL APPROACH

The nomenclatural history and taxonomy of the subtribe Mesosemiina was summarized in detail by HALL (2003, 2005) and HALL & HARVEY (2002) on the basis of the classification proposed by D. Harvey in his classic but unpublished PhD dissertation.

The taxon ***Mesosemiina*** was erected by H. Stichel in 1910 under the name "Semomesiina", belonging to the subfamily Riodininae (now as family Riodinidae, see LAMAS, 2008).

According to HALL (2005), a small cluster of genera possessing five forewing radial veins was recognized first as Eurybiini by REUTER (1896: 153-154) with *Eurybia* Illiger, 1850, as type genus. Reuter placed the genera *Mesosemia* Hübner and *Eunogyra* Westwood in the tribe *Mesosemiidi* (= *Mesosemiini* Bates, 1859). Reuter's classification was based on the examinations of palps and the sensory patches in

Eunogyra satyrus (Westwood) and two species of *Mesosemia* (*M. mevania* Hewitson and another species hid did not identify).

STICHEL (1930) transferred *Eunogyra* and *Mesosemia* with genera *Perophthalma* Westwood, *Mesophthalma* Westwood, *Leucochimona* and *Semomesia* Westwood to *Eurybiini*.

On the other hand SEITZ (1916) placed this cluster of genera in the "unterfamilia Erycinidae": *Eurybia*, *Mesosemia*, *Eunogyra*, *Diophthalma* H.-Schff., *Mesophthalma* and *Perophthalma* together with the Napaeina group + the remaining riodinid genera. Seitz in its treatment of the genus *Mesosemia* lumped the genus *Terathopthalma* Stichel in the IV group of species and characterized by the following combination of traits: central ocelli large and encircled by red, often angular, males without blue wing scalings. The same author transferred the species of *Leucochimona* into of the invalid genus *Diophthalma* Boisduval, 1836 (KIRBY, 1871: 288).

Recently Harvey (quoted by HALL, 2005) redefined *Eurybiini* to comprise only *Eurybia* and *Alesa* Doubleday, chiefly on the basis of Reuter`s original palpal character which does no occur elsewhere in the Riodinidae and the tentacle nectary organ present on larval abdominal segments, which otherwise common in the tribe Nymphidiini. Two papers of 1997 and authored by DE VRIES and BREVIGNON & GALLARD on the riodinid faunas of Costa Rica and French Guiana respectively also discussed *Mesosemiini*. De Vries comments that the tribe is distinguished by the presence of a silk girdle on the pupa that crosses the segment A2; male genitalia has a split base at the pedicel in the abdomen, the eyes hairy and tibial spurs absent in the legs. De Vries cited 130 species and placed them within five genera: the wide ranging *Perophthalma*, *Leucochimona* and *Mesosemia* plus the South American *Semomesia* and *Eunogyra*, but *Teratophthalma* was not cited by him because it does not reach Central America in distribution. In contrast Brevignon and Gallard recorded all of these genera for French Guiana and classified them in the *incertae sedis* group of Harvey (resolved subsequently by HALL 2003, 2005).

Several works of general interests also illustrated members of the subtribe using specimens deposited in renowned natural history museums around world (eg. LEWIS, 1975; SMART, 1976; VÉLEZ & SALAZAR, 1991; D`ABRERA, 1994, 2001; PIÑAS & MANZANO, 1997). Some of these books placed *Mesosemia* and *Semomesia* in the family Nemeobiidae, a younger subjective synonym of Riodiniidae, but the subfamily Nemeobiinae was also in usage (WATSON & WHALLEY, 1975) as well as the tribal name Nemeobiini (REUTER, 1896: 551). *Leucochimona* species were considered to be representing the genus *Mesosemia* by GODMAN & SALVIN (1885), but they treated separately *Mesosemia* and *Perophthalma* on the basis of characters provided by wing venation, forelegs, palpi and genital organs.

Today the modern treatments of *Mesosemiina* proposed by HALL & HARVEY (2002) and HALL (2003, 2005) remain the most important contributions so far offering a sound taxonomy of the subtribe. These papers together provide the most firm basis for future studies focused on these butterflies. Evidences were presented by the latter mentioned author for that the *Mesosemiina* cluster (*sensu stricto*) has characters that support the monophyly of the subtribal taxon (HALL, 2003).

COMPOSITION OF MESOSEMIINA

The subtribe Mesosemiina has the following synapomorphies representing characters present in adults (nos. 1-4), early stages (no. 6.) and larval hostplant references (no. 5.) as given by HALL (2003, 2005), based on Harvey's analysis:

1. - Eyes setosae (absent in *Eurybia*).
2. - Eyespot immediately before forewing discal cell end absent in *Eunogyra* and *Perophthalma?*).
3. - Multiple narrow bands on wings (absent in *Eunogyra* and *Teratophthalma*).
4. - Genital valvae in males triangular with 2 well separated and typically parallel posterior projections and narrow intervening section (absent in *Eunogyra* and *Teratophthalma*) (Fig. 8).
5. - Hostplants Rubiaceae, Solanaceae, Acanthaceae (DE VRIES *et al*., 1992), except *Eunogyra* in Araceae (BECCALONI *et al*., 2008).
6. - Silk girdle pupae in abdominal segment.

The following genera are placed in *Mesosemiina* on the basis of characters given by HALL (2003). The genera are listed in alphabetical order, nomenclatural details are taken from HEMMING (1967):

EUNOGYRA Westwood (1851), in Doubleday, *Gen. Diurn. Lep*., (2): pl. 72, fig 11. Type species by monotypy: *Eunogyra satyrus* Westwood (1851). Gen. Diurn. Lep., (2): pl 72, Fig. 11.

LEUCOCHIMONA Stichel, 1909, *Berl. Ent. Zeits*., 54 (3/ 4) : 273. Type species by original designation: *Papilio philemon* Cramer (1775). *Uitl. Pap*. 1(2): 35, pl. 22, figs. 6-7.

MESOPHTHALMA Westwood (1851), in Doubleday, *Gen. Diurn. Lep*., (2): 455. Type species by monotypy: *Mesosemia (Mesophthalma) idotea* Westwood (1851), in Dbl., Gen. Diurn Lep., (2): 355, nota.

MESOSEMIA Hubner (1819). *Ver. Bekkant Schmett*. (2): 21. Type species by selection of Scudder (1875). *Proc. Am. Ac. Arts Sci. Boston*, 10: 216, *Mesosemia philocles* Linnaeus (= *philoclessa*, name invalid).

PEROPHTHALMA Westwood (1851), in Doubleday, *Gen Diurn. Lep*., (2): 455. Type species by monotypy: *Mesosemia (Perophthalma) tenera* Westwood (1851), in Dbl. *ibid*., (2): 455 (as nominal species *Papilio tullius* Fabricius, 1787), *Mantissa Insect*., 2: 34.

SEMOMESIA Westwood (1851) in Doubleday. *Gen. Diurn. Lep*. (2): 455. Type species by selection of Scudder (1875). *Proc. Am Ac. Arts. Sci. Boston*, 10: 267, *Papilio croessus* Fabricius, 1777. *Gen. Insect*: 259.

TERATOPHTHALMA Stichel, 1909, *Berl. Ent. Zeits*. 54 (1/2): Type species by original designation: *Diophthalma phelina* C. & R. Felder, 1862. *Wien. Ent. Monats*., 6: 411.

(Some members of the genera of colombian *Mesosemiina* are showing in the Fig. 1)

Fig. 1 Some members in Mesosemiina subtribe (specimens from JS-C & MHN-UC)

A NOTE ON GENERIC RELATIONSHIPS

In relation with *Mesosemiina* genera indicated above HALL (2003) suggested that *Perophthalma*, *Mesophthalma*, *Leucochimona* and *Semomesia* raised from a common *Mesosemia* ancestor (Table I.) on the basis of the foreleg condition of STICHEL (1910), who proposed that Mesosemiina has a short and swollen femur on the male foreleg, a character, which is not so convincing in relation to the other genera. The *Mesosemia* adults have four branches in the subcostal venation of the primaries, two before and two beyond the end of the cell. The upper radial and the middle discocellular veins leave the subcostal vein at the same point, so that there is no upper discocellular. In genus *Perophthalma* the subcostal vein emits only three branches, two before and one beyond the end of the cell. The middle discocellular joins the upper radial vein some way beyond the junction of the latter with the subcostal so that there is a well defined upper discocellular. These differences were remarked by GODMAN & SALVIN (1885) for separate these two genera.

The most impressing evidences to support the monophyly of *Mesosemiina* are the medially sclerotized and ventrally split male genital pedicel and the setosae eyes present in all genera except in *Eunogyra*. GODMAN & SALVIN (1885: 451) considered to *Perophthalma* species an aberrant form of *Mesosemia* but the distinctive venation of the two genera were also recorded by these authors. In *Perophthalma* the male secondary organs are very like those of *Mesosemia* but inside the cavity of aedeagus there is an arrow of serrate papillae. Male *Mesosemiina* has an approximately triangular shaped genital valva with two well separated posterior projections running parallel, separated by the tegumen “in windows” in all genera. In the genera *Teratophthalma* and *Eunogyra,* which are considered as basal taxa, the saccus and the pedicel are ventrally split or medially desclerotized. This last

mentioned genus is particular because according to HALL & HARVEY (2002: 185) it possesses specialized androconial organ: the abdominal coremata, which is a pair of eversible tubes of membranous type only present in certain nymphalid subfamilies (*Danainae*, *Satyrinae* and *Morphinae*). Alar androconial organs are frequent in Riodinidae, and in *Mesosemiini* appear in some *Mesosemia* species, but in all male *Semomesia* members. This organ provides important characters and has systematic significance, as it helps the butterfly systematic for elucidating the relationships between the different tribes (HALL & WILLMOTT, 1996; PENZ & DE VRIES, 1999; HALL & HARVEY, 2002).

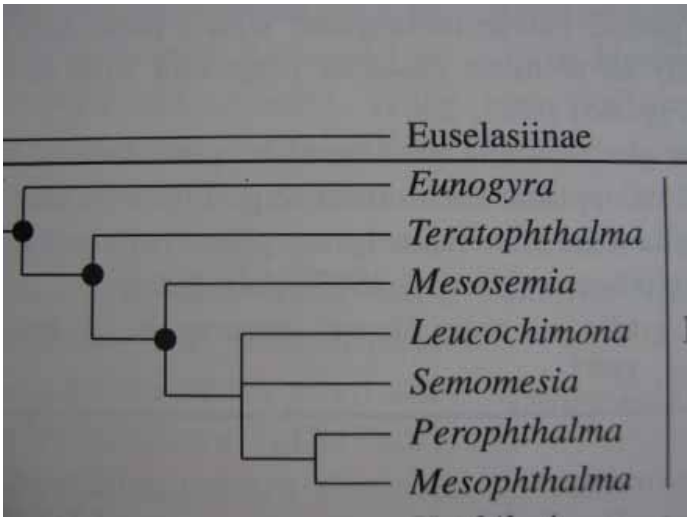

Table. 1 Relationships among genera of Mesosemiina (adapted from Hall 2005)

I reproduce in the Table I the generic-level relationships between *Mesosemiina* genera in the hypothetical phylogeny for the five radial veins tribes of the Riodinidae *sensu* HALL (2003, 2005). This is based on adult ecology and morphology (wing venation, male genitalia) as well as on early stages. Regarding wing pattern the genera *Mesosemia*, *Semomesia*, *Mesophthalma* and *Terathophtalma* are similar having an eyespot placed immediately in the forewing discal cell apex with several narrow bands on the dorsal wings surface common in *Mesosemia* and *Semomesia*, but in the enigmatic *Eunogyra* all of these are absent. The adult morphology and wing pattern in *Eunogyra* and *Teratophthalma* are atypical in comparison with *Mesosemia* and their behavior is also somewhat different (BROWN, 1993).

SPECIATION

In this subtribe six genera display low speciation what probably indicates a primitive lineage, *Eunogyra* (two species) and *Mesophthalma* (two species), *Perophthalma* (three species), *Teratophthalma* (five species), *Leucochimona* (nine species) and *Semomesia* (eight species).

In the contrary the high speciation of *Mesosemia* with 122 recorded species (LAMAS, 2004) suggests an Amazonian origin with rapid evolutionary development,

reflecting in successful radiations to Central America everywhere, including the isolated biogeographic region Chocó in Colombia and the Mata Atlantica in Brazil. The genus *Mesosemia* is the far well known group of the subtribe, and very well represented in entomological collections. It is widespread from sea level to middle elevations in the Andes (2600 m) and many regions of our country are very rich in species such as Napo (bordering Colombia, Ecuador and Peru) and Tambopata in Peru with 26 species; Jatun-Sacha, Ecuador or Putumayo zone in Colombia with 21 species (SALAZAR, 1995; LAMAS *et al.,* 1996a, 1996b, MURRAY, 1996) and 39 species for French Guiana (BREVIGNON & GALLARD, 1997). The genus is poorly represented in Southeasern Brazil (four-five species) (BROWN & FREITAS, 2000) or in western Ecuador (four species) (RAGUSO & GLOSTER, 1993).

Teratophthalma is restricted to the cloud forest habitats in the Andean region. The species have been recorded in the east slopes of the Oriental Cordillera but the Occidental Cordillera are poorly sampled, and there is evidence to suggest the existence of some undescribed species in montane or remote areas there.

MESOSEMIINA TAXA RECORDED IN COLOMBIA

Genus Eunogyra Westwood

Hitherto two species were known as representing the genus that inhabits the Amazonian lowland forest: *E. satyrus* Westwood, 1851, is common in the Amazonas river basin and *E. curupira* Bates, 1858, has been recorded in the Guianas. There is a newly discovered species that occurs in cloud forests of the eastern foothills of the Oriental Cordillera in Colombia described as follows:

Eunogyra satyrus infernalis Salazar & Constantino ssp. n. (Figs. 2-3)

Male: Forewing length: 18 mm (holotype), upperside entirely black with postmedial row of six black spots very little and insinuated in dark brown background; underside clear brown except with a tin black stripe restricted to medial area from M2 to 1A + 2a space, postmedial area only with one or two black translucent spots. Hindwing upperside entirely black without marks or spots; underside brown, basal area with curved thin black stripe from the costal to anal margin without postmedial row of little black spots (appears in satyrus). Body entirely black

Fig. 2-3 type male of Eunogyra satyrus infernalis ssp. n.

Genitalia: (Fig. 4) *Uncus* no slender and triangular as *satyrus* (Fig. 5), more heavy with terminal specula or nail (absent in *satyrus*); *tegumen* longer. *Gnathos*, *vinculum* and *aedeagus* similar to nominotypical species, *valvae* more excavate with terminal part slender.

Fig. 4 Genitalia of E. satyrus infernalis ssp.n.

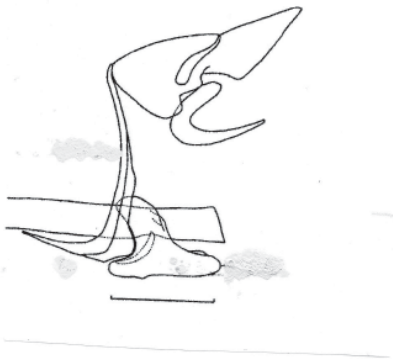

Fig. 5 Genitalia of E. satyrus (adapted from Hall, 2001)

Female: Unknown.

Etymology: The name is derived from the Latin word "***infernalis***" in reference to the avernus and the dark coloration of the wings.

Type material, Holotype: male, COLOMBIA, CAUCA: Santa Rosa-Río Villalobos (East slope), 1350 m., 3-III-1993, J. Salazar leg., deposited in the author collection. Paratype: male, (to be deposited in MHN-UC, Manizales) same data and location, J. Salazar leg. (CJS).

Distribution: The subspecies is very local in the premontane rain forest habitats and restricted to the eastern slopes of the Oriental Cordillera flying in deep forest after morning time activity, which is the typical behavior of *Eunogyra* species

(BROWN, 1993: 48). The only congeneric species recorded in Colombia is *E. satyrus*, a common butterfly that inhabits the entire Amazonian region (PINZÓN, 2008).

Diagnosis and Discussion: *E. s. infernalis* differs from the most similar congener *E. satyrus* Westwood, 1851 and *E. curupira* Bates, 1868 in general by having dorsal pattern entirely black and the postmedial spots of row is far less conspicuous. The *infernalis* upperside wingsurface is entirely black with postmedial row of six black spots very little and insinuated. These in *E. s. satyrus* are conspicuous each having yellow rings. Therefore the postmedial area in the underside surface has only one or two black translucent spots, while in *E. satyrus* there are all black spots evident and remarkable and this is the same for the medial stripe. The hindwing upperside is entirely black without markings or spots in *E. s. infernalis*, while in *E. satyrus* the postmedial row of black spots are manifested. The *E. s. infernalis* hindwing underside anal margin is without postmedial row of little black spots, but these appear in *E. satyrus*. The new subspecies was previously recorded as *E. satyrus* by SALAZAR (1995).

Genus Teratophthalma Stichel

In this genus five large species are known. Three of them are polytypic displaying many subspecies: *T. maenades* (Hewitson, 1858), *T. axilla* (Druce, 1904) and *T. phelina* (C. & R. Felder, 1862) (CALLAGHAN & LAMAS, 2004). According to BROWN (1993) the genus is a typical member of the Amazon Andean forest faunas being active in late morning time and having very low individual. There is a conspicuous sexual dimorphism amongst the known species.

Relatively high *Teratophthalma* diversity has been recorded in the Andean foothills of eastern and western slopes of the Colombian cordilleras. According to our observations no species of *Teratophthalma* has been caught in the Central Cordillera. The larval host plants or immature stages are unrecorded (see DÍAS, 1980).

Remarks on some previously described forms

The following species of *Teratophthalma* were recorded for Colombia by SEITZ (1916) and STICHEL (1930):

1. - The description of the taxon *phelina* (C. & R. Felder, 1862) was based on a single male specimen from "cordillerae bogotanae" (= eastern cordillera), caught by Lindig (FELDER, 1862: 411). The name *minima* was proposed subsequently by SEITZ (1916) on the basis of a small male individual from Villavicencio, Meta, which was in the material of Fassl. Is it an individual form, therefore not available, and seems to be close to *T. phelina analoga* of the same author. This taxon *analoga* is the Colombian subspecies (SEITZ, 1916) having minute pupilation in the forewing discal cell eyespot but the hindwing similar to that of *phelina*. The type locality is the upper Rio Negro, 800 m above sea level.

Records: CAUCA: Santa Rosa- Río Villalobos, 1350 m. META: Villavicencio-Bavaria, 500 m.

2. - The taxon *monochroma* Stichel, 1910 (Fig. 1) was recorded from "Brazil"? by CALLAGHAN & LAMAS (2004). Nevertheless SEITZ (1924, pl. 125a) and D`ABRERA (1994: 931) recorded another stil unnamed taxon taken in Peru under this name. It is characterized by a dark melanised wing surface with a row of seven white spots placed in the marginal area of the forewing and two or three lack marginal white spots of the hindwing. In the both wing ventral surfaces there are bright orange triangular patches or stripes.

Moreover the name of *nigrita* (Fig. 6a genitalia) was proposed by SALAZAR (1993) for a similar phenotype based on the holotype male taken in the slopes of the Western Cordillera, in cloud forest habitat. The dark melanised dorsal wing surface shape is entirely black without marginal white spots, and it seems to be identical with the type of *monochroma* STICHEL (1910). Consequently the two taxa are synonyms, and the name of Stichel has to be applied because it has priority (CALLAGHAN & LAMAS, *op. cit.*). The hitherto unknown female is illustrated in the plate of this paper (Fig. 1).

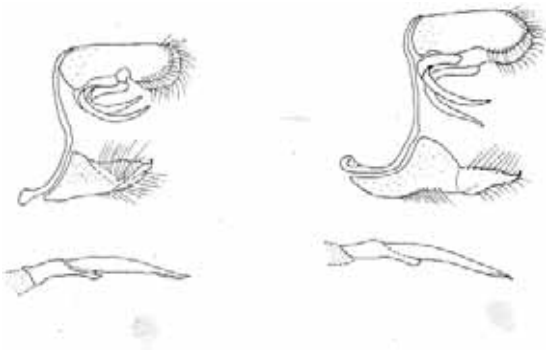

Fig. 6 Male genitalia of Teratophthalma species

Records: RISARALDA: San Antonio del Chami, Quebrada Sutu, 1800 m; Pueblo Rico- Reserva Karagabi, 2100 m.

3. - The taxon *maenades* Hewitson, 1858 (Figs. 1 male and female, 6b genitalia) was described from "Novelle Grenade" (= Colombia) (KIRBY, 1871). The collecting site is most probably was in the eastern slopes of the Cordilleras, because the species is known only from Cundinamarca and Meta (SALAZAR, 2004: as *marsena* Hewitson). However, FASSL (1918) recorded *maenades* to occur also in the western slopes of the same mountain chain. The species is rarely observed. Males perch 2-3 m above the ground in forest trails or occasionally came to feed sand containing urine (J. Vargas, *pers. comm.*). The typically patterned male has a wide medial white band on the upper side of the forewing but the female has *phelina* resembling wing pattern with pale white dorsal and ventral markings (Figs. 1 & 14 females).

Records: CAUCA: San Juan de Villalobos, 1350 m. CUNDINAMARCA: Chirajara-Guayabetal, 1200 m. HUILA: Palestina-Jerico, 2200 m. META: Villavicencio-Bavaria, 500 m.

4. - The enigmatical taxon *bacche* was described by SEITZ (1916: 639) as a subspecific form of *maenades*. The type "male" (Fig. 7) originates from the Western Cordillera of Colombia (Rio Aguacatal), and represents a distinct species. It differs from similar and allied *maenades* by the yellow-red illuminated markings and by the forewing upperside white stripe, which is short and reaches only the space between veins M3 and Cu1. The type specimen corresponds with *Teratophthalma* female phenotype, this it is most probably a female. For this species there is no recent record from Colombia.

Fig. 7 Type species of Th. bacche. Photo courtesy of G.Lamas

5. - The taxon *marsidia* Hewitson, 1869 has been known from Ecuador (KIRBY, 1871; CAMPOS, 1921), but it also inhabits the western slopes of the Occidental Cordillera, in cloud forest habitats and also occurs locally in the Chocó region. The species is high variable in wing pattern. The taxonomic status and relationships with other taxa representing the *maenades* group remains to be studied. I illustrate both sexes (Fig 1. male and female).

Records: CHOCÓ: San José del Palmar, 1700 m. NARIÑO: Reserva Natural La Planada, 1850 m. RISARALDA: Pueblo Rico and Santa Cecilia, 800-1900 m.

Genus Mesosemia Hübner

This is a "mega diverse" group of small riodinids with pronouncedly sexually dimorphic species. Today there are 122 recognized species which are placed in ten

groups by SEITZ (1916) based on Stichel`s previous works. The species of the groups IV and VIII have been transferred to the genera *Teratophthalma* and *Semomesia* respectively. The group is distributed from Mexico to Northern Argentina (LAMAS, 2003) and inhabits tropical rain forest from the sea level to the 2300-2600 m in the mountains. However, the largest diversity appears to be in the Amazonian region. D`ABRERA (1994: 903) gives general information on adult behavior writing that "they come forth only for a short time for the sake of copula and feeding. Then they perform jerky movements on the leaves, stretching the antennae straight forward placing the hindwings flat on the leaf and slightly raising the forewings. In this manner they hasten from one leaf to another, from one branch to another more jumping that flying" (Fig. 8-9).

Fig. 8 Male genitalia of Mesosemia ceropia (Druce)

Fig. 9 Male of Mesosemia mevania (Hew.)

In Colombia there are more then 59 recorded species (SALAZAR, RODRÍGUEZ & CONSTANTINO, in prep.).

Genus Semomesia Westwood

Semomesia, a genus allied to *Mesosemia* contains eight species. All the *Semosemia* males have androconial patches on the hindwings costa. The sexes strongly

dimorphic, the wing upper sides of all males are blue and the females are brown with bluish-white color. The genus has an Amazonian origin and the adult's behavior is similar to that of *Mesosemia*. According to BREVIGNON & GALLARD (1997), in French Guiana there are four species inhabiting humid hills at low altitude, and they are active between 8 am–3 pm. Some of the species perch 2-3 m above the ground in forest trails.

In Colombia the genus *Semomesia* is poorly known, there are very few specimens in collections. CALLAGHAN & LAMAS (2004: 146) cited *S. croesus lacrimosa* (Stichel, 1915) and *S. croesus trilineata* (Butler, 1874) as members of the Colombian fauna. Some additional records of *Semomesia* species were provided by FAGUA *et al*., (1999), SALAZAR *et al*., (2003) and PINZÓN (2008) listing the following species: *S. croesus* (Fabricius, 1777), *S. macaris* (Hewitson, 1859), S. *tenella* (Stichel, 1910) and *Semomesia* sp. All these taxa were recorded in the Amazonian region (Amazonas, Caquetá, Meta). Few colour illustrations are based on Colombian examples (VÉLEZ & SALAZAR, 1991; PINZÓN, 2008; and the Humboldt Gallery (H.N.), Villa de Leyva) (Fig. 10).

Fig. 10 Male of Semomesia capanea (Cr.)

Genus Leucochimona Stichel

This is a small genus of nine species distributed from Mexico, Central America to Nothern Argentina (LAMAS, 2003). The white wings are patterned by brown or grey stripes with characteristic ocelli in the ventral surfaces. In Colombia *Leucochimona* butterflies are seen in lowland humid forests of all regions up to 2200 m above sea level, although some species reach only 1400-1800 m in the coffee belt (Fig. 11).

Preliminary list of five species occurring in Colombia was provided by CALLAGHAN (1985): *L. lagora* (H-Schaff) occurs in six Colombian regions; *L. aequatorialis* (Seitz, 1913), *L. icare polita* (Stichel, 1910), *L. mathisca* (Hewitson, 1860) and *Leucochimona* sp., were recorded from the biogeographic region Chocó; *L. icare mathata* (Hewitson, 1873) was recorded for the eastern slopes of the Oriental Cordillera, but also from the Western Cordillera (ANDRADE, 2002). Of particular interest is the taxon *aequatorialis* considered by A. Seitz as a good species apparently from Ecuador. This species was figured in 1924 (pl. 126 e), but no descriptive text appeared in the

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fifth volume of the "Die Gross-Schmetterlinge der Erde, Amerikanischen Tagfalter" (SEITZ, 1913; LAMAS, 1995: 316). One male *L. aequatorialis* specimen taken in Colombia (Cachabe?) was illustrated by D'ABRERA (1994: 900). PINZÓN (2008) illustrated *L. icare* and *L. mathisca* from the lower Caquetá River and Apaporis-Amazonas.

For *L. philemon* (= *icare*) CONSTANTINO (1997) recorded *Palicourea* sp. and *Diodia* sp. (Rubiaceae) as hostplants in Colombia.

Fig. 11 Female of Leucochimona philemon (Cr.)

Genus Perophthalma Westwood

Three small and distinctive butterfly species are placed in *Perophthalma*: *P. tullius* (Fabricius, 1787), *P. lasus* (Westwood, 1851) and *P. lasciva* (Stichel, 1929). The type locality of the last mentioned species is in Colombia. Several regional listings contain *Perophthalma* species records for our country (ARIAS & HUERTAS, 2001; SALAZAR & VAAMONDE, 2002; SALAZAR *et al*., 2003). ANDRADE (2002: 172) recorded "P. lasus??" in the eastern slopes of the western Cordillera. CALLAGHAN (1985: 63) listed *P. tullius* for all natural regions of Colombia and indicated the occurrence of *P. tullius lasciva* only for the Chocó region.

Related with adult behavior GODMAN & SALVIN (1885) comments on *P. tullius* (= as *tenera* Ww.) that the species frequents sunny openings in the forest and sometimes to be seen in numbers in one little spot. The individuals rest on the uppersides of the leaves and have much the habit of *Mesosemia*. (Fig. 12).

DE VRIES (1997) recorded *Palicourea guianensis* (Rubiaceae) as a hostplants of *P. tullius* In Costa Rica.

Fig. 12 Male of Perophthalma tullius (F.)

Genus Mesophthalma Westwood

The genus has only one or two tiny species, restricted in distribution to tropical rain forests of the Amazonian drainage and the Guiana shield. The genus is close to *Mesosemia* in every respects but the small adult size and multistriped wings are diagnostic. CALLAGHAN & LAMAS (2004: 147) cited the taxon *mirita* Herrich-Schaeffer as an additional species from Surinam together with *M. idotea* Westwood, 1851. These taxa were considered to be synonymous by SEITZ (1916: 649).

According to BREVIGNON & GALLARD (1997) individuals of *Mesophthalma* are rare in nature. They observed *M. idotea* in deep forest between 3-4 p.m. flying low and close to the ground. In Colombia *M. idotea* is confined to the Amazonas region and several authors recorded the species to the Putumayo zone, Amazonas and the east slopes of Eastern Cordillera (SALAZAR, 1995; CALLAGHAN, 1985). More recently PINZÓN (2008) figured both sexes from the lower Caquetá and Apaporis River (Fig. 13).

Fig. 13 Male of Mesophthalma idotea (Ww)

Fig. 14 Female of Teratophthalma maenades (Hew.) (photo B. DAbrera)

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