

FOUR NEW SPECIES OF RIODINIDS FROM WESTERN ECUADOR (LEPIDOPTERA: RIODINIDAE)

KEITH R. WILLMOTT and JASON P. W. HALL

Dept. of Entomology and Nematology, University of Florida, Gainesville, Florida 32611, USA

ABSTRACT.— Four new species of Riodinidae in the genera *Theope* Doubleday, 1847, *Mesosemia* Hübner, [1819], and *Symmachia* Hübner, [1819], are named and described from western Ecuador, with additional observations on behavior.

KEY WORDS: behavior, *Calospila*, Central America, Colombia, Mesoamerica, *Mesosemia hazelae* n. sp., Neotropical, Panama, perching behavior, *Symmachia wiltoni* n. sp., Symmachiini, taxonomy, *Theope iani* n. sp., *Theope pepo* n. sp.



Fig. 1-2. La Punta, W. Ecuador: 1. View out over the canopy from the ridgetop site; 2. *Symmachia wiltoni* Willmott & Hall: male perching under a leaf.

The fauna of western Ecuador has clear affinities with southern Central America, but also has a number of endemic species, and others found only as far north as western Colombia. The first lepidopterists (de Mathan, Haensch, Flemming and Rosenberg) to collect in this area brought numerous new discoveries back to Europe around the turn of the century. This still constitutes a large percent of our knowledge. In more recent times collecting has been restricted mainly to the area just west of Quito, particularly the site of Tinalandia.

We have been working on the taxonomy and biogeography of the Ecuadorian fauna for the last two years, during which time we have discovered several new species, especially in the Riodinidae. The combination of comparatively little collecting and high degree of endemism in western Ecuador has made this an area of outstanding interest. A similar situation exists in the Choco region of western Colombia, where several new discoveries have also

recently been made in this remarkable family (Salazar, 1993; Salazar and Constantino, 1993). After consultation of relevant type material and original descriptions, we herein describe four new species of riodinid from western Ecuador. All these species may be easily identified by their distinctive external morphology, but drawings of genitalia are included for the sake of completeness.

Theope pepo Willmott & Hall, new sp.

Fig. 3a-c, 7a-b

Description.— MALE: forewing length 17mm. Forewing costa strongly bowed near base, hindwing elongated apically and rounded at the tornus. Recto: forewing ground color black; basal area purple extending from base midway to tornus, up to midpoint of M_3 , then back to the intersection of the costa and upper discocellular; purple fades to lustrous blue basally; thin purple stripe along distal margin from apex narrowing to-



Fig. 3-6. 3. *Theope pepo* Willmott & Hall: a) holotype ♂, recto surface; b) holotype ♂, verso surface; c) allotype ♀, recto surface. 4. *Theope iani* Willmott & Hall: a) holotype ♂, recto surface; b) holotype ♂, verso surface; c) allotype ♀, recto surface. 5. *Symmachia wiltoni* Willmott & Hall: a) holotype ♂, recto surface; b) holotype ♂, verso surface; c) allotype ♀, recto surface. 6. *Mesosemia hazelae* Willmott & Hall: a) holotype ♂, recto surface; b) holotype ♂, verso surface.

towards tornus, interrupted by black vein endings. Hindwing purple, fading to lustrous blue basally, costal margin black. Verso: both wings dark "pumpkin" orange, distal margins slightly darker, dorsal margin of forewing light brown. Labial palpi recto black, verso yellow. Eyes brown and bare. Antennae dark brown with white flecks, tip of club light brown. Thorax and abdomen recto dark grey, verso pale yellow. Genitalia (Fig. 7a-b): uncus short and setose; falces compact and rounded, valvae triangular, tips blunt; aedeagus long, pointed and flattened posteriorly.

FEMALE: forewing length 15mm. Similar to male except in the following respect. Recto: forewing basal area blue, not purple, meeting the dorsal margin more basally; distal margin lacks purple stripe. Hindwing blue, not purple, with a thin black distal border and black fringe of scales, orange at the apex.

Types.— *Holotype* ♂: ECUADOR.— Carchi Province, tributary of Río Mira, just west of Lita, 650m, 7 Jul 1994 (K. R. Willmott). *Allotype* ♀: same locality data as above (J. P. W. Hall). To be deposited in the Natural History Museum, London, England (BMNH).

Paratypes: 2 ♂ and 2 ♀, same data as above (1♂ and 1♀ deposited in the Pontificia Universidad Católica, Quito, Ecuador; 1♂ and 1♀ to be deposited in the Florida State Collection of Arthropods, Gainesville, Florida, USA (FSCA)).

Diagnosis.— The male is distinguished from all other species in the *Theope pedias* group by the purple marginal border on the forewing recto and the dark "pumpkin" orange verso surface.

Etymology.— This species is named for its distinctive verso coloration, after the Latin for pumpkin.

Discussion.— The female recto blue coloration is quite variable, extending distally towards the margin between cell M_3 - Cu_1 in

some specimens.

The first specimen collected by us was a female at Tinalandia, feeding on a flowering bush around midday. Subsequently a large population was discovered along the banks of a tributary of the Río Mira, near Lita. Both males and females were found feeding on a large flowering tree by the river. Several males could be found perching on another tree on the opposite bank, from which they would make sorties out over the river. Callaghan (1983) followed Scott ([1976]) in defining perching behavior as "males resting at characteristic sites and investigating passing objects by flying out at them in search of females". It is possible that this perching site was established here due to the proximity of the flowering tree, which provided an abundant nectar source for females. Indeed, a male and female were found in *copulo* on the underside of a leaf on the "perching bush". This clarifies the status of five *Theope* specimens figured by D'Abrera (1994, p. 995), curated in the BMNH. These represent two distinct species, one of which is described here as *T. pepo* n. sp. The two specimens figured as *Theope?* sp., male, recto and verso are actually *T. pepo* females. The two specimens figured as *Theope?* sp., female, recto and verso represent an unnamed taxon, from eastern Ecuador, to be described by the authors in the near future. The second *Theope* sp., male, recto is *T. pepo*, male. In total there are five females in the BMNH, which bear the locality data "La Chima" and "Paramba". The male is also from "La Chima". All of these are localities on the western slopes of the Andes between 300m and 900m. In addition, a single unidentified fe-

