

FIVE NEW SPECIES AND A NEW GENUS OF RIODINID FROM THE CLOUD FORESTS OF EASTERN ECUADOR (LEPIDOPTERA: RIODINIDAE)

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ABSTRACT.— The new genus *Machaya* is described, in addition to five new species in the genera *Anteros* Hübner, [1819], *Euselasia* Hübner, [1819], *Menander* Hemming, 1939, *Symmachia* Hübner, [1819], and *Machaya* n. gen. All of these taxa were discovered in cloud forest habitats in eastern Ecuador.

KEY WORDS: *Adelotypa*, *Anteros nubosus* n. sp., aphytophagy, *Apodemia*, *Argyrogrammana*, *Astraeodes*, bait trapping, Bolivia, *Calliona*, *Callistium*, *Calospila*, *Calydna*, Charitini, Colombia, *Dianesia*, *Dinoplotis*, *Echenais*, *Emesis*, *Esthemopsis*, Eurybiini, *Euselasia chinguala* n. sp., Helicopini, hilltopping, *Imelda*, Lemoniini, Lycaenidae, *Machaya* n. gen., *Machaya obstinata* n. sp., *Menander aldsi* n. sp., Mesosemiini, myrmecophily, Neotropical, Nymphidiini, *Pachythone*, *Pandemos*, perching behavior, *Pixus*, Riodinini, *Roerberella*, *Setabis*, Stalachtini, *Symmachia fassli* n. sp., *Symmachiini*, *Zabuella*.

The cloud forests of the eastern Andes are the wettest areas in the entire Amazon basin (Simpson and Haffer, 1978), and for the most part are confined to steep and rugged terrain. Access is limited to the few valleys where roads or trails are carved through the mountains, and during a three hour descent by car from páramo to lowland rain forest, one passes through the mid-altitude cloud forest habitats (1200-1700m) in a mere thirty minutes. This zone also provides a prime environment for agriculture, and in most cases the primary habitat has been cleared or degraded along these arteries. Even when these areas were pristine, many of the pioneering entomologists during the last century paused only briefly before hurrying down to the fabled biological riches of the lowlands. Many mid-altitude riodinid species are still only known from the type specimens collected by these early explorers, while others remain extremely rare in collections to this day. Thus these cloud forests offer unusual opportunities for the discovery of new taxa (Salazar and Constantino, 1993; Salazar, 1993; Hall and Willmott, 1995). In this paper we present descriptions of five new species and a new genus of riodinid from these fascinating and relatively poorly known habitats.

***Anteros nubosus* Hall & Willmott, new sp.**

Fig. 1a-d; 6

Description.— MALE: forewing length 17mm. *Recto*: forewing ground color black; white patch extending from postbasal to postdiscal area between 1A, Cu₁ and edge of cell. Hindwing ground color black with white costal margin; very faint white scaling between anal margin and M₃, outer margin black; fringe black from tornus to end of vein Cu₁, produced into small "tails" at tornus and ends of veins Cu₂ and Cu₁; fringe white from end of vein Cu₁ to apex. *Verso*: forewing ground color yellow-cream; outer margin fringe black; anal margin black; submarginal

yellow line bordered distally with gold and proximally with black, ending in a tornal black spot; very pale cream patch extending from postbasal to postdiscal area between 1A, Cu₁ and edge of cell; dark red postdiscal spot in space Cu₁, with central gold spot; dark red bar at cell end with four small distal gold spots, in spaces M₃ and M₂; costal edge black at cell end; dark red postbasal bar within cell, black at costa, bordered distally and proximally with gold. Hindwing ground color yellow-cream, outer margin fringe same as recto; yellow submarginal line bordered distally with gold and proximally with black; dark red, "n-shaped" marking at end of cell, between M₃ and Rs; four gold spots, basal two fused at end of cell and two distally in M₃ and M₂; dark red "n-shaped" marking at base of hindwing, with gold spot at distal edge; discal dark red spot in 1A and black spot at anal margin, both with basal edge gold. Labial palpi and frons yellow. Eyes brown and hairy. Antennae white with two longitudinal black stripes, recto and verso, and ringed with thin black stripes, black clubs. Thorax and abdomen recto black, verso black, with yellow hairs around tip of abdomen. Forelegs yellow, middle and hindlegs with black femur, yellow tibia, yellow tarsi with long black hairs and black tip. Genitalia (Fig. 6): valvae bifurcate, falci elongate.

FEMALE: forewing length unknown. *Recto*: forewing as in male. Hindwing as in male except white between anal margin and M₃, outer margin black. *Verso*: forewing and hindwing as in male, except for heavier dark red and gold markings. Labial palpi, frons, eyes, antennae (clubs missing), thorax, abdomen and legs as in male.

Types.— *Holotype* ♂: ECUADOR.— Tungurahua Prov., Río Machay, 1700m, 4 Feb 95 (K. R. Willmott). To be deposited in the Natural History Museum, London, England (BMNH).

Allotype ♀: "Ecuador." In the BMNH.

Etymology.— This species is named after the Spanish for "cloudy," in reference to the characteristic weather conditions at Río Machay.

Diagnosis.— This species is most similar to *A. formosus* (Cramer, [1777]) and *A. cruentatus* Stichel (1911), but is readily distinguished by the large white patch on the forewing recto, and the

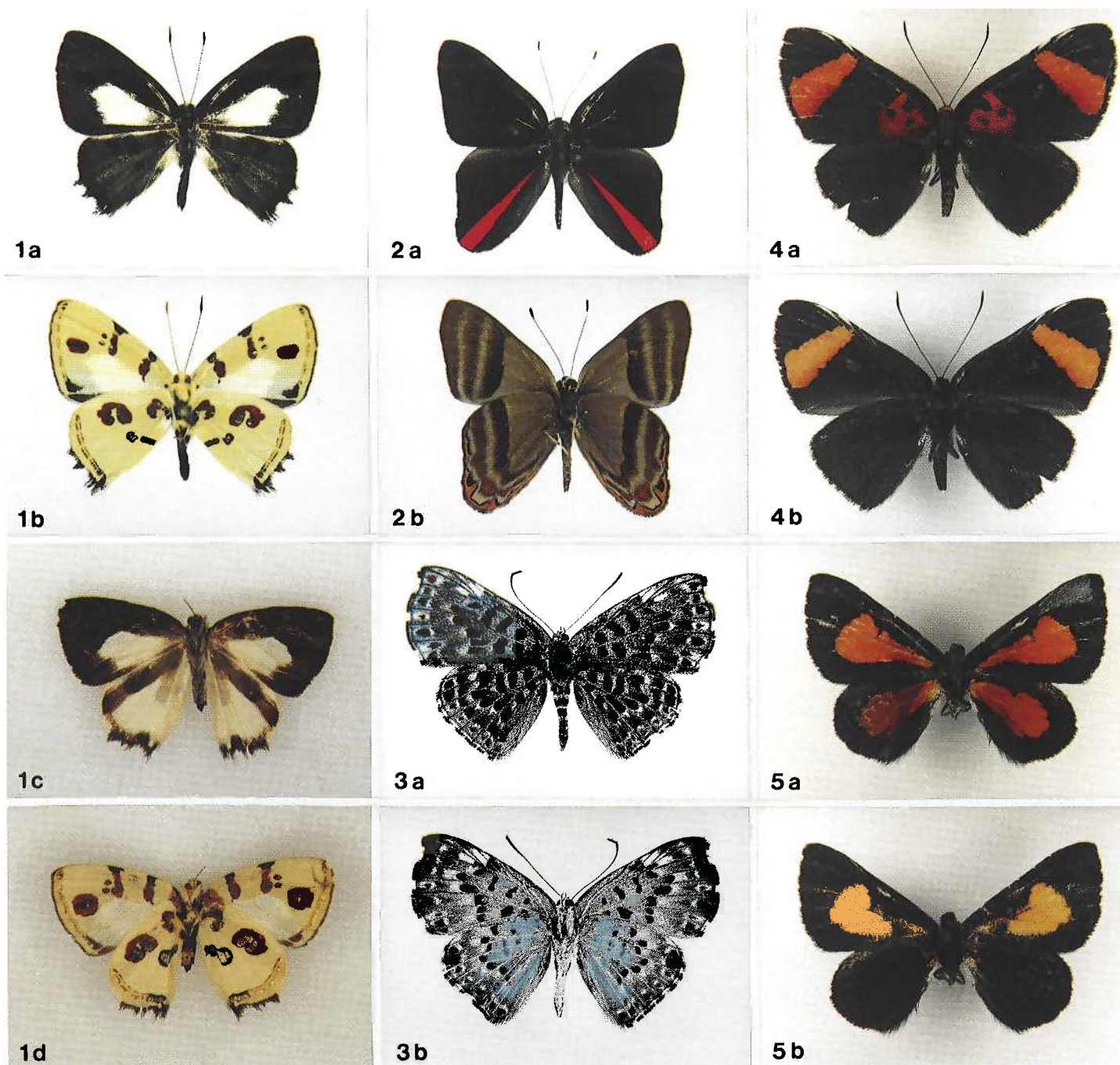


Fig. 1-5. Type specimens: 1. *Anteros nubosus* Hall & Willmott, holotype male: a) recto; b) verso. Allotype female: c) recto; d) verso. 2. *Euselasia chinguala* Hall & Willmott, holotype male: a) recto; b) verso. 3. *Menander aldasi* Hall & Willmott, holotype male: a) recto; b) verso. 4. *Symmachia fassli* Hall & Willmott, holotype male: a) recto; b) verso. 5. *Machaya obstinata* Hall & Willmott, holotype male: a) recto; b) verso.

lack of any red postdiscal markings in Cu_2 and Cu_1 on the hindwing verso. Also the postdiscal red and gold patch on the hindwing verso is "n-shaped," rather than compact and round. The genitalia of *A. formosus* differs from *A. nubosus* n. sp. in having shorter falci and a bifurcate upper projection of the valvae, which is only two-thirds the length of the lower projection. *A. formosus* is a widespread lowland forest species, while *A. cruentatus* is known only from mid-altitude sites from west Ecuador to west Colombia.

Discussion.— During the course of our research on the Ecuadorian butterfly fauna, we noticed two distinctive female *Anteros* specimens in the BMNH, filed as "female forma nov.?" under *A.*

formosus. Both were simply labelled "Ecuador." Subsequently on a visit to Ecuador we captured a male specimen with an identical verso pattern to these two females, enabling us to confirm that this was not a form of *A. formosus* but in fact an undescribed species. The male was attracted to a trap baited with rotting fish hung in the canopy along the riverside path at Río Machay, at around 1500h.

In addition to the specimens we have seen from Ecuador, there is an *Anteros* specimen figured as "*Anteros* sp." in Vélez and Salazar (1991: 120), which appears to be a female *A. nubosus* (although the verso surface is not illustrated), indicating the possible presence of this species in Colombia.

