

# HESPERIIDAE OF CENTRAL RONDÔNIA, BRAZIL: COMMENTS ON *HAEMACTIS*, WITH DESCRIPTION OF A NEW SPECIES (LEPIDOPTERA: HESPERIIDAE: PYRGINAE)

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**ABSTRACT.**— The two known species of *Haemactis* (Hesperiidae: Pyrginae) are discussed and their male genitalia illustrated. A new species is described from western Brazil. A key to males is given.

**KEY WORDS:** Bolivia, Brazil, Colombia, distribution, Ecuador, *Haemactis albamarita* n. sp., Neotropical, Panama, Peru, taxonomy.

*Haemactis* was proposed by Mabille (1903) for a distinctive black and red Neotropical pyrgine skipper, *Hesperia sanguinalis* Westwood (1852). Subsequently, Lindsey (1919) described *Haemactis pyrrhosphanus*, known from northern Colombia. A species of *Haemactis* from central Rondônia, Brazil was identified as *H. sanguinalis* and given no further thought until its very distinct female was seen. This did not correspond to the diagnoses (Evans, 1953) for either known species. Dissection of the male genitalia of the Rondônia population indicated differences from Evans' (1953) illustration for *H. sanguinalis*. This prompted a reexamination of the species in the genus.

The male genitalia of *Haemactis* are distinctive. The tegumen is bulbous. The uncus, which with the gnathos appears as an open "bird's beak" in side view, has a pair of lateral arms slightly longer than a pair of terminally expanded central arms. The valva is relatively broad with an upturned and finely dentate harpe. The penis has a prominent caudal extension of its right side.

## *Haemactis sanguinalis* (Westwood)

(Fig. 1-2 ♂, 3 ♂ genitalia)

*Hesperia sanguinalis* Westwood, 1852

*Haemactis sanguinalis* (Westwood, 1852); Mabille, 1903; Evans, 1953.

**Diagnosis.**— *Haemactis* have a characteristic irregular wing shape. On *H. sanguinalis*, the forewing termen is slightly concave anterior to vein  $M_3$ , broadly convex between  $M_3$  and  $CuA_2$ , and slightly concave again between  $CuA_2$  and 2A. The hindwing termen is convex and strongly produced at  $M_1$  (where it is considerably longer than the forewing anal margin), slightly concave between  $M_1$  and  $M_3$ , convex between  $M_3$  and  $CuA_2$ , slightly concave between  $CuA_2$  and 2A, and slightly convex to the tornus. The dorsum is black with bright red (near Scarlet in Smithe, 1975) markings along the outer margins of both wings and the forewing costal margin. The subapical macules are usually a paler yellow-orange. These markings are much reduced on the venter. The forewing has no (or a trace at the tornus) marginal red, a square macule at the apex, subapical macules as on the dorsum, and a mid costal bar. The hindwing margin retains the marginal marks but these grade into pale

brown proximad. This color often extends to the base of the wing posterior to the anterior edge of the discal cell and is conspicuously crossed by black veins.

Evans' (1953) illustration of the male genitalia is misleading. The form shown for the harpe is more-or-less factual but he indicated long, thin, and curved lateral processes on the uncus. These are relatively short and blunt on the ten specimens examined including a specimen labeled as the type (see below).

**Specimens examined.**— BOLIVIA: San Mateo (no date). ECUADOR: Oriente; Puyo, 1000m (Mar), Sadzayacu (Apr). PERU: Iquitos, Rio Cachiaco (no date), Pozuzo, 800m (no date), Upper Marañon, Rentema Falls, 1000' (no date), Chaquimayo, 2500' (Apr), Huanuco; Pozuzu [sic], 800-1000m (no date), Loreto; Boqueron Abad (Mar). Evans (1953) gave additional locations for Ecuador, Peru, and the Upper Amazons plus Colombia.

**Lectotype.**— A male at the Natural History Museum, London, has the following labels: white, printed and handprinted - Ecuador. / Hewitson Coll. / 79[unreadable numeral due to pin hole]9. / Helias 2. / Sanguinalis.; white, handprinted - Sanguinalis / J[?] D L.; round, white, handprinted - H / 830; round, white, handprinted - ? type / Sanguin / alis / Hew.; round, yellow, handprinted - 736; two, round, white with red margin, printed - Type; white, printed small label affixed to upper left corner - Equa; white, printed and handprinted - Genitalia Vial / GTA - 3400. Because of its labels, I assume this is a syntype of *Hesperia sanguinalis* Westwood, 1852 and here designated as the lectotype of this species, with the following label added: red, printed - LECTOTYPE / *Hesperia sanguinalis* / Westwood 1852 / identified by G. T. Austin 1994.

The specimen illustrated in Lewis (1973) is a typical *H. sanguinalis*.

## *Haemactis pyrrhosphanes* Lindsey

(Fig. 1-2 ♂, 4 ♂ genitalia)

*Haemactis pyrrhosphanes* Lindsey, 1919

**Diagnosis.**— This species is slightly larger than *H. sanguinalis* and has nearly identical wing shapes and dorsal surface. The ventral hindwing, especially the posterior half, of *H. pyrrhosphanes* is heavily overscaled with whitish giving this wing a very pale aspect.



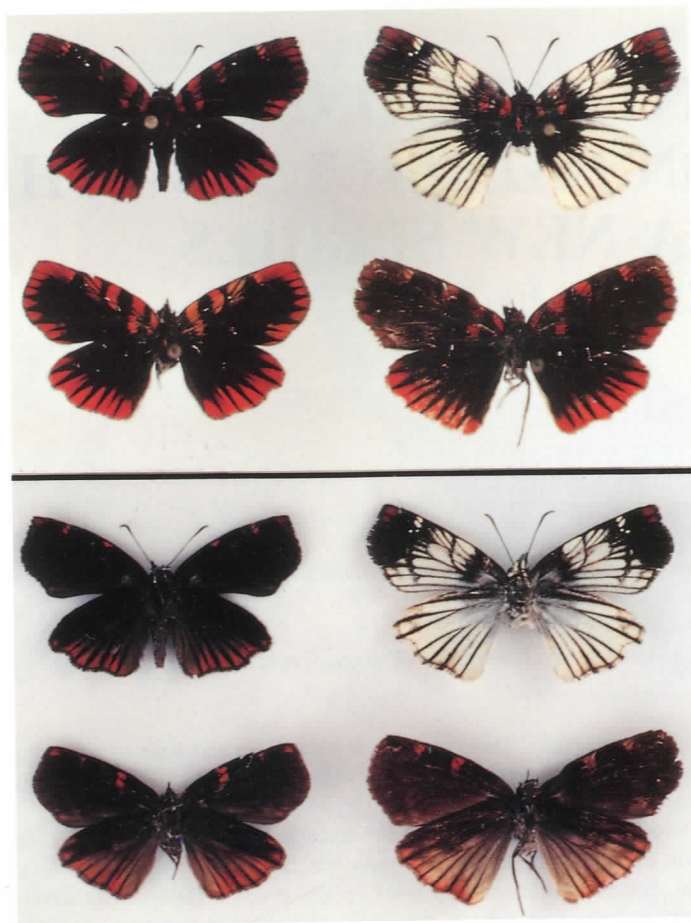


Fig. 1-2. *Haemactis* species: 1) Dorsal surface: upper left - *H. albamarita* n. sp., holotype ♂; upper right - *H. albamarita* n. sp., paratype ♀; lower left - *H. sanguinalis*, ♂, PERU: Loreto; Boqueron Abad; lower right - *H. pyrrhosphanes*, ♂, COLOMBIA: Boyaca; Muzo. 2) Ventral surface: same as in Fig. 1.

The male genitalia are distinctive (Fig. 4). The harpe curves dorsad to a straight and finely toothed terminus and the penis is much shorter than the valva with a short and bipronged caudal end.

**Specimens examined.**— COLOMBIA: Boyaca, Muzo (no date). Evans (1953) gave additional locations in Colombia (Bogota, Santa Fe, Cundinamarca).

***Haemactis albamarita* Austin, new sp.**

(Fig. 1-2 ♂♀, 5 ♂ genitalia, 6 ♀ genitalia)

**Description.**— MALE: Forewing length = 15.9mm (15.3-16.3, N = 8; types); forewing with no costal fold as usual for genus, wing shape similar to *H. sanguinalis*; forewing more angulate with apex straighter and not as broadly convex between  $M_3$  and  $CuA_2$ ; hindwing with concavities more pronounced accentuating the irregularity of its termen; dorsum black, forewing with four subapical macules very pale red (nearly white), anterior two long, posterior two dots; deep red (nearest Poppy Red in Smithe, 1981) marks as follows: along outer margin in each cell (this narrow, even obsolete, between veins  $M_1$  and  $CuA_1$ ), solid at apex to subapical macules, roughly triangular-shaped otherwise and divided by black veins to margin; short, vague, triangular-shaped postmedian costal macule (often absent); triangular-shaped macule at mid costa extending across discal cell; postbasal bar from costa to vein 2A; extreme base of wing. Hindwing with similar red, roughly triangular-shaped marks along outer margin, these often somewhat vaguely whitish proximad, divided by dark veins to margin; costa of hindwing and fringes of both wings gray. Venter blackish, forewing sometimes gray

along anal margin; subapical macules as on dorsum; narrow pale reddish at extreme apex and tornus (latter often absent); mid discal cell red mark more-or-less as on dorsum but paler. Hindwing blackish anteriorly, gray posteriorly; red marks of dorsum less intense and grading into black or gray ground color; veins prominently black across gray ground color. Head dorsum, thorax, and abdomen black, collar red as are two longitudinal lines on thorax; antennae all black, nudum with 12(1), 13(2) or 14(4) segments; palpi mixed black and white ventrad, gena white; pectus black with some white scales, legs black, mid tibiae with pair of short spurs, hind tibiae with pair of longer spurs, long brown hair tuft fitting into thoracic pouch; ventral abdomen gray.

**Male Genitalia:** uncus divided with two pairs of arms, both square-ended; outer (anterior) pair exceeding length of inner (posterior) pair by about 1/4 its length; outer pair slightly curved mesad; inner pair diverging and exceeding length of gnathos; gnathos divided, arms broadly separated and parallel; saccus nearly straight, anterior end broad and bulbous; valva with costa and ampulla both convex; posterior end of ampulla nearly perpendicular to junction of slender harpe; harpe curved dorsad to a point at about the level of the highest point of the costa/ampulla; terminal end of harpe serrated, serrations extending ventrad to near beginning of curved portion; inner face of pointed portion of harpe with medially directed, heavily serrated process; penis about length of valva plus saccus; posterior portion very long (greatly exceeds 1/2 total length), thin and sharply pointed.

**FEMALE:** Forewing length = 17.8mm (paratype); wing shape as male; dorsum of both wings largely white with black veins; forewing with black at apex extending to just basad of subapical macules; outer margin deep red anteriorly; thin black postdiscal line from apical black to vein 2A; similar vague black line distad to this; position of mid costal red mark on male white, outlined with black; postbasal mark same but with red posterior to discal cell; wing base red. Hindwing basal 1/3 black. Venter similar to dorsum; red on forewing only at extreme apex; hindwing with no black at base. Head and thorax as on male, antennal nudum 14(1); legs white; dorsal abdomen black anteriorly, white posteriorly with black segmental lines; ventral abdomen white.

**Female Genitalia:** lateral edges of lamella postvaginalis converging to narrow caudal end with prominent, shallow U-shaped indentation; lamella antevaginalis with two thin processes extending caudad to outside cephalo-lateral corners of lamella postvaginalis, expanding cephalad to broad lateral, nearly rectangular flaps, these fused very narrowly at cephalad edge; caudad of this fusion and ventral to ostium bursae is triangular-shaped, spiculate structure with lateral sides not fused at apex; ductus bursae long, thin, membranous with faint lateral striae; corpus bursae heart shaped, membranous.

**Types.**— **Holotype** ♂ with the following labels: white, printed - BRASIL: Rondonia / 62km S Ariquemes / linea C-20, 7km E / B-65, Fazenda Rancho Grande / 26 April 1991 / leg. G. T. Austin, red, printed - HOLOTYPE / *Haemactis albamarita* / Austin.

**Paratypes** (all BRAZIL: Rondônia, leg. G. T. Austin, unless noted) - same location as holotype, 27 Nov 1991 (1 ♂), 11 Dec 1992, leg. R. Schryver (1 ♀), linea C-2.5, B-65, 12.5mi. S Cacauplandia, 1 Nov 1990, leg. J. P. Brock (1 ♂), 2 Nov 1990 (1 ♂), 13 Nov 1990 (1 ♂), 16 Nov 1990, leg. J. P. Brock (1 ♂), ca 70km S Ariquemes, B-80 between lineas C-10 & 15, 19 Nov 1991 (3 ♂).

**Deposition of types:** The holotype will be deposited at the Universidade Federal do Paraná, Curitiba, Brazil. The paratypes will be deposited in other collections.

**Type locality.**— BRAZIL: Rondônia; 62km south of Ariquemes, linea C-20, 7km (by road) east of route B-65, Fazenda Rancho Grande, 180m. This is approximately 5km northeast of Cacauplandia in typical lowland tropical rainforest. Males commonly visit urine soaked soil.

**Etymology.**— The name means "white wife" and refers to the largely white female of this species.

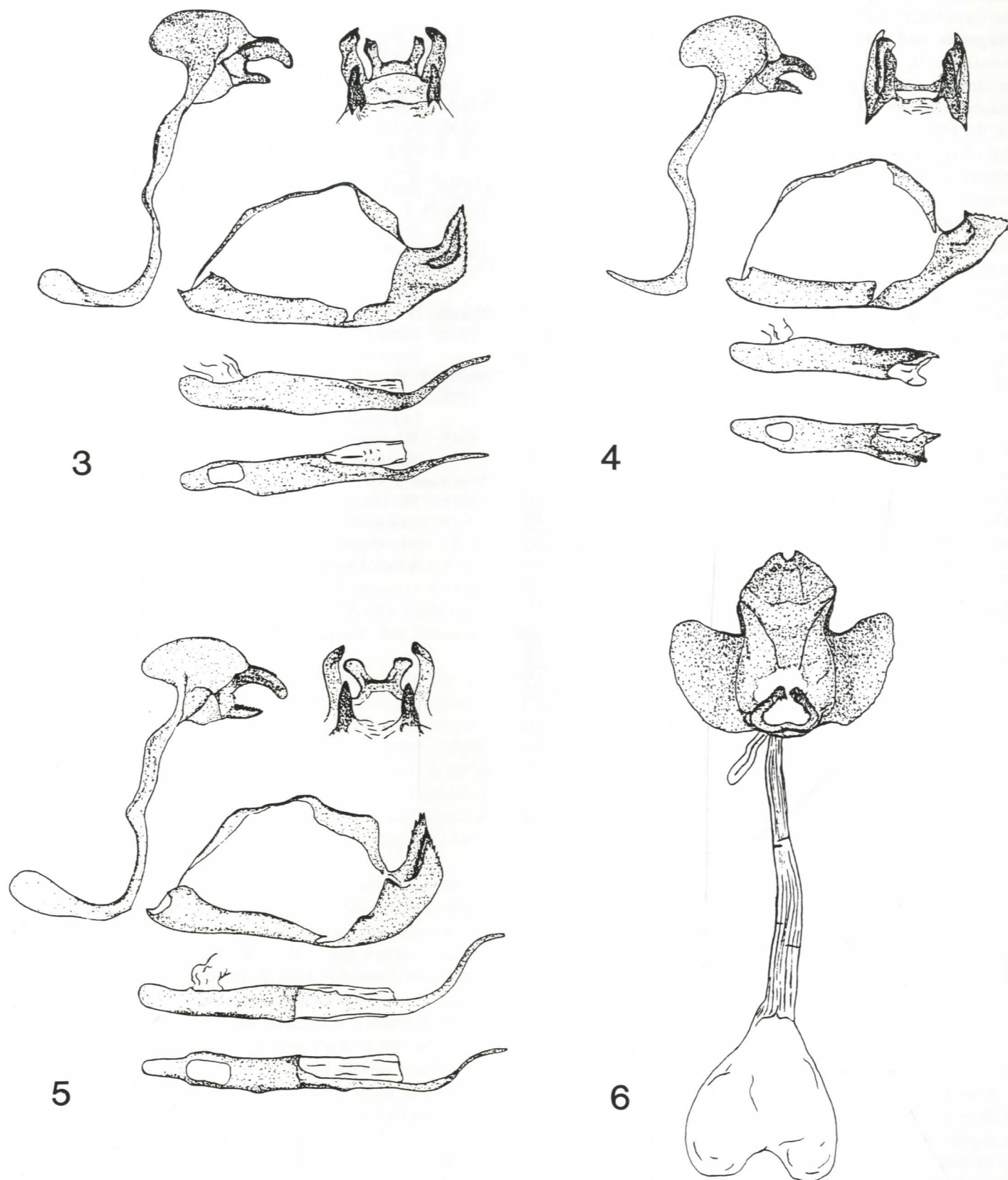


Fig. 3-6. *Haemactis* species genitalia: 3) *H. sanguinalis*, ♂ genitalia, GTA Vial #2919, ECUADOR: Oriente; Sadzayacu (♂ genitalia figures include left lateral view of tegumen, uncus, gnathos, and associated structures; ventral view of uncus, gnathos, and anterior tegumen; medial view of right valva; left view of penis; and dorsal view of penis). 4) *H. pyrrhosphanes*, ♂ genitalia, GTA Vial #2918, COLOMBIA: Boyaca; Muzo. 5) *H. albamarita* n. sp., paratype ♂ genitalia, GTA Vial #2822. 6) *H. albamarita* n. sp., paratype ♀ genitalia, GTA Vial #3382 (ventral view of lamellae, ductus bursae, and corpus bursae).



**Distribution and phenology.**— This species is known only from the types taken in April, November, and December.

**Diagnosis and discussion.**— The male of this species keys directly to *H. sanguinalis* in Evans (1953); males of the two species are nearly identical in overall color and pattern. The shapes of the wings of *H. albamarita* differ from other *Haemactis*; the forewing termen of *H. albamarita* is more angulate than that of *H. sanguinalis* and *H. pyrrhosphanes* and the hindwing termen is more strongly undulate. The red macules are of a deeper color on *H. albamarita* with these markings less broad. The subapical macules are distinctly whitish on *H. albamarita*; these have a yellow-orange aspect on the other two species. The venters of *H. sanguinalis* and *H. albamarita* are very similar. Besides the darker color of the red on both wings, the posterior hindwing is grayer on *H. albamarita* than the pale brown of *H. sanguinalis*. The ventral hindwing of *H. pyrrhosphanes* is extensively scaled with whitish and appears much paler than the other two species.

The male genitalia of *H. albamarita* are grossly similar to those of *H. sanguinalis* but differ in detail. Both arms of the uncus of *H. sanguinalis* are more-or-less parallel and the inner arms are further apart at their origins. The ampulla of the valva is nearly straight to slightly convex curving rather gradually to the harpe which is broader at this junction than on *H. albamarita*. The terminal portion of the harpe is longer and thinner. Its margins and medial process are very weakly or not serrated. The saccus is shorter and thinner than on *H. albamarita*. The penis of *H. sanguinalis* is shorter, about the length of the valva alone. The male genitalia of *H. pyrrhosphanes* are very different as shown above.

Females of *H. sanguinalis* and *H. pyrrhosphanes* were not noted as being broadly white (Evans, 1953) and it is assumed that they are similar to their males. Mielke (pers. comm.), however, informed me that he has seen white females from Panama and Rio Santiago, Peru; these need to be studied.

#### Key to the males of *Haemactis*

1. Ventral hindwing heavily overscaled with whitish, penis much shorter than valva ..... *H. pyrrhosphanes*
  - Ventral hindwing not heavily overscaled with whitish, penis at least as long as valva ..... 2
2. Penis about length as valva, inner uncus arms far apart at origins and more-or-less parallel ..... *H. sanguinalis*
  - Penis much longer than valva, inner uncus arms closer at origins and diverging ..... *H. albamarita*

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