

BULLETIN OF THE ALLYN MUSEUM

Published By
The McGuire Center for Lepidoptera and Biodiversity
Florida Museum of Natural History
University of Florida
P. O. Box 112710
Gainesville, FL 32611-2710

Number 15

18 April 2008

ISSN-0097-3211

A FEMALE *HAEMACTIS* MABILLE, 1903, FROM CENTRAL AMERICA (HESPERIIDAE: PYRGINAE)

Richard A. Anderson¹, George T. Austin², and Andrew D. Warren^{2,3}

¹836 Amelia Court NE, St. Petersburg, Florida 33702

²McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History,
University of Florida, P. O. Box 112710, Gainesville, Florida 32611-2710

³Museo de Zoología "Alfonso L. Herrera", Facultad de Ciencias, Universidad Nacional
Autónoma de México, Apdo. Postal 70-399, México 04510 D.F., México

ABSTRACT: A female phenotype of *Haemactis* Mabille, 1903, is described from Costa Rica and Nicaragua. This, the only *Haemactis* known from Central America, may be the female of an already described species, but is different in wing pattern and genitalia from the only female of the genus heretofore elaborated and illustrated, *Haemactis albamarita* Austin, 1994.

KEY WORDS: Costa Rica, genitalia, Lepidoptera, neotropical, Nicaragua, sexual dimorphism.

INTRODUCTION

Haemactis Mabille, 1903 (Hesperiidae: Pyrginae), a genus of three described species, occurs from Nicaragua southward through western South America to Bolivia (Evans 1953, Austin 1994, Anderson 2007). Males are black with red margins and other macules (see Austin 1994). Although Evans (1953) did not indicate sexual dimorphism in the genus, the female of a species known from Rondônia, Brazil, *Haemactis albamarita* Austin, 1994, is strikingly different from its male with extensive white in the middle of the forewing and across most of the hindwing on both surfaces. A female from Nicaragua (Anderson 2007) and another from Costa Rica, representing the only specimens known to us of the genus from Central America, are also largely white. This phenotype, while similar to *H. albamarita*, differs from that species in subtleties of its markings and in the morphology of its genitalia. Its male may be one of the other described species of the genus, *Haemactis sanguinalis* (Westwood, 1852), or *Haemactis pyrrosphenus* Lindsey, 1919, but this is yet unknown. Nonetheless, we describe the Central American females, both to make known their existence and to encourage the search for additional *Haemactis* in Central America.

Haemactis sp., unknown species
(Figs. 1, 2, 5)

Description. Female (Figs. 1-2) – forewing length = 16.4, 16.5 mm; forewing termen mostly convex, apex slightly produced in R_4 - R_5 , concave in CuA_2 -2A, anal margin slightly concave; hindwing termen produced at apex, somewhat undulate cephalad; forewing largely white medially with black veins, outer margin deep red divided by black veins, broadest at costa where extending proximad anterior to R_5 to sinuate series of white postmedial macules, latter most prominent in R_2 - R_3 and R_3 - R_4 ; submargin black, broadest cephalad extending into radial cells and to distal end of discal cell and then narrowing caudad to vein 2A distad of postmedial macules, these outlined narrowly with black in CuA_1 - CuA_2 and CuA_2 -2A, thin black line anteriorly originating on costa at end of vein Sc, slightly concave to anterior vein of discal cell where angled proximad across that cell, base of wing with red stripe divided by black veins from costa to vein 2A flanked on both sides by black, black continuing to anal margin, narrow red at very base of wing, fringe gray; hindwing entirely white with black veins

except for black basal 1/3, fringe white. Venter with pattern repeated except red restricted to margin at apex in R_4 - R_5 and R_5 - M_1 , black replaced by dark red-brown, hindwing with black terminal line.

Figures 1-4. Female *Haemactis*. 1) *Haemactis* sp., Nicaragua (see text), dorsal surface; 2) *Haemactis* sp., same specimen as Fig. 1, ventral surface; 3) *Haemactis albamarita*, paratype, BRAZIL: Rondonia, dorsal surface; 4) *Haemactis albamarita*, same specimen as Fig. 3, ventral surface.

Dorsal head and thorax black, abdomen entirely white except narrowly black on dorsum on anterior 1/3 and narrowly at segments on sides; palpi white with black 3rd segment, ventral head white, antennae black with gray distad on venter including venter of apiculus, nudum dark red-brown, 15 (n=2) segments, ventral thorax white.

Genitalia (Fig. 5) – lamella postvaginalis as a narrow tongue-shaped lobe constricted cephalad and with a convex caudal edge; lamella antevaginalis with lateral flaps narrowing to points caudad, exceeding caudal end of lamella postvaginalis; ostium bursae with oval smoothly sclerotized structure; ductus bursae very long, entirely membranous, broad caudad, thin in middle, broadening somewhat before membranous oval corpus bursae.

Figure 5. Female genitalia of *Haemactis* sp., COSTA RICA: Heredia Province (GTA #14027, ventral view).

Specimens examined. COSTA RICA: Prov. Heredia; La Selva Biological Station, 10°26'N 84°01'W, 16-24 Feb. 2002, leg. D. L. Wagner (1 female); NICARAGUA: Zelaya Dept.; Bluefields, 11 Dec. 1975, leg. R. A. Anderson (1 female). Both locations are in lowland tropical rainforest on the Atlantic slope; the site at Bluefields was described as “Disturbed tropical rain forest” (Anderson 2007). The Nicaraguan specimen is deposited at the McGuire Center for Lepidoptera and Biodiversity, Gainesville, Florida; the Costa Rican specimen is currently in RAA’s collection.

DISCUSSION

The three species of *Haemactis* had been known only from western South America (Evans 1953, Austin 1994) until a female of an unknown species was taken in Nicaragua in Central America by Anderson (2007), fully 800 km north of previous records; another female of the same species was subsequently found in Costa Rica some 700 km north. *Haemactis albamarita* is known only from western Brazil, but both *H. sanguinalis* and *H. pyrrhosphenus* occur in Colombia (Evans 1953), the former ranging south to Bolivia.

Central American females of *Haemactis* are smaller than the female of *H. albamarita* (Figs. 3-4) and male *H. pyrrhosphenus*, but about the same size as males of *H. sanguinalis* and *H. albamarita*. Based on sexual dimorphism in wing length of *H. albamarita* (females exceeding males by 1.8 mm), the yet unknown male of the Central American species may be the smallest of the *Haemactis*. Compared with *H. albamarita*, the Central American phenotype has more extensive red (not extending posterior of CuA_2 on *H. albamarita*), more extensive black on the forewing (also not extending posterior of CuA_2 on *H. albamarita*), postmedial macules caudad of the costal region, and less angular wings.

The genitalia of the Central American female (Fig. 5) are very different from those of *H. albamarita* (latter illustrated by Austin 1994). The lamella postvaginalis is narrower and prominently constricted cephalad. The lateral flaps of the lamella antevaginalis are likewise narrower and exceed the lamella postvaginalis caudad and there is no spiculate structure associated with the ostium bursae. The ductus bursae is proportionally longer than on *H. albamarita* and broader caudad. The corpus bursae is broadly oval on the Central American female, contrasting with the heart shaped corpus bursae of *H. albamarita*.

It is unknown if the females here described from Central America pertain to *H. sanguinalis* or *H. pyrrhosphenus*, or if they represent a yet undescribed species. Females of both those species were putatively seen by Evans (1953). Given the striking sexual dimorphism we have observed in *Haemactis*, it seems curious that Evans would not have mentioned this feature in his diagnosis of the genus or its species, provided the said females he examined were correctly sexed. If in fact there is no sexual dimorphism in *H. sanguinalis* or *H. pyrrhosphenus*, the *Haemactis* from Central America represents an unnamed species. We, however, refrain from naming it until males of it are encountered or females of *H. sanguinalis* and *H. pyrrhosphenus* are critically examined, to avoid creating a synonym. The foregoing, nonetheless, brings yet more attention to *Haemactis* in Central America and provides a description of a previously undescribed female phenotype.

ACKNOWLEDGMENTS

David Wagner is thanked for the loan of the specimen from Costa Rica. We gratefully acknowledge J. Y. Miller and A. Sourakov for reviewing this paper and offering helpful suggestions. We also thank D. Matthews Lott for photographing the specimens, organizing text and figures, and for critically commenting on the manuscript and D.-M. Mintz for assistance in the production of this publication. Funding was provided to ADW through DGAPA-UNAM.

LITERATURE CITED

- Anderson, R. A. 2007. A list of Hesperiiidae collected in Nicaragua, 1973-1976. *Bull. Allyn Museum* 146:1-19.
- Austin, G. T. 1994. Hesperiiidae of central Rondônia, Brazil: comments on *Haemactis*, with description of a new species (Lepidoptera: Hesperiiidae: Pyrginae). *Trop. Lepid.* 5:97-100.
- Evans, W. H. 1953. A Catalogue of the American Hesperiiidae, Indicating the Classification and Nomenclature Adopted in the British Museum (Natural History). Part III. Pyrginae. Section 2. London: British Museum (Natural History). 246pp.