

A new *Hylesia* (Lepidoptera: Saturniidae, Hemileucinae) from the National Park of Iguaque (Eastern Cordillera, Colombia)

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Abstract: A new species of *Hylesia* is described from the Eastern Cordillera of Colombia. *H. daryae* n. sp. is related to *H. gamelioides* with which it shares the presence of a red ocellus on the hindwing dorsal surface. The external aspect globally resembles a typical *Gamelia* sp., although examination of the genitalia clearly ranks this species in the genus *Hylesia*. It was collected in the cloud forest of the National Park of Iguaque (Boyacá Department) at 2800m of elevation. The holotype ♂ is deposited in the Institute of Natural Sciences (ICN-MHN) of the Colombian National University, Santafé de Bogota, Colombia.

Key Words: Andes, Colombia, *Hylesia daryae* n. sp., taxonomy, Neotropical entomofauna.

Un *Hylesia* (Lepidoptera: Saturniidae, Hemileucinae) nouveau du Parc National d'Iguaque (Cordillère Orientale, Colombie)

Résumé: Une nouvelle espèce d'*Hylesia* est décrite de Colombie. *H. daryae* n. sp. est proche de *H. gamelioides* avec lequel il partage la présence d'une ocelle rouge sur la face dorsale des ailes postérieures. L'aspect externe ressemble à celui d'un *Gamelia* sp. typique, mais l'examen des genitalia place clairement cette espèce dans le genre *Hylesia*. Elle a été récoltée dans la forêt andine du Parc National d'Iguaque (département du Boyacá) à 2800 m d'altitude. L'holotype ♂ est déposé à l'Institut des Sciences Naturelles (ICN-MHN) de l'Université Nationale de Colombie, Santafé de Bogota, Colombie.

Una *Hylesia* (Lepidoptera: Saturniidae, Hemileucinae) nueva del Parque Nacional de Iguaque (Cordillera Oriental, Colombia)

Resumen: Se describe una nueva especie de *Hylesia* de Colombia. *H. daryae* n. sp. es cercano a *H. gamelioides* con el cual comparte la presencia de un ocelo rojo en las alas posteriores. El aspecto general se parece al de una *Gamelia* sp. clásica, pero la examinación de las genitalia ubica claramente esa especie en el género *Hylesia*. Se recolectó en el bosque neblinoso del Parque Nacional de Iguaque en el departamento de Boyacá a una altura de 2800 m. El holotipo ♂ está depositado en el Instituto de Ciencias Naturales de la Universidad Nacional de Colombia, Santafé de Bogota, Colombia.

Eine neue *Hylesia* (Lepidoptera: Saturniidae, Hemileucinae) aus dem Iguaque-Nationalpark (Orientalische Kordillere, Kolumbien)

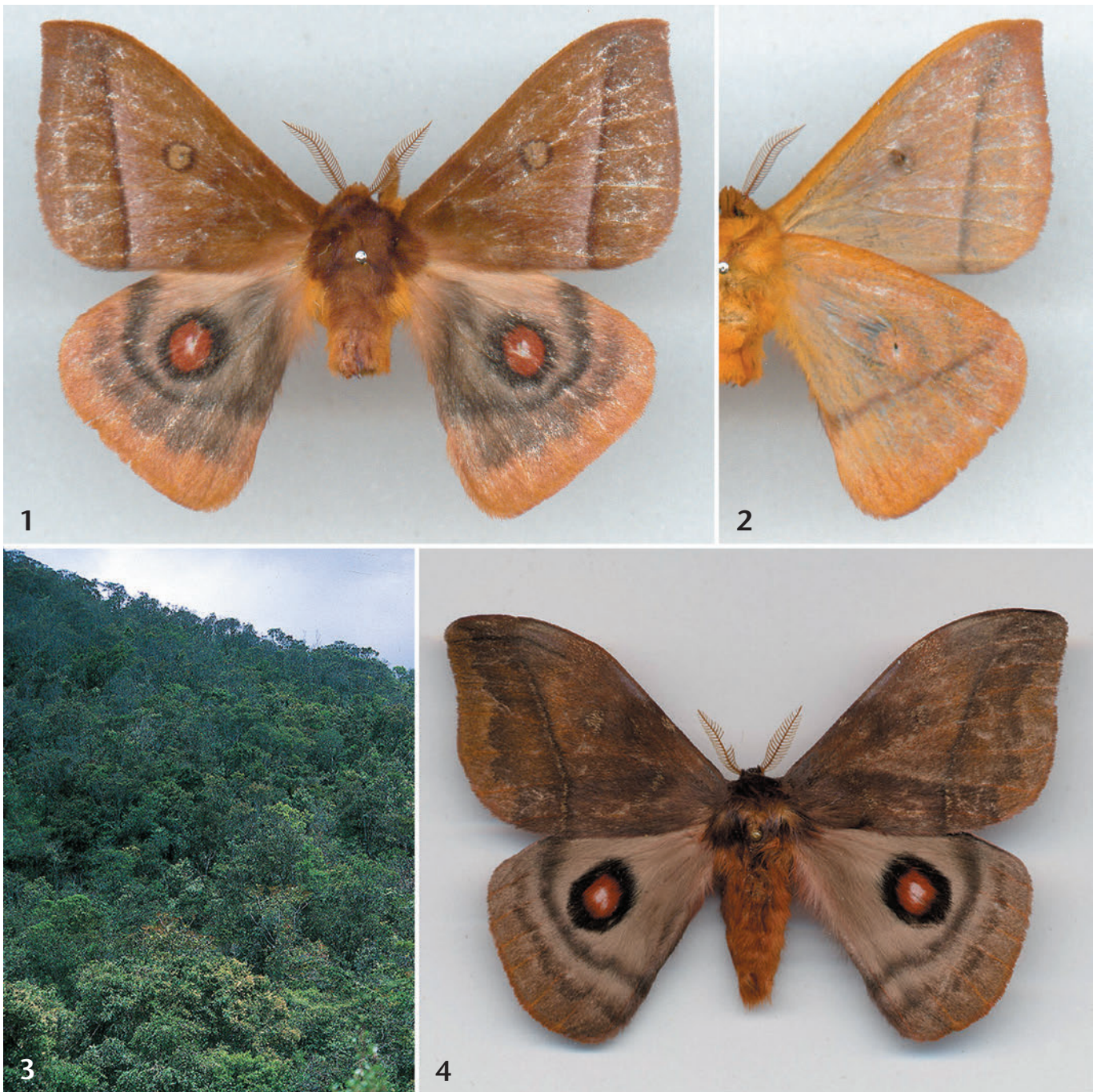
Zusammenfassung: Es wird eine neue Art der Gattung *Hylesia* aus Kolumbien beschrieben. *H. daryae* n. sp. ähnelt sehr der verwandten *H. gamelioides*, mit der sie die Präsenz eines roten, weißgekernten Hinterflügelaugeflecks teilt. Der oberflächliche Eindruck stellt die neue Art in die Gattung *Gamelia*, jedoch zeigt die männliche Genitalarmatur sofort, daß es sich um eine *Hylesia* handelt. Das einzig bekannte Stück wurde auf etwa 2800 m Höhe im Nebelwald des

Iguaque-Nationalparks im Department Boyacá gefunden. Der Holotypus ♂ wird im Instituto de Ciencias Naturales der Universidad Nacional de Colombia, Santafé de Bogota, Kolumbien, deponiert.

Introduction

The Saturniidae family is mainly famous for the extraordinary large size of some of its species (e.g. the giant *Attacus atlas* (LINNÉ, 1758)) and to a lesser extent for the bright colors displayed by some of its representatives (e.g. the yellow *Argema mittrei* (GUERIN-MÉNEVILLE, 1847) and *Actias maenas* DOUBLEDAY, 1847). A few less charismatic genera however are characterized by their small size and/or dark markings. The genus *Hylesia* HÜBNER, 1820 („1816“) presents both of these last characteristics, as it comprises the smallest New World species and demonstrates a nearly constant dark color pattern. The genus is exclusively neotropical, and distributed from Northern Mexico to Northern Patagonia. Although mainly represented in humid forests, it has colonized a wide range of tropical ecosystems and is found in nearly all habitats within its geographical range. In medium to high elevations, however, the number of *Hylesia* species tends to decrease more rapidly than observed for other Hemileucinae (LEMAIRE 1988a).

About 110 valid species of *Hylesia* have been described to date, placing this genus in second place for most species among neotropical Saturniidae after *Automeris* HÜBNER, 1819 („1816“) (LEMAIRE 1996, 2002). They are chiefly characterized by a conspicuous morphological homogeneity, making identification at species level one of the major challenges facing Saturniidae taxonomists. Not surprisingly, the genus was quoted as one of the more difficult of all Lepidoptera by DRAUDT (1929), was absent from the extensive work of BOUVIER (1936) and was finally reported to comprise a high number of synonyms by LAMY & LEMAIRES (1983) and later by LEMAIRES (2002). Attempts to clarify the taxonomy of *Hylesia* have led to the proposition of two main groups on the basis of the presence (group I) or absence (group II) of a subapical or median spur on the metathoracic legs (LAMY & LEMAIRES 1983). Each of these groups includes several subgroups defined according to both phenotypic and genitalia characters (LEMAIRE 2002). Although the distinction between the two main groups is not easy by external morphology only, this classification is supported by significant differences in the structure of the genitalia (LEMAIRE 1988a, 1988b).



Color plate, Figs. 1-4: *Hylesia daryae* n. sp. and *H. gamelioides*. **Fig. 1:** *H. daryae*, holotype ♂ upperside (wingspan 52 mm). **Fig. 2:** Same specimen underside. **Fig. 3:** Cloud forest of the National Park of Iguaque (Colombia, Boyacá, 2800 m). **Fig. 4:** *H. gamelioides* ♂ upperside (wingspan: 64 mm; Mexico, Oaxaca, Rd. 175 Tuxtpec to Oaxaca km 86, 1750 m, 22. VIII. 1992, leg. D. HERBIN & J. HAXAIRE, in coll. K. WOLFE).

A small number of species of the group I, however, may be more easily identified due to distinctive wing pattern. They chiefly contrast with the typical phenotypic monotony of the group by harboring a colorful ocellus on the hindwing dorsal side, hence resembling representatives of the genus *Gamelia* HÜBNER, [1819] or *Hyperchiria* HÜBNER, [1819]. These eye-spotted species form three distinct sub-groups (LEMAIRE 2002: 165), i.e. the sub-groups of *H. lineata* DRUCE, 1886 (6 Central American species), *H. gamelioides* MICHENER, 1952 (1 Central American species), and *H. nanus* (WALKER, 1855) (3 mainly southern Brazilian species). The new species described in this paper belongs to the colorful group of *H. gamelioides*.

Hylesia daryae n. sp.

Holotype: ♂ (only known specimen), Colombia, Boyacá, National Park of Iguaque, 2800 m, VII. 2002, UV light, leg. D. BONILLA & K. WOLFE, in coll. T. DECAËNS (genitalia prep. T. DECAËNS # 112).

Type deposition: The holotype will be deposited in the Institute of Natural Sciences (ICN-MHN) of the Colombian National University, Santafé de Bogota, Colombia (registration # ICN-L 17506).

Etymology: This species is dedicated to LUZ DARY RAMIREZ to acknowledge her valuable contribution to the knowledge of the Saturniidae fauna of Colombia.

Description: Wingspan ♂ 52 mm, forewing length 28 mm.

♂ (Fig. 1): Head: red brown; labial palpi and antennae same color. Body: thorax and legs red brown; tibial spur number 0-2-3; abdomen orange brown, with two baso-lateral strips of yellow hair-like scales. Forewings: not elongated; sharp apex; straight border, above background color red brown, medial area distally suffused with pink scales; submarginal band slightly covered with dark brown scales; antemedial line almost indistinct; postmedial line large, dark brown, straight and largely preapical (5 mm); rounded discocellular spot pink brown bordered with a large dark brown circle. Ventral side (Fig. 2) uniformly orange brown; black postmedial line and discal point clearly marked. Hindwings: periocellar area orange brown with abundant black hair-like scales; large and black periocellar ring; iris vivid red, small pupil covered with white scales; postmedial line large and dark brown; postmedian area orange brown; submarginal band extensively covered with black scales. Ventral side as in forewings.

♀: Unknown.

♂ genitalia (Figs. 5-6): Posterior part of the uncus largely sclerotized and differentiated in a ventral spine; large and rounded valves, surmounted by an apical membranous structure that presents a lateral lobe; inner spine of the valves well differentiated, terminated behind the uncus apex; aedeagus narrow and curved.

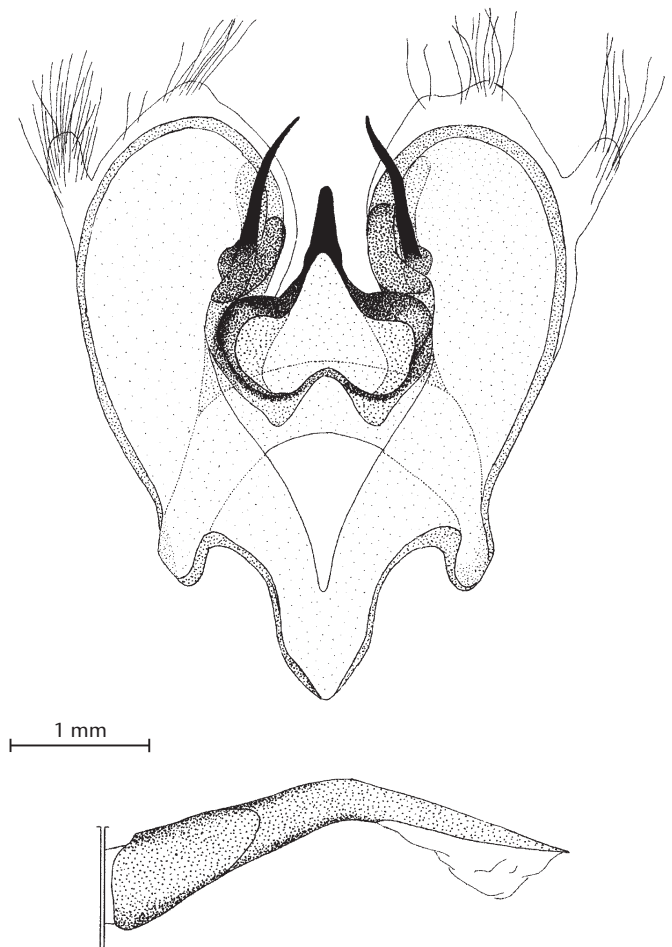
Immature stages: Unknown.

Distribution

This species is only known from the type locality, where it was collected in a protected cloud forest area at an elevation of 2800 m (Fig. 3). It is however likely to be present within a larger distribution in similar ecosystems of the Eastern Colombian Cordillera.

Diagnosis

H. daryae belongs to the first group defined by LAMY & LEMAIRE (1983) due to the presence of a median spur on the metathoracic legs. Although *H. daryae* also shares some characteristics with species of the *H. lineata* DRUCE, 1886 sub-group, the presence of an ocellus with a red iris and a white pupil clearly place this species in the sub-group of *H. gamelioides* MICHENER, 1952 (Fig. 4). This last character causes both *H. gamelioides* and *H. daryae* to astonishingly resemble *Gamelia*. In fact, *H. daryae* was initially identified as a new *Gamelia*, and its placement in *Hylesia* was determined only after genitalia dissection. The similarity with *Gamelia* was also stated by MICHENER (1952), who mentioned that *H. gamelioides* was frequently confused with *Gamelia musta* SCHAUS, 1912 in collections. Apart from genitalia, the more evident external character that separates both *H. gamelioides* and *H. daryae* from most *Gamelia* is the broadly preapical, instead of apical, position of the postmedial line of the forewings (LEMAIRE 2002). Within the genus *Gamelia*, this character is found only in the bi-specific group of *G. remissa* (WEYMER, 1907).



Figs. 5-6: *Hylesia daryae* n. sp. ♂ genitalia (holotype, genitalia prep. T. DECAËNS # 112). Fig. 5: ventral view, aedeagus removed. Fig. 6: lateral view of aedeagus.

Although *H. daryae* is phenotypically close to *H. gamelioides*, there is no real risk of confusion as both species differ by several ornamental traits: forewing size is smaller for *H. daryae*, background color brighter, apex sharper, forewings discal spot rounder, postmedial line of forewings straight instead of concave. Phenotypical differences are also supported by strong genitalia differences, as ♂ genitalia of *H. gamelioides* display characters not observed for *H. daryae* (see for comparison fig. 18-4 in LEMAIRE 2002).

Discussion

The discovery of this species suggests that the previously mono-specific sub-group of *H. gamelioides* may represent more species than initially supposed, and may present a geographical range covering Central America and extending through the Andean Cordillera in South America. The exact biogeographic and phylogenetic relationships existing between these strongly individualized species, other sub-groups of *Hylesia* and closely related genera such as *Gamelia* still needs to be explored.

Acknowledgements

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Corrigenda

TO: WOLFE, K. L. (2003): A new *Dirphiopsis* from Bolivia, with larval comparisons of the genus (Lepidoptera: Saturniidae, Hemileucinae). - Nachrichten des Entomologischen Vereins Apollo, Frankfurt am Main, N.F. **23** (4): 185-188.

The male specimen figured on the colour plate on page 186 under nos. 1 & 2 is the holotype specimen of *Dirphiopsis herbini* WOLFE, 2003, being deposited in the Museum of Natural History of Los

Angeles County, California, U.S.A. This information allowing the individual identification of the holotype was inadvertently not included in the original legend.

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