

Description of a new *Dirphiopsis* species from Bolivia (Lepidoptera: Saturniidae, Hemileucinae)

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Abstract: A new species of *Dirphiopsis* is described from Bolivia. *D. curvilineata* n. sp. is close to *D. cochabambensis*, from which it differs by the shape and ornamentation of the forewings. It is known from medium high altitude cloud forest on the old road between Cochabamba and Santa Cruz de la Sierra. The holotype ♂ is deposited in the Muséum national d'Histoire naturelle, Paris, France.

Key words: Andes, Bolivia, *Dirphiopsis curvilineata* n. sp., taxonomy, Neotropical entomofauna.

Un *Dirphiopsis* nouveau de Bolivie (Lepidoptera: Saturniidae, Hemileucinae)

Résumé: Une nouvelle espèce de *Dirphiopsis* est décrite de Bolivie. *D. curvilineata* n. sp. est proche de *D. cochabambensis*, dont elle diffère par la forme et l'ornementation des ailes antérieures. Elle est connue d'une région de forêt andine de moyenne altitude située sur l'ancienne route de Cochabamba à Santa Cruz de la Sierra. L'holotype ♂ est déposé au Muséum national d'Histoire naturelle, Paris, France.

Una *Dirphiopsis* nueva de Bolivia (Lepidoptera: Saturniidae, Hemileucinae)

Resumen: Se describe una nueva especie de *Dirphiopsis* de Bolivia. *D. curvilineata* n. sp. es cercano a *D. cochabambensis*, del cual difiere por la forma y la ornamentación de sus alas anteriores. Se conoce de bosque neblinoso de grande altura mediana en la carretera vieja entre Cochabamba y Santa Cruz de la Sierra. El holotipo ♂ está depositado en el Muséum national d'Histoire naturelle, Paris, Francia.

Eine neue *Dirphiopsis* von Bolivien (Lepidoptera: Saturniidae, Hemileucinae)

Zusammenfassung: Eine neue Art der Gattung *Dirphiopsis* wird von Bolivien beschrieben. *D. curvilineata* n. sp. ist ähnlich zu *D. cochabambensis*, von der sie sich in erster Linie durch die Vorderflügelzeichnung unterscheidet. Die Art ist bekannt aus andinen Nebelwäldern mittlerer Höhenlage von der alten Straße zwischen Cochabamba und Santa Cruz de la Sierra. Der Holotypus (♂) ist im Muséum national d'Histoire naturelle, Paris, Frankreich, hinterlegt.

Introduction

The genus *Dirphiopsis* BOUVIER, 1928 is a small group of moths that presently contains about 16 species distributed from Bolivia and southeastern Brazil to Mexico (LEMAIRE 1992, 1996, 2002). Almost all of the described species belong to the South American fauna, and only *Dirphiopsis flora* (SCHAUS, 1911) and *Dirphiopsis wolfei* LEMAITRE, 1992 are known from Central America. Most species occur in Andean forests where they can be found from low to high altitude.

The genus was described in order to group some species initially classified within the genera *Dirphia* HÜBNER, [1819], *Ormiscodes* BLANCHARD, 1852 and *Hyperdirphia* PACKARD, 1903. All *Dirphiopsis* species are characterized by the shape of the forewing discocellular patch and by the dark colour and the white lateral stigmata of the abdomen (LEMAIRE 1992). Although these two morphological attributes are shared with the *speciosa*-group of the genus *Cerodirphia* MICHENER, 1949, both genera are unambiguously separated by the structure of the ♂ antenna, which is quadripectinate for *Cerodirphia* and bipectinate for *Dirphiopsis*.

Dirphiopsis curvilineata n. sp.

Holotype: ♂, Bolivia, Cochabamba Department, Old Rd. Cochabamba to Santa Cruz, km 233, 2715 m, xi. 1995; at UV light, leg. G. LECOURT, in coll. T. DECAËNS (genitalia prep. T. DECAËNS # 37).

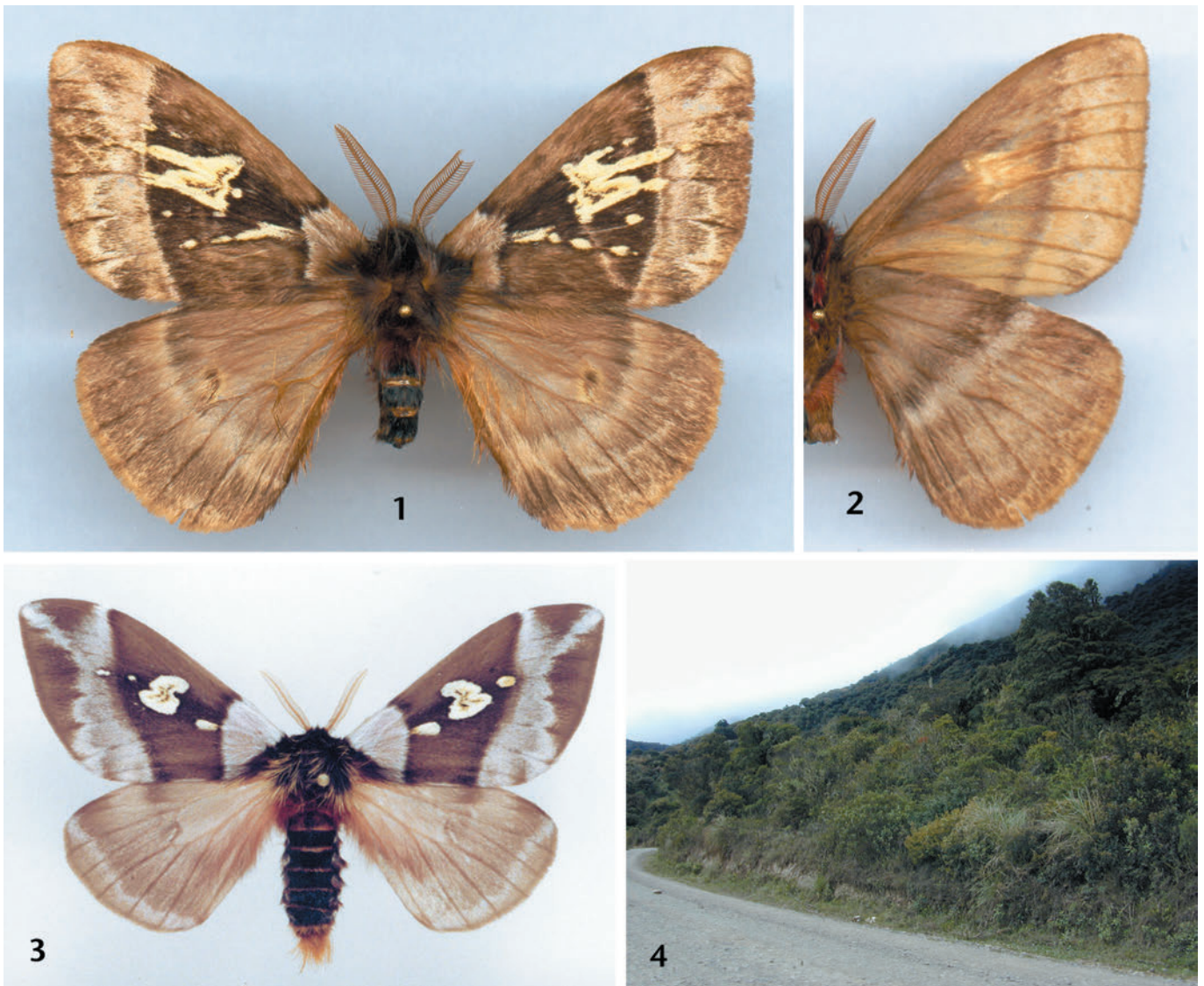
Paratypes (8 ♂♂), all Bolivia: 1 ♂, same locality and date as for the holotype, leg. G. LECOURT, in coll. T. DECAËNS (genitalia prep. T. DECAËNS # 38). 1 ♂, Santa Cruz Department, Old Rd. Cochabamba to Santa Cruz, 8.5 km W. Comarapa, 2400 m, 28. xi. 1997, at MV & UV lights, leg. K. WOLFE, C. CONLAN & W. KELLY, in coll. K. WOLFE. 2 ♂♂, Santa Cruz Department, Old Rd. Cochabamba to Santa Cruz, 8.5 km W. Comarapa, 2400 m, 2. xi. 1999, at MV & UV lights, leg. C. CONLAN & K. WOLFE, in coll. C. CONLAN. 1 ♂, Cochabamba Department, Old Rd. Cochabamba to Santa Cruz, 30 km W Comarapa, 2600 m, 12. ii. 1997, at UV light, leg. D. HERBIN & M. LAGUERRE, in coll. D. HERBIN. 4 ♂♂, Cochabamba Department, Old Rd. Cochabamba to Santa Cruz, between La Siberia and Comarapa, 2560 m, 24. x. 2000, at UV light, leg. D. HERBIN & M. LAGUERRE, in coll. D. HERBIN.

Type deposition: The holotype specimen will be deposited in the Muséum national d'Histoire naturelle of Paris, France (donation # 1069). Paratypes will be deposited as follows: 1 ♂ in the senior author's collection, 1 ♂ in the first junior author's collection, 5 ♂♂ in the second junior author's collection, 1 ♂ in C. CONLAN's collection (San Diego, California, U.S.A.), and 1 ♂ in the Natural History Museum of Los Angeles County, California, U.S.A.

Etymology: The name of the species refers to the shape of the postmedial line of the forewings which is continuous and follows a convex curve. This character constitutes one of the most obvious morphological characters to identify this taxon.

Description

♂ (Fig. 1): Wingspan: ♂♂ 67–76 mm. Head dark brown, labial palpi of the same color. Antennae dull yellow. Thorax dark brown sprinkled with yellow hairs in variable proportion according to the specimens. Legs dark carmine. Abdomen black, with a basal tuft of carmine



Colour plate. Figs. 1–2: *Dirphiopsis curvilineata* n. sp. **Fig. 1:** Holotype ♂ upperside (wingspan 72 mm). **Fig. 2:** holotype ♂ underside. — **Fig. 3:** *D. cochabambensis* ♂ (wingspan 63 mm; Bolivia, Chuquisaca Dept., 80 km W. of Monteagudo, 2100 m, 7. xi. 1999, ex ♀ at UV lights, leg. K. WOLFE & C. CONLAN; reared in California on Sumac (*Rhus* sp., Anacardiaceae) by K. WOLFE; emerged 21. vii. 2000. **Fig. 4:** Habitat of *D. curvilineata*: cloud forest on the old road Cochabamba to Santa Cruz, 2700 m of elevation.

hairs; posterior margin of each segment chestnut brown; anal hair tuft chestnut brown; lateral stigmata white. Forewing: length 36–40 mm; elongated; rounded apex; slightly convex outer margin; dorsal background color dark brown; anal and costal areas suffused with dark grey scales, contrasting with the darker brown median area; internal ante- and external postmedian areas extensively covered with light grey to white scales; both lines brown, bordered with a white stripe on their opposite edges, the outer postmedian line convex and largely preapical (10–12 mm); discocellular patch extended and subdivided, white with faint brown lines in its center. Underside (Fig. 2) pale brown; fine and diffuse light grey postmedial line, bordered by a large brown strip on its basal edge; external area light brown. Hindwing: dorsal background color pale brown; discocellular patch reduced to a small dark brown dash; postmedial line brown bordered with grey scales on external edge. Underside brown; postmedial line as in forewings but wider.

♀: Unknown.

♂ **genitalia** (Figs. 5–7): Very similar to the genitalia of *D. cochabambensis* (LEMAIRE, 1977), although the bulbus ejaculatorius is slightly shorter and much more tightly spiral.

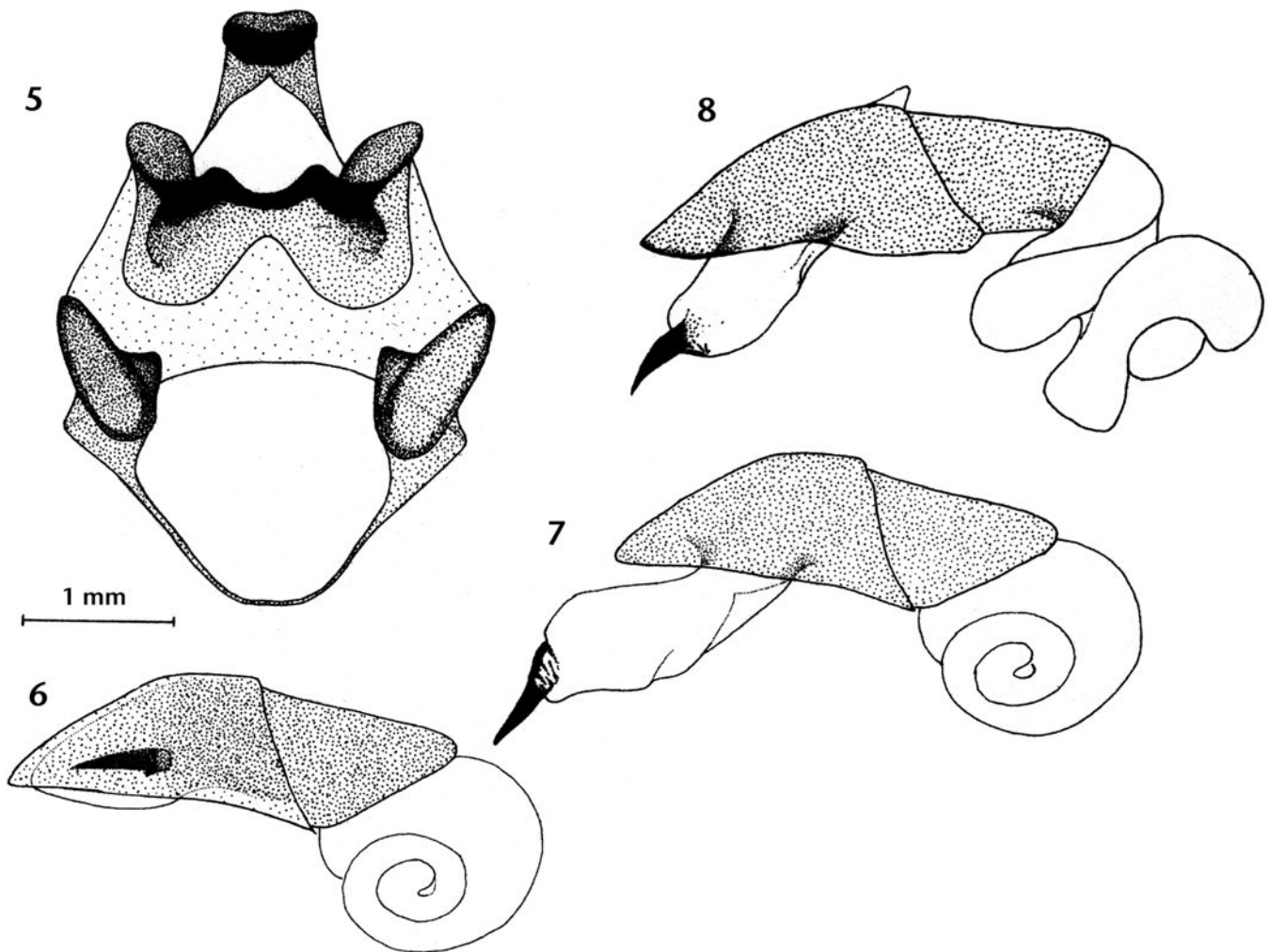
Immature stages: Unknown.

Distribution

D. curvilineata is known from medium high elevation cloud forest on the Old Road from Cochabamba to Santa Cruz de la Sierra in Central Bolivia (Departments of Cochabamba and Santa Cruz; Fig. 4).

Diagnosis

This new species was first considered by LEMAIER as an individual variation in his original description of *D. cochabambensis* (Fig. 3) (LEMAIRE 1977: fig. 13; 2002: plate 102, fig. 10). Recently, new specimens of both taxa were



Figs. 5–7: Genitalia of the holotype ♂ of *Dirphiopsis curvilineata* n. sp. (genitalia prep. T. DECAËNS # 38). Fig. 5: Ventral view, aedeagus removed. Fig. 6: Lateral view of aedeagus. Fig. 7: Idem, vesica extended. — Fig. 8: Lateral view of aedeagus of *D. cochabambensis* (genitalia prep. T. DECAËNS # 39). — All drawings by T. DECAËNS.

Table 1. Comparison of morphology and altitudinal ranges of *Dirphiopsis curvilineata* n. sp and *D. cochabambensis*.

Character	<i>D. curvilineata</i> ♂	<i>D. cochabambensis</i> ♂
Size (wingspan)	67–76 mm	62–67 mm
Forewings		
Shape	Slightly elongated	Elongated
Discocellular patch spot	Extended	Smaller
Postmedial line	Convex, distinct and continuous	Rather straight and vague near discocellular patch
Median area	Contrasting grayish brown anal and costal areas	This character absent
Postmedial area	With a wide, even band of light grey to white scales	With sinewy, uneven band of light scales
Hindwings		
Discocellular patch	Present as a dark brown spot	Present as a light spot
Genitalia		
Bulbus ejaculatorius	In spiral	More elongated
Distribution		
Geographical range	Restricted to the localities of the type series	North, central and South Bolivia
Habitat	Medium high elevation cloud forest	Medium elevation Andean forest
Altitudinal range	2400–2715 m	1300–2100 m

collected and allow us to identify some relevant and consistent differences between them, considered significant enough to justify the description of this new species. These characters mostly concern the shape and ornamentation of the wings that present very obvious differences between both species. However, differences were also observed in the genitalia, as the bulbus ejaculatorius is less developed and more spiral in *D. curvilineata* than in *D. cochabambensis* (Figs. 6–8; Table 1).

According to our own collecting data, *D. cochabambensis* and *D. curvilineata* do not share the same biotopes and elevation ranges. The former is commonly collected at medium elevation Andean forests (1300–2100 m) from North to South Bolivia (Departments of La Paz, Cochabamba and Chuquisaca), while the latter is known only from the type localities at higher elevation (2400–2700 m). This was not reported by LEMAIRE (1977), who cited all the typical material of his description (including the specimens belonging to *D. curvilineata*) from the same locality at an elevation of 2000 m. In our opinion, this may be due to inaccuracy of the labels of the first specimens of *D. curvilineata* that were used in the description of *D. cochabambensis*.

The differences in altitudinal range between the two close relatives is, however, confirmed in a more recent publication of the same author (LEMAIRE 2002). In this work, LEMAIRE illustrated three ♂♂ identified as *D. cochabambensis* (LEMAIRE 2002: pl. 102, figs. 8–10). One of them (fig. 10) was collected in the same locality as the typical material listed herein at an altitude of 2700 m, and unambiguously belongs to *D. curvilineata*, whereas

the other two are true *D. cochabambensis* that were collected at a lower altitude of 2000 m.

Acknowledgements

The authors want to thank Gilbert LECOURT for providing the type material of this new species; C. LEMAIRE for extensive revision and valuable suggestions; W. A. NÄSSIG and an anonymous referee for useful comments on an earlier version of the paper.

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Received: 19. II. 2002, 23. IX. 2002

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Band/Volume: [23](#)

Autor(en)/Author(s): Decaens Thibaud, Wolfe Kirby L., Herbin Daniel

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