

## A new endemic Sphingid from Cuba:

### *Cocytius haxairei* spec. nov.

(Lepidoptera, Sphingidae)

by

JEAN-MARIE CADIOU

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**Abstract:** *Cocytius haxairei* spec. nov. is described from South East Cuba. The habitus of both sexes as well as ♀ genitalia are illustrated. Comparison is made with two other resembling species of *Cocytius* which coexist with the new species in Cuba, *C. duponchel* (POEY, 1832) and *C. vitrinus* ROTHSCHILD & JORDAN, 1910. In habitus, the new taxon is close to *C. vitrinus* ROTHSCHILD & JORDAN, 1910, with which it was confused in collections, and in the work of DE ZAYAS MUÑOS & ALAYO DALMAU (1956) (in part). The ♀ genitalia are closer to *C. duponchel* (POEY, 1832) however.

**Zusammenfassung:** *Cocytius haxairei* spec. nov. wird aus dem Südosten von Kuba beschrieben. Der Habitus beider Geschlechter, wie auch das ♀-Genital werden abgebildet. Die neue Art wird mit zwei weiteren *Cocytius*-Arten verglichen, mit denen sie in Koexistenz lebt. Es sind diese die Arten *C. duponchel* (POEY, 1832) und *C. vitrinus* ROTHSCHILD & JORDAN, 1910. Habitus ähnelt die neue Art sehr der *C. vitrinus* ROTHSCHILD & JORDAN, 1910, mit der sie bis jetzt in den Sammlungen verwechselt wurde und auch in der Arbeit von DE ZAYAS MUÑOS & ALAYO DALMAU (1956) (in part). Das ♀-Genital ist jedoch ähnlicher mit dem von *C. duponchel* (POEY, 1832).

### Description

#### *Cocytius haxairei* spec. nov.

*Cocytius vitrinus*, DE ZAYAS MUÑOS & ALAYO DALMAU, 1956 (partim).

#### Type material:

Holotype ♂, Cuba, Provinz Santiago de Cuba, Gran Pietra [sic!], 1050 m, 2.8[VIII].[19]92, leg. et coll. SCHNITZLER.

Paratypes: 1 ♂, Cuba, Guantanamo, 17.III.1908, at light, Rothschild Bequest B.M. 1939-1 [coll. BMNH]; 1 ♂, Cuba, Santiago de Cuba, Gran Piedra, 1200 mts, VI.1994, P. BLEUZEN [coll. J.-M. CADIOU]; 1 ♀, Cuba, Moa, VI.1954, F. DE ZAYAS MUÑOS & P. ALAYO DALMAU, [probably coll. Universidad de Oriente, Santiago de Cuba]; 1 ♀, Cuba, La Gran Piedra, 1130 mts, Station météorologique, 20.VII.1996, 22h50, J. HAXAIRE [coll. J. HAXAIRE]; 1 ♀, Cuba, Guantanamo, O. TOLLIN, ex coll. B. P. CLARK, acc # 5645 [coll. CMNH]; 1 ♀, Cuba, Guantanamo, O. TOLLIN, ex coll. B.P. CLARK, acc # 4577 [coll. CMNH]; 1 ♀, Cuba, Guantanamo, ex ROLLE, ex coll. B. S. SCHULTZE, ex coll. B. GEHLEN [coll. ZSM].

#### Habitus (Figs 1-5)

Forewing length: ♂: 51-53 mm; ♀: 55-63 mm (however, the ZSM ♀, at 55 mm, is significantly smaller than the other specimens examined, which range from 61 to 63 mm).

*Cocytius haxairei* **spec. nov.** differs from *C. vitrinus* R. & J. (Figs 6-7) in being generally darker, and having broader, less elongate forewings. On the forewing, the dark line between veins M3 and Cu1a is hardly visible, whereas it is very prominent in *C. vitrinus* R. & J. The angle of the line from the forewing stigma to the costal margin is different: in *C. haxairei* **spec. nov.** it reaches the costal margin with a bigger angle than in *C. vitrinus* R. & J. (i.e. further away from the base). On the hindwing, there are six hyaline windows in *C. vitrinus* R. & J., only five in *C. haxairei* **spec. nov.** In the latter, the light window closest to the inner margin has yellow scales, whereas it is clear up to the base in *C. vitrinus* R. & J. In the ♀ *C. haxairei* **spec. nov.**, the hyaline area on the hindwing is much smaller than in *C. vitrinus* R. & J., and consequently the marginal black band is broader. These characters are also evident in the specimen from Moa, SE Cuba, illustrated by de ZAYAS MUÑOZ & ALAYO DALMAU, 1956 (plate II, fig. 6), and referred to as *C. vitrinus* R. & J., ♀.

From *C. duponchel* (POEY) ♀, *C. haxairei* **spec. nov.** differs in having a clearly convex forewing outer margin. The ground colour of the forewing is more brownish in *C. haxairei* **spec. nov.**, greenish in *C. duponchel* (POEY). In *C. haxairei* **spec. nov.** the white stigma is larger, and the black forewing postdiscal line more strongly marked than in *C. duponchel* (POEY), and clearly crenulated at the veins. In the ♀♀ *C. haxairei* **spec. nov.**, the white preapical costal patch is more prominent and contrasting with the adjacent area than in *C. duponchel* (POEY) and in general the forewing is more contrasted.

*C. haxairei* **spec. nov.** is somewhat sexually dimorphic: the ♀♀ are not only larger and more broadly winged than the ♂♂, the forewings are also more contrasted, with white patches distad of the crenulated postdiscal line and between the stigma and the costal margin, and a lighter area basad of the postdiscal line, irrorated with yellow scales.

♀ **Genitalia** (Figs. 8-10): The three superficially similar species of *Cocytius* that occur together in Cuba, *C. haxairei* **spec. nov.**, *C. vitrinus* R. & J. and *C. duponchel* (POEY), exhibit remarkable differences in the external ♀ genitalia, as illustrated in Figs 8, 9 and 10 respectively. In *C. duponchel* (POEY) (Fig. 10), both the antevaginal plate (AVP) and the postvaginal plate (PVP) are well developed. The AVP has two large, posteriorly-directed, bluntly triangular lobes on either side of the ostium bursae. The PVP is a smooth, sclerotized plate, posterior to the ostium bursae, with a pair of slight ridges running from near the middle, anteriorly and laterally. These structures are also evident in the illustration of ROTHSCCHILD & JORDAN (1903: plate XIX, fig. 6).

In contrast, *C. vitrinus* R. & J. (Fig. 9) has the least developed structures of the three species. The AVP appears undifferentiated and membranous, and the two posteriorly-projecting triangular lobes of *C. duponchel* (POEY) are missing. It is simply sclerotized around the ostium bursae, which is surrounded by a simple tubular structure. The ostium bursae is somewhat projecting, with the posterior edge flush with the PVP, and the anterior edge is pulled ventrally, and broadly V-shaped. The PVP is entirely membranous and has no obvious structures.

In *C. haxairei* **spec. nov.** (Fig. 8), anterior to the ostium bursae are two triangular flaps, somewhat similar to the AVP lobes of *C. duponchel* (POEY) but much smaller and positioned very close to one another near the midline, so close in fact that the median edge of the right lobe overlaps that of the left. This gives the superficial appearance of a single rounded structure with a central notch. Immediately posterior to these lobes is the narrow opening of the ostium bursae. Behind, the PVP is formed from thick, ridged membrane. There are two closely aligned median ridges developed anteriorly towards the ostium bursae, and a pair of ridges arising from them that angle away posteriorly and laterally.

**Discussion:** *C. haxairei* spec. nov., like *C. vitrinus* R. & J., is confined to a very small area in Southeastern Cuba, where the two species coexist, together with *C. duponchel* (POEY). It is remarkable that these two endemics should have developed in such a small area. It has up to now been confused with *C. vitrinus* R. & J. in several collections, probably owing to the very small number of specimens known of the two taxa, and this improbable coexistence. Apart from the ♀ holotype in the BMNH (Fig. 6), the author is aware of two other specimens of *C. vitrinus* R. & J.: a ♀ in the Peabody Museum (ex M. M. CARY collection) (Fig. 7), from Guantanamo, probably collected by C. RAMSDEN, and a specimen illustrated in DE ZAYAS MUÑOS & ALAYO DALMAU, 1956 (plate II, fig. 5), collected by the authors at Gran Piedra. It is listed as a ♂, but the shape of the abdomen and the antenna rather suggest a ♀.

**Acknowledgements:** This species is dedicated to JEAN HAXAIRE, who collected himself a ♀ of the new species in Gran Piedra, and with whom I had the first discussions which led to recognising that there were two species under "*vitrinus*". HERMANN SCHNITZLER collected a ♂ of this species in the same locality, which I have designated as the holotype. I would also like to thank Dr. IAN KITCHING for providing me with photographs of the BMNH and CMNH specimens illustrated in this paper as well as those of the ♀ genitalia, for his invaluable help in interpreting and drawing them, and for allowing full access to the material under his care at the Natural History Museum, London. Finally, I would like to thank Dr. ULF EITSCHBERGER for bringing to my attention the ♀ in the ZSM, and for publishing this paper in the NEN volume dedicated to *Cocytius* and allied species.

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- ROTHSCHILD, L.W. & K. JORDAN (1903): A revision of the lepidopterous family Sphingidae. - Novit. Zool. 9 (suppl.): cxxxv + 1-972.

Address of the author

Dr. JEAN-MARIE CADIOU  
18 avenue de l'Yser

B-40 Brussels

Legends of the colour plates 13-15 (p. 433, 435, 437)

Figs 1-5: *Cocytius haxairei* **spec. nov.**

Fig. 1: Holotype ♂, right forewing length (RFL = 51 mm), upperside. Fig. 1a: Same, underside. Fig. 2: Paratype ♂, Cuba, Santiago de Cuba, Gran Piedra [coll. J.-M. CADIOU] (RFL = 53 mm). Fig. 3: Paratype ♂, Cuba, Guantanamo [coll. BMNH] (RFL = 53 mm), copyright The Natural History Museum, London. Fig. 4: Paratype ♀, Cuba, La Gran Piedra [coll. J. HAXAIRE] (RFL = 63 mm). Fig. 5: Paratype ♀, Cuba, Guantanamo, #4577 [coll. CMNH], copyright The Natural History Museum, London.

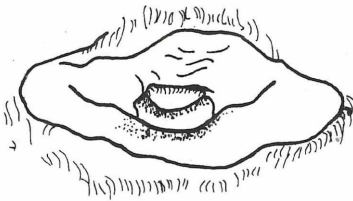
Figs 6-7: *Cocytius vitrinus* ROTHSCILD & JORDAN, 1910

Fig. 6: Holotype ♀ [coll. BMNH] (RFL = 57 mm), copyright The Natural History Museum, London.

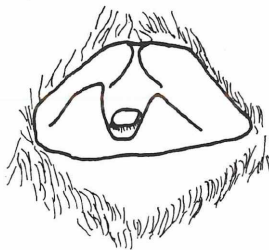
Fig. 7: ♀, Cuba, Guantanamo, VI.1910, ex coll. M. CARY [coll. Peabody Museum].



8



9



10

Fig. 8: *Cocytius haxairei* **spec. nov.**, ♀ genitalia, paratype, Cuba, Guantanamo, O. TOLLIN, # 5645 [coll. CMNH].

Fig. 9: *Cocytius vitrinus* ROTHSCILD & JORDAN, 1910, ♀ genitalia, holotype [coll. BMNH].

Fig. 10: *Cocytius duponchel* (POEY, 1832), ♀ genitalia, Cuba [coll. BMNH].



### Colour plate/ Farbtafel 13

CADIOU, J.-M.: A new endemic Sphingid from Cuba: *Cocytius haxairei* **spec. nov.** (Lepidoptera, Sphingidae). - Neue Ent. Nachr. **59**: 167-170, Marktleuthen.

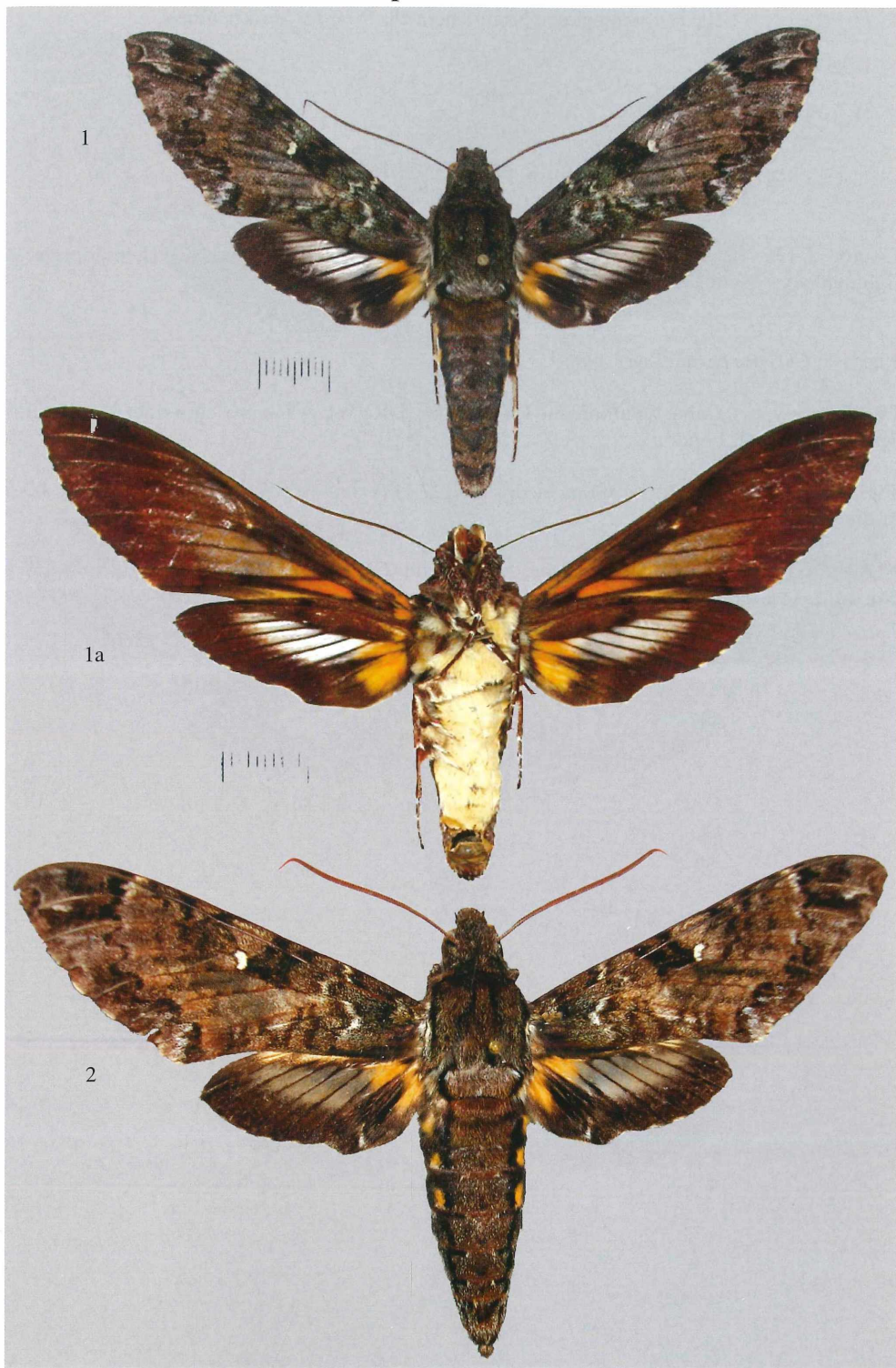
Figs 1, 2: *Cocytius haxairei* **spec. nov.**

Fig. 1: Holotype ♂, right forewing length (RFWL = 51 mm), upperside, Kuba, Provinz Santiago de Cuba, Gran Pietra [sic!], 1050 m, 2.8[VIII].[19]92, leg. et coll. SCHNITZLER. Photo: JEAN HAXAIRE.

Fig. 1a: Holotype ♂, underside, Kuba, Provinz Santiago de Cuba, Gran Pietra [sic!], 1050 m, 2.8[VIII].[19]92, leg. et coll. SCHNITZLER. Photo: JEAN HAXAIRE.

Fig. 2: Paratype ♂, Cuba, Santiago de Cuba, Gran Piedra [coll. J.-M. CADIOU] (RFWL = 53 mm).

## Colour plate/ Farbtafel 13



## Colour plate/ Farbtafel 14

CADIOU, J.-M.: A new endemic Sphingid from Cuba: *Cocytius haxairei* **spec. nov.** (Lepidoptera, Sphingidae). - Neue Ent. Nachr. **59**: 167-170, Marktleuthen.

Figs 3-5: *Cocytius haxairei* **spec. nov.**

Fig. 3: Paratype ♂, Cuba, Guantanamo [coll. BMNH] (RFWL = 53 mm), copyright The Natural History Museum, London.

Fig. 4: Paratype ♀, Cuba, La Gran Piedra [coll. J. HAXAIRE] (RFWL = 63 mm). Photo: JEAN HAXAIRE.

Fig. 5: Paratype ♀, Cuba, Guantanamo, # 4577 [coll. CMNH], copyright The Natural History Museum, London.



## Colour plate/ Farbtafel 14





## Colour plate/ Farbtafel 15

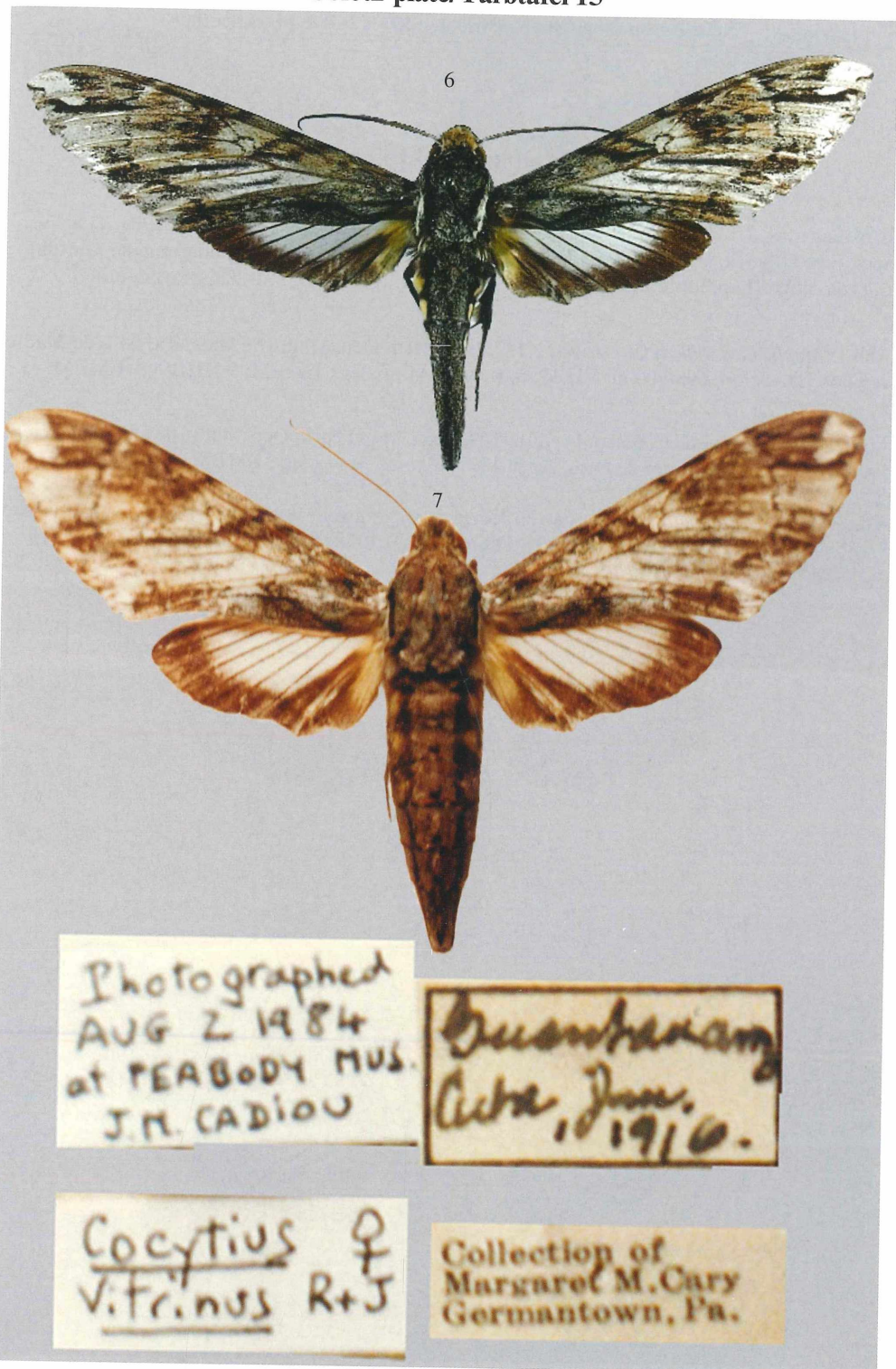
CADIOU, J.-M.: A new endemic Sphingid from Cuba: *Cocytius haxairei* **spec. nov.** (Lepidoptera, Sphingidae). - Neue Ent. Nachr. **59**: 167-170, Marktleuthen.

Figs 6-7: *Cocytius vitrinus* ROTHSCILD & JORDAN, 1910

Fig. 6: Holotype ♀ [coll. BMNH] (RFWL = 57 mm), copyright The Natural History Museum, London.

Fig. 7: ♀, Cuba, Guantanamo, VI.1910, ex coll. M. CARY [coll. Peabody Museum].

## Colour plate/ Farbtafel 15



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