

Description of a new *Oospila* Warren, 1897, from French Guiana

(Lepidoptera Geometridae Geometrinae Lophochoristini)

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Résumé

Description d'un nouvel *Oospila* Warren, 1897, de Guyane

Une nouvelle espèce appartenant au genre *Oospila* Warren, 1897, est décrite d'après deux mâles et une femelle collectés en Guyane : *Oospila poirieri* n. sp. Elle appartient au groupe d'espèces *includaria*, mais ses motifs alaires et ses genitalia — qui sont figurés — apparaissent nettement distincts de ceux des deux autres espèces de ce groupe — *Oospila includaria* (Herrich-Schäffer, 1855) et *Oospila leucothalera* (Prout, 1932) —, ainsi que de ceux du taxon *Oospila venezuelata* (Walker, 1861), présent en Guyane et dont certaines formes peuvent ressembler à la nouvelle espèce.

La disposition et la forme de chacune des deux zones vertes de l'aile antérieure sont caractéristiques : séparées par une large bande médiane de couleur beige à crème — s'étendant de la côte au tornus, où cette bande s'élargit le long des bords externe et interne —, ces taches vertes sont toutes les deux ceinturées d'abord par une ligne de quelques écailles rougeâtres, puis par une mince bande blanche ; la tache verte basale est assez petite et presque arrondie, la tache verte subapicale, plus grande, revêt une forme subtriangulaire. La mince bande terminale brun foncé, qui court de manière continue et régulière le long du bord de l'aile postérieure, est un autre critère distinctif de la nouvelle espèce.

Les petites taches beiges à crème présentes à la base des ailes antérieure et postérieure d'*O. includaria* sont absentes chez *O. poirieri* n. sp., et la marque sombre située au milieu d'une zone ovoïde beige à crème dans l'aire discale de l'aile postérieure chez *O. includaria* est remplacée par un court et étroit trait blanc chez la nouvelle espèce. À l'aile postérieure, l'aire verte d'un seul tenant et de forme ovoïde est plus nettement étendue chez *O. poirieri* n. sp. que chez *O. leucothalera* (où elle présente une forme irrégulière), chez certaines variétés d'*O. includaria* et chez *O. venezuelata*. Les formes de ce dernier taxon qui peuvent évoquer la nouvelle espèce s'en distinguent également par l'absence de la bande terminale brun foncé et incurvée bordant l'aile postérieure, et par la présence d'une bande assombrie, rectiligne et pas aussi nette, traversant obliquement l'aire postmédiane beige à crème. À l'aile antérieure, la plus grande des deux taches vertes est davantage située dans l'aire médiane que subapicale chez *O. leucothalera*, chez qui elle n'est pas régulière, avec la moitié inférieure plus grande que la moitié supérieure, deux parties d'ailleurs séparées l'une de l'autre chez certains spécimens.

Oospila includaria et *O. leucothalera* sont inconnus de Guyane, la seconde espèce étant semble-t-il restreinte au sud-est du Brésil et la première plus largement répandue depuis le sud du Pérou et l'ouest de la Bolivie jusqu'au centre et au sud-est du Brésil, en passant par le nord de l'Argentine et le Paraguay.

Abstract

A new species of the genus *Oospila* Warren, 1897, from French Guiana is described. *Oospila poirieri* n. sp. belongs to the *includaria* group but the wing markings and genitalia are distinctive from those of two other species in this group, *O. includaria* (Herrich-Schäffer, 1855) and *O. leucothalera* (Prout, 1932), and also from those

of *O. venezuelata* (Walker, 1861) some forms of which can resemble to the new species. On the forewing, the two green blotches are characteristic, outlined by a ring of few reddish scales then by a narrow white band, the basal blotch small and almost circular, the subapical subtriangular; the narrow, dark brown terminal band, continuous along the edge of the hindwing, is also a distinctive feature. *O. includaria* and *O. leucothalera* are not known from French Guiana.

Abbreviations

MNHN Muséum National d'Histoire Naturelle, Paris, France

IZBE Insect collection of former Institute of Zoology and Botany of Estonia Academy of Sciences, deposited in Estonian University of Life Sciences, Tartu, Estonia

ZSM Zoologische Staatssammlung München, Germany

The genus *Oospila* Warren, 1897, includes seventy-four species and one subspecies (COOK & SCOBLE, 1995; SCOBLE & *al.*, 1999; VIIDALEPP, 2002). Thirty-one species are recorded from French Guiana (INPN, on line).

During an intensive entomological recording campaign in the Nature Reserve of Nouragues by the Société Entomologique Antilles-Guyane between 2009 and 2011, a single male specimen of a small unidentified *Oospila* was collected at a light sheet in September 2010. The very unusual ornamentation of the wings appeared different from that of any of the known species of the genus. By consulting the Herbulot Collection, preserved in Munich (Germany), the first author noticed the presence in this collection of another specimen, which Claude HERBULOT himself had taken care to isolate as undetermined.

Meanwhile, the second author had also noticed the presence in the collection of IZBE of a female specimen of what appeared to be an undescribed species of *Oospila*, the wing pattern of which was similar to that of the male collected in 2010.

After careful examination of the wing pattern and genitalia to confirm the status of new species, we describe it here.

Oospila poirieri n. sp.



FIG. 1-2. — *Oospila poirieri* n. sp., holotype ♂. – 1, upperside. – 2, underside. Magnification : $\times 3$. Photos : © Antoine LÉVÊQUE.

Holotype. ♂, French Guiana, Natural Reserve of Nouragues, Inselberg DZ, 3/IX/2010, Eddy POIRIER *leg.*, coll. Philippe Collet, genitalia slide AL39. *In* MNHN.

Paratypes.

1 ♂, French Guiana, Saül, VIII/1982, Gilbert LECOURT *leg.*, coll. Claude Herbulot. *In* ZSM.

1 ♀, French Guiana, Montagnes Tortue, 115 m, 4° 15,007' N – 52° 21,512' W, 4/I/2003, Villu SOON *leg.*, genitalia slide 8176. *In* IZBE.

Description. Male and female similar but the female is larger. Wingspan: 16-25 mm; holotype ♂: 16 mm, paratype ♂: 20 mm, paratype ♀: 25 mm. Frons light brownish, whitish in the inferior part. Palpi cream, thin, stick-shaped, projecting ahead of frons a little less than the diameter of eye. Vertex and interantennal fillet whitish. Antennae of male and female bipectinate, cream. Dorsal surface of thorax green. Legs beige, hind legs with one pair of spurs. Abdomen dorsally mottled green and whitish, anterior abdominal segments with four cream or beige crests.

Forewing. Ground colour green. Costa light brownish, slightly darker towards the apex and edged of cream over the entire length. A small cream area at the base of the wing and another at the apex. Basal area green, almost circular. Antemedial band white, from about a quarter of the costa to almost the middle of inner margin, edged by a thin row of reddish scales along the green basal area. White postmedial band traversing the wing from costa to the termen below the vein CuA₁, then continuing towards the apex and around a green subtriangular area, which is surrounded by a thin row reddish scales, between the green and the white areas. Medial area beige, sparsely irrorated with dark grey scales giving a light brownish tint to this area. Discal spot blackish, double, with the superior spot often linear. Terminal line light brown. A small light cream area at the tornus. Fringe light beige.

Hindwing. Ground colour green. Basal and medial areas contiguous, green, surrounded at first by a thin row of reddish scales and then by a white band. Distal to the latter, another broader band, beige, irrorated brown and dark grey, continuous from the costa to the middle of the dorsum, through postmedial area and tornus. Terminal line broad, dark brown, larger and darker than that of the forewing. Fringe dark beige, slightly darker than that of the forewing. Discal spot absent, replaced by a white line, which extends to the costal white band.

Underside of both wings as upperside, but paler and a little brighter.

Male genitalia. Uncus short, in the shape of a truncated triangle, with three small teeth at the tip, the middle of these slightly longer than the other two. Socii membranous, large. Gnathos with strongly sclerotized hornlike arms, not fused, broadest at base and tapered towards the pointed apex. Anellar complex completely surrounding aedeagus, well developed, with a complex shape. Ventral plate of vinculum broad, emarginated. Coremata absent.

Valva deeply excavated, divided in two parts by a very large cleft; the inferior part (saccular edge) with the sacculus extended into long, narrow, pointed and sclerotized process; the superior part (costal edge) strongly sclerotized, wider than the sacculus, bearing ventrally a relatively wide but short projection at base; costa with a pointed apex and an additional strong tip, which resembles the pointed tooth of a shark, before the apex; ampulla absent; dorsally a small additional projection below the base of costal arm of the valva.

Aedeagus long, narrow and pointed. No cornutus.

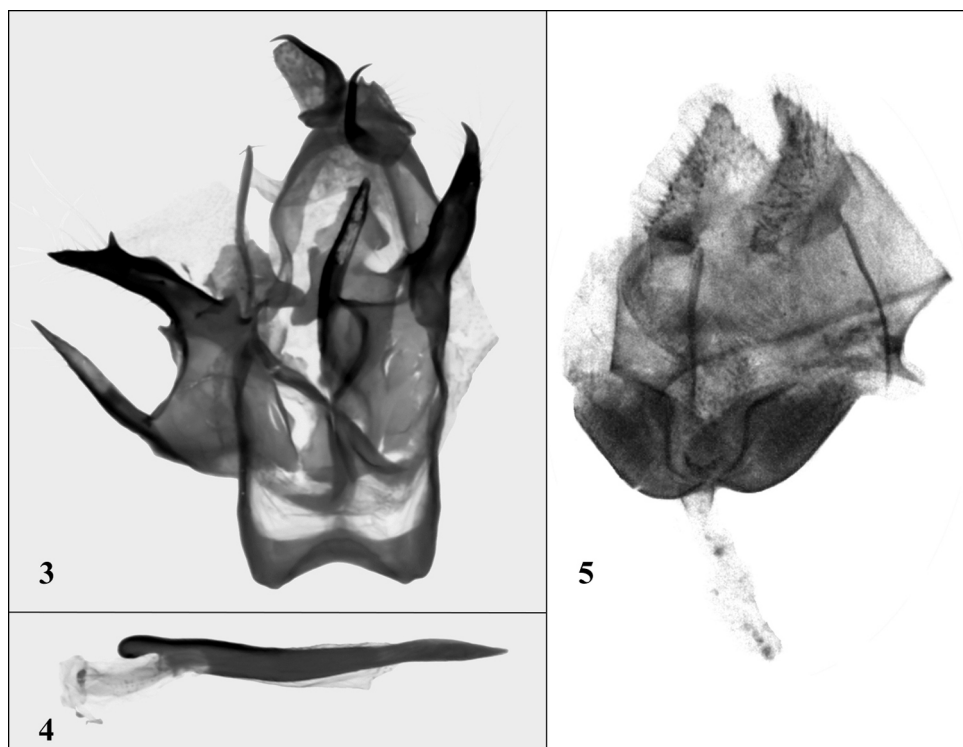


FIG. 3-5. — *Oospila poirieri* n. sp. – 3 and 4, Male genitalia and aedeagus, holotype. – 2, Female genitalia, paratype. Photos : © Antoine LÉVÊQUE (3 and 4), Jaan VIIDALEPP (5).

Female genitalia. Ovipositor papillae roughly setose, tips acute. Anterior apophyses reduced to a short projection, four to five times shorter than the posterior apophyses. As in *O. includaria*, ductus and corpus bursae membranous and not striated, narrow, short and poorly developed. No signum visible. Antrum obsolescent. Sterigma strongly sclerotized, very large, almost semicircular, slightly emarginated just above and just below the ostium; ostium ring-shaped.

Derivatio nominis. The species is named after Eddy POIRIER, its discoverer.

Discussion

Systematic position. *Oospila poirieri* n. sp. belongs to the *includaria* group, and it could be placed after *O. leucothalera* (Prout, 1922).

Diagnosis. The two green blotches of the forewing are characteristic, underlined by a line of few reddish scales then by a thin white band are characteristic. The narrow, dark brown terminal band, continuous along the edge of the hindwing, is another good distinctive feature.

In *O. includaria* and *O. leucothalera*, the two other species in the *includaria* group, the cream or beige medial area of the forewing is always much narrower, even though the wing markings of *O. includaria* vary considerably.

The presence of a cream or beige blotch, oval and conspicuous, along inner margin at the base of the forewing and the presence of another blotch at the base of the hindwing, also cream or beige but bigger, and elongated along the tornal area, distinguish *O. includaria* from the new species, as well as from *O. leucothalera*. *O. includaria* differs also from *O. poirieri* n. sp. by the presence of a dark discal mark, surrounded by a roundish cream or beige area in the hindwing. In the new species, there is instead a short and thin white line.

The shape of the green markings on the fore and hind wings also distinguish *O. leucothalera* from *O. poirieri* n. sp. On the hindwing, the green blotch is reduced and irregular in *O. leucothalera* while it is larger and regularly ovoid in the new species. On the forewing, the green central blotch is bigger in the inferior half than in the superior half, often almost constricted into two separate blotches, in *O. leucothalera*. In *O. poirieri* n. sp. the blotch is more apical, not constricted, and subtriangular; in addition, the basal green blotch is not rounded in *O. leucothalera*.

O. poirieri n. sp. can also resemble some forms of the highly variable *O. venezuelata*, especially in the forms in which the cream area around discal spot on the forewing is continuous with the cream area at tornus, so forming a continuous cream band more and less wide between the costa and the tornus and dividing the green ground colour in two parts as in the new species. However, *O. poirieri* n. sp. differs from *O. venezuelata* in the hindwing, in which the green colour is more extended and the dark brown submarginal band is narrow, rounded, following the wing margin and not straight through to the cream area. *O. poirieri* n. sp. differs also from *O. venezuelata* in the conspicuous and clearly double discal spot on the forewing, and in the smaller, almost circular basal green blotch.

The male genitalia of *O. poirieri* n. sp. differ markedly from those of *O. includaria*. In *O. poirieri* n. sp., the uncus has the shape of a truncated triangle, with three small teeth, but in *O. includaria* it is simply triangular; the deeply excavated valva and the shape of the sacculus and the costa are also good criteria to separate the two taxa; the anellar complex is very different in the two species, and the shape of the ventral plate of the vinculum is large, broad and emarginated in *O. poirieri* n. sp. while it is small and V-shaped in *O. includaria*. The male genitalia of *O. leucothalera* are very like those of *O. includaria* but the saccular process is longer in *O. leucothalera*, reaching the tip of the valva.

The female genitalia of *O. poirieri* n. sp. can be recognized by the large size and the shape of the sterigma. In *O. includaria*, it is smaller and approximately elliptical, and in *O. leucothalera*, it is large and kidney-shaped. Further, in *O. leucothalera*, the ductus bursae is strongly sclerotized and striated, with a large antrum.

Distribution. *Oospila poirieri* n. sp. is known only from French Guiana. According to COOK & SCOBLE (1995: 37-38), *O. leucothalera* is known only from southern areas of Brazil (Minas Geraes, São Paulo) while the distribution of *O. includaria* seems more extended from South Peru (Puno Region) and West Bolivia (La Paz department) to Central and South-East Brazil (Matto Grosso, Minas Geraes, São Paulo, Paraná, Santa Catarina, Rio Grande do Sul), through North Argentina (Jujuy, Salta, Tucuman, Misiones) and Paraguay. Neither *O. includaria* nor *O. leucothalera* is known in French Guiana and their range seems very far removed from that country.

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References

- Cook (Mark A.) and Scoble (Malcolm J.)**, 1995. — Revision of the neotropical genus *Oospila* Warren (Lepidoptera: Geometridae). *Bulletin of the natural History Museum, Entomology Series*, **64** (1): 1-115, 199 fig. + 1 colour plate off pagination (21 fig.).
- INPN**, on line. — Inventaire National du Patrimoine Naturel [list of *Oospila* species recorded in the French territories]. < <http://inpn.mnhn.fr/espece/listeEspeces/oospila/> > {accessed the 7th May 2015}.
- Scoble (Malcom J.) et alii**, 1999. — Geometrid moths of the World. A catalogue (Lepidoptera, Geometridae). **1** : [I]-XXV + 1-482 + 1-129 (index) ; **2** : [I]-[II] + 485-1016 + 1-129 (index). 1 CD-ROM. CSIRO Publishing, Collingwood, Australie, et Apollo Books, Stenstrup, Danemark.
- Viidalepp (Jaan)**, 2002. — *Oospila orula*, a new species of Emerald Moths from Ecuador (Lepidoptera: Geometridae: Geometrinae). *Zoosystematica rossica*, **11** (1): 183-186.