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First record of *Idaea lobaria* Chrétien, 1909 from the Iberian Peninsula (Lepidoptera: Geometridae, Sterrhinae)

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Abstract

Idaea lobaria Chrétien, 1909 was described from specimens collected in Algeria. Here we report the first records for the fauna of Europe, based on specimens collected from the late June to early October in south-eastern Iberian Peninsula, in habitats characterised by dry and extremely warm ravines in the Murcia province (Spain).
KEY WORDS: Lepidoptera, Geometridae, *Idaea lobaria*, new records, distribution, Spain.

Primer registro de *Idaea lobaria* Chrétien, 1909 en la Península Ibérica (Lepidoptera: Geometridae, Sterrhinae)

Resumen

Idaea lobaria Chrétien, 1909 fue descrita con ejemplares colectados en Argelia. Aportamos la primera cita para la fauna de Europa, basada sobre especímenes colectados desde finales de junio hasta comienzos de octubre en el sureste de la Península Ibérica en hábitats caracterizados por ramblas secas y extremadamente cálidas en la provincia de Murcia (España).
PALABRAS CLAVE: Lepidoptera, Geometridae, *Idaea lobaria*, nuevos datos, distribución, España.

Introduction

Species occupying the southern half of the Iberian Peninsula and northern Morocco, extending further to northern Algeria and Tunisia, can be attributed to the Iberian-Maghrebian corotype while the Betic-Riffian corotype is used for species restricted to the mountains of the South of Iberian Peninsula and the Rif Mountains of northern Morocco, including the Sistema Central in Iberian Peninsula or the northern part of the Atlas Mountains (SERRANO *et al.,* 2003).

The subfamily Sterrhinae includes many species distributed in both areas as, for example, *Idaea sericeata calvaria* Wehrli, 1927, *I. ochrata albida* Zerny 1936, *I. nigrolineata* (Chrétien, 1911), *I. mustelata* (Gumppenberg, 1892), *I. bigladiata* Herbulot, 1975, *I. nexata* (Hübner, 1813), *I. manicaria* (Herrich-Schäffer, 1852), *I. minuscularia* (Ribbe, 1912), *I. fractilineata* (Zeller, 1847), *I. incisaria* (Staudinger, 1892), *Cinglis andalusiaria* Wagner, 1935, *Rhodostrophia vibicaria strigata* Staudinger, 1871, *Cyclophora hyponoea* (Prout, 1935) and many others (HAUSMANN, 2004). Other species are only present in the Iberian Peninsula with single records in North Africa as *Idaea luteolaria* (Constant, 1863), *I. figuraria* (Bang-Haas, 1907), *I. simplicior* (Prout, 1934) and *Oar reaumuraria* (Millière, 1864), while *Cleta ramosaria* (Villers, 1789) is scarcely recorded on both sides of the Gibraltar Straight.

North African lepidopteran species are very often remaining undetected or overlooked in European collections due to lack of information since few species descriptions based on morphology

and genitalia are available. For example, *I. gelbrechti* Hausmann, 2003 was described from Ifrane in Morocco and the first record in the Iberian Peninsula was cited in MÜLLER (2010). Later, GUERRERO *et al.* (2012) added further records to the Iberian-Maghrebine region with new records in south-eastern Spain after studying the specimens labelled as *Idaea aversata* (Linnaeus, 1758) in several entomological collections.

Idaea lobaria Chrétien, 1909 was described from Biskra in Algeria and was tentatively placed into the *I. infirmaria* species-group including also the West-Mediterranean species *I. infirmaria* (Rambur, 1833) and *I. rhodogrammaria* (Püngeler, 1913), the East-Mediterranean *I. tineata* (Thierry-Mieg, 1931) and the Iberian endemism *I. saleri* Domínguez & Baixeras, 1992. The remaining species are distributed in North Africa (*I. alutaceata* (Rungs, 1945)), and in the Canary Islands (*I. bacalladoi* (Pinker, 1974)*, I. purpurariata* (Pinker, 1974) and *I. fuerteventurensis* (Pinker, 1974)). *Idaea lobaria* is distributed from the Levant to northern Morocco. This species in habitus is reminiscent of *I. fractilineata* (Zeller, 1847) and differs from the latter by several morphological and genital characters (HAUSMANN, 1994, 2004).

Material and methods

Adult female specimens were examined externally in order to evaluate possible differences and the female genitalia structures were dissected using standard procedures (HAUSMANN, 2001) with minor modifications. Female adults (Figure 1) and the morphology of genital structures (Figure 2) were studied using a Zeiss Stemi 508 stereomicroscope with a Zeiss Axiocam ICc5 digital camera. All specimens are deposited in the collection of the Department of Zoology and Physical Anthropology of Universidad de Murcia (Spain).

Results

In 2003, 2006 and 2016 the following 12 females were collected.

Material: Murcia, Rambla Salada, Las Torres de Cotillas, 80 m, 30SXH50, 1 ♀, 26-VI-2003; 2 ♀♀, 8-VII-2003; 1 ♀, 1-X-2003; 1 ♀, 7-VII-2016 (Guerrero leg.); Río Mula, Embalse de los Rodeos, Las Torres de Cotillas, 120 m, 30SXH50, 1 ♀, 27-VI-2003 (Guerrero leg.); Rambla Salada, Cañada Hermosa, Murcia, 150 m, 30SXH40, 3 ♀♀, 29-VI-2006; 3 ♀♀, 17-VII-2006 (Guerrero leg.).

The specimens have been found between 80 and 150 m above sea-level in a gullied landscape in the center of the Murcia province, located within the thermo-mediterranean bioclimatic belt, and characterized by high summer temperatures and low and sporadic rainfall (mean annual precipitation of 300 mm).

Discussion

The south-east of the Iberian Peninsula presents large areas of arid habitats with many species and plant communities with closest relationships to those of North Africa. This area seems to have been under arid conditions for a long time, allowing the evolution and persistence of hundreds of plant species adapted to those environments, some of them endemics, and others shared with the semiarid Maghreb (Algeria and Morocco) (more information in ALCARAZ, 2017).

The sampled localities correspond to two semi-desert landscapes around two seasonal or sporadic water courses with some differential characteristics. The location around the Mula River is an area of badland ravines or “ramblas”, gypsum marls, with high dryness and erodibility and sparse vegetation. The most characteristic plant species are some of the Ibero-Africanisms adapted to this type of substrate, with resistance to high concentrations of calcium sulfates and high temperatures such as *Limonium, Tamarix, Ferula, Helianthemum, Fumana, Salsola, Suaeda, Arthrocnemum*, and other xero-halophilic genera. The other two localities corresponding to Rambla Salada are situated in a ravine of clay materials and little consolidated conglomerates, with high salinity which characterize the type of the present vegetation. The reed (*Phragmites australis*) dominates depending on water

depth, with other common halophilic plants occurring such as *Arthrocnemum, Suaeda, Limonium, Tamarix*, etc.

In North Africa, the species has been recorded from sea-level up to 1,500 m in Morocco (Anti-Atlas) inhabiting deserts, semi-deserts and oases.

Idaea lobaria can be considered as univoltine or bivoltine and it has been recorded from the end of June to early of October while the scarce North African records are from early May to early June. The Iberian data from October may refer to a partial second emergence. In the Levant, scarce data indicate also bivoltinism from early April to late June and from mid-October to mid-November.

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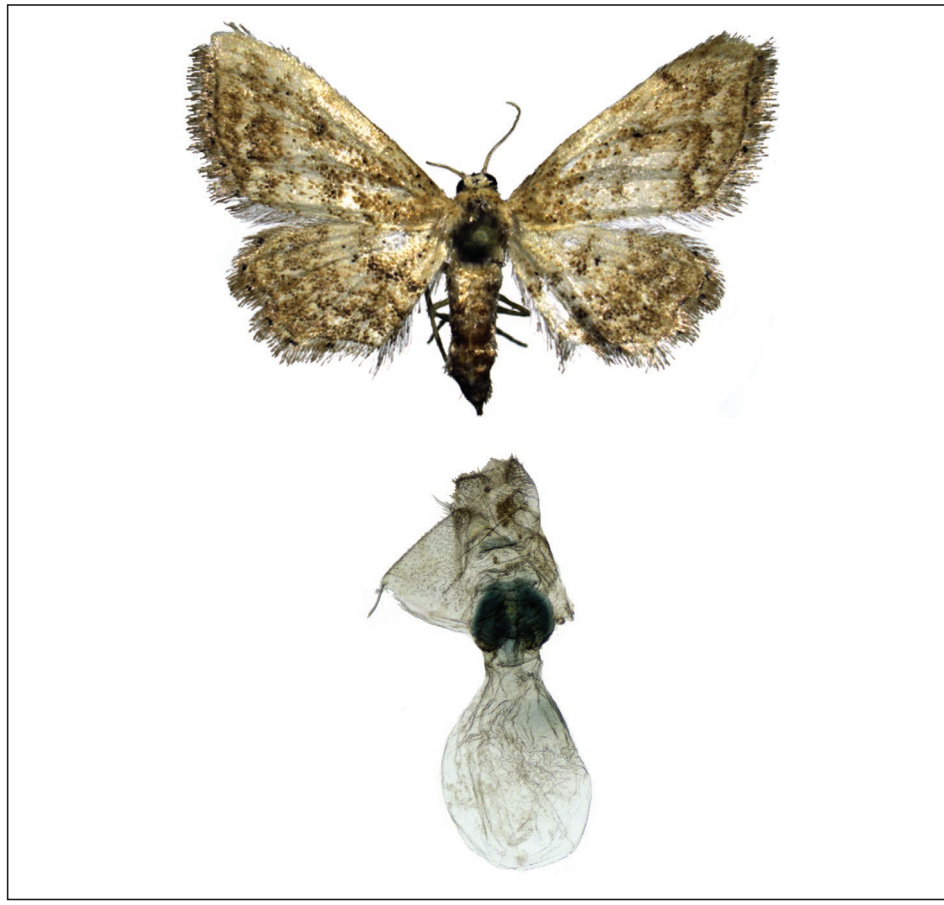

Figures 1-2.– 1. Female adult of *Idaea lobaria* Chrétien. **2.** Female genitalia.