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NOTA / NOTE
The lilac moth, *Gracillaria syringella* (Fabricius, 1794) (Lepidoptera: Gracillariidae), a new species for the Iberian Peninsula

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Abstract: The widespread leaf-miner moth *Gracillaria syringella* (Fabricius, 1794) (Lepidoptera: Gracillariidae), is here reported for the first time in Portugal, whilst previously unpublished records in Spain are also presented. We comment upon the finding, in the context of the distribution and ecology of the moth.
Key words: Lepidoptera, Gracillariidae, *Gracillaria*, *Gracillaria syringella*, pollinator, Oleaceae, leaf-miner, Portugal, Spain.

Resumen: La polilla de la lila, *Gracillaria syringella* (Fabricius, 1794) (Lepidoptera: Gracillariidae), una nueva especie para la Península Ibérica. Se cita por primera vez en Portugal la polilla minadora de amplia distribución *Gracillaria syringella* (Fabricius, 1794) (Lepidoptera: Gracillariidae), y se presentan también registros inéditos en España. Comentamos el hallazgo en el contexto de la distribución y ecología de la polilla.
Palabras clave: Lepidoptera, Gracillariidae, *Gracillaria*, *Gracillaria syringella*, polinizador, Oleaceae, minadora de hojas, Portugal, España.

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Introduction

Gracillaria syringella (Fabricius, 1794) is a small leaf-miner moth of the family Gracillariidae, described first as *Tinea syringella* Fabricius, 1794, and later as *Gracillaria anastomosis* Haworth, 1828, becoming the type-species of the genus *Gracillaria* Haworth, 1828, when the bucket-genus *Tinea* Linnaeus, 1758 was dismembered (Stainton, 1864), and *Gracillaria* was discovered to represent an independent lineage from *Caloptilia* Hübner, 1825, within the Gracillariidae (Kumata, 1982).

The moth is widely distributed across temperate Europe and western Asia, from Spain (see below) (Karsholt & Razowski, 1996) eastwards to Romania and Moldova (Rákosy *et al.*, 2003), to Ukraine (Crimea) and Russia (Sinev, 2019), Iran (Rajaei *et al.*, 2023) and northwards to the Nordic and Baltic countries (Aarvik *et al.*, 2017), but is replaced by other congeneric species in the Russian Far-East and Japan (Kumata, 1982). As an introduced species, *G. syringella* is also widespread in Canada and the United States of America (Pohl *et al.*, 2016, 2018).

Its presence in southern Europe, and particularly in Iberia, is however patchy or anecdotal, and few records are actually known. It has been cited for Sardinia (Triberti & Braggio, 2011) but, despite being noted in all other northern circum-Mediterranean countries in Karsholt & Razowski (1996), we couldn't locate precise observations in Greece or Spain. What is factual is that it was not known in Spain by 1976 (Kiziroglu, 1976) or 1984 (Carter, 1984), but apparently so by 1996 (Karsholt & Razowski, 1996). Presumably taking the latter reference as proof of presence, the species is mentioned as Iberian in Vives Moreno (2014), but is not formally assigned to either Spain ('E') or Portugal ('P') in the list's notation. Therefore, in the absence of verifiable published records of the species in the region, we take its Iberian presence as still unverified.

This species is a trophic specialist depending on shrubs and trees belonging to the family Oleaceae, such as lilac, privet, ash and jasmine, although the latter is less referred in the literature (Stainton, 1864; Murdoch, 1967; Kiziroglu, 1976). A thorough list of host plants can be found on lepiforum.org, gracillariidae.net, and bladmineerders.nl. As the specific-epithet indicates, the species is mostly associated with the genus *Syringa*, but also with *Ligustrum* and *Fraxinus*. Both the early stages and imago have been thoroughly described by Kiziroglu (1976) and Carter (1984). In the early instars, larvae mine leaves of the host plant, often gregariously and into a blotch near the leaf margin, later to leave the mine and build a shelter made out of a rolled leaf, whilst feeding on its upper side. Once the development is finished, pupation takes place among withered leaves or in the leaf-litter at the base of the host. Damage to the host is characteristic and may be visible from afar, depending on the level of attack. Despite its size, this moth is reported as a pest in multiple situations in both temperate Europe and North America (Murdoch, 1967; Kiziroglu, 1976), and its spread both northwards and into the Nearctic is generally attributed to the widespread cultivation of these plants in gardens and hedges (Kozlov, 1996).

Recently, some records of the species in Spain have surfaced in online databases (iNaturalist.org, Observation.org, GBIF.org), but have apparently fallen away from the attention of researchers and the species has yet to be formally presented as occurring in the country. Furthermore, the species was unknown to be present in Portugal too, so when the authors located *G. syringella* in the south of the country, this triggered the need to update on the yet poorly known distribution of the species in the Iberian Peninsula, presented here.

Fig. 1.- Photographic record of *Gracillaria syringella* at Herdade da Mitra (Évora), 05.07.2024. Photo: Fernando Pires.

Studied material

A single specimen, morphologically identifiable as belonging to *Gracillaria syringella* (Fabricius, 1794) (Fig. 1), was observed on 05.07.2024, during light-trapping for moths at Herdade da Mitra (Valverde, Évora, Portugal). The area surrounding the light-source consists of dry Mediterranean parkland, dominated by sclerophyllous oak-species, namely *Quercus rotundifolia* and *Q. suber*, whilst a riverine habitat nearby is dominated by narrow-leaved ash, *Fraxinus angustifolia*. Minor traditional agricultural activities are present, such as non-intensive olive trees' cultivation, and honey bee hives.

The aforementioned record triggered a search for published and unpublished records of *G. syringella* in Iberia, resulting in the finding of five hitherto unpublished records, otherwise only available in online biodiversity databases such as iNaturalist.org and Observation.org (Table 1).

Table 1 - Iberian records assignable to *Gracillaria syringella*

Record	Locality data	Geolocation	Date	Observer	Source - ID
1	Santiago de Ois, Coirós, A Coruña, Galicia, ES	43.25160; -8.12220	09.08.2009	Belén Rodríguez	Observation.org - 303116990
2	Cerdedo, Pontevedra, Galicia, ES	42.53430; -8.38780	16.06.2017	Luís Álvarez Vieitez	Observation.org - 303990272
3	Izu, Pamplona, Navarra, ES	42.82870; -1.79630	02.05.2022	Santiago Serrano	Observation.org - 240071784
4	Buño, A Coruña, Galicia, ES	43.26885; -8.77629	17.08.2022	David Gil	iNaturalist - 131380795
5	Ansede, Guitiriz Lugo, ES	43.17710; -7.87520	02.04.2023	Xose Otero	Observation.org - 266731479
6	**Herdade da Mitra, Valverde Évora, PT**	**38.52869; -8.01927**	**05.07.2024**	**Fernando Pires & André Oliveira**	**This paper**

Discussion

Gracillaria syringella is a characteristic moth, whose identity in Europe can only be disputed against some dark-colored *Caloptilia* and the only congeneric species, *G. loriolella* Frey, 1881. However, it bears a richer, brownish ground-color against the plainer-grey of the latter species and larger white streaks, often forming larger blotches. All these Gracillariidae rest in a characteristic posture, where the anterior part of body and head are raised above the substrate, standing on the first two pairs of legs.

Despite being relatively easy to identify, records of the species in Iberia are few and apparently hitherto formally unpublished, so that previous to our Portuguese record, only five could be found. However, although the preferred host plant, lilac (*Syringa vulgaris*), is not native to the region and is only present as a garden or often naturalized shrub, alternative native Oleaceae are widespread in western Iberia, especially narrow-leaved ash (*Fraxinus angustifolia* Vahl, 1804), a common tree in Portugal (Araújo *et al*., 2024), and widely cultivated species of privets, chiefly *Ligustrum vulgare*, *L. lucidum* or *L. ovalifolium*. Although never reported, some hard-leaved species in the same family are also potential hosts, such as *Phillyrea* spp., *Jasminum fruticans* or even *Olea europaea*.

Regardless of the origin and ecology of this species in Iberia, it is clear that further field-work is necessary in order to precise which host plant it is using both in north Iberia, as well as in the south.

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