

Monochroa suffusella (Lepidoptera: Gelechiidae, Gelechiinae), new to the Belgian fauna

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Abstract. On June 20th, 2015 several specimens of *Monochroa suffusella* (Douglas, 1850) were netted in Kalmthout (prov. Antwerp, Belgium). This is the first record of this species for Belgium. Information on the geographical distribution and biology of the species is provided as well as an examination of the genitalia.

Samenvatting. Op 20 juni 2015 werden enkele exemplaren van *Monochroa suffusella* (Douglas, 1850) met een net gevangen te Kalmthout (prov. Antwerpen, België). Het is de eerste keer dat deze soort in België werd waargenomen. Informatie over de geografische verspreiding en de biologie wordt gegeven samen met een beschrijving van de genitalia.

Résumé. Le 20 juin 2015 quelques exemplaires de *Monochroa suffusella* (Douglas, 1850) furent capturés au filet à Kalmthout (prov. d'Anvers, Belgique). Il s'agit de la première mention de cette espèce en Belgique. Des informations concernant la distribution géographique et la biologie de l'espèce sont fournies ainsi qu'un examen des génitalia.

Key words: *Monochroa suffusella* – Faunistics – Lepidoptera – New record – Belgium.

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Introduction

During a twilight visit to Grenspark De Zoom-Kalmthoutse Heide (Kalmthout, prov. Antwerp, Belgium) on June 20th, 2015 conditions were good for micro moths to be on the wing.



Figure 1. *Monochroa suffusella* (Douglas, 1850) at Kalmthout (Antwerpen, België) 20.vi.2015 (© Dan Sloomakers).

A couple of sweeps with an insect net above the wet heath vegetation yielded, amongst others, three fresh specimens of *Monochroa suffusella* (Douglas, 1850) (fig. 1). The location of this find was a bog vegetation with *Erica tetralix*, *Molinia caerulea*, *Eriophorum angustifolium* and *Sphagnum* sp. as most common plants. This is the first record for the Belgian fauna (De Prins & Steeman 2003–2015), though its presence in Belgium and France had been predicted by Sattler (1992: 109).

Taxonomy

The Gelechiidae are a rather large, cosmopolitan family in which about 4600 species are described, of which hitherto 153 are known from Belgium. The genus *Monochroa*, to which *M. suffusella* belongs, contains

about 40 species in the Holarctic region (Sakamaki 1996: 245) and it was hitherto represented by 9 species in Belgium, of which only 6 were observed after 2004 (De Prins & Steeman 2003–2015).

Monochroa conspersella (Herrich-Schäffer, 1854), also a very rare species in Belgium of which the larva lives mining on *Lysimachia vulgaris*, was found within 500 meters of this location in 2013.

Distribution

Throughout Europe, observations of *M. suffusella* have been recorded. The species is known from Austria, Belarus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Ireland, Latvia, Lithuania, the Netherlands, Norway, Poland, Romania, Russia, Sweden, and Switzerland (Karsholt & van Nieukerken 2013).

Elsner *et al.* (1999: 28) add that *M. suffusella* is a North European species which enters into Central Europe in scattered and local biotopes, becoming more rare towards the south. It is much more common and abundant in the northern zone, roughly from Great Britain to Lithuania. It is absent in the Mediterranean area. The species occurs in all our neighbouring countries, except Luxembourg.

In the Netherlands, *M. suffusella* is mainly distributed in the eastern half of the country, and more abundant in the northern part. It is considered as a rare species, though it can be locally common in bog and fen vegetation which holds *Eriophorum angustifolium* (Gielis *et al.* 1985: 97, waarneming.nl 2015).

In Great Britain the species is known from the southern half of the country and from one place in Ireland (Bland *et al.*: 89). In Germany, it has been recorded from Schleswig-Holstein and Niedersachsen before 1980 only. In recent years, it has been recorded in

Bayern, Mecklenburg-Vorpommern, and Brandenburg (Gaedike & Heinicke 1999: 77).

The first record of *M. suffusella* in France originates from Carnet-des-Maures, dept. Var, where a female was caught on 3 June 1998. The hostplant of *M. suffusella* does not occur in the entire region of the Massif des Maures and is thought to be replaced by *Carex* sp. in this area. The schematic drawing of the female genitalia, however, point to *M. suffusella* (Nel 1998: 218–219). The species was mentioned from the Japanese fauna by Sakamaki (1996: 248), more specifically from the northern island Hokkaido, and feeding as well on *Carex* sp.



Figure 2. Habitat of *Monochroa suffusella* at Kalmthout (© Dan Sloommaekers).

The local character of the species seems to hold for the situation in Kalmthout. In vegetation with *E. angustifolium* (fig. 2) it is very hard to miss this species, as it is very abundant. During daytime the imagoes are easily disturbed and were found even by heavy winds albeit lower in the vegetation.

The bog area that was searched for this species, the day after the initial find is quite small but since connectivity within the reserve is very high, it is likely to be present in every patch of *E. angustifolium* in the reserve.

Characteristics

As most Gelechiidae, the species is small with a wingspan of only 11 to 13 mm. This species can be confused with other members of its genus; in Belgium namely *Monochroa divisella* (Douglas, 1850) and pale

specimens of *Monochroa lucidella* (Stephens, 1834). The forewing of *M. suffusella* however has an indistinct pale straw ground colour which is the result of a combination of white and dark straw-coloured scales. The head has a slightly warmer yellow hue due to the uniform straw-coloured hairs on frons and vertex. More notable is the single, diffuse black spot on the forewing, halfway between the tornus and the costa.

A more reliable determination of the sometimes hard to identify *Monochroa* species is by means of genitalia. Two individuals were collected the day after the initial find to examine the genitalia. Both are males.



Fig. 3. *Monochroa suffusella* (Douglas, 1850), a.– male genitalia; b.– left valva, detached; c.– aedeagus inside last abdominal segments; genitalia slide De Prins 3935♂ (© De Prins).

The most reliable characters for identification are present in the valva which has an overall triangular shape; the costa is almost straight and ends at the apex in a sharp, well-sclerotised point. In *M. lucidella* and *M. divisella*, the costa is more or less concave and there is no such conspicuous point at the apex (compare figures 61, 62 and 66 in Elsner *et al.* 1999: plate 8, and figure 3 in Bland *et al.* 2002: 23). At the base of the valva a narrow, weakly sclerotised appendix is present which is also connected to the vinculum. This appendix is also present in *M. lucidella* and *M. divisella* and hence it cannot be used to separate these species.

The tegumen in lateral view is triangular like in most *Monochroa* species and bears some hairs at its apex. Vinculum and saccus are rather weakly sclerotised and do not show any diagnostic characters when compared to the other *Monochroa* species. The aedeagus is twice as long as the valva; its basal half is almost twice as thick as its proximal half. In the vesica about 15–20 very minute cornuti are present (not visible in figure 3). The last segments of the abdomen have a lot of hair-like structures but these are not diagnostic either.

Biology

M. suffusella is a mining species of which the larvae live in the stalk and leaves of *E. angustifolium*. In winter the larvae mine the basal part (the sheath) of the leaves

of its host plant (Sterling 1998: 150, Ellis 2007–2015). In spring the overwintered larvae mine higher in the leaf. Literature is unclear however on whether one larva makes these two distinct mines and on whether they pupate inside the mine. More likely the larva exits the mine via a hole at the upper side (Ellis 2007–2015). The adults fly from late May through July, with most specimens recorded in June.

The mines that were found in the same spot where the imagoes were netted accord with the information stated in the entomological literature. Mined leaves usually showed 2 mines (fig. 4); a longer one in the basal part of the leaf but also a second, shorter one, higher up. In many of the more proximal mines in the leaf itself, there were two holes. These can be interpreted as the entrance and exit holes, indicating that the larva has an early, basal mine which it exits to enter the leaf higher up to make a second mine.

The basal mine is hard to find as the red colouration of the damaged leaf tissue is nearly identical to the colour of the leaf base itself. The leaf mine is readily found since the purple-red mine stands out against the greenish leaf.

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Figure 4. *Monochroa suffusella* (Douglas, 1850) 2 leaf-base mines on top and 2 leaf mines underneath (© Dan Sloommaekers).

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