

An update on the bionomics of *Depressaria halophilella* (Lepidoptera: Depressariidae)

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Abstract. Larvae and pupae of *Depressaria halophilella* Chrétien, 1908 (Lepidoptera: Depressariidae) are rarely found. The available data about the biology and phenology come from only a few observations. This article provides additional information on this species, thanks to some recent finds in Sardinia that are described and illustrated here.

Samenvatting. Rupsen en poppen van *Depressaria halophilella* Chrétien, 1908 (Lepidoptera: Depressariidae) worden zelden gevonden. De beschikbare informatie omtrent de biologie en fenologie zijn dan ook afkomstig van slechts enkele waarnemingen. Dit artikel biedt bijkomende informatie over deze soort, dankzij enkele recente vondsten in Sardinië die worden beschreven en geïllustreerd.

Résumé. Les chenilles et chrysalides de *Depressaria halophilella* Chrétien, 1908 (Lepidoptera: Depressariidae) sont rarement trouvées. Les informations disponibles sur la biologie et la phénologie ne proviennent donc que d'un faible nombre d'observations. Cet article apporte des informations complémentaires sur cette espèce, grâce à quelques découvertes récentes en Sardaigne qui sont ici décrites et illustrées.

Key words: *Depressaria halophilella* — Depressariidae — Bionomics — Sardinia — *Crithmum maritimum*

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Introduction

Depressaria halophilella Chrétien, 1908 (Lepidoptera: Depressariidae) is a rarely encountered species, with no records entered on observation platforms as inaturalist.org and Observation.org until July 2022. It occurs in France, Croatia, Sicily, Spain (Lepiforum.org 2022), Corsica, Madeira, The Balearic Islands, Crete and the Greek mainland (pers. comm. Peter Buchner). According to the original description, larvae of *Depressaria halophilella* Chrétien, 1908 feed on the host plant in winter, which is quite unique within the *Depressaria* genus. Adults are on the wing from March. Recent observations of this species in summer in Sardinia adjust this atypical image.



Fig. 1. Habitat of *Depressaria halophilella* with *Crithmum maritimum*, Tinari, Sardinia, 06.vii.2022. © Ruben Meert.

Fig. 1. Habitat van *Depressaria halophilella* met *Crithmum maritimum*, Tinari, Sardinië, 06.vii.2022. © Ruben Meert.

Bionomics

The few described observations of the immature stages of *D. halophilella*, all from southern France, were made in winter on *Crithmum maritimum* L. (rock samphire) (Apiaceae) (Fig. 1) with adults flying from March (Chrétien 1908, pers. obs. Peter Sonderegger†) until April (Vives Moreno & Gastón 2017). From 6 July 2022 onwards, however, fresh exuviae, pupae and larvae were observed and collected on the Mediterranean coast in Tinari, Sardinia. In all, four adults (Figs 5–6) emerged in early morning from 10 July onwards, the last one on 13 August 2022. The first record of an adult moth in Croatia was also made in summer, on 13 July 2005 (Šumpich 2013).



Fig. 2. Full-grown larva of *Depressaria halophilella* in stem of *Crithmum maritimum*, Tinari, Sardinia, 08.vii.2022. © Ruben Meert.

Fig. 2. Volgroeide rups van *Depressaria halophilella* in stengel van *Crithmum maritimum*, Tinari, Sardinië, 08.vii.2022. © Ruben Meert.



Fig. 3. Pupa of *Depressaria halophilella* behind leaf sheath of *Crithmum maritimum*, Tinari, Sardinia, 08.vii.2022. © Ruben Meert.

Fig. 3. Pop van *Depressaria halophilella* achter bladschede van *Crithmum maritimum*, Tinari, Sardinië, 08.vii.2022. © Ruben Meert.



Fig. 4. Feeding signs of *Depressaria halophilella* on *Crithmum maritimum*, Tinari, Sardinia, 08.vii.2022. © Ruben Meert.

Fig. 4. Vraatbeeld van *Depressaria halophilella* op *Crithmum maritimum*, Tinari, Sardinië, 08.vii.2022. © Ruben Meert.

The larvae (Fig. 2) feed within the stems, shoots, and succulent leaves of the host plant, often ejecting copious amounts of orange frass (Fig. 4). Pupation regularly takes place behind a leaf sheath (Fig. 3), but pupae and exuviae were also found within living stems and dried out shoots. Although Chrétien 1908 states that the larva is whitish and the pupa maroon brown, personal observations show larvae that are clearly tinged greenish (Fig. 2) and pupae that are rather light brown (Fig. 3). In Sardinia, feeding signs and immature stages of *D. halophilella* were mainly found on large host plants, both on isolated plants and in dense populations. Some infested plants even seemed to be regularly flooded by sea water.

Depressaria halophilella is very abundant on the Sardinian northwest coast, with feedings signs found on nearly every beach where the author searched for this species in stands of *Crithmum maritimum*. On Lepiforum.org (2022), Erwin Rennwald suggests that this species might be more common than assumed, as its host plant occurs on many Mediterranean coasts. The well-camouflaged adult moths seem hard to find in their rocky or sandy habitat, so searching for larvae or pupae is undoubtedly much more efficient.



Fig. 5. *Depressaria halophilella*, 31.vii.2022, bred from larva in stem of *Crithmum maritimum*, Tinari, Sardinia, 08.vii.2022. © Ruben Meert.

Fig. 5. *Depressaria halophilella*, 31.vii.2022, gekweekt in stengel van *Crithmum maritimum*, Tinari, Sardinië, 08.vii.2022. © Ruben Meert.



Fig. 6. *Depressaria halophilella*, 13.viii.2022, bred from larva in stem of *Crithmum maritimum*, Tinari, Sardinia, 08.vii.2022, leg. Ruben Meert. © Theo Garrevoet.

Fig. 6. *Depressaria halophilella*, 13.viii.2022, gekweekt van rups in Stengel van *Crithmum maritimum*, Tinari, Sardinië, 08.vii.2022, leg. Ruben Meert. © Theo Garrevoet.

Conclusions

Larvae and pupae of *Depressaria halophilella* can be found in winter, spring and summer, probably due to an extended generation (pers. comm. Peter Buchner). As feeding signs can very easily be found in and on stems and shoots of *Crithmum maritimum*, searching for the immature stages of this species might help to get a better picture of its distribution range. This way, *D. halophilella* could be confirmed from Sardinia in 2022.

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