

The Hawthorn Moth *Scythropia crataegella* (Lepidoptera: Yponomeutidae) is probably fairly common in Mariehamn, Åland Islands, Finland

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In Finland, the Hawthorn Moth *Scythropia crataegella* (Linnæus, 1767) was previously known in very few localities in the Åland Islands and one in Ab: Turku. It is strictly protected according to the nature conservancy law of the Åland Islands and regarded as endangered in Finland. In this study, *Scythropia crataegella* was observed in ten localities in the town of Mariehamn in the Åland Islands in 2010–2012. The larvae fed on three *Cotoneaster* species and in one place on hawthorn (*Crataegus* spp.). The species is bivoltine in Mariehamn as larvae were observed in May–June and August and adults in June–July and August–September. The infestations were weak in many localities, probably due to shearing of the hedges. As only some of all hedges in Mariehamn were searched for *S. crataegella* in 2011 and 2012, and it was found in several of them, the species is probably fairly common there.

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1. Introduction

The Hawthorn Moth *Scythropia crataegella* (Linnæus, 1767) is an ermine moth (family Yponomeutidae). According to Kimber (2012), the adult moth has a wingspan of 11–15 mm. The forewings have a black-and-white pattern with two broad black bands dividing the wings into roughly three equal whitish parts with numerous irregular black spots (Fig. 1). The hindwings are greyish-brown without ornamentation. The head, thorax, legs and antennae are whitish, the abdomen is darker with a whitish tinge. The larva (caterpillar) is about 12–14 mm long when ready to pupate (Fig. 2). Its colour is generally pale brown with a few longitudinal somewhat darker brown

stripes and paler stripes with a greyish tinge. The second and third thoracal segments have a dark bump on each side. The whole larva is covered by



Fig. 1. An adult *Scythropia crataegella* resting on the silken web. Åland Islands, Mariehamn, Locality 1, 27.VI.2011.



Fig. 2. Larvae of *Scythropia crataegella* feeding on *Cotoneaster nanshan*. Åland Islands, Mariehamn, Locality 1, 9.VIII.2011.

pale long spine-like hairs; the length of the hairs is about the same as the diameter of the larva. Young larvae are leaf miners, but later they live gregariously on the host plant inside a silken web. The pupa is blackish, with greyish spots close to adult emergence (ornamentation of the wings) on its ventral side. It hangs upside down from its tail end in the silken web inside a spherical pupal chamber (Fig. 3).

Very good illustrations of the adult moth, larvae and pupae as well as infested shrubs are presented in Emmet (1996) and in the webpages of Bestimmungshilfe (2011) and Schön (2012). In different parts of its range, *S. crataegella* can be found from late May to September and it has two generations per year (Wall 2012, Wheeler 2012). However, in Great Britain, adult moths are said to be seen commonly only in July. The moths are active during night-time and they are attracted to light sources. *Scythropia crataegella* is widespread and quite common almost all over Europe (Khranov 2007–2012, Jonko 2011). It has not been found in the northern parts of Great Britain, Ireland and Iceland. Further, no records are known from Portugal and Slovenia; however, it probably occurs in these two countries too, as its range includes the neighbouring countries.

Scythropia crataegella is fairly common in southern Sweden where it occurs from Scania northwards to Uppland and Värmland (Gustafsson 2010, Unger 2012). It is not included in the current Red List of Species in Sweden (Bengtsson

et al. 2010). The Species Gateway of Sweden (Artportalen 2012) includes ten reports of *S. crataegella* in Öland, two in Gotland and three in Småland during the period 2000–2012. *Scythropia crataegella* is fairly common also in Denmark (Wind & Pihl 2010). It is a southern species in Norway, but it is not regarded as a threatened species there (e.g. Endrestøl *et al.* 2008, Aarvik & Berggren 2010). Only one find is known in Estonia: *S. Saaremaa*, Kuressaare, 8.VII.1994, R. Pedmanson (Elurikkus 2009).

2. *Scythropia crataegella* in Finland

Scythropia crataegella was known during the 1950s to the 1970s from one locality only in Finland, namely the Åland Islands, Lemland, Apalholm, where it was found on crab apple (*Malus sylvestris*). It was then regarded as vulnerable (VU) in the Finnish Red List (Rassi *et al.* 1986). In the next red list (Rassi *et al.* 1992), it was regarded as endangered (EN), because no information was available since the 1970s. As *S. crataegella* was found in Ab: Turku on the mainland of Finland in the late 1990s, it was again regarded as vulnerable (Rassi *et al.* 2001).

Although it was observed in two places in the Åland Islands during the period 2000–2009 (Insects 2012), its status was altered to endangered again in the Red List of 2010, due to changes of the estimation methods (Kaitila *et al.* 2010). Ac-



Fig. 3. The spherical pupal chambers of *Scythropia crataegella* can be seen when the silken web is moist. Åland Islands, Mariehamn, Locality 1, 19.VI.2012.

cording to Prof. Erkki Laasonen (personal information, November 2011), *S. crataegella* has occurred for some years in one locality at the south coast of Finland. Further information on the exact locality cannot be given due to the aspects of protection.

3. *Scythropia crataegella* in Åland 2010

Scythropia crataegella was protected by law in the Åland Islands in 1986 (ÅFS 1986) and it was also declared as a species with strict protection according to the nature conservancy law of the Åland Islands in 1998 (ÅFS 1998). A silk web with many small larvae was observed on a cultivated shrub of *Cotoneaster nanshan* at the eastern wall of the house of Södragatan 28 (Locality 1) in central Mariehamn about 10.VI.2010. The silk web expanded till midsummer and it covered about a fifth of the approximately 6-metre-long shrub. New larvae were observed again in early August 2010 and adult moths in late August. Then the species was identified as *S. crataegella*. A few moths were swarming around the *C. nanshan* shrub at dusk on 24.VII.2010. They did not fly more than a metre from the shrub. One dead specimen was taken for the entomological collec-

tion of the Zoological Museum, Finnish Museum of Natural History in Helsinki.

Similar larvae in small silk webs were also seen on a small creeping shrub of *Cotoneaster horizontalis* and on a hedge of *C. nanshan* at the Restaurant of the Yacht Club (Locality 2) in the western harbor of Mariehamn in June 2010. A small silk web with larvae was observed on a shrub of *C. nanshan* at the house of Höggbackagatan 10 (Locality 3) in northern Mariehamn in both June and August 2010.

4. *Scythropia crataegella* in Åland 2011 and 2012

Silk webs with larvae, pupae and adult moths of *S. crataegella* were observed in nine localities in Mariehamn in 2011 and in six localities 2012, of which one was a new one (Locality 10). The localities were usually visited in late June or early July and in late August.

Locality 1, Södragatan 28 (66830:81074, plane coordinate system ETRS-TM35FIN, Ollikainen & Ollikainen 2004). Two generations of larvae and moths were observed in both years. The silk web expanded to about one third of the *C. nanshan* shrub in June 2011 and covered more than half of the shrub in August 2012 (Fig. 4).



Fig. 4. The *Cotoneaster nanshan* shrub in Locality 1 is partly covered by silken web of *Scythropia crataegella* larvae. A part of the shrub is already destroyed as it cannot stand two attacks a year. If *S. crataegella* is allowed to develop undisturbed, the whole shrub will be destroyed. Åland Islands, Mariehamn, 28.VIII.2012.

Some ten moths were still to be seen in the silk web 18.IX.2011. The pupation began about 18.VI.2012 and newly hatched moths were first seen 3.VI.2012. The newly hatched moths were quite stationary. When disturbed during daytime the moths flew rapidly to new places inside the silky web but none of them ever moved far outside the web. Several matings were observed on the next day. Tens of moths swarmed around the shrub after sunset (about 23.30 o'clock) 13.VII.2012 and a few swarmed still late in the evening four days later.

Locality 2, Yacht Club (66832:81070). A weak infestation was observed on the small *C. horizontalis* in June, 2011, but nothing could be seen on the *C. nanshan* hedge. Nothing could

be seen of *S. crataegella* at this locality 28.VIII.2011, or in 2012.

Locality 3, Högbäckagatan 10 (66859:81086). A weak infestation was observed in June 2011, but nothing in August 2011. However, a weak infestation was observed both in June and August 2012.

Locality 4, Mekmattesgränd (66828:81075). A weak infestation was observed on a small *C. nanshan* shrub exposed towards the south 25.VI.2011. A few pupae and adult moths of the second generation were seen in the silk web on this shrub 25.VIII.2011. The infestation was still weak in both June and August 2012.

Locality 5, Köpmansgatan 5 (66836:81079). A weak infestation with a few pupae hanging in

the silk web was observed on a *C. horizontalis* shrub exposed towards the north 27.VI.2011. The second generation was poor in individuals with only a few larvae and pupae 25.VIII.2012. The reason was that the previously infested branches had been cut off the shrub. However, about seven or eight separate small colonies of larvae were observed on the *C. horizontalis* shrub 20.VI.2012 and about ten larger colonies of larvae on the 22.VIII.2012.

Locality 6, Sjöpromenaden near the Yacht Club, next to the stern of the museum ship Pommern (66833:81070). A fairly strong infestation with a few second generation larvae and pupae still left was observed on an about one metre high hawthorn (*Crataegus monogyna* or *rhipidophylla*) 27.VIII. 2011. Other larger hawthorn trees in the vicinity were not infested. The small hawthorn was cut in 2012.

Locality 7, Badhusgatan 24 (66835:81072). A weak infestation was observed 27.VIII.2011 in an east exposed hedge of *Cotoneaster lucidus*. A few larvae and pupae of the second generation were seen. Probable infestations (twigs without leaves, dead damaged leaves) without *S. crataegella* were seen on some parts of the hedge.

These first generation infestations were probably destroyed due to shearing of the hedge. No infestation by *S. crataegella* was seen in this locality in 2012.

Locality 8, Norragatan 28 (66834:81074). Several weak infestations with a few second generation larvae and pupae were observed in a hedge of *C. lucidus* with a southern exposition on the 27.VIII.2011. The hedge was sheared earlier in the summer. A few weak infestations with a few pupae were observed 4.VII.2012, but nothing of *S. crataegella* could be found in August 2012, probably because of shearing of the hedge.

Locality 9, Skarpansvägen 19 (66840:81078). Several weak infestations with a few second generation adult moths were observed in a hedge of *C. lucidus* with a southwestern exposition 27.VIII.2011. The hedge was sheared earlier in the summer. Nothing of *S. crataegella* could be found in June or August 2012.

Locality 10, Hamngatan, a W exposed *Cotoneaster lucidus* hedge E of the old customs building (66831:81075). Tens of swarming moths were observed along a 20–30-metre-long stretch

in sunshine just before sunset 17.VII. 2012. This was the first observation of *S. crataegella* in this locality.

5. Discussion

In Central Europe and Britain, the larvae of *S. crataegella* feed on hawthorn (*Crataegus* spp.), blackthorn (*Prunus spinosa*) and other *Prunus* species, *Cotoneaster* species, crab apple (*Malus sylvestris*) and pear (*Pyrus* spp.) (Kimber 2012). *Scythropia crataegella* is regarded as a pest species in, e.g., Britain (Alford 2012). The food plants reported in Sweden are *Cotoneaster* species, hawthorn species, crab apple, *Prunus* species and pear (*Pyrus communis*). The only food plant in the Åland Islands previously mentioned is crab apple.

The finds in Mariehamn in 2010–2012 have chiefly been on different *Cotoneaster* species. This is a previously unknown food plant genus for *S. crataegella* in Finland. Only one colony of larvae lived on *Crataegus monogyna* or *rhipidophylla*. At locality 1 (Södragatan 28), a long and about 1.5-m-high hedge of *Crataegus grayana* grows only five metres apart from the heavily infested *Cotoneaster nanshan* shrub. However, no sign of infestation by *S. crataegella* was ever seen in the *Crataegus* hedge.

As larvae and adult moths of *S. crataegella* were found both in June–July and in August–September in Mariehamn it is a bivoltine species. As far as I know, this has not been shown earlier in Finland. *Scythropia crataegella* is said to be univoltine in Britain with adult moths in June–July (e.g. Wheeler 2012). However, it is most likely that it is bivoltine also in Britain; for instance the phenology data from Hampshire and Isle of Wight, southern England, clearly show a bivoltine pattern as larvae are found from late May to early October and adult moths from late May to mid-September with two peaks in June–July and August–September (Wall 2012).

The adult moths are said to be active during night-time (Artportalen 2012, Kimber 2012). However, they have been seen swarming before sunset in Mariehamn, even in bright sunshine late in the evening.

The reason for the heavy infestation on the

C. nanshan shrub at Södragatan 28 is probably its sheltered location and that the population of moths has developed undisturbed. The population probably started in 2008 or 2009. Unfortunately, no observations were made then. The weak infestations in several of the localities in Mariehamn are probably the result of yearly shearing of the hedges.

As only some of all hedges in Mariehamn were searched for *S. crataegella* in 2011 and 2012, and it was found in several of them, the species is probably fairly common there. Further, as the species occurs also in the mainland of southern Finland, the species should perhaps be regarded as vulnerable or near threatened in Finland.

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