

Coleophora saponariella (Lepidoptera: Coleophoridae), a new species for the Belgian fauna

Chris Snyers, Guido De Prins, Jean-Yves Baugnée & Nicolas Vereecken

Abstract. On the 4th of October 2009, several mines and cases of *Coleophora saponariella* Heeger, 1848 were found on Common Soapwort (*Saponaria officinalis*) at De Panne (province of West-Flanders). It was the first mention of this species in Belgium. In 2010 the species was found again in the same locality and several cases were bred to adults. It appears that *C. saponariella* has a permanent population in “De Westhoek” with three generations per year. In 2012, the species was also discovered at Rochefort (province of Namur). It is distributed in the whole of Europe and is sometimes very common.

Samenvatting. *Coleophora saponariella* (Lepidoptera: Coleophoridae), een nieuwe soort voor de Belgische fauna. Op 04 oktober 2009 werden op Zeepekruid (*Saponaria officinalis*) enkele mijnen en kokers van *Coleophora saponariella* Heeger, 1848 gevonden te De Panne (West-Vlaanderen). Het is de eerste keer dat deze soort uit België gemeld wordt. In 2010 werd deze soort op dezelfde vindplaats terug gevonden. Zij blijkt in de Westhoek dus een vaste populatie te hebben en door uitkweken werd vastgesteld dat er drie generaties per jaar voorkomen. In 2012 werd *C. saponariella* ook te Rochefort (Namen) aangetroffen. De soort is verspreid in heel Europa en soms zeer talrijk.

Résumé. *Coleophora saponariella* (Lepidoptera: Coleophoridae), une espèce nouvelle pour la faune belge. Le 04 octobre 2009, des mines et fourreaux larvaires de *Coleophora saponariella* Heeger, 1848 furent observés sur Saponaire officinale (*Saponaria officinalis*) à De Panne (prov. Flandre Occidentale). Il s'agit de la première mention de cette espèce en Belgique. En 2010 l'espèce fut observée dans la même localité et des adultes ont été obtenus en élevage. Il apparaît que *C. saponariella* présente une population permanente dans la réserve naturelle du Westhoek, avec trois générations par an. En 2012, l'espèce fut aussi observée à Rochefort, dans la province de Namur. Elle est largement distribuée en Europe et parfois très commune.

Key words: *Coleophora saponariella* – Belgium – Faunistics – First record

Snyers C.: Rendierstraat 14/2, B-2610 Wilrijk. bladmineerders.be@gmail.com

De Prins G.: Markiezenhof 32, B-2170 Merksem/Antwerpen. guido.deprins@telenet.be

Baugnée J.-Y.: Service Public de Wallonie – DEMNA, 22 avenue de la Faculté, B-5030 Gembloux. jybaugnee@gmail.com

Vereecken N.: rue du thiers 41, B-5580 Rochefort. nicolas.vereecken@ulb.ac.be

Introduction

On the 4th of October 2009, several blotch mines and cases of a *Coleophora* species were found on Common Soapwort, *Saponaria officinalis*, at De Panne (prov. West-Flanders, Belgium), by several members of the Workgroup Leafminers. Later on, the species was identified by the first author as *Coleophora saponariella* Heeger, 1848, a new species for the Belgian fauna (De Prins & Steeman 2013).

The cases were kept in small containers and hibernated, but no imago emerged. During spring and early summer of 2010, more searches were conducted in several localities along the coast, looking for traces of this species on soapwort. There were, however, no new findings.

On 31st of July 2010, the same locality in De Panne was visited where the cases were found the year before. It became soon clear that the species was still present. On 1 out of 4 plants blotch mines were discovered, but no cases were present, except for one full-grown case that was broken open, found on a mine that was recently made. Apart from that, a leaf with three galleries from which the frass was pushed out, was discovered. On 4th October 2010 two full-grown cases and 1 young case were found. The species was again met with in 2011

when on 14th May many small cases were seen, sometimes about 10 per leaf.

Several mines and six young cases of *C. saponariella* were recently discovered at Rochefort (prov. Namur) on 6 August 2012, by the third author (Fig. 5). They stand on a tuft of *Saponaria officinalis* from N. Vereecken's garden, at less than 200 m from the river Lomme. The soapwort has been installed there for many years by the previous owner. It is possible that *C. saponariella* was already present before our observations. On 23 September 2012, a mature case was observed at the same site by N. Vereecken himself (Fig. 6).

Description of the species

The imago (Figs. 7, 8) is ochreous brown with several light longitudinal stripes on the fore wings. The wing span is around 11 mm. The egg is pale green. The caterpillars are yellowish green (Fig. 1). The cases are initially straw coloured (Fig. 4), but after reaching around 5 mm in length they become dark grey with black longitudinal stripes. When the caterpillar is full-grown, it lives in a straight three-valved silken case of about 7 mm long. Towards the head, the case becomes granular with remains of the host plant. The mouth angle reaches 70°–80° (Fig. 2). For a detailed description, see Heeger (1848: 342–347, pl. 6).



Figs. 1–6. *Coleophora saponariella* Heeger, 1848;

- 1.– a young caterpillar on *Saponaria officinalis*, Belgium, West-Vlaanderen, De Panne, 11 vii 2012, leg. and photo C. Snyers.
- 2.– case of a full grown caterpillar, ca. 7 mm, Belgium, West-Vlaanderen, De Panne, 4 x 2009, leg. and photo C. Snyers.
- 3.– mines on a leaf of *Saponaria officinalis*, Belgium, West-Vlaanderen, De Panne, 4 x 2009, leg. and photo C. Snyers.
- 4.– case of a young caterpillar with "frass", Belgium, West-Vlaanderen, De Panne, 4 x 2009, leg. and photo C. Snyers.
- 5.– mines on *Saponaria officinalis*, Belgium, Namur, Rochefort, 6.xiii.2012, leg. and photo J.-Y. Baugnée.
- 6.– mature case on *Saponaria officinalis*, Belgium, Namur, Rochefort, 23.ix.2012, leg. and photo N. Vereecken.

Biology

The eggs are deposited on the upper side of the leaves, relatively high on the plant (up to 25 cm high), usually on a large vein. After hatching of the eggs, the

caterpillars make small half-transparent galleries on the upper side of the leaf. The galleries can be up to five cm long before they convert into blotch mines. The first frass is secreted here and building of the case begins immediately. The initial galleries exceed themselves

regularly, but rarely the main vein. The blotch mines originate from the consumption of the entire content of the leaf. Because of this, the mine is whitish and transparent. On sandy soil and the dunes, where the host plant is usually found, the mines remain relatively intact. However, aging of the mines is well visible, given a certain experience (Fig. 3). The caterpillars can be found

from September to May. After hibernation the caterpillars cease eating (Patzak 1974).

It is thought that three generations appear each year: the first one right after hibernation in May–June, the second one in summertime (July–August) and the third generation during autumn (September–October).



Figs.7–8. *Coleophora saponariella* Heeger, 1848;

7.–adult, Belgium, West-Vlaanderen, De Panne, mine 07.vii.2010, e.l. 24.viii.2010, leg. and photo C. Snyers.

8.– adult, Belgium, West-Vlaanderen, De Panne, mine 31.vii.2010, e.l.24.viii.2010, leg. and photo C. Snyers.

Distribution

So far, this species is found in Belgium in two distinct areas: in the coastal dunes (maritime phytogeographical district) and in the Famenne (mosan district). According to the distribution of the host plant, *Saponaria officinalis*, the species could also exist in other localities. The third author has conducted research in 2011 and 2012 in the surroundings of Gembloux as well as in the valley of the Meuse between Liège and Huy, but without success.

C. saponariella was recently also discovered in the Netherlands by Arnold Scheurs (27th June 2010, Limburg, Vlodrop-Station). He writes the following on *C. saponariella*: “conducting searches in springtime is little effective because the larvae are moving around. During autumn, hundreds of cases were discovered. The results of breeding were satisfying: out of 40 larvae, 30 imagos emerged. After hibernation the larvae become active

again. When found, they were put in jars with small branches to stimulate pupation.”

In Europe, *Coleophora saponariella* is found in Sweden and Denmark and in the entire Western and Central Europe except in Great Britain and Ireland. In Southern Europe it is recorded only from Portugal and Italy. In Eastern Europe the species is mentioned from Poland, Slovakia, Croatia and Rumania (Baldizzone & van der Wolf 2012).

Acknowledgements

Special thanks to Willem N. Ellis for providing the references of literature, to Willy De Prins for proofreading the text and for writing the résumé, to Arnold Scheurs for the data of the Netherlands and Johan De Prins for the translation in English.

References

- Baldizzone G. & van der Wolf H. 2012. Fauna Europaea – Coleophoridae. – In: Karsholt O. & van Nieukerken E. J. (Eds.) *Fauna Europaea: Lepidoptera, Moths. Fauna Europaea version 2.5.* — www.faunaeur.org [accessed 13 December 2012].
- De Prins W. & Steeman C. 2013. *Catalogue of the Lepidoptera of Belgium.* — www.phegea.org [accessed 13 December 2012].
- Heeger C. 1848. Beiträge zur Naturgeschichte der Kerfe, in Beziehung auf ihren verschiedenen Lebenszustände, ihre Feinde in jedem Zustande, und ihre Nahrung, mit erläuternden Fehlerzeichnungen. — *Isis, Encyclopädische Zeitschrift, vorzüglich für Naturgeschichte, vergleichende Anatomie und Physiologie, von Oken* **1848**(5): 321–348, pls. 3–6.
- Patzak H. 1974. Beiträge zur Insektenfauna der DDR: Lepidoptera – Coleophoridae. — *Beiträge zur Entomologie* **24**(5/8): 153–278.