

Notes on species of Cerambycidae (Coleoptera) in Norway

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In this paper we present some new and interesting records of Cerambycidae in Norway. *Xylotrechus pantherinus* (Savenius, 1825) and *Anaglyptus mysticus* (Linnaeus, 1758) are rediscovered in Norway. *Grammoptera ustulata* (Schaller, 1783) and *Saperda similis* Laicharting, 1784 are reported from new localities. *Mesosa nebulosa* (Fabricius, 1781) is for the first time reported from *Fagus sylvatica* L. on the mainland.

Keywords: Coleoptera, Cerambycidae, *Grammoptera ustulata*, *Xylotrechus pantherinus*, *Anaglyptus mysticus*, *Mesosa nebulosa*, *Saperda similis*.

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INTRODUCTION

Compared with other groups of beetles, the faunistics of the family Cerambycidae in Norway is well documented. This is a family comprised of relatively large species, and they are usually well represented in collections. However, for some species the distribution is poorly known. In the present paper we report the rediscovery of *Xylotrechus pantherinus* (Savenius, 1825) and *Anaglyptus mysticus* (Linnaeus, 1758). In addition three rare species are recorded from new localities. The records are placed in a historical and distributional context. The records are the result of manual search, which is a method that complements the more systematic use of various trapping devices used in many surveys. To obtain more records of these species, elements of their biology are recapitulated together with comments on how to search for them. The nomenclature follows Silfverberg (2004). The localities are given according to the revised Strand system (Økland 1981) and the European Invertebrate

Survey (EIS) grid system of Norway (Økland 1976). Abbreviations used in the text: Arne E. Laugsand (AL); Stefan Olberg (SO); Christer Reiråskag (CR) and Ulf Hanssen (UH). The material is kept in the collections of the collectors given for each record.

THE SPECIES

Grammoptera ustulata (Schaller, 1783)

Ø Råde: Kil (EIS 20, UTM_{WGSS8432VNL069758}), 4 June 2006 (leg. AL & SO). Six specimens of *G. ustulata* were collected on flowers of *Sorbus aucuparia* L. VE Larvik: Roppestad (EIS 19, UTM_{WGSS8432VNL519574}), 25 June 2006 (leg. CR). One specimen was swept-netted on *Corylus avellana* L.; Malerød (EIS 19, UTM_{WGSS8432VNL546490}), 27 April – 4 May 2007 (leg. AL). Thirteen specimens of *G. ustulata* emerged from a dead branch of *Fagus sylvatica* L. that was collected on the ground, 17 April 2007.

The branch was about 10 cm in diameter and had some bark left. The wood was dry and hard. Neither Ehnström & Holmer (2007) nor Bílý & Mehl (1989) report *F. sylvatica* as host tree for *G. ustulata*. The present record is to the authors knowledge the first record of *G. ustulata* using *F. sylvatica* as breeding substrate.

G. ustulata is associated with the fungus *Vuilleminia comedens* (Nees) Maire, 1902 (Hoskovec & Rejzek 2008). The larvae live under the bark on dead branches of deciduous trees, and they complete their development in one year. Flowers of *Crataegus* spp. and *S. aucuparia* attract the adult beetles, which can be found from late May to early July (Ehnström & Holmer 2007).

G. ustulata was recorded new to Norway, 11 June 1981, at VE Larvik: Bisjord. It was sweep-netted from vegetation on a locality which was later built-up (Borgersen 1991). The species was listed as endangered (EN) in the Norwegian Red List (Ødegaard et al. 2006). In Sweden the species has a fragmented distribution in the south, and is classified as near threatened (NT) in the Swedish Red List (Gärdenfors 2005). The new records indicate that favourable areas along the southern coastline in Norway probably contains additional populations of this species.

***Xylotrechus pantherinus* (Savenius, 1825)**

BØ Hole: Tømmeråsen (EIS 36, UTM_{WGS84}32VNM709553), 10–12 May 2007, 6 ex (leg. SO & AL); 14 July 2007, 1 ex. (leg. SO). Living stems of *Salix caprea* L. with old wounds in the bark and exit holes from cerambycids were collected, 15 April 2007. Two ex. of *X. pantherinus* emerged, 10 May 2007. Four additional specimens were found in their pupal chambers the two following days. One specimen was sweep-netted from *S. caprea* in the same locality, 14 July 2007 (leg. SO).

ON Sel: Koia (EIS 71, UTM_{WGS84}32VNP207567), 11–15 May 2007, 3ex (leg. CR). Living stems and branches of *S. caprea* that contained larvae



Figure 1. *Salix caprea* with exit holes made by *Xylotrechus pantherinus* (Photo: C. Reiråskog).

of *X. pantherinus* were brought home for rearing, 21 April 2007. Three specimens hatched between 11–15 May. Additionally, one dead imago was found in the gallery which leads to the exit hole (leg. UH).

At Koia, young living stems with diameter from 3–8 cm, as well as branches with diameter from 7–12 cm on larger trees, had exit holes made by *X. pantherinus* (Figure 1). All of them were sun-exposed. The majority of the young stems were weakened due to old wounds in the bark and probably also drought, but the branches on the larger trees that contained larvae had no visible old wounds other than the exit holes.

This species attacks living *S. caprea*. The females oviposit in the vicinity of old wounds in the bark of the tree and the larval gallery follows the border between living and dead wood. According to Ehnström & Axelsson (2002) it is quite common that *X. pantherinus* attack branches and stems

already infested by *Saperda similis* Laicharting, 1784. *X. pantherinus* prefers *S. caprea* that grows in warm, dry and sun-exposed places like sand pits and hillsides. The larval development time lasts at least two years and pupation takes place in early June (Ehnström & Holmer 2007). The adult beetles can be found running on stems of *S. caprea* from the middle of June towards the end of July. There exist only a few records of the adult beetle in Sweden (Ehnström & Holmer 2007). That is because they do not visit flowers (Bilý & Mehl 1989), have cryptic colouration and show shy behaviour. Hence, the best method to search for this species is to look for the characteristic exit holes in *S. caprea*. To document the presence of this species, samples of wood that are assumed to be infested, could be collected for rearing. The method is described for instance by Ehnström & Axelsson (2002).

The Norwegian localities described here are situated 200 km apart and are stone scree facing south-west. Such stone scree create a warm microclimate with often large amounts of sun-exposed dead wood. Logging seldom takes place in steep and stony terrain, and hence such places usually have a long continuity of dead wood which are not found in a commercially used forest. Mechanical stress from large stones, and possible lack of water, seem to weaken trees and therefore make them vulnerable for attack by saproxylic insects (personal observations). The fact that stone scree are common in Norway, combined with the long distance between the new localities, suggest a potentially wider distribution of *X. pantherinus* in the country.

Previously only one locality for *X. pantherinus* was known from Norway and the records are more than 150 years old: **ON** Sel: Laurgården, August 1851 (leg. N.G. Moe) (Schøyen 1879). In Sweden the species has an eastern distribution (Ehnström & Holmer 2007). Despite the lack of new records from Norway, *X. pantherinus* was assumed to be present, and it was categorized as endangered (EN) in the Norwegian Red List by Ødegaard et al. (2006). This was based on the Swedish distribution and the fact that the species

is hard to discover in the field. The new records reported here confirm that *X. pantherinus* has viable populations in Norway.

Anaglyptus mysticus (Linnaeus, 1758)

BØ Hole: Tømmeråsen (EIS 36, UTM_{WGS84}32 VNM711544), 10 June 2006, 1 ex. (leg. Jostein Engdal). The specimen was caught sitting on a person in warm, sunny weather; 2 June 2007, 3 ex. (leg. CR). On a very hot and sunny day the specimens were caught swarming together with many *Clytus arietis* (Linnaeus, 1758).

The larva of *A. mysticus* develops in dead wood of various deciduous trees, but it seems to prefer *C. avellana*. The two or three years old larvae pupate in late summer, and the adults hatch in the autumn to spend the winter in their pupal chambers. They emerge in late May and visit flowers of e.g. *Crataegus* spp., *Sorbus aucuparia* and *Anthriscus sylvestris* (L.). Specimens can be found until the end of July (Ehnström & Holmer 2007). *A. mysticus* is as many other saproxylic insects threatened by the removal of dead wood. This species was considered extinct in Norway (Ødegaard et al. 2006) and was hereto only known in three specimens. One is from **MRY** Sunnmøre (Strøm 1783), and two are from **Ø** Hvaler, 1915 (Münster 1922) and 1939, (leg. Thomas Münster). Because of the relatively northern location, the specimen from Sunnmøre has been regarded as imported. However, due to new knowledge regarding the insect fauna in pockets of warm microclimate in western parts of Norway, we believe this specimen represented a resident population.

At the upper part of the stone scree at Tømmeråsen, *C. avellana* grows in a narrow area along the hillside. It is likely that *A. mysticus* depends on dead wood occurring there. The records of *X. pantherinus* (see above) and *S. similis* (see below) from Tømmeråsen are from stands of *S. caprea* situated further down the hillside, well below the stone scree. The new records of these three species indicate that the area around Tømmeråsen is of a high nature conservancy interest.



Figure 2. Newly emerged *Mesosa nebulosa* (Photo: A. Laugsand).

***Mesosa nebulosa* (Fabricius, 1781)**

VE Larvik: Malerød (EIS 19, UTM_{WGS84}32V NL546490), 17 April 2007, 1 ex. (leg. AL); 19–24 April 2007, 6 ex. (leg. AL); 21 April 2007, 1 ex. (leg. SO). Two specimens were found in their pupal chambers in dead branches of *Fagus sylvatica*. Six specimens of *M. nebulosa* emerged from the same branch of *F. sylvatica* as *G. ustulata* (see *G. ustulata* above) (Figure 2).

From the branch collected on 17th of April at Malerød, the first two specimens appeared on 19th of April, only two days after the branch was brought indoors and kept at room temperature. After a two or three year long developmental time, *M. nebulosa* hatches in the autumn and hibernates as adult in the pupal chamber (Ehnström & Holmer 2007). That explain why the six specimens appeared earlier than the specimens of *G. ustulata*, which pupate in the spring. *G. ustulata* started to appear after 10 days at room temperature. From

May, the adults of *M. nebulosa* leave their pupal chambers and can be found sitting on recently dead branches and thin stems where they feed on the bark of their host trees.

Bilý & Mehl (1989) claim *Quercus* spp. to be the preferred host of *M. nebulosa*. This statement can be questioned, at least for the populations in Fennoscandia. In Sweden it has a southern distribution and is usually found in *C. avellana*, but it is also known from *F. sylvatica*, *Quercus* spp., *Betula* spp., *Alnus glutinosa* (L.), *Carpinus betulus* L. and *Ulmus* spp. (Ehnström & Holmer 2007). In Norway *M. nebulosa* was only known from a few islands in the Oslofjord area where it lives in old stands of *C. avellana*. It was listed as vulnerable (VU) in the Norwegian Red List (Ødegaard et al. 2006). The new records are the first to confirm that *M. nebulosa* uses *F. sylvatica* as host also as far north as Norway. The fact that this species now is documented on the mainland, suggests a wider distribution potential than earlier expected.

***Saperda similis* Laicharting, 1784**

AK, Fet: Nordli (EIS 29, UTM_{WGS84}32V PM237481), 12 April 2007, 3 ex. (leg. AL); 15–20 June 2007, 4 ex. (leg. UH & CR). Stems of sun-exposed living *Salix caprea* growing in sandy slopes by an industrial area, were collected, 16 March 2007. The stems had wounds in the bark associated with old exit holes. From the same locality 4 additional specimens hatched from larvae collected, 17 May 2007, in young living sun-exposed stems and branches of *S. caprea* with a diameter of 4–7 cm.

BØ Hole: Tømmeråsen (EIS 36, UTM_{WGS84}32V NM709553), 10–22 July 2007, 1 ex. (leg. CR). One larva of *S. similis* was found in its pupal chamber, 18 May 2007, in a young living stem of *S. caprea*. The specimen later hatched in medio July 2007. The same stem also contained several young larvae of *X. pantherinus*, which died before pupation.

S. similis was recorded for the first time in Norway



Figure 3. *Saperda similis* on *Salix caprea* (Photo: C. Reiråskag).

by Karl Erik Zachariassen in 1985 at AK Sørums Lystadmoen (Zachariassen 1986). The three known specimens recorded from Norway before 2007 are from this locality, which is very close to the locality at Nordli.

Contrary to the close relative *Saperda carcharias* (Linnaeus, 1758), which is nocturnal and is attracted to light, *S. similis* is active during the day and therefore cannot be caught by light traps. Further, when it sits on the host tree it is well camouflaged, but it is also easily disturbed and then drops to the ground (Ehnström & Holmer 2007) (Figure 3). This could explain the few records of this species in Norway. As for *X. pantherinus*, it is easier to find new localities for *S. similis* by looking for traces on the host tree *S. caprea*, than to look for the adult beetle. The larva of *S. similis* develops 2-5 m above the ground in 3-5 cm thick stems of living *S. caprea* (Ehnström & Holmer 2007). The egg-laying female gnaws a vertical, about 1 dm long, visible incision in the bark where the eggs are placed (Figure 4). Later the larvae, from their galleries, shovel out

reddish-brown frass which is visible near the incision. Such fresh frass reveals the presence of the larvae. The lifecycle of the species is two or three years, but the vertical incision together with the associated exit holes are visible for several years (Ehnström & Axelsson 2002). As described by Ehnström & Axelsson (2002) and apparent from our record from Tømmeråsen, infestations by *S. similis* sometimes facilitate infestation by *X. pantherinus*. These two species, with almost



Figure 4. Old wounds on *Salix caprea* made by an egg-laying female of *Saperda similis* (Photo: C. Reiråskag).

unknown distributions in Norway, should be kept in mind when inspecting *S. caprea* for insects.

S. similis was categorized as near threatened (NT) in the Norwegian Red List (Ødegaard et al. 2006). In Sweden the species was earlier regarded as rare, but with better knowledge of the traces on bark produced by egg-laying females, many new localities have been discovered (Ehnström & Holmer 2007). The new record from Tømmeråsen indicates that this species probably is more widely distributed also in southern Norway.

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