

# Introduced or Overlooked?

## New Bark Beetle Species in Sweden (Coleoptera; Curculionidae)

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### Abstract

The bark beetle fauna in Sweden and other Scandinavian countries is rather well known and the number of new species discovered during the last 50 years is low. During the last decade several new species have been recorded. This article describes the changes in the bark beetle fauna since 2000. The causes of the changes are discussed.

**Keywords** | bark beetles, Sweden

### Kurzfassung

#### Eingeschleppt oder übersehen? Neue Borkenkäferarten in Schweden (Coleoptera; Curculionidae)

Die Borkenkäfer-Fauna Schwedens und anderer skandinavischer Länder ist recht gut bekannt, die Anzahl an neu entdeckten Arten in den vergangenen 50 Jahren ist gering. Im letzten Jahrzehnt wurden einige neue Arten gefunden. Dieser Artikel beschreibt die Veränderungen in der Borkenkäfer-Fauna seit 2000. Die Gründe für die Veränderungen werden diskutiert.

**Schlüsselwörter** | Borkenkäfer, Schweden

There are four species of elm bark beetles known in Sweden. Widely distributed are *Scolytus laevis* (Chaupis 1873) and *S. triarmatus* (Eggers 1912), *S. multistriatus* (Marsham 1802) is rare on the mainland but the only species present on the island Gotland. *S. pygmaeus* (Fabricius 1787) is known by three specimens in the Natural Museum in Gothenburg (Leg. Mortonsson) found on the island Öland more than 100 years ago. *S. scolytus* (Fabricius 1775), a widely distributed species in Europe has recently been found to expand its range in Denmark (Hansen et al. 1995). Besides two

specimens from Öland (Leg. Mortonsson ~1900), this species has now been found in 2006 and in numbers 2007, both in Skåne and Halland using flight interception traps attached to elm trees diseased with *Ophiostoma novo-ulmi*. Obviously *S. scolytus* have entered southern Sweden during the last decade. The establishment may be aided by the fact that many suitable host trees are available due to the Dutch elm disease killing a lot of elm trees in southern Sweden.

In 2004, *Xyleborinus alni* (Niisima 1909) was trapped in numbers in a partly dead willow (*Salix* sp.) in Stockholm (Lindelöw et al. 2006). The species has later been trapped in horse chestnut trees (*Aesculus hippocastanum*) in Stockholm area (Jonsell unpubl.). Males and females were found in galleries in rowan (*Sorbus aucuparia*) and beech (*Fagus sylvatica*) damaged by fire (Ericsson unpubl.) in Southern Sweden. The scattered records of *X. alni* indicate multiple introductions, although it cannot be excluded that the species is overlooked in between.

Another xyleborine ambrosia beetle of exotic origin in Northeast Asia is *Cyclorhipidion bodoanus* (Reitter 1913). This species was caught in numbers in 2007 in flight barrier traps attached on old hollow oak trees in Southeast of Sweden (Franck unpubl.). The first record in Europe is 1944; now it is spreading rapidly throughout Europe and is believed to influence both flora and fauna (Bussler and Schmidt 2007).

Importation of larch timber to Sweden is substantial in some years. The finding of *Pityophthorus pityographus* (Ratzeburg 1837) on dead larch trees along with the

cerambycid *Tetropium gabrieli* Weise 1905 in larch stands not far away from one of the harbors Karlshamn (Ericsson 2010) is probably a result of spread and establishment by individuals coming from imported timber. The increasing area planted with larch in southern Sweden may favor future establishments of other bark and wood living species, e.g. *Ips cembrae* (Heer 1836).

Table 1: Introduced or native bark beetle species in Sweden, recorded since 2000.

Tabelle 1: Eingeschleppte oder einheimische, seit 2000 entdeckte Borkenkäferarten in Schweden.

Species	Year of detection	Origin	Pathway	Habitat
<i>Scolytus scolytus</i>	2006	Europe	unbarked timber	dead elm trees
<i>Xyleborinus alni</i>	2004	Asia	wood packing	dead broad leaf trees
<i>Cyclorhipidion bodoanus</i>	2007	Asia	wood packing	hollow oak trees
<i>Pityophthorus pityographus</i>	2007	Europe	unbarked larch timber	dead larch trees
<i>Trypodendron laeve</i>	pre 1900	native	-	dead spruce or pine
<i>Trypophloeus dejevi</i>	2008	native	-	<i>Salix myrcinifolia</i>

*I. cembrae* was found established in Denmark in 1995 and has since spread in the country (Ravn and Harding 1995).

Due to taxonomic confusion the distribution of *Trypodendron leave* (Eggers 1939) is still unclear in Europe. The species is described from Japan by Eggers. Strand (1946) described the species *T. piceum* (Strand 1946). Later, *T. piceum* was synonymised with *T. proximum* (Niisima 1909) by Pfeffer (1989). Holzschuh (1990) found *T. leave* in traps on imported timber and considered this species to be an exotic species. Mandelshtam and Popovichev (1999) describe the differences between *T. leave* and *T. proximum* and it seems clear that *T. leave* is the widely distributed species in Europe and *T. proximum* is an Asian species not found in Europe. Bussler and Schmidt (2008) consider *T. leave* as a native species in Germany. The oldest records in Scandinavia dates back to the mid 1900<sup>th</sup> century (Lindelöw in prep.). It seems reasonable that the species is native in Europe and has a wide distribution from Scandinavia in the West to the Far East.

The surprising detection of *Trypophloeus dejevi* Stark 1936 as a new bark beetle species in Sweden was made in 2007 (Lindelöw 2009) by examining the bark beetle collection of late Lars Huggert which was given to the Swedish Museum of Natural History. One specimen of this species was found in 1968 in Northern Sweden but wrongly determined as *T. bispinulus* Eggers 1927. In 2008, the species was found reproducing in *Salix myrcinifolia*. Obviously *T. dejevi* is a native species that has remained undetected until now.

In the coming years a number of bark beetle species can be expected to become established in Sweden. *Ips cembrae* will probably be one of these. Expanding its range in Denmark, the beetle has been found repeatedly in imported larch timber in harbors. An increasing area of larch stands in Sweden will provide suitable breeding material as dead and dying larch trees for *I. cembrae*. Mandelstam (in litt.) has suggested *Anisandrus maiche* Stark 1936, a polyphagous xyleborine ambrosia species expanding to the West in Russia to establish in Scandinavia. This species was recently found in North America (Rabaglia et al. 2009). The speed of the expansion is however unknown. *Xylosandrus germanus* (Blandford 1894) and *Gnathotrichus materiarius* (Fitch 1858) are also to be expected. At least *G. materiarius* has reached Northern Germany.

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