Bulletin de la Société royale belge d'Entomologie/Bulletin van de Koninklijke Belgische Vereniging voor Entomologie, 153 (2017): 203–205

Morimus funereus Mulsant, 1862, a longhorn beetle from the Habitats directive observed in Belgium for the first time due to transport (Coleoptera: Cerambycidae)

Arno THOMAES[1], Herwig LEIRS[2] & Luc DE BRUYN[1,2]

[1] Research Institute for Nature and Forest (INBO), Havenlaan 88 bus 73, B-1000 Brussels, Belgium (e-mail: arno.thomaes@inbo.be, luc.debruyn@inbo.be)
[2] University of Antwerp, Department of Biology, Evolutionary Ecology Group, Universiteitsplein 1, B-2610 Antwerpen, Belgium (e-mail: herwig.leirs@uantwerpen.be)

Abstract

Morimus funereus Mulsant, 1862, a longhorn beetle listed in the Habitats directive, is reported for the first time in Belgium. A specimen was intercepted in Nijlen (near Antwerp) which is very likely explained by transport although the exact origin and route is unclear.

Keywords: round wood transport, species introduction, *Morimus asper* Sulzer, 1776

Samenvatting

Morimus funereus Mulsant, 1862, een boktor vermeld in de habitatrichtlijn, wordt voor de eerste keer gemeld voor België. Een individu werd gevonden in Nijlen (nabij Antwerpen) wat meer dan waarschijnlijk verklaard wordt door transport, hoewel de exacte oorsprong en route onbekend zijn.

Résumé

Morimus funereus Mulsant, 1862, un longicorne figurant dans la directive Habitats, est signalé pour la première fois en Belgique. Un spécimen a été trouvé à Nijlen (près d'Anvers), probablement introduit par le transport de bois, bien que l'origine et la route empruntée ne soient pas connues.

Introduction

Longhorn beetles (Cerambycidae) are often transported as the larvae of many species develop in the tree trunks of recently died trees. When cut trees are piled up in or near the forest before final transport, they consequently attract a lot of Cerambycidae which lay eggs in this material. Either these adults or the larvae can then be transported over large distances together with the round wood and end up in places where they are non-native (e.g. TOBIN *et al.,* 2010).

For example, *Rosalia alpina* Linnaeus, 1758, a longhorn beetle listed in the Habitats directive, was recently found in Belgium at two locations. In one case it was found near a sawmill and the second record came from an industrial area along the E17 highway (www.waarnemingen.be).

Here, we report the finding of *Morimus funereus* Mulsant, 1862, another longhorn beetle listed in the Habitats directive which has not been reported before as import species in Belgium.

Morimus is a genus with a dozen of flightless longhorn beetles of which five occur in Europe (DAJOZ, 1976). A recent genetic study on the five European species (SOLANO *et al.,* 2013), however, concluded that they may actually represent a single, genetically and morphologically variable biological species. As *M. asper* Sulzer, 1776 is the first described species, all other taxa should then be gathered as

Fig. 1. Female specimen of *M. funereus* found in Nijlen. Left, picture taken on 16.V.2017 (photo: Herwig Leirs) and right picture taken from the same specimen (based on the elytral markings) collected on 17.V.2017 (photo: Camille Locatelli).

synonyms of this species. However, *M. funereus* is a species of the Habitats directive while the other *Morimus* species in Europe are not. Due to the genetic study, the entire *M. asper* senso latu should now be considered as Habitats directive species as prescribed by European legislation (HARDERSEN *et al*., 2017; LEONARDUZZI *et al.,* 2017).

Morimus asper sensu stricto is entirely black and is found in north Spain, south France and northwest Italy, while *M. funereus* is grey with large black spots on the elytra and is found in northeastern Italy, the Alps and Balkan region. Intermediate forms are mainly found in Italy. Adults can life several years and lay eggs in recently died (often cut) logs and stumps of broad-leaved trees as well as conifers (e.g. LEONARDUZZI *et al.,* 2017).

Material and methods - Results

One female specimen of *M. funereus* (Fig. 1) was found in Nijlen (near Antwerp, 51º09'46"N, 4º41'20"E) on the sun exposed terrace in the garden of the second author on 16.V.2017. As this was one day after he returned home from a field trip to Tanzania, he first believed the species could have traveled with him from there somehow. Consequently, he took a picture of the specimen and finally could collect it a day later (17.V.2017) at the same location. The first author identified the species. This determination was later confirmed by AL VREZEC who is responsible for the monitoring of this species in Slovenia (e.g. VREZEC *et al.,* 2012). The specimen is deposited in the collection of the first author.

Discussion

It is quite clear that this observation is related to transport as it is quite far from the natural distribution of this species. Furthermore, this species is flightless making it impossible to disperse over large areas. However, it is unclear how it was transported or how it ended up at the location where it was found. As the species is attracted to log piles (HARDERSEN *et al.,* 2017), it is probably more often transported. However, only a few recordings of transported beetles are known (AKBULUT *et al.,* 2008: Turkey; BORG, 1939: Malta; Al VREZEC pers. comm.: Slovenia). It is very difficult to conclude how it ended up at the place where it was found as different options are possible. Firstly, there is a railway line at 150m from this garden that runs from Antwerp to Herentals that could have been a transport path. Secondly, Some oak and beech fire-wood was bought a year earlier and a few remaining logs were still present in the garden, which could be another source of transport. In this case a larva might have pupated and eventually emerged in the garden. Finally, it is also possible that the specimen was transported by any of the neighbors that returned from vacation or the beetle first traveled to the airport from its original population (e.g. in the camping gear of backpackers) and then was transported to the second authors house when he arrived home from Tanzania. Genetic analysis of the specimen could give more insight in the origin of the specimen.

Only a single specimen has been observed (the picture taken the first day, clearly represents the same specimen collected the next day, Fig. 1) but it is impossible to exclude the possibility that more than one specimen were transported as the source of transport is very unclear. Consequently, we cannot rule out the possibility that local reproduction has taken place, despite this is very unlikely. To exclude this possibility, it is important to survey for specimen of this species in the coming years.

Acknowledgments

We thank Al Vrezec and Sönke Hardersen for providing literature and additional comments. Thanks to Camille Locatelli for taking the stacking picture of the specimen.

References

AKBULUT S., KETEN A. & YÛKSEL B., 2008. - Wood Destroying Insects in Düzce Province. *Turkisch journal of Zoology*, 32: 343–350.

BORG J., 1939. - Our insect visitors. *Archivium Melitense*, 10: 191–197.

DAJOZ R., 1976. - Étude morphologique et biométrique des *Morimus* (Col. Cerambycidae) de la faune européenne. *L'Entomologiste*, 32: 212–231.

HARDERSEN S., BARDIANI M., CHIARI S., MAURA M., MAURIZI E., ROVERSI P.F., MASON F. & BOLOGNA MA., 2017. - Guidelines for the monitoring of *Morimus asper funereus* and *Morimus asper asper*. *Nature Conservation*, 20: 205–236.

LEONARDUZZI G., ONOFRIO N., BARDIANI M., MAURIZI E., ZANDIGIACOMO P., BOLOGNA M.A. & HARDERSEN S., 2017. - Attraction of different types of wood for adults of *Morimus asper* (Coleoptera, Cerambycidae). *Nature Conservation,* 19: 135–148.

SOLANO E., MANCINI M., CIUCCI P., MASON F., AUDISIO P. & ANTONINI G., 2013. - The EU protected taxon *Morimus funereus* Mulsant, 1862 (Coleoptera: Cerambycidae) and its western Palaearctic allies: systematics and conservation outcomes. *Conservation Genetics*, 14: 683–694.

TOBIN P.C., DISS-TORRANCE A., BLACKBURN L.M. & BROWN B.D., 2010. - What Does "Local" Firewood Buy You? Managing the Risk of Invasive Species Introduction. *Journal of economic entomology*, 103: 1569–1576.

VREZEC A., AMBROŽIČ Š. & KAPLA A., 2012. - An overview of sampling method tests for monitoring schemes of saproxylic beetles in the scope of Natura 2000 in Slovenia. *Studia Forestalia Slovenica*, 137: 73–90.