



First record of *Grynocharis oblonga* (Linnaeus, 1758) (Coleoptera: Trogossitidae) from the Benelux

Jonas POTTIER¹, Rens HENDRICKX² & Kevin SCHEERS^{3,4}

¹ University of Antwerp, Department ECOBE, Universiteitsplein 1 building C, 2610, Wilrijk, Antwerp, Belgium
(e-mail: jonaspottier@gmail.com)

² Berkenrodelei 18, 2660 Hoboken, Belgium (e-mail: saske.rens@gmail.com)

³ Research Institute for Nature and Forest (INBO), Havenlaan 88 bus 73, 1000 Brussels, Belgium
(e-mail: kevin.scheers@inbo.be)

⁴ Biodiversity Inventory for Conservation NPO (BINCO), Walmersumstraat 44, 3380 Glabbeek, Belgium

Abstract

In this paper we report the first record of *Grynocharis oblonga* (Linnaeus, 1758) from the Benelux based on a specimen collected in Northern Belgium. The ecology of this species is discussed and the European distribution is mapped.

Keywords: biogeography, Belgium, distribution

Samenvatting

In dit artikel rapporteren we de eerste vondst van *Grynocharis oblonga* (Linnaeus, 1758) in de Benelux gebaseerd op een exemplaar verzameld in het noorden van België. De ecologie van deze soort wordt kort besproken en de Europese verspreiding in kaart gebracht.

Résumé

Dans cet article, nous rapportons la première observation de *Grynocharis oblonga* (Linnaeus, 1758) du Benelux basée sur un spécimen collecté dans le nord de la Belgique. L'écologie de cette espèce est discutée et la répartition européenne est cartographiée.

Introduction

The genus *Grynocharis* (Thomson, 1862) has a Holarctic distribution and comprises four species, of which only *G. oblonga* (Linnaeus, 1758) and *G. pubescens* (Erichson, 1844) occur in Central Europe (KOLIBAC, 2013). *Grynocharis oblonga* (Fig. 1) is easily distinguished from *G. pubescens* by external characters: *G. pubescens* has the pronotum and elytra with a distinct pubescence while in *G. oblonga* this pubescence is lacking. Both adults and larvae are mycetophagous and live under bark of a wide array of dead deciduous and coniferous trees (KOLIBAC, 2013). According to MILKOWSKI *et al.* (2019) adults are collected both under the bark and on polypores throughout the year and are mainly active from mid-April until mid-July, with pupation in August. The distribution range of *G. oblonga* comprises most of continental Central Europe and the species is absent from Southern Europe, Great Britain and the north of Scandinavia (MANNERKOSKI *et al.*, 2010) (Fig. 2). Despite this large distribution area, it is localized and rare in most of its range and considered typical for old European forests (MANNERKOSKI *et al.*, 2010). Here, we report the first record of this species from the Benelux based on a single specimen collected by the first two authors in northern Belgium.

Results



Fig. 1. First specimen of *Gynocharis oblonga* (Linnaeus, 1758) found in Belgium. © Camille Locatelli.

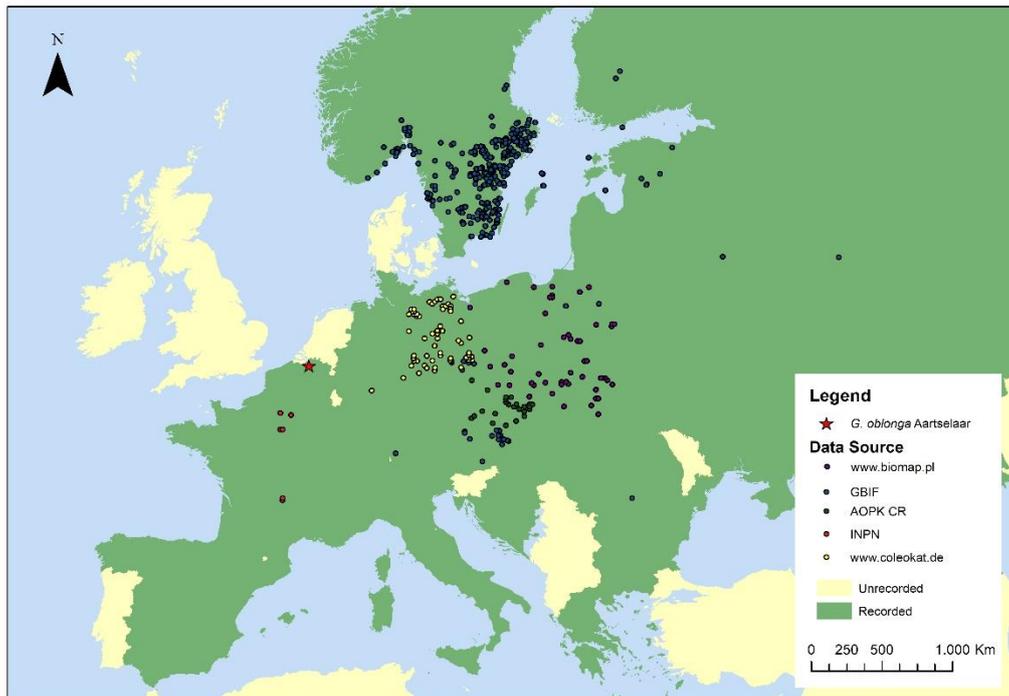


Fig. 2. European distribution of *Grynocharis oblonga* (Linnaeus, 1758).

Studied material

On 23th of January 2018 a single adult of *Grynocharis oblonga* (Linnaeus, 1758) (Fig. 1.) was collected in the Domain “Klaverblad” near Aartselaar, province of Antwerp, Belgium (51.152°N, 4.358°E). Despite subsequent searches on 3th and 5th of February, no additional specimens could be found.



Fig. 3. Habitat at domain 'Klaverblad' with sun-exposed dead beech at the border of a beech forest with a meadow.
© Jonas Pottier.

Site Description

The specimen was found within the 22 ha castle domain 'Klaverblad', in the wood of a decaying beech (*Fagus sylvatica*) situated on the border of a beech stand and a small meadow (Fig. 3). This forest, first mentioned in 1577, is described as historically stable deciduous wood (AGENTSCHAP ONROEREND ERFGOED, 2020). It is dominated by beech (*Fagus sylvatica*) and American red oak (*Quercus rubra*) stands. Dead wood is scarce and only two lying dead beeches were noticed. The trunk in which the specimen of *Grynocharis oblonga* (Linnaeus, 1758) was found, had a length of seven meter and a diameter of 45 cm (Fig. 4). The specimen was collected in the sapwood, near a woodpecker cavity.



Fig. 4. Decaying beech in which the specimen of *Grynocharis oblonga* (Linnaeus, 1758) was found. © Jonas Pottier.

Discussion

The nearest localities where *G. oblonga* is known to occur are situated in Seine-et-Marne and Lorraine in France and near Mannheim in Germany (Fig. 2). The distance between these sites and the locality in Belgium is respectively 303 km and 394 km. *Grynocharis oblonga* has been found in a wide array of tree species (20 species), both deciduous and coniferous among which: birch, willow, aspen, alder, beech, hornbeam, oak, elm, linden, maple, hazel, fir, pine and spruce (NILSSON & BARANOWSKI, 1997; KOLIBAC, 2013; MIŁKOWSKI *et al.*, 2019). However, both in Sweden (NILSSON & BARANOWSKI, 1997) and the Lorraine in France (ROSE, 2017) the species seems to prefer a mix of beech and oak. In Poland this species seems to prefer oak (23% of records), willows (18%) and poplars (17%) (MIŁKOWSKI *et al.*, 2019). The species develops only in sun-exposed decaying trees with a diameter of at least 40cm (NILSSON & BARANOWSKI, 1997), agreeing with the characteristics of the collecting site in Belgium. *Grynocharis oblonga* is mycetophagous (KOLIBAC, 2013) and in Russia, adults have been found in the fruiting bodies of polypores *Fomitopsis pinicola* and *Pycnoporellus fulgens* (NIKITSKY & SCHIGEL, 2004).

NILSSON & BARANOWSKI (1997) suggests that *G. oblonga* has shown an extinction wave over Europe with a time lag of at least 100 years following habitat decline. Furthermore, NILSSON & BARANOWSKI (1997) predict that the species will be detected in sediments in Denmark and other countries where habitat decline and fragmentation occurred before entomologists started to record the fauna. In Sweden, the species has been found in localities with as few as ten suitable trees. NILSSON & BARANOWSKI (1997) considered these populations to be doomed to extinction. The situation in Belgium seems to be more complex. Due to the historically stable character of the domain 'Klaverblad', one could suggest the hypothesis of a relict population. However, recent colonization cannot be excluded, whether or not facilitated by human transport. More research of the entomofauna of decaying wood in Belgium could result in additional populations. For the moment, the limited availability of suitable trees at area 'Klaverblad' in addition to the fact that only a single specimen was found, suggests that the population size is small. A change in forest management, resulting in more decaying wood, would seem highly desirable in order to maintain the population of this and other insects dependent on dead wood.

Acknowledgements

Thanks are due to Wouter Dekoninck (RBINS) for help in the collections of the RBINS and Camille Locatelli (RBINS) for the habitus photo of the collected specimen of *Grynocharis oblongus* illustrating this article.

References

- AGENTSCHAP ONROEREND ERFGOED, 2020. - Domein Kasteel Klaverblad. <https://id.erfgoed.net/erfgoedobjecten/11603> [accessed on 20 August 2020].
- KOLIBAC J., 2013. - Trogossitidae: A review of the beetle family, with catalogue and keys. *ZooKeys*, 366: 1–194.
- MANNERKOSKI I., HYVÄRINEN E., ALEXANDER K., BÜCHE B. & CAMPANARO A., 2010. - *Grynocharis oblonga*. *The IUCN Red List of Threatened Species 2010: e.T157730A5133820*. <https://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T157730A5133820.en>. [accessed on 20 August 2020].
- MILKOWSKI M., TATUR-DYTKOWSKI J., GUTOWSKI J.M., RUTA R., GRZYWOCZ J., KONWERSKI S., KRÓLIK R., KUBISZ D., LASOŃ A., MELKE A., OLBRYCHT T., SZOŁTYS H. & WANAT M., 2019. - Trogossitidae, Lophocateridae, Peltidae and Thymalidae (Coleoptera: Cleroidea) of Poland: distribution, biology and conservation. *Polish Journal of Entomology*, 88(3): 215–274.
- NIKITSKY N. B. & SCHIGEL D.S., 2004. - Beetles in polypores of the Moscow region, Russia: checklist and ecological notes. *Entomologica Fennica*, 15: 6–22.
- NILSSON S.G. & BARANOWSKI R., 1997. - Habitat predictability and the occurrence of wood beetles in old-growth beech forests. *Ecography*, 20: 491–498.
- ROSE O., 2017. - Première capture en Lorraine de *Grynocharis oblonga* (L., 1758) (Coleoptera: Trogossitidae). *L'Entomologiste*, 73(2): 182.
-