

***Nemastoma dentigerum* (Arachnida, Opiliones) found in Belgium**

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Summary

Nemastoma dentigerum Canestrini, 1873 is reported for the first time from Belgium. An overview is given of the situation and the behaviour of this species in the neighbouring countries. The circumstances of the find are compared to other known captures. It is suggested that this is probably a case of introduction.

Résumé

Nemastoma dentigerum Canestrini, 1873 est mentionné pour la première fois en Belgique. Un aperçu est présenté de la situation et du comportement de cette espèce dans les pays limitrophes. Les circonstances de cette découverte sont comparées aux autres captures faites ailleurs. La conclusion est qu'il s'agit probablement d'une introduction.

Samenvatting

Nemastoma dentigerum Canestrini, 1873 is voor het eerst gevangen in België. Er wordt een overzicht gegeven van de situatie en het gedrag van de soort in de buurlanden. De omstandigheden van de huidige vondst worden vergeleken met die op andere plaatsen. Er wordt gesuggereerd dat het om een geval van invoer gaat.

Introduction

Several species of Opiliones — e.g. *Dicranopalpus ramosus*, *Platybunus pinetorum*, *Opilio canestrinii* — have extended their area quite impressively during the past few decades. The same is true for *Nemastoma dentigerum* Canestrini, 1873. *N. dentigerum* has its original distribution in the Mediterranean region — more precisely centered around the Adriatic Sea — but becomes more and more widespread and abundant in neighbouring countries. The species is now also found in Belgium.

Material

Leopold Park (UTM ES9732) is an urban park in the middle of Brussels and situated next to the *Royal Belgian Institute of Natural Sciences*.

Pitfalls were placed by the second author at several locations, of which one was a former lawn in this park. In 2013 the upper layer of this lawn was scraped off and replaced by new humus rich soil. A seed mixture of common field weeds was then sown in. The result in 2014 was a flower carpet with a dominance of Chrysanthemums (Figure 1) not unlike the (usually sponsored) edges of many fields in the countryside (see f.e. NOORDIJK & WIJNHOFEN, 2009). It is in this new wild flower carpet that *N. dentigerum* was found on three occasions:

5.V.2014: 1♂ together with *Odiellus spinosus* (juv)

11.VII.2014: 1♀

30.VII.2014: 1♂ and 2♀ together with *O. spinosus* (juv) and *Opilio saxatilis* (3♀ 4juv)

Some samples are still waiting for identification and therefore the list may be incomplete.



Figure 1: *Sampled Chrysanthemums plot.*

***Nemastoma dentigerum* in neighbouring countries: a short history**

Martens states in his masterly work (MARTENS, 1978) that north of the Alps, the species is restricted to localised small (relic) populations. But although the species is still said to be endangered in the German “*Rote Liste*” of 1996 (BLISS *et al.*, 1996), studies done in Germany at latitudes as far north as Belgium and a few years before the red list was published, already state that «The new records show that *N. dentigerum* is more spread than previously assumed». The authors are not sure «... whether this classification still fits *N. dentigerum* in all parts of Germany» (LANG *et al.*, 1993). A study in the wide region of Mainz (MARX & SCHÖNHOFER, 2005) revealed the species to be the third most common in their pitfalls, which were set out for three months starting in November 2003. The study also supports the suggestion that *N. dentigerum* and *N. lugubre* are vicariants. From The Netherlands however, is reported that both species occur together at the same locations (WIJNHOFEN, 2009).

In the Netherlands *N. dentigerum* was first found in 1961. It was a female and the determination was only confirmed when two males and another female were found in 1973 (WIJNHOFEN, 2005). The species occurred more often from the 1990ies on and is currently common and particularly abundant along the “*Grote Rivieren*” in the southern part of the country (WIJNHOFEN, 2014). The species was also reported from the coastal region near the Flemish part of Belgium (NOORDIJK & WIJNHOFEN, 2009).

It lasted until 2007 before the species was recorded from France (IORIO, 2008). A single male was captured in the most southern part (Roquebillière, Alpes maritimes) near the border with Italy. Because of the distance, this is hardly relevant for our finds. There is one other reference that may be of importance: quite recently the find of a male is reported from Zuydcoote (6.III.2015 — see <http://www.insecte.org/forum/viewforum.php?f=83>) which is located in Nord-Pas-de-Calais and only a few miles from the Flemish coast. A photograph is presented and it fits the species.

It was only in 2009 when *N. dentigerum* was discovered in the “Grand Duché du Luxembourg” (MUSTER & MEYER, 2014). The atlas mentions the species from six sites in the eastern half of the country where it is considered rare.

Discussion

Taking the previous paragraphs into consideration, some questions readily pop-up. Why it took so long before *N. dentigerum* was found in Belgium? Why is it that the species is only found on one isolated location in the centre of the country, with nothing linking this population to others just outside the country? Have they always lived here? Have they recently arrived ; autonomically or introduced by humans?

The Leopold Park has a long history. In medieval times it was an old brook valley which was transformed into a pleasure garden with several ponds in the 19th century. It will have provided the proper living conditions for *N. dentigerum* then as now. However, the species is of adriato-mediterranean origin (MARTENS, 1978) and it is therefore rather improbable that the species has since long been living in Brussels, going unnoticed. It must therefore be an immigrant or an introduced species.

If the species is introduced, then the vector is probably the humus rich soil which forms the new flowerbed. In this case, the same soil has most probably been used in several other gardens all over the country and we should find the species elsewhere, because we know from our short history that *N. dentigerum* has quite some dispersion potential.

Assuming that *N. dentigerum* has already a wider distribution in Belgium , why didn't we find it elsewhere and why it took so long before we found that first male? There could be something wrong with our sampling method or perhaps we haven't been very lucky in the choice of our sampling stations.

We get almost all our knowledge of Belgian Opiliones from pitfall samplings and we know that the method is not effective for all species (VANHERCKE, 2010). *N. dentigerum*, however, occurred in pitfalls in The Netherlands (NOORDIJK & WIJNHOFEN, 2009) and was found in pitfalls placed in woodland in Germany (LANG *et al.*, 1993), sometimes in large numbers (MARX & SCHÖNHOFER, 2005). Pitfalls seem to be effective in collecting *N. dentigerum*.

N. dentigerum is not very fussy about its habitat. Alluvial woodland is preferred (MARX & SCHÖNHOFER, 2005; MUSTER & MEYER, 2014; WIJNHOFEN, 2014), but in general a moist environment rich in litter and near water will do (MUSTER & MEYER, 2014). Occasionally the species is also found in dryer, more park-like, habitat (MARTENS, 1978, NOORDIJK & WIJNHOFEN, 2009). A query of our database results in more than 3000 records from forests made in the last 20 years. Not all forests qualify as alluvial, but the majority are at least humid. Furthermore another 500 records are from several sites in the city of Brussels (like cemeteries or gardens). We believe *N. dentigerum* would have been found at least a few times if it had been present.

Conclusion

While none of the above considerations is conclusive in either way — pro or contra introduction or immigration — our belief is that *Nemastoma dentigerum* was introduced when the Leopold Park got its make over. Adults live for about a year (MARTENS, 1978). The work was done in 2013 and we found the specimens in 2014. Therefore it is probable that reproduction took place. Maybe a permanent settlement is going on.

We will happily draw the alternative conclusion of migration, should the species be reported from other sites in Belgium.

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