

The status of some exotic cladoceran (Crustacea: Branchiopoda) species in the Belgian fauna

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Introduction

We report the occurrence of some exotic cladocerans (Crustacea: Branchiopoda) in Flanders, Belgium. In addition to well-established exotics such as *Daphnia ambigua* and *Daphnia parvula*, we also report on the occurrence of a previously unreported species from the Belgian fauna, *Moina weismanni*. These reports on alien species add to the general observation that aquatic habitats seem to be very prone to the invasion of exotic species, amongst others due to the construction of canals and the frequent and often uncontrolled translocations and stocking of fish.

Discussion

Daphnia ambigua was first found in Belgium in the 1960's by DUMONT (1974), in Lake Donk (Eastern Flanders). The species is currently widespread in Flanders, and is often abundant in heavily stocked fishponds. The species has been reported from all over Europe (MAIER 1996). The success of the species is related to its small body size, which makes it pre-adapted to ponds that are eutrophied and over-stocked with fish. Interestingly, MICHELS *et al.* (2001) observed that genetic diversity in local populations of this species in ponds of the nature reserve De Maten (Limburg) is not particularly lower than has been reported from populations in North America. This is in contrast to observations of low genetic diversity in Czech populations (ZOFKOVÁ 2000).

Recently, the predatory cladoceran *Bythotrephes longimanus* was reported from several reservoirs in The Netherlands and Belgium (KETELAARS & GILLE 1994). This species probably arrived in our region through transport via the river Rhine and canals.

Moina weismanni was recently observed for the first time in Belgium (Melle, Eastern Flanders; FORRÓ *et al.*, in

prep.). The natural range of this species is situated in the Far East (GOULDEN 1968) but it has also been reported as an exotic species from Southern and Eastern Europe. It is very likely that the species arrived in our region through fish stocking. *Moina weismanni* can easily be recognized from *Moina micrura* by the unique ornamentation of the surface of the resting egg capsule (ephippium).

The amount of exotic species in aquatic habitats is astonishing and obvious to all field workers. Sampling ponds in the nature reserve De Maten, formerly used as fishponds, has revealed exotic species in a wide variety of taxa (K. COTTENIE, E. MICHELS & S. DECLERCK, pers. obs.). In addition to the effects of the construction of canals, it is clear that the widespread and often uncontrolled translocation of fish in relation to fish culture and angling results in a serious risk of contamination with exotic species. This risk is not limited to fish communities themselves, but also to other organisms that are present in the medium in which the fish are transported. It is also clear that the occasional reports on new alien species only reveal a small portion of the real problem, since most contaminations are cryptic in nature, because they consist of species that naturally occur in our region. Although these invasions of new genetic lineages of indigenous species can only be detected through the use of molecular markers, the potential consequences should not be underestimated. *Daphnia ambigua* in Europe, and species such as *Daphnia lumholtzi* and *Bythotrephes cederstroemi* in North America, illustrate in a striking manner how fast new taxa can spread over an entire continent.

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