

## Note on some new and rare stoneflies (Plecoptera) in Flanders

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### Abstract

On 21.XI.2010, *Taeniopteryx nebulosa* (Linnaeus, 1758) was rediscovered in the stream Zwarte Beek in Koersel, where also the last Flemish observation took place in 1982. *Leuctra geniculata* Stephens, 1836 is reported here for the first time in Flanders: it was observed in the stream Kikbeek in Opgrimbie on 29.IX.2011. Also *Protonemura risi* (Jacobson & Bianchi, 1905) is reported here for the first time in Flanders: the species was found in a spring that discharges into the stream Veurs in Krindaal on 28.II.2012.

**Keywords:** *Leuctra geniculata*, *Protonemura risi*, *Taeniopteryx nebulosa*.

### Samenvatting

Op 21.XI.2010 werd *Taeniopteryx nebulosa* (Linnaeus, 1758) herontdekt in de Zwarte Beek te Koersel, waar in 1982 ook de laatste vondst in Vlaanderen plaatsvond. *Leuctra geniculata* Stephens, 1836 wordt hier voor het eerst uit Vlaanderen gemeld: de soort werd waargenomen in de Kikbeek te Opgrimbie op 29.IX.2011. Ook *Protonemura risi* (Jacobson & Bianchi, 1905) wordt hier voor het eerst uit Vlaanderen gemeld: deze soort werd aangetroffen in een bron die uitmondt in de Veurs te Krindaal op 28.II.2012.

### Résumé

Le 21.XI.2010, *Taeniopteryx nebulosa* (Linnaeus, 1758) a été trouvé dans le ruisseau Zwarte Beek à Koersel, site identique à celui de sa dernière observation en Flandre datant de 1982. *Leuctra geniculata* Stephens, 1836 et *Protonemura risi* (Jacobson & Bianchi, 1905) sont rapportés ici pour la première fois en Flandre: la première espèce a été trouvée dans le ruisseau Kikbeek à Opgrimbie le 29.IX.2011 et la seconde dans une source se déversant dans le ruisseau Veurs à Krindaal le 28.II.2012.

### Introduction

An elaborate study about the ecology and distribution of stoneflies (Plecoptera) in Flanders was performed by LOCK & GOETHALS (2008). In that study, 16 species were reported for Flanders of which three seemed to be regionally extinct. Despite this effort, one species that was assumed to be regionally extinct as well as two additional species could recently be observed.

### Results

The last observation of *Taeniopteryx nebulosa* in Belgium took place in 1982 in the stream Zwarte Beek in Koersel (FS6061) (LOCK *et al.*, 2010). On 21.XI.2010, the species was rediscovered at the same place. The species

probably remained unnoticed because it is very rare. Also here, only one larva was found. In addition, adults are active from December till February, the last larval stages can therefore only be found during autumn, which falls outside the regular sampling period for water quality monitoring. The stream Zwarte Beek is exceptionally rich in stonefly species, since also *Amphinemoura standfussi* (Ris, 1902), *Leuctra fusca* (Linnaeus, 1758), *Nemoura avicularis* Morton, 1894 and *Nemoura cinerea* (Retzius, 1783) occur in this stream. The water quality of the Demer, the only other locality where *T. nebulosa* has ever been found in Flanders, is still too low to allow the occurrence of stoneflies, although the ecological water quality is ameliorating due to a decreased industrial discharge in the river Demer.

*Leuctra geniculata* is reported here for the first time in Flanders. The species was found in the stream Kikbeek in Opgrimbie (FS8647) on 29.IX.2011. A lot of adults were found along a limited stretch of the stream, where it co-occurred with *L. fusca*, the only other species in Flanders that is also adult during autumn. The stream Kikbeek and the nearby stream Ziepbek together constitute the area with the highest stonefly richness in Flanders. Not less than ten species can be found in this area: *A. standfussi*, *Isoperla grammatica* (Poda, 1761), *L. fusca*, *L. geniculata*, *Leuctra hippopus* Kempny, 1899, *Leuctra nigra* Olivier, 1811, *N. avicularis*, *N. cinerea*, *Nemurella pictetii* Klapálek, 1900 and *Protonemura meyeri* (Pictet, 1841). Because *L. geniculata* has not been observed in the Netherlands since 1955 (KOESE, 2008), while the species is only common below the rivers Samber-Meuse in Wallonia (LOCK, unpublished data), the occurrence of this species in Flanders was unexpected.

Also *Protonemura risi* could be added to the Flemish fauna. The species was captured in a tufa-spring which discharges into the stream Veurs in Krindaal (FS9925) on 28.II.2012. This locality is situated on an ancient trout nursery site containing several springs. A few larvae of *P. risi* were found, although *Nemoura marginata* Pictet, 1836 was more commonly observed at this locality. The occurrence of this species in Flanders was not totally unexpected since it was recently also observed in the Netherlands, close to the Flemish border (VAN DEN HOEK, 2006; KOESE, 2008).

### Discussion

With the presented additions, the Flemish Plecoptera fauna now contains 18 species, two of which are regionally extinct: *Taeniopteryx schoenemundi* Mertens, 1923 and *Isogenus nubecula* (Newman, 1833). *T. schoenemundi*

was last observed in the river Demer in 1921, a river that is now too polluted to contain any stoneflies. However, this species was recently discovered in the Netherlands (KOESE & KLEUKERS, 2010) in the river Roer. The species is also still present in Wallonia, for example in the river Ourthe and the river Lesse (LOCK *et al.*, 2010). On the other hand, *I. nubecula* has not been observed in Belgium since the nineteenth century (LOCK *et al.*, 2010). Both are potamal species, which means that they are restricted to large rivers. The ecological water quality of such rivers, including the river Meuse, which is the most likely route of return for *T. schoenemundi*, is still far too low to allow the recolonisation of Flanders. With 16 out of 18 species still present, Flanders scores much better than the Netherlands, where only 11 out of 28 species still occur (KOESE, 2008; KOESE & KLEUKERS, 2010). However, most species are very rare in Flanders and conservation measures are needed to protect the remaining populations of these sensitive macro-invertebrates.

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