

The bristle-tails of Belgium (Thysanura)

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Abstract

So far, the only bristle-tail (Thysanura) reported for Belgium was *Lepisma saccharina* (L., 1758). In the present study, *Dilta hibernica* (CARPENTER, 1907), *Trigoniophthalmus alternatus* (SILVESTRI, 1904) and *Lepismachilis γ -signata* (KRATOCHVIL, 1945) are added to the Belgian fauna which brings to total number of species in Belgium up to four. The Belgian species list is compared with the fauna of the neighbouring countries and a distribution map is presented for the encountered species.

Keywords : Thysanura, checklist, Belgium.

Samenvatting

Tot nu toe was *Lepisma saccharina* (L., 1758) de enige soort van de zilvervisjes (Thysanura) die werd gemeld voor België. In deze studie worden *Dilta hibernica* (CARPENTER, 1907), *Trigoniophthalmus alternatus* (SILVESTRI, 1904) en *Lepismachilis γ -signata* (KRATOCHVIL, 1945) toegevoegd aan de Belgische fauna wat het totaal aantal soorten voor België op vier brengt. De Belgische soortenlijst wordt vergeleken met de fauna van de buurlanden en een verspreidingskaart van de aangetroffen soorten wordt gegeven.

Résumé

Jusqu'à présent, *Lepisma saccharina* (L., 1758) était la seule espèce de thysanoures (Thysanura) qui avait été rapportée pour la Belgique. Dans cette contribution, *Dilta hibernica* (CARPENTER, 1907), *Trigoniophthalmus alternatus* (SILVESTRI, 1904) et *Lepismachilis γ -signata* (KRATOCHVIL, 1945) sont ajoutées à la faune belge, ce qui élève le nombre total des espèces pour la Belgique à quatre. La liste des espèces belges est comparée avec la faune des pays voisins et une carte de distribution est donnée.

Introduction

Thysanura or bristle-tails are an order of primitively wingless insects or Apterygota. Bristle-tails are vegetarian, nocturnal, thermophilous and they are very sensitive to dessication. They are quite common and yet literature about the Belgian Thysanura is almost lacking. The present study aims to fill in this gap.

Material and methods

Most of the studied Thysanura belong to the collection of the Royal Belgian Institute for Natural Sciences. Furthermore, some animals belonging to the collection of Matty BERG (Free University of Amsterdam, Department of Animal

Ecology, the Netherlands) and to my private collection were studied. All available material was identified according to MEISCH (1977), STURM (1997) and WYGOZINSKY (1954).

Results

So far, only *Lepisma saccharina* (L., 1758) had been reported for the Belgian fauna (LAMEERE, 1895; GEYSKENS, 1945). LAMEERE (1895) also reported *Machilis polypoda* for Belgium but it is impossible to ascertain which species was intended because this name was used for all species of Machilidae at that time. In the present study four species are reported for the Belgian fauna (Table 1).

Table 1. The bristle-tails reported for Belgium and some neighbouring countries. B = Belgium (present study), NL = The Netherlands (WYGOZINSKY, 1954), LUX = Luxemburg (MEISCH, 1977) and G = Germany (STURM, 1997).

| Species | B | NL | LUX | G |
|---|---|----|-----|---|
| Family Machilidae | | | | |
| <i>Dilta hibernica</i> (CARPENTER, 1907) | * | * | * | * |
| <i>Lepismachilis notata</i> (STACH, 1919) | | | | * |
| <i>Lepismachilis rozspali</i> (KRATOCHVIL, 1945) | | | | * |
| <i>Lepismachilis y-signata</i> (KRATOCHVIL, 1945) | * | * | * | * |
| <i>Machilis germanica</i> (JANETSCHEK, 1953) | | * | * | * |
| <i>Machilis oudemansi</i> (WYGODZINSKY, 1954) | | * | | |
| <i>Machilis tirolensis</i> (VERHOEF, 1910) | | | | * |
| <i>Petrobius brevistylis</i> (CARPENTER, 1912) | | * | | * |
| <i>Trigoniophthalmus alternatus</i> (SILVESTRI, 1904) | * | * | * | * |
| Family Lepismatidae | | | | |
| <i>Lepisma saccharina</i> (L., 1758) | * | * | * | |
| <i>Thermobia domestica</i> (PACKARD, 1873) | | * | | |
| Total number of species | 4 | 8 | 5 | 8 |

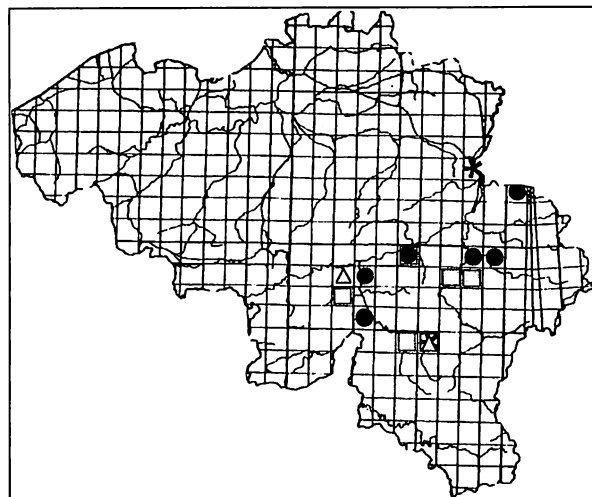


Fig. 1. Distribution of the Belgian Thysanura (□ = *Dilta hibernica*; ● = *Trigoniophthalmus alternatus*; △ = *Lepismachilis y-signata*; * = *Lepisma saccharina*).

Dilta hibernica (CARPENTER, 1907) can be found in a variety of habitats having a fairly dense vegetation cover. In contrast to the other Machilidae, this species does also occur in areas without stones. Just like in Luxemburg (MEISCH, 1977), *D. hibernica* was the most commonly found species in Belgium (Table 1, Fig. 1). Also *Trigoniophthalmus alternatus* (SILVESTRI, 1904) was collected in several places among which was Plombières, where a lot of specimens were collected during a year-round pitfall sampling campaign. *Lepismachilis y-signata* (KRATOCHVIL, 1945), on the contrary, was only represented by a few individuals. *Lepisma saccharina* (L., 1758)

is a cosmopolitan species, distributed by man. The species can be easily found in old houses, mainly in bathrooms and attics. In Cannes (Sint-Pietersberg) and Wavreille, however, freeliving animals have been collected. Also in the Netherlands, the Sint-Pietersberg is one of the few places where free-living specimens have been found (WYGOZINSKY, 1958).

Discussion

The species list for the Belgian Thysanura matches quite well with those of the neighbouring countries (Table 1). However, in Luxemburg, the Netherlands as well as in Germany some additional species have been reported. *Petrobius brevistylis* (CARPENTER, 1912), for example, is a petrophilous species, being commonly found in coastal areas on rocks immediately above high-water mark. Belgium possesses only sandy beaches but *P. brevistylis* may be sought on jetties. One individual of the species *Machilis germanica* (JANETSCHEK, 1953) was found in the Belgian collection of Thysanura in the Royal Belgian Institute for Natural Sciences but because the locality where the animal was found was not indicated, it can not be assured if the species was collected in Belgium. At least, the species is expected to occur in Belgium. *Machilis oudemansi* (WYGODZINSKY, 1954) was described by only one male from the Sint-Pietersberg (The Netherlands) and might therefore also be expected in Belgium. The species has, however, not been recorded since and more

material should be examined in order to be able to describe the female and to get an idea of the variability of the characteristics. In Germany also *Lepismachilis notata* (STACH, 1919), *L. rozsyali* (KRATOCHVIL, 1945) and *Machilis tirolensis* (VERHOEFF, 1910) have been found but it is unclear if these species may also be expected in Belgium. *Atelura formicaria* (HEYDEN) is very common in Sweden (WYGOZINSKY, 1941) and has also been found in Austria and France. The species lives in nests of ants and can be found under stones. Despite intensive searching in the Netherlands (WYGOZINSKY, 1958) and Luxemburg (MEISCH, 1977) the species was not observed in these countries. *Thermobia domestica* (PACKARD 1873) can be found synantropically but is slightly more thermophilous situations than *L. saccharina*. *T. domestica* is probably firmly established in Western Europe and is often common in bakeries and warmer parts of buildings. *Acrotelsa collaris* (FABRICIUS, 1793) and *Gastrotheus sumatranus* (SILVESTRI, 1916) are much more thermophilous and were probably only temporary residents in the Netherlands.

It can be concluded that the present study already gives a first idea of the Thysanura occurring in Belgium. However, selective searching will probably add some more species to the Belgian fauna and further research is needed to get a better idea of the distribution and ecology of the Belgian Thysanura.

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Literature

- GEYSKENS J., 1945. - *Kleine fauna voor laag- en midden België*. De Nederlandse Boekhandel, Antwerpen, 277 pp.
- LAMEERE A., 1895. - *Manuel de la faune de Belgique. Tome 1*. Bruxelles, 639 pp.
- MEISCH C., 1977. - Faune des Thysanoures du Grand-Duché de Luxembourg. *Archives Institut grand-ducal de Luxembourg. Section des Sciences naturelles*, 37 : 103-135.
- STURM H., 1997. - Kommentiertes verzeichnis der Felsenspringer-arten (Machilidae, Archaeognatha, Insecta) Deutschlands. *Entomologische Mitteilungen aus dem Zoologischen Museum Hamburg*, 12 : 123-140.
- WYGOZINSKY P.W., 1941. - Beiträge zur Kenntnis der Dipluren und Thysanuren der Schweiz. *Denkschrift Schweizerischer naturforschenden Gesellschaft*, 74 : 113-227.
- WYGOZINSKY P.W., 1954. - The Thysanura of the Netherlands (Apterygota, Insecta). *Natuurhistorisch Maandblad*, 43 (10) : 67-80.

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Checklist of the Belgian centipedes (Myriapoda Chilopoda)

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Abstract

A checklist of the centipedes (Chilopoda) of Belgium is presented. Thus far, 22 species had been cited for Belgium. In this contribution, *Lithobius piceus*, *L. tenebrosus*, *L. muticus*, *L. agilis*, *L. lapidicola*, *Lamyctes fulvicornis*, *Henia vesuviana*, *Strigamia maritima* and *Pachymerium ferrugineum* are reported for the first time for the Belgian fauna. This brings the total number of centipedes found in Belgium up to 31 species, belonging to 11 genera. If the current checklist is compared with those of the neighbouring countries, however, it can be assumed that still a dozen more species are to be expected in Belgium.

Keywords : Chilopoda, checklist, Belgium.