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Centromerus levitarsis (SIMON, 1884), a new linyphiid spider for the Belgian fauna (Araneae: Linyphiidae)

By Frederik HENDRICKX[1], Domir DE BAKKER[1,*] & Herman DE KONINCK[2]

[1] Ghent University, Department of Biology, Research Unit of Terrestrial Ecology, K.L. Ledeganckstraat 35, B-9000 Ghent (e-mails: Frederik.Hendrickx@UGent.be; Domir.Debakker@UGent.be). *current address: Royal Belgian Institute of Natural Sciences, Department of Entomology, Vautierstraat 29, B-1000 Brussels (e-mail: Domir.Debakker@naturalsciences.be).

[2] Smalvoortstraat 47/2, B-2300 Turnhout (e-mail: Herman.d4@planetinternet.be).

Summary

Three females of *Centromerus levitarsis* (SIMON, 1884) were captured for the first time at two localities in Belgium (Marais de Sampont, Luxemburg and Sankt-Vith, Liège) in respectively a rough meadow dominated by *Filipendula ulmaria* and a transmission mire dominated by *Sphagnum* sp., *Menyanthes trifoliata* and *Molinia caerulea*. Investigation of the habitat preference of the species revealed that it is a very stenotopic species bound to a vulnerable swamp habitat.

Keywords: *Centromerus levitarsis*, Belgium, new record, Linyphiidae

Résumé

Trois femelles de *Centromerus levitarsis* (SIMON, 1884) sont capturées pour la première fois de deux localités en Belgique: dans une pelouse très humide dominée par *Filipendula ulmaria* (Marais de Sampont, Luxembourg) et dans une tourbière basse "bombée" à sphaignes où dominent *Menyanthes trifoliata* et *Molinia caerulea* (Sankt-Vith, Liège). Il s'agit d'une espèce sténotype liée à un marais très vulnérable.

Samenvatting

Drie vrouwtjes van de soort *Centromerus levitarsis* (SIMON, 1884) werden voor het eerst gevangen in België in twee localiteiten (Marais de Sampont, Luxemburg en Sankt-Vith, Luik) in een verruigd hooiland gedomineerd door Moeasspirea (*Filipendula ulmaria*) en overgangsveen gedomineerd door *Sphagnum* en o.a. Waterdrieblad (*Menyanthes trifoliata*) en Pijpestrootje (*Molinia caerulea*). Opzoekingen van de habitatpreferntie van deze soort toonden aan dat deze zeer stenotope soort gebonden is aan een zeer kwetsbaar moerashabitat.

Introduction

Although the spider fauna of Belgium is relatively well known, this mainly holds true for the northern part of Belgium. Within the southern part of Belgium (Wallonia), it is likely that many records of rare, endangered or even new species might be discovered and this for at least two reasons. First of all, the southern part of Belgium is relatively less sampled compared to the northern part and secondly, natural areas in Wallonia are often much less influenced by human activities (i.e. "pristine") compared to natural areas in Flanders. Additionally, due to a larger variety in climate, soil types, relief, etc. and consequently a larger variety in habitats and biogeographic regions, it might be expected that Wallonia is even more species rich than Flanders.

Within the framework of the PhD-thesis of Marc Dufrêne on the biogeography and ecology of ground beetles, more than 180 different plots were sampled in a large array of habitats scattered all over Wallonia in 1987 (DUFRÊNE, 1992). Because of the use of pitfall trapping method in this study, also several spiders were caught. Material was gathered, sorted out and left in the Royal Belgian

Institute of Natural Sciences (RBINSc, Dr. Léon Baert) for several years. Recently, the material was put at our disposal and identification could be started. While identifying the spiders, we stumbled upon two females of the species *Centromerus levitarsis* (SIMON, 1884). Recently, another female was sampled by hand at a second location (Sankt-Vith).

The position of the species in Belgium and Europe

Although *Centromerus levitarsis* was already present on the list of Belgian spiders (BOSMANS & MAELFAIT, 1986) and even on the Red list of spiders of Flanders (MAELFAIT *et al.*, 1998), these records were based on incorrect information (JANSSEN, *pers. comm.*). The record presented here is therefore the first record of the species in our country. It was found in the nature reserve Marais de Sampont (Luxemburg, UTM: FR951068) and recently at Sankt-Vith (Liège, UTM KA96). The position of both localities in Belgium is displayed in Fig. 1.

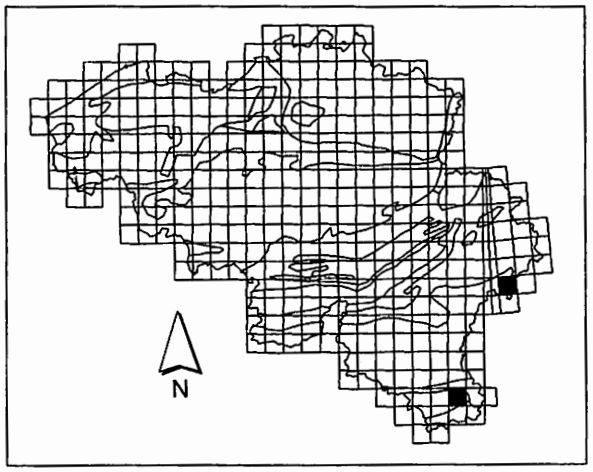

Fig. 1. Map showing current distribution of *Centromerus levitarsis* in Belgium.

The catching of the species is not entirely surprising, because it has already been found in our neighbouring countries: the Netherlands (VAN HELSDINGEN, 1963; 1999), Germany (BLICK, 2000), France (BRATTON, 1991) and the United Kingdom (BRATTON, 1991; MERRET & MURPHY, 2000). Other countries of the Western Palearctic where the species has been found are the Czech Republic (KLIMES, 2000), Switzerland and Austria (BLICK *et al.*, 2000), Sweden (KRONESTEDT, 2001), Slovakia (GAJDOS *et al.*, 1999), Denmark (LANGEMARK, 2000), Lithuania (RELYS, 1996), Latvia and Estonia (MIKHAILOV, 1997). Furthermore, BRATTON (1991) adds Italy and Finland as countries were the species occurs. More eastwards, records are known from the Russian plains, Ural Mountains and Middle Siberia (MIKHAILOV, 1997).

To date, there are no records from Norway (AAKRA & HAUGE, 2000), Portugal (CARDOSO, 1999), Bulgaria (DELTSHEV & BLAGOEV, 2000), Hungary (SAMU & SZINETAR, 1999) and Rumania (WEISS & URAK, 2000). Data from Poland are still incomplete (KUPRYJANOWICZ, 2000), but BRATTON (1991) mentions it as a country were the species occurs.

Except for the presence of the species in Italy, most data on the distribution of *C. levitarsis* are from the northern part of the Palearctic region.

Habitat preference of *Centromerus levitarsis*

A detailed habitat description of where *C. levitaris* was found in Belgium is only available for the specimen captured at Sankt-Vith. The location is a nature reserve defined as brook valley grassland with a mosaic of different habitat types. Pitfalls were placed in a varied wet open low fen area with *Menyanthes trifoliata* and *Molinia caerulea* as dominant plant species and a high presence of *Spaghnum*-mosses. Vegetation height differs from open (in *Sphagnum*-rich places) to a maximum of 30cm. No cultivation in the reserve is recorded (mowing and/or hay-making).

The only information we have about the plot located at Marais de Sampont, is that it was dominated by *Filipendula ulmaria*. Given the very large ecological amplitude of this plant species, it can only be concluded that it must have been a wet locality. However, other species of arachnids present in the sample are known to be bound to rather vulnerable marshes with minor fluctuations of the water table and relatively nutrient poor conditions such as *Oedothorax gibbosus*, *Trochosa spinipalpis*, *Allomengea vidua* and *Robertus arundineti*.

Habitat descriptions of other countries include high moorland (WIEHLE, 1956; VAN HELSDINGEN, 1963; VON BROEN & MORITZ, 1963; MAURER & HÄNGGI, 1990), swamps, between detritus of reed and in the presence of ponds (SIMON, 1929) and spacious low fens with mats of floating vegetation (PALMGREN, 1975; MAURER & HÄNGGI, 1990) like large sedge vegetations (HÄNGGI *et al.*, 1995). The species is also found in open forested regions, but only when the soil is extremely wet and covered with *Sphagnum* mosses (LOCKET & MILLIDGE,

1953; HEIMER & NENTWIG, 1991) as is the case in some types of *Alnus spec.* carrs and *Sphagnum* bogs overgrown by *Betula spec.* (PARKER, 1971; BRATTON, 1991). The species is also encountered in *Sphagnum* rich *Picea spec.* woodlands (BRAUN, 1961).

More detailed information concerning habitat descriptions where males were found involves a transition mire and peat-like heathland with is becoming afforested spontaneously mainly with *Betula spec.* with in-between some *Alnus* spec. and *Frangula alnus*. The herb layer consists of *Sphagnum*-mosses, *Calluna vulgaris*, *Eriophorum spec.* and *Molinea caerulea* (BLICK & STAUDT, *unpubl. records*). The area is not managed in any way. Females were found in a peat like pasture with the presence of *Sphagnum*-mosses, which is managed extensively. According to CASEMIR (1976), the species is really bound to *Spagnum*-mosses ('sphagnophilic'), but cannot be stipulated as being a typical 'high moorland' species.

Summarizing these habitat descriptions, we can conclude that *C. levitarsis* is bound to very wet habitats, located in fen areas. Although *Sphagnum*, indicating ombrotrophic situations, is mostly present at the sites, there are often also some minerotrophic plant species present (e.g. *Alnus spec.*, *Menyanthes trifoliata*, *Phragmithes australis*, *Carex spec.*). Such a type of vegetation, called transition mires, is extremely vulnerable as it can only develop when groundwater fluctuations are within the order of a few centimetres. Transition mires often develop on mats of floating vegetation that have been undisturbed for many years. In these situations, an ombrotrophic water layer might be present at the top, giving rise to the development of *Sphagnum* mosses. This corresponds very well with the findings of CASEMIR (1976) that *C. levitarsis*, although really bound to *Sphagnum* mosses, cannot be stipulated as a typical 'high moorland' species.

Phenology

No real conclusion about phenology can be given due to the rareness of the species in a lot of countries where the species occurs but reviewing the literature in neighbouring countries reveals a slight consistency of the period in which the adults occur. BRATTON (1991) mentions adult males in March and April, while females occur in May and October. In the second location in Belgium, the individual was found in July. In Germany, adult individuals of both sexes could be found in the period June-July and September (BLICK, 1996; BLICK & STAUDT, *unpubl. records*). Although the species is often recorded in low numbers in a lot of countries, more abundant catches of both sexes in the month of October indicate that the copulation probably takes place in this period (BRAUN & RABELER, 1969, CASEMIR 1976).

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