

***Liposcelis palatina* Roesler, 1954 and *Ectopsocus axillaris* (Smithers, 1969) new to Belgium (Psocoptera: Liposcelididae & Ectopsocidae)**

Koen LOCK

Merelstraat 27, B-9000 Gent, Belgium (e-mail: Koen_Lock@hotmail.com)

Abstract

Two Psocoptera were observed for the first time in Belgium. On 6.X.2018, the booklouse *Liposcelis palatina* Roesler, 1954 was found under bark of *Platanus x hispanica* in Lanaye (Province of Liège). On 16.X.2018 and 17.X.2018, the barkfly *Ectopsocus axillaris* (Smithers, 1969) was found under a piece of wood in the dunes of Heist (Province of West Flanders).

Keywords: barkflies, Belgian fauna, booklice, Psocodea

Samenvatting

Twee Psocoptera werden voor het eerst in België waargenomen. Op 6.X.2018 werd de boekluise *Liposcelis palatina* Roesler, 1954 gevonden onder schors van *Platanus x hispanica* in Lanaye (Provincie Luik). Op 16.X.2018 en 17.X.2018 werd de stofluise *Ectopsocus axillaris* (Smithers, 1969) gevonden op een stuk hout in de duinen van Heist (Provincie West-Vlaanderen).

Résumé

Deux Psocoptera ont été observés pour la première fois en Belgique. Le 6.X.2018, *Liposcelis palatina* Roesler, 1954 a été trouvé sous l'écorce d'un Platane à feuilles d'érable à Lanaye (Province de Liège). Le 16 et le 17.X.2018, *Ectopsocus axillaris* (Smithers, 1969) a été trouvé sous un morceau de bois dans les dunes de Heist (Province de Flandre Occidentale).

Introduction

Psocoptera are a small order of insects closely related to lice (order Phthiraptera). Unlike lice, Psocoptera are not external parasites, although some species can be found in nests of mammals and birds. Recently, Psocoptera and Phthiraptera were brought together under the order Psocodea, because molecular and morphological research has shown that Psocoptera are paraphyletic and Phthiraptera are polyphyletic, therefore the parasitic lifestyle probably originated twice within the Psocodea (JOHNSON *et al.*, 2004; YOSHIZAWA & JOHNSON, 2006). However, due to their very different lifestyles, literature and research of both groups is mostly separated and therefore, Psocoptera are still treated in their traditional sense here.

The vernacular name booklice is used for species of the genus *Liposcelis*. They are apterous, their body is strongly depressed dorsoventrally and the hind femora are strongly dilated. They measure only 1.0-1.3 mm and their compound eyes are reduced to 2-8 ommatidia. Many species are associated with human habitation and several are well known as pests of stored products, especially grain stores, but also paper products such as books. Among entomologists, they are infamous because they can eat insect collections. *Liposcelis bostrychophila* Badonnel, 1931 is a parthenogenetic species, but all other species in Belgium reproduce sexually and males are known. However, males are much rarer than females: on average only about 10% of the captured individuals are male.

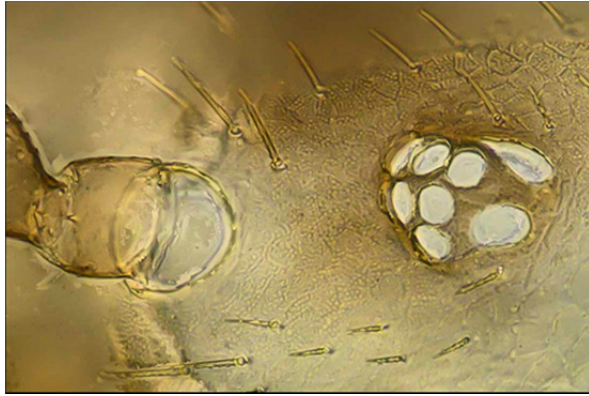


Fig. 1. Left eye and base of antenna of *Liposcelis palatina* Roesler, 1953 (photo: Koen Lock).



Fig. 2. Pronotum of *Liposcelis palatina* Roesler, 1953 (photo: Koen Lock).



Fig. 3. *Ectopsocus axillaris* (Smithers, 1969) (photo: Koen Lock).

Ectopsocidae do not possess an areola postica in the forewings, but unlike Peripsocidae, the vertex is pilose. In Belgium, they are only represented by the genus *Ectopsocus*. Both *Ectopsocus petersi* Smithers, 1978 and *Ectopsocus briggsi* McLachlan, 1899 have been introduced in Belgium. *Ectopsocus briggsi* was first observed in 1919 (BALL, 1920a,b) and *E. petersi* in 1983 (SCHNEIDER, 1989), but they are now among the most common Psocoptera in natural habitats.

LIENHARD (1998) listed 72 species of Psocoptera from Belgium. Since then, seven additional species have been observed (SCHNEIDER & CARRIÈRES, 2008; LOCK *et al.*, 2015; LOCK, 2017; LOCK & SOORS, 2018). Here, *Liposcelis palatina* Roesler, 1953 and *Ectopsocus axillaris* (Smithers, 1969) are added to the Belgian fauna, which brings the total number of species reported from Belgium to 81.

Material and methods

Liposcelis palatina and *E. axillaris* were identified using LIENHARD (1998). Specimens of both species were deposited to the entomological collection of the Royal Belgian Institute of Natural Sciences (I.G.: 33955).

Results

On 6.X.2018, three individuals of the booklice *L. palatina* were found under bark of plane (*Platanus x hispanica*) in Lanaye (Province of Liège, UTM: FS8929). Species of the genus *Liposcelis* Motschulsky, 1852 are difficult to identify: slides with cleared specimens should be prepared for identification. Identification keys have only been developed for females, which can be recognised by the subgenital plate with a T-shaped sclerite. *L. palatina* is uniformly grey-brown. The species can be recognised by the compound eyes consisting of eight ommatidia (rarely seven) (Fig. 1), while most species have no more than seven ommatidia. Five or six setae are present on the anterior side of the prosternite and none in the middle. Usually, two (rarely three and exceptionally one) strong pronotal setae are present along the anterior border in addition to the humeral bristle, several short setae are

present behind the pronotal setae (Fig. 2). The species can be found under bark and in bird nests.

On 16.X.2018 and 17.X.2018, the barkfly *Ectopsocus axillaris* (Smithers, 1969) was found under a piece of wood in the dunes of Heist (Province of West Flanders). It is an unmistakable uniformly dark brown species with dark brown tainted wings (Fig. 3). The body measures 1.5-2.1 mm. The species is usually brachypterous, although females are sometimes macropterous.

Discussion

Liposcelis palatina was described from Germany and was also listed for Croatia, France, Germany, Hungary and Switzerland and the Grand Duchy of Luxembourg (LIENHARD, 1998). More recently, the species was also found in Slovakia (HOLUSA & KUCEROVA, 2010) and Finland (KANERVO, 2011). The presence of this species in Belgium could therefore be expected. Since the species was observed very close to the border with the Netherlands, the species can also be expected there. Apart from *L. palatina*, eight other *Liposcelis* species are known from Belgium, which makes it the largest genus of Psocoptera in Belgium. Additional species that might be expected in Belgium are *L. bicolor*, *L. meridionalis* and *L. pearmani*, which have all been listed from both France and Germany (LIENHARD, 1998). In addition, *L. bicolor* and *L. meridionalis* were also reported from the Netherlands (KRUSEMAN, 1944) and *L. pearmani* from the Grand Duchy of Luxembourg (LIENHARD, 1998) and the Netherlands (DE WILDE, 2009).

Ectopsocus axillaris was described from New Zealand and was also reported from Australia and Ireland (LIENHARD, 1998) and more recently also from Great Britain (SAVILLE, 2001). The species has always been found in natural habitats, but its distribution in Europe indicates that the species has been introduced (LIENHARD, 1998). The Belgian observation was done very close to the harbour of Zeebrugge, which is also an indication that the species was probably introduced. As *E. axillaris* is now known from several locations in Ireland and Great Britain, it might be expected that it will continue the colonisation of the European mainland.

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