

***Hydroptila angulata* Mosely, 1922, *Hydroptila simulans* Mosely, 1920 and *Tinodes maculicornis* (Pictet, 1834) confirmed for Belgium (Trichoptera: Hydroptilidae, Psychomyiidae)**

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Abstract

On 11.IX.2016, *Hydroptila angulata* Mosely, 1922, *Hydroptila simulans* Mosely, 1920 and *Tinodes maculicornis* (Pictet, 1834) were captured with a light trap along the River Meuse in Heer-sur-Meuse (province Namur). With these observations, the presence of these species in Belgium can now be confirmed.

Keywords: *Hydroptila angulata*, *Hydroptila simulans*, *Tinodes maculicornis*

Samenvatting

Op 11.IX.2016 werden *Hydroptila angulata* Mosely, 1922, *Hydroptila simulans* Mosely, 1920 en *Tinodes maculicornis* (Pictet, 1834) met een lichtval gevangen langs de Maas in Heer-sur-Meuse (provincie Namen). Met deze waarnemingen kan de aanwezigheid van deze soorten in België worden bevestigd.

Résumé

Le 11.IX.2016, *Hydroptila angulata* Mosely, 1922, *Hydroptila simulans* Mosely, 1920 et *Tinodes maculicornis* (Pictet, 1834) ont été capturés au piège lumineux au bord de la Meuse à Heer-sur-Meuse (province de Namur). Ces observations confirment la présence de ces espèces en Belgique.

Introduction

Adult Hydroptilidae can be recognised by the pointed forewings that are smaller than 5 mm. They have short antennae, which are maximum about half as long as the forewings, while in other families, these are about as long as the forewings or even longer. In contrast to most other Belgian caddisflies, the larvae of the genera *Hydroptila* Dalman, 1819, *Oxyethira* Eaton, 1873 and *Orthotrichia* Eaton, 1873 cannot yet be identified to species level. Their small size in combination with the inability to identify the larvae renders this one of the least known caddisfly families. *Hydroptila angulata* Mosely, 1922 and *H. simulans* Mosely, 1922 were reported previously from Belgium (RICCIARDONE & STROOT, 1991), but unfortunately no material was conserved at that time. With the observation of both species along the River Meuse, their presence in Belgium can now be confirmed. Together with the recent additions of *H. occulta* (Eaton, 1873) (LOCK & GOETHALS, 2012a), *H. tineoides* Dalman, 1819 (LOCK *et al.*, 2013), *Oxyethira falcata* Morton, 1893 (LOCK, 2014) and *Orthotrichia tragetti* Mosely, 1930 (LOCK & ZWAENEPOEL, 2014), this brings the total number of Hydroptilidae in Belgium to 21 species.

Psychomyiidae are also quite small, with forewings of 3.5-8 mm. They possess 2, 4 and 4 spurs on the tibia of the fore, middle and hind legs, respectively and they lack ocelli. For *Tinodes maculicornis* (Pictet, 1834), only larvae were reported so far (LOCK, 2015). However, with the exception of

T. waeneri (Linnaeus, 1758), larvae of the genus *Tinodes* Leach, 1815 cannot be identified to species level with certainty based on morphological characteristics (Waringer, pers. comm. 2015). This time, an adult female was collected, which is the first certain record for this species in Belgium. With the recent discovery of *Tinodes dives* (Pictet, 1834) (LOCK & GOETHALS, 2010) and the observation of *T. maculicornis*, the number of *Tinodes* species known from Belgium is now seven. Together with two *Lype* species and one *Psychomyia* species, this brings the number of Psychomyiidae in Belgium to 10 species.

Material and methods

On 11.IX.2016, caddisflies were sampled with a light trap along the river Meuse in Heer-sur-Meuse (Namur province, UTM: 31UFR3058, 100m asl) (coll. RBINS). Species were identified using MALICKY (1983) and for the Hydroptilidae also MARSHALL (1978).

Results

One male and two females of *Hydroptila angulata* Mosely, 1922, one female of *H. simulans* Mosely, 1920 and one female of *Tinodes maculicornis* (Pictet, 1834) were sampled with a light trap along the River Meuse. During the same night, also *Hydropsyche angustipennis* (Curtis, 1824) (Hydropsychidae), *Hydroptila forcipata* (Eaton, 1873), *Hydroptila lotensis* Mosely, 1930, *Hydroptila sparsa* Curtis, 1834, *Hydroptila vectis* Curtis, 1834, *Mystacides longicornis* (Linnaeus, 1758), *Oecetis testacea* (Curtis, 1834) (Leptoceridae), *Limnephilus flavicornis* (Fabricius, 1787) (Limnephilidae) and *Psychomyia pusilla* (Fabricius, 1781) (Psychomyiidae) were observed.

Species from the *Hydroptila sparsa*-group are difficult to identify. Males of *Hydroptila angulata* can be recognised by the bluntly produced ventral corner of the inferior appendages, which lacks the small dark spot that is present in several other species (Fig. 1). Females have a deep excision in tergite eight, which has marginal sclerotised ridges that are pointed terminally (Fig. 2). Males of *Hydroptila simulans* can be recognised by the dilated apex of the inferior appendages, that possesses a distinct spot in the ventral corner. Females have a shallow rectangular excision in tergite eight (Fig. 3) and the mushroom-shaped ventral sclerite is broader than in related species (Fig. 4). Males of the genus *Tinodes* can be readily recognised by the shape of the inferior appendages, whereas females are more difficult to separate, with most species having an abdomen ending in a narrow upturned tip (Fig. 5). Females of *Tinodes maculicornis* can be identified by the dark sinuous sclerotised posterior margin of sternite eight (Fig. 6).

Discussion

Hydroptila angulata was already known from the Netherlands (HIGLER, 2008; TEMPELMAN, 2015), the French departments Ardennes and Meuse (COPPA, 2016), the Grand Duchy of Luxembourg (SCHRANKEL *et al.*, 2008) and the German federal states Rheinland-Pfalz and Nordrhein-Westfalen (ROBERT, 2001). RICCIARDONE & STROOT (1991) reported the species for the first time in Belgium from the river Meuse: Waulsort, Tailfer and Andenne were sampled, but it was not indicated where *H. angulata* was found. Unfortunately, no material was preserved and the species was therefore not included in the Belgian checklist (LOCK & GOETHALS, 2012a). With the observation of *H. angulata* in Heer-sur-Meuse, its presence in Belgium can now be confirmed.

Although the historical record of *Hydroptila simulans* from the Netherlands (HIGLER, 2008) was probably erroneous (TEMPELMAN *et al.*, 2013), its presence in the Netherlands was recently ascertained (SANABRIA & TEMPELMAN, 2015). The species is also known from the French departments Aisne, Ardennes and Meuse (COPPA, 2016), the Grand Duchy of Luxembourg (SCHRANKEL *et al.*, 2008) and the German federal states Rheinland-Pfalz and Nordrhein-Westfalen (ROBERT, 2001). STROOT (1985) reported the species from the stream Le Hoyoux in Clavier, but re-identification indicated that this was actually *Hydroptila vectis* Curtis, 1834. RICCIARDONE & STROOT (1991) also reported this species from the river Meuse (Waulsort, Tailfer or Andenne), but no material was conserved and therefore, the species was not included in the Belgian checklist (LOCK & GOETHALS, 2012a). With the observation of *H. simulans* in Heer-sur-Meuse, the presence of this species in Belgium can now be confirmed.



Fig. 1. Ventrrolateral view of the male genitalia of *Hydroptila angulata* Mosely, 1922 (Photograph: Koen Lock).

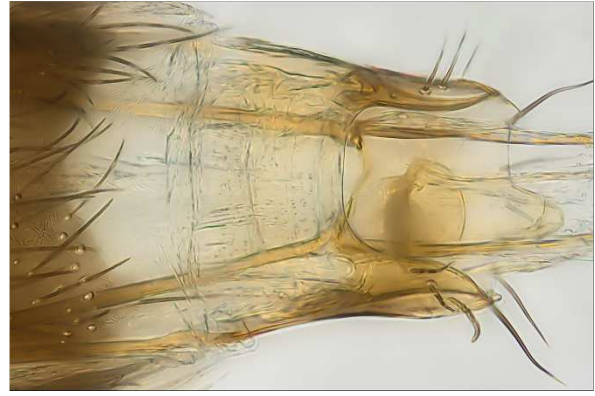


Fig. 2. Dorsal view of the female genitalia of *Hydroptila angulata* Mosely, 1922 (Photograph: Koen Lock).

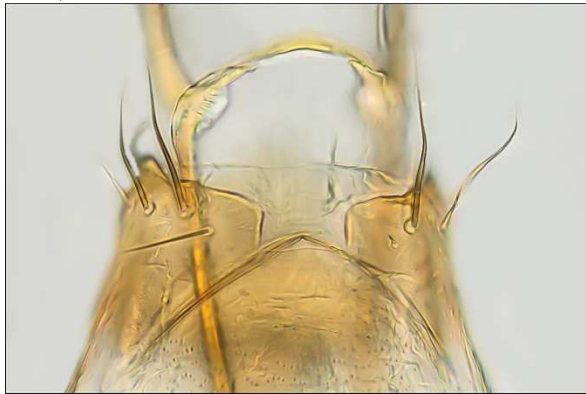


Fig. 3. Dorsal view of the female genitalia of *Hydroptila simulans* Mosely, 1920 (Photograph: Koen Lock).

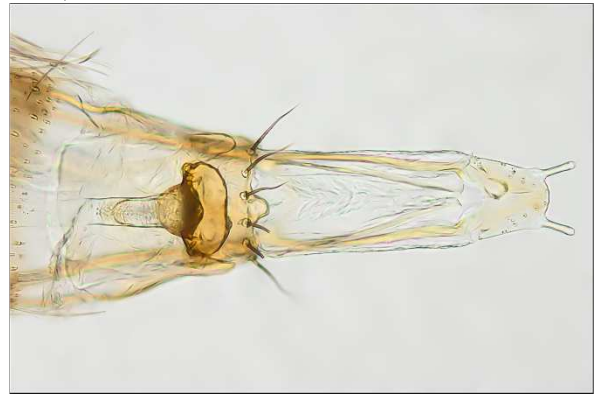


Fig. 4. Ventral view of the female genitalia of *Hydroptila simulans* Mosely, 1920 (Photograph: Koen Lock).



Fig. 5. Lateral view of the female genitalia of *Tinodes maculicornis* (Pictet, 1834) (Photograph: Koen Lock).



Fig. 6. Ventral view of the female genitalia of *Tinodes maculicornis* (Pictet, 1834) (Photograph: Koen Lock).

Tinodes maculicornis has not yet been found in the Netherlands (HIGLER, 2008). In Germany, the species was only observed in the southern federal states Bayern and Baden-Württemberg (ROBERT, 2001). However, the species has been reported from the French departments Ardennes and Meuse (COPPA, 2016) and it was recently also discovered in the Grand Duchy of Luxembourg (LOCK & VAN BUTSEL, unpublished data). MARLIER (1949) reported *T. maculicornis* from Groenendael, however, STROOT (1985) indicated that this was rather a female of *Tinodes unicolor* (Pictet, 1834). LOCK & GOETHALS (2012b) reported the species from several locations in Flanders, however, these were all larvae that cannot yet be identified with certainty based on morphological characteristics (Waringer, pers. comm. 2015). At the locations where these larvae were captured, adults were searched and only *Tinodes assimilis* McLachlan, 1865 and *T. unicolor* were found (LOCK, 2015). *Tinodes maculicornis* was therefore again removed from the Belgian checklist. However, with the observation of an adult female in Heer-sur-Meuse, the presence of this species in Belgium could be ascertained after all.

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