

**The willow catkin fly *Egle brevicornis* (Zetterstedt, 1838) new for  
The Netherlands and confirmed for Belgium (Diptera: Anthomyiidae)**

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**Abstract**

In this paper the willow catkin fly *Egle brevicornis* (Anthomyiidae) is reported for the first time from the Netherlands. This species has already been reported from Belgium, but this is based on old identifications which are recently questioned by Verner Michelsen. As no old specimens are preserved, new material was collected, which confirms the presence of *Egle brevicornis* in Belgium.

**Keywords:** Anthomyiidae, *Egle brevicornis*, willow catkin fly, *Salix repens*, The Netherlands, Belgium

**Samenvatting**

In dit manuscript wordt *Egle brevicornis* voor het eerst gerapporteerd vanuit Nederland. Voor België werd de soort reeds eerder vermeld, maar dit is gebaseerd op oude identificaties die recent in vraag werden gesteld door Verner Michelsen. Aangezien er geen oude specimens bewaard zijn, werd nieuw materiaal ingezameld dat de aanwezigheid van *Egle brevicornis* in België bevestigt.

**Résumé**

Dans cet article, *Egle brevicornis* (Anthomyiidae) est signalé pour la première fois des Pays-Bas. L'espèce a déjà été mentionnée en Belgique, cependant, cette occurrence est basée sur d'anciennes identifications récemment remises en question par Verner Michelsen. Comme aucun spécimen ancien n'a été conservé, du nouveau matériel a été collecté confirmant la présence d'*Egle brevicornis* en Belgique.

**Introduction**

Willow catkin flies (genus *Egle* Robineau-Desvoidy) are small blackish flies of the Diptera family Anthomyiidae which depend on willow or exceptionally Aspen and Poplar or German tamarisk. Their larvae feed on the seeds while their imagoes feed on the pollen and nectar. The adult flies play an important role as pollinators of willows (MICHELSEN, 2009).

With the exception of *Egle concomitans* (Pandellé, 1900) which is dependent on Aspen and Poplar, adult willow catkin flies have a typical head with conspicuously protruding mouth edge and long and slender proboscis. In addition they have a very short antennal postpedicel, an antennal arista with very short pubescence, a mid tibia without anteroventral seta and a hind tibia without apical posteroventral seta (MICHELSEN, 2009; VAN ERKELENS, 2011).

Up to now ten species of willow catkin flies were reported from the Netherlands (BEUK *et al.*, 2002; VAN ERKELENS, 2013) and eight species (including *Egle brevicornis* (Zetterstedt, 1838)) were reported from Belgium (GOSSERIES & ACKLAND, 1991; MARTENS & MORTELMANS, 2013; MARTENS *et al.*, 2015).



Fig. 1. Pictures of the terminalia of one of the male *Egle brevicornis*: upper left: cerci and surstyli, lower left: sternite V, upper right: phallus (posterior and lateral view) and lower right: pre- and postgonites. ©JVA

This paper focuses on *Egle brevicornis*. *Egle brevicornis* resembles the very common species *Egle ciliata* and the hardly recorded species *Egle anderssoni* Michelsen, 2009. The most important characteristics to distinguish *Egle brevicornis* can be found in the head (in *brevicornis* head higher than long, parafacial parallel-sided, fronto-parafacial angle lying well behind lower parafacial margin and haustellum and palp shorter than largest diameter of the eye) and the male genitalia (MICHELSEN, 2009).

In England and Denmark *Egle brevicornis* is mainly found on Creeping willow *Salix repens*, a low growing shrub found in wet and dry sand dune slacks, on acid heaths and in moorland. Other species of willow must support the species in northern Fennoscandia (MICHELSEN, 2009). *Egle brevicornis* is known from the British Isles, Denmark, Sweden, Finland, Latvia, Poland and Switzerland (MICHELSEN, 2009). The known populations, nearest to our records, occur in England (at least in Crowborough, Sussex and Newborough, Anglesey) (BRATTON & ACKLAND, 2015).

For Belgium *Egle brevicornis* is incorporated in the Anthomyiidae checklist of GOSSERIES & ACKLAND (1991). However, MICHELSEN (2009) states that this is based on old identifications and refers probably to *Egle ciliata* (Walker, 1849). Unfortunately no old specimens are preserved. Therefore at 18.IV.2016 the Flemish nature reserve 'Ter Yde' (dune slacks 'Karthuizerpanne',

‘Voetbalveldpanne’ and ‘Kolonel Dhaenenpanne’) (Belgium, Koksijde) was visited by Chantal Martens (CM) in search for this species. Later on, a sample of Calyptratae (preserved in alcohol) collected at 1.IV.2016 by Frank Van de Meutter (FVDM) in the Flemish nature reserve ‘De Westhoek’ (area ‘Zuidelijk begrazingsblok’) (Belgium, De Panne) was screened for willow catkin flies. In the Netherlands no former records of *Egle brevicornis* are known. On 19.IV.2018 the ‘Braakman Noord’ (The Netherlands, Biervliet) was visited by CM in search for the species.

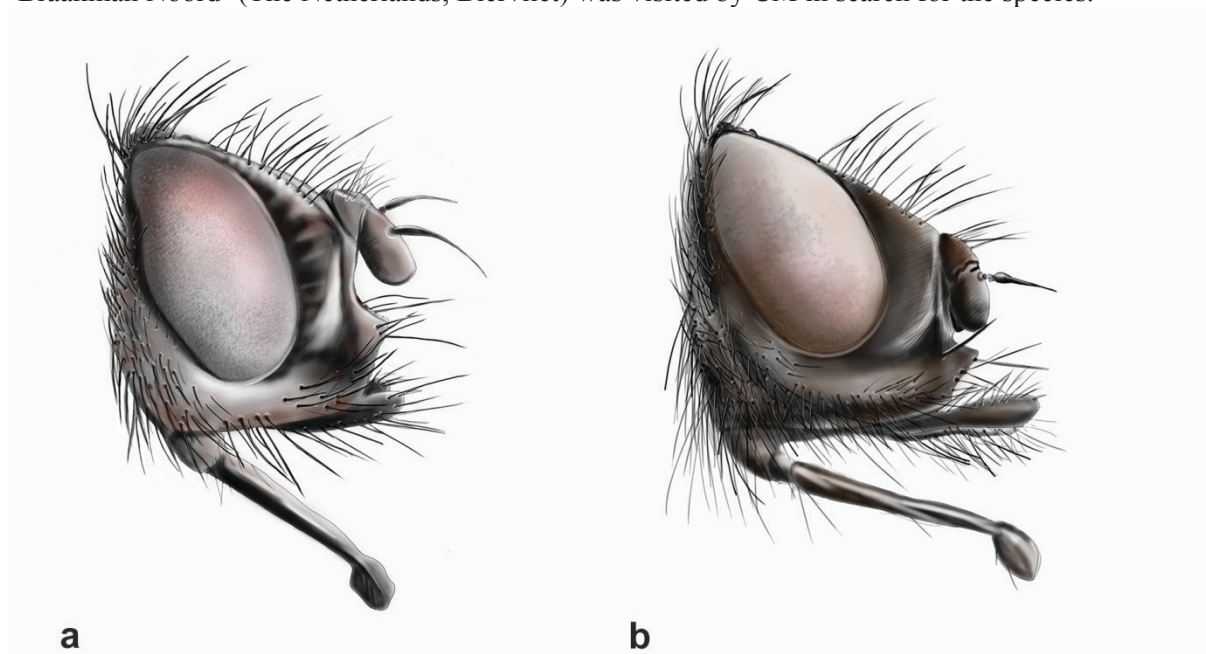


Fig. 2. Drawings of the head of male *Egle brevicornis*, based on the collected material (a) and the head of male *Egle ciliata*, based on material in the collection of JVA (b). Note that in *brevicornis* the head is higher than long, the parafacial is parallel-sided, the fronto-parafacial angle lies well behind the lower parafacial margin and the haustellum and palpi are shorter than the largest diameter of the eye. ©JVA

### Material and methods

All specimens are dry set by CM. In some males the abdomen is removed and soaked and the terminalia are dissected. These abdomens and terminalia are kept in microvials attached to the corresponding needles with the specimens. All material is kept in the private collection of CM. Identifications are based on MICHELSEN (2009) and are performed by CM. The identity of all females and one male of each location is verified and confirmed by Joke van Erkelens (JVA), who made also the pictures of the terminalia and the drawings of the heads included in this paper.

### Results

**MATERIAL EXAMINED:** Belgium, De Panne, De Westhoek, zuidelijk begrazingsblok, approximately N 51,0795° E 2,5586°, on *Salix repens*, 1.IV.2016, 4♂ & 2♀, leg. FVDM, det. & coll. CM; Belgium, De Panne, De Westhoek, zuidelijk begrazingsblok, approximately N 51,0795° E 2,5586°, on a willow from the *Salix cinerea* group, 1.IV.2016, 2♂, leg. FVDM, det. & coll. CM; Belgium, Koksijde, Ter Yde, Kolonel Dhaenenpanne, N 51,13559° E 2,69828°, on *Salix repens*, 18.IV.2016, 1♂ & 1♀, leg., det. & coll. CM; Belgium, Koksijde, Ter Yde, Voetbalveldpanne, N 51,13228° E 2,69179°, on *Salix repens*, 18.IV.2016, 5♂ & 1♀, leg., det. & coll. CM; The Netherlands, Biervliet, Braakman Noord, N 51,33469° E 3,73319°, vegetation with *Salix repens*, 19.IV.2018, 2♂, leg., det. & coll. CM.

*Egle brevicornis* was found both in Belgium and in the Netherlands. Figure 1 gives pictures of the terminalia of one of the male specimens. Figure 2 gives a drawing of the head of *Egle brevicornis*, based on the collected material, and a drawing of the head of *Egle ciliata*, based on material in the collection of JVA, to illustrate the differences in the shape of the head, as explained in the introduction.



In Belgium *Egle brevicornis* was found at three different localities in the coastal dunes. In the nature reserve 'Ter Yde' the species was found in the humid dune slacks 'Kolonel Dhaenenpanne' and 'Voetbalveldpanne', but not in the equivalent dune slack 'Karthuizerpanne'. The 'Kolonel Dhaenenpanne' (Fig. 3) is a young dune slack which got naturally vegetated, with *Salix repens* as a dominant species, at the end of the eighties and which is still slightly extending in eastern direction. This dune slack is extensively grazed year-round and is rather homogeneously mown in autumn. In the dune slack itself I found hardly any flowering *Salix repens*, however near the edge occurred some flowering *Salix repens* shrubs on which I collected the *Egle brevicornis* specimens. The 'Voetbalveldpanne' was used as football field by the local youth until the early eighties. It got naturally vegetated during the eighties. This dune slack is extensively grazed year-round. In addition small *Hippophae rhamnoides* are selectively mown or dug out. *Salix repens* is dominant and freely developing. *Egle brevicornis* was also found in the nature reserve 'De Westhoek', area 'Zuidelijk begrazingsblok'. For this locality the exact location is not known as the received samples contained Calypttratae collected scattered over a certain area. 'De Westhoek – Zuidelijk begrazingsblok' includes a number of large dune slacks, mostly some hundreds years old and slightly decalcified and most of the area is grazed year round. *Salix repens* is not uncommon but rather local.

In the Flemish dunes *Salix repens* is mostly represented by its ecotype 'dunensis' (personal communication Arnout Zwaenepoel).

In The Netherlands *Egle brevicornis* was found in the Natur area 'Braakman Noord' (Fig. 4), situated in Zeelandic Flanders. The Braakman creek was formerly a tidal inlet, created by a succession of storms in the 14th and 15th century. Over the centuries it steadily spread. But successively empolderings shrank the Braakman creek to a remnant, which was finally closed off from the sea in 1952. The nature area 'Braakman Noord' encloses the northern part of the Braakman creek and the polders on its western banks. In 2005 a nature development project occurred in the Braakman polders. *Egle brevicornis* was swept from a vegetation with *Salix repens* shrubs growing along an in 2005 dug artificial, meandering water body (ca. 100 m broad and 600 m long) in a former field. Nowadays the banks are covered by grassland. Though the grassland vegetation is quite high and contains mainly species of grasslands rich in nutrients, a lot of *Salix repens* shrubs grow there.



Fig. 3. Habitat of *Egle brevicornis* in the dune slack 'Kolonel Dhaenenpanne' in Ter Yde (Koksijde, Belgium). ©CM



Fig. 4. Habitat of *Egle brevicornis* along an in 2005 dug artificial, meandering water body (ca. 100 m broad and 600 m long) in a former field in the nature area 'Braakman Noord' (Biervliet, The Netherlands). ©CM

## Discussion

As *Egle brevicornis* is now known from the most southern coastal dunes in Belgium, from two more locations in the Belgian coastal dunes, from one location in the Netherlands and from Denmark and Fennoscandia, the species can be expected anywhere in the Belgian and Dutch coastal dunes where suitable habitat with *Salix repens* occurs.

As the collection site of *Egle brevicornis* in the ‘Westhoekreservaat’ is situated less than 500 m from the border with France and dunes with suitable habitat occur also at the French side of the border with only a camping site in between, it is pretty sure that *Egle brevicornis* occurs also in the extreme north-west of France. Further investigations should reveal how far southward the species can be found.

*Salix repens* (although mostly the slightly differing ecotype ‘*repens*’ – personal communication Arnout Zwaenepoel) occurs also on acid heaths and in moorland in the inlands of Belgium and The Netherlands. These inland *Salix repens* populations are more scattered than the populations in the dunes. Small, isolated populations of this dioecious shrub are often degraded to either male or female clones (personal communication Marc Leten & Arnout Zwaenepoel). Consequently no seeds are developed and no *Egle brevivornis* larvae can feed on it. However in larger nature reserves with larger *Salix repens* populations still male and female plants coexist. Further investigations should point out whether these larger inland populations support *Egle brevicornis*.

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