

## ***Helophilus affinis*, a new syrphid fly for Belgium (Diptera: Syrphidae)**

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### **Abstract**

A male *Helophilus affinis* Wahlberg, 1844 was caught on 7 July 2012 at the nature reserve Putten Weiden at Kieldrecht. This species is new to Belgium. In this contribution we provide an account of this observation and discuss the occurrence of *Helophilus affinis* in Western-Europe.

**Keywords:** faunistics, freshwater species, range shift, Syrphidae.

### **Samenvatting**

Op 7 juli 2012 werd een mannetje van de Noordse pendelvlieg *Helophilus affinis* Wahlberg, 1844 verzameld in het gebied Putten Weiden te Kieldrecht. Deze soort is nieuw voor België. Deze bijdrage geeft een beschrijving van deze vangst en beschrijft het voorkomen van deze soort in West-Europa.

### **Résumé**

Le 7 Juillet 2012, un mâle de *Helophilus affinis* Wahlberg, 1844 fut observé à Kieldrecht. Cette espèce est signalée pour la première fois de Belgique. La répartition de l'espèce en Europe de l'Ouest est discutée.

### **Introduction**

Over the last 20 years, the list of Belgian syrphids on average has grown by one species each year (VAN DE MEUTTER, 2011). About one third of these additions, however, is due to changes in taxonomy i.e. they do not indicate true changes in our fauna. Among the other species that are newly recorded, we find mainly xylobionts and southerly species expanding their range to the north. More surprising, also a good number of boreomontane species have recently been recorded for the first time in Belgium (VAN DE MEUTTER, 2011). This is, however, mainly the result of an increased search effort in the Hautes-Fagnes region, where relic populations of some species may persist since glacial times. The recent warming of our climate (IPCC, 2007) is likely to make it less evident that northern species expand to the south. However, when we take a look at the list of species that have been recorded in neighbouring regions and not yet in Belgium (VAN DE MEUTTER, 2011), we notice one northern species that is increasingly observed in these adjacent areas: *Helophilus affinis*. This species has been recorded recently in the Netherlands and nearby regions of Germany (SPEIGHT, 2012), though it was not yet seen in Belgium.

### **Material and methods**

As part of a larger research program on the restoration of non-tidal brackish grasslands (commissioned by the department of Mobility and Public Works), the invertebrate community of present non-tidal brackish grasslands in Flanders is investigated from 2012 onwards by INBO. In this study we apply a standard combination of pitfall traps, coloured pan traps and Malaise traps. One of the areas investigated is the nature reserve Putten Weiden (Kieldrecht, prov. East-Flanders). The vegetation of this reserve is, amongst others, typified by large stands of *Aster tripolium*, *Glaux maritima*, *Juncus*



Fig. 1. Dorsal view on the male *Helophilus affinis* (7.VII.2012, Kieldrecht, Putten Weiden). Note the black posterior side of the tergites.



Fig. 2. Lateral view on the male *Helophilus affinis* (7.VII.2012, Kieldrecht, Putten Weiden). The combination of the black facial stripe and the completely black hind femur is typical.

*gerardi*, *Scirpus maritima* and *Triglochin maritima*. The surroundings of the reserve consist of agricultural fields, freshwater wetlands, meadows and dry, sandy, elevated land of the port of Antwerp.

## Results

BELGIUM: **East-Flanders**: 7.VII.2012, Kieldrecht, Putten Weiden, 1♂, leg., det. & coll. Van de Meutter Frank.

On 7 July 2012 the first author visited the reserve to collect catches of the invertebrate traps. Unexpectedly, high numbers of syrphids were seen foraging that day, despite the rainy weather. Hundreds of *Platycheirus* sp. were lured by the flowering *Scirpus maritima*, and among them several other species were present. A dark *Helophilus* with strongly contrasting marks was caught by hand and appeared to be a male *Helophilus affinis*.

The identification of *Helophilus affinis* is relatively straightforward. It is a typical *Helophilus* (NL: pendelzweefvlieg) with characteristic transversal yellow stripes on the thorax and yellow spots on the abdomen. It can be distinguished from the other autochthonous *Helophilus* species by the combination of the small yellow spots and black posterior sides on the tergites (Fig. 1; not found in *Helophilus hybridus* Loew, 1846 and *Helophilus pendulus* (Linnaeus, 1758) and the black facial stripe (Fig. 2; yellow in *Helophilus trivittatus* (Fabricius, 1805)). Further it is the only Belgian *Helophilus* that has a completely black hind femur (Fig. 2).

## Discussion

*Helophilus affinis* is a northern species within Europe. It is a common species on most of the Scandinavian peninsula below the polar circle (BARTSCH, 2009; SPEIGHT, 2012), and occurs south as far as Poland and Denmark. The number of observations at the southern limit of its range is clearly increasing since the end of the 1970s (TORP, 1984). Specimens have been recorded repeatedly from Northern Germany and the Netherlands since, with outliers recorded in South-west Germany and Switzerland (SPEIGHT, 2012). It is suggested that *Helophilus affinis* undertakes southerly directed invasions in some years (TORP, 1984). This may indeed explain why all 15 observations in the Netherlands (cited in REEMER *et al.*, 2009) originate from four years only (1979, 1999, 2001, 2003). In 2012, however, no observations of *Helophilus affinis* have been done in the Netherlands (E. De Bree, pers comm.).

All Dutch observations are between half July and the beginning of September. In Scandinavia down to Denmark, however, where the species reproduces, observations range from the beginning of May to half September (NIELSEN, 1997; BARTSCH, 2009). It appears that dispersal only occurs later in the season (only the summer generation migrates?). The Belgian observation is rather early compared

to the Dutch observations, yet, it fits into the time window (summer) where dispersers/migrants may be expected.

The habitat of *Helophilus affinis* is described as wetland; small water bodies in humid, unimproved grassland, acid fen and at the edge of raised bogs (SPEIGHT, 2012). The larvae of *Helophilus* sp. are of the rat-tailed type and live in wet organic matter. A female *H. affinis* indeed has been observed ovipositing at the edge of a water-filled track (REEMER *et al.*, 2009). During dispersal, *H. affinis* can be found at various flower-rich places, though often near water or wet meadows (REEMER *et al.*, 2009). This conforms to the Belgian observation. The habitat at Kieldrecht probably is not suited for *H. affinis* for reproduction, because of the high salinities of the surface water. Species that thrive at this location are *Lejogaster tarsata* Megerle in Meigen, 1822 and *Eristalis abusiva* Collin, 1931 – both can be seen here by hundreds on a day. They are species that prefer brackish, organically enriched mud in the larval stage. Within close range also freshwater habitat is available, inhabited by species such as *Anasimyia transfuga* (Linnaeus, 1758) and *Parhelophilus versicolor* (Fabricius, 1794). No *H. affinis* were seen so far at these locations.

It is likely that other influxes of *H. affinis* in Western Europe will occur in the near future. Since the launch of online data platforms such as [www.waarneming.be](http://www.waarneming.be) and [www.waarneming.nl](http://www.waarneming.nl) and more specialized forums for Syrphidae (e.g. [Syrphidae.com](http://Syrphidae.com)), the dissemination of interesting observations is particularly fast. In the case of *Helophilus affinis* which may occur by influxes here, this may be particularly useful.

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#### References

- BARTSCH H., 2009. - *Syrphidae /Tvavingar: Blomflugor. Vol. 2 Eristalinae & Microdontinae*. The National Encyclopedia of the Swedish Flora and Fauna – nationalnyckeln till Sveriges Flora och Fauna. 406 pp.
- IPCC, 2007. - Climate change 2007. The Physical basis. *Contribution of working group I to the Fourth Assessment report of the IPCC*.
- NIELSEN T.R., 1997. - The hoverfly genera *Anasimyia* Schiner, *Helophilus* Meigen, *Parhelophilus* Gerschner and *Sericomyia* Meigen in Norway. *Fauna Norvegica Serie B*, 44: 107-122.
- REEMER, M., RENEMA W., VAN STEENIS W., ZEEGERS T., BARENDREGT A., SMIT J.T., VAN VEEN M.P., VAN STEENIS J. & VAN DER LEIJ L.J.J.M., 2009. - *De Nederlandse zweefvliegen*. – Nederlandse Fauna 8: 455 pp.; Utrecht: KNNV Uitgeverij.
- SPEIGHT M.C.D., 2012. - Species accounts of European Syrphidae (Diptera). – In: SPEIGHT, M.C.D., CASTELLA, E., SARTHOU J.-P. & MONTEIL C. (eds): *Syrph the Net. The database of European Syrphidae* 59: 285 pp.; Dublin: Syrph the Net Publications.
- TORP E., 1984. - *Danske Svirrefluer (Diptera: Syrphidae), Kendetegn, levevis of udbredelse. Danmarks Dyreliv, Bind I*, Apollo Books, Kobenhavn.
- VAN DE MEUTTER F., 2011. - An annotated catalogue of the hoverflies (Diptera: Syrphidae) of Belgium [Ein kommentierter Katalog der Schwebfliegen (Diptera: Syrphidae) Belgiens]. *Studia Dipterologica*, 18: 55-75.