As long as the precise ecology of this species is not known, it will remain difficult to explain or predict the occurrence of *H. verrucula*.

Heringia verrucula undoubtedly is an easily overlooked species. Adults may be largely arboreal, are tiny and inconspicuous and fly early in the year. As with all other *Heringia* species, females are difficult if not impossible to identify. It is thus possible that other populations still persist unnoticed in Belgium. Similar forests as the one in Arendonk can be found in the area from Hoogstraten to Postel along the Dutch border. This area has been very little investigated for Syrphidae (cf. Belgian Syrphidae database), yet appears very promising. It would come as no surprise if further research here would reveal the presence of more populations of *H. verrucula*. Such search efforts should try to find flowering bushes (*Salix sp.*, probably mainly the late flowering species *S. cinerea* & *S. repens*) near well developed forest to maximize the chances of finding this rare syrphid.

Epilog

Just before publication of this article, an additional record became known of *Heringia verrucula* that predates the here reported record. Two *H. verrucula* (1 male + 1 female) were retrieved from Malaise trap material: Tessenderlo, Averbode Bos & Heide, 11.IV.2009-24.IV.2009, det., leg. & coll. F. Van de Meutter. The Malaise trap was located at the edge of a small open patch in old deciduous forest on sandy soil, in agreement with the other records.

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Cheilosia aerea Dufour, 1948 new for the Belgian fauna (Diptera Syrphidae)

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Abstract

The species *Cheilosia aerea* Dufour, 1948 is reported for the first time from Belgium.

Keywords: *Syrphidae/ new Belgian species/ Cheilosia aerea*

Résumé

Le syrphe *Cheilosia aerea* Dufour, 1948 est mentionné pour la première fois en Belgique.

Samenvatting

De zweefvlieg *Cheilosia aerea* Dufour, 1948 wordt voor het eerst vermeld voor België.

Introduction

Cheilosia aerea (Dufour, 1948) is a medium-sized, grey-black syrphid. This species was long known under the name *C. zetterstedti* BECKER, 1894 (e.g. VAN DER GOOT, 1981) but CLAUSSEN AND THOMPSON (1996) established that *C. zetterstedti* is a junior synonym of *C. aerea*. The species was not included in the keys of VERLINDEN (1991, 1994), because current believe then was that this species did not occur in North-western Europe.

Cheilosia aerea occurs widespread in south and central Europe (SPEIGHT, 2010). Only recently, it was established that the Atlantic distribution of *C. aerea* reaches as far north as the Netherlands (SMIT *et al.* 2001). In the Netherlands, this species occurs very localized on a handful of locations in Zuid-Limburg only (REEMER *et al.*, 2009). Apart from one record in 1943, all observations are done since 1993 which suggests that this species has become more numerous or has expanded recently (REEMER *et al.*, 2009).

In Germany and the Netherlands, the species is bound to dry, hot, open habitats such as calcareous grasslands, or old quarries (REEMER *et al.*, 2009). A prerequisite for the occurrence of *C. aerea* is the presence of *Verbascum* species: its larvae are known to mine leafs of *V. densiflorum, V. nigrum,* and *V. pulverulentum* (DOCZKAL, 1996; STUKE, 2000). Adults are nearly always observed near to these plants (DOCZKAL, 1996). *Cheilosia aerea* is bivoltine; a first generation occurs in May and a second generation in July/August (REEMER *et al.*, 2009; DOCZKAL, 1996; SPEIGHT, 2010). Yet, in the Netherlands only the spring generation has been observed so far, which lead to the suggestion that *C. aerea* may be univoltine at its northern range limit.

Cheilosia aerea is a variable species with dark morphs dominating in spring and lighter individuals dominating in summer. The most striking differences with the very similar *C. proxima* are the dense, narrow punctuation of thorax and the hairy postero-dorsal rim of the anterior anepisternum (SMIT *et al.*, 2001). A key for the identification of species in the *Cheilosia proxima*-group is given in SMIT *et al.* (2001).

Detailed account of the records

(1) Ethe (prov. Luxembourg), 20.V.1952, 1 female, leg. anonymus, det. F. Van de Meutter & J. Mortelmans, coll. Royal Belgian Institute of Natural Sciences (RBINS) in Brussels (2) Aywaille (prov. Liège), Carrière de la Falize, 7.VIII.2010, 1 male +1 female on Daucus carota, det., leg. & coll. F. Van de Meutter.

On 09.XII.2009 the authors visited the Syrphidae collection at the RBINS in Brussels. This visit was part of efforts to update the Belgian Syrphidae fauna list (VAN DE MEUTTER, submitted). Alarmed by the recent discovery of this species in the Netherlands, all *C. proxima* specimens in the collection (a mere 20 individuals) were thoroughly re-identified using SMIT *et al.* (2001) and VAN VEEN (2004). Eventually, one female *C. aerea* was discovered, collected on 20.V.1952 at Ethe (Prov. Luxembourg).

On 07.VIII.2010, the first author visited the abandoned quarry *Carrière de la Falize* near Aywaille. A male and a female *C. aerea* were found here foraging on *Daucus carota* at the bottom of a rocky south-oriented slope. *Verbascum nigrum* grew nearby (some meters) in number. At the same site, also a female *C. proxima* and a female *C. velutina* were collected, indicating all three species may occur together.

Discussion

The discovery of *C. aerea* in Belgium came as no surprise. This species was recently shown to occur locally in number in Zuid-Limburg (the Netherlands) close to the Belgian border. Zuid-Limburg is unique in the Netherlands in having the country's warmest climate providing suitable habitat for southern species (e.g. also *Paragus albifrons, P. quadrifasciatus*). It is likely that these species travel through Belgium, possibly using the warm valley of the Meuse, before reaching Zuid-Limburg. Even if they do not (e.g. arrival from the east), much more and even warmer xerothermic habitat is available in Belgium where southern species may thrive, including *C. aerea*. The two currently known Belgian records come from the Gaume and the area south of Liège. It seems probable that the distribution may be relatively continuous in eastern Belgium: both the area in between Liège and Zuid-Limburg and the area between Liège and the Gaume have much suitable (warm) habitat that may house several (many?) more populations of this species.

Cheilosia aerea is not a typical recent arrival

of a southern species, such as for example *P. quadrifasciatus*. Both in the Netherlands and Belgium, the first records of *C. aerea* date back more than 50 years. Dutch records suggest it may be spreading recently, however. The larval food plants of *C. aerea* are *Verbascum* species. In our region this concerns mainly *V. densiflorum* and *V. nigrum*. In Belgium, *V. nigrum* is most abundant in the Ardennes and the Meuse valley. *V. densiflorum* is more widely distributed, but most abundant in the Meuse valley. The Ardennes and the Meuse valley therefore seem the most likely places where the species now may further expand, if they are not yet largely colonized. Interestingly, both *Verbascum* species also occur concentrated in high numbers along railways. Such places often also have a warmer micro-climate, at least on the south-oriented bank of the railway. If *C. aerea* is further spreading, it could travel along these nearly continuous strips of suitable habitat. We suggest observers should pay extra attention to any *C. proxima* type syrphids flying in such situations. The recent Belgian records demonstrate that, in contrast to the situation in the Netherlands, *C. aerea* may be found in both spring and summer.

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