Hovering Tachinidae, what's the Buzz ?

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Note: Translated and adapted from Zeegers (2024).

Introduction

The family of hoverflies (Syrphidae) is named after the persistent hovering behaviour of males of many species. Hovering, however, within Diptera is not limited to hoverflies. Males of many beeflies (Bombyliidae) and horseflies (Tabanidae) are known to hover persistently on a regular basis. Hovering amongst the Calyptratae is mostly reported within Muscoidea. Many species of *Fannia* (Fanniidae) do hover, though slightly bobbing up and down. Some Muscidae are also known to hover (Pajunen 1982). However, hovering males within Oestroidea are rarely reported.

Unambiguous records of persistent hovering Oestroidea are known to us only from a few species of Tachinidae, within two groups in the subfamily Exoristinae: the tribe Winthemiini and the *Carcelia*-group within Eryciini. Within Europe, the first author has repeatedly seen hovering males of *Carcelia dubia* (B. & B.), *C. puberula* Mesnil and *C. lucorum* (Meigen). Our colleague Menno Reemer has also observed an unidentified species of *Carcelia* hovering. *Carcelia* males are often seen in groups, called leks, at forest clearings or along forest edges. The three species seen by the first author were hovering at one to two meters above the ground. Shima (2015: 10) reported hovering by *Carcelia rasa* (Macquart) and Shima & Tachi (2022: 50) by *Senometopia cariniforceps* (Chao & Liang). From the tribe Winthemiini, Shima (1996: 185) reported hovering by *Smidtia amoena* (Meigen).

Figures 1–2. *Carcelia lucorum*, courtship hovering of male, Deventer, Douwelerkolk. **1.** An oblique view from behind, 25.ix.2023. **2.** Lateral view, 28.ix.2023. Photos by Piet van Dijk.

New records

New records of hovering males of *Carcelia lucorum* were made by the second author in the Netherlands near Deventer on several days at the end of September, 2023. He was able to take several photographs (Figs. 1–2), which show very nicely the front legs extending forward, even surpassing the anterior of the head and the front tarsi held upward. In any hovering syrphids we have seen, the front legs are kept tight to the body and behind the head.

Canopy leks

On arrival at a nature reserve in the south of the Netherlands on September 7th, 2023, the first author was baffled by a very loud buzzing, resembling a large group of hoverflies. At first, it was difficult to locate the source. Eventually, high up at approximately 25 meters above the ground in the canopy, groups of flies were detected (Fig. 3). The flies showed classic persistent hovering behaviour. Observation with binoculars and extreme crops of pictures made with a 180 mm lens on a 1.4 crop camera (hence, 5 times magnification) made it clear we were looking at rather large, stout Calyptratae. Two days later, another colleague Wouter van Steenis observed one of the males at approximately 10 m above the ground and confirmed it to be a bristly Calyptratae. Hovering males could be observed between 09:00–11:00 a.m. local time. Although we could not make a positive identification, given the locality and date and our previous observations, we believe the males belonged to a large *Carcelia* species, possibly *Carcelia bombylans* R.-D. or *C. rasa*.

Figure 3. Hovering males, probably of a *Carcelia* species, at a canopy lek about 25 meters above the ground, at 5 times magnification. Two males are in focus, and on the left a third male is out of focus. Photo by Theo Zeegers.

Conclusion

Reports of hovering male Tachinidae are restricted to a very limited set of species. Especially within the genus *Carcelia*, persistent hovering is frequently observed. This hovering is often just a meter or two from the ground and therefore easy to spot, but is sometimes high up in the canopy and located more by sound than by sight. We hope this report might draw more attention to the topic and behavior of hovering Tachinidae.

References

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