

Dasineura odoratae new to Denmark and new records of the rare *Mayetiola hellwigi* (Diptera: Cecidomyiidae)

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Abstract

We report the first documented records of the gall midge *Dasineura odoratae* Stelter, based on adults reared from galls on the single host plant of the species, *Viola odorata*. We also report *Aphanogmus abdominalis* (Thomson) (Hymenoptera: Ceraphronidae) as a parasitoid of this gall midge. In addition, we report some recent Danish finds of the rare gall midge *Mayetiola hellwigi* (Rübsamen).

Dansk sammendrag

Galmyggen *Dasineura odoratae* Stelter blev klækket fra galler på blade af Marts-Viol (*Viola odorata*) samlet ved København, Køge og Fårevejle. De udgør første dokumenterede fund af arten i Danmark, selvom galler på denne plantart er nævnt i Henriksens fortegnelse over danske galler (1944). Fra alle tre lokaliteter klækkedes også parasitoiden *Aphanogmus abdominalis* (Thomson) fra gallerne. Endelig rapporteres fire nye fund af galmyggen *Mayetiola hellwigi* Rübsamen, der fremkalder galler på Skov-Stilkaks (*Brachypodium sylvaticum*). Den er kendt fra ét tidligere dansk fund (1958).

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Skuhrová (2005) revised the Danish gall midge fauna as represented in the most important museum collection in Denmark, the Natural History Museum in Copenhagen, and Skuhrová et al. (2006) added many records of hitherto unknown species from this territory, in particular from northern Zealand and the island of Læsø. In 2009-2010, the first author collected midge galls on plants from various parts of Denmark. Among these were galls formed on *Viola odorata* (Violaceae), which is probably non-native, but very common as a garden escape in suburban areas and in deciduous forests, particularly in the eastern part of the country. Adult midges reared from galls collected at three sites were determined by the second author, and proved to belong to *Dasineura odoratae* Stelter.

The three sites from which galls on *Viola odorata* were collected and adult gall midges were reared are:

NEZ: Copenhagen: Universitetsparken (55°42'6.54"N 12°33'30.90"E), 02-09-2010, urban park.

SZ: Køge, Gammel Køgegård (55°27'37.78"N 12°10'8.15"E), 03-09-2010, deciduous forest near old manor park.

NWZ: Fårevejle, Dragsholm Slot (55°46'14.22"N 11°23'26.93"E), 19-09-2010, old manor park.

For all collections, leg. H.H.Bruun, det. M. Skuhrová. The date given is the collec-



Galler af *Mayetiola hellwigi* på strå af Skov-Stilkaks (*Brachypodium sylvaticum*). Først larven og siden puppen har siddet i en hulhed, der opstår mellem et stærkt forkortet internodie, et voldsomt opsvulmet knæ derover og som er dækket af bladskede. På billedet savnes pupperne. Kolås Skov, 18-09-2010.
Galls of *Mayetiola hellwigi* on stems of *Brachypodium sylvaticum*. Larva, and later pupa, sits in a cavity between a stunted internode, a much-inflated knee above and covering leaf sheet. Pupae are missing from the pictured galls. Kolås Skov, 18-09-2010.

tion date. Voucher specimens have been deposited at the Natural History Museum in Copenhagen. Galls consisted of much-thickened rosette leaves rolled from one or two sides towards the midrib, densely pubescent and with stunted petioles.

Dasineura odoratae was described by Stelter (1982) on the basis of material collected at Schmalkalden, Germany. Prior to his work, it was thought that one broadly monophagous species, *Dasineura affinis* (Kieffer), used all perennial species of the genus *Viola* as host plants. However, Stelter showed that midges galling different *Viola* species were in fact morphologically differentiated, justifying a split into three species, viz. *D. violahirtae* Stelter galling *V. hirta*, *D. odoratae* Stelter galling *V. odorata* and *D. affinis* s.s. associated with *V. reichenbachiana*, *V. riviniana* and perhaps *V. canina*. In his catalogue of Danish zoocecid, Henriksen (1944) listed galls of *D. affinis* s.l. on *Viola odorata* from NEZ Charlottenlund, collected by R. H. Stamm 28-04-1926, as well as collections on other *Viola* hosts. This record, however, was not documented by specimens in museum collections and, thus, cannot be verified. We nevertheless find it likely that *D. odoratae* has occurred in Denmark at least since 1926. Further corroborating the long-lasting presence of this species in Denmark is its widespread occurrence. At the Danish citizen science website Fugleognatur.dk, several observers have indicated that galls of the described habit on *V. odorata* are common in the suburban areas north of Copenhagen.

At all three sites, *D. odoratae* pupae were parasitized by *Aphanogmus abdominalis* (Thomson) (Hymenoptera: Ceraphronidae), which emerged abundantly from the midge galls. This species is known to parasitize *Dasineura brassicae* (Winnertz) and is used as a classical biocontrol agent. Interestingly, Buhl (2009) recently described the association of *D. odoratae* and *Aphanogmus abdominalis* from the UK.

Mayetiola hellwigi (Rübsamen), galling *Brachypodium sylvaticum* (Poaceae), was first reported from Denmark by Jensen (1962), who collected it at Frederiksdal near Nakskov in 1958. This one hitherto single reported Danish record was amended by a new record in 2009. Following that, opportunistic search at a few suitable sites – deciduous forest on mull soils – resulted in three more records in 2010, viz.

SZ, Køge, Åshøje Overdrev, old beech forest, 16-08-2009;

SZ, Køge, Åsen, old beech forest, 03-09-2010;

SZ, Sorø, Sønderskov, old beech forest, 10-08-2010;

NWZ, Fårevejle, Kolås Skov, old beech forest, 18-09-2010.

The first three mentioned sites are well within the core distribution range the host plant, whereas the last is a small (30 ha) forest, isolated from larger forests by tens of km probably since early medieval times or earlier. Thus, either it is a very old remnant population or it is a sign of potential long-distance dispersal potential in the gall midge species.

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