

Old and new Norwegian records of Camillidae (Diptera), a family missing from the checklist

LOUIS BOUMANS

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Eleven specimens of *Camilla flavicauda* Duda 1922 were accidentally reared indoors in Oslo, and a twelfth one was later found free living. In addition, four old specimens of *Camilla glabra* (Fallén, 1823) were found in the collection of the Natural History Museum in Oslo. These constitute the first records of the small family Camillidae for Norway. The identification literature and the likely substrate of the larvae of *C. flavicauda* are discussed.

Key words: Diptera, Ephydroidea, Camillidae, *Camilla flavicauda*, *Camilla glabra*, Norway.

Louis Boumans, Natural History Museum, University of Oslo, P.O. Box 1172 Blindern, NO-0318 Oslo, Norway. E-mail: louis.boumans@nhm.uio.no

Introduction

Camillidae constitute a small family of flies resembling Drosophilidae and Ephydriidae. Around ten species are known from the Western Palaearctic. In the past decades, relatively many species have been described from the Afrotropical region (Papp 1998; Marshall 2012: 355). The species of north-western Europe can be identified with the keys of Papp (1985) and, more easily, with the keys and illustrations of the Camillidae of the Netherlands (Beuk & de Jong 1994) and Switzerland (Merz 2008). As there has been confusion about the identity of most taxa of European *Camilla* Haliday, 1838, all older identifications need to be checked. Little is known about the larval biology of Camillidae, but larvae and adults are associated with excrements of birds and excrements and burrows of small mammals (Basden 1961; Beuk & de Jong 1994; Papp 1998; Merz 2008).

In autumn 2013, I took flower pots indoors for the purpose of overwintering geraniums (*Pelargonium*). These pots had stood outside on

my terrace during spring and summer, and were filled with garden turf (ca. 10 L) with a high proportion of organic matter. In addition, I brought into my home some three litres of sandy garden soil for geranium cuttings. This soil was taken from under a veranda, had been relatively dry throughout the year and contained little organic matter. The containers were placed in an unheated room (10–15°C in winter) in front of a window.

From December to May, a range of Diptera and some other insects emerged from these substrates and collected against the window, the most conspicuous in size and numbers being Tipulidae, Limoniidae and Anthomyiidae. These species most probably emerged from the garden turf. Among the less conspicuous flies were eleven specimens of *Camilla flavicauda* Duda, 1922 (Camillidae) (Figure 1). A further specimen that must have emerged outdoors was collected in July. The Fauna Europaea checklist (Carles-Tolrá 2004) and Artsnavnebasen (artsdatabanken.no) list no Camillidae species at all for Norway.

I checked the Camillidae collection at the Natural History Museum in Oslo (NHMO, aka



FIGURE 1. *Camilla flavicauda* Duda, 1922, male from Oslo. This one has three vibrissae on each side of the mouth cavity, while two vibrissae are typical. Photo: Karsten Sund.

ZMUN), where I found four specimens from the collection of J.H. Siebke (1816–1875), all belonging to *C. glabra* (Fallén, 1823). The Museum of Natural History in Trondheim (NTNU) has no Camillidae (pers. comm. T. Ekrem, 22.IV.2013). The University Museum in Bergen housed one specimen labelled as *Camilla*, which I checked and identified as a species of Ephydriidae.

The records

Camilla flavicauda Duda, 1922

NORWAY **AK**, Oslo: Søndre Nordstrand, Bjørnås, garden (emerged indoors) 59.834°N 10.833°E, 3.IV.2013–24.IV.2013, 5♂♂6♀♀; idem (on window pane but emerged outdoors) 19.VII.2013, 1♀. leg. & det. L. Boumans. 2♂♂ and 2♀♀ are deposited at NHMO, the rest in my private collection.

Camilla glabra (Fallén, 1823)

NORWAY **AK**, Oslo: Bæklag, 27.VI.1853, 1 ex; idem 17.VII.1853, 1 ex; **OS** (?) ‘Fron.’ [no date] 1 ex; **B** Hallingdal [no date] 1♂. All specimens leg. J.H. Siebke. Catalogue nrs. Gl 1630-1633.

These old specimens bear no identification label, but the museum’s handwritten catalogue “Gl. 1-5000 Diptera” documents that they have been identified by J.E. Collin via E.B. Basden. Collin (1956) makes no mention of Norwegian specimens. The sex is difficult to ascertain, as the male genitalia are very small and covered by the terminal tergites in dried specimens. I refrained from making preparations for sex identification.

Discussion

In view of Camillidae being associated with mammal excrements, it seems plausible that the

C. flavicauda specimens collected indoors did not originate from the turf substrate but rather from the sand. Neighbourhood cats tend to use dry sand as a latrine. The specimen collected in July was found at 1.5 m distance from this sand patch. Basden (1961: 128) reared *C. flavicauda* from “entrance soil of rabbit burrows”, which also suggests a sandy substrate.

One of the characters distinguishing *C. glabra* from *C. flavicauda* is the number of vibrissae: three pairs in the former, two in the latter. However, some specimens of *C. flavicauda* have three vibrissae on one side (Beuk & de Jong 1994). This is also the case in one of the male specimens from Oslo. Another male even has three vibrissae on both sides, though one vibrissa is small. This variation can be confusing if one identifies the flies with the keys of Papp (1985) or Merz (2008). The female, but not the male, of *C. flavicauda* is characterised by the yellowish colour of the 5th tergite and the latero-ventral borders of the 3rd and 4th tergites (cf. Duda 1922: 152, describing the female).

Both *C. flavicauda* and *C. glabra* are widespread in Europe, including Finland and Sweden (Carles-Tolrá 2004; Dyntaxa 2013). One to three additional species of Camillidae are likely to occur in Norway. *Camilla atrimana* Strobl, 1910 is reported from Finland and Sweden (Carles-Tolrá 2004; Dyntaxa 2013) and two more species, *C. nigrifrons* Collin, 1933 and *C. fuscipes* Collin, 1933 are known from the United Kingdom and Germany, and the latter also from the Netherlands (Carles-Tolrá 2004).

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