

First record of the family Opetiidae from Norway (Diptera, Brachycera, Platypezoidea)

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Material of *Opetia nigra* Meigen, 1830 is reported from six localities in three counties from Norway: Hedmark, Hordaland and Rogaland. This represents the first documented records of this species and the family Opetiidae from Norway. A DNA barcode and a habitus photograph are presented to facilitate for easy identification of the species in the future.

Key words: Diptera, Opetiidae, *Opetia nigra*, faunistics, new records, Norway.

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Introduction

The family Opetiidae is a species-poor family of Diptera comprising a single genus *Opetia* Meigen, 1830 in the Palearctic region. Although often referred to the Platypezoidea (e.g. Chandler 2001), the group has several characters that are inconsistent with the Muscomorpha and thus has been considered to occupy an isolated position within the Eremoneura (Chandler 1998). Molecular data has yielded mixed results, placing Opetiidae as the sister group of Platypezidae+Phoridae+Ironomyiidae (Wiegmann *et al.* 2011), or grouped with the traditionally platypezid genus *Microsania* Zetterstedt, 1837 as sister to remaining Platypezidae (Tkoč *et al.* 2017). Detailed morphological evidence supporting a placement in Platypezoidea was recently presented by Amorim *et al.* (2018).

The only nominal species of Opetiidae occurring in Europe, *Opetia nigra* Meigen, 1830, is easily recognized due to its isolated position

within the fauna. Positive species identification of both sexes can be made based on wing venation alone: M_{1+2} with a long narrow fork, crossvein dM-Cu absent, cell cup short and apically tapering (Chandler 1998, see e.g. figure 1). Male and female wings differ in that the males have a well-developed anal lobe and the females have the $A+CuA_2$ vein reaching the wing margin (Chandler 1998). The antennae are also characteristic, carrying a 2-segmented terminal arista, and they finally lack the modified flat tarsi of platypezids (Chandler 1998, figure 1).

Faunistically, *O. nigra* appears widespread with records from most European countries including Sweden, Finland and Denmark (Chandler 2004). It was included and assessed as an LC species in the Norwegian red lists of 2010 and 2015 (Kålås *et al.* 2010, Henriksen & Hilmo 2015), but has, however, not previously been formally recorded from Norway (Chandler 2001). In this note we document *O. nigra* from several localities in Southern Norway.



FIGURE 1. *Opetia nigra* Meigen, 1830, female from Osterøy: Geitrem. Photo: G.M. Kvifte and L.K. Hagenlund.

Material and methods

Specimens of *Opetia nigra* were collected using Malaise traps, pan traps or hand-collected. All specimens are kept in EtOH alcohol, except two specimens that were micro-pinned and are preserved dry. Identifications are according to Chandler (2001). Material is kept in the natural history collections at the University Museum of Bergen (ZMBN) or in the private collection of Terje Jonassen (TJ).

DNA barcoding was carried out in cooperation with the Norwegian barcode of life project, using legs from a single specimen from Hedmark, as described by Ekrem *et al.* (2012).

Localities are listed according to counties as defined prior to the 2020 Norwegian municipal and regional reform.

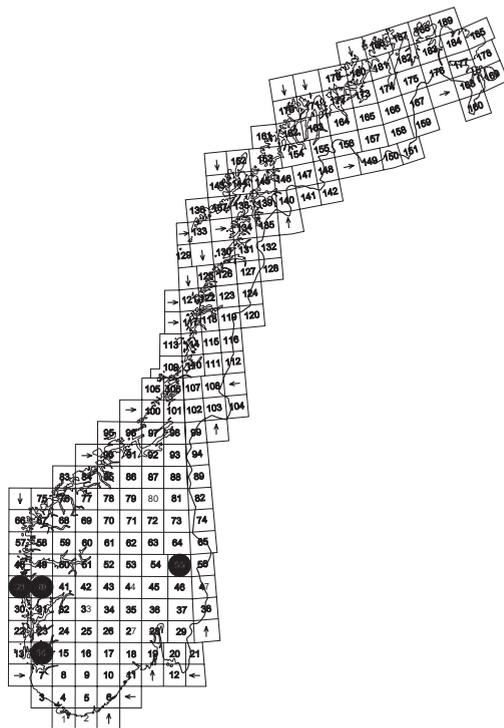


FIGURE 2. Norwegian records of *Opetia nigra* Meigen, 1830.

Records

Opetia nigra Meigen, 1830

First records from Norway (see also Figure 2):

Records. HEDMARK (HeN): Åmot, Kildesaga, 61.1788 N, 11.4022 E, 23.VI–11.VII.2016, 1♂, Rikmyrsprosjektet leg., coll. ZMBN (GenBank MH670460, BOLD: ZMBN1081-18). ROGALAND (RY): Finnøy, Kyrkjøy, Eik, 59.2553881 N, 5.8255746 E, 11–18.VI.2010, 1♂, T. Jonassen leg. (Yellow pan trap), coll. TJ. Finnøy, Kyrkjøy, Skjæra, 59.261105 N, 5.7984545 E, 11.VI–4.VII.2010, 1♂, T. Jonassen leg. (Yellow pan trap), coll. TJ. Finnøy, Kyrkjøy, Krabbavadvatnet, 59.2612336 N, 5.8015537 E, 24.VI–3.VII.2010, 1♂, T. Jonassen leg (Malaise trap), coll. TJ. Same, but 8.V–5.VI.2011, 2♂♂. Same but 5.VI–4.VII.2011, 3♂♂. HORDALAND (HoY): Osterøy, Geitrem, 60.544381 N, 5.470275

E, 1–6.VI.2017, 2♂♂5♀♀, G. Kvitte leg. (Malaise trap), coll. ZMBN. Lindås, Åse, 60.579752 N, 5.26875391 E, 1.VIII.2017, 1♀, H. Kivistø leg. (Hand collected), coll. TJ.

Comments. Our observations fit with previous published collection data for Opetiidae in that most specimens collected are males from woodlands (Chandler 1998). The Malaise trap from Osterøy: Geitrem is anomalous in yielding a higher number of females than of males, probably due to the trap being in contact with the ground including several fragments of moist dead *Ulmus* wood. Previously recorded larval habitats for *O. nigra* include rotting birchwood (*Betula*) and soil (Chandler 1998).

One of our specimens was DNA barcoded, grouping with an *O. nigra* specimen from Finland in the BIN BOLD:ACD2824. The two specimens' nearest neighbour BIN BOLD:ADL5995 comprised four Southern German specimens also identified as *O. nigra*, separated from the two Scandinavian specimens by a pairwise distance of only 1.93%. The two BINs do not consistently group with any other BIN clusters, supporting the status of Opetiidae as an isolated family within Diptera.

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