

Clusiidae (Diptera) from Finnmark, northern Norway

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Winqvist, K. & Andersen, T. 2018. Clusiidae (Diptera) from Finnmark, northern Norway. *Norwegian Journal of Entomology* 65, 55–59.

Records of four Clusiidae species, *Clusia flava* (Meigen, 1830), *Clusiodes freyi* Tuomikoski, 1933, *C. geomyzinus* (Fallén, 1823) and *C. ruficollis* (Meigen, 1830), collected in Finnmark, northern Norway, in 2010 are presented. *Clusiodes freyi* has previously not been recorded from Norway and *Clusia flava* has previously not been recorded from Finnmark. A checklist of the Clusiidae species recorded from Norway is presented.

Key words: Diptera, Clusiidae, *Clusia*, *Clusiodes*, Finnmark, Norway.

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Introduction

Clusiidae is a medium-sized family of Acalyptrate Diptera with 636 described species distributed in all biogeographical regions except Antarctica (Lonsdale 2017). The species are generally 2.5 to 6.0 mm long with a relatively narrow, cylindrical body. The body coloration varies from dark brown to pale yellow and in many cases the species have contrasting stripes or markings. The wings often have a cloudy infuscation along the anterodistal margin. The larvae live in rotting wood and the adults usually occur around decaying tree trunks (Rotheray & Horsfield 2013). They feed on nectar, sap or rotting vegetable matter. Adults are mainly found in damp deciduous forests. They are rarely netted but at proper locations frequently collected in Malaise traps (Oosterbroek 2006).

At present, 11 species of Clusiidae are known to occur in Norway (Artsdatabanken 2018, Elven & Søli 2016). Four species of Clusiidae are reported from Finnmark, northern Norway, of which *Clusiodes freyi* Tuomikoski, 1933 has previously not been recorded from Norway, thus

raising the number of species known from Norway to 12. The specimens were collected during the project “Insects inhabiting freshwater and humid habitats in Finnmark, northern Norway” (Ekrem *et al.* 2012). The project aimed at increasing the knowledge of little-known insect groups, particularly various Diptera families, in Finnmark, the northernmost part of mainland Norway. Insects were collected using various methods at more than 100 localities across Finnmark (Ekrem *et al.* 2012). So far the project has resulted in a number of publications (e.g. Andersen & Hagenlund 2012, Greve & Andersen 2012, Jonassen *et al.* 2013, Kvifte & Andersen 2012, Stur & Borkent 2014, Søli & Rindal 2012), but there is still more material to be identified.

Material and methods

The senior author has identified the material. It was collected in Malaise traps in 2010, preserved in alcohol and is deposited in the entomological collection at the Department of Natural History,

University Museum of Bergen (ZMBN). Detailed descriptions of the localities are given by Ekrem *et al.* (2012).

The species

Clusia flava (Meigen, 1830)

Material. FV, Alta: Gargia fjellstue, N69.80525° E23.48937°, 120 m a.s.l., 23 July–7 August 2010, 1♂, Malaise trap, leg. Finnmarksprosjektet (ZMBN).

Remarks. Collected in a Malaise trap close to a fast-running stream in an area with mixed forest with pine (*Pinus sylvestris*), birch (*Betula pubescens*), willow (*Salix* spp.) and alder (*Alnus incana*). The species was not recorded from Finnmark by Greve (2005); in Norway it has previously been taken in most parts of the country north to Troms. The species is widespread in Europe (Roháček & Merz 2013).

Clusiodes freyi Tuomikoski, 1933

Material. FØ, Sør-Varanger: Pasvik, Sametijohka near Sameti, N69.40106° E29.71923°, 43 m a.s.l., 24 June–20 July 2010, 1♂, Malaise trap, leg. Finnmarksprosjektet (ZMBN).

Remarks. The species was described by Tuomikoski (1933: 16) based on material from two localities in southern Finland and one locality in Russia near Lake Ladoga, former Finnish Karelian. It is quite similar to *C. apicalis* (Zetterstedt, 1848) but can be easily separated because of its whitish face, which is blackish in *C. apicalis*. There are also slight differences in the male genitals (see Bei-Bienko 1988, Tuomikoski 1933) The puparium was briefly described and figured by Rotheray & Horsfield (2013) who reared it from pine and birch.

The specimen was collected in a Malaise trap situated on the bank of a rather rapid, small river in birch-dominated woodland (Figure 1). *Clusiodes freyi* has been recorded from Sweden, Finland, and Central and Northwest European Russia (Roháček & Merz 2013). In Finland there are about 20 records, mainly from the central or northern parts of the country (Laji.Fi. 2018). There is also a single older record from a grove-

like forest near Tana River, very close to the Norwegian border (Frey 1950). In Sweden, it has been taken in Västerbotten and Ångermanland (ArtDatabanken 2018).

Clusiodes geomyzinus (Fallén, 1823) (Figure 2)

Material. FØ, Sør-Varanger: Pasvik, Russevann, N69.44497° E29.89904°, 60 m a.s.l., 24 June–20 July 2010, 1♂2♀♀, Malaise trap, leg. Finnmarksprosjektet (ZMBN).

Remarks. Collected in a Malaise trap situated on the shore of a lake in an area with a mosaic of pine forest and blanket bog. The species is widespread in Europe and is distributed in most parts of Norway north to Finnmark (Greve 2005, Roháček & Merz 2013).

Clusiodes ruficollis (Meigen, 1830)

Material. FV, Alta: Gargia fjellstue, N69.80525° E23.48937°, 120 m a.s.l., 23 July–7 August 2010, 1♂1♀, Malaise trap, leg. Finnmarksprosjektet (ZMBN). FØ, Sør-Varanger: Pasvik, Russevann, N69.44497° E29.89904°, 60 m a.s.l., 24 June–20 July 2010, 4♀♀, Malaise trap, leg. Finnmarksprosjektet (ZMBN).

Remarks. The species was collected in the same Malaise traps as *Clusia flava* in West Finnmark and *Cusiodes geomyzinus* in East Finnmark. Greve & Midtgaard (1986) recorded the species as new to Norway from Tjøme in Vestfold and Kristiansand in outer Vest-Agder. There are additional scattered records in southern Norway north to Sør-Trøndelag and one isolated record from eastern Finnmark (Greve 2005). The species is widespread in northern and central Europe (Roháček & Merz 2013).

Discussion

Twelve species of Clusiidae are known from both Sweden and Finland (Kahanpää 2014, Nilsson 2009). Elven and Søli (2016) suggested that 12 species could occur in Norway too. In addition to the 10 species listed by Greve (2005), *Heteromeringia nigrimana* (Loew, 1864) has been recorded from Aust-Agder, Vest-Agder and Sogn og Fjordane (Artsdatabanken 2018). With



FIGURE 1. The birch forest along the small, rapid river Sametijohka, where *Clusiodes freyi* Tuomikoski, 1933 was collected. Photo: Elisabeth Stur.



FIGURE 2. *Clusiodes geomyzinus* (Fallén, 1823) is a rather dark species. Photo: Håkon Haraldseide.

the record of *Clusiodes freyi* from Finnmark we have reached 12 species in Norway too (Table 1). Fourteen species of Clusiidae occur in Europe (Roháček & Merz 2013). In addition to the species listed in Table 1, *Clusiodes microcerca* Stackelberg, 1955 is distributed in Northwest European Russia and Finland (Kahanpää 2014, Roháček & Merz 2013) and *Clusiodes gentilis* (Collin, 1912) occurs in Central and Southern Europe (Roháček & Merz 2013).

Greve (2005) recorded three species of Clusiidae from Finnmark, *Clusiodes apicalis* from West Finnmark (FV), *C. geomyzinus* from West and East Finnmark (FV, FØ) and *C. ruficollis* from East Finnmark (FØ). The record of *C. ruficollis* from Alta is thus a new record for West Finnmark, and the record of *Clusia flava* from Alta (FV) is the first record of this species from Finnmark. We failed to take *C. apicalis* in Finnmark and with the records of *Clusia flava* and *Clusiodes freyi* the number of Clusiidae species known to occur in Finnmark reaches five.

TABLE 1. Checklist of Norwegian Clusiidae.

<i>Clusia flava</i> (Meigen, 1830)
<i>Clusiodes albimanus</i> (Meigen, 1830)
<i>C. apicalis</i> (Zetterstedt, 1848)
<i>C. caledonicus</i> (Collin, 1912)
<i>C. freyi</i> Tuomikoski, 1933
<i>C. geomyzinus</i> (Fallén, 1823)
<i>C. pictipes</i> (Zetterstedt, 1855)
<i>C. ruficollis</i> (Meigen, 1830)
<i>C. verticalis</i> (Collin, 1912)
<i>Hendelia beckeri</i> Czerny, 1903
<i>Heteromeringia nigrimana</i> (Loew, 1864)
<i>Paraclusia tigrina</i> (Fallén, 1820)

Acknowledgements. The study was funded by a grant from the Norwegian Taxonomy Initiative. We are indebted to Håkon Haraldseide for allowing us to use the photo of *Clusiodes geomyzinus*. We are also indebted to Torbjørn Ekrem, Linn Katrine Hagenlund, Steffen Roth, Elisabeth Stur, Geir Sølvi and all the others who participated in the Finnmark project.

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Received: 27 April 2018

Accepted: 25 May 2018

Note

After this article was printed another Clusiidae species, *Clusiodes tuomikoskii* Mamaev, 1974, was recorded from Åsele lappmark in northern Sweden (Hellqvist 2018). The species was described by Mamaev (1974) from Kedrovaya Pad Nature Reserve, Primorsky Krai Province, southeastern Russia, close to the borders with North Korea and China. According to Hellqvist (2018) there seems to be no other published records of the species.

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