

Diptera from rich fens and other habitats in eastern part of Innlandet, southeastern Norway. IX. Ephydriidae

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Records of 52 species of Ephydriidae from Hedmark in the eastern part of Innlandet County, southeastern Norway, are presented based on material collected in 2016 and 2017 during a survey of insects inhabiting rich fens in the region; a few older records are also included. We regard 17 of the species as new to Norway, and an additional 35 species are recorded for the first time from southern and/or northern Hedmark (Strand-regions HES and HEN). In addition, a female belonging to *Allotrichoma* Becker, 1896, a genus that is not recorded from Norway previously, was collected in northern Hedmark. Only 112 specimens of altogether seven species were collected in the Malaise traps on the rich fens. *Limnellia surturi* Andersson, 1971 with 81 specimens (72.3%) was the most abundant species, while *Eutaenionotum guttipennis* (Stehammar, 1844) with 21 specimens (18.8%) ranked second. The remaining five species were less abundant, taken only in one or a few specimens.

Key words: Rich fens, Diptera, Ephydriidae, new records, Hedmark, Innlandet County, Norway.

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Introduction

Ephydriidae is a family of small to medium sized flies, usually 1–6 mm long. They are dark colored, dull to shining, usually with unmarked wings, but some species have darkened or spotted wings. Most species inhabit aquatic or semi-aquatic habitats and can be found in large numbers in coastal or non-coastal saline situations. The larvae feed on micro-organisms such as bacteria, algae or yeasts, some prey on insects and others prefer rotting animal tissue, excrement, or eggs of spiders or frogs. Some species are also phytophagous, mining in plants (Zatwarnicki 1997, Mathis & Zatwarnicki 1998).

According to Elven & Sølvi (2021) 72 species

of Ephydriidae are known from Norway and they estimate that 115 species might occur in Norway. In comparison, today 126 species are recorded from Finland (Zatwarnicki & Kahanpää 2014) and updates; from Sweden 145 species are known (Zatwarnicki 2013).

In 2016 the project "Insects on rich fens in Hedmark, eastern Norway" was initiated aiming at increasing the knowledge of the insect fauna on rich fens in Norway (see Artsdatabanken 2016, Andersen & Hagenlund 2019). Rich fens are among our most vulnerable and threatened nature types. Five types of lowland rich fens are listed in the Norwegian Red List of Nature Types (Lindgaard & Henriksen 2011). These fens are rich in calcium and usually fed by ground water

and many rare and red-listed plants grow on these fens. During the project insects were collected in nearly 100 localities (see Jonassen & Andersen 2020). The insect fauna on rich fens were the main target, but insects were also collected in several other habitats to get a better understanding of the habitat preferences of the different species.

The initiative to identify Norwegian Ephydriidae aims at compiling an updated checklist of the Norwegian species. The first author has visited the museums in Oslo and Bergen several times and identified specimens in the collections. Unfortunately, some of these records are already shown in Artskart (Artsdatabanken 2017). However, when it comes to species “New to Norway” or “Recorded for the first time from Hedmark” we have disregarded these records, as they were intended to be shown in Artskart first after they had been formally published. The senior author also participated in the fieldwork in Hedmark. Together with two of his PhD students, Magdalena Cielniak and Katarzyna Pochrzast, he collected Ephydriidae in Hedmark in August 2016.

Material and methods

The fieldwork was conducted during 2016 and 2017. The main part of the material was collected in Malaise traps, but adult Diptera were also collected with other methods like sweep nets, window traps, light traps and yellow pan traps. The Malaise traps were situated on eight different rich fens in 2016 and were emptied bi-weekly beginning after the snow had melted in April–May and continuing until the winter started in late October. The fens are of different sizes and structure and a gradient from lowland fens to upland fens were strived for (see Jonassen & Andersen 2020). A total of 94 localities in Hedmark were visited during the project. Each locality is given a HeLoc number, which is used in the species list below. Although the fieldwork was focused on rich fens, several other habitats were also explored. In the species list rich fen localities are marked with an asterisk after the HeLoc number. All localities including HeLoc numbers are listed in Jonassen & Andersen (2020: Table 1).

During the field work the material was preserved in 75–80% ethanol, then brought to the Department of Natural History, University of Bergen, and sorted to family level. Most of the Ephydriidae material from the project has been pinned, a few specimens are also stored in 75–80% ethanol. All material from the project was identified by the senior author and most of it is housed in the entomological collection at the Department of Natural History, University Museum of Bergen, some specimens are also housed in the Institute of Biology, Opole University, Poland.

As part of an ongoing survey of the Norwegian Ephydriidae the senior author has also identified older material housed in the museums in Oslo (ZMO) and Bergen. We have included the records from Hedmark in the present article as “additional material”. This material has been collected by Gudrun Bakkerud, Arild Fjeldså, Lita Greve Jensen, Tore R. Nielsen, John O. Solem and Ove Sørlibråten.

The former counties Oppland and Hedmark were merged into Innlandet County on the 1 January 2020. None of the municipalities in Hedmark were, however, altered or merged and the municipality boundaries are still as before 2020. All fieldwork was performed in the eastern part of Innlandet, i.e. the former Hedmark County, and we have used the biogeographical regions southern Hedmark (HES) and northern Hedmark (HEN) following the “Strand-system” (Endrestøl 2021).

The species

Allotrichoma sp.

Material. HeLoc32*, 15–17 July 2016, 1♀, yellow pan trap.

Remarks. No species of the genus seems to be published from Norway. However, the single female cannot be identified to species with certainty.

Axysta cesta (Haliday, 1833)

Material. HeLoc17*, 28 April–11 May 2016, 1♂, Malaise trap.

Remarks. Recorded for the first time from

northern Hedmark (HEN).

***Calocoenia (Leptocoenia) paurosoma*
(Sturtevant & Wheeler, 1954)**

Material. HeLoc12, 21 July 2017, 1♂, sweep net; HeLoc 52, 17 August 2016, 1♀, sweep net; HeLoc62, 16 August 2016, 2♀♀, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Coenia curvicauda* (Meigen, 1830)**

Material. HeLoc02, 5 June 2017, 1♂, sweep net; HeLoc30, 4 July 2017, 2♂♂, sweep net.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Coenia palustris* (Fallén, 1823)**

Material. HeLoc70*, 18 August 2016, 1♀, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Dichaeta caudata* (Fallén, 1813)**

Material. HeLoc18, 21 July 2017, 1♂, sweep net; HeLoc67*, 18 August 2016, 1♀, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Discocerina obscurella* (Fallén, 1813)**

Material. HeLoc18, 21 July 2017, 1♀, sweep net; HeLoc62, 16 August 2016, 1♀, sweep net; HeLoc70*, 18 August 2016, 1♀, sweep net.

Remarks. Recorded for the first time from Norway. A subcosmopolitan species distributed in most parts of Europe including Denmark, Sweden, and Finland (Zatwarnicki 2013).

***Disomyza incurva* (Fallén, 1813)**

Material. HeLoc70*, 18 August 2016, 2♀♀, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Ditrichophora calceata* (Meigen, 1830)**

Additional material. HES, Ringsaker, Furnes, Sandvoll, 60.83650°N 11.08212°E, 23 July 1992, 1♀, sweep net, leg. G. Bakkerud.

Remarks. Although the record is shown in

Artskart (Artsdatabanken 2017) it is identified by the senior author and we regard the species as new to Norway. A Palaearctic species distributed in most parts of Europe including Denmark, Sweden, and Finland (Zatwarnicki 2013).

***Ditrichophora fuscella* (Stenhammar, 1844)**

Material. HeLoc09, 22 July 2017, 10♂♂10♀♀, sweep net; HeLoc19, 21 July 2017, 1♀, sweep net; HeLoc35, 29–31 July 2016, 1♂, light trap; 15 August 2016, 1♀, sweep net.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Ditrichophora palliditarsis* (Becker, 1896)**

Material. HeLoc35, 15 August 2016, 1♀, sweep net.

Remarks. Recorded for the first time from Norway and Fennoscandia. A Palaearctic species distributed in Central- and Southern Europe (Zatwarnicki 2013).

***Eutaenionotum guttipennis* (Stenhammar, 1844)**

Material. HeLoc17*, 28 April–11 May 2016, 1♂1♀, Malaise trap; HeLoc32*, 29 April–14 May 2016, 1♂4♀♀, Malaise trap; HeLoc34, 21 June–20 July 2017, 1♀, light trap; HeLoc47*, 27 April–13 May 2016, 1♂2♀♀, Malaise trap; HeLoc71*, 24 April–13 May 2016, 2♂♂6♀♀; 23 June–11 July 2016, 3♀♀, Malaise trap.

Remarks. Recorded for the first time from Norway. A Holarctic species distributed in Central- and Northern Europe including Sweden and Finland (Zatwarnicki 2013).

***Gymnoclasiopa aurifacies* (Strobl, 1893)**

Material. HeLoc35, 15 August 2016, 2♂♂3♀♀, sweep net.

Remarks. Recorded for the first time from Norway. The species is distributed in most parts of Europe including Sweden and Finland (Zatwarnicki 2013).

***Gymnoclasiopa bohemanni* (Becker, 1896)**

Additional material. HES, Ringsaker, Furnes, Sandvoll, 60.83650°N 11.08212°E, 23 July 1992, 5♀♀, sweep net, leg. G. Bakkerud.

Remarks. Although records are shown in Artskart (Artsdatabanken 2017) it is identified by the senior author and we regard the species as new to Norway. A Holarctic species, in Europe previously recorded from Austria, Sweden, Finland, and Iceland (Zatwarnicki 2013).

***Gymnoclasioipa cinerella* (Stenhammar, 1844)**

Material. HeLoc09, 22 July 2017, 2♂♂5♀♀, sweep net; HeLoc35, 29–31 July 2016, 1♂, light trap; 15 August 2016, 2♂♂1♀, sweep net; HeLoc86, 25 July 2017, 1♀, sweep net.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Hyadina guttata* (Fallén, 1813)**

Material. HeLoc10, 1 June 2017, 1♂, sweep net.

Remarks. Recorded for the first time from southern Hedmark (HES).

***Hyadina nigricornis* Frey, 1930**

Material. HeLoc74*, 2–16 September 2016, 1♂, Malaise trap.

Remarks. Recorded for the first time from Norway. The species is only known from the original description by Frey (1930). The type locality is in Russia (Saint Petersburg), and the record from Hedmark is the second record of the species.

***Hyadina rufipes* (Meigen, 1830)**

Material. HeLoc52, 17 August 2016, 2♀♀, sweep net; HeLoc63, 17 August 2016, 2♀♀, sweep net; HeLoc68, 26 July 2016, 1♂, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Hydrellia albiceps* (Meigen, 1824)**

= *H. maura* Meigen, 1838

Material. HeLoc62, 16 August 2016, 1♀, sweep net; HeLoc68, 26 July 2016, 1♂1♀, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Hydrellia cochleariae* Haliday, 1839**

Material. HeLoc91, 24–25 July 2017, 2♀♀, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Hydrellia griseola* (Fallén, 1813)**

Material. HeLoc06, 23 July 2017, 6♂♂3♀♀, sweep net; HeLoc09, 22 July 2017, 1♂, sweep net; HeLoc12, 21 July 2017, 1♂, sweep net; HeLoc13, 21 July 2017, 1♀, sweep net; HeLoc18, 21 July 2017, 1♂, sweep net; HeLoc34, 21 June–20 July 2017, 12♂♂18♀♀, light trap; HeLoc35, 29–31 July 2016, 4♂♂4♀♀, light trap; 15 August 2016, 2♂♂5♀♀, sweep net; HeLoc49*, 7 June 2016, 1♂, sweep net; HeLoc50, 7 June 2016, 1♀, sweep net; HeLoc59, 24 July 2017, 1♂, light trap; HeLoc62, 16 August 2016, 1♀, sweep net; HeLoc74*, 18 August 2016, 2♀♀, sweep net; HeLoc78*, 23 June–11 July 2016, 1♂2♀♀, Malaise trap; 17 July 2017, 1♂, sweep net; HeLoc80*, 17 August 2016, 1♂3♀♀, sweep net; HeLoc91, 24–25 July 2017, 1♂, yellow pan trap.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Hydrellia nigricans* (Stenhammar, 1844)**

Additional material. HEN, Elverum, Kvernbakken, 60.96446°N 11.50127°E, 14 June 1996, 1♂, sweep net, leg. L. Greve Jensen.

Remarks. Recorded for the first time from Norway. The species is recorded from South-, Central- and Northern Europe including Sweden (Zatwarnicki 2013).

***Hydrellia svecica* Zatwarnicki, 1988**

Material. HeLoc06, 23 July 2017, 1♂, sweep net; HeLoc10, 22 July 2017, 2♀♀, sweep net; HeLoc12, 21 July 2017, 1♂, sweep net; HeLoc22, 21 July 2017, 1♂, sweep net; HeLoc25, 15 August 2016, 2♂♂, sweep net; HeLoc34, 21 June–20 July 2017, 2♂♂, light trap; HeLoc35, 15 August 2016, 1♂1♀, sweep net; HeLoc48, 24 July 2017, 2♂♂2♀♀, sweep net.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Ilythea spilota* (Curtis, 1832)**

Material. HeLoc09, 22 July 2017, 1♀, sweep net; HeLoc76*, 17 July 2016, 1♂5♀, sweep net.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Lamproscatella sibilans* (Haliday, 1833)**

Material. HeLoc78*, 17 August 2016, 8♂♂4♀♀, sweep net; HeLoc80*, 17 August 2016, 2♂♂2♀♀, sweep net; HeLoc85, 28 July 2016, 2♂♂1♀, sweep net; HeLoc87, 26 July 2017, 1♀, sweep net.

Additional material. HEN, Folldal, Straumbu, 61.92335°N 10.05231°E, 17 July 1992, 4♂♂2♀♀, sweep net, leg. L. Greve Jensen.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Limnelli quadrata* (Fallén, 1813)**

Material. HeLoc35, 15 August 2016, 1♂, sweep net; HeLoc47*, 26 May–9 June 2016, 1♀, Malaise trap; HeLoc71*, 26 May–9 June 2016, 1♀, Malaise trap.

Additional material. HEN, Stor-Elvdal, Atlasjøen, 61.85214°N 10.22753°E, 22–29 May 1988, 1♀, Malaise trap, leg. J.O. Solem; Folldal, Folla, 29 May–5 June 1988, 1♀, Malaise trap, leg. J.O. Solem.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Limnelli surturi* Andersson, 1971**

Material. HeLoc09, 22 July 2017, 1♂, sweep net; HeLoc17*, 28 April–11 May 2016, 4♂♂4♀♀; 26 May–9 June 2016, 4♂♂8♀♀; 9–23 June 2016, 2♂♂3♀♀, Malaise trap; HeLoc32*, 29 April–14 May 2016, 2♂♂1♀; 14–26 May 2016, 1♀; 26 May–9 June 2016, 1♂4♀♀; 9–23 June 2016, 1♂1♀; 23 June–11 July 2016, 1♀; 11–21 July 2016, 2♀♀; 21 July–4 August 2016, 1♀, Malaise trap; HeLoc45*, 26 May–9 June 2016, 1♂; 23 June–11 July 2016, 1♂, Malaise trap; HeLoc47*, 27 April–13 May 2016, 3♂♂5♀♀; 26 May–9 June 2016, 3♂♂2♀♀; 9–23 June 2016, 1♂1♀, Malaise trap; HeLoc71*, 14–26 May 2016, 1♂1♀; 26 May–9 June 2016, 4♂♂8♀♀; 9–23 June 2016, 1♂1♀; 23 June–11 July 2016, 1♂, Malaise trap; HeLoc74*, 26 May–9 June 2016, 2♂♂4♀♀; 9–23

June 2016, 1♀, Malaise trap.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Limnelli stenhammari* (Zetterstedt, 1846)**

Additional material. HES, Kongsvinger, Langerudberget, Vennersberg, 60.18459°N 12.02502°E, 8 April 2005, 1♀, leg. O. Sørlibråten (ZMO).

Remarks. Recorded for the first time from southern Hedmark (HES).

***Notiphila annulipes* Stenhammar, 1844**

Material. HeLoc13, 21 July 2017, 1♀, sweep net; HeLoc19, 21 July 2017, 2♂♂4♀♀, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Notiphila brunipes* (Robineau-Desvoidy, 1830)**

Material. HeLoc13, 21 July 2017, 1♀, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Notiphila dorsata* Stenhammar, 1844**

Material. HeLoc50, 17 August 2016, 2♀♀, sweep net; HeLoc58, 23–25 July 2016, 2♂♂, sweep net.

Remarks. Recorded for the first time from Norway. A Palearctic species distributed in most parts of Europe including Sweden and Finland (Zatwarnicki 2013).

***Notiphila major* (Robineau-Desvoidy, 1830)**

Material. HeLoc19, 21 July 2017, 1♀, sweep net; HeLoc86, 25 July 2017, 4♂♂2♀♀, sweep net.

Remarks. Recorded for the first time from Norway. The species is known from Sweden, Finland, and Russia (Siberia) (Zatwarnicki 2013).

***Ochthera mantis* (De Geer, 1776)**

Material. HeLoc35, 11–14 September 2014, 1♂, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Parydra aquila* (Fallén, 1813)**

Material. HeLoc62, 16 August 2016, 1♂, sweep net; HeLoc76*, 17 July 2016, 1♀, sweep net.

Additional material. HES, Eidskog, Helgesjøen, 10–12 July 1974, 1♂, Malaise trap, leg. T.R. Nielsen; Elverum, Prestøya, 60.87001°N 11.55296°E, 20 August 1992, 1♂, sweep net, leg. A. Fjeldså.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Parydra arctica* Clausen, 1971**

Material. HeLoc56, 18 August 2016, 1♂, sweep net; HeLoc67*, 18 August 2016, 1♂, sweep net; HeLoc71*, 28 April–13 May 2016, 1♂2♀♀, Malaise trap; HeLoc81*, 28 July 2016, 1♂, sweep net.

Remarks. Although a record is shown in Artskart (Artsdatabanken 2017) it is identified by the senior author and we regard the species as new to Norway. The species has a Holarctic distribution and was recorded for the first time from the Palaearctic region from Finland by Krivosheina (2000). So far, Finland is the only European country where the species has been taken (Zatwarnicki 2013).

***Parydra fossarum* (Haliday, 1833)**

Material. HeLoc71*, 21 July–4 August 2016, 1♂, Malaise trap.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Parydra quadripunctata* (Meigen, 1830)**

Material. HeLoc25, 15 August 2016, 1♂, sweep net; HeLoc76*, 17 July 2016, 1♂3♀♀, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Pelina aenescens* (Stenhammar, 1844)**

Material. HeLoc70*, 18 August 2016, 2♂♂, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Philygria flavipes* (Fallén, 1823)**

Material. HeLoc80*, 17 August 2016, 1♀, sweep net.

Additional material. HES, Ringsaker, Dæli, 60.79639°N 10.76854°E, 28 June 1991, 1♂, sweep net, leg. G. Bakkerud.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Philygria posticata* (Meigen, 1830)**

Material. HeLoc10, 1 June 2017, 1♀, sweep net.

Remarks. Recorded for the first time from Norway. Distributed over much of Europe including Denmark, Sweden, and Finland (Zatwarnicki 2013).

***Philygria vittipennis* (Zetterstedt, 1838)**

Material. HeLoc35, 29–31 July 2016, 1♂, light trap; 15 August 2016, 2♂♂1♀, sweep net; HeLoc69, 16 August 2016, 1♂, sweep net; HeLoc70*, 18 August 2016, 1♂, sweep net.

Remarks. Although records are shown in Artskart (Artsdatabanken 2017) it is identified by the senior author and we regard the species as new to Norway. A Palaearctic species distributed over much of Europe including Sweden and Finland (Zatwarnicki 2013).

***Psilopa nitidifacies* (Frey, 1958)**

Material. HeLoc35, 29–31 July 2016, 2♂♂3♀♀, light trap; 15 August 2016, 3♂♂9♀♀, sweep net.

Remarks. Recorded for the first time from Norway. The species is only known from the original description by Frey (1958). The type series is from different localities in Finland, and the record from Hedmark is the first record outside Finland.

***Psilopa nitidula* (Fallén, 1813)**

Additional material. HES, Eidskog, Midtskogsætra, 60.01987°N 12.18519°E, 4 August 2004, 1♀, leg. O. Sørlibråten (ZMO); Elverum, Øksetsaga, 60.98615°N 11.47816°E, 29 June 1998, 1♀, sweep net, leg. L. Greve Jensen.

Remarks. Recorded for the first time from

southern Hedmark (HES).

***Psilopa polita* (Macquart, 1835)**

Material. HeLoc06, 23 July 2017, 1♂, sweep net; HeLoc10, 1 June 2017, 3♂♂7♀♀, sweep net; HeLoc24, 15 August 2016, 1♀, sweep net; HeLoc25, 15 August 2016, 1♀, sweep net.

Additional material. HES, Elverum, Prestøya, 60.87001°N 11.55296°E, 20 August 1992, 1♂4♀♀, sweep net, leg. A. Fjeldså.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Scatella lacustris* (Meigen, 1830)**

= *Scatella tenuicosta* Collin, 1930

Material. HeLoc19, 21 July 2017, 1♀, sweep net; HeLoc25, 15 August 2016, 1♂, sweep net; HeLoc34, 21 June–20 July 2017, 1♂, light trap; HeLoc35, 29–31 July 2016, 41 ex, light trap; 6 June 2016, 2♀♀, sweep net; HeLoc62, 16 August 2016, 3♂♂4♀♀, sweep net; HeLoc67*, 18 August 2016, 5♂♂5♀♀, sweep net; HeLoc69, 9 June 2016, 2♂♂, sweep net; HeLoc70*, 18 August 2016, 8♂♂9♀♀, sweep net.

Additional material. HES, Elverum, Økset-saga, 60.98615°N 11.47816°E, 29 June 1998, 1♂, sweep net, leg. L. Greve Jensen; HEN, Trysil, Osensjøen, 61.10624°N 11.97536°E, 30 June 1998, 1♀, sweep net, leg. L. Greve Jensen.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Scatella lutosa* (Haliday, 1833)**

Material. HeLoc68, 26 July 2016, 1♂, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Scatella obsoleta* Loew, 1861**

= *Scatella callosicosta* Bezzi, 1895

Material. HeLoc09, 22 July 2017, 1♀, sweep net.

Additional material. HES, Elverum, Prestøya, 60.87001°N 11.55296°E, 20 August 1992, 7♂♂7♀♀, sweep net, leg. A. Fjeldså.

Remarks. Although a record is shown in Artskart (Artsdatabanken 2017) it is identified by the senior author and we regard the species as new

to Norway. The species has a Holarctic distribution and is found in Southern-, Central-, and Northern Europe including Denmark, Sweden, and Finland (Zatwarnicki 2013).

***Scatella paludum* (Meigen, 1830)**

Material. HeLoc35, 6 June 2016, 1♀, sweep net.

Additional material. HEN, Folldal, Vollen, 69.98490°N 10.02827°E, 19–26 June 2016, 1♀, Malaise trap, leg. J.O. Solem.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Scatella stagnalis* (Fallén, 1813)**

Material. HeLoc09, 22 July 2017, 2♂1♀, sweep net; HeLoc25, 15 August 2016, 1♂4♀♀, sweep net; HeLoc58, 23–25 July 2016, 1♂, sweep net; HeLoc70*, 25 July 2016, 1♀, sweep net; HeLoc78*, 17 July 2016, 6♂♂6♀♀, sweep net; HeLoc80*, 17 July 2016, 1♀, sweep net; HeLoc87, 26 July 2017, 1♂3♀♀, sweep net.

Additional material. HES, Elverum, Strandøya, Glomma, 60.95615°N 11.50132°E, 20 June 1997, 5♂♂3♀♀, sweep net, leg. L. Greve Jensen.

Remarks. Recorded for the first time from northern Hedmark (HEN).

***Scatophila caviceps* (Stenhammar, 1844)**

Material. HeLoc34, 21 June–20 July 2017, 1♀, light trap; HeLoc35, 15 August 2016, 14♂♂12♀♀, sweep net; HeLoc76*, 17 July 2016, 2♂♂1♀, sweep net; HeLoc80*, 17 July 2016, 1♂, sweep net.

Additional material. HES, Elverum, Prestøya, 60.87001°N 11.55296°E, 20 August 1992, 1♀, sweep net, leg. A. Fjeldså.

Remarks. Recorded for the first time from southern and northern Hedmark (HES & HEN).

***Scatophila iowana* Wheeler, 1961**

Additional material. HEN, Stor-Elvdal, Atnasjøen, 61.85214°N 10.22753°E, 22–29 May 1988, 1♂1♀, Malaise trap, leg. J.O. Solem.

Remarks. Although the record is shown in Artskart (Artsdatabanken 2017) it is identified by the senior author and we regard the species as new to Norway. A Holarctic species found in Southern-,

Central-, and Northern Europe including Sweden (Zatwarnicki 2013).

Scatophila noctula (Meigen, 1830)

Material. HeLoc91, 24–25 July 2017, 1♂, sweep net.

Remarks. Recorded for the first time from northern Hedmark (HEN).

Scatophila quadriguttata (Meigen, 1830)

Material. HeLoc35, 15 August 2016, 1♂1♀, sweep net.

Remarks. Recorded for the first time from Norway. The species is found in Southern-, Central-, and Northern Europe including Denmark, Sweden, and Finland (Zatwarnicki 2013).

Discussion

The project gave new data on the Norwegian distribution and occurrence of many Ephydridae species. A total of 52 species are recorded from Hedmark. Of these we regard 17 of the species to be new to Norway, namely *Discocerina obscurella* (Fallén, 1813), *Ditrichophora calceata* (Meigen, 1830), *D. palliditarsis* (Becker, 1896), *Eutaenionotum guttipennis* (Stenhammar, 1844), *Gymnoclasiopa aurifacies* (Strobl, 1893), *G. bohemani* (Becker, 1896), *Hyadina nigricornis* Frey, 1930, *Hydrellia nigricans* (Stenhammar, 1844), *Notiphila dorsata* Stenhammar, 1844, *N. major* (Robineau-Desvoidy, 1830), *Parydra arctica* Clausen, 1971, *Philygria posticata* (Meigen, 1830), *P. vittipennis* (Zetterstedt, 1838), *Psilopa nitidifacies* (Frey, 1958), *Scatella obsoleta* Loew, 1861, *Scatophila iowana* Wheeler, 1961, and *S. quadriguttata* (Meigen, 1830). The remaining 35 species are all recorded for the first time from southern and/or northern Hedmark. In addition, a female of *Allotrichoma* Becker, 1896, a genus that is not recorded from Norway previously, was collected in northern Hedmark, but the single female could not be identified to species with certainty.

Two species of Ephydridae, *Paracoenia fumosa* (Stenhammar, 1844) and *Scatella stagnalis* (Fallén, 1813) were published from

Elverum in Hedmark by Siebke (1872, 1877). *Scatella stagnalis* was confirmed by the present study, while *P. fumosa* was not taken. The number of species now recorded from Hedmark thus stands at 53.

Only 112 specimens of all together seven species were taken in the Malaise traps on the rich fens. *Limnellia surturi* Andersson, 1971 was the most abundant species with 81 specimens (72.3%) collected on six of the eight rich fens. *Eutaenionotum guttipennis* (Stenhammar, 1844) ranked second with 21 specimens (18.8%) collected on four of the rich fens. The remaining five species were each only collected in one to three specimens. Nothing much is known about the occurrence of the two most abundant species, but according to Dahl (1959) *E. guttipennis* is “one of our rarest ephydrids” and *Limnella stenhammari* (Zetterstedt, 1846) which at that time also referred to *L. surturi*, “has shown a weak xerophilous tendency and has been collected on meadow-biotopes, which are perhaps somewhat drier than the biotopes constituted by the moist meadow”.

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