

Notes on new and interesting Diptera from Norway

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Thirty-one species are reported new to Norway, most of them from the Oslofjord-area. The species are: Phoridae: *Borophaga agilis* (Meigen, 1830), *Borophaga incrassata* (Meigen, 1830), *Diplonevra abbreviata* (von Roser, 1840), *Diplonevra florescens* (Turton, 1801), *Diplonevra funebris* (Meigen, 1830), *Diplonevra pilosella* (Schmitz, 1927), *Megaselia barbulate* (Wood, 1909), *Megaselia subconvexa* (Lundbeck, 1920), *Phalacrotophora berlinensis* Schmitz, 1920, *Woodiphora retroversa* (Wood, 1908); Pipunculidae: *Chalarus latifrons* Hardy, 1943, *Chalarus spurius* (Fallen, 1816), *Tomosvaryella littoralis* (Becker, 1897); Micropezidae: *Cnodacophora stylifera* (Loew, 1870); Stongylophthalmyidae: *Strongylophthalmyia pictipes* Frey, 1935; Psilidae: *Psila fimetaria* (Linnaeus, 1761); Tephritidae: *Campiglossa argyrocephala* (Loew, 1844), *Orellia falcata* (Scopoli, 1763); Lauxaniidae: *Trigonometopus frontalis* (Meigen, 1830); Anthomyzidae: *Anthomyza macra* Czerny, 1928; Asteiidae: *Asteia amoena* Meigen, 1830; Sphaeroceridae: *Leptocera oldenbergi* (Duda, 1918), *Pullimosina moesta* (Villeneuve, 1918); Drosophilidae: *Hirtodrosophila oldenbergi* (Duda, 1924), *Scaptodrosophila deflexa* (Duda, 1924), *Scaptomyza teinoptera* Hackman, 1955, *Drosophila limbata* von Roser, 1840, *Hirtodrosophila trivittata* (Strobl, 1893); Ephydriidae: *Nostima picta* Fallén, 1813, *Scatella lutosa* (Haliday, 1833), *Haloscatella dictaeta* Loew, 1860. In addition, the Norwegian fauna of Anthomyzidae is briefly commented on.

Key words: Diptera, Norway, Phoridae, Pipunculidae, Micropezidae, Stongylophthalmyidae, Psilidae, Tephritidae, Lauxaniidae, Anthomyzidae, Asteiidae, Sphaeroceridae, Drosophilidae, Ephydriidae.

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Introduction

Except for a few families, our knowledge about Diptera in Norway must be characterized as highly deficient and incomplete, both when it comes to the number species present and the distributional range of the species recorded. Up to present, about 5127 species have been reported from Norway (Artsportalen 2011). This is a strikingly low number compared to those reported from our neighboring countries. If we look at Sweden where one may assume a much similar number of species due to its geographic location, as many

as 6974 species are reported up to now (Dyntaxa 2011). From this one may deduce the number of species in Norway to be comparatively high. Although the southernmost parts of Sweden may held a higher number of thermophilous species, one should at least expect the number of species in Norway to exceed 6500.

This paper is intended to be the first in a series which presents data on Diptera new to the Norwegian fauna. We will also include records of species known to exist in Norway, but for which we have no or very poorly documented distributional data.

The Oslofjord-project

In this first paper, we will mainly present data from a study of the Diptera fauna in the Oslofjord area. This study was part of a project called “Study of selected insect groups in the Oslofjord-area”, funded by the Norwegian Biodiversity Information Centre (Artsdatabanken), and run from 2010 to 2011. The Oslofjord-area was here defined as the coastal areas from the Swedish border, north to the Inner Oslofjord, and further south to Langesund in Telemark. This area is known for its great diversity of insects, with perhaps as much as 80% of Norway’s terrestrial species (Hansen & Hanssen 1998, Hansen & Aarvik 2000, Endrestøl et al. 2005, 2006a, 2006b, 2008).

The coastal areas along the Oslofjord have a favorable climate, with high summer temperatures and relatively mild winters, which explains the presence of a higher number of thermophilic species here than anywhere else in Norway. A varied geology with large areas of calcareous rocks give rise to a rich and interesting flora which also contributes to a high insect diversity. Of the 233 species listed on the Norwegian Red List 2010 (Gammelmo et al. 2010), many have their distribution in Norway limited to this region, often close to heavily populated areas. In our opinion, there are good reasons to believe that a large proportion of the more than 1000 “missing” species mentioned above, will be found here.

The Oslofjord-area may well be termed a Norwegian hotspot, considering the high diversity, but also due to the fact that a substantial proportion of the remaining areas of more or less undisturbed vegetation is under high pressure from a growing human population. Significant parts of the coastal zone have already given ground to roads, chalets, house and industrial buildings. Along beaches and other popular resorts there is also an excessive wear due to various outdoor activities. The strong human impacts seemingly also explain why the area exhibits such a high number of redlisted species (Kålås et al. 2010).

The Oslofjord-project was aimed at exploring poorly studied families of Hymenoptera and Diptera, and within Diptera, we have focused on the following taxa: Sciaroidea (mainly

the families Mycetophilidae, Bolitophilidae, Diadocidiidae, Ditomyiidae and Keroplatidae), Chironomidae, Tabanoidea, Stratiomyoidea, Asiloidea, Empidoidea, Platypezoidea, Syrphoidea, Conopoidea, Sphaeroceroidea, Ephydroidea, Oestroidea and Muscoidea. Several of these taxa will be dealt with in this paper.

Material and methods

During the field work, material was collected from a wide range of localities, but we also included material from earlier collecting in the Oslofjord-area.

Malaise-traps have been our main collecting method, but a variety of other methods were also used, such as yellow pan traps, netting and a portable suction trap.

The studied material is deposited in the collection at the Natural History Museum in Oslo (NHMO).

The species

All species listed here are reported from the Norwegian fauna for the first time. Localities are given using the revised Strand-system (Økland 1986) and the EIS system (Endrestøl 2005). In addition, all localities are georeferenced using decimal degrees. For all species the European distribution are commented on. Where relevant, remarks are given on the species.

The higher systematics follows Yeates & Wiegmann (1999).

PHORIDAE

Borophaga agilis (Meigen, 1830)

Material. AK Oslo: Søndre Nordstrand, Ljanselva, Liadalen (EIS 28) (59,84809°N 10,79341°E), 1♂, 8 May 2010, Leg. G. Søli.

Distribution. Relatively widespread in Europe (Weber 2011).

Borophaga incrassata (Meigen, 1830)

Material. Ø Hvaler: Prestegårdskogen (EIS

12) (59.02913°N 11.02303°E), 2♂♂, 20 May–4 June 2010, Leg. T.J. Olsen; **VE** Larvik: Karto (EIS 19) (59.02526°N 10.20567°E), 1♂, 1–22 August 2010, Leg. S. Olberg.

Distribution. Relatively widespread in Europe (Weber 2011).

***Diplonevra abbreviata* (von Roser, 1840)**

Material. **AK** Frogn: Bonnebukta (EIS 28) (59.71821°N 10.71288°E), 1♂, 18 June–2 July 2010, Leg. O. Lønnve; **VE** Larvik: Karto (EIS 19) (59.02526°N 10.20567°E), 1♂, 1–22 August 2010, Leg. S. Olberg.

Distribution. Widespread in Central and Southern Europe (Weber 2011).

***Diplonevra florescens* (Turton, 1801)**

Material. **VE** Larvik: Karto (EIS 19) (59.02526°N 10.20567°E), 1♂, 1–22 August 2010, Leg. S. Olberg.

Distribution. Widespread in Europe (Weber 2011).

***Diplonevra funebris* (Meigen, 1830)**

Material. **Ø** Moss: Kubberød (EIS 19) (59.4313°N 10.61023°E), 1♂, 18 May–4 June 2010, Leg. A. Laugsand.

Distribution. Widespread in Europe (Weber 2011).

***Diplonevra pilosella* (Schmitz, 1927)**

Material. **Ø** Moss: Kubberød (EIS 19) (59.4313°N 10.61023°E), 1♂, 30 June–23 July 2010, Leg. A. Laugsand.

Distribution. Widespread in Western Europe (Weber 2011).

***Megaselia barbulata* (Wood, 1909)**

Material. **Ø** Hvaler: Prestegårdskogen (EIS 12) (59.02913°N 11.02303°E), 1♂, 20 May–4 June 2010, Leg. T.J. Olsen.

Distribution. Relatively widespread in Europe, known from Finland and Denmark in Fennoscandia (Weber 2011).

***Megaselia subconvexa* (Lundbeck, 1920)**

Material. **Ø** Hvaler: Prestegårdskogen (EIS 12) (59.02913°N 11.02303°E), 1♂, 20 May–4

June 2010, Leg. T.J. Olsen.

Distribution. Relatively widespread in Europe, known from Denmark in Fennoscandia (Weber 2011).

***Phalacrotophora berlinensis* Schmitz, 1920**

Material. **AK** Oslo: Lilleaker (EIS 28) (59.92064°N 10.63117°E), 1♂, 18 April–8 May 2011, Leg. Ø. Gammelmo & S. Olberg; **Ø** Moss: Kubberød (EIS 19) (59.4313°N 10.61023°E), 1♂, 30 June–23 July 2010, Leg. A. Laugsand.

Distribution. Widespread in Central and Northern Europe (Weber 2011).

***Woodiphora retroversa* (Wood, 1908)**

Material. **AK** Oslo: Lilleaker (EIS 28) (59.92064°N 10.63117°E), 1♂, 18 April–8 May 2011, Leg. Ø. Gammelmo & S. Olberg; **VE** Larvik: Karto (EIS 19) (59.02526°N 10.20567°E), 1♂, 1–22 August 2010, Leg. S. Olberg.

Distribution. Scattered records in Europe, known from Denmark in Fennoscandia (Weber 2011).

PIPUNCULIDAE

***Chalarus latifrons* Hardy, 1943**

Material. **VE** Larvik: Karto (EIS 19) (59.02526°N 10.20567°E), 2♀♀, 5–18 July 2010, Leg. S. Olberg; **Ø** Moss: Kubberød (EIS 19) (59.4313°N 10.61023°E), 1♀, 18 May–4 June 2010, Leg. A. Laugsand.

Distribution. Widespread in Northwestern Europe and North America. Doubtful reports from South America and East Palaearctic (Meyer 2011).

***Chalarus spurius* (Fallen, 1816)**

Material. **AK** Frogn: Bonnebukta (EIS 28) (59.71821°N 10.71288°E), 1♀, 21 May–18 June, Leg. O. Lønnve; 3♀♀, 18 June–2 July 2010; **VE** Larvik: Karto (EIS 19) (59.02526°N 10.20567°E), 2♀♀, 5–18 July 2010, Leg. S. Olberg, **Ø** Moss: Kubberød (EIS 19) (59.4313°N 10.61023°E), 1♀, 18 May–4 June 2010, Leg. A. Laugsand.

Distribution. Widespread in Europe (Meyer 2011).

***Tomosvaryella littoralis* (Becker, 1897)**

Material. AK Frog: Bonnebukta (EIS 28) (59.71821°N 10.71288°E), 1♀, 18 June–2 July 2010, Leg. O. Lønnve.

Distribution. Relatively widespread in Europe, known from Denmark and Sweden in Fennoscandia. (Meyer 2011).

MICROPEZIDAE

***Cnodacophora styliifera* (Loew, 1870)**

Material. Ø Moss: Kubberød (EIS 19) (59.4313°N 10.61023°E), 1♂, 30 June–23 July 2010. Leg. A. Laugsand

Distribution. Widespread in Northern Europe and Russia (Ozerov 2011).

STRONGYLOPHTHALMYIIDAE

***Strongylophthalmyia pictipes* Frey, 1935**

Material. AK Asker: Skustadfossen (EIS 28) (59.86733°N 10.46590°E), 1♂, 17 June–7 July 2009, Leg. G. Sævi & E. Rindal (Malaise trap).

Distribution. The family Strongylophthalmyiidae is represented by two species in Europe, *S. ustulata* (Zetterstedt, 1844) and *S. pictipes*, both considered rare. *S. pictipes* has a very restricted, eastern distribution in Europe, known from Finland and Russia only.

PSILIDAE

***Psila fimetaria* (Linnaeus, 1761)**

Material. VE Larvik: Stavern (EIS 19), 1♀, [no date], Leg. Siebke; HES Ringsaker: Helgøya (EIS 45), 1♀, [no date], Leg. Esmark; Ø Sarpsborg: Sandbakken, Vik (vestre) (EIS 20) (59.2364°N 11.1836°E + 200m), 1♂, 28 June 2005, Leg. T. J. Olsen; AK Asker: Skustadfossen (EIS 28) (59.86733°N 10.46590°E), 1♀, 16 July 2009, 1♂3♀♀, 17 June–7 July 2009, 1♂, 1 August 2009, Leg. G. Sævi & E. Rindal (sweep net and Malaise trap); Frog: Bonnebukta (EIS 28) (59.71821°N 10.71288°E), 1♂, 18 June–2 July 2010. Leg. O. Lønnve.

Distribution. Reported from Great Britain, Ireland (doubtful record), Belgium, Denmark, Lithuania, Germany, Czech Republic, Slovakia,

Hungary and Italy (Pape & Beuk 2011).

Remarks. The species is probably rather common in southern Norway, but have been mixed up with the closely related *P. merdaria* (Collin, 1944).

TEPHRITIDAE

***Campiglossa argyrocephala* (Loew, 1844)**

Material. AK Frog: Bonnebukta (EIS 28) (59.71821°N 10.71288°E), 1♂, 18 June–2 July 2010. Leg. O. Lønnve.

Distribution. Widespread in Europe (Merz & Korneyev 2011).

***Orellia falcata* (Scopoli, 1763)**

Material. Ø Hvaler: Brattestø (EIS 12) (59.05339°N 10.92394°E), 1♂, 1 June 2010, Leg. Ø. Gammelmo; Ørekroken (59.03248°N 11.01245°E), 2♂♂, 2 June 2010, Leg. Ø. Gammelmo.

Distribution. Widespread in Europa and Russia (Merz & Korneyev 2011).

LAUXANIIDAE

***Trigonometopus frontalis* (Meigen, 1830)**

Material. AK Oslo: Østensjø, Bogerudmyra, Kloptjern (EIS 28) (59.87736°N 10.83732°E) 1♀, 16 August 2009, 1♀, 18 August 2009, 1♂9♀♀, 10 September 2009, Leg. G Sævi.

Distribution. Widespread in wetlands in Europe; in Fennoscandia previously recorded from Denmark.

Remarks. This easily recognizable species, with its elongated head, appears to be rather common in a small patch of marshy grassland at Bogerudmyra, particularly in late summer and autumn, but it has also been recorded in early spring.

ANTHOMYZIDAE

***Anthomyza macra* Czerny, 1928**

Material. AK Oslo: Østmarka, Lutdalen (EIS 28) (59.8967°N 10.8746°E), 2♂♂, 26 June–5 July 1990, Leg. M. Falck (Malaise trap); Søndre Nordstrand, Ljanselva, "Urskogen" (59.8554°N

10.8174°E), 1♂, 25 June 2010, Leg. M. Steinert (Suction trap); 1♂, 8–19 May 2010, Leg. G. Søli & M. Steinert.

Distribution. The species is rather widespread in Europe, and in Fennoscandia recorded from Sweden and Finland (Rohacek 2006).

Remarks. Three species of Anthomyzidae are commonly listed from Norway, viz. *Paranthomyza nitida* (Meigen, 1838) (AK), *Anthomyza pallida* (Zetterstedt, 1838) (AK, BV, HES, VAY, HOI, HOY, MRY, NTY, NSY, TRI), and *A. socculata* (Zetterstedt, 1838) (VAY, TRY). The actual number of species, however, is higher as the Norwegian records listed in Roháček's monograph of the family seemingly have been overlooked (Rohacek 2006). According to this, the following species should be added: *A. collini* (Andersson, 1976) (AK, VE, HOY); *A. dissors* Collin, 1944 (VE, HEN, AAI, HOY), *A. elbergi* Andersson, 1976 (AK, VAY), *A. gracilis* (Fallén, 1823) (AK, Ø, VE, BØ, AAY, VAI, VAY, RY, HOI, HOY), *A. pleuralis* Czerny, 1928 (AK, NTI), *Fungomyza albimana* (Meigen, 1830) (AK), and *Stiphrosoma laetum* (Meigen, 1830) (HOY, STY). The record of *A. collini* in Akershus has not previously been published.

ASTEIIDAE

Asteia amoena Meigen, 1830

Material. AAY Birkenes: Birkeland, Nordåsen, (EIS 6) (58.3363°N 08.2400°E), 1♂, June 2003, Leg. S. Svendsen; AK Oslo: Søndre Nordstrand, Ljanselva, Liadalen (EIS 28) (59.8481°N 10.7927°E), 1♂, 5 September 2010, Leg. M. Steinert (Sweep net); Sørums, Sørliløkka, Dammyra (EIS 37) (60.00402°N 11.17517°E ±200m), 1♂, 17 May 2007, Leg. O. Sørlibråten.

Distribution. Widespread in Europe; in Fennoscandia recorded from Sweden and Denmark (Carles-Tolra 2011).

SPHAEROCERIDAE

Leptocera oldenbergi (Duda, 1918)

Material. AK Oslo: Søndre Nordstrand, Ljanselva, Liadalen (EIS 28) (59,84809°N 10,79341°E), 1♂, 8 May 2010, Leg. G. Søli.

Distribution. A widespread European species; in Fennoscandia recorded from Denmark and Sweden (Roháček 2011).

Pullimosina moesta (Villeneuve, 1918)

Material. AK Oslo: Søndre Nordstrand, Ljanselva, Liadalen (EIS 28) (59,84809°N 10,79341°E), 1♂, 8 May 2010, Leg. G. Søli; AAY Birkenes: Nordåsen (EIS 6) (58.3363°N 8.2400°E), 1♂, June 2003, Leg. S. Svendsen (Malaise-trap).

Distribution. A widespread European species; in Fennoscandia recorded from Denmark, Sweden and Finland (Roháček 2011).

DROSOPHILIDAE

Drosophila limbata von Roser, 1840

Material. AK Oslo: Søndre Nordstrand, Ljanselva, Liadalen (EIS 28) (59.8477°N 10.7917°E), 1♂, 19 May 2010, Leg. G. Søli & M. Steinert; Østensjø, Østensjøvannet, N Abildsø (EIS 28) (59.88982°N 10.82529°E), 12 September 2009, Leg. G. Søli (Sweep net).

Distribution. In Europe recorded from Finland (several records), Sweden (Skåne), Denmark (three records), the Baltic countries and from northwestern Russia (Baechli et al. 2004).

Hirtodrosophila oldenbergi (Duda, 1924)

Material. AK Oslo: Søndre Nordstrand, Ljanselva, Liadalen (EIS 28) (59,84809°N 10,79341°E), 1♂, 8 May 2010, Leg. G. Søli.

Distribution. Widespread in Europe, but not previously recorded in Fennoscandia (Baechli et al. 2004).

Hirtodrosophila trivittata (Strobl, 1893)

Material. TEY Porsgrunn, Brevik, Dammane (EIS 11) (59.05746°N 9.66883°E), 1♀, 29 April–25 May 2010, Leg. G. Søli (Malaise-trap).

Distribution. A widespread Palearctic species, more common in the south. In Fennoscandia previously recorded from Sweden (Småland) (Baechli et al. 2004).

***Scaptodrosophila deflexa* (Duda, 1924)**

Material. TEY Porsgrunn: Åsstranda (59.05794°N 9.66485°E; 40 masl), 1♂, 27 July–27 August 2010, Leg. G. Sølvi (Malaise trap).

Distribution. The species is widespread in Europa; in Fennoscandia recorded from Denmark, Sweden and Finland (Baechli et al. 2004).

***Scaptomyza teinoptera* Hackman, 1955**

Material. AK Oslo: Søndre Nordstrand, Ljanselva, Liadalen (EIS 28) (59.8477°N 10.7917°E), 1♂, 25 June 2011, Leg. M. Steinert (Suction trap); "Urskogen" (59.8554°N 10.8174°E), 2–14 June 2010, 1♀, Leg. G. Sølvi & M. Steinert (Malaise trap).

Distribution. The species has only found in NW Russia, in Latvia, Sweden (Norrbotten) and Finland (numerous records) (Baechli et al. 2004).

EPHYDRIDAE

***Nostima picta* Fallén, 1813**

Material. BØ Hurum: Holtnesdalen (EIS 28) (59.54092°N 10.42849°E; 141 masl.), 1♀, 9 June–7 July 2010, Leg. L.O. Hansen (Malaise trap).

Distribution. A widespread European species; in Fennoscandia recorded from Denmark, Sweden and Finland (Zatwarnicki 2011).

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

Material. AK Frogn: Bunnefjorden, Nettet, Bonn (EIS 28) (59.71660°N 10.71402°E), 7♂♂11♀♀, 5 May 2010, Leg. Sølvi & Steinert (Sweep net; suction trap); 4♂♂5♀♀, 7 August 2010, Leg. Sølvi (suction trap).

Distribution. Widespread in Europe; in Fennoscandia previously recorded from Sweden and Finland (Zatwarnicki 2011).

***Haloscatella dichæta* Loew, 1860**

Material. AK Frogn: Bunnefjorden, Nettet, Bonn (EIS 28) (59.71660°N 10.71402°E), 5♂♂5♀♀, 7 August 2010, Leg. G. Sølvi (suctiontrap).

Distribution. Widespread in Europe; in Fennoscandia previously recorded from Denmark, Sweden and Finland (Zatwarnicki 2011).

Discussion

With the present additions, the list of Norwegian Phoridae counts 101 species, Pipunculidae 42 species, Micropezidae 7 species, Strongylophthalmyiidae 2 species, Psilidae 18 species and Tephritidae 61 species, Lauxaniidae 44 species, Anthomyzidae 11 species, Asteiidae 2 species, Sphaeroceridae 101 species, Drosophilidae 47 species, and Ephydriidae 55 species (Artsportalen 2011).

Ottesen (1993) estimated the number of species to be 250 for Phoridae, 60 for Pipunculidae, 7 for Micropezidae, 1 for Strongylophthalmyiidae, 25 for Psilidae, 55 for Tephritidae, 40 for Lauxaniidae, 10 for Anthomyzidae, 4 for Asteiidae, 100 for Sphaeroceridae, 45 for Drosophilidae, and 100 for Ephydriidae. For several families we thus approach or even exceed these figures. The gap between the estimated and the actual number of species is most striking for Ephydriidae and, in particular, Phoridae. This may be explained by problems related to identification, and by lack of interest from Norwegian dipterists in general. Unquestionably, further sampling will reveal several new species, particularly if more rare and special types of habitats are included.

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