

The Norwegian species of Dolichopezinae, Ctenophorinae and *Angarotipula*, *Nephrotoma*, *Nigrotipula* and *Prionocera* (Tipulinae) (Diptera, Tipulidae)

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The distribution in Norway of the species in the following genera of Tipulidae is surveyed: *Dolichopeza* Curtis, 1825, *Ctenophora* Meigen, 1803, *Dictenidia* Brullé, 1833, *Phoroctenia* Coquillett, 1910, *Tanyptera* Latreille, 1804, *Angarotipula* Savchenko, 1961, *Nephrotoma* Meigen, 1803, *Nigrotipula* Hutson & Vane-Wright, 1969 and *Prionocera* Loew, 1844. Notes on the flight period and habitats are also given.

Key words: Dolichopezinae, Ctenophorinae, Tipulinae, *Angarotipula*, *Nephrotoma*, *Nigrotipula*, *Prionocera*, distribution, new records, Norway.

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Introduction

The distribution and biology of Tipulidae (Diptera), the long-palped crane flies, are relatively poorly studied in Norway in spite of their large densities in some habitats and their conspicuous size. A few areas have been examined in more details over several years, as Finse at Hardangervidda (Hofsvang 1974, Brodo 1995), Dovrefjell National Park (Hofsvang *et al.* 1987) and the inner part of the Oslofjord (Hofsvang *et al.* 1993, Hofsvang 2010).

The present paper summarizes the records of the Norwegian species of Dolichopezinae, Ctenophorinae and *Angarotipula* Savchenko, 1961, *Nephrotoma* Meigen, 1803 and *Nigrotipula* Hutson and Vane-Wright, 1969 (Tipulinae) (Diptera, Tipulidae), mostly from the period 1969 to 2015. Earlier published records are added to complement the distribution of the species in Norway. Information on the flight period, the

habitat and the regions of distribution of each species is given.

Material and methods

Records where an interval of two dates is given, refer to catches in a malaise trap. Single date records refer to use of sweep net, if no other information is added. If no name is given, the specimens have been collected by the author, stored in alcohol and kept in the author's collection. Specimens from several locations in the middle part of Norway are from studies by John O. Solem, NTNU and are stored in alcohol at the NTNU University Museum. Localities are given using the revised Strand-system (Økland 1986) and the EIS system (Endrestøl 2005). Nomenclature follows Oosterbroek (2016).

The following abbreviations have been used in the text: AA = A. Andersen, AB = A. Bakke,

coll. NIBIO, RF = R. Fardal, LOH = L.O. Hansen, OH = O. Hanssen, DWBJ = D.W.B. Johansen, TK = T. Kvamme, FM = F. Midtgaard, TRN = Tore R. Nielsen, PO = P. Ottesen, DR = D. Ruud, JOS = J.O. Solem, coll. NTNU University Museum, UMB = coll. University Museum of Bergen, WMS = W.M. Schøyen, coll. NIBIO.

The species

DOLICHOPEZINAE

Dolichopeza Curtis, 1825

One species in Norway.

Dolichopeza (Dolichopeza) albipes (Strøm, 1768)

STI, Selbu: Rotla (EIS 93), 14–21 June 1986, 1♂, leg. JOS.

According to Tjeder (1965), *D. albipes* has also been recorded from **HOY**, Os: Heggelandsdalen (EIS 31) and from **FN**, Porsanger: Banak (EIS 181).

Distribution and biology. *Dolichopeza albipes* is distributed in northern and temperate Europe (Oosterbroek & Lantsov 2011). The species is mostly found along river margins (references in Oosterbroek 2016), which is in accordance with the record at the river Rotla. Flight period: June–July.

CTENOPHORINAE

Oosterbroek *et al.* (2006) have published a key to all species of Ctenophorinae in the Western Palaearctic.

Ctenophora Meigen, 1803

Three species in Norway, all mentioned by Siebke (1877) from Oslo and Hedmark.

Ctenophora (Ctenophora) flaveolata (Fabricius, 1794)

AK, Asker: Sems vann (EIS 28), 30 May 1988, 1♂, leg. PO.

Distribution and biology. The distribution is limited to the West Palaearctic (Oosterbroek *et al.* 2006). Larvae live in decaying wood (references in Oosterbroek 2016). The male from Sems vann was observed flying close to a hollow oak tree.

Ctenophora (Ctenophora) guttata Meigen, 1818

VAY, Farsund: Lista fuglestasjon (EIS 1), 15 July 1996, 1♂, leg. AA.

Distribution and biology. A widespread Palaearctic species (Oosterbroek *et al.* 2006). Larvae live in decaying wood and classified as a saproxylic species (references in Oosterbroek 2016).

Ctenophora (Ctenophora) pectinicornis (Linnaeus, 1758)

AK, Asker: Sem (EIS 28), 21 June 1973, 1♀; **Ås**: Ås (EIS 28), no date, 1♀, leg. WMS; **VE**, Larvik: Orholt, Farris (EIS 19), 10 June 1981, 1♀, bark beetle trap, leg. RF; **AAV**, Grimstad: Hesnes, Sandum (EIS 6), 24 June 1972, 1♀.

Distribution and biology. Limited to the West Palaearctic (Oosterbroek *et al.* 2006). Larvae in decaying wood (references in Oosterbroek 2016). Flight period: June.

Dictenidia Brullé, 1833

One species in Norway.

Dictenidia bimaculata (Linnaeus, 1760)

AK, Asker: Sem (EIS 28), 14 July 1984, 1♂, leg. PO; **BØ**, Hurum: Ranvikholmen (EIS 19), July 1987, 1♀, light trap, leg. LOH; **VE**, Re: Langøya (EIS 19), 28 May–8 July 1991, 1♀, leg. LOH; **AAV**, Grimstad: Hesnes, Sandum (EIS 6), 18–26 July 2009, 1♀, 20 July–22 August 2013, 1♀; **NTI**, Høylandet: Skiftesåa (EIS 107), 1–9 July 1986, 1♀, leg. JOS.

Additional records of *D. bimaculata* from EIS 19 and 154 are given by Hofsvang *et al.* (1993). Tjeder (1965) states one record from **SFI**, Aurland: Otternes (EIS 51).

Distribution and biology. Distributed in Westpalaearctic and Eastpalaearctic. Larvae in decaying wood (references in Oosterbroek 2016). The male found at Sem was observed at a hollow oak. Flight period: June–August.

Phoroctenia Coquillett, 1910

One species in Norway.

Phoroctenia vittata vittata (Meigen, 1830)

This seems to be a rare species in Norway.

No new material is recorded. Both Lackschewitz (1935) and Mannheims (1951) list two localities from Northern Norway: Bjerkeng/Maukstad and Bardufoss/Maukstad, respectively.

Distribution and biology. Predominantly a species of temperate regions, known from south of 70°N in Europe, Westpalaeartic and Eastpalaeartic (Oosterbroek *et al.* 2006). Classified as a saproxylic species (references in Oosterbroek (2016)).

Tanyptera Latreille, 1804

Two species in Norway.

Tanyptera (Tanyptera) atrata atrata (Linnaeus, 1758)

AK, Asker: Semsvangen (EIS 28), medio June 1988, 1♂, leg. LOH; Bærum: Ostøya (EIS 28), 12–30 May 1984, 1♂, leg. FM, 30 May–10 June 1984, 4♀♀, leg. FM, 2 June 1984, 1♀, leg. FM, 16 June 1985, 1♂, leg. FM; Frogn: Håøya (EIS28), 16–27 June 1984, 1♀, leg. FM; Ås: Ås (EIS 28), April 1959, 1♀, leg. AB, 25 June 1981, 1♂, leg. FM; **HEN**, Stor-Elvdal: Atnaelv, Solbakken (EIS 63) 24 June–2 July 1984, 2♀♀, leg. JOS; Stor-Elvdal: Atnaelv, Vollen (EIS 63), 25 June–2 July 1986, 1♀, leg. JOS; **VE**, Re: Langøya (EIS 19), 28 May–8 July 1991, 1♀, leg. LOH; **MRI**, Sunndalsøra: Oppdølstranda (EIS 85), 10 June–9 July 1985, 1♀, leg. OH.

Additional records of *T. atrata atrata* from EIS 28, 35, 85 and 178 have been published by Hofsvang *et al.* (1993). The species is also reported from **ON**, Dovre (EIS 51) and **SFI**, Årdal: Øvre Årdal (EIS 71) (Tjeder 1965). Lackschewitz (1935) mentions five additional localities from Northern Norway, but these are omitted here since they are difficult to pinpoint.

Distribution and biology. This species is reported from most of the European countries and in Eastpalaeartic (Oosterbroek *et al.* 2006). Larvae live in fresh and decaying trees (references in Oosterbroek 2016). One male reported here (Ås 1981) hatched from dead *Betula* sp. Flight period: May–July.

Tanyptera (Tanyptera) nigricornis nigricornis (Meigen, 1818)

Ø, Moss: Kambo (EIS 19), 26 May 1980, 1♀, leg. TK; **AK**, Enebakk: Enebakk (EIS 28), 3 June 1985, 1♀, yellow pan trap, leg. AA; **ON**, Dovre: Atnaelv, Skranglehaugan (EIS 71), 25 June–2 July 1986, 1♂, leg. JOS; **BØ**, Hurum: Filtvedt (EIS 28), 2 June 1982, 1♂, window trap, leg. FM, 6 June 1983, 1♀, leg. FM; Hurum: Tofteholmen (EIS 19), 1–28 May 1991, 1♀, leg. LOH; **VE**, Re: Langøya (EIS 19), 16 May 1990, 1♀, leg. LOH, 28 May–8 July 1991, 1♀, leg. LOH; Sande: Kommersøya (EIS 19), 2–28 May 1991, 1♀, leg. LOH; **TRI**, Storfjord: Parasdalen (EIS 155), 2 July 1982, 1♂, leg. FM.

Mannheims (1951) mentions *T. nigricornis nigricornis* from Norway, but no location is given.

Distribution and biology. Distributed predominantly limited to Westpalaeartic, parts of Eastpalaeartic (Oosterbroek *et al.* 2006). Larvae develop in dead wood of various broadleaved trees (references in Oosterbroek 2016). Flight period: May–July.

TIPULINAE

Angarotipula Savchenko, 1961

One species in Norway.

Angarotipula tumidicornis (Lundström, 1907)

A rare species. Lackschewitz (1935) reports this species from two locations in Northern Norway; **TRY**, Tromsø: Tromsø (EIS 162) and **FV**, Alta: Jotkajavre (EIS 173).

Distribution and biology. Westpalaeartic and Eastpalaeartic. A mire-dwelling species (references in Oosterbroek 2016).

Nephrotoma Meigen, 1803

Fourteen species of the genus *Nephrotoma* have so far been recorded in Norway of which four species seem to have a distribution along the southern coast. For a key to the western palaeartic species, see Oosterbroek (1979c).

Nephrotoma aculeata (Loew, 1871)

AK, Oslo: Marienlyst (EIS 28), 8 August 2015, 1♂; Oslo: Sognsvannsbekken, Vindern, (EIS 28), 17 July–1 August 2014, 4♂♂, 1–17 August 2014, 1♂; Oslo: Munkerud (EIS 28), 10 August 1981,

1♂, 13 August 1981, 1♂, 27 July 1985, 2♂♂; Frogn: Drøbak, (EIS 28), 11–12 August 1980, 1♂, light trap, leg. RF; Ås: NMBU, Frydenhaug (EIS 28), 30 July–6 August 1996, 1♂, 6–13 August 1996, 1♂, 13–20 August 1996, 1♂; HEN, Stor-Elvdal: Atnaelv, Solbakken (EIS 63), 18–25 July 1986, 1♂, leg. JOS, 25 July–2 August 1986, 2♂♂, leg. JOS, 2–8 August 1986, 3♂♂, leg. JOS, 8–16 August 1986, 4♂♂, leg. JOS; BØ, Hurum: Filtvedt (EIS 28), June–July 1985, 1♂, leg. FM; Hurum: Tofteholmen (EIS 19), 31 July–1 September 1991, 2♂♂, leg. LOH; VE, Re: Langøya (EIS 19), 8 July–2 August 1991, 6♂♂, leg. LOH, 2 August–1 September 1991, 1♂, leg. LOH; AAY, Grimstad: Hesnes, Sandum (EIS 6), 20 July 1979, 1♂, 12–18 July 2009, 1♂, 18–26 July 2009, 1♂, 26 July–2 August 2009, 1♂, 7–22 August 2009, 3♂♂.

Additional records from EIS 6, 19 and 28 have been published by Hofsvang *et al.* (1993). Tjeder (1965) reported *N. aculeata* from ON, Lom: Lom (EIS 70), Lackschewitz (1935) from NSY, Sømna: Sømnes (EIS 110) and Oosterbroek (1978) from NSI, Grane: Laksfors (EIS 115).

Distribution and biology. Distributed in Westpalaeartic and Eastpalaeartic. Adults are found in various habitats, often in association with riverine sediments (references in Oosterbroek 2016) which is in accordance with the malaise trap catches from Sognsvannsbekken and Atnaelv. Flight period July–August.

Nephrotoma analis (Schummel, 1833)

AK, Oslo: Sognsvannsbekken, Vindern (EIS 28), 17 July–1 August 2014, 2♂♂; Oslo, Marienlyst (EIS 28), 11 July 2010, 1♂; Oslo: Munkerud (EIS 28), 5 July 1977, 1♂, 11 June 1978, 1♂, 24 July 1979, 1♂, 5 July 1984, 1♂; Ås: NMBU, Frydenhaug (EIS 28), 25–31 July 1995, 1♂, 31 July–8 August 1995, 1♂, 8–18 August 1995, 1♂, 8–15 July 1997, 1♂; BØ, Nedre Eiker: Mjøndalen, Miletjern (EIS 28), primo July 1988, 1♂, light trap, leg. DR; AAY, Grimstad: Hesnes, Sandum (EIS 6), 13 July 1984, 1♂1♀ (in copula), 17 July 1984, 1♂, 13–20 July 2013, 3♂♂, 22–26 August 2013, 1♂, 24 July 2014, 1♂.

Additional records of *N. analis* from EIS 6, 19, 28 and 85 have been published by Hofsvang *et al.* (1993). According to Oosterbroek (1979c) the

northernmost locality in Scandinavia of *N. analis* is NSY, Sømna: Sømnes (EIS 110) as reported by Lackschewitz (1935).

Distribution and biology. Distributed in Westpalaeartic and Eastpalaeartic. Several references in Oosterbroek (2016) state that *N. analis* is a species of exposed riverine sediments habitats as the records from Sognsvannsbekken. However catches from Munkerud, Ås NMBU and Hesnes indicate that the species also can be found in habitats as gardens and deciduous forests. Flight period June–August.

Nephrotoma appendiculata appendiculata (Pierre, 1919)

AK, Frogn: Drøbak (EIS 28), 15–16 June 1980, 1♂, light trap, leg. RF, 1–2 July 1980, 1♂, light trap, leg. RF; Ås: NMBU (EIS 28), 5 June 1984, 1♂, 29 May 1985, 1♂, 11 June 1985, 1♂, 14 June 1985 1♂, 5 June 1987, 1♂1♀ (in copula), 3 June 1988, 1♂, 5 June 1988, 1♂1♀ (in copula), 31 May 1990, 1♂1♀ (in copula); Ås: NMBU, Frydenhaug (EIS 28), 18–25 June 1992, 1♂, 16–20 June 1994, 1♂ 22–30 June 1995, 8♂♂, 30 June–7 July 1995, 1♂, 10–17 June 1997, 3♂♂, 17–24 June 1997, 1♂, 24 June–1 July 1997, 1♂, 1–8 July 1997, 1♂; Enebakk: Haugstein (EIS 29), 24 June 1998, 1♂, leg. AA; VE, Re, Langøya (EIS 19), 28 May–8 July 1991, 3♂♂, leg. LOH.

Additional records of *N. appendiculata appendiculata* from EIS 19 and 28 have been published by Hofsvang *et al.* (1993) and Hofsvang (2010).

Distribution and biology. Widespread in Westpalaeartic (Oosterbroek 2016). Larvae live in open grassland (references in Oosterbroek 2016). Flight period: May–July.

Nephrotoma cornicina cornicina (Linnaeus, 1758)

AK, Oslo: Sognsvannsbekken, Vindern (EIS 28), 17 July–1 August 2014, 1♂, 1–17 August 2014, 1♂; Oslo: Marienlyst (EIS 28), 8 August 2015, 2♂♂; Oslo: Munkerud (EIS 28), 9 August 1977, 1♂, 11 August 1977 1♂, 18 August 1977, 1♂, 13 August 1978, 1♂, 1 August 1980, 1♂, 26 July 1982, 2♂♂, 5 July 1984, 1♂, 24 July 1984, 1♂, 26 July 1984, 1♂, 27 July 1984, 1♂, 29 July

1984, 1♂, 31 July 1984, 1♂, 5 August 1984, 1♂, 26 August 1984, 1♂, 8 August 1985, 1♂; Frog: Drøbak (EIS 28), 13–14 August 1980, 1♂, light trap, leg. RF; Ås: NMBU, Frydenhaug (EIS 28), 7–13 August 1992, 1♂, 19–21 July 1994, 1♂, 21–22 July 1994, 1♂, 22–25 July 1994, 1♂, 25–28 July 1994, 1♂, 28 July–1 August 1994, 3♂♂, 1–4 August 1994, 2♂♂, 31 July–8 August 1995, 1♂, 23–30 July 1996, 1♂, 30 July–6 August 1996, 1♂, 6–13 August 1996, 3♂♂, 13–20 August 1996, 5♂♂, 20–27 August 1996, 1♂, 22–29 July 1997, 8♂♂, 29 July–5 August 1997, 4♂♂; **HES**, Ringsaker: Nes, Huse (EIS 45), 5 July 1984, 1♂; **AA**, Grimstad: Hesnes, Sandum (EIS 6), 27 July 1984, 1♂1♀ (in copula), **NTI**, Stjørdal: Stjørdal (EIS 92), 12 August 1980, 1♂.

Additional records of *N. cornicina cornicina* from EIS 28 have been published by Hofsvang *et al.* (1993). Tjeder (1965) recorded the species from **ON**, Vågå: Vågå (EIS 71) and Oosterbroek (1978) from **NTI**: Stjørdal: Stjørdalshalsen (EIS 92).

Distribution and biology. Nearctic, Westpalaeartic, Eastpalaeartic, Oriental. The habitats include deciduous forests and along rivers (references in Oosterbroek 2016). The specimens listed above have been collected from agricultural fields, gardens, deciduous forests and along streams. Flight period July–August.

Nephrotoma crocata crocata (Linnaeus, 1758)

Ø, Moss: Jeløy, Røre (EIS 19), 12 June 1984, 1♂, leg. LOH; **AA**, Arendal: Tromøy (EIS 6), 30 June 1957, 1♀, leg. AB; Grimstad: Hesnes, Sandum (EIS 6), 23 May–23 June 1988, 1♀.

Siebke (1877) mentions *N. crocata crocata* from several locations in South Norway north to **STI**, Oppdal: Kongsvoll (EIS 79).

Distribution and biology. Westpalaeartic, Eastpalaeartic. The species is found in a variety of habitats often associated with sandy soil (references in Oosterbroek 2016). Flight period: June.

Nephrotoma dorsalis (Fabricius, 1781)

AK, Oslo: Sognsvannsbekken, Vindern (EIS 28), 3–10 July 2014, 2♂♂, 10–17 July 2014, 1♂; Oslo: Ljanselven, Munkerud (EIS 28), 22 June–5

July 2015, 6♂♂, 5–19 July 2015, 2♂♂, 19 July–1 August 2015, 2♂♂; Ås: NMBU, Frydenhaug (EIS 28), 7–12 July 1995, 1♂; **HEN**, Stor-Elvdal: Atnaelv, Solbakken (EIS 63), 17–24 June 1986, 1♂, leg. JOS, 24 June–2 July 1986, 5♂♂, leg. JOS, 9–17 July 1986, 1♂, leg. JOS; **VE**, Re: Langøya (EIS 19), 28 May–8 July 1991, 2♂♂, leg. LOH, 8 July–2 August 1991, 3♂♂, leg. LOH, 2 August–1 September 1991, 1♂, leg. LOH; **AA**, Grimstad: Hesnes, Sandum (EIS 6), 13–20 July 2013, 1♂; **RY**, Sandnes: Sandnes (EIS 7), 28 July 1985, 1♂, leg. AA; **STI**, Selbu: Rotla (EIS 93), 17–24 July 1989, 1♂, leg. JOS, 24 July–1 August 1989, 2♂♂, leg. JOS, 1–7 August 1989, 1♂, leg. JOS, 14–22 August 1989, 1♂, leg. JOS.

Additional records of *N. dorsalis* from EIS 6 have been published by Hofsvang *et al.* (1993).

Distribution and biology. Westpalaeartic, Eastpalaeartic. The species is found in meadows and gardens, but is also associated with exposed riverine sediments habitats (references in Oosterbroek 2016). The records listed above include catches in malaise traps placed along rivers or streams at the following localities: Sognsvannsbekken, Ljanselven, Atnaelv and Rotla. Flight period: June–August.

Nephrotoma flavescens (Linnaeus, 1758)

AK, Ås: NMBU (EIS 28), 21 July 1978, 1♂1♀ (in copula); Ås: NMBU, Frydenhaug (EIS 28), 16–23 July 1992, 2♂♂, 7–12 July 1995, 15♂♂, 12–25 July 1995, 11♂♂, 25 July–3 August 1995, 1♂, 16–23 July 1996, 2♂♂, 1–8 July 1997, 7♂♂, 8–15 July 1997, 23♂♂, 15–22 July 1997, 15♂♂, 22–29 July 1997, 13♂♂, 29 July–5 August 1997, 4♂♂; Frog: Drøbak (EIS 28), 28–29 June 1980, light trap, leg. RF; **HES**, Ringsaker: Nes, Berg (EIS 45), 5 July 1984, 1♂; Ringsaker, Nes, Mølstad (EIS 45), 5 July 1984, 1♂; **HEN**, Follidal: Atnaelv, Vollen (EIS 72), 25 June–2 July 1986, 15♂♂, leg. JOS; **OS**, Østre Toten: Rogneby (EIS 45), 4 July 1984, 1♂; **BØ**, Nedre Eiker: Mjøndalen, Miletjern (EIS 28), primo July 1988, 1♂, leg. DR; Hurum: Toftelholmen (EIS 19), 28 May–7 July 1991, 1♂, leg. LOH; **VE**, Re: Langøya (EIS 19), 28 May–8 July 1991, 5♂♂, leg. LOH, 8 July–2 August 1991, 7♂♂, leg. LOH; Sande: Kommersøya (EIS 19), 28 May–9 July 1991, 3♂♂, leg. LOH, 9 July–2

August 1991, 13♂♂, leg. LOH; **MRI**, Sunndal: Sunndalsøra, Oppdølstranda (EIS 85), July–August 1985, 2♂♂, leg. OH.

Additional records of *N. flavescens* from EIS 19, 28 and 85 have been published by Hofsvang *et al.* (1993) and Hofsvang (2010). Tjeder (1965) lists *N. flavescens* from **RY**, Klepp: Orre (EIS 7) and Oosterbroek (1978) from **OS**, Lillehammer: Lillehammer (EIS 54).

Distribution and biology. Nearctic, Westpalaeartic. Habitat is dry grassland and often along rivers (references in Oosterbroek 2016), cf. the present records at the river Atnaelv. Flight period: June–August.

Nephrotoma lundbecki lundbecki (Nielsen, 1907)

STI, Oppdal: Kongsvoll, Blesbekken (EIS 79), 7–14 July 1981, 1♂, leg. JOS, 1200m a.s.l. (Hofsvang *et al.* 1987). This is the only Norwegian specimens known to the author, however, Mannheims (1951) refers to one record (as *Pales orbitalis*) from Isfjord, Northern Norway, a locality difficult to establish today.

Distribution and biology. Nearctic, Westpalaeartic, Eastpalaeartic. In arctic ecosystems, primarily in cold, exposed and open habitats (references in Oosterbroek 2016). Flight period: July.

Nephrotoma lunulicornis (Schummel, 1833)

AK, Oslo: Sognsvannsbekken, Vindern (EIS 28), 15–26 June 2014, 1♂; Oslo: Marienlyst (EIS 28), 8 August 2015, 1♂.

Oosterbroek (1979b) reports *N. lunulicornis* from **OS**, Lillehammer: Lillehammer (EIS 54) and Lackschewitz (1935) from **TRI**, Målselv: Råvatn (EIS 154).

Distribution and biology. Westpalaeartic, Eastpalaeartic. Often found in habitats along river banks (references in Oosterbroek 2016). One of the two males reported in here was found along a stream (Sognsvannsbekken), the other in open grassland. Flight period June–August.

Nephrotoma pratensis pratensis (Linnaeus, 1758)

A rare species in Norway. Three pinned specimens are stored in the entomological

collection at NIBIO, Ås. No locations or dates are given except that the specimens were collected by T.H. Schøyen (1♂1♀) or W.H. Schøyen (1♀), both former State Entomologists. According to Siebke (1877) *N. pratensis pratensis* is recorded from several locations in and close to Oslo. Lundström (1913) mentions the species from Hvalerøyene.

Distribution and biology. Westpalaeartic, Eastpalaeartic (Oosterbroek 2016). Larvae often found in sandy soils (Oosterbroek 1979a).

Nephrotoma quadrifaria quadrifaria (Meigen, 1804)

AK, Oslo: Ljanselven, Munkerud (EIS 28), 22 June–5 July 2015, 12♂♂, 5–19 July 2015, 1♂.

Hofsvang *et al.* (1993) listed *N. quadrifaria quadrifaria* from EIS 6 and EIS 19.

Distribution and biology. Westpalaeartic. Habitats. Woodland, gardens, also along small rivers (references in Oosterbroek 2016). The malaise trap at Ljanselven was placed next to the stream. Flight period: May–August.

Nephrotoma scurra (Meigen, 1818)

HEN, Folldal: Atnaelv, Vollen (EIS 71), 25 June–2 July 1986, 10♂♂, leg. JOS, 2–8 July 1986, 26♂♂, leg. JOS, 9–18 July 1986, 2♂♂, leg. JOS, 18–26 July 1986, 2♂♂, leg. JOS; **BØ**, Hurum: Tofteholmen (EIS 19), 31 July–1 September, 1991, 1♂, leg. LOH; Nedre Eiker: Mjøndalen, Miletjern (EIS 28), medio July 1988, 1♂, light trap, leg. DWBJ; **VE**, Re: Langøya (EIS 19), 2 August–1 September 1991, 1♂, leg. LOH; **AAY**, Grimstad: Hesnes, Sandum (EIS 6), 19 July 1985, 2♂♂, **STI**, Selbu: Rotla (EIS 93), 21–28 June 1986, 1♂, leg. JOS, 28 June–5 July 1986, 1♂, leg. JOS, 5–12 July 1986, 1♂, leg. JOS, 12–20 July 1986, 2♂♂, leg. JOS, 20–27 July 1986, 1♂, leg. JOS, 17–24 July 1989, leg. JOS, 1♂, 24 July–1 August 1989, 2♂♂, leg. JOS.

Hofsvang *et al.* (1993) and Hofsvang (2010) have listed additional records for *N. scurra* from EIS 6 and EIS 28.

Distribution and biology. Westpalaeartic, Eastpalaeartic. Habitats: often associated with sandy soils (references in Oosterbroek 2016). Rather frequent along two rivers in Norway: Atnaelv and Rotla. Flight period: June–August.

***Nephrotoma submaculosa* Edwards, 1928**

The only record of *N. submaculosa* in Norway has been published by Tjeder (1965): **RY**, Klepp: Orre (EIS 7).

Distribution and biology. Westpalaeartic. Found at costal sand dune sites and sandy river banks (see references in Oosterbroek 2016).

***Nephrotoma tenuipes* (Riedel, 1910)**

AK, Oslo: Sognsvannsbekken, Vindern (EIS 28), 10–17 July 2014, 1♂; Oslo: Marienlyst (EIS 28), 11 July 2015, 1♂, 20 July 2015, 1♂; Oslo: Munkerud (EIS 28), 14 July 1982, 1♂, 29 July 1982, 1♂, 30 July 1982, 1♂, 16 August 1982, 1♂, 24 July 1984, 1♂, 5 August 1984, 1♂, 11 July 1985, 1♂, 21 July 1985, 1♂, 24 July 1985, 1♂, 21 June 1986, 1♂, 12 July 1988, 2♂♂; Frogn: Drøbak (EIS 28), 13–14 August 1980, 1♂, leg. RF, 16–17 August 1980, 2♂♂, leg. RF; **HEN**, Stor-Elvdal: Atnaelv, Solbakken (EIS 63), 2–9 July 1986, 1♂, leg. JOS, 25 July–2 August 1986, 3♂♂, leg. JOS; **VE**, Re: Langøya (EIS 19), 28 May–8 July 1991, 1♂, leg. LOH, 8 July–2 August 1991, 5♂♂, leg. LOH, 2 August–1 September 1991, 5♂♂, leg. LOH; **STI**, Selbu: Rotla (EIS 93), 28 June–5 July 1986, 2♂♂, leg. JOS, 5–12 July 1986, 1♂, leg. JOS, 17–24 July 1989, 1♂, leg. JOS, 24 July–1 August 1989, 1♂, leg. JOS; **NSI**, Grane: Vefsna, Fagerli (EIS 115), 19 September 1974, 1♂, leg. JOS.

Additional records from EIS 19, EIS 28 and EIS 85 have been published by Hofsvang *et al.* (1993) and Hofsvang (2010). Tjeder (1965) published *N. tenuipes* from **ON**, Vågå: Vågå (EIS 71) and Oosterbroek (1978) from **NSY**, Brønnøy: Nevernes (EIS 114), **NSI**, Rana: Mo i Rana (EIS 123) and from **NNØ**, Narvik: Narvik (EIS 140).

Distribution and biology. Westpalaeartic, Eastpalaeartic. The species is usually found in moist habitats (Oosterbroek 1978 and references in Oosterbroek 2016). The specimens recorded here are often collected along streams and rivers (Sognsvannsbekken, Atnaelv and Rotla). Flight period: June–August.

Nigrotipula Hutson and Vane-Wright, 1969

This genus has only one species recorded from Norway.

***Nigrotipula nigra nigra* (Linnaeus, 1758)**

VE, Re: Langøya (EIS 19), 28 May–8 July 1991, 1♂, leg. LOH.

Additional records for *N. nigra nigra* from EIS 28 have been published by Hofsvang *et al.* (1993) and Hofsvang (2010). Siebke (1877) reports the species from several locations in South Norway north to **STI**, Oppdal: Kongsvoll (EIS 79).

Distribution and biology. Westpalaeartic, Eastpalaeartic. Found in wet habitats e.g. along rivers and streams (references in Oosterbroek 2016).

***Prionocera* Loew, 1844**

Five species of *Prionocera* are found in Norway. Brodo (1987) gives a review of the genus.

***Prionocera chosenicola* Alexander, 1945**

One record from Norway: **FØ**, Sør-Varanger: Grenseset (EIS 168), 19 July 1969 (Brodo 1994).

Distribution and biology. Nearctic, Westpalaeartic, Eastpalaeartic. Habitats: peatland (references in Oosterbroek 2016).

***Prionocera pubescens* Loew, 1844**

This species has been reported from **HOI**, Samnanger: Ådlandsvingene and Haugen (EIS 40) (Tjeder 1965, Brodo 1987). Mannheims (1952) mentions specimens from **AK**, Skedsmo: Lillestrøm (EIS 29). Flight period: May.

Distribution and biology. Nearctic, Westpalaeartic, Eastpalaeartic. Habitats: bogs, associated with *Sphagnum* (references in Oosterbroek 2016).

***Prionocera serricornis* (Zetterstedt, 1838)**

The species is reported from **HOI**, Ulvik: Finse (EIS 42) (Hofsvang 1974, Brodo 1995). The species has also been reported from **FV**, Alta: Jotkajavre (EIS 173) (Lachschewitz 1935, Tjeder 1948).

Distribution and biology. Westpalaeartic, Eastpalaeartic. A mire-dwelling species (references in Oosterbroek 2016) Flight period: June–July.

***Prionocera subserricornis* (Zetterstedt, 1851)**

AK, Ås: NMBU, Frydenhaug (EIS 28), 11–14 June 1993, 1♂, **HEN**, Follidal: Atnaelv, Vollen (EIS 72), 18–25 June 1986, 1♂, leg. JOS.

Hofsvang *et al.* (1987) published additional records of *P. subserricornis* from EIS 79. Brodo (1987) examined *P. subserricornis* from **HOI**, Eidfjord: Vivali, Veigdalen (EIS 32).

Distribution and biology. Nearctic, West-palaearctic, Eastpalaearctic. Habitats: wetlands, bogs (references in Oosterbroek 2016). Flight period: June–July.

***Prionocera turcica* (Fabricius, 1787)**

RY, Klepp: Øksnedvad (EIS 7), 7 August 1984, 1♂, leg. TRN; Klepp: Øksnedvad tjern (EIS 7), 17 August 1984, 1♂, leg. TRN; **NNØ**, Evenes: Evenes lufthavn (EIS 139), 22 May 1984, 1♂1♀, leg. TRN; **FI**, Kautokeino: Kautokeino (EIS 157), 24 June 1984, 1♂, leg. TRN.

Additional records of *P. turcica* from EIS 28 are published by Hofsvang *et al.* (1993). Lackschewitz (1935) lists the species from four localities in northern Norway, however only two of them can be identified; **TRY**, Karlsøy: Torsvåg (EIS 171) and **FV**, Alta: Jotkajavre (EIS 173). Tjeder (1965) reported *P. turcica* from **TRY**, Tromsø: Tromsø (EIS 162) and **TRI**, Kåfjord: Olderdalen (EIS 163). Brodo (1987) published specimens from **HOI**, Eidfjord: Vivali, Veigdalen (EIS 32) and **NSI**, Fauske: Fauske (EIS 131).

Distribution and biology. Nearctic, West-palaearctic, Eastpalaearctic. Habitats: bogs and other wetlands, often with *Sphagnum* (references in Oosterbroek 2016). Flight period: May–August.

Discussion

This study presents the distribution of 29 out of 96 species of Tipulidae so far published from Norway. The records summarized here represent rather few localities and probably reflect a fragmented picture of distribution. Parts of South Norway such as the western coast and east along the Swedish border and most of North Norway should be studied in more details to give a more complete overview of the Norwegian Tipulidae.

The Tipuloidea of Finland has recently been thoroughly studied, and 113 species of Tipulidae have been recorded (Salmela 2011). In Finland the genus *Prionocera* includes nine species compared to five reported from Norway. The four species not recorded in Norway have all been collected from the northernmost Finnish county with border to Norway. With new studies in the inner parts of Troms and Finnmark, the number of species of *Prionocera* in Norway can be expected to increase.

Species such as *N. pratensis* and *A. tumidicornis* are included here based on old records. More studies are needed to confirm if these species are still represented in the Norwegian fauna. *Angarotipula tumidicornis* is found in mires in Finnish Lapland (Salmela 2011), so studies of mires in North Norway should probably rediscover this species. More information is also needed for the seven Norwegian species in Ctenoporidae which all have larvae living in fresh or decaying wood. Some of these species seem to be rare. One, *P. vittata vittata*, is included in the Norwegian Red List for Species as vulnerable (Henriksen & Hilmo 2015).

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