

Atlas of the Lauxaniidae (Diptera, Brachycera) in Norway

LITA GREVE

Greve, L. 2009. Atlas of the Lauxaniidae (Diptera, Brachycera) in Norway. *Norw. J. Entomol.* 56, 75–116.

The distribution of the forty-three species of the family Lauxaniidae (Diptera, Brachycera) in Norway is presented on EIS grid maps. Supplementary information on the total distribution range of each species and on flight periods is given. This survey is based on a material of 43 species, a total of 11803 specimens. *Minettia tabidiventris* (Rondani, 1877) and *Sapromyza setiventris* (Zetterstedt, 1847) are recorded new to Norway, and *M. fasciata* (Fallén, 1826) is deleted from the Norwegian faunal list.

Key words: Lauxaniidae, Diptera, Brachycera, Norway, distribution.

Lita Greve, Zoologisk Museum, University of Bergen, P.O. Box 7800, NO-5020 Bergen, Norway.
E-mail: lita.greve.jensen@bm.uib.no

Introduction

It is estimated that the fly family Lauxaniidae contains more than 1500 species world-wide (Papp & Shatalkin 1998), the number in the Palaearctic alone is probably higher than 300 species. Around 150 species have been recorded from the western Palaearctic region, still the knowledge of this family is partly fragmentary. In the later years some lauxaniid genera have been revised, and more work on several genera is going on. An excellent key to the European genera is presented by Merz (2002).

The Lauxaniidae are fairly small and medium-sized flies varying in colour. Most Norwegian species have clear wings, some have spotted and a few partly clouded wings. For further description see Papp & Shatalkin (1998). The larvae of this family, when described, are saprophagous or mycetophagous, and the larvae play an important role in the decomposition of leaf litter.

The Lauxaniidae are abundant acalyptrate Diptera in forest ecosystems in the temperate and tropical parts of the world, and can also be collected in open habitats like cornfield and meadows.

Most adults Palaearctic lauxaniids are found in damp woods (Papp & Shatalkin 1998), and many also in herbage and scrubs boarding along edges of forests. Several species of the family Homoneurinae tolerate dry climate like sand dunes, sand beaches etc. Reddersen (1994, 1995) reports several species from cereal fields. Few have been collected in alpine areas, but at least two Norwegian species are distributed here, see below.

The aim of this paper is to update the knowledge of the distribution of the family in Norway. The major part of the material, 11803 specimens, has been collected or sorted out by the author in the last ten to fifteen years, and thus the dominating part of the material is deposited in Zoological Museum, University of Bergen. The oldest material from Norway, collected by J. Zetterstedt, is in the Naturhistoriska Museéet in Lund, Sweden, and this material has been examined. Some old material is in Zoological Museum, University of Oslo, see Siebke (1877). A small part of the material is in private collections. For some species only males can be determined, there is therefore a considerable material of females from the following species not included here:

Lyciella illota, *L. mihalyii*, the three species in the genus *Pseudolyciella* and *Sapromyza zetterstedti*.

Zetterstedt (1847) was the first author to mention lauxaniids from Norway. His Norwegian material has been examined and some of his records have been revised (Greve 2006). Siebke (1877) listed twentytwo species of lauxaniids from Norway, his material deposited in the Zoological Museum, University of Oslo. Siebke's material has been revised and only nineteen species are present. Some of the material mentioned by Siebke (1877) is not present in ZMO today. Only localities where material has been checked, are listed below.

Very few of other published records from Norway can be checked as no material exists today in collections. Some lauxaniid species were mentioned by Storm (1907) and Strand (1903, 1914), but these records can not be confirmed.

There are very few records mentioned in the literature from Northern Norway. Bidekap (1901) listed only two species, both only with references to literature, viz. Zetterstedt's records of *Lauxania cylindricornis* (Fabricius, 1794) from Bjørkvik and *Cnemacantha muscaria* (Fallén, 1823) from Dyrøy.

A useful work for determination of species of lauxaniids in Fennoscandia and Denmark is the article by Remm & Elberg (1979) which illustrates the genitalia of both males and females of species in the Baltic states. However, this publication has no keys, it is illustrations and text to the illustrations only. Some Norwegian species listed are not included.

A fairly new and very useful key [in Russian] is the one by Shatalkin (2000). Shatalkin's key covers many genera and species and the genitalia is well illustrated. His key has been basis for the translating into English by Schacht et al. (2004), including some corrections.

For lists of this family from Fennoscandia and Denmark see Hackman (1980) who lists members of this family from Finland, today his list needs

some updating. Merz et al. (2001) present an updated list from Denmark.

The family Lauxaniidae is not mentioned in the list by Frey (1918) from Arkangelsk, and no species are listed from Iceland in Olafsson (1991), one species *Calliopum aeneum* is listed from the Faroes (Lyneborg 1968)

The nomenclature follows Fauna Europaea, Chandler (1998, 2000), and Merz et al (2001). However, the genus name *Lyciella* (Collin, 1948) is used here, not *Meiosimyia* Hendel, 1925 .

The majority of the material has probably been collected with insect nets, but net is only listed on some occasions. Other methods of collection are noted below. Abbreviations used are: PT (Pitfall trap); LT (Light trap); MT (Malaise trap); CT (Collision trap); WT (Window trap); J/B (jarring/beating from vegetation); YT (water trap with yellow trays). Earlier published material is only included when material have been seen and verified.

Incorporated material is loans from several museums, abbreviations: Lund Museum, ZMO (Zoological Museum, University of Oslo), RMZ (Helgeland Museum, Nat. Hist. Dept.), TSZD (Tromsø Museum), VM (Vitenskapsmuséet, Trondheim). Some material is in private collections.

The species

HOMONEURINAE

The subfamily Homoneurinae can be recognized by the small black spines along the costa which reach the apex of vein R4+5. There is only one genus of Homoneurinae recorded from Fennoscandia and Denmark, viz. the genus *Homoneura* van der Wulp, 1891.

The species of *Homoneura* seem to be very rare in Norway, and the total material of three species constitutes not even 1,0% of the total amount of the Lauxaniidae material. For a key to

palaeartic species of *Homoneura*, see Shatalkin (1995, 1996). Note should be made of the fact that the distribution of the genus *Homoneura* is not restricted to Southern Norway only. In the material (ZMB) there is one heavily damaged female *Homoneura* specimen from FV Alta: Kåfjord, Møllersnes collected in MT between 21 June–4 August 1995. This specimen can not be determined further.

***Homoneura consobrina* (Zetterstedt, 1847)**
(Map 1)

Total material: 2♂♂.

Number of localities: 2.

Remarks: *H. consobrina* was recorded from Norway for the first time from **AK** Oslo: Hovedøya and **TEY** Porsgrunn: Porsgrunn by Greve & Merz (2003), both records from July. These two are still the only records of this species

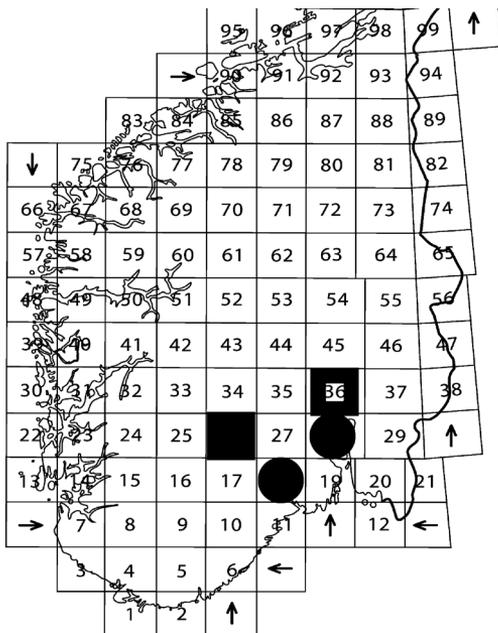
known from the country. *H. consobrina* must therefore be considered a rare species in Norway. The wings of this species is hyaline without spots. *H. consobrina* has been recorded from Sweden (Andersson, pers. comm.) and from Denmark (Merz et al. 2001). On Öland it is recorded from Stora alvar, a steppe-like area (Persson 1983).

***Homoneura tenera* (Loew, 1846)** (Map 1)

Total material: 1♂1♀.

Number of localities: 1.

Remarks: *H. tenera* was recorded from Norway for the first time from **TEI** Tinn: Håkanes by Greve (2000a). This record is still the only record known from the country. *H. tenera* must therefore be considered a rare species in Norway. Wings have R4+5 with apical spot and one additional spot. *H. tenera* is recorded from Finland by Hackman (1980). It is not recorded from Sweden (Andersson, pers. comm.), nor from Denmark (Merz et al. 2001).



Map 1. Distribution of *Homoneura consobrina* (Zetterstedt, 1847) (circle), *Homoneura tenera* (Loew, 1846) (square) and *Homoneura sp.* ("notata" -complex) (open square).

***Homoneura sp.* ("notata" -complex)** (Map 1)

Total material: 2♀♀

Remarks: No males were collected, only two females, in a Malaise trap between 1 June and 3 July 2004 at **BØ** Ringerike: Sokna, Hovland farm, and they were determined to a species near *H. notata* (Fallén, 1820) as described by Merz (2003). The wings have 6 brownish spots, at both cross-veins, at tip of veins R4+5 and M1+2 and two spots on R4+5 between R-M and the apical spot on the radial veins 3 and 4. Merz (2003) lists *H. subnotata* Papp, 1978 as a synonym of *H. notata* (Fallén, 1820). The Malaise trap at Hovland was run from 30 May until 11 October 2004, but no additional specimens of *Homoneura* were collected. Another Malaise trap situated 20 m from the this locality was collecting from 7 May until 2 September 2005, but no *Homoneura* specimens were found in the material.

LAUXANIINAE

The subfamily Lauxaniinae can be recognized by the small black spines along the costa which diminish in size and stop half way between the apices of radial vein 2+3 and radial vein 4+5. All

the Norwegian genera with exception *Homoneura* (see above) belong to this subfamily.

***Aulogastromyia* Hendel, 1925**

***Aulogastromyia anisodactyla* (Loew, 1845)**
(Map 2)

Total material: 8♂♂14♀♀ (6♂♂10♀♀ earlier published). **Number of localities:** 2.

Records: AK Frog: Håøya, MT, 22 July–18 August 1984, 1♂, Nesodden: Fagerstrand, LT, 21–22 September 2003, 1♂, 9–30 August 2004, 4♀♀.

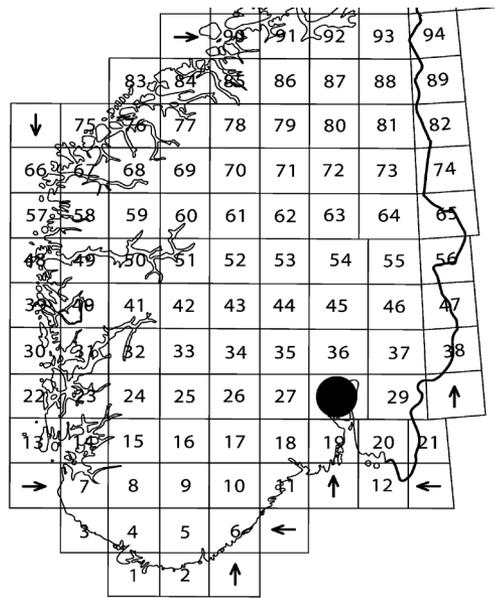
Remarks: *Aulogastromyia anisodactyla* is a yellow lauxaniid, the third antennal segment/first flagellomere is partly black at apex. The males are easily recognized by the enlarged outer claw on the tarsus of the third pair of legs. The 7th segment's sternit and tergite of the females are characteristic, females, however, lack the enlarged claws of the males. *A. anisodactylus* was recorded as new to Norway by Greve (2000a), and lighttrapped material was recorded by Greve & Kobro (2004) from one locality at Nesodden, Fagerstrand between the years 1994–2002. In addition during the years 2003–2005 1♂ and 4♀♀ have been light-trapped at this locality. One male was collected in a Malaise trap from another locality, also in the Oslofjord, viz. Håøya. One female from RY Eigersund: Hornesvann netted on 8 July 1986 might belong to this species, but it is very weakly chitinized, and therefore not listed here. *A. anisodactyla* must be considered a rare species in Norway since much collection has been done in the Oslofjord area, and here it has been collected from only two localities. The material from Nesodden shows that *A. anisodactyla* is phototactic. *A. anisodactyla* was at Fagerstrand collected from August until October, thus the flight period is in autumn.

***Calliopum* Strand, 1928**

Three species of the genus *Calliopum* have been collected in Norway. All three are blackish species with a metallic glow.

***Calliopum aeneum* (Fallén, 1820)** (Map 3)

Total material: 65♂♂58♀♀ 2 specimens (3♂♂7♀♀ 1 specimen earlier published)



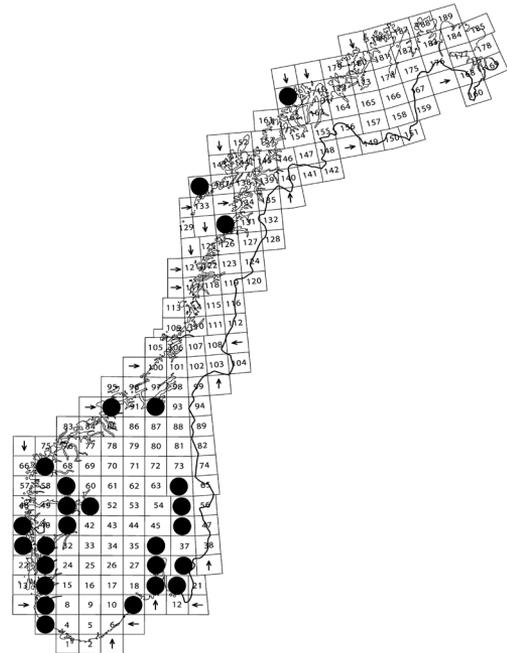
Map 2. Distribution of *Aulogastromyia anisodactyla* (Loew, 1845).

Number of localities: 63 (9 earlier published)

Records: Ø Onsøy: Rauer, 28–29 July 1989, 2♂♂2♀♀; Sarpsborg: Maugesten, 29 June 1992, 1♂, near lake Tune, 28 August 1991, 1♀, the Vister area, 25 August 1992, 1♂. AK Bærum: Ostøya, 31 May 1984, 1 specimen; Nesodden: Fagerstrand, LT, 11–12 October 1994, 1♂1♀, 2–3 August 1995, 1♂, 3–4 October 1995, 1♀, 24–25 October 1995, 1♀; Oslo: Hengsengen, 1 June 1984, 1♀, Hovedøya, 5 July 1988, 1♂; Ås: Kirkejordet, WT, 24 June 1985, 3♂♂2♀♀, 12 September 1985, 1♀. HES Ringsaker: Brumunddal, Dæli, 28 June 1991, 3♂♂, Furnes, Sandvold, 10 July 1991, 1♂. HEN Åmot: Rena S, 17 July 1987, 1♂, Ytre Rendal: Solbakken, 24 July 1951, 1♀ (ZMO). BØ Hurum: Mølen, 15 July 1989, 2♂♂2♀♀, Ramvikholmen, 12 August 1990, 1♂2♀♀; Nedre Eiker, Mjøndalen, Miletjern, MT, July 1994, 1♀ (ZMO); Ringerike: Hønefoss NØ, 8 September 1980, 1♀, Sokna center, at vicarage, 23 September 2005, 1♂1♀, 21 June 2006, 7♂♂6♀♀ VE Horten: Karljohansvern, 9 July 1985, 3♂♂; Sandefjord: Sandefjord, July 1846, 1♀, leg. Siebke (ZMO); Stokke: Akersvannet, net, 29 June 2000, 1♀, Melsomvik, 28 June 1♂1♀; Tjøme: Kjære, net, 11 August 1966, 1♀, Kløvningen, 27 June 1984, 2♂♂, Treidene, 19 July 1983, 1♂; Tønsberg: Frodåsen, 19 July 1982, 2♂♂1♀; Våle, Langøya, 3 July 1990, 1♂. AAY Risør: Stamsøykilen, Kiiljordet, 3♂♂1♀. RY Finnøy: Sevheim, LF, 9–16 June 1992, 1♀; Hå:

Brusand, 4 August 1960, 1♀, Oгна, 27 June 1962 1♀, 8 July 1986, 1♂1♀, MT, 21 June–17 July 1996, 2♂♂; Klepp: Orresanden, Skårtangen, 6 June 1998, 4♂♂1♀, Skasheim, 2 August 1963, 1♂, Vik, 1♀. **RI** Forsand: Frafjord, 16 August 2000, 1♂; Hjelmeland: Mosnes, J/B, 11 August 1982, 1♂, 5 October 1982, 1♀. **HOY** Bergen: Munkebotntjern, 3 July 1984, 1♂, Neevengården, 4 July 1982, 1♂, Bergen (Fana) Lønningen, 28 September 1989, 1♂, Nordre Skagetjern, 1 July 1990, 2♂♂2♀♀; Etne: Molnes, 28 June 1985, 1♀; Fusa: Sundvor, 24 June 1989, 1♂1♀; Øygarden: Skogsøysåta, 3 July 1984, 1♂. **HOI** Eidfjord: Simadalen, 10 August 1981, 1♀. **SFY** Eid: Sårheim, 24 July 1981, 2♂♂1♀; Jølster, Kjosnes, 3 July 1983, 1♂1♀, Skei, 3 July 1983, 2♀♀, 1 km. S of Skei, 4 July 1983, 1♀. **SFI** Leikanger: Gjerde, J/B, 11 August 1982, 1♀; Lærdal: Lærdalsøyri, 24 July 1981, 1♀. **MRY** Ulstein: Vonheim, 21 July 1957, 1♀, det. L. Lyneborg. **STI** Trondheim: Lade, 2 July 1968, 2♀♀, Ranheim, 24 July 1990, 1♂. **NSY** Bodø: Hernes, 8 August 1987, 1♂. **NNV** Leknes: Stamsund, 28 July 1979, 1♂. **TRY** Karlsøy: Nord Fugløy, 4 August 1925, 1♀ (TSZD). Nord Kvaløy, 24 July 1934, 1♂ (TSZD).

Remarks: *Calliopus aeneum* is here reported new to HES, HEN, BØ, VE, AAY, RI, HOY, HOI, SFY, SFI, STI, NSY, NNV and TRY. *C. aeneum* was first recorded from Norway by Siebke (1877) from some localities in Ø and AK, and from the island Smøla in MRY. Ardø (1957) recorded *C. aeneum* from Klepp in RY. *C. aeneum* is a widespread species in Norway which here is shown to be distributed also in parts of Northern Norway. *C. aeneum* is widespread in Scandinavia and is recorded from the British Isles and from the Faroes (Lyneborg 1968). Most of the records are in coastal areas or in fjord areas, few represent the inner parts of the country. No records are from subalpine or alpine areas. Ardö (1957) included *C. aeneum* as a part of the marine shore dune ecosystem. *C. aeneum* is, however, in the literature recorded from different types of localities see Martinek (1996a, 1996b). Persson (1983) presents records from Stora Alvar (a steppe-like formation) på Öland in the Baltic. In Norway *C. aeneum* is recorded from wet areas along lakes, in edges of forest, in herbage etc. Reddersen (1994, 1995) reports it from cereal fields and some of the material listed above has been collected from similar localities. Collection has been done with nets, Malaise traps, light



Map 3. Distribution of *Calliopus aeneum* (Fallén, 1820).

traps, jarring/beating etc. *C. aeneum* is as far as the number of localities goes, the most common species of the genus *Calliopus* in Norway. The number of specimens collected at each locality is usually low. The majority of records are from July and August, some are from October. A few records represent early summer, one from late May, some from early and late June.

Calliopus elisae (Meigen, 1826) (Map 4)

Total material: 81♂♂56♀♀ (4♂♂6♀♀ earlier published)

Number of localities: 34 (6 earlier published).

Records: Ø Halden: Prestbakke, 1 August 1992, 1♂; Hvaler, Kirkøy, Ørekroken, 12 July 1992 (ZMO); Sarpsborg: Tune, at lake Tune SE, 25 June 1992, 1♀ (T.J. Olsen PC); Marker: Ørje, 5 August 2009, 1♂; Moss: Jeløy, Ahlbybukt, 17 July 1986, 1♂. **AK** Oslo: Hovedøya, 12 July 1985, 2♂♂1♀, 5 July 1988, 1♂1♀; Eidsvoll: Eidsvoll, 9 July 1988, 1♂; Enebakk: Nordre Bøler, 1 July 2000, 1♂4♀♀. **HES** Elverum: Baanerud, net, 25 & 27 June 2005, 3♂♂1♀, W of Øksetsaga, net, 29 June 1998, 17♂♂8♀♀; Ringsaker: Furnes, Sandvold, 10 July 1991, 1♂1♀. **HEN** Åmot: Rena, Renås, 17 July 1987, 2♂♂5♀♀, near Åsta bridge, net, 29 June 1998, 2♂♂. **BØ** Nedre Eiker:

Mjøndalen, Miletjern, LT, July 1988, 1♂, Ultimo July 1988, 1♂; Ringerike: Sokna, Hovland, net, 3 September 2004, 4♂♂1♀, Sokna near railway bridge, net, 23 June 2005, 1♂, 20 July 2005, 8♂♂11♀♀, Sokna, at vicarage, MT, 23 June–30 July 2005, 3♂♂2♀♀, net, 3 July 2005, 1♂. **VE** Larvik: Brunlanes, Mølen, 14 July 1989, 1♂; Nøtterøy: Strengdalsvann, 5 July 1983, 1♀; Stokke: Akersvannet, 29 June 2000, 4♂♂3♀♀, Melsomvik, net, 1 July 2000, 5♂♂2♀♀; Tjøme: Kløvningen, 27 June 1984, 1♂, Moutmarka S, 24 July 1982, 2♀♀, Treidene, 5 July 1984, 1♂, Verdens ende, Helgerød, 28 June 1984, 5♂♂2♀♀; Tønsberg: Slotts fjellet, 18 July 1982, 1♂1♀. **TEY** Porsgrunn: Porsgrunn, 9 July 1986, 1♂. **AAY** Arendal: Tromøya, Hove, 27 June 2003, 1♂; Vegårdshei: Kviftekilen, net, 29 June 2003, 1♂.

Remarks: *Calliopum elisae* is here reported new to HES, HEN, BØ, TEY and AAY. *Calliopum elisae* was first recorded from six localities in SE Norway by Greve & Skartveit (1998). New material confirms that the distribution is clearly South-Eastern in Norway, and *C. elisae* is not uncommon in this area as more than 120 specimens have been collected from 33 localities. There are no subalpine or alpine records. In Sokna center, near the railwayline nearly 20 specimens were netted, otherwise the number of specimens at each locality are low. The flight period is from late June until early September, but nearly all specimens have been collected in late June and

July. *C. elisae* is probably euryoc, reported from many different localities in Central-Europe, see Martinek (1996a, 1996b). Arð (1957) records it from dune heath in Sweden.

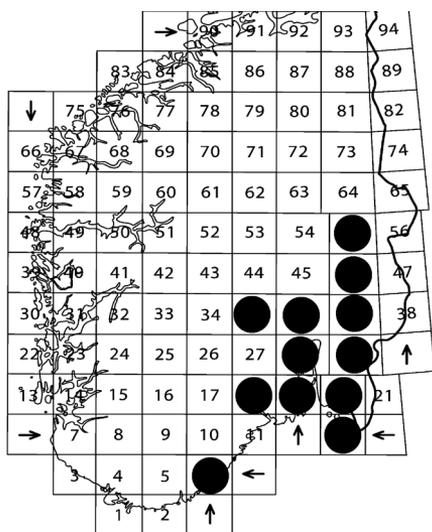
***Calliopum simillimum* (Collin, 1935) (Map 5)**

Total Material: 6♂♂6♀♀ (2♂♂2♀♀ earlier published).

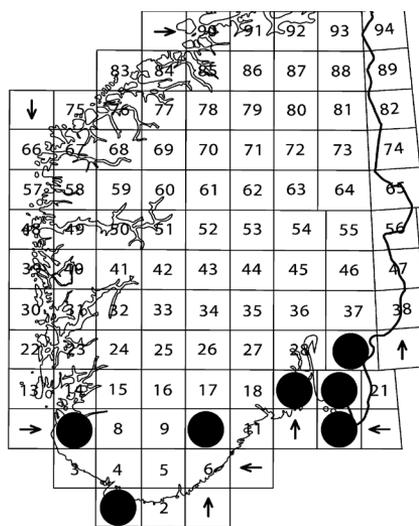
Number of localities: 10 (2 earlier published).

Records: Ø Hvaler: Arekilen, MT, August–September 2000, 1♀; Moss: near Rødsund bridge, net, 26 June 2003, 1♂. **VE** Borre: Falkenstein, net, 30 June 2000, 1♀; Sem: Robergmyra, 7 July 1983, 1♂; Tjølling: Ula, 21 July 1984, 1♂. **AAY** Vegårdshei: Kvifte, Kvifteskog, net, 26–27 June 1989, 1♀. **VAY** Lindesnes: Jørgenstad, near Stusvik, 21 July 2002, 1♂. **RY** Forsand: Frafjord, net, 26 September 2000, 1♀.

Remarks: *Calliopum simillimum* is here reported new to VE, AAY, VAY and RY. *C. simillimum* was reported new to Norway from two localities in Østfold and Akershus provinces by Greve & Skartveit (1998). Here the main area of distribution is shown to be in SE Norway, exceptions are two localities further west in VAY and RY. The total number of localities are ten, the number of specimens is low as only twelve specimens have been collected in all. *C. simillimum* must be considered fairly rare, and the distribution is scattered. Much collection has been done in



Map 4. Distribution of *Calliopum elisae* (Megjan, 1826).



Map 5. Distribution of *Calliopum simillimum* (Collin, 1935).

the areas where *C. simillimum* is distributed, but the total number of records are low, and *C. simillimum* is the rarest of the three species of the genus *Calliopum* hitherto recorded from Norway. Martinek (1996a, 1996b) shows *C. simillimum* to be euryoc in Central Europe. Here it is also less common than the two other *Calliopum* species mentioned here. Several of the localities are near lakes, rivers, in mosses etc. viz. in very wet areas, and also from forest areas. The flight period in Norway seems to be from late June until late September, but only one specimen was collected September. There are no subalpine or alpine records.

Cnemacantha Macquart, 1835

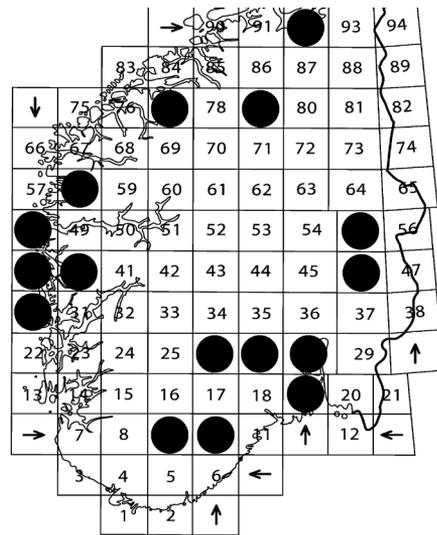
Cnemacantha muscaria (Fallén, 1823) (Map 6)

Total material: 9♂♂79♀♀ 3 specimens (1♂12♀♀ 1 specimen earlier published).

Number of localities: 25 (6 earlier published).

Records: **AK** Asker: Bjørkås, MT, 2 July–24 August 1995, 3♀♀; Frogn: Håøya, MT, 19 May–3 June 1984, 1♀, 29 June–27 July 1984, 1♀; Oslo: Hengsenga, net, 1 June 1984, 1♀. **HES** Elverum N: Baanerud, net., 24 June 2005, 1♀, 25 & 27 June 2005, 1♀; Ringsaker: Furnes, Sandvold, net, 24 June 1991, 1♀. **BØ** Røyken: Hyggen, Kinnartangen, MT, 28 May–6 July 1991, 1♂; Hurum: Tofteholmen, MT, 1–2 May 1991, 4♂♂1♀. **BV** Gol: Engjan, MT, 18 June–5 July 1982, 1♂1♀. **VE** Sande: Kommersøya, MT, 28 May–1 July 1991, 5♀♀. **AAV** Vegårsdshoi: Kvifte, Kvifteskog, 26–27 June 1989, 1♀. **AAI** Bygland: Heddevika, MT, 10 June–1 July 1998, 10♀♀, 1–29 July 1998, 10♀♀, 29 July–27 August 1998, 1♀. **HOY** Bergen, Breiviknesset, 10 June 1989, 1♀, Fløyen, 18 June 1985, 2♀♀, Bergen (Fana) Mildevann, MT, 19 June–27 July 2005, 1♀, Bergen (Åsane) Kråmyrane, MT, 27 June 1999, 1 specimen. **HOI** Kvinnherad: Rosendal guesthouse, garden, MT, 12–15 June 2006, 1♀. **SFY** Hyllestand: Botnen, MT, 21 June–21 July 1999, 1♂; Jølster: near Jølstertunet, Vassenden, MT, 6–11 July 1998, 1♀. **MRI** Norddal: Fjæra, MT, 28 June–18 July 1993, 12♀♀, 18 July–11 September 1993, 3♀♀. **STI** Oppdal: Lønset, MT, 12 June–13 August 1992, 1♀. **NTI** Sjørdal: Vikan, MT, 25 May–28 June 1990, 1♂4♀♀, 14 July–20 August 1990, 3♀♀1 specimen.

Remarks: *Cnemacantha muscaria* is here reported new to HES, BV, VE, AAV, AAI, HOY, SFY, MRI, STI and NTI. The genus *Cnemacantha* has only one species recorded from Europe. *C.*



Map 6. Distribution of *Cnemacantha muscaria* (Fallén, 1823).

muscaria is a fairly small, blackish, bodylength around 2–3 mm lauxaniid with wings strongly infuscated along the costal border. The first Norwegian record is Zetterstedt's from Nordland, Dyroy. (Zetterstedt 1848) and Siebke (1877) refer to Zetterstedt's record, and listed no new records themselves. One female lauxaniid specimen collected from Norway by Zetterstedt today in the Lund museum, Sweden, might very well be a *C. muscaria*. This specimen is damaged, however, and therefore this record is not listed above. Zetterstedt's record from Dyroy was not included by Greve (1997) who reported additional records of *C. muscaria* from SE Norway. New material presented here include records north to Northern Trøndelag province, and Zetterstedt record from NNV Sortland is thus eventually the northernmost in the country. Nearly ninety specimens have been collected from twentyfour localities and *C. muscaria* must be considered fairly common in southern Norway. Because of the small size and the dark colour this species can probably often be overlooked among malaise-trapped material. *C. muscaria* seems to have a flight period in spring and summer, no records from late autumn. No subalpine or alpine records are known, the one from Fjæra at 550 masl the highest elevation.

The majority of the material has been caught in Malaise traps, and *C. muscaria* has been caught in traps opened from May until August. The number of females caught is much higher than males during the whole season.

Lauxania Latreille, 1804

Three species of *Lauxania* have been recorded from Norway, all three are dark, blackish species. Three morphologically different subgenera are at present placed in the genus *Lauxania* s.l., and further studies are necessary to confirm whether these three groups form a monophyletic group (Greve & Merz 2003). Two of the three Norwegian species, viz. *Lauxania cylindricornis* and *L. minor*, have both characteristic antennae as the first flagellomere is lengthened, at least four times as long as deep, and they are therefore easily to recognize among other lauxaniids. The third species, however, *L. albomaculata* (subgenus *Czernushka*) has a short first flagellomere and white, short plumose arista. All three are dark coloured lauxaniids.

Lauxania albomaculata Strobl, 1909 (Map 7)

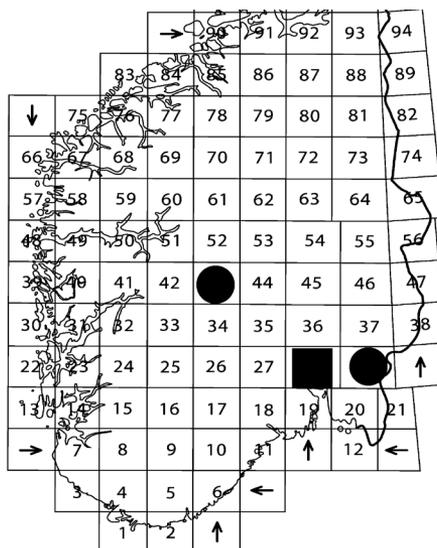
(Subgenus *Chernushka* Shatalkin, 2000)

Total material: 1♂2♀♀ (1 ♀ earlier published).

Number of localities: 3 (1 earlier published).

Records: BØ Drammen: Underlia, MT, May 1994, 1♂. BV Ål: Storeteigen: MT, 18 July–18 Aug. 2000, 1♀.

Remarks: *Lauxania albomaculata* is here recorded new to BØ and BV. *L. albomaculata* has a short first flagellomere around twice as long as broad, head without produced frontofacial angle, anterior fronto-orbital seta inclined and hind tibia without dorsal preapical seta. It is a small, dark lauxaniid with clear wings, and therefore easy to overlook in Malaise trapped material compared to most of the other lauxaniids. *L. albomaculata* was first recorded new to Norway from Lørenskog: Aamodtdammen, Akershus province by Greve & Merz (2003), and this record was also the first from Fennoscandia and Denmark. *L. albomaculata* is considered rare also in Central Europe where it has been recorded from Austria, Switzerland and the Czech Republic only (Merz 2002). The locality Storeteigen in Ål community, inner parts of Buskerud province, at approximately 500 masl



Map 7. Distribution of *Lauxania albomaculata* Strobl, 1909 (circle and square) and *Lauxania minor* Martinek, 1974 (square).

represents inland climate compared to the two localities from the lowlands of SE Norway.

Lauxania minor Martinek, 1974 (Map 7)

Subgenus *Callixania* Papp, 1978

Total material: 1♂ earlier published.

Number of localities: 1.

Remarks: *L. minor* has same the characteristic extended postpedicel as *L. cylindricornis* (see below). To separate these species, see Martinek (1974). *L. minor* was first recorded from Norway by Greve (2006) from Bjørkås, Asker in Akershus province. This is the only record from Norway, and also from Fennoscandia and Denmark.

Lauxania cylindricornis (Fabricius, 1794)

(Map 8)

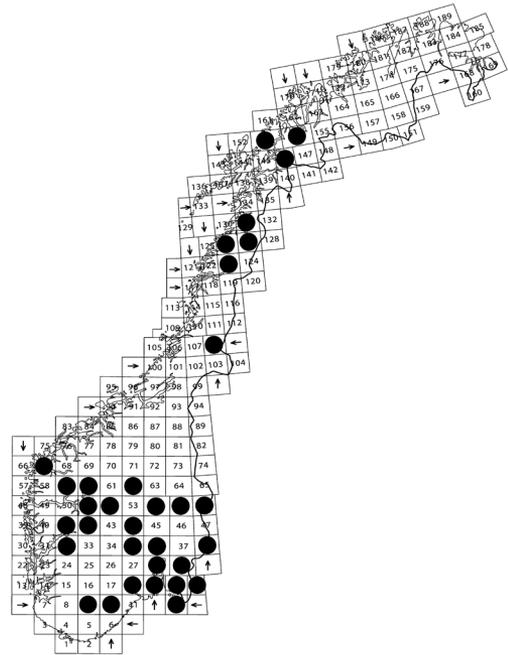
Total material: 182♂♂160♀♀ 2 specimens (4♂♂3♀♀ earlier published)

Number of localities: 77 (7 earlier published)

Records: Ø Aremark: Boen setra, 1 June 1991, 1♂, 29 June 1991, 1♂ (T.J.Olsen p.c.); Halden: Prestbakke, MT, June 1988, 2♂♂; Sarpsborg: Råkil i Tune, 24 June 1991, 1♀, Råde, Tasken, MT, 6–24 June 1995, 1♂, 1 specimen; Skjeberg: Blåkollen, 21 May 1992, 1♀; Hvaler: Asmaløy, Huser, 30 May 2004, 1♀ (ZMO). AK Lørenskog: Losby, CT, 27 May–27

June 1991, 1♀; Oslo: Hovedøya, 5 July 1988, 1♂1♀, 18 July 1989, 1♂. **HES** Elverum: Baanerud, net, 24, 25 & 27 June 2005, 3♂♂5♀♀, Elverum N, 14–17 June 1996, 7♂♂2♀♀, W of Enga, net, 19 June 1997, 4♂♂, at Sagtjernet, net, 15–16 June 1996, 3♂♂4♀♀, Speiderøya, 20 June 1997, 3♀♀, W of Øksetsaga, net, 29 June 1998, 2♂♂3♀♀; Ringsaker: Næroset, Gurivangen, 10 July 1991, 1♂. **HEN** Trysil: Torrberget, 30 June 1998, 1♀; Åmot: Borregårdsvelta, 29 June 1998, 4♂♂10♀♀, Deset N., Strømstad, 24–25 June 2000, 1♀, Ilsås, July 1987, 5♂♂6♀♀, Rena, 7 July 1987, 1♂1♀, Rena, S, 17 July 1987, 8♂♂5♀♀, at Åsta bridge, 29 June 1998, 6♂♂4♀♀, Skjelmoen S, 18 June 1997, 8♂♂5♀♀, Skjomen S, 16 June 1996, 1♂2♀♀, Østersjøen 18 July 1987, 7♂♂3♀♀. **ON** Nord-Fron: Harpefoss, 14 July 1981, 1♂; Vestre Slidre: Veset, Veset seter, 9–21 July 1998, 1♀ (ZMO). **BØ** Krødsherad: Bukollplassen, 30 May 2004, 1♀; Ringerike: Sokna, 23 June 2005, 1♂1♀. **BV** Gol: Engjan, MT, 2–26 August 1982, 1♀, Engene E, 31 May 2004, 1♀; Rollag: Tråen saga, MT, August 1994, 1♀. **VE** Sem: Robergsmyra, 7 July 1983, 1♂; Stokke, near Gjennestadvann, 7 July 1983, 1♂; Tjøme: Tjøme, 27 July 1966, 1♂. **TEI** Sauherad: Hørte, 1 July 1995, 1♂. **AAY** Vegårdshei: Kvifte, Kvifteskog, 26 June 1989, 8♂♂5♀♀. **AAI** Bygland: Heddevika, MT, 11 June–1 July 1998, 1♀. **HOI** Eidfjord: Hjølmødal, 320 masl, 14 July 1967, 1♀. **SFY** Gløppen: Vereide, 30 June 1989, 1♂; Jølster: Lunde, 300 masl, 22 May 1990, 1♀. **SFI** Aurland: Aurland, 23 July 1981, 2♂♂, Flåm, 26 July 1981, 1♂, Lunde, 22 July 1981, 1♂, Tero, 25 July 1981, 1♂; Lærdal: Tønjum, 1 June 2003, 2♀♀; Luster: Fortundalen, Drægni, Ruskesethaugen, MF, 480 masl, 21 May–26 June 2004, 1♀. **NTI** Lierne: Kveskallen, MT, 7–26 June 1986, 1♂. **NSI** Beiarn: Kvål, 19 July 1981, 1♂, Moldjord, 6 August 1982, 1♀ 1 specimen; Rana: Svartvasshei, 22 June 1983, 2♂♂2♀♀ (RMZ 2840); Saltdal: Rognan, 23 July 1988, 1♂. **NNØ** Sørfold: Røsvik, 3 July 1923, 1♂ (TSZD 7572), 10 July 1923, 1♀ (TSZD 7574). **TRY** Torsken: Grunnfarnes, net, 21 June 2004, 1♀, Kaperdalen, at the Same-Museum, net, 22 June 2004, 63♂♂50♀♀, Sifjordura, net, 22 & 24 June 2004, 1♂4♀♀; Tranøy: Gammelseter, 23 June 2004, 3♀♀. **TRI** Balsfjord: Lillevann, 12 July 1943, 2♂♂2♀♀ (1♂1♀ in copula) (TSZD 7573, 7575, 7576); Målselv: Dividalen, 18 July 1987, 3♀♀ (ZMB) 2♀♀ (TSZD), Frihetsli, Vetlebunges, 18 July 1987, 1♀, Grunnes, 25 June 2004, 1♂4♀♀, Gullhav near Storakka, net, 25 June 2004, 1♂, Kongsvoll-tunet, at Lille Rostavann, 24 June 2004, 16♂♂9♀♀, Råvatn, net, 24 June 2004, 3♂♂1♀♀, Rundhaug, net, 24 June 2004, 1♀, Sandquarry near Teigen, net, 25 June 2004, 1♂.

Remarks: *Lauxania cylindricornis* is here recorded as new to Ø, ON, BØ, BV, VE, TEI,



Map 8. Distribution of *Lauxania cylindricornis* (Fabricius, 1794).

AAY, AAI, HOI, SFY, SFI, NTI, NSI, NNØ, TRY & TRI. *L. cylindricornis* has the first flagellomere enlarged at least four times as long as deep, and the scape and pedicel are yellowish. This character is shared with *L. minor* Martinek. Because of the special antennae *L. cylindricornis* is easy to recognize in the field. To separate *L. cylindricornis* from the closely related *L. minor* see Martinek (1974). *L. cylindricornis* was first recorded from Norway from Bjerkvik, Narvik in Nordland province by Zetterstedt (1847). One female is still in Zetterstedt's collection in Lund. Siebke (1877) listed it from the provinces AK, OS, HES and HEN. Bidentkap (1900) refers to Zetterstedt's record, but lists no additional material. No additional records from northern Norway have later been published. Here additional unpublished material in Tromsø Museum is included. *L. cylindricornis* is widely recorded from parts of southern Norway, but few records are from more coastal districts, most from inner parts. There is only one record from the Trøndelag provinces, while there are several

further north from the provinces Nordland and Troms. During one week's collecting late June in not particularly fine weather on the island Senja, outer Troms province and in Målselv, inner Troms province, *L. cylindricornis* was collected on nearly all locations. At a meadow close to the Same-Museum in Kaperdalen, island Senja, 113 specimens were collected, many more could have been netted if there had been more time. *L. cylindricornis* will probably also be collected in Finmark province in the future, and must be considered one of the most common lauxaniids in Northern Norway. There are probably also areas in southern Norway where *L. cylindricornis* is fairly common – see all the records from the Rena area in northern Hedmark province. There are no alpine or subalpine records in the material. The flight period starts early in May, most records from June and July, a few only from August.

Lyciella (Meiosimyza) Collin, 1948

The autor here follows Fauna Europaea using the genus name *Lyciella* Collin, 1948. However, some modern papers use *Meiosimyza* Hendel, 1925, see Shatalkin (2000). This change has already been done as a correction for the British check-list see Chandler (1998, 2000).

Most of the Norwegian species of this genus are bright yellow.

***Lyciella affinis* (Zetterstedt, 1847) (Map 9)**

Total material: 267♂♂544♀♀ 6 specimens (2♀♀ 5 specimens earlier published)

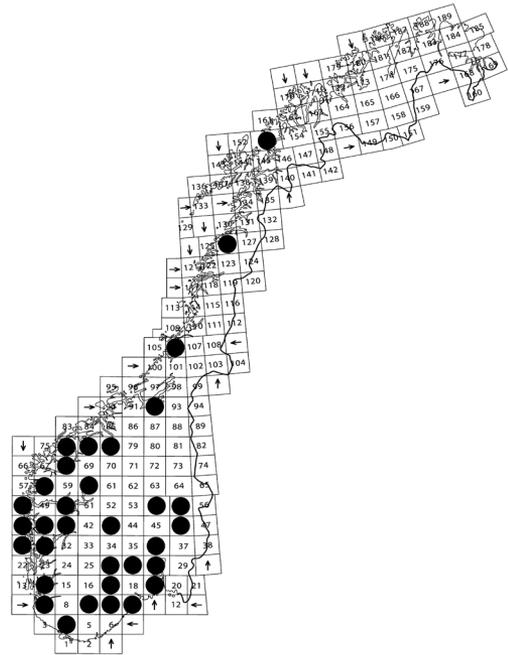
Number of localities: 85 (3 earlier published)

Records: AK Frogn: Håøya, MT, 19 May–3 June 1984, 1♂, 16–27 June 1984, 2♂♂3♀♀; Nesodden: Fagerstrand, LF, 18–19 August 1988, 1♀, 17–18 September 2003, 1♂1♀, 20–21 September 2003, 1♀, 30–31 August 2004, 1♂, 7–8 September 2005, 1♂. HES Ringsaker: Brumunddal, Dæli, 28 June 1991, 1♂, Furnes, paddock, MT, July 1992, 1♂, Sandvold, MT, August 1992, 1♀, MT, 14 July–5 August 1998, 1♀, Elverum: Baanerud, net, 25 & 27 June 2005, 3♂♂4♀♀, Åmot: Rena South, near bridge to Rød, net, 30 June 1995, 1♀, Skjelmoen, 18 June 1997, 1♂. OS Nordre Land: 1.5 km. Svingstad E, 1 July 1998, 1♂. BØ Kongsberg: Sansvær, 26 July 1995, 1♂; Ringerike: Hovland, MT, 3 July–13 August 2004, 2♀♀, 3 September–11 October 2004, 1♂, 23 June–30

July 2005, 1♀, Sokna center, net, 30 July 2005, 1♀. BV Rollag: Rollag, Kjømmen, 13 July 1995, 1♀; Ål: Storeteigen, MT, 500 masl, 18 July–18 August 2000, 2♂♂2♀♀, Tuftelia, MT, 680 masl, MT, 18 August–18 September 2000, 2♂♂. VE Stokke: at lake Akersvann, net, 29 June 2000, 3♀♀, Tjøme: Kolabekkilen, 24 July 1982, 2♂♂6♀♀, 19 July 1983, 1♀, Kynna N, 17 July 1983, 2♂♂1♀, Mostrand, 20 July 1983, 1♂; Tønsberg: Tønsberg, 7 July 1927, 1♀ (ZMO), 9 July 1927, 1♀ (ZMO). TEY Porsgrunn: Brevik, Dammane, MT, 12–20 July 1988, 1♀. TEI Tinn: Rjukan, MT, August 1995, 1♂; Tokke: Dalen, garden at Dalen hotel, 24 June 2006, 1♀. AAY Vegårdshei: Kvifte, Kvifteskog, 26–27 June 1989, 1♂2♀♀. AAI Bygland: Heddevika, MT, 15 May–11 June 1997, 2♀♀, 11 June–4 July 1997, 1♀, 4 July–31 August 1997, 1♂2♀♀. VAY Flekkefjord, Sira, 31 July 1984, 1♂. RI Forsand: Frafjord, net, 26 September 2000, 1♀, Frafjord, Røssdalen, Røssdalsvatn E. 19 August 2000, 1♀; Hjelmeland: Mosnes, J/B, 5 October 1982, 1♂; Suldal: Sand, Eide, 25 June 1935, 1 specimen (TSZD). HOY Bergen, Fjellveien N, 6 June 1983, 1♂1♀, Munkebotnstjern, 20 June 1989, 1♂, 14 July 1987, 1♀, Mullen, 29 June 1987, 1♂, Bergen (Fana): Mildevann, net, 24 July 1983, 1♂1♀, Rambjøra Nat. Res., 2 MT, 3–24 July 2006, 1♂21♀♀, 24 July–15 August 2006, 29♀♀, Straume, 22 June 1986, 12♂♂8♀♀, 31 August 1979, 3♂♂, Bergen (Åsane): Bruås, MT, 2 May–5 June 2003, 1♂, 16–28 July 2003, 8♀♀, 28 July–12 August 2003, 4♀♀, 12–21 August 2003, 1♀, Haukåsmyrane, MT, 16–28 July, 1♀, Almås, MT, 5 June–16 July 2004, 1♂12♀♀, 16–28 July 2003, 2♂♂8♀♀, Kråmyrane Nat.Res., MT, 12 August–30 September 1999, 1♂1♀; Fjell: Lokøy, 11 June 1995, 2♀♀; Os: Osøyri, 5 June 1983, 2♀♀; Osterøy: Marikovane, 27 June 1983, 3♂♂9♀♀, Kossdalssvingene, 23 June 2002, 3♀♀; Vaksdal: Nedre Midtvann, 176 m a s l, 21 June 1998, 2♀♀; Øygarden: Herdlevær, Vardholmen, MT, 14 August–30 September 1985, 1♀. HOI Eidfjord: Hjørmodalen, 400 m a s l, 15 July 1967, 1♂; Kvam, Bergsberget 2 July 1971, 1♀, 1–28 July 1997, 1♀, near Svevatn, MT, 28 May–1 July 1997, 48♂♂32♀♀, 1–28 July 1997, 9♂♂13♀♀, 28 July–11 Sept, 1997, 8♂♂18♀♀, MT, 23 June–28 July 1998, 4♀♀, 28 July–31 August 1998, 3♂♂8♀♀, net, 8 June 1999, 1♂; Ullensvang: Espe, J/B, 28 September 1982, 2♂♂, Frøynesvegen, J/B, 22 June 1983, 1♂2♀♀, Lofthus, J/B, Sekse, J/B, 28 September 1982, 1♂, Tveisme, J/B, 14 June 1982, 1♂; Ulvik: Langvasstøl, net, 795 m a s l, 15 August 1993, 1♂; Voss: Mørkdalen, Mørkve, 28 July 1997, 2♂♂, Strandelva, 24 July 1997, 2♂♂, Ulvundøyeni, 28 July 1997, 1♀. SFY Flora: Svardal, 11–12 July 1998, 1♀; Førde: Rotenes, 2 July 1983, 20♂♂35♀♀; Gulen: Brosvikvatn, 1 July 1983, 1♀; Hyllestad: Botnen,

2 MT, 21 May–21 June 1999, 2♂♂21♀♀, 21 June–25 July 1999, 15♂♂42♀♀, 25 July–7 September 1999, 10♂♂40♀♀, 7–14 September 1999, 8♂♂9♀♀. **SFI** Aurland: Undredal, S, 23 July 1981, 1♀; Balestrand: Målsnes, 2 MT, 1–29 August 1998, 2♀♀, 29 August–4 October 1998, 1♀; Flåm, Indrelied, MT, 17 July–13 August 2000, 3♂♂7♀♀, 13 August–24 September 2000, 1♂1♀; Leikanger: Hamre, J/B, 1♀, Husabø, J/B, 20 August 1982, 1♂, 30 September 1982, 2♂♂, Njøs, 7 September 1982, 1♀; Luster: Fortundalen, Drægni, Ruskesethaugen, 480 masl, MT, 26 June–28 July 2004, 1♀, 28 July–31 August 2004, 1♀, Fortundalen, Yttre, Djupedalen, 600 masl, WT, 7–20 June 2003, 1♀; Sogndal: Ølmheim, 30 September 1982, J/B, 6♂♂30♀♀; Vik: Fresvik, net, 29 August–1 September 1997, 3♂♂ 1 specimen, MT, 1–17 September 1997, 2♂♂9♀♀, YT, 29 August–1 September 1998, 2♂♂. **MRY** Sykkylven: Andestad, MT, 3–25 June 2001, 1♀; Volda: Helgatun – Tømmerbakken, net, 17 June 1995, 5♀♀, Ørsta: Brekke near Storelva, Haugen, 16 June 1995, 1♂1♀. **MRI** Norddal: Fjora, Ytste Furneset, MT, 5 May–11 June 2000, 1♀; Rauma: Rødstøl, Verma, 2 August 2001, 1♀ (H. Hatlen p.coll.); Skorgen, Isfjord, 15 July 2001, 1♀ (H. Hatlen p.coll.); Stranda: Lauvvika, MT, 28 May–6 July 2000, 1♂1♀, 6 July–20 August 2000, 3♂♂3♀♀. **STI** Trondheim: Rotvoll, Leangbukta, 21 July 2002, 1♂1♀, Østmarksneset, 22 July 1987, 1♀. **NTY** Nærøy: Kjeksvika, net, 6 May–20 June 2002, 1♂1♀, 20 June–5 August 2002, 1♂1♀. **NSY** Bodø: Isvik, 27 July 1986 1♂, Øvre Falkflaug, 20 July 1986, 1♂1♀, Nedre Falkflaug, Hammersbakken, 20 July 1983, 1♂1♀, 23 July 1986, 7♂♂36♀♀, Falkflaugvika, 12 July 1989, 1♂2♀♀, Ørnliia, Valnesvann 15 July 1984, 1♂1♀, 15 August 1992, 35♂♂40♀♀. **TRY** Torsken: Sifjordura, net, 22–24 June 2004, 1♂.

Remarks: *Lyciella affinis* is here recorded new to HES, OS, BØ, BV, VE, TEY, TEI, AAY, AAI, VAY, RI, HOY, HOI, SFY, SFI, MRY, MRI, STI, NTY, NSY & TRY. *L. affinis* can be identified on the black-coloured legs and the fore tarsi which are visibly thickened. *L. affinis* is listed from some localities in AK by Siebke (1877) who also refers to Zetterstedt's localities from NTI. Zetterstedt's material, 5 specimens, have been examined, but none of these are *L. affinis*. In ZMO there are two females, one from Oslo, Tøyen dated 15 Aug. 1848 and another female only labelled Romsdal (=MRI), not mentioned by Siebke (1877). Nielsen (2000) records *L. affinis* as new to RI, the material was determined by the author and the record is also listed above. Judged from



Map 9. Distribution of *Lyciella affinis* (Zetterstedt, 1847).

the material presented here, *L. affinis* is a very common species in most parts of southern and central Norway, and the total number of specimens indicates that *L. affinis* is probably one of the most common species of lauxaniids in this area. However, only five specimens were collected in a light trap from AK Nesodden: Fagerstrand, see Greve & Kobro (2004) where some other common lauxaniid species occurred in high numbers. This could perhaps indicate that *L. affinis* is not as phototactic as other *Lyciella* species. The northernmost locality is Sifjordura at the island Senja, a locality known for its rich insect fauna. There are records from localities around 800 m a s l, in lower parts of the subalpine area, but not true alpine records. Mingled deciduous trees, herbage, scrubs etc. seems to be the preferred localities, *L. affinis* has also been collected along cultivated fields, on meadows and Ardö (1957) records it from dune heath. In several localities a fairly high number of specimens have been collected. Malaise traps seems to be effective placed along the forest edges like the two traps at Botnen in

Hyllestad SFY. Insect nets are useful, and on several occasions jarring/beating on different deciduous trees, also on planted fruit trees. Using jarring/beating, however, the collected number of specimens are low.

***Lyciella decempunctata* (Fallén, 1820) (Map 10)**

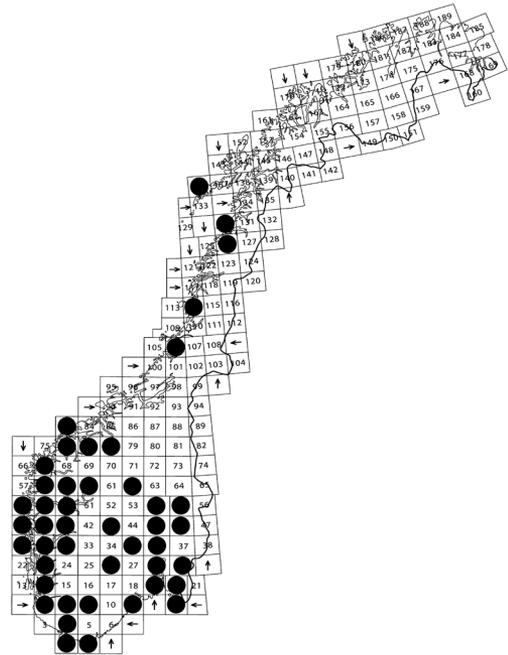
Total material: 374♂♂609♀♀ 130 specimens (1♂10♀♀ 120 specimens earlier published)

Number of localities: 136 localities (4 earlier published)

Records: Ø Hvaler: Arekilen, MT, 22 July–15 August 2000, 7♂♂12♀♀, August–September 2000, 1♀, Vesterøy, net, 1 August 1984, 1♀; Moss: Jeløy, Hvittingbukta, MT, 3–30 June 1995, 1♂1♀; Onsøy: Rauer, 28 July 1989, 1♀; Rygge: Dilling, Ekely, 22 July, 1998, 1♀ (ZMO), Gunnarsbybekken, MT, 21 July–24 August 1992, 2♀♀; Rygge: Ekely, Telemarkslunden, MT, 19 May–17 June 1992, 1♂2♀♀, 17 June–21 July 1992, 8♂♂1♀; Sarpsborg: Skjeberg church, 31 July 2005, 1♀; Våler: Svinndal, 31 July 1996, 1♂1♀. **AK** Asker: Bjørkås, MT, 2 July–24 August 1995, 43♀♀, 24 August–10 October 1995, 41♀♀; Enebakk: Kirkejordet, 24 June 1985, 1 specimen, Nordre Bøler, MT, July 1996, 4♀♀, August 1996, 6♀♀, September 1996, 1♀, Vangen, CT, Point 49, 24 June–29 July 1991, 2♀♀; Frog: Håøya, MT A, 16–27 June 1984, 7♂♂12♀♀, MT B, 16–27 June 1984, 2♂♂, 27 June–22 July 1984, 4♂♂19♀♀, 22 July–18 August 1984, 2♂♂8♀♀, Langåra, MT, 8–22 June 1997, 1♂1♀, 22 June–6 July 1997, 7♂♂5♀♀, 6–12 July 1997, 2♂♂3♀♀, 12–20 July 1997, 10♂♂5♀♀, 20–28 July 1997, 3♂♂2♀♀, 2–10 August 1997, 2♀♀, 10–24 August 1997, 2♂♂1♀; Frog: Håøya, 26 June 1983, 1♀, Oksenhøya, Storøykilen, net, Juli–August 2002, 2♀♀ (ZMO); Nesodden: Fagerstrand, LT, 19–20 July 2003, 1♂, 10–11 August 2003, 1♂, 21–22 August 2003, 1♂, 4–5 July 2004, 1♀, 3–4 August 2004, 1♂1♀, 17–18 August 2004, 1♂1♀, 29–30 August 2004, 1 specimen, 30–31 August 2004, 1♂, 3–4 September 2004, 1♂1♀, 27–28 June 2005, 1♀, 28–29 June 2005, 1♂, 26–27 July 2005, 1♂, 2–3 August 2005, 1♀, 3–4 August 2005, 1♂, 7–8 August 2005, 1♀, 10–11 August 2005, 1♂5♀♀, 15–16 August 2005, 1♂ 1 specimen, 17–18 August 2005, 2♀♀, 24–25 August 2005, 1♂1♀, 29–30 August 2005, 1♂1♀, 20–21 September 2005, 2♂♂, 27–28 September 2005, 1♂, Nesodden, Fagerstrand, Gjøfjell, net, 12–20 July 1997, 1♂1♀; Oslo: Oslo, 1♀ (TSZD 7471), Oslo: Slemmestad, 18 August 1935, 1♂ (TSZD 7472); Ås: Vollebekk, 27 July 1955, 1♂. **HES** Elverum: Inset, at Glomma, net, 29 June 1998, 1♀, Sagtjernet, net, 30 June–1 July 1998, 1♀; Løten: Vang, Blæstad, net, 17 June 1996, 1♂; Ringsaker:

Brumunddal, Dæli, net, 28 June 1991, 1♂, Furnes, Sandvold, net, 23 July 1992, 1♂, MT, July 1992, 9♂♂7♀♀, August 1992, 3♂♂2♀♀, June–18 July 1993, 1♂5♀♀, May 1997, 6♂♂7♀♀, June 1997, 1♂2♀♀, August 1997, 1♀, September 1997, 2♂♂, 14 July–5 August 1998, 1♂7♀♀, 5 August–10 September 1998, 1♀, YT 22 July 1992, 1♀, Elverum: Baanerud, net, 25–27 July 2005, 2♂♂1♀, Åmot: Rena, Åsta bridge, net, 29 June 1998, 1♀. **OS** Gausdal: Follebu, 12 August 1995, 1♀. **ON** Nord-Fron: Vinstra, MT, 25 May–30 June 1992, 1♀. **BØ** Drammen: Underlia, MT, June 1992, 2♂♂1♀, May 1994, 1♂, June 1994, 1♂2♀♀, July 1995, 1♂3♀♀ (1♀ in ZMO), August 1995, 1♂9♀♀; Hurum: Mølen, 4 July 1990, 1♀, Ramvikholmen, 12 August 1990, 1♀, Verkøya, MT, 6 June–6 July 1995, 1♀, 6 July–19 August 1995, 5♀♀, Østnestangen, MT, 26 May–8 July 1995, 1♂, 8 July–20 August 1995, 1♂2♀♀; Nedre Eiker: Hagatjern Ryggsetra, LT 27 June–3 July 1994, 1♀, July 1994, 1♀, Ringerike: Sokna, Hovland, MT, 3 July–13 August 2004, 1♀, 13 August– 3 September 2004, 1♀, 23 June–30 July 2005, 2♀♀. **BV** Rollag: Rollag, 12 July 1995, 1♂, 5 August 1995, 1♀, Tråen saga, MT, August 1995, 1♂4♀♀, Veggli, 11 May 1995, 1♂, 13 July 1995, 1♀, Ål Storeteigen, 500 m a s l, net, 19 June–19 July 2000, 1♀. **VE** Borre: Semb, June 1974, 5♂♂6♀♀; Stokke: Melsomvik, net, 1 July 2000, 1♀; Tjøme: Kynna, 17 July 1983, 1♂1♀, Mostrand, 22 July 1982, 1♂, YT, 4–11 August 1984, 1♀, MT, 24 May–6 June 1984, 1♀, Tjøme, 18 June 1983, 1♂, Treidene, 19 July 1983, 1♀, 20 July 1983, 1♀; Våle: Langøya, MT, 1 September–26 October 1991, 4♀♀. **TEY** Porsgrunn: Brevik, Dammane, MT, 27 May–12 July 1988, 1♂, 12–20 July 1988, 2♀♀, 13–27 June, 1988, 1♂5♀♀ 20 July–12 August 1988, 2♂♂2♀♀, Frierfluaane, 2 MT, 17 August 1983, 2♂♂1♀, Hitterødbekken, Kjørholt, 13 June–11 July 1988, 2♂♂7♀♀, 11–20 July 1988, 3♀♀, 12 July–20 August 1988, 4♀♀, Kohtøya, Skjelvik, net, 31 July 1983, 1♀. **TEI** Tinn: Håkanes, MT, Juni 1995, 4 specimens, August 1995, 1♂, Rjukan, MT, June 1995, 1♂, July 1995, 8♂♂27♀♀, August 1995, 3♂♂11♀♀. **AAI** Bygland: Heddevika, MT, 16 May–11 June 1997, 6♂♂, 11 June–4 July 1997, 8♂♂11♀♀, 4 July–27 August 1997, 12♂♂26♀♀, 27 August– 5 October 1997, 1♂4♀♀, 1–29 July 1998, 1♂, 29 July–27 August 1998, 3♂♂10♀♀. **VAY** Farsund: Straumen, 13 June–8 July 1999, 1♂2♀♀; Flekkefjord: Hidra, Dragøy, net, 27 July 1982, 1♀, 30 July–3 August 1984, 4♀♀, Hidra, Kirkehavn, 15 July 1982, 1♂, Sira, net, 15 August 1984, 1♀, 16 August 1984, 1♂, 17 August 1984, 1♂, 10 September 1984, 1♀; Kristiansand: Stangenes, 14 August 1984, 1♀; Lindesnes: Stusvik, Jørgenstad, net, 16 July 1987, 1♀; Lyngdal: Trollskei, 19–22 July 1999, 1♂1♀; Søgne: Søgne Folkehøyskole, LT,

8–14 August 1979, 1♂. **VAI** Kvinesdal: Gjemlestad, 4 July 1945, 1♂, Kloster, 11 September, 1998, 1♀; Sirdal: Lindeland, 220 m a s l, 2 August 1981, 1♂1♀. **RY** Finnøy: Kvitevik, 2 MT, 11–29 May 1993, 1♂, 29 May–17 June 1993, 1♀, 9–27 July 1993, 1♀, 21 August–23 October 1993, 1♀, 26 June–5 August 1995, 3♀♀, 25 August–10 September 1995, 1♂1♀, Sevheimsvatn, MT, 24 June–4 July 1992, 1♀, 9–27 July 1993, 1♀; Sola: Sola, 18 July 1924 (TSZD 7475); Tysvær: Kårstø, net, 14 July, 1981, 3♂♂2♀♀. **RI** Suldal: Eide, 25 June 1935, 1♂ (TSZD 7473). **HOY** Askøy: Kleppstø, net, 20 June 1985, 1 specimen; Austrheim: Rebnor, 15 June 1978, 1♀; Bergen: Zoologisk Museum, 4 August 1936, 1♂, Bergen (Fana): Mildevann, MT, 19 June–27 July 2005, 1♀, Rambjørna Nat. Res., 2 MT, 23 May–3 July 2006, 1♂, 3–24 July 2006, 2♂♂9♀♀, 24 July–15 August 2006, 1♂21♀♀, (Åsane) Almås, MT, 5 June–16 July 2003, 2♀♀, 16 July–21 August 2003, 2♂♂4♀♀, Bruås, MT, 16–28 July 2003, 1♂3♀♀, 12–21 August 2003, 1♀, Eidsvåg: Vollane, CT, 18–25 July 1978, 1♂, 21 June–10 July 1986, 2♂♂1♀, 31 Jul –16 August, 1986, 2♀♀, 16 August–22 September 1986, 2♂♂1♀, 1–14 July 1996, 3♂♂6♀♀, 7 July 2003, in window, 1♂, Haukåsvatn, at outlet, MT, 5 June–16 July 2003, 1♂3♀♀, 16 July–21 August 2003, 8♀♀, Jordalsvann SW, net, 27 June 1970, 1♂, Kråmyrane Nat. Res. MT, 16 July–12 August 1999, Vikaleitet at Teigland, 29 June 1981, 1♂; Etne: Frette, net, 27 June 1985, 1♀; Meland: Brakstad, net, 25 June 1966, 1♂, det. L. Lyneborg; Osterøy: Kleppe, SW, 5–12 July 1992, 1♀. **HOI** Eidfjord: Øvre Eidfjord, 100 masl, 1 July 1967, 6♂♂1♀, Måbødalen, 570 masl, 13 July 1967, 1♀, 90 masl, 19 August 1967, 3♀♀, det. L. Lyneborg, 6 July 1968, 1♂, 580 masl, 7 July 1968, 1♂, 340 masl, 8 July 1968, 1♂, 240 masl, 24 June 1969, 1♂1♀, Måbødalen, Tveito, net, 150 masl, 24 July 1967, 1♀; Granvin: Seim, 30 May 1936, 1♂, 31 May 1936, 1♂1♀, 1 June 1936, 1♂1♀ 1 specimen, det L. Lyneborg; Kvam: Bergsberget, 29 June 1971, 1♂, 30 June 1971, 1♀, Stekka Nat. Res., 2 MT, 6 August–13 September 2000, 1♂1♀, Svevatn, MT, 28 May–1 July 1997, 2♀♀, 1–28 July 1997, 1♂1♀, 4 May–23 June 1998, 1♂, 23 June–28 July 1998, 1♀, 28 July–31 August 1998, 2♀♀; Kvinnherad: Guddalsdalen, 10 June 1943, 1♂, Rosendal, MT, 2 June 1992, 2♂♂1♀, Rosendal, Baroniparken, net, 4 June 1964, 1♂, Rosendal guesthouse, garden, MT, 12–15 June 2006, 3♂♂, Rosendal, Træet, net, 26 August 1968, 1♂, Skeiehavna, 22 June 1943, 1♂1♀[in copula]; Ullensvang: Børve, 29 August 1944, 1♂1♀, Djonno, 26 June 1984, 1♀, Espe, 28 September 1982, 2♂♂2♀♀, Lofthus, J/B, 7 July 1982, 1♀, 21 September 1982, 3♀♀, Lofthus, Frøysnesvegen, Tveisme, J/B, 14 June 1982, 1♀, 22 June 1983, 1♂; Ulvik: Hjeltnes, Hagebruksskolen, 6



Map 10. Distribution of *Lyciella decempunctata* (Fallén, 1820).

August 1977, 1♂; Voss: Mjølfjell, Solbakken, MT, 670 m a s l, 8 June–13 July 1985, 1♀, 1 specimen, 13 July–3 August 1985, 1♀, 25 July–5 August 1991, 1♀. **SFY** Florø: Svardal, net, 11–12 July 1998, 1♂; Førde: Røkenes, 2 July 1983, 1♀; Gulen: Brekkestranda, 30 June 1983, 1♀; Hyllestad: Botnen, 2 MT, 21 May–25 July 1999, 3♂♂15♀♀, 25 July–7 September 1999, 14♂♂29♀♀, 7–14 September 1999, 4♂♂6♀♀; Jølster: Gåsemyr, 17 July 1980, 2♀♀, Jølstratunet, Vassenden, MT, 6–11 July 1998, 3♀♀, Solheim, 5 July 1983, 1♀, Sunde, net, 8 July 1998, 1♀. **SFI** Aurland: Flåm, Indreliid, 400 masl, MT, 26 June–17 July 2000, 2♂♂2♀♀, 17 July–13 August 2000, 4♂♂9♀♀; Balestrand: Målsnes, MT, 14 June–1 August 1998, 7♂♂2♀♀, 1–29 August 1998, 6♂♂5♀♀, 29 August–4 October 1998, 6♂♂2♀♀; Leikanger: Gjerde, 20 August 1982, 1♀, Hermannsverk, Njøs forsøkgård, 22 May 1990, 1♂, Husabø, J/B, 9 August 1982, 1♀, 30 September 1982, 2♂♂2♀♀; Luster: Fortundalen, Drægne, Ruskesethaugen, 480 m a s l, MT 26 June–28 July 2004, 2♀♀, Fortundalen, Yttri, Dalateigen, MT, 21 June–5 July 2003, 2♀♀; Sogndal: Ølmheim, J/B, 30 September 1982; Vik: Fresvik, MT, 1–17 July 1997, 32♂♂33♀♀. **MRV** Haram: Løvøya, Farstad, MT, 21 June–5 July 1992, 1♀; Sykkylven: Andestad, MT, 25 June–13 August 2001, 1♀, Gjevnes, 17 June–11 August 2001, 2♀♀; Volda: Helgatun – Tommerbakken, net, 17 June 1995,

net, 1♂. **MRI** Norddal: Fjøra, MT, 23 June–18 July 1993, 1♀, 18 July–11 September 1993, 1♀; Rauma: Raudstøl, 2 August 2000, 1♀ (H. Hatlen p.c.); Stranda: Lauvvika, MT, 28 May–6 July 2000, 1♂4♀, 6 July–20 August 2000, 4♂♂4♀♀. **NTY** Nærøy: Kjeksvika, MT, 6 May–20 June 2002, 22♂♂24♀♀, 20 June–5 August 2002, 16♂♂6♀♀, 5 August–3 September 2002, 3♂♂10♀♀, 3–13 September 2002, 3♀♀. **NSY** Bodø: Skuti, Urskar, 4 August 1982, 2♂♂2♀♀, Valnesvann, MT, 15 July 1984, 1♂; Brønnøy: Dyrnes, 7 August 1984, 1♀ (RMZ 3213). **NNV** Leknes: Stamsund, Kjærmyr, net, 30 July 1979, 1♀.

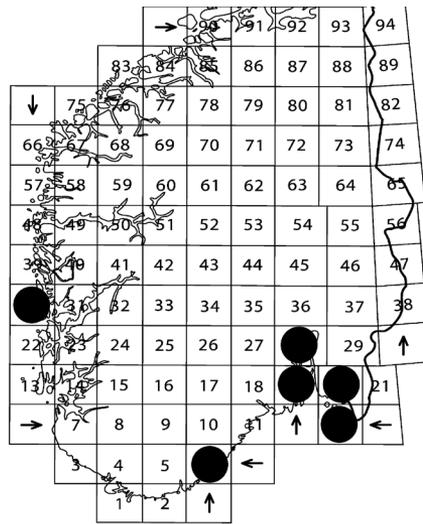
Remarks: *L. decempunctata* is here reported new to HES, OS, ON, BØ, BV, VE, TEY, TEI, AAI, VAY, VAI, RY, RI, HOY, SFY, SFI, MRI, NTY, NSY and NNV. *L. decempunctata* is easy to recognize among other *Lyciella* species as it has wings with five spots each. Siebke (1877) listed *L. decempunctata* (as *Sapromyza 10-punctata*) from Fredrikshald, viz. Halden, Oslo, Enebakk and Gjemnes in MRY. There are material in ZMO from these localities with exception of Gjemnes. Tromsø Museum has one female from Oslo leg. L. Esmark, about as old as Siebke's material. Four specimens of *L. decempunctata* was listed from three localities at Østensjøvannet AK, Oslo by Hansen & Falck (2000) and 120 specimens of *L. decempunctata* were recorded by Greve & Kbro (2004). *L. decempunctata* is a very common species in southern Norway, becoming definitely more rare in Central and Northern Norway. There is no material from alpine or sub-alpine areas. One female listed by Greve (1996) from Solbakken, Mjølfjell, collected in a Malaise trap situated at 670 m a s l, represents the highest elevated locality for this species. This locality is situated in the upper part of mixed forest, with open areas, consisting of some pine trees (*Pinus silvestris*) intermingled with *Betula* sp., *Sorbus* sp. and *Alnus* sp. Collections has been done with Malaise traps, nets and by jarring and beating. *L. decempunctata* is also attracted to light. The flight period is long, from late May until early October.

***Lyciella decipiens* (Loew, 1847) (Map 11)**

Total material: 94♂♂80♀♀ (1♂1♀ earlier published).

Number of localities: 20 (1 earlier published).

Records: Ø Hvaler: Arekilen, MT, 22 July–15 August 2000,



Map 11. Distribution of *Lyciella decipiens* (Loew, 1847).

4♂♂1♀ (ZMB, VM); Moss: Rødsund bridge W, net, 26 June 2003, 1♂. **AK** Nesodden: Fagerstrand, LT, 30 June–1 July 2004, 1♀, 20–21 July 2005, 1♀; Oslo: Tjernsmyr, net, 25 July 1988, 1♂1♀. **VE** Borre: Adalsvannet, net, 30 June 2000, 1♂; near Falkensten, at river from Borrevann, net, 30 June 2000, 22♂♂17♀♀ (ZMB, ZMO); Nøtterøy: Strengdalsvann, 5 July 1983, 20♂♂10♀♀; Sandefjord: Eftang, 12 July 1982, 1♀, det. B. Merz; Stokke: Akersvannet, net, 29 June 2000, 5♂♂5♀♀, Melsomvik, net, 28 June 2000, 3♂♂3♀♀, 1 July 2000, 1♂; Tjølling: Ula, 21 July 1983, 1♂; Tjøme: Kolabekkkilen, 24 July 1982 5♂♂8♀♀, 19 July 1983, 1♀, 4 July 1985 2♀♀, 24 July 1982, 5♂♂8♀♀, Kynna forest N, 12 July 1983, 8♂♂7♀♀, Mostrand, 20 July 1983, 1♂, Sunnane, 5 July 1983, 1♂, Treidene, 19 July 1983, 3♀♀, Helgerød, Verdens ende, 28 June 1984, 4♂♂3♀♀. **AAY** Arendal: Solevann, net, 28 June 2003, 6♂♂5♀♀, Skomakerveien, 6 July 2000, 2♂♂. **HOY** Bergen (Fana): Mildevann, MT, 28 July–2 September 2005, 1♂1♀, net, 28 July, 1♀, net, 30 August 2005, 1♂.

Remarks: *Lyciella decipiens* is here recorded new to Ø, VE, AAY and HOY. *L. decipiens* was first recorded from Norway from AK Nesodden: Fagerstrand (Greve 2000a), and 2 lighttrapped females from this locality were included in Greve & Kbro (2004). Based on the material presented here *L. decipiens* is not rare species in parts of SE Norway, and on some localities many specimens have been collected from large populations. Many

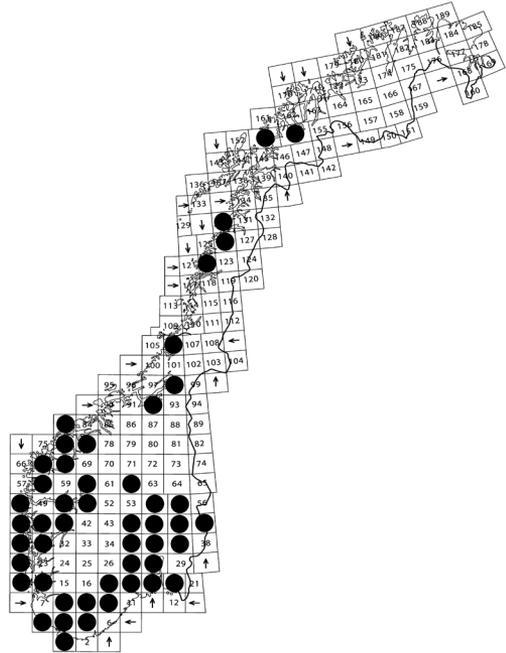
localities are near lakes, bogs etc. suggesting a preference of such areas. However, Ardø (1957) records *L. decipiens* from dune heat in Sweden. Bährmann (1991) records *L. decipiens* from forest areas and wet areas in Germany. The single, separate locality outside SE Norway is from Milde south of Bergen center. A Malaise trap was situated in the belt of reed bordering the lake Mildevann, two specimens were collected in this trap, another two netted July and August close to the reed belt and near the trap. All localities of *L. decipiens* are in coastal areas. Flight period seems to be from late June throughout July and August.

Lyciella illota (Loew, 1847) (Map 12)

Total material: 417♂♂.

Number of localities: 119.

Records: Ø Skjeberg: Grimsøy, 10 June 1991, 1♂, Hafslundparken, 17 August 1992, 1♂. **AK** Eidsvoll: Eidsvoll, 9 July 1988, 3♂♂; Oslo: Hovedøya, 12 July 1985, 1♂, 5 July 1988, 10♂♂, Tjernsmyr, net, 25 July 1985, 1♂, 8 July 1989, 1♂; Ås: Kirkejordet, water trap, 12 September 1985, 1♂. **HES** Ringsaker: Brumunddal, Dæli, 28 June 1991, 1♂, Furnes, Sandvoll, 10 July 1991, 3♂♂, MT, July 1992, 1♂; Våler: Gravberget, net, 24 June 2003, 4♂, Elverum: Baanerud, net, 25 & 27 June 2005, 5♂♂, Glomma at Indset, net, 29 June 1998, 1♂, Øksetsaga, W, net, 29 June 1998, 1♂; **HEN** Åmot: At bridge to Rød, net, 30 June 1995, 1♂, Rena S, 17 July 1987, 1♂, Åsta E, net, 22 June 1997, 3♂♂. **OS** Nordre Land: Dokka, 11–14 August 2001, 1♂, 1.5 km E of Svingstad, net, 1 July 1998, 3♂♂. **ON** Nord-Fron: Kvam, 16 August 2001, 2♂♂ (H. Hatlen, p.c.). **BØ** Drammen: Underlia, MT, June 1992, 2♂♂, August 1995, 2♂♂; Kongsberg: Sansvær, 26 July 1995, 1♂; Nedre Eiker: Mjøndalen, Miletjern, Medio July, 4♂♂, Medio August 1988, 12♂♂; Ringerike: Sokna, Hovland, net, 3 September 2004, 2♂♂, at vicarage, net, 3 July 2004, 3♂♂, 23 June 2005, 1♂, 3 July 2005, 1♂, 30 August 2005, 1♂, 23 September 2005, 1♂. **BV** Gol: Engjan, net, 6 August 2006, 3♂♂; Rollag: Tråen saga, MT, August 1994, 2♂♂. **VE** Horten: Karlsjohansvern, net, 9 July 1985, 5♂♂; Notterøy: Strengdalsvann, net, 5 July 1983, 18♂♂; Sande: Gyltesen, 9 July 1985, 7♂♂; Sandefjord: Sørbyøya, 22 June 1984, 1♂; Tjøme: Fynstranda, 3–9 July 1983, 1♂, Kløvningen, 27 June 1984, 1♂, Mostrand, 24 July 1982, 2♂♂, 8 July 1983, 1♂, 20 July 1983, 9♂♂, 30 June 1985, 1♂, 22 June 1995, 1♂, Moutmarka, Treidene to Helgerød, 22 July 1982, 1♂, Sunnane, 5 July 1983, 3♂♂, Torås, 6 June 1984, 1♂, Treidene, 19 July 1983, 2♂♂; Tønsberg: Slottsfjellet, 4♂♂. **TEI** Bø:



Map 12. Distribution of *Lyciella illota* (Loew, 1847).

Bø, 17 July 1982, 4♂♂; Seljord: Svartdal, net, 23 June 2006, 2♂♂. **AAY** Bygland: Heddevika, MT, 29 July–27 August 1998, 1♂; Vegårdshei: Kvifte, Kvifteskog, 26–27 June 1989, 2♂♂. **AAI** Evje & Hornes: Near Lislevann, net, 2 August 1996, 5♂♂. **VAY** Farsund: Einarsneset, 3–5 June 1995, 1♂; Flekkefjord: Hidra, Ysthus, 14 July 1982, 5♂♂. **VAI** Sirdal: Tonstad center, net, 3 August 1996, 5♂♂. **RY** Egersund: Guddalsåna, Terland E, net, 3 August 1996, 3♂♂; Karmøy: Våge, Grodvatn, MT, August 1994, 1♂, Skår, 10 July 1992, 8♂♂; Ogn, MT, 17 July–21 August 1996, 13♂♂; Tysvær: Kårstø, net, 13 July 1981, 1♂. **RI** Forsand: Fosså, Jøsnneset, MT, 11 July–21 July 1982, 2♂♂. **HOY** Askøy: Herdla, net, 17 June 2004, 1♂; Austrheim: Øksnesvågen, net, 27 August 1993, 1♂; Bergen: Fløyen, 18 June 1985, 1♂, Mulen, 29 June 1997, 1♂, Nedrediket, 21 August 1983, 2♂♂, Bergen (Fana): Kyrkjetangen, net, 25 May 1980, 4♂♂, Mildevann, net, 7 July 2005, 10♂♂, 27 July 2005, 4♂♂, Skagetjern N, net, 1 July 1990, 1♂, Straume, 22 June 1986, 2♂♂, Bergen (Åsane): Eidsvåg, Vollane, net, 1 July 1981, 1♂, 6 July 1981, 1♂, 17 June 1983, 2♂♂, Haukåsvann, at outlet, net, 9 June 2003, 2♂♂, Haukåsmyrane, MT, 5 June–16 July 2003, 1♂, Langavatnet, Mellingen, net, 12 June 2005, 3♂♂; Bømlo: Grutle, net, 18 August 1992, 1♂, Kalvneset, Olavskolen, net, 17–18 August 1992, 1♂, Svortland, Bremnes, 26 June 1966,

1♂; Fusa: Boga quay, net, 20 June 1993, 2♂♂, Skåtevann, 10 July 1995, 1♂, Sundvor, net, 24 June 1989, 2♂♂; Meland: Brakstadvann S, net, 2 June 2002, 1♂; Os: Røykenesvann at Nordgård, net, 19 June 1983, 1♂; Osterøy: Marikovane, 27 June 1982, 1♂; Sund: Sæle, net, 13 July 2003, 3♂♂; Øygarden: Alvheim, net, 21 June 1983, 1♂. **HOI** Eidfjord: Hjølmødal, 400 masl, 6 July 1967, 1♂, 350 masl, 10 July 1967, 1♂; Kvam: Gravdal, near Svevatn, MT, 29 July–11 September 1997, 1♂; Voss: Klyve, net, 18 July 2006, 3♂♂, Mjølfjell, Kårdal, net, 650 masl, 14 July 1983, 1♂, Moensvatn, 246 masl, 18 July 2003, 3♂♂; Myrkdalen, Mørkve, net, 24 July 1997, 2♂♂, Near Strandelva, net, 24 July 1997, 8♂♂, Ulvundøy, 28 July 1997, 1♂; Ulvik: Dalsete W, 795 masl, 29 July 2006, 2♂♂. **SFY** Eid: Lote, net, 18 June 1995, 1♂, Flora: Svardal, net, 11–12 July 1998, 32♂♂ + 1♂1♀[in copula]; Hyllestad: Botnen, MT, 21 June–25 July 1999, 2♂♂; Jølster: Skei, 3 July 1983, 1♂, Vassenden, MT, 6–11 July 1998, 5♂♂. **SFI** Aurland: Berekvam, 300 masl, net, 29 July 1999, 1♂, Flåm, net, 7 July 1965, 1♂, Onstad, 20 July 1981, 1♂, Tero, net, 28 August 1987, 2♂♂, Undredal S, net, 23 July 1981, 1♂, Upsete, railwaystation, 822 masl, net, 29 July 2004, flowering meadow, 1♂; Balestrand: Målsnes, net, 14 June 1998, 1♂, 1 August 1998, 1♂; Luster: Fortundalen, Drægne, Ruskesethaugen, 480 masl, MT, 21 April–21 May 2004, 1♂; Lærdal: Lærdalsøyri, 24 July 1981, 1♂; Vik: Fresvik, MT, 17 May–31 June 1997, 1♂, 3 August 2006, net, 1♂. **MRY** Haram: Langøya, Nosa, net, 3 July 1992, 7♂♂; Hareid: Håbakken, MT, 19–24 July 1991, 1♂; Ulstein: Jensgården, net, 22 July 1991, 1♂; Volda: Helgatan–Tømmerbakken, net, 17 June 1995, 1♂; Ørsta: Near Åreflot, net, 20 July 1991, 2♂♂. **MRI** Rauma: Isfjorden, Gluterbenken, 14 July 2003, 1♂ (H. Hatlen p.c.), Grøtta, 5 July 2001, 5♂♂ (H. Hatlen p.c.). **STI** Trondheim: Korsvika, 21 July 1987, 6♂♂, Rotvoll, Leangbukta, 21 July 1987, 4♂♂, Østmarksneset, 22 July 1987, 26♂♂. **NTY** Nærøy: Kjeksvika, MT, 20 June–5 August 2002, 2♂♂, 5 August–3 September 1989, 1♂, 3–13 September 2002, 5♂♂. **NTI** Verdal: Thynes, 1♂. **NSY** Bodø: Hernes, 8 August 1987, 6♂♂, at old airport, 15 July 1989, 9♂♂, Falkflaugvika, 12 July 1989, 1♂, Valnesvann, 14 July 1988, 1♂, Vindlausbukta–Severinhagen, 15 July 1988, 6♂♂. **NSI** Rana: Kvanndalen, 5 July 1973, 1♂ (RMZ 2983). **TRY** Torsken: Sifjordura, net, 22 & 24 June 2004, 14♂♂. **TRI** Målselv: Olsborg, Trollhaugen, net, 25 June 2004, 1♂.

Remarks: *L. illota* is here reported from Ø, AK, HES, HEN, OS, ON, BØ, BV, VE, TEI, AAY, AAI, VAY, VAI, RY, RI, HOY, HOI, SFY, SFI, MRY, MRI, STI, NTY, NTI, NSY, NSI, TRY & TRI. This is the first survey of *L. illota* (Loew, 1847) in Norway since earlier records could be

L. mihalyii Papp, 1978. Only males are reported here as females can not be separated from females of *L. mihalyii*, see below. One male of *L. illota* was present in Zetterstedt's collection (determined as another *Lyciella* species). *L. illota* is a common and widely distributed species in all southern Norway with exception of alpine areas. It has been collected in subalpine areas up to 822 masl. The flight period is probably starting in southern Norway in last part of May, most records are from June, July and August, and only a few from early September. *L. illota* and *L. mihalyii* is closely related, and in Norway *L. illota* is by far the most common of the two, 415 males have been collected, more than the double number of males of *L. mihalyii* which is 169. The number of localities, 70, is also lower for *L. mihalyii* compared to 117 for *L. illota*. The combined number of females belonging to these two species, is slightly higher than for combined number of males. The two species have often been collected together. There are slightly less records of *L. illota* from Central- and Northern Norway, compared to *L. mihalyii*, and some more records of *L. illota* from SE Norway compared to the records of *L. mihalyii*.

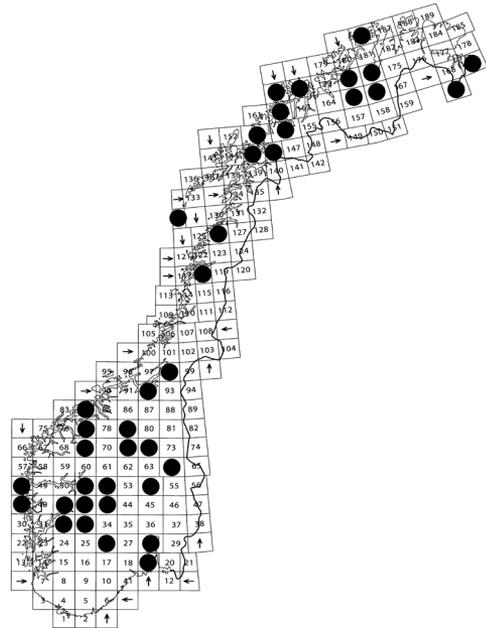
Lyciella laeta Zetterstedt, 1838 (Map 13)

Total material: 314♂♂754♀♀ (6♂♂8♀♀ earlier published).

Number of localities: 95 (12 earlier published).

Records: **HES** Ringsaker: Furnes, Sandvold, MT, August 1992, 1♀. **HEN** Åmot: Åsta bro, net, 29 June 1998, 2♂♂1♀. **OS** Nordre Land: 1.5 km East of Svingstad, net, 1 July 1998, 1♂. **ON** Vestre Slidre: Vadset, Vadset center, 9–21 July 1998, 1♂ (ZMO). **BV** Hemsedal: Hemsil near Kårstad, 7 August 1984, 1♀; Hol: Halnefjorden, 1220 masl, 29 August 1969, 1♂2♀♀, Haugastøl, Lillevannosen, ca. 1100 masl, 1 September 1967, 1♀, Vest Løa, ca. 1100 masl, 24 August 1967, 1♀; Uvdal: Geitsjøen, 1160 masl, 1♂2♀♀; Ål: Storeteigen, 500 masl, MT, 18 July–18 August 2000, 1♂, Tufelia, 680 masl, MT, 19 June–18 July, 2♂♂1♀, 18 July–18 August 2000, 1♂14♀♀, 18 August–18 September 2000, 1♂12♀♀. **VE** Tjøme: Kynna, 17 July 1983, 1♂. **TEI** Tinn: Håkanes, MT, August 1995, 1♂3♀♀, Rjukan, MT, August 1995, 4♀♀. **HOY** Bergen: Fløyen appr. 330 m a s l, 18 June 1985, 1♀, Sandviksfjellet, 21 August 1983, 1♀. **HOI** Eidfjord: Fossli, 3 July 1969, 1000 masl, 1♂5♀♀, Halnefjorden,

1240 masl, 29 August 1969, 5♂♂4♀♀, Hjølmødal, 525 masl, 16 July 1967, 3♂♂1♀, Isdalen, 920 masl, 25 June 1969, 2♂♂4♀♀, 880 masl, 25 June 1969, 4♂♂1♀, 29 June 1969, 5♂♂, Måbødalen, 570 masl, 13 July 1967, 2♂♂2♀♀, 310 masl, 14 July 1967, 1♂, 500–600 masl, 15 July 1967, 2♂♂4♀♀, 600 masl, 16 July 1967, 2♂♂5♀♀, 24 July 1967, 450 masl, 1♀, 100–250 masl, 4 July 1968, 1♀, 340 masl, 7 July 1968, 3♂♂2♀♀, 525 masl, 7 July 1968, 3♂♂1♀, 580 masl, 7 July 1968, 1♂3♀♀, 490 masl, 4 July 1969, 2♀♀, 430 masl, 4 July 1969, 2♂♂7♀♀, Sysenvatn, 1020 masl, 5 July 1969, 3♂♂9♀♀, 960 masl, 8 August 1969, 1♀, det. L. Lyneborg, 960 masl, 8 August 1969, 3♂♂9♀♀, 960 masl, 10 August 1969, 1♂, 1070 masl, 10 August 1969, 1♂, 960 masl, 1♂2♀♀, 940 masl, 9 August 1969, 3♂♂5♀♀, 1070 masl, 11 August 1969, 6♂♂, Vivali–Veigdalen, 880 masl, 22 July 1967, 2♀♀, 880 masl, 29 June 1969, 4♂♂, 910 masl, 27 July 1968, 3♂♂2♀♀, 970 masl, 23 July 1968, 1♂; Kvan: Svevatn, MT, 11 September–29 October 1997, 1♀; Ullensvang: Hadlaskard, 1040 masl, 18 July 1968, 6♂♂1♀, Lofthus, J/B, 21 September 1982, 1♀, Stavali area, 950 masl, 25 July 1968, 2♂♂2♀♀, Stavali area, 1000 masl, 26 July 1968, 1♂, 900 masl, 3 August 1968, 1♂1♀, Veivann, 1050 masl, 13 July 1968, 1♂1♀; Ulvik: Dalsete W, net, 795 masl, 29 July 2006, 1♀, Langvasstøl, E, net, 795 masl, 15 August 1993, 1♂7♀♀, Osastøl, 530 masl, 5 September 1970, 2♂♂, Slondalsvann, at outlet, net, 750 masl, 16 July 1995, 1♂1♀; Voss: Mjølfjell, Speidertjønn, net, 22 July 1997, 1♀, Solbakken, 670 masl, MT, 8 June–13 July 1985, 3♂♂, 29 June–6 August 1986, 2♂♂1♀, 6 August–29 September 1986, 1♂2♀♀, 25 July–5 August 1991, 1♂, 5–9 August 1991, 3♂♂8♀♀, 31 August–29 September 1991, 1♂4♀♀. **SFI** Aurland: Flåm, Indrelid, 400 masl, MT, 13 August–24 September 2000, 1♂18♀♀, Flåmsdalen, Berekvam, 29 July 1999, 1♀, Upsete, railway station, 822 masl, MT, 25 June–19 July 1994, 1♂2♀♀, 19–31 July 1994, 7♂♂6♀♀, 21 August–4 October 1994, 3♂♂6♀♀, net, 22 July 1996, 2♀♀, net, 23 July 1997, 2♂♂4♀♀, 11 July 2004, 5♂♂, Øyestøl, Aurlandsdalen, net, 960–970 masl, net, 29 July 2005, 1♂2♀♀, 3 August 2006, 3♂♂9♀♀; Hyllestad: Botnen, 2 MT, 25 July–7 September 1999, 1♂7♀♀; Lærdal: Maristova, 811 masl, 29 June 1938, 1♀, det. L. Lyneborg; Sogndal: Ølmheim, J/B, 30 September 1982, 3♀♀; Vik: Fresvik, MT, 17 May–30 June 1997, 3♂♂4♀♀. **MRI** Norddal: Fjæra, Ytste Furneset, MT, 5 May–11 June 2001, 1♂1♀, Tafjordfjella, Veldalen, 23 July 1996, 3♂♂; Rauma: Gluterbekken, net, 14 July 2003, 2♂♂ (H. Hatlen p.c.), Isfjord, Grøtta, 5 July 2001, 2♂♂ (H. Hatlen, p.c.). **STI** Oppdal: Kongsvoll, 900 masl, MT, 28 July–12 August 1992, 1♂, 12–19 August 1992, 1♂1♀, 920 masl, MT, 22–28 July 1992, 3♀♀, S. Knutshø,



Map 13. Distribution of *Lyciella laeta* Zetterstedt, 1838.

1080 masl, 5 YT, 15–19 August 1992, 1♂, 1400 masl, MT, 28 July–12 August 1992, 1♂, S. of Driva, YT, 23–27 July 1992, 1♀, Sprænbekken, 1000 masl, YT, 19–22 August 1992, 1♀; Trondheim: Leirbru, 17 July 1967, 1♂2♀♀. **NSY** Bodø: Falkflaug, Upper, 20 July 1986, 17♂♂84♀♀, Falkflaug, Falkflaugtjønn, 13 August 1992, 10♂♂25♀♀, Falkflaug, Hammersbakken, 23 July 1986, 6♂♂16♀♀, 5 August 1987, 1♀, 12 July 1989, 3♀♀, Falkflaugvika, 12 July 1989, 2♂♂11♀♀, Falkflaug, Tverrlivann N, 1 August 1987, 1♂2♀♀, Falkflaug, Urskarsvann, 11 July 1978, 1♂, Isvik, 27 July 1986, 1♀, Urskar, 1 August 1987, 1♂7♀♀, 1 August 1992, 31♂♂38♀♀, Urskar, Bukktjønn, 18 August 1992, 5♂♂16♀♀, Urskar, Kronli, 20 July 1986, 5♂♂21♀♀, MT, 15–27 July 1986, 9♂♂14♀♀, net, 18 July 1988, 1♂3♀♀, 12 August 1992, 4♂♂11♀♀, Urskar, Kronlitoppen, 22 July 1986, 9♀♀, Valnesvann, 15 July 1984, 1♂1♀, 14 July 1988, 1♀, 15 August 1992, 12♂♂56♀♀, Valnesvann, Ørnli, 15 August 1992, 1♀; Gildeskål: Oterstranda, 9 July 1981, 2♀♀. **NSI** Rana: Helgåvatn, 26 June 1982, 1♂ (RMZ 2549), Kvandalen, 5 July 1973, 1♀ (RMZ 2483), 6 July 1973, 1♂1♀ (RMZ 2974), 7 July 1973, 1♀ (RMZ 2978). **NNV** Røst: Vedøy, 4 July 1936, 1♂ (TSZD 7541). **NNØ** Evenes: Lenvikmarka-Snubba, MT, 21 August–16 September 2003, 1♂29♀♀. **TRY** Berg: Øvre Svanelvdal, Øvre Svodan, net, 23 June 2004, 13♂♂10♀♀; Karlsøy: Bukkhattøy, 2 August 1934, 1♀ (TSZD

7517), Hushattøy, 20 August 1934, 1♀ (TSZD 7532), 25 July 1935, 2♀♀ (TSZD 7528, 7534), Nord-Fugløy, 2 August 1925, 1♀, 1 specimen, (TSZD 7510, 7512), Måkeskjær, 19 July 1934, 2♀♀ (TSZD 7519, 7520), 20 July 1934, 1♂, (TSZD 7531), 28 July 1934, 1♀ (TSZD 7518), 21 August 1934, 1♀ (TSZD 7539), 22 August 1934, 2♂♂ (TSZD 7526, 7560), Måsvær, 28 July 1934, 4♂♂4♀♀ (TSZD 7516, 7524, 7525, 7537, 7542, 7547, 7551, 7556), 30 July 1934, 1♂ (TSZD 7547), Vannøya 25 July 1925, 2♀♀ (TSZD 7506, 7511), 28 July 1925 4♀♀ (TSZD 7498, 7507, 7509, 7511); Kvæfjord: Straumsbotn, 1♀; Torsken: Grunnfarnes, net, 21 June 2004, 13♂♂14 ♀♀, Kaperdalen, near tunnel, net, 24 June 2004, 1♀, at Same Museum, 22 June 2004, 1♂2♀♀, Sifjordura, net, 22 & 24 June 2004, 1♀, Øvre Svalenldal, net, 22 June 2004, net, 2♂♂2♀♀; Tranøy: Senjehestneset, net, 23 June 2004, 1♀; Tromsø: Oldervik, Brattfjellet, 13 September 1987, 1♀. **TRI** Målselv: Gullhav, near Storakka, net, 25 June 2004, 1♂, Olsborg, Trollhaugen, net, 25 June 2004, 5♂♂8♀♀, Rundhaug, at river, net, 24 June 2004, 1♀. **FV** Alta: Gargia, net, 3 August 1982, 3♀♀, Joatkajävri (Jotkajavre), 24 July 1924, 3♀♀ (TSZD 7502, 7503, 7504), Mattisdalen, MT, 4 August–26 September 1996, 10♂♂95♀♀; Måsøy: Rolvsøy, Gunnarsnes, MT, August 1992, 1♀. **FI** Karasjok: Ravnastua, 11 August 1924, 1♂1♀ (TSZD 7496, 7505). **FØ** Kirkenes: Prestøya, MT, 30 July–8 August 1996, 1♂1♀, net, 5 August 1996, 1♀; Sør-Varanger: Vaggetem, 1 August 1996, 2♂♂2♀♀.

Remarks: *L. laeta* is here reported new to HES, OS, BV, VE, TEI, HOY, HOI, SFI, STI, NSY, NSI, TRY, TRI, FV and FØ. *L. laeta* is the smallest species of the yellow coloured Lauxaniidae occurring in Norway and can nearly be recognized by size alone. The males have characteristic genitalia. Zetterstedt (1847) described *Lyciella laeta*, and listed records from a long list of Norwegian localities: Oslo, Fredriksvern, Land, Nes in Hallingdal, Nystua, Filefjell, Dovre, Gudbrandsdal, Østerdal, Nordmøre and Romsdal, Garnes, Thynes and Østre Nes and also from Alta and Kautokeino. In Zetterstedt's collection in Lund, Sweden, there are today 1 male and 1 female from Dovre: Dovre (NTI), 1 male from Verdal: Garnes (NTI), 1 male from Verdal: Nes (NTI) and 2 females from Bjerkvik near Narvik (NNØ). Siebke also recorded *L. laeta* from many areas, and in ZMO there is material from Dovre, Gjemnes, Nystua, Tyldal and Tøyen. Both authors showed that *L. laeta* is among the most widespread species of lauxaniids in Norway. *L.*

laeta is the lauxaniid species occurring most often in alpine/subalpine, and by far the most common species of lauxaniids in the provinces Nordland, Troms and Finnmark. Even if there are many records from Northern Norway it is probably even more common in northern areas than shown on the map. *L. laeta* is often collected in valleys bordering to alpine areas, and it is also several times recorded from the lowlands.

L. laeta is also recorded from Sweden in northern parts see Frey (1918) and Ringdahl (1951). The International Biological Program in 1969–70 surveyed large parts of the central mountainous area of the Hardangervidda alpine area in southern Norway, see Fjellberg (1972), and *L. laeta* was clearly a common species of Lauxaniidae collected. It must be considered a true alpine species, albeit it can occur in the lowlands also. *L. laeta* is also on some localities collected in fairly high numbers. The flight period is from late June until first half of September.

Lyciella mihalyii Papp, 1978 (Map 14)

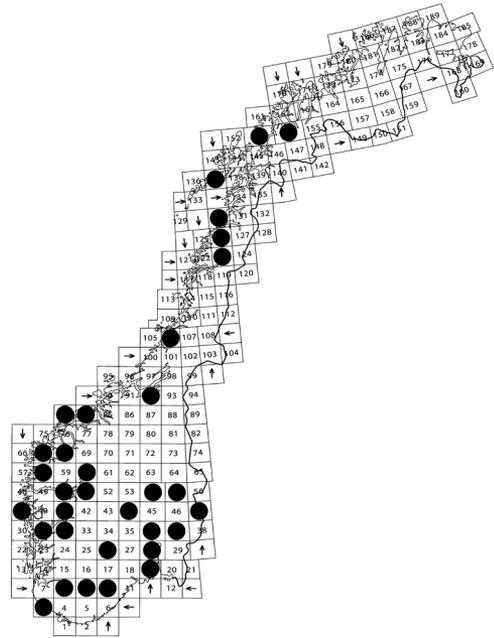
Total material: 171♂♂ (32♂♂ earlier published).

Number of localities: 72 (18 earlier published).

Records: **AK** Eidsvoll: Eidsvoll, 9 July 1988 2♂♂. **HES** Ringsaker: Furnes, Sandvold, net, 24 June 1991, 1♂; Våler: Gravberget, net, 24 June 2003, 1♂. Elverum: Baanerud, net, 25 & 27 June 2005, 6♂♂, Øksetsaga W, 29 June 1998, 9♂♂; **HEN** Trysil: Osensjøen, S, at outlet, net, 30 June 1998, 1♂; Åmot: Borregårdsvelta, net, 29 June 1998, 1♂, Near bridge to Rød, net, 30 June 1995, 5♂♂, Strömstad Deset N, 24–25 June 2003, 1♂. **OS** Nordre Land: 1.5 km E of Svingstad, net, 1 July 1998, 3♂♂. **BØ** Drammen: Underlia, MT, August 1996, 3♂♂; Nedre Eiker: Mjøndalen, Miletjern, MT, Medio July 1988, 1♂; Ringerike: Sokna, at vicarage, MT, 23 June–28 July 2005, 1♂, Sokna, center, net, 23 June 2005, 1♂. **BV** Gol: Engjan, net, 6 August 2006, 1♂. **VE** Nøtterøy: Strengdalsvann, 5 July 1983, 2♂♂. **TEI** Tinn: Håkanes, MT, August 1995, 1♂. **AAY** Vegårdshei: Kvifte, Kvifteskog, net, 26–27 June 1989, 1♂. **VAI** Sirdal: Tonstad, center near river, net, 3 August 1996, 1♂. **HOY** Bergen (Åsane): Vollane, MT, 10–22 July 1986, 1♂; Fusa: Vinnesleira, net, 10 July 1995, 1♂. **HOI** Eidfjord: Hjolmodalen, 400 masl, 6 July 1967, 1♂, 270 masl, 24 June 1969, 2♂♂; ; Ulvik: Dalsete W, 795 masl, 29 July 2006, 4♂♂, Langevann S, appr. 790 masl, 17 July 2006, 1♂; Voss: Ulvundøyeni, 28 July 1997, 1♂. **SFY** Eid: Lote, net, 18 June

1995, 1♂; Flora: Svoldal, net, 11–12 July 1998, 14♂♂. **SFI** Aurland: Berekvam, net, ca. 300 masl, 29 July 1989, 1♂, Flåm, net, 7 July 1965, 1♂, Upsete, at railwaystation, net, 822 masl, net 11 July 2004, 8♂♂; Øyestøl, net, 965 masl, net, 29 July 2005, 1♂; Luster: Fortundalen, Drægni, Ruskesethaugen, MT, 480 masl, 26 June–28 July 2004, 2♂♂; Vik: Fresvik, 3 August 2006, 4♂♂. **MRY** Haram. Løvøya, Nosa, 3 July 1992, 2♂♂; Molde: Bolsøya, Draghalsen, MT, 18 July–25 September 2006, 1♂; Volda: Helgaton–Tømmerbakken, net, 17 June 1995, 3♂♂. **MRI** Rauma: Isfjord, Gluterbenken, 14 July 2003, 1♂ (H. Hatlen p.c.), Isfjord, Grøtta, 5 July 2001, 1♂ (H. Hatlen p.c.). **STI** Trondheim: Leirbru, 18 July 1987, 1♂, Østmarkneset, 22 July 1987, 5♂♂. **NTY** Nærøy: Kjeksvika, MT, 20 June–5 August 2002, 3♂♂. **NSY** Bodø: Bodø, N. Vindlausbukt–Severinhagen, 15 July 1989, Hernes, 8 August 1987, 2♂♂, old airport, 15 July 1989, 2♂♂, Falkflaug, Upper, 15 July 1989, 6♂♂, Falkflaugvika, 12 July 1989, 3♂♂, Valnesvann, 14 July 1988, 8♂♂, Ørnli, Valnesvann, 15 August 1992, 3♂♂. **NSI** Beiarn: Moljord, N, 21 July 1981, 1♂, Rana: Kvanndalen, 3 July 1973, 1♂ (RMZ 2983), Selforslia, 6 July 1983, 1♂ (RMZ 2855). **NNV** Vestvågøy: Rettvik, net, 23 August 1983, 1♂ **TRY** Torsken: Grunnfarnes, net, 21 June 2004, 2♂♂, Sifjordura, net, 22 & 24 June 2004, 1♂, Tranøy: Senjehestneset S, net, 23 June 2004, 4♂♂. **TRI** Målselv: Kongsvolltunet, at L. Rostavatn, net, 24 June 2004, 2♂♂, Olsborg, Trollhaugen, net, 25 June 2004, 1♂

Remarks: *L. mihalyii* is here recorded new to AK, HES, TEI, MRI, STI, NTY, NSY, NSI, NNV TRY and TRI. *L. mihalyii* was first recorded from Norway by Greve (2002a). Only males can be determined with certainty, see above under *L. illota*. Additional material presented here shows that *L. mihalyii* is not only common in southern Norway, it is probably widely distributed in central- and northern-parts of Norway as well. During a week's stay in Troms province in June 2004, it was possible to collect *L. mihalyii* from several localities. There still is no material collected from the northernmost province in Norway, Finnmark, the author's guess is that it is probably distributed here as well. *L. mihalyii* seems to be more rare than *L. illota* in the region around the Oslofjord where much collection has been done in the last decades. *L. mihalyii* has on several localities been collected together with *L. illota*. There are slightly more localities from Central – and Northern Norway of *L. mihalyii* than for *L. illota*. Greve (2000 a) did not present material from sub-alpine



Map 14. Distribution of *Lyciella mihalyii* Papp, 1978.

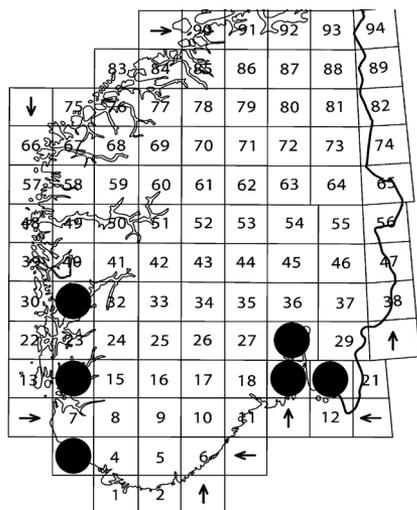
or alpine areas, here, however, one record from Øyestøl in the Aurland valley is at 965 masl and should represent subalpine area. There are also two records from the area near Upsete, one at the railway station at 822 masl and another somewhat lower down at the Langevann which also are at a level of approximately 800 masl.

Lyciella platycephala (Loew, 1847) (Map 15)

Total material: 39♂♂48♀♀ (14♂♂31♀♀ earlier recorded).

Number of localities: 9 (1 earlier published).

Records: Ø Sarpsborg: Borge Varde, 21 August 1998, 1♂. **AK** Frogn: Håøya, MT, 3–16 June 1984, 6♂♂4♀♀, 29 June–22 July 1984, 6♂♂1♀, 22 July–18 August 1984, 1♂; Nesodden: Fagerstrand, LT, 30–31 August 2004, 2♂♂2♀♀, 10–11 August 2005, 2♂♂, 24–25 August 2005, 1♂, 25–26 September 2005, 1♀. **VE** Tjøme: Kynna N, 17 July 1983, 3♂♂3♀♀. **RY** Egersund: Hornesvann, 8 July 1986, 2♂♂4♀♀; Finnøy: Sevheim, MT, 8 July–5 August 1995, 1♀. **HOI** Kvam: Berge Nature Reserve, net, 6 June 1999, 1♂6♀♀, MT, 6 August–13 July, 1♂, Neshalvøya, Nes, MT, 6 June–16 August 2006 1♂, 16 August–13 October 2006, 1♀; Kvinherad: Rosendal at



Map 15. Distribution of *Lyciella platycephala* (Loew, 1847).

Træet, 26 August 1968, 1♂.

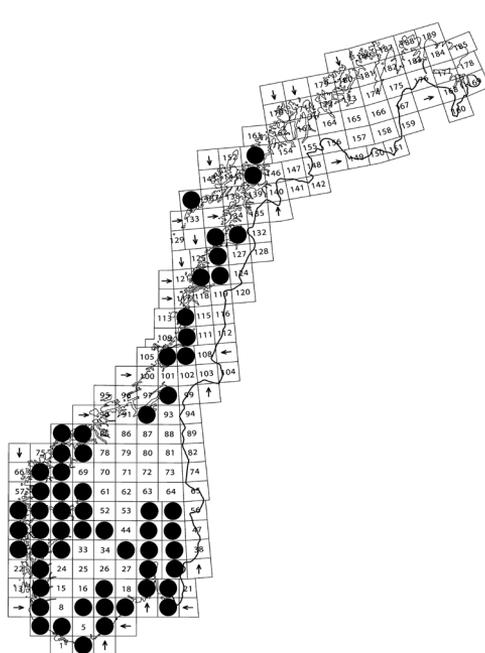
Remarks: *Lyciella platycephala* is here recorded new to Ø, VE, RY and HOI. *L. platycephala* was first recorded by Greve (2000a). 31 specimens were lighttrapped specimens from Nesodden: Fagerstrand caught between 1994–2002 Greve & Kobro (2004). The short list of only seven new localities here indicates that *L. platycephala* is a fairly rare species in southern Norway. There are no localities from sub-alpine or alpine areas. The flight period is from July to August, a few specimens have, however, been caught in the first part of June.

***Lyciella rorida* (Fallén, 1820) (Map 16)**

Total material: 1790♂♂2481♀♀ 8 specimens (192♂♂259♀♀ 1 specimen earlier published).

Number of localities: 228 (6 earlier published).

Records: Ø Hvaler: Arekilen, MT, 22 July–15 August 2000, 2♂♂3♀♀, August–September 2000, 3♀♀; Onsøy: Rauer, 29 July 1989, 2♀♀; Sarpsborg: Molteberg, 21 June 1991, 1♂, Skjebergdalen, 27 June 1991, 1♀, Tune, Råkil, 30 July 1991, 1♀. AK Asker: Bjørkås, MT, 4 June–2 July 1995, 1♂♂3 specimens, 24 August–10 October 1995, 3♂♂, Konglungen, 9 July 1999, 1♂1♀ (ZMO); Eidsvoll: Eidsvoll, 9 July 1988, 1♂; Enebakk: Bøler, MT, July 1996, 2♂♂, August 1996, 10♂♂21♀♀, September 1996, 5♂♂4♀♀, Vangen, CT, Point



Map 16. Distribution of *Lyciella rorida* (Fallén, 1820).

18, 23 & 24 June–30 July 1999, 4♂♂11♀♀, Vestbyveien, net, 26 June 2000, 1♀; Frogg: Håøya, MT, 3–16 June 1984, 1♀, 16–27 June 1984, 18♂♂17♀♀, 27 June–22 July 1984, 2♂♂3♀♀, 22 July–18 August 6♂♂18♀♀, Langåra, MT, 22 June–6 July 1997, 1♂4♀♀, 2–10 August 1997, 1♂1♀, 10–24 August 1997, 2♀♀; Lørenskog: Losby, CT, Point 14, 21 June–31 July 1991, 1♀; Nesodden: Fagerstrand, LT, 24–25 June 2003, 1♂, 19–20 July 2003, 1♀, 27–28 July 2003, 1♀, 19–20 August 2003, 1♂, 21–22 August 2003, 1♂2♀♀, 6–7 September 2003, 3♂♂, 7–8 September 2003, 1♂1♀, 9–10 September 1♂, 15–16 September 2003, 2♂♂1♀, 17–18 September 2003, 1♂2♀♀, 20–21 September 2003, 5♂♂6♀♀, 24–25 September 2003, 1♀, 25–26 September 2003, 3♀♀, 8–9 July 2004, 4♀♀, 11–12 July 2004, 1♀, 2–3 August 2004, 1♂, 8–9 August 2004, 1♂, 15–16 August 2004, 2♀♀, 29–30 August 2004, 17♂♂17♀♀, 30–31 August 2004, 8♂♂10♀♀, 3–4 September 2004, 1♀, 9–10 September 2004, 1♂, 12–13 September 2004, 3♂♂5♀♀, 14–15 September 2004, 4♂♂8♀♀, 19–20 September 2004, 2♂♂, 21–22 September 2004, 3♀♀, 26–27 September 2004, 3♀♀, 28–29 September 2004, 1♀, 5–6 October 2004, 2♀♀, 7–8 October 2004, 2♀♀, 20–21 July 2005, 1♂, 2–3 August 2005, 1♀, 7–8 August 2005, 9♂♂9♀♀, 10–11 August 2005, 2♀♀, 15–16 August 2005, 1♀, 23–24 August 2005, 1♀, 24–25 August 2005, 2♂♂2♀♀, 29–30 August 2005, 1♀, 1–2 September 2005, 1♂, 2–3 September

2005, 1♀, 6–7 September 2005, 1♂1♀, 11–12 September 2005, 2♀♀, 13–14 September 2005, 3♀♀, 18–19 September 2005, 1♂1♀, 20–21 September 2005, 2♂♂4♀♀, 26–27 September 2005, 2♂♂2♀♀, 27–28 September 2005, 3♀♀, 6–7 October 2005, 1♀, 7–8 October 2005, 1♂, 10–11 October 2005, 1♂2♀♀, 13–14 October 2005, 1♀; Oslo: Hovedøya, 12 July 1985, 2♂♂1♀, 5 July 1988, 14♂♂27♀♀, Hovedøya S, 18 July 1989, 11♂♂20♀♀, Tjernsmyr, net, 25 July 1988, 3♂♂3♀♀; Ski: Follo, Midtsjøvann, 6 July 1983, 1♂. **OS** Nordre Land: Dokka, 11–14 August 2001, 1♂2♀♀, (H. Hatlen p.c). **HES** Elverum: Baanerud, net, 25 & 27 June 2005, 4♂♂13♀♀, Glomma, “Speiderøya”, net, 20 June 1997, 1♀, Sagtjernet, net, 30 June–1 July 1998, net, 1♀, Øksetsaga V, net, 29 June 1995, 1♂; Ringsaker: Brumundal, Dæli, net, 28 June 1991, 2♂♂2♀♀, Furnes, Sandvold, net, 24 June 1991, 2♂♂1♀, MT, July 1992, 15♂♂36♀♀, August 1992, 12♂♂18♀♀, 5–12 July 1993, MT, 1♂, MT, June 1997, 5♀♀, July 1997, 1♂, August 1997, 1♂2♀♀, 14 July–5 August 1998, 2♂♂12♀♀, 5 August–10 September 1998, 3♀♀, no date, 5♂♂3♀♀, Helgøya, Hovindsholm, MT, 29 June–2 July 1991, 1♂, Helgøya, Eiksberget, 24 July 1992, 1♂1♀, Veldre, net, 9 September 1991, 1♂; Vang: Bjørgedalen, net, 21 July 1992, 2♀♀. **HEN** Åmot: Rena, Skjelmoen S, net, 18 June 1997, 1♀, near Åsta bridge, 29 June 1998, 1♀. **BØ** Drammen: Underlia, MT, August 1995, 3♂♂7♀♀; Hurum: Mølen, 13 July 1989, 1♂3♀♀, 2–4 July 1990, 3♀♀, Ramvikholmen, 12 August 1990, 4♀♀, Tofteholmen, MT, 31 July–1 September 1991, 1♀; Nedre Eiker: Hagetjern, Ryggsetra, July 1994, MT, 1♀, Mjøndalen, Miletjern, LT, Medio July 1988, 2♂♂2♀♀, Medio August 1988, 1♂3♀♀; Ringerike: Ask chapel, net, 5 August 2006, 1♂2♀♀, Sokna center, net, 4 July 2004, 1♀, 23 September 2005, 1♀, at vicarage, net, 3 July 2004, 1♀, 30 July 2005, 2♀♀, MT, 3–23 June 2005, 1♀, 23 June–28 July 2005, 2♀♀, 28 July–15 September 2005, 1♂3♀♀, Sokna, Hovland, MT, 3 July–13 August 2004, 2♀♀, 13 August–3 September 2004, 1♀, 23 June–30 July 2005, 4♂♂1♀; Røyken: Kinnartangen, Hyggen, 6 July 1989, 2♀♀, 8 July 1989, 2♂♂1♀, 17 July 1998, 1♀, Slemmestad, 18 August 1935, 1♂1♀ (TSZD 7553, 7548). **BV** Rollag: Tråen saga, MT, August 1994, 2♀♀; Ål: Storeteigen, MT, 500 masl, 18 July–18 August 1994, 1♀, 18 August–18 September 2000, 1♀, Tuftelia, 680 m a s l, MT, 19 June–18 July 2000, 2♂♂, 18 July–18 August 2000, 4♂♂8♀♀, 18 August–18 September 2000, 1♂1♀. **VE** Borre: Adalstjern, net, 30 June 2000, 1♂1♀, Falkensten, net, 30 June 2000, 3♂♂6♀♀, Løvøya, September 1994, 1♀, Semb, June 1974, 2♂♂1♀; Brunlanes: Stavern, net, 5 July 1980, 1♀; Horten: Karljohansvern, net, 9 July 1985, 1♂, 30 June 2000, 3♂♂7♀♀; Larvik: Middagshøgda, net, 29 June 2000, 1♂8♀♀; Nøtterøy: Strengdalsvann, 5 July 1983, 1♂2♀♀; Stavern: Stavern, no date, 1♀ leg. Siebke (TSZD 7565); Stokke:Akersvannet, net, 29 June 2000, 5♂♂8♀♀, Melsomvik, net, 28 June 2000, 5♂♂16♀♀; Tjøme: Helgerød, Verdens ende, 28 June 1984, 1♂, Kjære, 12 June 1965, 1 specimen, 10 August 1966, 1♂, Kolabekkilen, 24 July 1982, 33♂♂40♀♀ 3 specimens, 19 July 1983, 8♂♂29♀♀, 4 July 1985, 2♂♂2♀♀, Kynna, 17 July 1983, 43♂♂78♀♀, Mostrand, YT, 4–11 August 1984, 1♂1♀ Mostrand, 20 July 1983, 3♂♂2♀♀, 22 June 1995, 2♂♂3♀♀, Moutmarka S, 24 July 1982, 5♂♂7♀♀, Tjøme, 18 June 1983, 1♂1♀, 22 June 1995, 2♂♂1♀, Treidene, 19 July 1983, 1♀; Tønsberg: Slottsfjellet, 18 July 1982, 1♀. **TEY** Porsgrunn: Friarflauene, 17 August 1983, 1♀. **TEI** Tokke: Dalen, hotel garden, net, 24 June 2006, 18♂♂28♀♀, Dalen E, net, 25 June 2006, 5♂♂3♀♀. **AAV** Arendal: Nidelven, 8 July 1992, 1♀, net, Skomakerveien, 21–23 July 2003, 2♀♀, net, Solevann, 28 June 2003, 2♂♂8♀♀, Tromøya, 22 May 1983, 1♂; Lillesand, Storemyr, 7 June 1992, 1♀; Vegårdshei: Kvifte, Kvifteskog, 26–27 June 1989, 3♂♂7♀♀. **AAI** Bygland: Heddevika, MT, 16 May–11 June 1997, 1♂, 11 June–4 July 1997, 6♀♀, 4 July–31 August 1997, 1♂5♀♀, 27 August–3 October 1998, 2♂♂5♀♀. **VAY** Flekkefjord: Hidra, Kirkehavn, 15 July 1982, 5♂♂5♀♀, Sira, net, 31 July 1984, 1♂3♀♀, 17 August 1984, 1♀; Mandal: Holum, YT, 10–15 July 1997, 1♂. **RY** Eigersund: Hornesvann, collected 26 December 1985, hatched May 1986, 1♀, net, 8 July 1986, 9♂♂7♀♀, Sandbakkane, 12 July 1982, 2♂♂3♀♀; Finnøy: Kvitevik, MT, 26 June–5 August 1995, 3♂♂1♀, Sevheim, LF, 15–28 August 1992, 1♀, 16–24 September 1992, 1♀, 24 September–1 October 1992, 1♂1♀, 2 MT, 8 July–5 August 1995, 20♂♂50♀♀, 25 August–9 September 1995, 14♂♂38♀♀, YT, 26 August–9 September 1995, 3♂♂6♀♀; Forsand: Forsand, 10 July 1945, 1♀ det. L. Lyneborg, Jøsneset, Fosså, MT, 11–21 July 1982, 2♂♂7♀♀; Hå: Brusand, 3 July 1935, 1♂ (TSZD 7521), Ognå, MT, 17 July–21 August 1996, 3♂♂4♀♀, 21 August–28 September 1996, 1♀, Tysvær: Kårstø, net, 14 July 1981, 1♀, Kårstø, Sandvikgårdene, net, 14 July 1981, 1♂2♀♀. **RI** Forsand: Frafjord, net, 16 August 2000, 1♀, Frafjord, Røssdalen, net, 19 August 2000; Hjelmeland: Eiane, 16 August 1982, 3♂♂, Heløy, 12 August 1982, 2♂♂2♀♀, 5 October 1982, 1♂, Mosnes, J/B, 2 August 1982, 1♂, 19 August 1982, 2♂♂1♀, 5 October 1982, 5♀♀, Sande, J/B, 5 October 1982, 2♀♀, Sande, no date, 6♂♂, Sæbø, J/B, 19 July 1982, 2♂♂1♀, 2 August 1982, 1♂1♀, 19 August 1982, 1♂1♀; Suldal: Sand, Eide, 25 June 1935, 1♂ (TSZD 7571). **HOY** Askøy: Florvåg, 23 August 1987, 1♂; Austrheim, Mongstad, MT, 28 May–1 July 2005, 1♀; Bergen: Dokkeveien, June 1992, 1♀, Kristianborg-

vann, 25 July 1989, 4♂♂, Melkeklassen, net, 4 July 1981, 1♀, Munkebotntjern, 14 July 1987, 13♂♂3♀♀, 3 July 1988, 18♂♂6♀♀, 20 June 1989, 2♀♀, Neevengården, 4 July 1982, 1♀, Sandviken, 5 June 1995, 1♀, Sandviksfjellet, July 1988, 1♂, Sølvberget, 10 August 1986, 4♂♂4♀♀, YT, Solheimsviken, 28 June 1995, 2♂♂, August 1996, 2♀♀, Bergen (Fana): Fana Folkehøgskule, 12 July 1983, 1♀, Mildevann, MT, 19 June–27 July 2005, 2♂♂3♀♀, 28 July–2 September 2005, 3♂♂5♀♀, net, 7 July 2005, 3♂♂3♀♀, 30 August 2005, 1♂2♀♀, Rambjøra Nat. Res., 2 MT, 23 May–3 July 2006, 4♂♂4♀♀, net, 3 July 2006, 4♂♂, 2 MT, 3–24 July 2006, 11♂♂8♀♀, 24 July–15 August 2006, 10♂♂7♀♀, Skjold, 13 September 1936, 1♂ det. L. Lyneborg, Straume, 22 June 1986, 1♀; Bergen (Åsane): Eidsvåg, Vollane, net, 24 August 1970, 1♀, June 1975, 1♀, CT, 9–13 June 1978, 1♀, MT, 21 June–10 July 1986, 2♂♂5♀♀, 10–22 July 1986, 8♂♂3♀♀, 16 August–22 September 1986, 3♂♂7♀♀, Furubotten, net, 17 September 1967, 1♀ det. L. Lyneborg, Golfbanen, 17 July 1966, 1♂1♀ det. L. Lyneborg, Haukåsmyrane, MT, 5 June–16 July 2003, 1♂4♀♀, 16 July–21 August 2003, 14♂♂9♀♀, 21 August–30 September 2003, 3♀♀, Haukås, Almås E, MT, 5 June–16 July 2003, 32♂♂24♀♀, 16 July–21 August 2003, 31♂♂28♀♀, 21 August–30 September 2003, 2♂♂7♀♀, Haukås, Bruås, MT, 16–28 July 2003, 7♂♂25♀♀, 28 July–12 August 2003, 6♂♂25♀♀, 12–21 August 2003, 6♂♂6♀♀, Haukåsvatn, at outlet, MT, 5 June–16 July 2003, 3♂♂1♀, 16 July–21 August 2003, 5♂♂11♀♀, 21 August–30 September 1♂3♀♀, Kråmyrane Nat. Res., 2 MT, 16 July–12 August 1999, 1♂, 31 July–16 August 1986, 14♂♂4♀♀, 12 August–30 September 1999, 1♀, Langavatn at Mellingen, net, 12 June 2005, 2♂♂3♀♀; Fjell: Syltøy, 6 June 2002, 1♂; Fusa: Djupvik, net, 10 July 1995, 1♂12♀♀, Vinnesleiren, net, 10 July 1995, 4♂♂3♀♀; Masfjorden: Søre Hopevann, 8 June 1997, 2♀♀; Os: Halgjem, net, 8 July 1999, 20♂♂18♀♀, Røykenesvatn, net, 19 June 1983, 1♀; Osterøy: Kleppe, 11 July 1956, 1♀ det. L. Lyneborg, Kossdalsvingene, net, 23 June 2002, 21♂♂9♀♀, Marikovane, 27 June 1982, 3♂♂10♀♀, Stord: Hystadmarka Nat. Res., net, 12 July 2006, 25♂♂9♀♀; Tysnes: Espevik, net, 24 June 1989, 1♂, Øygarden: Vardholmen, MT, 15 August–15 September 1984, 4♂♂8♀♀, 14 August–30 September 1985, 3♂♂4♀♀. **HOI** Eidfjord: Eidfjord, Øvre, 130 masl, 2 July 1967, 1♀, det. L. Lyneborg, 60 masl, 4 July 1967, 1♀, 21 July 1967, 1♀, Hjørmodalen, 80 masl, 5 July 1967, 2♀♀, 100–250 masl, 525 masl, 6 July 1967, 1♀, 100–250 masl, 4 July 1968, 3♂♂5♀♀, 50 masl, 7 July 1967, 1♀, 450 masl, 8 July 1967, 1♂7♀♀; 570 masl, 13 July 1967, 3♂♂4♀♀, 400 masl, 15 July 1967, 3♀♀, 280 masl, 16 July 1967, 1♂4♀♀, 240 masl, 24 June 1969, 5♂♂14♀♀, 340 masl, 7 July 1968, 1♀, 490 masl,

4 July 1969, 1♂8♀♀, Måbødalen, 580 masl, 7 July 1968, 2♂♂4♀♀, 270 masl, 24 June 1969, 2♂♂3♀♀, Simadalen, at power plant, 10 August 1981, 1♂2♀♀, Sysenvatn, 940 masl, 9 August 1969, 1♂2♀♀; Etne: Austrheim, net, 27 June 1985, 2♀♀; Granvin: Seim, 1 June 1936, 1♂, det. L. Lyneborg; Kvam: Bergsberget, 29 June 1971, 2♂♂, 30 June 1971, 2♀♀, 2 July 1971, 1♂2♀♀, 28 July 1971, 2♀♀, Gravdal, Svevatn, MT, 28 May–1 July 1997, 7♂♂6♀♀, 1–28 July 1997, 46♂♂26♀♀, 29 July–11 September 1997, 150♂♂72♀♀, 2 MT, 4 May–23 June 1998, 2♂♂2♀♀, 23 June–28 July 1998, 7♂♂4♀♀, 28 July–31 August 1998, 16♂♂11♀♀, Neshalvøya, MT, 6 June–6 August 2006, 1♂1♀, Stekka Nat. Res., net, 6 June 2000, 1♀, 2 MT, 6 August–13 September 2000, 7♂♂6♀♀, net, 4 July 2000, 1♀, PT, 27 July–22 August 1997, 1♂, Torrøvikbygd, 13 July 1971, 4♂♂2♀♀, 19 July 1971, 1♂, 20 July 1971, 1♂, 21 July 1971, 1♂; Kvinnherad: Rosendal, Baroniet, 2 June 1980, 1♀, Rosendal guest house, garden, MT, 12–15 June 2006, 2♂♂8♀♀, Rosendal, Træet, 26 August 1968, 1♀, Rosendal, Veavik, 10 July 1943, 1♂ det. L. Lyneborg; Ullensvang: Ernes, J/B, 2 July 1982, 1♀, Ekse, 16 June 1982, 1♀, Espe, 25 September 1982, 4♂♂5♀♀, Lofthus, 17 June 1982, 1♀, 21 September 1982, 13♂♂39♀♀, Lofthus, Frøysnesvegen, 22 June 1983, J/B, 4♀♀, Sekse, J/B, 16 June 1982, 1♀, 28 September 1982, 2♂♂12♀♀, Tveisme, 14 June 1982, 2♀♀; Ulvik: Hjeltnes, 1 September 1989, 1♀; Voss: Myrkdalen, Mørkve, net 28 July 1997, 2♂♂4♀♀. **SFY** Eid: Lote, net, 18 June 1995, 1♀; Flora: Svardal, net, 11–12 July 1998, 2♂♂5♀♀; Gulen: Brosvik, net, 1 July 1983, 1♂; Hyllestad: Botnen, 2 MT, 21 May–21 July 1999, 2♂♂5♀♀, 21 June–25 July 1999, 18♂♂21♀♀, 25 July–7 September 1999, 24♂♂215♀♀, 7–14 September 1999, 72♂♂56♀♀; Jølster: Solheim, 5 July 1983, 1♂, Sunde, net, 8 July 1998, 1♂, Vassenden at Jølstratunet, MT, 6–11 July 1998, 5♂♂5♀♀; Naustdal: Naustdal, MT, 3 July–28 July 1986, 1♂. **SFI** Aurland: Flåm, Indrelid, MT, 17 July–13 August 2000, 6♂♂19♀♀, 13 August–24 September 2000, 3♂♂1♀, Vassbygdi, 18 August 1940, 1♀; Balestrand: Målsnes, 2 MT, 14 June–1 August 1998, 3♂♂7♀♀, 1–29 August 1998, 3♂♂3♀♀, 29 August–4 October 1998, 5♂♂8♀♀; Høyanger: Vadheim, Kyrkjebø, 17 June 1942, 1♀; Leikanger: Gjerde, J/B, 11 August 1982, 1♂1♀, 20 August 1982, 1♂1♀, Hamre, 9 August 1982, 1♀, 15 September 1982, 7♂♂2♀♀, Husabø, J/B, 9 August 1982, 3♂♂2♀♀, 20 August 1982, 6♂♂, 30 September 1982, 8♂♂8♀♀, Njøs J/B, 20 August 1982, 1♀, 7 September 1982, 8♂♂11♀♀, 30 September 1992 1♂; Lærdal: Kvamma, 28 June 1938, 1♀; Luster: Fortundalen, Drægni, Ruskesethaugen, MT, 21 May–26 June 2004, 1♂1♀, 26 June–28 July 2004, 8♂♂5♀♀, 28 July–31 August 2004, 4♂♂3♀♀,

Fortundalen, Yttri, Dalsteigen, 2 WT, 8–21 June 2003, 1♂1♀, Fortundalen, Yttri, Djupedalen, 600 masl, WT, 5–19 July 2003, 2♂♂2♀♀; Sogndal: Ølmheim, J/B, 30 September 1982, 2♂♂34♀♀; Vik: Fresvik, MT, 17 May–31 June 1997, 1♀, 1–17 July 1997, 10♂♂20♀♀, 29 August–1 September 1996, 2♀♀, Orvedal: 16 July 1991, 1♂1♀. **MRY** Eide: Eide, Vassgård, 10 July 2003, 1♀, (H. Hatlen p.c.); Gjemnes: Knutset, Botnfjorden, 23 July 2003, 2♂♂2♀♀, 30 July 2003, 1♀, 31 July 2003, 1♂, 1 August 2003, 1♀, (H. Hatlen p.c.); Haram: Løvøya, Nosa, SW, 3 July 1992, 1♂1♀; Hareid: Håbakken, MT, 19–24 July 1991, 1♂1♀; Molde: Bolsøya, Draghalsen, MT, 18 July–25 September 2006, 2♀♀; Sykkylven: Andestad, MT, 25 June–13 August 2001, 1♀, 13 August–8 September 2001, 1♂, Gjevenes, MT, 25 June–11 August 2001, 3♀♀, 11 August–30 September 2001, 5♀♀; Volda: Helgatun–Tømmerbakken, net, 17 June 1995, 1♂2♀♀; Ørsta: Brekke, at river, 17 June 1995, 6♂♂13♀♀, Haugen, net, 16 June 1995, 3♀♀, Vatnevann, NW, net, 16 June 1995, 1♀; Åreflot NW, net, 20 July 1991, 1♂1♀. **MRI** Norddal: Fjora, MT, 23 June–18 July 1993, 1♀; Rauma: Isfjord, 28 June 1998, 1♀, Skorgen, 15 July 2001, 1♀ (H. Hatlen p.c.); Stranda: Lauvvika, MT, 28 June–6 July 2000, 11♂♂18♀♀, 6 July–20 August 2000, 4♂♂10♀♀. **STI** Trondheim: Korsvika, 21 July 1987, 1♀, Leirbru, 18 July 1987, 1♀, Rotvoll, Leangbukta, 21 July 1987, 11♂♂5♀♀, Østmarksneset, 22 July 1987, 11♂♂19♀♀. **NTY** Nærøy: Kjeksvika, MT, 6 May–20 June 2002, 82♂♂40♀♀, 20 June–5 August 2002, 85♂♂45♀♀, 5 August–3 September 2002, 23♂♂30♀♀, 3–13 September 2002, 1♂17♀♀. **NTI** Grong: Grong gård, 8 August 1982, 1♀; Stjørdal: Vikan, MT, 14 July–20 August 1990, 1♀, Verdal: Nes, no date, 1♀, (revised from *Lyciella laeta* L.U.). **NSY** Bindal: Reppen, 27 June 1980, 1♂2♀♀ (RMZ 3224); Bodø: Falkflaug, øvre, 20 July 1986, 6♂♂6♀♀, Falkflaug, Falkflaug-tjørna near river, 13 August 1982, 1♀, Hammersbakken, 23 July 1986, 1♀, Hernes, 8 August 1987, 1♂2♀♀, Isvik, 27 July 1986, 2♂♂3♀♀, Urskar, 1 August 1992, 4♀♀, Urskar, Bukktjønn, 18 August 1992, 7♂♂5♀♀, Valnesvann, 15 August 1992, 11♂♂31♀♀, Vindlausbukt–Severinshagen, 10♂♂7♀♀; Brønnøy: Horn, 7 August 1984, 1♂ (RMZ 3211); Gildeskål: Oterstranda, 9 July 1981, 1♂. **NSI** Rana: Alterhaug, 27 June 1980, 1♀ (RMZ 1404), Utskarpen, 20 August 1982, 1♀ (RMZ 2639). **NNV** Leknes: Kartfjord, net, 31 July 1979, 1♂. **NNØ** Evenes: Lenvikmarka, Snubba, MT, 21 August–16 September 2003, 9♂♂19♀♀, Hamarøy: Storvatn, net, 26 July 1979, 1♀, Sørfold: Røssvik, 3 July 1923, 2♀♀ (TSZD), 16 August 1928, 1♀ (TSZD). **TRY** Berg: Svanelvdalen, Øvre Svodan, net, 23 June 2004, 1♀; Torsken: Grunnfarnes, net, 21 June 2004, 1♀, Sifjordura, net, 22–24

June 2004, 2♂♂3♀♀.

Remarks: *L. rorida* is recorded new to HES, HEN, OS, BØ, BV, VE, TEY, TEI, AAY, AAI, VAY, RY, RI, HOY, HOI, SFY, SFI, MRY, MRI, STI, NTY, NTI, NSY, NSI, NNØ, NNV and TRY. Zetterstedts material includes one female from NTI Verdal: Nes. Siebke (1877) presents the first records of *L. rorida* from many localities in southern Norway, his material is deposited in ZMO. Correctly determined specimens in ZMO are from Ø Halden: Fredrikshald, July 1862, 2♂♂ 1♀♀, not dated; AK Oslo: Tøyen, 15 August 1848, 1♂2♀♀ 1 specimen, (leg. Siebke), Oslo, 1♂, (leg. Esmark); ON Vang: Nystuen 1♂. Nystuen is situated close to the lake Otrøvatn at 971 masl, the highest situated locality in the total material. Storm (1907) lists *L. rorida* from a garden in the vicinity of Trondheim, but no material exists in Norwegian collections. 187♂♂ and 255♀♀ were published from Nesodden: Fagerstrand (Greve & Kobro 2004), additional material from this locality is listed above. *L. rorida* is all yellow lauxaniid, the femur of the first pair of legs has a characteristic row of small spines. The antennae are yellow or slightly darkened at apical segment and palpi are all yellow, see Schacht et al. (2004). For drawings of the genitalia see Remm & Elberg (1979). *L. rorida* is definitely the most common species in the family Lauxaniidae in Norway, both in the south and in the north. It has also been collected in very high numbers on some localities. There are many localities listed from western Norway and *L. rorida* has been collected in numbers from outer islands (Vardholmen) as well as innermost fjord areas. In Northern Norway it might be fairly rare. However, *L. rorida* was collected at three localities during one week's stay in Troms province June 2004, however, only from the outer parts. *L. rorida* is clearly an euryoc species, but it is not recorded from many alpine areas. Two localities, Nystuen in Oppland province and Sysenvatn in inner Hordaland province are both situated above 900 m a s l. The material from inner Hordaland province presents many records from the valleys close to the Hardangervidda, however, none from the many high situated localities where collecting was done during the collecting period in 1967–70, see

Fjellberg (1972). *L. rorida* is widely distributed in NW Europe and has been collected from isolated areas like the Orkney islands (Laurence, 1997).

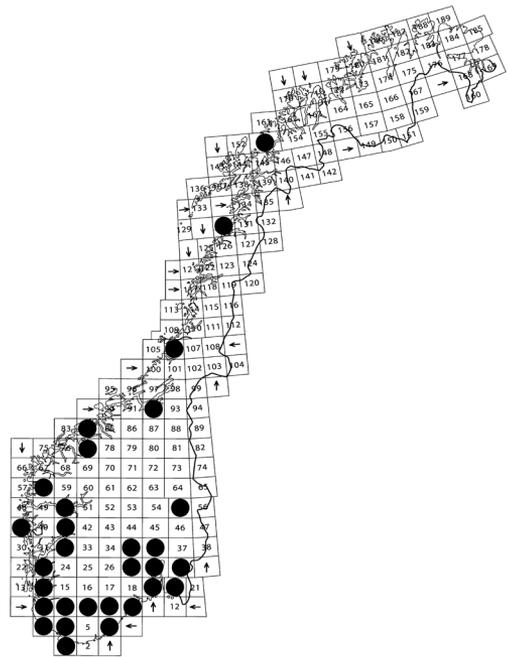
***Lyciella subfasciata* (Zetterstedt, 1838)**

(Map 17)

Total material: 178♂♂113♀♀ (earlier published 30♂♂25♀♀)

Number of localities: 60 (2 earlier published).

Records: Ø Moss: Rødsund bridge W, 26 June 2003, 1♂. **AK** Frog: Håøya, MT, 29 June–22 July 1984, 4♂♂; Lørenskog: Losby, WT, 28 June–2 August 1996, 1♂; Nesodden: Fagerstrand, LT, 6–7 July 2005, 1♂, 1–2 September 1♂; Oslo: Hovedøya, 5 July 1988, 3♂♂, 18 July 1989, 1♂2♀♀, Tjersmyr, 8 July 1989, 1♂. **HES** Elverum: Øksetsaga W, 29 June 1998, 1♂. **BØ** Drammen: Underlia, MT, May 1994, 1♀, August 1995, 5♂♂8♀♀; Hurum: Verksøya, MT, 6 July–19 August 1995, 1♂1♀; Nedre Eiker: Mjøndalen, Miletjern, LT, Ultimo June 1988, 1♂, Medio July 1988, 3♂♂, Medio August 1988, 2♂♂; Ringerike: Sokna, Hovland, MT, 13 August–3 September 2004, 1♂, net, 3 September 2004, 1♂, Sokna center, 4 July 2004, 1♂. **BV** Rollag: Rollag, Car-net, 6 August 1993, 1♂, Tråen saga, MT, August 1994, 1♂, Veggli, 19 July 1995, 1♂, **VE** Horten: Karljohansvern, 9 July 1985, 2♂♂3♀♀; Larvik: Middagshøgda, 29 June 2000, 5♂♂5♀♀; Nøtterøy: Strengdalsvann, 5 July 1983, 10♂♂12♀♀; Stokke: Melsomvik, 1 July 2000, 1♂; Tjøme: Hvasser, Sjøbustrand, 11 August 1984, 1♂1♀, Kolabekkilen, 19 July 1983, 4♂♂2♀♀, 24 July 1983, 5♂♂1♀, Mostrand, 8 July 1983, 1♂, 30 June 1985, 1♀, 23 June 1995, 1♂, Moutmarka, 1♂, Sunnane, 5 July 1983, 2♂♂3♀♀; Tjølling: Ula, 21 July 1984, 4♂♂6♀♀. **TEY** Bamble: Langøya, MT, 6–31 July 1995, 1♀, **TEI** Notodden: Tinnemyr, 3 August 1986, 1♂3♀♀; Tokke: Dalen, hotell garden, 25 June 2006, 1♀. **AAY** Arendal: Tromøya, Hove, 7 July 2000, 1♂; Vegårdshoi: Kvitte, Kvifteskog, 26–27 June 1989, 11♂♂10♀♀. **AAI** Bygland: Heddevika, MT, 11 June–1 July 1998, 1♂, 1–29 July 1998, 7♂♂6♀♀, 29 July–27 August 1998, 3♂♂7♀♀; Evje & Hornnes: near Lislevatn, 2 August 1996, 1♂. **VAY** Egersund: Hidra, Kirkehavn, 15 July 1982, 3♂♂1♀; Lindesnes: Lillehavn, 19 July 1999, 1♂1♀, 22 July 1999, 2♀♀; Risør: Torskeberget, LT, 20–21 July 1995, 1♂. **VAI** Sirdal: Tonstad center, 3 August 1996, 1♂2♀♀. **RY** Egersund: Sandbakkane, 12 July 1982, 3♂♂; Oгна: Oгна, MT, 21 June–17 July 1991, 2♂♂, 17 July–21 August 1991, 2♂♂1♀. **RI** Forsand: Lower Frafjord, 26 September 2000, 1♂; Hjelmeland: Fosså, MT, 11–21 July 1982, 1♂, Mosnes, J/B, 5 October 1982, 1♂. **HOY** Askøy: Florvåg, 23 August 1987, 3♂♂; Bergen: Munkebotnstjern, 14 July 1987, 1♂,



Map 17. Distribution of *Lyciella subfasciata* (Zetterstedt, 1838).

Sandviksfjellet: 21 August 1983, 3♂♂1♀, Sølverget, 10 August 1986, 1♂, Bergen(Åsane): Haukåsriver, at outlet, MT, 16 July–21 August 2003, 1♂, Eidsvåg, Vollane, MT, 25 May–14 June 1986, 1♂, Tysnes: Espevik, 24 June 1989, 1♂. **HOI** Ullensvang: Kinsarvik, J/B, 1 July 1982, 1♂; Voss: at Strandelva, 24 July 1997, 2♂♂. **SFY** Flora: Svardal, 11–12 July 1998, 16♂♂5♀♀; Hyllestad: Botnen, MT, 21 June–25 July 1999, 1♀. **SFI** Leikanger: Hermannsverk, Sanden, 18 July 1990, 1♂; Vik: Fresvik, 29 August–1 September 1996, 1♂. **MRY** Molde: Bolsøya, Draghalsen, MT, 18 July–25 September 2006, 1♂. **MRI** Stranda: Lauvvika, MT, 6 July–20 August 2000, 1♂. **STI** Trondheim: Østmarksneset, 22 July 1987, 1♂. **NTY** Nærøy: Kjeksvika, 5 August–3 September 2002, 1♂. **NSY** Bodø: Sjøgand, Valnes, 27 July 1987, 1♂. **TRY** Torsken: Sifjordura, 22 & 24 June 2004, 1♂.

Remarks: *L. subfasciata* is here recorded new to: Ø, HES, BØ, BV, VE, TEY, TEI, AAY, AAI, VAY, VAI, RY, RI, HOY, HOI, SFY, SFI, MRY, MRI, STI, NTY, NSY & TRY. *Lyciella subfasciata* was first recorded from Norway by Siebke (1877) from several localities in SE Norway, but in ZMO only 1 male from Tøyen, Oslo belongs probably to this species. 29 males and 25 females were recorded from AK Nesodden: Fagerstrand

by Greve & Kobro (2004). *L. subfasciata* has a wide distribution in the coastal parts of southern Norway, but it is more rare in the inner parts. There are several records in inner fjord districts. *L. subfasciata* must be considered one of the more common species of lauxaniids in southern Norway. There are only scattered records in central Norway, and one only from Sifjordura in the northern parts as far north as outer Troms. There are no records from subalpine or alpine area, and all records seem to be from lowlands. There are most records from late June, July and August. Very few from early June or late autumn.

Minettia Robineau-Desvoidy, 1830

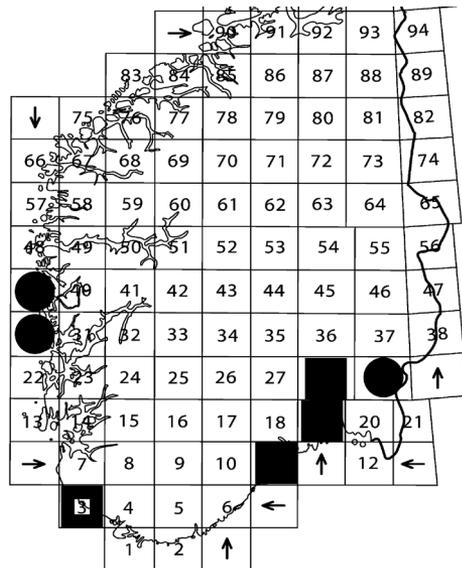
Minettia filia (Becker, 1895) (Map 18)

Total material: 9♂♂60♀♀ (1♂2♀♀ earlier published).

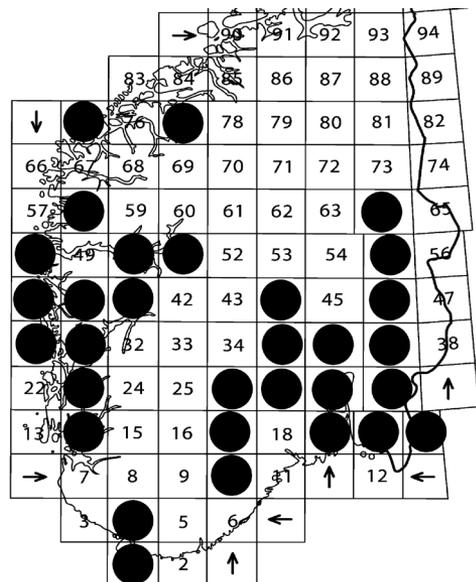
Number of localities: 3 localities (1 earlier published).

Records: HOY Bergen (Fana): Rambjøra, 2 MT, 23 May–3 July 2006, 3♂♂5♀♀, 3 July 2006, net, 1♀, 3–24 July 2006, 1♂12♀♀, 24 July–15 August 2006, 1♀, Bergen (Åsane): Haukås, Ålmås E, MT, 24 April–5 June 2003, 1♂, 5 June–16 July 2003, 2♂♂26♀♀, 16 July–2 August 2003, 1♂13♀♀.

Remarks: *Minettia filia* is here recorded new to HOY. *M. filia* was recorded for the first time from Norway by Greve (2002a). Additional material from the Haukåsriver, HOY was recorded by Greve (2004b). *M. filia* males have highly characteristic genitalia, see Remm & Elberg (1979) (here named *Sapromyza pellucida* Becker, 1895), and males should not be possible to overlook among other yellow coloured lauxaniids in Norway. *M. filia* is the only all yellow *Minettia* species. Shatakin (2000) also figures the male genitalia. The Malaise trap at the Haukås was positioned among scattered *Alnus glutinosa* (L.) some meters from the river. At Rambjølla both Malaise-traps were positioned under mingled deciduous trees bordering a flowering meadow. The Malaise trap at the locality at Nordre Bøler (Greve 2000a) was situated at edge of a cereal field. The distribution known hitherto is special, one record from AK and two from HOY only.



Map 18. Distribution of *Minettia filia* (Becker, 1895) (circle), *Minettia plumicornis* (Fallén, 1820) (open square) and *Minettia tabdiventris* (Rondani, 1877) (square).



Map 19. Distribution of *Minettia longipennis* (Fabricius, 1794).

***Minettia longipennis* (Fabricius, 1794) (Map 19)**

Subgenus: *Frendelia* Collin, 1948

M. longipennis is the only species of *Minettia* in Norway which belongs to the subgenus *Frendelia*. The characters of this subgenus, halteres black with black top, most of the body black, wings yellowish with black basis, and above the mouth two small knobs identify *M. longipennis*.

Total material: 94♂♂182♀♀ (earlier published 1♂7♀♀).

Number of localities: 61 (3 earlier published).

Records: Ø Aremark : Bøensetra, 26 June 1990, 1♂; Onsøy: Lervik, 8 June 1991, 1♂; Sarpsborg: Råkil i Tune, 18 June 1992, 1♀. **AK** Bærum: Ostøya, MT, 1–24 July 1984, 1♀, Tjernsmyr, 28 June 1986, 1♀; Eidsvoll: Eidsvoll, 9 July 1988, 2♂♂; Enebakk: Nordre Bøler, MT, June 1996, 7♂♂8♀♀, July 1996, 8♂♂22♀♀, August 1996, 2♂♂13♀♀; Lørenskog: Losby, CT, 27 June–1 August 1991, 1♂; Oslo: Bogerudmya, 17 July 1989, 1♀, Hovedøya, 5 July 1988; Vestby: Soner, LF, 7–13 August 1998, 1♀. **HES** Ringsaker: Furnes, Sandvold, 24 June 1991, 1♂. **HEN** Rendalen: Ytre Rendalen, Solbakken, 19 July 1951, 1♀ (ZMO); Åmot: Rena N, net, 17 July 1987, 12♂♂1♀, near Åsta bridge, net, 29 June 1998, 2♂♂. **BØ** Drammen: Underlia, MT, August 1994, 1♀ (ZMO), MT, August 1995, 1♀; Hurum: Mølen, 2–4 July 1990, 1♀, Tofte, MT, 17 June–17 July 1985, 1♂8♀♀; Nedre Eiker: Mjøndalen, Miletjern, Primo July 1988, 1♂, MT June 1988, 5♂♂5♀♀, LT, Primo July 1988 2♀♀, Medio July 1988, 8♂♂6♀♀; Ringerike: Sokna, at vicarage, MT, 23 June–28 July 2005, 1♀, net, 21 June 2006, 2♂♂, Røyken: Hyggen, Kinnartangen, 6 July 1989, 1♂. **BV** Gol: Engene, net, 27 June 2005, 1♂, Gol: Engjan, MT, 18 June–5 July 1982, 1♀, 6 August 2006, 1♂; Rollag: Kjomme, 13 July 1995, 1♀, Rollag, Veggli, 13 July 1995, 1♂. **VE** Tjøme: Moutmarka, 22 June 1995, 1♀, Treidene, 19 July 1983, 1♂. **TEI** Kviteseid: Kviteseid, LT, 15–17 June 1988, 1♂, 23–27 June 1988, 1♀, 24–29 July 1988, 1♀; Tinn: Håkanes, MT, July 1995, 1♀; Tokke: Dalen, net, 25 June 2006, 1♂. **AAY** Vegårdshei: Kvifte, Kvifteskog, 26–27 June 1989, 7♂♂11♀♀. **VAY** Flekkefjord: Gausdal, Gyland, MT, 1♀; Lindesnes: Lillehavn, LT, 22 July 1999, 1♀, Stusvik, Jørgenstad, net, 21 July 2002, 3♂♂. **RY** Finnøy: Kvitevik, MT, 11–29 May 1993, 1♂, 29 May–17 June 1993, 1♂1♀, 17 June–9 July 1993, 1♀, YT, 9 July–5 August 1994, 1♀, MT, 26 June–5 August 1995, 2♀♀. **HOY** Bergen: Neevengården, 18 May 1985, 1♂, Bergen (Fana): Mildevann, net, 18 July 1983, 2♀♀, Nordås, 5 July 1981, 1♀, Rambjølla Nat. Res., 2 MT, 23 May–3 July 2006, 2♀♀, 3–24 July 2006, 4♀♀, 24 July–15 August 2006, 1♀, Straume, net, 22

June 1986, 1♀; Bergen (Åsane): Almås, MT, 5 June–16 July 2003, 3♂♂22♀♀, 16 July–21 August 2003, 1♂8♀♀, Eidsvåg, net, 18 June 1985, 1♀, Haukåsmyrane, MT, 5 June–16 July 2003, 1♂2♀♀, Vikaleitet at Teigland, 29 June 1981, 1♀, Vollane, net, 16 July 1981, 2♀♀, MT, 21 June–10 July 1986, 1♂; Fusa: Boga kai, net, 5♂♂3♀♀; Os: near Halhjem, net, 8 July 1999, 1♂, net, Røykenesvann at Nordgård, net, 19 June 1983, 3♀♀; Samnanger: Ådland, MT, 2–17 July 1982, 1♀; Stord: Hystadmarka Nat. Res., net, 12 July 2006, 1♀, Ølen: Osen, 27 June 1985, 1♂. **HOI** Granvin: Kvanndal, net, 20 June 1988, 1♀. **SFY** Førde: Movika, net, 5 July 1983, 1♀; Hyllestad: Botnen, 2 MT, 21 June–25 July 1999, 5♀♀, 25 July–7 September 1999, 1♀. **SFI** Aurland: Aurland, 21 July 1981, net, 1♂, Flåm, Indrelid, MT, 26 June–17 July 2000, 1♀, 17 July–3 August 2000, 2♀♀, Fretheim, net, 11 June 1939, 1♀, det. L. Lyneborg; Leikanger: Hermannsverk, Njøs, 21 May 1990, 2♂♂2♀♀; Lærdal: Eggum, 21 June 1938, 1♀, det. L. Lyneborg. **MRY** Hareid: Hareidlandet, Kråkhølen, MT, 10 June–16 July 1990, 1♀, 16 July–5 August 1990, 1♂. **MRI** Norddal: Fjæra, 2 MT, 23 June–18 July 1993, 1♂5♀♀, 18 July–11 September 1993, 2♂♂7♀♀; Rauma: Heinalidam, 12 June 2000, 1♀ (H. Hatlen p.c.); Isfjorden, 28 June 1998, 1♂ (H. Hatlen p.c.).

Remarks: *M. longipennis* is here recorded new to Ø, HES, HEN, BØ, BV, VE, TEI, AAY, VAY, RY, HOY, HOI, SFY, SFI, MRY & MRI. *M. longipennis* is the only species of genus *Minettia* in the subgenus *Frendelia* in Norway. It is a fairly large lauxaniid species which can be determined using the characteristics described for the subgenus *Frendelia*. In NW Europe it is recorded from Fennoscandia and Denmark, and from the British Isles (Collin 1948). Siebke (1877) listed *M. longipennis* from Tøyen, Bekkelaget, Stabekk and Enebakk in AK and this material is in ZMO. Siebke also listed this species from Sarpsborg in Ø, but there is no material in ZMO. One female from Tøyen collected by Siebke is deposited in TSZD. *M. longipennis* is widely distributed in southern Norway, with a fairly high number of records, and some localities with high numbers of specimens. Hitherto the distribution seems restricted to southern Norway as *M. longipennis* has not been recorded north of Møre and Romsdal province. There are no subalpine or alpine records. The localities are varied from very wet bogs to forest edges and sometimes near beaches. Arðø (1957) presented many records from dune areas,

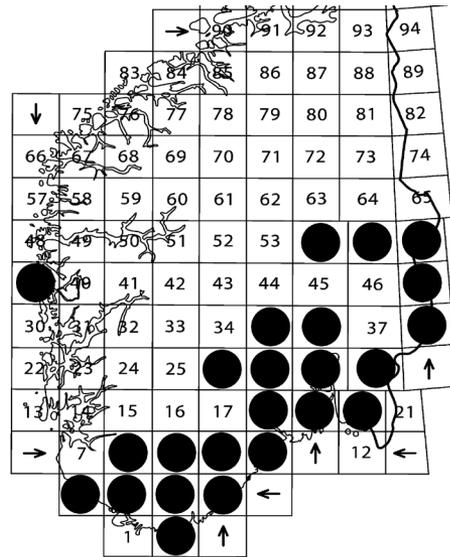
but no such localities have been recorded here. *M. longipennis* was collected in fairly large numbers in the Malaise trap at Bøler, near a meadow with cereal. *M. longipennis* is mentioned among fungivorous insects from Danish cereal fields, but in low numbers (Reddersen 1994, 1995). The flight period seems to be from late May until first part of August.

***Minettia lupulina* (Fabricius, 1787) (Map 20)**

Total material: 266♂♂225♀♀ 1 specimen (1♂♂7♀♀ 1 specimen earlier published).

Number of localities: 70 (7 earlier published).

Records: Ø Onsøy: Rauer, 29 July 1989, 3♀♀; Sarpsborg: Råkil in Tune, 1991, net, 2♂♂, (T.J.Olsen p.c./ZMB), Lake Tune, 25 June 1992, net, 25 June 1991, 2♂♂ (T.J.Olsen p.c./ZMB), Skjeberg, Skjebergdalen, 4 July 1991, 1♂. AK Bærum: Ostøya, 28 June 1996, 1♂; Frogn: Håøya, MT A, 16–27 June 1984, 1♂, MT B, 3–16 June 1984, 1♂, 16–27 June 1984, 1♂, 27 June–22 July 1984, 8♂♂7♀♀; Lørenskog: Losby, CT, 28 June–2 August 1996, 1♀; Nesodden: Fagerstrand, LT, 27–28 July 2003, 1♂; Oslo: Gressholmen, net, 3 July 1983, 1♂, Hovedøya W, net, 12 July 1985, 1♂2♀♀. HES Elverum: Baanerud, net, 25 & 27 June 2005, 6♂♂4♀♀, Elverum N, net, 14–17 June 1996, 1♂, Inset, net, 29 June 1998, 2♂♂4♀♀, Prestholmen, 20 August 1992, 1♂, Sagtjern, 30 June–1 July 1998, 6♂♂2♀♀, Øksetsaga W, net, 12♂♂14♀♀; Grue: Skasenden leirsenter, net, 25 June 2003, 1♂; Valer: Gravberget, net, 24 June 2006, 1♀. HEN Trysil: Osensjøen S, net, 30 June 1998, 1♀, Rysjøen, net, 30 June 1998, 2♂♂2♀♀; Åmot: Borregårdsvelta, net, 29 June 1998, 33♂♂20♀♀, Deset, net, 29 June 1998, 1♂, Rena S, 17 July 1987, 1♂2♀♀, near Rød bridge, net, 30 June 1996, 6♂♂4♀♀, Skjelmoen S, net, 18 June 1997, 10♂♂2♀♀, Østersjøen, 18 July 1987, 1♂, near Åsta river, net, 35♂♂22♀♀, Åsta bridge, net, 29 June 1998, 4♂♂2♀♀. OS Lillehammer: Gausdal, Follebu, 12 August 1995, 1♂. BØ Drammen: Underlia, MT, July 1995, 2♀♀, August 1995, 3♂♂1♀; Kongsberg: Hednestad, 19 July 1995, 1♀, Hvamslia, 19 July 1995, 1♂1♀; Ringerike: Skogstjern, near Hovin setra, 244 masl, 5 August 2006, 1♂, Sokna, at vicarage, net, 3 July 2004, 1♀, 21 June 2006, 1♀, Sokna stadion, 23 June 2005, 1♂4♀♀. BV Rollag: Rollag, 1 June 1983, 2♀♀, 1 August 1984, 2♂♂, 12 July 1995, 1♂1♀, Tråen saga, MT, August 1995, 14♂♂44♀♀, Veggli, 13 May 1995, 1♂2♀♀, 13 July 1995, 3♀♀. VE Horten: Karljohansvern, net, 9 July 1985, 1♀; Tjølling: Ula, 20 July 1984, 8♂♂6♀♀; Tjøme: Grimestad, 11 July 1985, 1♀, Verdens ende, 28 June 1984, 1♂1♀. Kynna, 17 July 1983, 3♂♂1♀, Mostrand, 30



Map 20. Distribution of *Minettia lupulina* (Fabricius, 1787).

June 1983, 2♂♂, 20 July 1983, 18♂♂9♀♀, 30 June 1984, 2♀♀, YT 17 July–2 August 1986, 1♀, Torås, 6 July 1984, 1♂, Treidene, 5 July 1984, 1♂, Tønsberg: Slottsfjellet, 18 July 1982, 1♂. TEI Notodden: Tinnemyr, 3 August 1996, 2♂♂; Sauherad: Horte, 1 July 1995, 1♀; Tinn: Håkanes, MT, July 1995, 1♂1♀, August 1995, 1♂, September 1995, 1♂1♀. AAY Evje: Hornes, 2 August 1996, 1♂; Froland: Båtsteintjørna, net, 28 June 2003, 1♀; Risør: Kiiljordet, net, 25 July 1992, 1♂, 1–2 August 1996, 3♂♂4♀♀; Vegårdshei: Kvifte, Kvifteskog, net, 26–27 June 1989, 39♂♂19♀♀, Kvifteken, net, 29 June 2003, 2♂♂2♀♀, Romindalstjern, net, 29 June 2003, 1♀. AAI Bygland: Heddevika, MT, 4 July–31 August 1997, 1♂, 1–29 July 1998, 2♂♂, 29 July–27 August 1998, 2♂♂1♀. VAY Audnedal: Viblemo 6 July 2000, 1♀, Flekkefjord: Gausdal, Gyland, MT, 1♀, Sira, 4 July 1984, 1♀, 12 August 1984, 1♂1♀. VAI Sirdal: Tonstad, center, 3 August 1996, 2♂♂1♀. RY Egersund: Forland, Guddalåna, net, 3 August 1996, 1♂, Hornesvann, 8 July 1986, 1♂, Ognå: Ognå, net 8 July 1986, 1♂, MT, 21 June–17 July 1996, 1♂2♀♀, 17 July–21 August 1996, 1♀. HOY Bergen (Åsane): Eidsvåg, Vollane 13, MT, 21 June–10 July 1986, 1♀.

Remarks: *M. lupulina* is here recorded new to Ø, HEN, OS, BØ, BV, VE, TEI, AAY, AAI, VAI, RY & HOY. Siebke (1877) listed *M. lupulina* from AK Bekkelaget, Hasle and Tøyen in Oslo, from Drøbak in Frogn and from HES Elverum: Grundset. 1 male and 6 females from Siebke's

localities with exception of Hasle are present in ZMO. One of Siebke's females collected at Tøyen is today in TSZD. Ardø (1957) recorded *M. lupulina* from VAY Mandal: Sjøsandene where one specimen was collected 9 July 1953 at dune ridge. This locality is represented on the map. Greve & Kobro (2004) recorded one female from Nesodden, Fagerstrand in AK. *M. lupulina* has a SE distribution in Norway, with the single locality at HOY Eidsvåg outside the main area. There has been much collection in the Bergen area, but this female is still the only specimen and represents the northernmost locality in Western Norway. *M. lupulina* is obviously very common in SE Norway and there are many localities and often a high number of specimens. Some of the localities are in areas with inland climate. There are no subalpine or alpine localities. The flight period is from early June until August.

***Minettia plumicornis* (Fallén, 1820)** (Map 18)

Total material: 7♂♂3♀♀ earlier published.

Number of localities: 1 earlier published.

Remarks: Seven males and three females of *Minettia plumicornis* were netted at Ogna, Hå, Rogaland province on 8 July 1986 (Greve 2002b). This is still the only material recorded from Norway. Two Malaise traps were run in the same area throughout the summer 1996, however, somewhat further up the shore from the area with *Ammophila arenaria* and *Elymus* sp. No additional specimens were collected. Ardø (1957) listed several records of *M. plumicornis* from Sweden and Denmark from dune heath, dune ridges, high beach and inland dunes. Ardø also remarks that this species is bound to the inner parts of the marine shore dune ecosystem, the dune ridge and the dune heath.

***Minettia tabidiventris* (Rondani, 1877)** (Map 18)

Total material: 2♂♂3♀♀ (1♀ earlier published as *M. fasciata* (Fallén, 1826)).

Number of localities: 3.

Records: AK Oslo: Hovedøya W, 5 July 1988, 2♂♂1♀, det. B. Merz. BØ Hurum: Tofteholmen, MT, 31 July–1 September 1991, 1♀.

Remarks: *Minettia tabidiventris* is here recorded new to Norway. *M. tabidiventris* was first

recorded as *M. fasciata* (Fallén, 1826), one female only, from Bamble, Langøya in TEY by Greve (2002d). Merz (2004) made a revision of the *Minettia fasciata* species-group which includes four species in the Palaearctic. All material was therefore revised. Only one of these four species viz. *M. tabidiventris* (Rondani, 1877) is here recorded from Norway. However, among the three remaining species *Minettia fasciata* (Fallén, 1826) is described from a female holotype from Skåne in southern Sweden and thus a possible species in Norway. *M. fasciata* has Holarctic distribution. A third species *M. czernyi* Freiberger & Yarom has hitherto only been recorded from Cyprus and Lebanon. The fourth *Minettia subvittata* (Loew, 1847) has a distribution in southern Europe. *M. tabidiventris* is probably a rare species in Norway, hitherto only recorded from three islands in the Oslofjord in SE Norway.

***Pachycerina* Macquart, 1835**

Both the Norwegian species in the genus *Pachycerina* are fairly easy to recognize among other lauxaniids. *P. pulchra* is a shining black species with clear light yellow marks above the mouthparts. *P. seticornis* is distinguished by a strongly protruding light-brown face with two prominent blackish spots below the antennal sockets.

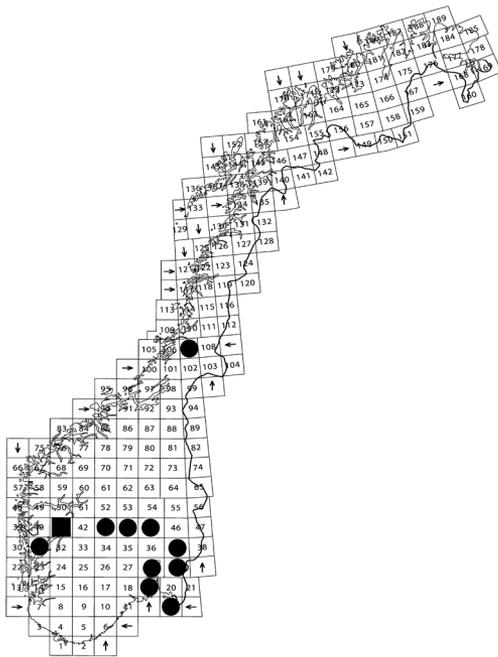
***Pachycerina pulchra* (Loew, 1850)** (Map 21)

Total material: 2♀♀ (1♀ earlier published).

Number of localities: 2.

Record: HOI: Kvam: Berge, Stekka Nat. Res., MT, 6 August–13 September 2000, 1♀

Remarks: *Pachycerina pulchra* was first recorded from Norway by Greve, Pommeresche & Skartveit (1998) from Kvam: near Lake Svevatn. Another specimen are reported here collected in Stekka Nat. Res., the same community Kvam and not far from the first recorded locality. The first female was collected in a Barber trap between 22 November 1997 and 23 April 1998, the second specimen in the autumn, perhaps this could indicate that *P. pulchra* is an autumn species. *P. pulchra* has not been reported from other places in Fennoscandia nor Denmark, neither from the British Isles or Ireland. *P. pulchra* is recorded



Map 21. Distribution of *Pachycerina pulchra* (Loew, 1850) (square) and *Pachycerina seticornis* (Fallén, 1820) (circle & square)

from Central Europe see Chvála (1997), Papp (2001) and Merz (2002). The black colour of the face contrasting with the bright yellow colouring above the mouth should make it difficult to overlook.

***Pachycerina seticornis* (Fallén, 1820) (Map 21)**

Total material: 39♂♂32♀♀ and 4 specimens (35♂♂23♀♀ and 3 specimens earlier published).

Number of localities: 19 (14 earlier published).

Records: AK Nesodden : Fagerstrand, LT, 1–2 October 2003, 1♀, 2–3 October 2004 1♀, 5–6 October 2004 1 specimen; Sørum: Sørløkka, Dammyra , net, 14 March 1991, 1♂ (ZMO). BØ Hurum: Filtvedt, net 15 June 1981, 1♀. BV Ål : Storeteigen, 500 masl, MT, 20 May–19 June 2000, 1♂3♀♀, 18 July–18 September 2000, 1♂2♀♀, Tuftelia, 680 masl, MT, 21 May–18 June 2000, 1♂. HOI Kvam: Stekka Nat. Res., net, 13 July 2000, 1♀.

Remarks: *Pachycerina seticornis* is here recorded new to BØ. *P. seticornis* was first recorded from Frogner in Oslo collected on 5 July 1849 by Siebke (1877). Greve & Skartveit (1998) listed records from southern and central Norway, the

northernmost from Northern Trøndelag province. Hågvar & Greve (2003), Thunes et al., (2004) and Greve & Kobro (2004) have additional records of *P. seticornis* from Norway. *P. seticornis* has a different biology from all other Norwegian lauxaniids as it is the only species occurring throughout the year in Norway, and both sexes were active on snow in winter (Hågvar & Greve 2003). There are also summer records from Norway like Siebke’s old record, and some new records from BV and HOI. The details of the life cycle are still practically unknown (Merz pers. comm.). The highest situated localities are BV Tuftelia and Storeteigen, and there are no records from subalpine or alpine areas.

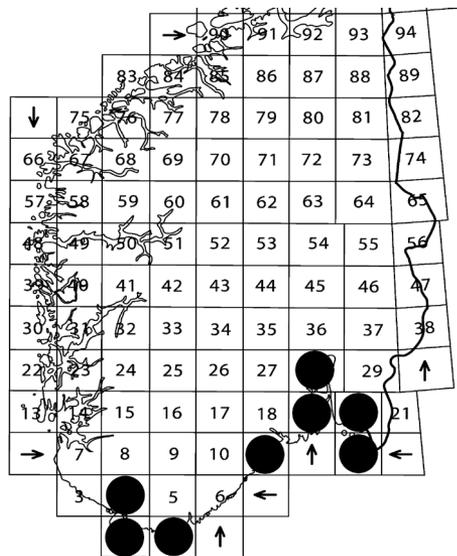
Peplomyza Haliday, 1837

***Peplomyza litura* (Meigen, 1826) (Map 22)**

Total material: 46♂♂70♀♀ (19♂♂42♀♀ earlier published).

Number of localities: 15 (9 localities earlier published).

Remarks: Ø Hvaler: Vesterøy, Guttormsvauen, 7 August 1998, 1♀ (ZMO), S. Sandøy, Skjelleren, 31 July 1992, 3♂♂1♀; Sarpsborg: Tune, Råkil 1 September 1993, 1♂. AK



Map 22. Distribution of *Peplomyza litura* (Meigen, 1826).

Nesodden: Fagerstrand, LT, 21–22 August 2003, 1♂, 6–7 September 2003, 4♀♀, 8–9 September 2003, 1♀, no date 4♀♀, 1–2 October 2003, 1♀, 29–30 August 2004, 1♂1♀, 30–31 August 2004, 3♀♀, 9–10 September 2004, 1♀, 7–8 August 2005, 4♀♀, 10–11 August 2005, 1♂; 24–25 August 2005, 2♀♀, 13–14 September 1♀, 20–21 September 2005, 1♀, 29–30 September 2005, 1♂. **VAY** Farsund: Sellegrod, 21–27 July 1999, 1 specimen; Kristiansand: Bråvann, 7 September 1999, 2♀♀, Kvinesdal: Kvinesdal, 11 September 1999, 1♀.

Remarks: *P. litura* was first recorded from Norway by Rognes (1995). Most of the material in Rognes' article is deposited in ZMB. The genus *Peplomyza* has a characteristic wing pattern which separates this genus from other Norwegian Lauxaniinae. A closely related species, *P. discoidea* (Meigen, 1830) has been recorded both from Finland and Sweden (H. Andersson Lund, pers.comm.), and *P. discoidea* could perhaps occur in Norway as well. Greve & Kobro (2004) recorded 50 specimens light-trapped from the Fagerstrand locality at Nesodden where lauxaniids were collected from 1994–2002. More material has been collected during the years 2003–2005, and this locality represents the majority of the material presented here. This also confirms that for *P. litura* light-trapping is an effective collecting method. New material of *P. litura* is from the same provinces as presented by Rognes (1995), and the distribution of *P. litura* seems to be in coastal areas in S and SE Norway. There is no subalpine or alpine records. The flight period is from July and into the autumn as *P. litura* is flying in October, viz. late autumn.

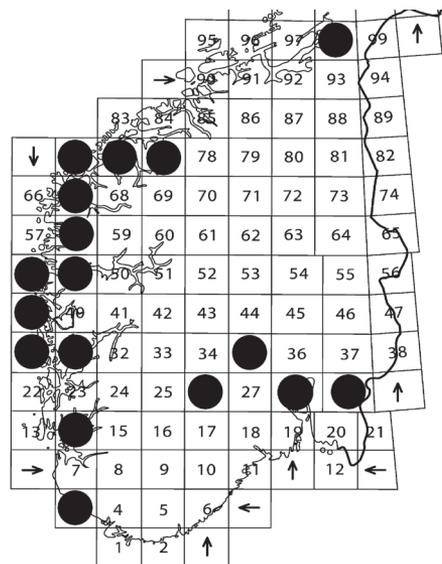
Poecilolycia Shewell, 1986

***Poecilolycia vittata* (Walker, 1849) (Map 23)**

Total material: 24♂♂47♀♀ (22♂♂39♀♀ earlier published)

Number of localities: 20 (13 earlier published)

Records: **BØ** Krødsherad: Bukollplassen, approximately 400 masl, net, 30 May 2004, 1♂. **TEI** Tinn: Håkanes, MT, Juni 1995, 1♀. **RY** Hjelmeland: Jøsneset, Fosså, MT, 11–21 July 1982, 1♀; Hå: Oгна, net, 21 May 1988, 1♀. **HOY** Bergen (Fana): Rambjølla Nat. Res., 2 MT, 23 May–3 July 2006, 2♀♀, Straume, 22 June 1986, 1♂1♀. **HOI** Kvam: Svevatn Nat. Res., MT, 28 May–1 July 1997, 1♀. **MRY** Volda, between Helgatun to Tømmerbakken, 17 June 1995, 1♀.

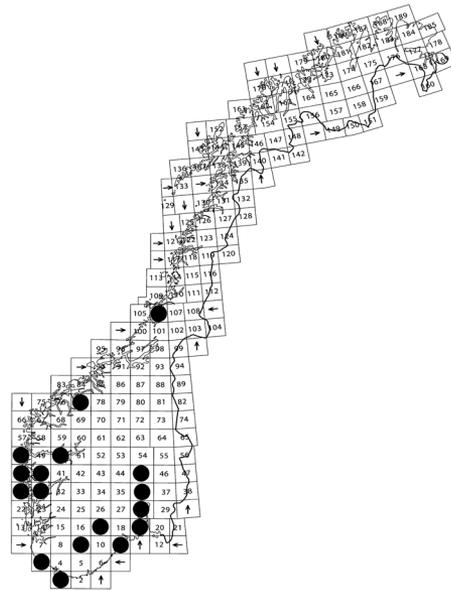


Map 23. Distribution of *Poecilolycia vittata* (Walker, 1849).

Remarks: *P. vittata* is here recorded new to TEI & HOI. *P. vittata* is easy to determine on account of the brown and grey colour and the characteristic genitalia. The first records of *P. vittata* (as *Lyciella vittata* (Walker, 1849) from Norway was presented by Greve (2000a), with remarks of some characters of this distinctive species. Recent records confirm that *L. vittata* has a wide distribution in lowlands of southern Norway. However, the fairly small material show it to be a rather uncommon species, and on most of the localities only one or two specimens have been caught. One exception is the material collected with 2 MT at Botnen in Hyllestad in outer Sogn & Fjordane province where during the summer 12 males and 24 females were caught, this constitutes around half of the material. The northernmost record is from Stjørdal, Vikan in NTI. There is no subalpine or alpine records. The flight period is from May until July, none from autumn.

Pseudolyciella* Shatalkin, 2000**Pseudolyciella pallidiventris* (Fallén, 1820)**

(Map 24)

Total material: 64♂♂ (25♂♂ earlier published).**Number of localities:** 27 (5 earlier published).**Records:** Ø Onsoy: Rauer, 29 July 1989, net, 1♂. **AK** Nesodden: Fagerstrand, LF, 12–13 July 2005, 1♂, 24–25 August 2005, 1♂, 29–30 August 2005, 1♂, 31 August–1 September 2005 1♂; Oslo: Gressholmen, 16 July 1989, 1♂.**HES** Ringsaker: Helgøya, Hovindsholm, MT, 29 June–2 July 1991, 1♂. **BØ** Nedre Eiker: Mjøndalen, Hagatjern, Ryggsetra, LT, July 1994, 1♂, July 1999 1♂; Ringerike: Sokna, Hovland farm, net, 23 June–30 July 2005, 1♂. **VE** Tjøme: Mostranda, 14–17 July 1986, 1♂. **TEY:** Kragerø: Kjøllebrønn, 3 August 1983, 1♂. **TEI** Kviteseid: Kviteseid, LF, June 1998, 1♂. **AAI** Bygland: Heddevika, MT, 15 May–11 June 1997, 1♂. **VAY** Flekkefjord: Hidra, Dragøy, MT, 8–15 August 1982, 3♂♂, Lyngdal: Jåsund 8 August 1983, 1♂; Lindesnes: Lillehavn, 19 July 1999, 1♂. **RY** HÅ: Ognå, net, 7 July–21 August 1986 2♂♂. **HOY** Bergen: Martensgården, 17 June 1983, 2♂♂, Bergen (Åsane): Bruås, MT, 16–28 July 2003, 1♂, Haukås, Haukåsriver at outlet, MT, 16 July–21 August 2003, 1♂, Os: Gåssand, Raudli, Åsen, MT, 28 June–12 July 1990, 1♂. **HOI** Kvam: Gravdal, at Svevatn, MT, 28 May–1 July 1997, 1♂, det. B. Merz. **SFY** Hyllestad: Botnen, MT, 21 May–21 June 1999, 2♂♂, 21 June–25 July 1999, 1♂; Høyanger: Lavik, net, 5 July 1985, 1♂. **SFI** Balestrand: Målsnes, MT, 14 June–1 August 1998, 1♂; Vik: Fresvik, MT, 1–17 July 1997, 2♂♂, det. B. Merz. **MRI** Stranda: Lauvvikane, MT, 28 May–6 July 2000, 1♂. **NTY** Nærøy: Kjeksvika, MT, 6 May–29 June 2002, 3♂♂, 5 August–3 September 2002, 1♂, 3–13 September 2002, 1♂.**Remarks:** *Pseudolyciella pallidiventris* is here recorded new to HES, BØ, VE, TEY, TEI, AAI, VAY, SFY, SFI, MRI & NTY. *P. pallidiventris* was recorded from five localities in southern Norway by Greve (1999). 16 males was lighttrapped at Ak Nesodden: Fagerstrand see Greve & Kobro (2004). The northernmost record is at Kjeksvika in Nærøy NTY. There are no records from subalpine or alpine areas. In addition to males there is a number of females at least the same number as males. These are only identified as *Pseudolyciella* sp. as they cannot be separated from the other Norwegian species of *Pseudolyciella* (see below). At some localities *P. pallidiventris* males have been collected together with males of *P. stylata*. The highest number of females at one locality was**Map 24.** Distribution of *Pseudolyciella pallidiventris* (Fallén, 1820).

13. There is no subalpine or alpine records. *P. pallidiventris* is distributed in Sweden & Finland (Andersson pers.comm.) and it is recorded from Denmark (Merz et al. 2001).

Pseudolyciella stylata* (Papp, 1978) (Map 25)*Total material:** 102♂♂ (49 earlier published).**Number of localities:** 18 (7 earlier published).**Records:** **AK** Nesodden: Fagerstrand, LT, 14–15 September 2003, 1♂, 29–30 August 2004, 1♂, 3–4 September 2004, 1♂, 16–17 August 2005, 1♂, 24–25 August 2005, 3♂♂, 13–14 September 2005, 4♂♂, 25–26 September 2005, 1♂, 13–14 October 2005, 1♂. **HES** Ringsaker: Helgøya, Hovindsholm, MT, 29 June–2 July 1991, 1♂. **VE** Borre: Semb, June 1974, 1♂; Tjøme: Kolabekkilen, 24 July 1982, 1♂. **TEI** Kviteseid: Kviteseid, 18–21 June 1988, 1♂. **VAY** Lindesnes: Lillehavn, 19 July 1999, 1♂. **RY** Finnøy: Sevheim, MT, 8 July–5 August 1995, 1♂; Hå: Ognå, 2 MT, 21 August–21 September 1996, 1♂. **RI** Forsand: Frafjord, net, 16 August 2000, 1♂. **HOY** Bergen (Fana): at Mildevann, MT, 28 July–2 September 2005, 1♂, Bergen: Haukåsriver at outlet, MT, 16 July–21 August 2003, 4♂♂. **HOI** Kvam: Berge Nat. Res., net, 6 June 2000, 1♂; Ulvik: Hjeltnes, 1 September 1989, 1♂. **SFY** Hyllestad: Botnen, 2 MT, 21 June–25 July 1999, 1♂, 27 July–7 September 1999, 1♂. **SFI** Balestrand: Målsnes, MT, 7 May–

14 June 1998, MT, 2♂♂. **MRY** Hareid: Hareidlandet near Kråkhølen, MT, 10 June–16 July 1990, 1♂; Volda: Helgatun–Tømmerbakken, net, 17 June 1995, 1♂. **STI** Trondheim: Østmarksneset, 22 July 1987, 2♂♂. **NTY** Nærøy: Kjeksvika, MT, 20 June–5 August 2002, 2♂♂, 5 August–3 September 2002, 2♂♂. **NTI** Høylandet: Tverråa, MT, 9–16 July 1986, 1♂. **NSY** Bodø: Ørnli at Valnesvannet, 15 August 1992, 1♂.

Remarks: *Pseudolyciella stylata* is here recorded new to HES, VE, RI, HOI, MRY, SFY, SFI, STI, NTI & NSY. *Pseudolyciella stylata*, represented by 49 males from 7 localities, was first recorded from southern Norway (as new to Fennoscandia) by Greve (1999). Only males are recorded. 45 males were lighttrapped at Nesodden, Fagerstrand (Greve & Kobro 2004). Here the northernmost record presented is from southern part of Nordland province. Most of the records are from coastal areas and lowlands. On several localities *P. stylata* has been found together with *P. pallidiventris*, and at AK Nesodden, Fagerstrand also together with *P. subpallidiventris*. There are no subalpine or alpine records. *P. stylata* has been recorded from Denmark (Merz et al. 2001) and it has been recorded from UK by Godfrey (1994). The flight period is fairly long, from June until early October.

***Pseudolyciella subpallidiventris* (Papp, 1978)** (Map 25)

Total material: 2♂♂ (1♂ earlier published).

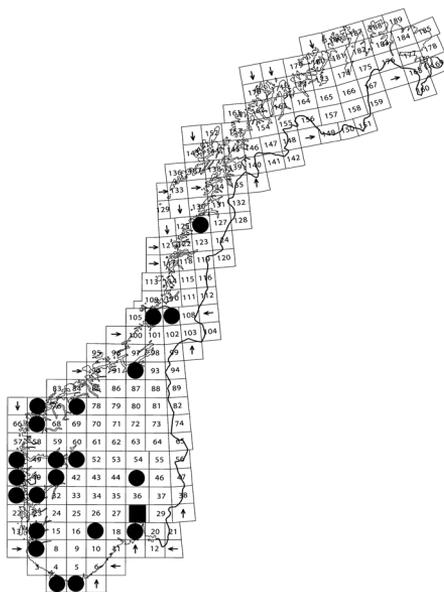
Number of localities: 1.

Record: AK Nesodden: Fagerstrand, LT, 5–6 September 2005, 1♂.

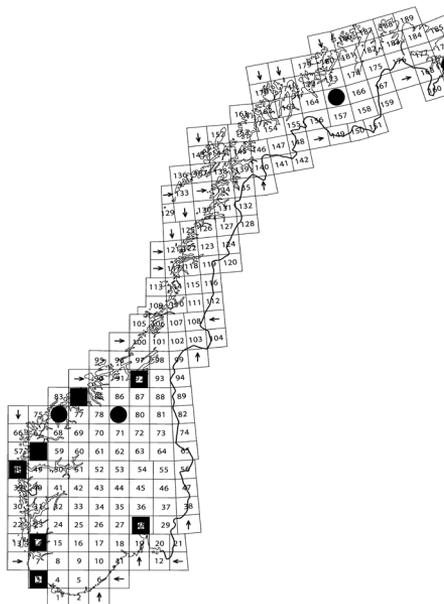
Remarks: *P. subpallidiventris* has once only been recorded from Norway, lighttrapped at Fagerstrand, Nesodden (Greve 2000a). The second specimen listed here was light-trapped at the same locality in 2005. *P. subpallidiventris* are in NW Europe recorded from England, Ireland/Eire and Scotland (Godfrey 1994) and Denmark (Merz et al. 2001).

***Sapromyza* Fallén, 1810**

The genus *Sapromyza* is closely related to the genus *Sapromyzosoma*. The ocellar setae are inserted inside the triangle formed by the lateral edges of the ocelli, in the genus *Sapromyzosoma* the setae are placed outside the triangle, see Merz



Map 25. Distribution of *Pseudolyciella stylata* (Papp, 1978) (circle & square) and *Pseudolyciella subpallidiventris* (Papp, 1978) (square).



Map 26. Distribution of *Sapromyza albiceps* (Fallén, 1820) (square), *Sapromyza amabilis* Frey, 1930 (circle) and *Sapromyza zetterstedti* Hendel, 1895 (open square).

(2003).

***Sapromyza albiceps* (Fallén, 1820) (Map 26)**

Total material: 10♀♀ (6♀♀ earlier published).

Number of localities: 2 (1 earlier published).

Records: MRY Molde: Bolsøya, Draghalsen, MT, 21 June–18 July 2006, 2♀♀, 18 July–25 September 2006, 2♀♀.

Remarks: *Sapromyza albiceps* is here reported new to MRY. The only record previously known from Norway from SFY Naustdal: Naustdal was published by Greve (2004a) where six females were collected in a Malaisetrapp SFY Naustdal: Naustdal, MT, 3–28 July 1986. *S. albiceps* is a small species where females have characteristic spots on tergites 5 and 6.

***Sapromyza amabilis* Frey, 1930 (Map 26)**

Total material: 7♂♂6♀♀ (3♂♂3♀♀ earlier published).

Number of localities: 8 (3 localities earlier reported).

Records: MRY Sykkylven: Gjevenes, MT, 11 August–30 September 2001, 1♂. MRI Stranda: Lauvvika, MT, 6 July–20 August 2000, 1♀. STI Oppdal: Kongsvoll, MT, 920 masl, MT, 15–22 July 1992, 2♂♂1♀. FV Alta: Gargia, MT, 22 June–6 August 1996, 1♀; Mattisdalen, MT, 4 August–26 September 1996, 1♂ (added to 2♂♂ earlier reported from the same locality).

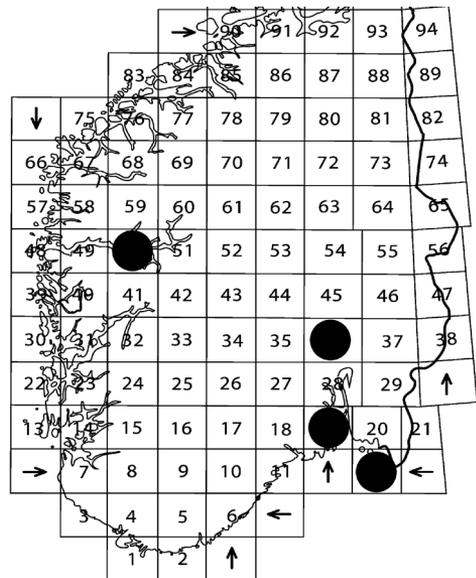
Remarks: *S. amabilis* is here reported new to MRI and MRY. *S. amabilis* was reported new to Norway from STI Oppdal, Kongsvoll, FV Alta, Mattisdalen and FØ Sør-Varanger, Svanhovd, Mellesmo by Greve (2000b). *S. amabilis* is probably a boreal-alpine species. The two new records from MRY are lowland localities, however, both localities are in close vicinity to mountainous areas and sometimes alpine species are collected at sea shore level at the feet of high mountains. *S. amabilis* is widespread, but very rare in Norway. It is also recorded from Mongolia (Shatalkin 2000).

***Sapromyza basalis* Zetterstedt, 1847 (Map 27)**

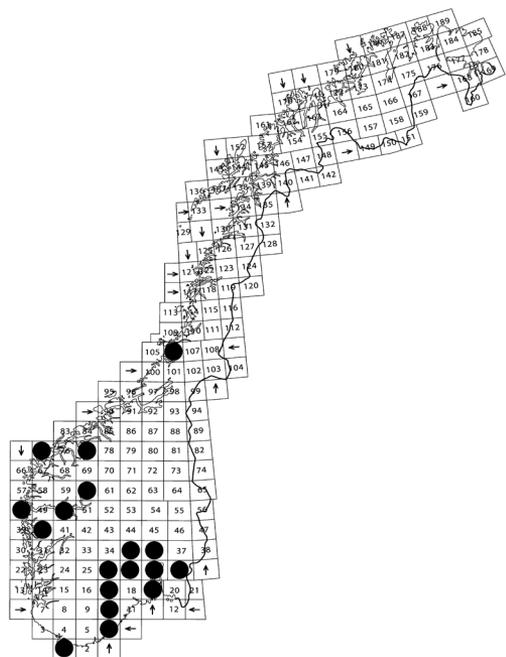
Total material: 4♀♀ (1♀ earlier published).

Number of localities: 4 (1 locality earlier published).

Records: Ø Hvaler: Arekilen, MT, 15 August–September 2000, 1♀. VE Tjøme: Kynna, 17 July 1983, 1♀. BØ Sokna:



Map 27. Distribution of *Sapromyza basalis* Zetterstedt, 1847.



Map 28. Distribution of *Sapromyza hyalinata* (Meigen, 1826).

Hovland gård, MT, 23 June–30 July 2005 1♀.

Remarks: *Sapromyza basalis* is here recorded as new for Ø, BØ and VE. *S. basalis* was reported new to Norway from NTI Levanger, Thynes and Verdal, Østre Nes by Zetterstedt (1847), and his records were also noted by Siebke (1877). Siebke published, however, no new records. Today there is no specimens determined as *S. basalis* from Norwegian localities in Zetterstedt's collection in Lund. A record from SFI Balestrand: Målsnes therefore might be the first certain from Norway see Greve (1999). Based on collection done in the last decenniums *S. basalis* is a rare species, but widely scattered in southern Norway. There is no alpine records.

***Sapromyza hyalinata* (Meigen, 1826) (Map 28)**

Subgenus *Schumannimyia* Papp, 1978

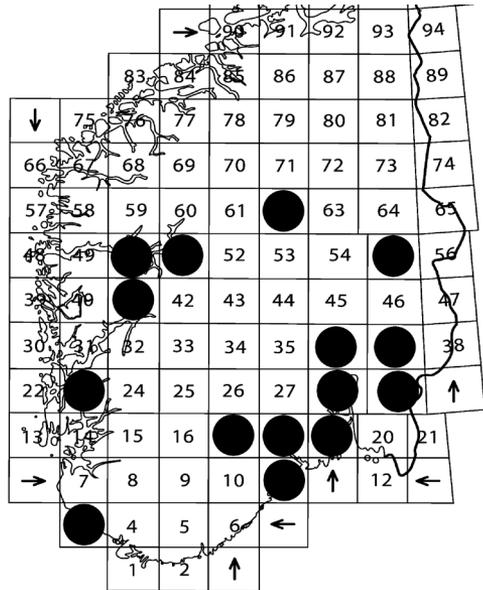
The subgenus *Schumannimyia* has abdomen entirely black, without patches, but sometimes with grey dust.

Total material: 43♂♂50♀♀ 1 specimen.

Number of localities: 23.

Records: AK Bærum: Ostøya, MT, 30 May–10 June 1984, 2♀♀, Oslo: Hovedøya, 18 July 1989, 4♂♂7♀♀; Lørenskog: Losby, WT, 27 June–1 August 1991, 1♂. HEN Åmot: Østersjøen, 18 July 1987, 1♀. BØ Hurum: Østnestangen, MT, 8 July–20 July 1995, 1♀; Kongsberg: Hedenstad, 19 July 1995, 1♂; Nordre Eiker: Mjøndalen, Miletjern, LT Ultimo June 1988, 3♂♂, Ultimo July 1988, 1♂1♀, Ringerike: Sokna, at vicarage, MT 23 June–28 July 2005, 2♀♀♀. BV Rollag: Rollag, Veggli, 13 May 1995, 1♂, 29 June 1995, 1♀, 11 July 1995 1♂. TEI Kviteseid: Kviteseid, LT, 5–8 July 1988, 1♀, 24–29 July 1988, 1♂; Tinn: Håkanes, MT, June 1995, 6♂♂7♀♀, July 1995 1♀, Rjukan, MT, June 1995, 1♂2♀♀♀. AAY Landvik: Skiftesnes, 28 May 1971, 1♀; Vegårdshei: Kvifte, Kvifteskog, 26–27 June 1989, 10♂♂10♀♀♀. VAY Lindenes: Lillehavn, net, 19 July 1977, 1♂. HOY Bergen: Breivikneset, 10 June 1989, 1♀; Os: Raudlia, Åsen SV, 16 May 1991, 1♂. SFI Aurland: Flåm, Indrelid, MT, 26 June–17 July 2000, 1♂; Luster: Fortundalen, Drægne, Ruskeneshaugen, MT, 480 masl, MT 26 June–28 July 2004, 1♂. MRY Hareid: Hareidlandet, MT, 10 June–16 July 1990, 1♀. MRI Norddal: Fjæra, 2 MT, 23 June–18 July 1993, 2♀♀♀, 18 July–11 September 1993, 4♂♂3♀♀♀. NTY Nærøy: Kjeksvika, MT, 6 May–20 June 2002, 1♂3♀♀♀, 20 June–5 August 2002, 4♂♂4♀♀♀.

Remarks: *Sapromyza hyalinata* is here recorded new to AK, HEN, BØ, BV, TEI, AAY, VAY, HOY,



Map 29. Distribution of *Sapromyza opaca* Becker, 1895.

SFI, MRY, MRI and NTY. *S. hyalinata* is an all dark coloured species of the genus *Sapromyza*. *S. hyalinata* was first recorded from Norway by Siebke (1877) from Sandefjord, Vestfold province, and there is one specimen from Sandefjord in ZMO determined as *S. hyalinata*, but this is a female *Calliopum aeneum* (locality listed under *C. aeneum* above). *S. hyalineata* is a small dark species, easily overseen both because of size and because of colour. The genitalia is characteristic and well illustrated by Remm & Elberg (1979). Material has been collected from 23 localities north to Northern Trøndelag province. The localities are mostly coastal or from fjord areas. there are few inland localities. There are no alpine or subalpine records, the highest elevation is from SFI Luster at 480 masl. Usually there is a low number of specimens from each locality. The flight period is from May to August. Most of the material has been collected in June and July, few in autumn.

***Sapromyza opaca* Becker, 1895 (Map 29)**

Total material: 85♂♂18♀♀ (33♂♂ earlier published).

Number of localities: 23 (11 earlier published).

Records: **AK** Oslo: Hovedøya W, 5 July 1988, 32♂♂, Tjensmyr, net, 25 July 1988, 2♂♂2♀♀. **ON** Nord-Fron: Kvam, 16 August 2001, 1♂, (H. Hatlen p.c.). **BØ** Ringerike: Sokna, at vicarage, net, 3 July 2004, 2♂♂3♀♀, Sokna center, near railway, net, 30 July 2005, 1♂. **TEY** Porsgrunn: Porsgrunn, 9 July 1986, 1♂2♀♀. **TEI** Bø: Bø, 17 July 1982, 4♂♂; Tokke: Dalen, hotel garden, net, 25 June 2006, 3♂♂. **HOY** Stord: Hystadmarka Nat. Res., net, 12 July 2006, 1♂. **HOI** Etne: Austreim, net, 27 June 1985, 2♂♂1♀; Voss: Klyve, net, 18 July 2006, 2♂♂10♀♀. **SFI** Aurland: Aurland, 21 July 1981, 1♂; Vik: Fresvik, 3 August 2006, 1♂.

Remarks: *S. opaca* is here recorded new to ON, TEY, TEI, HOY & HOI. *S. opaca* was first recorded from Norway by Greve (2002a). The males of this species is characterized by characters of the genitalia, the females can be difficult to determine. *S. opaca* does not seem to be rare in southern Norway, but the distribution is scattered. There are no sub-alpine or alpine records. The flight period in Norway seems to be from last part of June until first part of August.

***Sapromyza setiventris* Zetterstedt, 1847 (Map 30)**

Total material: 1♀.

Number of localities: 1.

Record: **VE** Brunlanes: Oddane, 7 July 1980, 1♀ det. B. Merz.

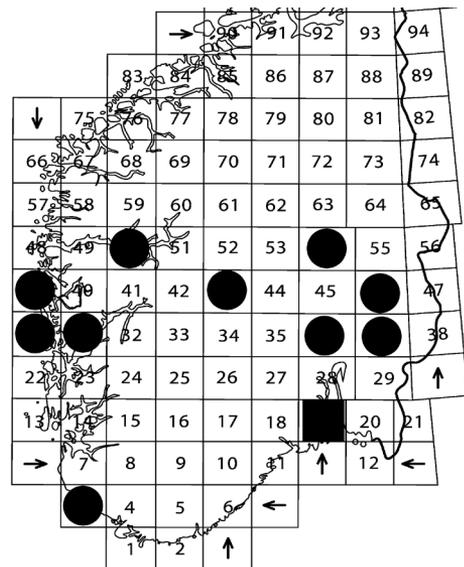
Remarks: *Sapromyza setiventris* is here recorded to Norway for the first time. One female was netted by the author near the beach. *S. setiventris* is a fairly rare species, described from Sweden, recorded from Denmark (Merz et al. 2001) and Finland (Hackman, 1980) and also from central Europe (Chvala et al. 1997).

***Sapromyza sexpunctata* Meigen, 1826 (Map 30)**

Total material: 29♂♂102♀♀ (2♂♂2♀♀ earlier published).

Number of localities: 15 (2 earlier published).

Records: **AK** Eidsvoll: Eidsvoll, 9 July 1988, 1♂. **HES** Ringsaker: Furnes, Sandvold, net, 24 June 1991, 1♂, July 1992, 1♂, July 1997, 1♂, MT, 14 July–5 August 1998, 1♂5♀♀, 5 August–10 September 1998, 1♂3♀♀. **BØ** Ringerike:



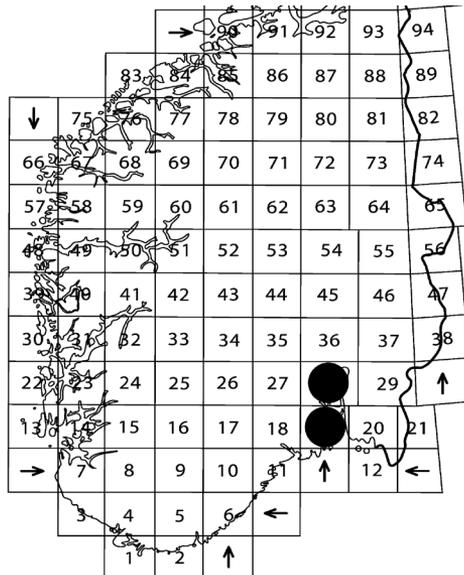
with females of other *Sapromyza* species with black spots on the abdominal segments 4–6. *S. sexpunctata* has a scattered distribution in Norway and is here recorded for the first time outside SE Norway. On some localities the number of females is much higher than the number of the males, especially at Almås, where the MT was situated close to the Haukås river on a wet area with some *Alnus incana* (L.) Another locality at Oгна is a fairly dry area not too far from the sand dunes along the beach. Ardø (1957) listed *S. sexpunctata* from some localities of dune ridge in Sweden. *S. sexpunctata* is probably euryoc. It is also recorded from Denmark (Merz et al. 2001.) There is no subalpine or alpine records. The flight period is from July until September.

***Sapromyza zetterstedti* Hendel, 1895 (Map 26)**
 = *S. quadrinotata* Zetterstedt, 1847

Total material: 4♂♂ (2♂♂1♀ earlier published).
Number of localities: 5 (2 earlier published).

Records: BØ Drammen: Underlia, MT, August 1995, 1♂.
 RY Oagna: Oagna, 2 MT, 17 July–21 August 1996, 1♂. RI Hjelmeland: Fosså, Jøsneset, MT, 20 June–11 July 1982, 1♂ det. Hugo Andersson. SFY Hyllestad: Botnen, 2 MT, 21 June–25 July 1999, 1♂ (1♀).

Remarks: *S. zetterstedti* is here recorded new to BØ, RY, RI and SFY. The author has chosen to list only males here, as females can be confused with other species of *Sapromyza*. The genitalia of the males are characteristic. Zetterstedt’s record from Thynes in Verdal, NTI has been checked. One male and one female have been examined. The abdomen of the male has broken off the body and is tapered to a card. Details are difficult to see, however, this specimen is definitely a *Sapromyza* male, not a *Sapromyzosoma*. The two pair of spots are rather large – this fits well with Norwegian material seen. Zetterstedt’s record is thus probably the northernmost in the country. Siebke’s (1877) records from AK Enebakk and OS Gudbrandsdalen at Øyer are both females, in ZMO. One male was listed by Greve & Kobro (2004). Females from BV Ål: Storeteigen and HOY Os Gåssand are probably belonging to this species with two pairs of large spots on the abdominal tergits, palps all yellow and four rows of acrostichal setae. *S. zetterstedti* is obviously



Map 31. Distribution of *Sapromyzosoma quadricincta* (Becker, 1895).

a rare species in Southern Norway even if one includes the females listed here. It is, however, widely scattered. There are no subalpine or alpine records. The flight period seems to be from last part of June until August. *S. zetterstedti* has been recorded from Sweden, Finland and Denmark, (Andersson pers.comm., Merz et al. 2001) and the British Isles (Collin 1948).

Sapromyzosoma Lioy, 1864

The genus *Sapromyzosoma* is closely related to the genus *Sapromyza*. The ocellar setae are inserted outside the triangle formed by the lateral edges of the ocelli, in the genus *Sapromyza* the setae are placed inside the triangle, see Merz (2003).

***Sapromyzosoma quadricincta* (Becker, 1895)**
 (Map 31)

Total material: 6♂♂16♀♀ (1♂ earlier published).

Number of localities: 6 (1 earlier published).

Records: AK Asker: Bjørkås, MT, 2 July–24 August 1996, 2♂♂13♀♀; Oslo (Kristiania): Oslo, 1♂, leg. Siebke, revised from *Lyciella rorida* (Fallén, 1820) (ZMO). BØ Hurum: Verksøya, MT, 6 July–19 August 1995, 1♂1♀, Østnestangen, 8 July–20 August 1993, 1♂2♀♀. VE Tjøme: Mostrandra 30

June 1985, 1♂.

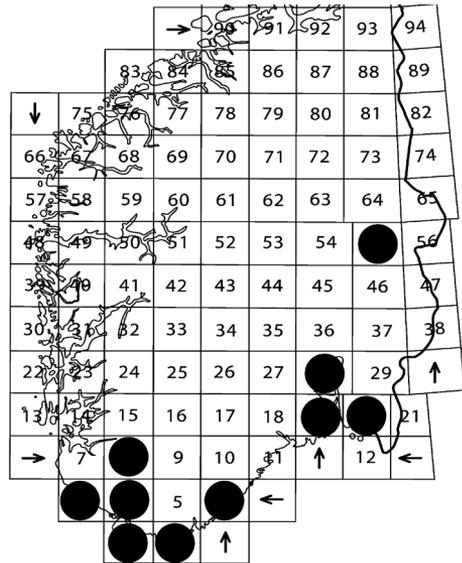
Remarks: *Sapromyzosoma quadricincta* is here reported new to AK and VE. In the Norwegian material there are always two black spots on the fourth pair of tergites of the abdomen. Sometimes there are black spots pair on the two tergits, the “extra” pair often smaller. In the material from Bjørkås there were some specimens with one pair of spots, some with two pairs. There are 4 rows of acrostichals setae compared to *S. quadripunctata* which has 2 rows of acrostichals. *Sapromyzosoma quadricincta* was first recorded from Norway from Drammen, Underlia by Greve (2000a). Females are noted only when males were present at the localities, all females are checked to belong to the genus *Sapromyzosoma* sp., however. The males can easily be identified by characters of the genitalia. One locality was in a pine forest, another one at the seashore. The Flight period is in July and August. *S. quadricincta* is probably a fairly rare species distributed in SE Norway.

***Sapromyzosoma quadripunctata* (Linnaeus, 1767) (Map 32)**

Total material: 108♂♂186♀♀ (6♂♂3♀♀ earlier published).

Number of localities: 35 (3 earlier published).

Records: Ø Hvaler: Akerøy, 6 June 1992, 1♀; Moss: Rødsund bro W, net, 26 June 2003, 2♂♂1♀; Onsøy: Rauer, 28 July 1989 1♂1♀. **AK** Oslo: Gressholmen, 16 July 1989, 3♂♂1♀, Hovedøya V, 12 July 1985, 1♂4♀♀, 5 July 1988, 7♂♂17♀♀, 18 July 1989, 4♂♂13♀♀. **HES** Elverum: Baanerud, net, 24 & 27 June 2005, 1♂. **BØ** Drammen: Underlia, MT, June 1992, 2♂♂, July 1995, 2♂♂, August 1995, 1♂; Hurum, Verksøya, MT, 6 July–19 August 1995, 4♂♂6♀♀. **VE** Horten: Karljohansvern, 9 July 1985, 2♂♂; Sande: Gyltесе, 9 July 1985, 1♀; Tjølling: Ula, 21 July 1984, 14♂♂42♀♀; Tjøme: Fynstranden: 3 & 9 July 1983, 4♂♂18♀♀, Grepan, 22 July 1990, 2♀♀, Grimestad, 11 July 1985, 1♀, Hvasser, Sjøbustrand, 11 August 1984, 2♂♂1♀, Kløvningen, 27 June 1984, 1♂, Mo, near Groens cabin, 28 June 1985, 3♂♂, Moutmarka, 22 June 1995, 1♂, Moutmarka, fra Treidene til Helgerød, 22 July 1982, 1♂1♀, Mostrand, YT, 14–17 July 1986, 1♂, net, 4–11 August 1984, YT, 1♂1♀, Mostrand, 22 July 1982, 1♂4♀♀, 8 July 1983, 5♂♂13♀♀, 20 July 1983, 12♂♂21♀♀, 14 July 1986, 1♀, in sand-quarry, 22 July 1982, 3♂♂, 13 July 1986, 1♂, Treidene, 5 July 1984, 1♂1♀; Tønsberg: Slottsfjellet, 18 July 1982, 5♂♂7♀♀; Våle: Langøya 3 July 1990, 1♀. **AAY**



Map 32. Distribution of *Sapromyzosoma quadripunctata* (Linnaeus, 1767).

Vegårdshei: at Kviftekilen, net, 29 June 2003, 3♂♂2♀♀. **VAY** Arendal: Tromøy, near Hove camp, 25 June 2003, 7♂♂12♀♀, Flekkefjord: Hidra, Ysthus, 14 July 1982, 1♂6♀♀; Lindesnes: Lindesnes lighthouse, 21 July 2000, wet meadow, near rock pool, 1♂; Spangereid, 9 July 2000, 2♀♀. **VAI** Sirdal: Tonstad, net, 3 August 1996, 1♂ 2♀♀. **RY** Egersund; Mong, YT, 23 July 1992, 1♂, Sandbakkane, 17 July 1982, 1♂; Hå: Oгна, MT, 17 July–21 August 1996, 1♂.

Remarks: *Sapromyzosoma quadripunctata* is here reported new to HES, AAY and RY. The genitalia of the males are characteristic, the females has only two rows of acrostichals (see above for *S. quadricincta*). *S. quadripunctata* was first recorded from Norway by Siebke (1877) from AK Oslo : Bekkelaget, Sofienberg and Tøyen as well as Ådalen in Buskerud and Aurdal in Oppland. There are today, however, only material from the Oslo area in ZMO. *S. quadripunctata* is distributed mainly in coastal areas from SE Norway to southern Rogaland province. Ardø (1957) in his work on marine shore dune ecosystems have many records of this species, included three records from Norway Ø Larkollen, VE Larvik, Oddane sand and VAY Mandal: Sjøsandene from dune ridges and dune heath. The material listed here also have similar localities

showing that *S. quadripunctata* obviously thrives in coastal areas. There are also localities like the one at Lindesnes on wet meadow near rock pool, Spangereid, meadow near the sea, at Kvitekilen on meadow, in vegetation close to river at Rødsund, among *Phragmites/Carex* at Kløvningen and Mostrand. Several specimens were collected in a small isolated patch of vegetation in the middle of a wide area of stone beach near Hove leir. There are no alpine or subalpine records. The flight period is from June to August.

Tricholauxania Hendel, 1925

The genus *Tricholauxania* can be separated from all other Norwegian Lauxaniids on the vein R2+3 which is setose ventrally.

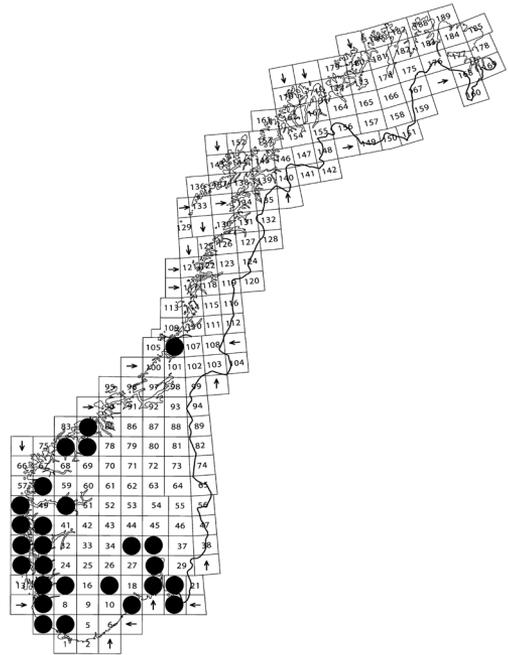
Tricholauxania praeusta (Fallén, 1820)

(Map 33)

Total material: 308♂♂380♀♀ (95♂♂120♀♀ earlier published).

Number of localities: 79 (22 earlier published).

Records: Ø Hvaler: Arekroken, MT, 22 July–15 August 2000, 1♀, (VM); Råde: Tasken, MT, 6–24 June 1995, 1♀; Moss: Jeløy, Hvittingbukta, MT, 3–30 June 1995, 1♂. **AK** Nesodden: Fagerstrand, LT, 14–15 July 2003, 1♂, 6–7 August 2003, 1♂, 10–11 August 2003, 2♂♂1♀, 11–12 August 2003, 1♂, 12–13 August 2003, 1♂, 17–18 September 2003, 1♂, 26–27 July 2004 1♀, 28–29 July 2004, 1♀, 8–9 August 2004, 1♂, 11–12 August 2004, 2♂♂, 15–16 August 2004, 1♂, 3–4 September 2004, 1♂1♀, 12–13 September 2004, 1♀, 26–27 June 2005, 2♂♂, 6–7 July 2005, 1♀, 10–11 August 2005, 1♂4♀♀, 17–18 August 2005, 1♂, 24–25 August 2005, 1♂; Enebakk: Kirkejordet, 24 June 1985, 1♀, Nordre Bøler, MT, August 1996 1♀, Frogn: Håøya, MT, 16–27 June 1984, 5♂♂5♀♀; Oslo: Hovedøya, 12 July 1985, 1♂, 18 July 1989, 2♂♂1♀. **BØ** Hurum: Tofteholmen, MT, 31 July–1 September 1991, 1♂; Ringerike: Sokna, Hovland, MT, 3 July–13 August 2004, 2♀♀, 23 June–30 July 2005, 5♀♀, Sokna center, net, 23 June 2005, 2♀♀, Sokna, center at vicarage, MT, 23 June–28 July 2005, 2♀♀, 28 July–15 September 2005, 5♀♀. **VE** Borre: Adalstjern, net, 30 June 2000, 3♂♂; Horten: Karljohansvern, 9 July 1985, 7♂♂3♀♀; Nøtterøy: Strengdalsvann, 5 July 1983, 2♂♂; Stokke: Akersvannet, 29 June 1999, 1♂, Melsomvik, at Agricultural School, net, 1 July 2000, 7♂♂5♀♀; Tjøme: Kolabekkilen, 24 July 1982, 2♀♀, 19 July 1983, 6♂♂8♀♀, Mostrand, 20 July 1983, 3♂♂6♀♀, MT, 4–11 August 1984, 1♂1♀, net, 2 July 1985, 1♂1♀,



Map 33. Distribution of *Tricholauxania praeusta* (Fallén, 1820).

Kynna, 17 July 1983, 16♂♂6♀♀. **TEI** Tokke: Dalen, hotel garden, net, 24 June 2006, 1♀. **AAY** Risør: Torskeberget, LT, 20–21 July 1995, 1 specimen. **VAY** Flekkefjord: Andabeløyna, BT, June–September 1998, 2♀♀, Hidra, Kirkehavn, 14 July 1982 1♂1♀, 15 July 1982, 1♂. **RY** Egersund: Hornesvann, 8 July 1986, 6♂♂3♀♀, Sandbakkane, 12 July 1982, 5♂♂2♀♀; Finnøy: Ladsteinvatn, MT, 17–24 June 1992, 2♂♂1♀, 9–27 July 1993, 1♂, Kvitevik, MT, 17 June–9 July 1993, 1♂, 9–27 July 1993, 1♀, 21 August–23 September 1993, 1♀. **RI** Forsand; Frafjord, net, 16 August 2000, 1♀, Røssdalen, net, 19 August 2000, 2♀♀; Hjelmeland: Sæbø, 2 August 1982, J/B, 3♂♂, Mosnes, J/B, 2 August 1982, 1♀, 5 October 1982, 1♀, Sande, J/B, no date, 1♀; Suldal: Sand, Eide, 25 June 1935, 1♀, (TSZD 7543). **HOY** Austrheim: Mongstad, MT, 28 May–1 July 2005, 2♀♀, Bergen: Helleneset, 16 June 1985, 4♂♂1♀, Kristianborgvann, 25 July 1989, 3♂♂, Munkebotntjern, 14 July 1987, 3♂♂5♀♀, 3 July 1988, 1♂2♀♀, Sølverget, 10 August 1986, 2♀♀, Bergen (Fana), Mildevann, MT, 28 July–2 September 2005, 1♂, net, 28 July 2005, 1♂, 30 August 2005, 1♀, Rambjøra Nat. Res. 2 MT, 23 May–3 July 2006, 1♂1♀, 3–24 July, 6♀♀, net 3 July 2006, 1♀, 24 July–15 August 2006, 10♀♀, Straume, 22 June 1986, 1♀, (Åsane), Haukås river at outlet, MT, 5 June 16 July 2003, 1♂9♀♀, 16 July–21 August 2003, 2♂♂4♀♀, 21 August–30 September 2003, 2♀♀,

Bruås, MT, 16 July–28 July 2003, 2♀♀, 28 July–12 August 2003, 1♀, 12–21 August 2003, 1♀, Haukåsmyrane, MT, 16 July–21 August 2003, 2♀♀, Almås, MT, 5 June–16 July 2003, 1♂3♀♀, 16 July–21 August 2003, 1♂8♀♀, Vollane, MT, 1 July–14 July 1996, 1♂; Etne: Austrheim, 26 May 1985, 1♂, Holsenøy: at Brakstadvatn, net, 20 June 2002, 1♀, Osterøy: Marikovane, 27 June 1982, 17♂♂9♀♀; Stord: Hystadmarka Nat. Res., net, 12 July 2006, 5♂♂6♀♀. **HOI** Kvam: Stekka Nat. Res., 6 June 2000, 1♀, Kvinnherad: Rosendal guest house, garden, MT 12–15 June 2006, 4♂♂6♀♀. **SFY** Florø: Svardal, net, 11–12 June 1998, 7♂♂1♀; Gulen: Brosvik, 1 July 1983, 1♂; Jølster: Vassenden near Jølstratunet, 6–11 July 1998, 3♀♀. **SFI** Balestrand: Målsnes, MT, 14 June–1 August 1998, 2♀♀, 1–29 August 1998, 1♀; Sogndal: Ølmheim, J/B, 30 September 1982, 1♂1♀. **MRY** Gjemnes: Knutset, Botnfjord, 30 July 2003, 1♀, Sykkylven: Anestad, MT, 25 June–13 August 2001, 2♂♂3♀♀, 13 August–9 September 2001, 1♀. **MRI** Stranda: Lauvvika, MT, 28 May–6 July 2000, 3♂♂1♀, 6 July–20 August 2000, 8♂♂13♀♀. **NTY** Nærøy: Kjeksvika, MT, 6 May–20 June 2002, 12♂♂12♀♀, 20 June–5 August 2002, 14♂♂11♀♀, 5 August–3 September 2002, 4♂♂8♀♀, 3–13 September 2002, 2♂♂5♀♀.

Remarks: *T. praeusta* is here reported new to Ø, BØ, VE, TEI, AAY, VAY, SFY, SFI, MRY and NTY. The material from RI Frafjord and Røssdalen is also recorded, see Nielsen (2000). *T. praeusta* was first published from Norway by Siebke (1877). It has also been recorded by Greve & Skartveit (1998), Greve (2000a, 2004b) & Greve & Kobro (2004). *T. praeusta* is the only species in the genus *Tricholauxania* in NW Europe, and among Norwegian lauxaniids it is easy to identify on account of the ventrally setose R2+3. It is all yellow with wings somewhat clouded on dm-cu and darkening along longitudinal veins. It is known from Sweden (H. Andersson pers. comm.). *T. praeusta* is a common species in the coastal lowlands of southern Norway, the northernmost locality is Kjeksvika in Nærøy province. There is no records from Southern Trøndelag province, but here it is probably overlooked. There is no records from alpine or subalpine areas, and very few from inland southern Norway. However, several records from the Sokna area shows that this species can tolerate fairly cold winter periods. The flight period is from late May until October.

Discussion

Since very little has been published on the lauxaniid fauna in the other Scandinavian countries, it is not possible to compare with recent surveys from neighbouring countries. Wahlgren's (1919) key based on Swedish material cannot be used successfully for several genera today, it is, however, one of the few older overviews. One updated list of species is presented in the preliminary list of Diptera from Denmark (Merz et al. 2001), the number of lauxaniid species listed from Denmark is 48 compared with the 43 species listed here from Norway. There is no records from Iceland (Olafsson 1991). The number of species in Germany is 67 (Schumann et al. 1999).

This survey, based on a material numbering nearly 12 000 thousands specimens, should give the faunistical picture for most species, which species are rare and which are common in the country. For some species the females are not included as they can not be determined with certainty, and thus the total number of specimens examined in all is some hundred specimens higher than the total number listed above. There are fairly little collected in the three northern provinces, and here the information must be considered poor, and more collection in the areas of Central and Northern Norway will obviously give more information.

The author also expect that additional species will be added to the species list in the future.

The subfamily Homoneuriinae is at present represented with one genus *Homoneura* numbering at least three species in Norway, all three are very rare. These three species are all from SE Norway. However, an additional female belonging to the genus *Homoneura* has been collected in Finmark, unfortunately this specimen is strongly damaged and can not be determined further.

The dominating subfamily is thus the Lauxaniinae to which the bulk of the material belongs. Two genera *Lyciella* and *Sapromyza* contains the highest number of species, the genus *Lyciella* by

far the largest part of the total material.

Three species of subfamily Lauxaniinae were in the later years recorded new to Fennoscandia and Denmark and their nearest localities are situated in Central Europe, viz. *Lauxania albomaculata* Strobl, 1909, *L. minor* Martinek, 1974 and *Pachycerina pulchra* (Loew, 1850). Both *L. albomaculata* and *P. pulchra* have been collected more than once, while *L. minor* have been collected from one locality only (Greve 2006).

Pseudolyciella subpallidiventris Papp, 1978 is also very rare in Norway recorded from one locality, and has not yet been recorded from other localities in Fennoscandia and Denmark, however, see Merz et al. (2001). The three species of the genus *Pseudolyciella* recorded from Norway has also been recorded from UK (Godfrey 1994).

The rare *S. amabilis* have been recorded from two lowlands localities in in MRI and MRV, both localities close to high mountains, and from two localities in western Finmark. *S. amabilis* is a very rare species in most of distributional area, possibly true alpine, however, further material is needed to discuss the total distribution in Norway. *S. amabilis* was described by Frey, and is noted (Shatalkin 2000) also from Mongolia.

L. laeta, a common species, is collected in alpine areas in most part of the country and must be considered the second true alpine species although it is also known more scattered in the lowlands.

Based on the present knowledge this is the list of rare species, all in the subfamily Lauxaniinae: *A. anisodactyla*, *C. simillimum*, *L. albomaculata*, *L. minor*, *M. filia*, *M. plumicornis*, *M. tabidiventris*, *P. pulchra*, *S. albiceps*, *S. basalis*, *S. quadricincta* and *S. setiventris*.

Notes have been made on the flight period for most species, however, few studies have been done to especially investigate this phenomenon.

Acknowledgements. I thank all collectors, and in particular A. Andersen, Ås, J. Anonby, Leikanger, J. Bakkerud, Furnes,

K. Berggren, Kristiansand, H. Breilid, Bergen, A. Bruserud, Ringerike, A. Fjeldså, Bergen, A. Foldvik, Stavanger, O. Frengen, Trondheim, G. A. Halvorsen, K.J. Grimstad, D. Holtan, Fjæra A.K. Hufthammer, Bergen, L. O. Hansen, Oslo, O. Hanssen, Trondheim, H. Hatlen, Batnfjordsøra, K.A. Johanson, Stockholm, I. E. Greve, Sokna, S. Kobro, Ås, J. Korsnes, Kvamsøya, S. Ligaard, F. Midtgaard, Ås, T. Randulff Nielsen, Sandnes, T.J. Olsen, & A.L. Olsen, Råkil i Tune, Bjørn, A. Sagvolden, Rollag, J. Skartveit, Bergen, L. Sognes, Botnen, Hyllestad, J.O.Solem, Trondheim, T. Sømme, Bergen, G. E. E. Søli, Oslo, O. Sørlibråten, Oslo, Per Tangen, Oslo, B. Økland, Ås. I am grateful for loan of material from curator R. Daielsson, Lund University, Sweden, professor Arne C. Nielsen, Tromsø Museum, University of Tromsø and curator P.O. Syvertsen, Helgeland Museum, Naturhistorisk Dept. Mo i Rana. And last, but not least, I am very grateful to my friend Bernhard Merz, Switzerland for all his help and advice!

References

- Ardö, Paul. 1957. Studies in the marine shore dune ecosystem with special reference to the Dipterous fauna. Opusc. ent. Suppl. XIV, 255 pp.
- Bidenkap, O. 1901. Foreløbig oversigt over de i det arktiske Norge hidtil bemærkede Diptera Brachycera. Tromsø Mus. Aarsheft. 19, 23–112.
- Bährmann, R. 1991. Erster Beitrag zu ökofaunistischen untersuchungen der Lauxaniidae (Diptera) Tübingens und angrenzender Gebiete. Zool. JB. Syst. 118, 409–422.
- Chandler, P. 1998. Checklists of Insects of The British Isles (New series): Part 1: Diptera. Handb. Ident. Br. Insects.12, 1–234.
- Chandler, P. 2000. Corrections and changes to the Diptera Checklist (4) – Editor. Dipterists Digest 7, 81–82.
- Chvála, M. 1997 (Ed.). Check List of Diptera (Insecta) of the Czech and Slovak Republics. Karolinum. Charles University Press, Pragas 1997, 132 pp.
- Collin, J. E. 1948. A short synopsis of the British Sapromyzidae (Diptera). Trans. Royal ent. Soc. London 99, 225–242.
- Fjellberg, A. 1972. Coleoptera of the Hardangervidda. Fauna of the Hardangervidda 1, 1–74, Universitetsforlaget, Bergen, Oslo, Tromsø.
- Frey, R. 1918. Beitrag zur kenntnis Der Dipterenfauna des Nördl. Europäischen Russlands. II Dipteren aus Archangelsk. Acta Soc. Pro Fauna et Flora Fenn., 46, 2, 1–32.
- Godfrey, A. 1994. *Lyciella stylata* Papp and *L.*

- subpallidiventris* Papp (Diptera: Lauxaniidae) new to Britain. Br. J. ent. Nat. Hist. 7, 81–84.
- Greve, L. 1996. En faunistisk undersøkelse av insektlivet i de øvre delene av Raundalen. Rapport 93, LFI, Zoologisk Institutt, UiB. 22 pp.
- Greve, L. 1997. *Cnemocanthe muscaria* (Fallén, 1823) (Dipt., Lauxaniidae) a species new to Norway. Fauna norv. Ser. B. 44, 78–79.
- Greve, L. 1999. *Lyciella stylata* Papp, 1978 (Diptera, Lauxaniidae) new to Fennoscandia; *Lyciella pallidiventris* (Fallén, 1820) and *Sapromyza basalis* Zetterstedt, 1847 (Diptera, Lauxaniidae) new to Norway. Dipterists Digest 1999 6, 33–34.
- Greve, L. 2000a. New records of Norwegian Lauxaniidae (Diptera). Norw. J. Entomol. 47, 89–93.
- Greve, L. 2000b. *Sapromyza amabilis* Frey, 1930 (Diptera, Lauxaniidae), new to Norway. Dipterists Digest 7, 3.
- Greve, L. 2002a. Further records of Norwegian Lauxaniidae (Diptera). Norw. J. Entomol. 49, 63–65.
- Greve, L. 2002b. *Minettia plumicornis* (Fallén, 1820) (Diptera, Lauxaniidae), new to Norway. Dipterists Digest 9, 159–160.
- Greve, L. 2004a. *Sapromyza albiceps* (Fallén, 1820) (Diptera, Lauxaniidae), new to Norway. Dipterists Digest 10, 117–118.
- Greve, L. 2004b. Terrestrer arthropoder fra nær-områdene til Haukåselva, Haukåsvassdraget, Åsane, Bergen Kommune, Hordaland. Bergen Kommune, Byutvikling, Rapport, 30 pp.
- Greve, L. 2006. *Lauxania minor* Martinek, 1794 (Diptera, Lauxaniidae) in Norway and *Sapromyza obsoleta* Fallén, 1820 (Diptera, Lauxaniidae) deleted from the Norwegian fauna. Norw. J. Entomol. 53, 83–84.
- Greve, L. & Kobro, S. 2004. Abundance of phototactic Lauxaniidae (Diptera) in SE Norway as indicated by light trap catches. Dipterists Digest (2 Ser.) 10, 119–124.
- Greve, L. & Merz, B. 2003. *Homoneura consobrina* (Zetterstedt, 1847) and *Lauxania albomaculata* Strobl, 1909 (Diptera, Lauxaniidae) in Norway. Norw. J. Entomol. 50, 107–108.
- Greve, L. & Skartveit, J. 1998. Three species of Lauxaniidae (Diptera) new to Norway and a note on the distribution of *Pachycerina seticornis* (Fallén, 1820) (Diptera, Lauxaniidae). Fauna norv. Ser. B. 45, 110–112.
- Greve, L., Pommeresche, R., & Skartveit, J. 1998. *Pachycerina pulchra* (Loew, 1850) (Diptera, Lauxaniidae), a species new to Fennoscandia. Dipterists Digest 5, 95.
- Hackman, W. 1980. A check list of the Finnish Diptera II. Cyclorrhapha. Notul. ent. 60, 117–162.
- Hansen, L. O. & Falck, M. 2000. Insektfaunaen ved Østensjøvannet. Rapport Østensjøvannets Venner, 34 pp.
- Hågvar, S. & Greve, L. 2003. Winter active flies (Diptera, Brachycera) recorded on snow – a long-term study in south Norway. Studia dipterol. 20 (2), 401–421.
- Laurence, B. R. 1997. Diptera in the Northern Isles of Britain. Entomologist's mon. Mag., 133, 225–232.
- Lyneborg, L. 1968. XLII a. Diptera Brachycera et Cyclorrhapha. In: Spärck, R. & Tuxen, S.L. (eds.), The Zoology of the Faroes 2 (2), 79 pp.
- Martinek, V. 1974. New European species *Lauxania minor* sp.n. and redescription of species *Lauxania cylindricornis* (Fabr.) (Diptera, Lauxaniidae). Biológia (Bratislava) 29, 609–617.
- Martinek, V. 1996 A. Dipterous Insects (Diptera) in a forest meadow in the Orlické Mts. In summer and fall aspects. Lesnictví-Forestry, 42, (5), 193–212 [In Czech].
- Martinek, V. 1996 B. The community of the higher Diptera (Diptera – Brachycera) on wetlands along the Divoká Orlice river. Lesnictví-Forestry, 42, (11), 518–536. [In Czech].
- Merz, B. 2002. Einführung in die Familie Lauxaniidae (Diptera, Acalyptrata) mit angaben zur Fauna der Schweiz. Mitt. Entomol. Ges. Basel 52 (2-3): 29–128.
- Merz, B. 2003. The Lauxaniidae (Diptera) described by C.F. Fallén with description of a misidentified species of *Homoneura* van der Wulp. Insect Syst. Evol. 34, 345–360.
- Merz, B. 2004. Revision of the *Minettia fasciata* species-group (Diptera, Lauxaniidae). Revue Suisse Zool. 111 (1), 183–211.
- Merz, B., Greve, L., Petersen, F.T. & Papp, L. 2001. Fam. Lauxaniidae. Pp. 199–200 in Petersen, F.T. & Meier, R. (Eds.), A preliminary list of the Diptera of Denmark, Steenstrupia 26, 119–276.
- Nielsen, T.R. 2000. Verneplanarbeid Frafjordheiana. Kartlegging av insekter o.a. Invertebrater i verneplanområdet år 2000. Fylkesmannen i Rogaland. Rapport 37 pp.
- Oelerich, H.-M. 1999. Fam. Lauxaniidae. See: Schumann, H., Bährmann, R. & A. Stark (Eds.). Checkliste der Dipteren Deutschlands. Studia Dipterologica – Supplement 2 (1999), 354 pp.
- Olafsson, E. 1991. Íslenskt skordýratil

- Fjölrit Náttúrufræðistofnunar 17. 69 pp. Náttúrufræðistofnun Íslands, Reykjavík.
- Papp, L. & Shatalkin, A. I. 1998. Family Lauxaniidae. Pp. 383–400, in: Papp, L. & Darvas, B. (eds.), Contributions to a Manual of Palaearctic Diptera. Vol. 3, Science Herald, Budapest.
- Papp, L. Family Lauxaniidae. In: Checklist of the Diptera of Hungary (L. Papp ed.), Hungarian Natural History Museum, Budapest, 2001, 55 pp.
- Persson, P.I. 1983. Flugor på Ölands Stora alvar. Ent. Tidsskr. 104, 151–164.
- Reddersen, J. Distribution and abundance of lauxaniid flies in Danish cereal fields in relation to pesticides, crop and field boundary. Ent. Meddr. 62, 117–128.
- Reddersen, J. 1995. Feeding biology of fungivorous insects from Danish cereal fields. Pedobiologia Pedobiologia 39, 370–384.
- Remm, E. & Elberg, K., 1979. Terminalia of the Lauxaniidae (Diptera) found in Estonia, Latvia and Lithuania. Dipterologisi Uurimusi: 66–117. Tartu.
- Ringdahl, O. 1951. Flugor från Lapplands, Jämtlands och Härjedalens fjälltrakter (Diptera, Brachycera). Opusc. ent, XVI, 113–186.
- Rognes, K. 1995. Recent records of rare flies from Norway (Diptera: Lauxaniidae, Fanniidae, Tachinidae). Fauna norv. Ser. B 42, 136–137.
- Schacht, W., Kurina, O., Merz, B. & Gaimari, S., 2004. Zweiflügler aus Bayern XXIII (Diptera; Lauxaniidae, Chamaemyiidae). Entomofauna, 25/3, 41–80.
- Shatalkin, A.I. 1995. Palaearctic species of *Homoneura* (Diptera, Lauxaniidae). Zoologicheskii Zhurnal, 74/11, pp. 54–57 [in Russian]. See also 1996. Entomological Review, 75 (8), 1996, 171–186.
- Shatalkin, A.I. 2000. Keys to the Palaearctic flies of the family Lauxaniidae (Diptera). Zoologicheskii Issledovaniya 5, 1–102. [In Russian].
- Siebke, J. H. S., 1877. Enumeratio insectorum norvegicorum. Fasciculum IV. Catalogum dipterorum continentem. Xiv + 255 pp. A.W. Brøgger, Christianiae (Oslo).
- Storm, V. 1907. Supplerende iagttagelser over Insecta Diptera ved Trondhjem. K. norske Vidensk. Selsk. Skr. 1907, 5 : 1–11.
- Strand, E. 1903. Nye lokaliteter for Diptera. Christiania Vidensk. Selsk. Forh. 1903 (3), 3–11.
- Strand, E. 1914. XVIII. Weiteres über von mir gesammelte Diptera. Nyt Mag. Naturv. 51: 323–329.
- Thunes, K. H., Skartveit, J., Gjerde, I., Star, J., Solhøy, T., Fjellberg, A., Kobro, S., Nakahara, S., zur Strassen, R., Vierbergen, G., Szadziewski, R., Hagan, D.V., Grogan Jr., W. L., Jonassen, T., Aakra, K., Anonby, J., Greve, L., Aukema, B., Heller, K., Michelsen, V., Haenni, J.-P., Emeljanov, A. F., Douwes, P., Berggren, K., Franzen, J., Disney, R. H. L., Prescher, S., Johanson, K. A., Mamaev, B., Podenas, S., Andersen, S., Gaimari, S. D., Nartshuk, E., Söli, G. E. E., Papp, L., Midtgaard, F., Andersen, A., von Tschirnhaus, M., Bächli, G., Olsen, K. M., Olsvik, H., Földvári, M., Raastad, J. E., Hansen, L. O. & Djursvoll, P. 2004. The arthropod community of Scots pine (*Pinus sylvestris* L.) canopies in Norway. Ent. Fenn. 15, 65–90.
- Wahlgren, E. 1919. Diptera 2. Andre underordningen. Flugor Cyclorhapha. Andre gruppen Schizophora. Fam. 13. Lövflugor. Lauxaniidae. Svensk Insektfauna 11: 225–235.
- Zetterstedt, J. W., 1847. Diptera Scandinaviae disposita et descripta. 6: 2311–2344, 2358–2368. Ex officina lundbergiana, Lundae (=Lund).
- Zetterstedt, J. W. 1848. Diptera Scandinaviae disposita et descripta. 7: 2581–2918. Ex officina lundbergiana, Lundae (=Lund).

Received: 12 June 2009

Accepted: 1 december 2009