

# Some Diptera (Tachinidae, Calliphoridae, Fanniidae, Muscidae) from the mountains of the Finse area, Southern Norway

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Rognes, K. 1983. Some Diptera (Tachinidae, Calliphoridae, Fanniidae, Muscidae) from the mountains of the Finse area. Southern Norway. *Fauna norv. Ser. B.* 30, 25–33.

Records of 44 species of Tachinidae (1), Calliphoridae (5), Fanniidae (2) and Muscidae (36) captured in the high mountain area of Finse, Southern Norway, during the summer 1981 are given. *Chaetovoria antennata* Villeneuve, 1922 (Tachinidae), *Spilogona brunneifrons* (Ringdahl, 1931), *S. malaisei* (Ringdahl, 1920) and *S. nitidicauda* (Schnabl, 1915) (Muscidae) are reported as new to Norway. For several arctic and subarctic species the records from Finse represent important southern extensions of their known range in Fennoscandia.

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Below are given records of tachinid, calliphorid, fanniid and muscid flies (683 specimens) captured at Finse (Hordaland, HOI, Ulvik) during a six day stay during the summer 1981. No records of these families have previously been presented from the area. As information on the calypterate fauna of the mountains of southern Norway is very scarce, the results are also of general interest.

The Finse area, i.e. the area in the vicinity of the Finse railway station (60° 36'N 7° 31'E), lies well above the tree limit in the north-western part of the Hardangervidda mountain plateau in South Norway. A short general description of the area including a list of the known terrestrial invertebrate fauna is given by Østbye & Hågvar (1972), and a survey of the geology (brief) and vegetation by Fægri (1967; updated by Elven, Løkken & Aarhus 1980). The Finse area belongs to Region 35, subregion c, of Norden, general information of which is given in Nordiske Utredninger (1977).

The climate is humid and strong winds from W and E prevail in the area. Standard normals for temperature (1931–1960, in °C) at the meteorological station at Finse (1224 m) are for the whole year –1.4, for January –9.3, February –9.3, March –7.4, April –4.0, May 0.9, June 4.7, July 8.0, August 7.5, September 3.8, October –0.7, November –6.9, and December –6.9. Standard normals for precipitation (1931–1960, in mm) at the meteorological station at Slirå (1300 m, 5 km W of Finse railway

station) are for the whole year 1006, for January 79, February 62, March 41, April 51, May 43, June 77, July 110, August 120, September 136, October 116, November 81 and December 90. The standard normal (1931–1960) of annual number of days with snow cover is 261 (at Slirå), and the normal length (1931–1960) of the vegetation period ( $t \geq 6^\circ\text{C}$ ) 61 days (at Slirå), which is very low. (Data from Værværslinga på Vestlandet, Bergen, in litt. 7 Aug. 1981).

The localities worked were: (1) Nordnut, southern slopes, 1220–1350 m, lower alpine zone (cf. Fægri 1967: 6, 24–25); (2) Jomfrunut, southern slopes, 1220–1469 m, middle alpine zone; (3) Kvannjølmut, south-western slopes, 1217–1469 m, lower alpine zone, mainly *Salix* scrub, into middle alpine zone; (4) Finsefetene, western part, 1200 m, lower alpine zone, mainly *Salix* scrub; (5) Area in the immediate vicinity of High Mountain Ecology Research Station near Torbjørnstølen, 1220 m, including the river banks. In addition captures were made at the eastern slopes of Lille Finsenut, 1250 m, (G.A. Evje leg.), and between Finse railway station and the Research Station. (All locality names will be found on the map «Norway-Norge 1:50 000 Hardangerjøkulen Sheet 1416 II AMS Series M 711»). All recorded captures are from EIS square 42.

Most captures were made singly with a hand net, but a Malaise-trap was operated for the whole period near the Research Station, most of the time in a marsh («myr») bordering a stream.

A baited blow-fly trap was operated on the sunny side of the main building one day for a few hours.

Specimens (male and female) were as a rule mounted with the terminalia extended. For the works used in the identification of species and other matters pertaining to the presentation of the data see Rognes (1982a, 1982b). Some identifications have been confirmed by A.C. Pont, British Museum (Natural History), London (marked A.C.P. below). Specimens are in my collection except for a few which are in British Museum (Natural History) or in the Canadian National Collection, Ottawa (BMNH, CNC, respectively, below). Species marked with an asterisk are new to Norway.

#### Family Tachinidae

\* *Chaetovoria antennata* Villeneuve, 1922.

Taxonomy: Mesnil 1974: 1272.

Material: 1♂. — Jomfrunut 1♂ 19 July. Taken on the ground between flowers below steep south-facing black schist cliffs at about 1350 m. Distribution: Sweden (Torne Lappmark, Jämtland, Härjedalen), Finland (Lapponia inarenensis), Alps (France, Austria, Italy) (Ringdahl 1952, Hedström & Nuorteva 1971, Mesnil *l.c.*). New to Norway.

#### Family Calliphoridae

*Calliphora alpina* (Zetterstedt, 1838).

Taxonomy and previous records: See Rognes 1982b.

Material: 6♂♂ 4♀♀. — Nordnut 1♂ 17 July; Research station 1♂ 18 July; 1♀ 22 July; 2♂♂ 3♀♀ 22 July (baited trap); Jomfrunut 2♂♂ 19 July.

Distribution: Fennoscandia, Scotland, North England, Alps (Emden 1954, Zumpt 1956, Hackman 1980, Dear 1981).

*Calliphora uralensis* Villeneuve, 1922.

Previous records: See Rognes 1982b.

Material: 1♂ 1♀. — Research station 1♀ 18 July; Kvannjolnut 1♂ 21 July.

Distribution: Mongolia, USSR (Ural, Murman Coast), Fennoscandia, W. Ireland, Scotland (incl. Shetland, Fair I., Hebrides, St. Kilda), Iceland, Central Europe (mainly in the mountains), Greenland (Emden 1954, Zumpt 1956, Hall 1965, Grunin 1969, 1971, Irwin 1976, Dear 1981).

*Calliphora vicina* Robineau-Desvoidy, 1830.

Previous records: *Musca erythrocephala* Meig. — Zetterstedt 1838: 656–657; Zetterstedt 1845: 1329–1330; Siebke 1877: 98; Strand 1900: 70; *Calliphora erythrocephala* Meig. — Bidenkap 1892: 238; Bidenkap 1901: 61; Soot-Ryen 1925: 141, 144; Strand 1903: 7; Ringdahl 1944a: 80;

Ringdahl 1944c: 6; Ringdahl 1952: 148–149 No. 357; Nourteva & Vesikari 1966: 545.

Material: 5♂♂ 2♀♀. — Nordnut 1♂ 1♀ 17 July; Research station 1♂ 18 July; 1♀ 19 July (indoors); 2♂♂ 22 July; Kvannjolnut 1♂ 21 July.

Distribution: Cosmopolitan. Palaearctic and Nearctic Regions (incl. Svalbard and Japan), Afrotropical Region, Australia, New Zealand, Oriental Region, Neotropical Region (Collin 1925, Zumpt 1956, Hall 1965, Kano & Shinonaga 1968, James 1970, 1977, Pont 1981).

*Cynomya mortuorum* (L.).

Previous records: See Rognes 1982b.

Material: 2♂♂ 2♀♀. — Research station 1♀ 18 July; 1♂ 1♀ 22 July (baited trap); Jomfrunut 1♂ 19 July.

Distribution: Mongolia, Turkestan, Caucasus, Europe, Greenland, Alaska (Zumpt 1956, Hall 1965, Grunin 1969).

*Protophormia terraenovae* (Robineau-Desvoidy, 1830).

Previous records: See Rognes 1982b.

Material: 1♂. — Research station 1♂ 22 July.

Distribution: Japan, China, Mongolia, Siberia, northern Europe (incl. Svalbard), Greenland, North America (Collin 1925, Zumpt 1956, Hall 1965, Kano & Shinonaga 1968, Grunin 1969, 1971).

#### Family Fanniidae

*Fannia mollissima* (Haliday in Westwood, 1840).

Taxonomy: Hennig 1955: 95 (*Coelomyia*); Chillcott 1961 (*Coelomyia*); Pont 1964.

Previous records: *Aricia spathulata* Zett. — Zetterstedt 1845: 1543–1544; Siebke 1877: 112; *Homalomyia spathulata* Zett. — Bidenkap 1901: 72; *Coelomyia spathulata* Zett. — Ringdahl 1928: 27; Ringdahl 1944c: 17; Ringdahl 1952: 158–159 No. 558; Dahl 1968: 22–23.

Material: 4♂♂. — Between Finse railway station and Research station 1♂ 16 July; Nordnut 3♂♂ 17 July.

Distribution: Europe (incl. Faroes and Iceland), Alaska, Yukon Territory, Northwest Territories (extreme north-western part) (Hennig 1955, Chillcott 1961).

*Fannia postica* (Stein, 1895).

Taxonomy: Hennig 1955: 72; Chillcott 1961; Fonseca 1968.

Previous records: *Fannia postica* Stein — Ringdahl 1944b: 84; Ringdahl 1944c: 17; Ringdahl 1952: 158–159 No. 544.

Material: 9♂♂. — Nordnut 9♂♂ 17 July. All specimens have rather dark squamae and halteres and a broad frons.

Distribution: Northern Europe (incl. British Isles and Iceland), Germany, France, Alps, Spain, North America (Hennig 1955, Chillcott 1961, Pont 1969).

## Family Muscidae

### *Thricops aculeipes* (Zetterstedt, 1838).

Previous records: *Anthomyza aculeipes* Zetterstedt 1838: 674; *Aricia aculeipes* Zett. — Zetterstedt 1845: 1487—1488; Siebke 1877: 109; *Lasiops aculeipes* Zett. — Bidenkap 1901: 74; Ringdahl 1928: 17—18; Ringdahl 1944b: 83; Ringdahl 1944c: 15; Ringdahl 1952: 154—155 No. 468; Dahl 1968: 22—23; *Thricops aculeipes* Zett. — Pont 1971: 118; *Lasiops aculeipes* Zett. — Bidekap 1901: 74 (misidentification, cf. Ringdahl 1928: 18 and below under *hirtula*).

Material: 32 ♂♂ 15 ♀♀. — Between Finse railway station and Research station 14 ♂♂ 2 ♀♀ 16 July; Nordnut 10 ♂♂ 9 ♀♀ 17 July; Jomfrunet 1 ♀ 19 July; Finsefetene 5 ♂♂ 1 ♀ 20 July; Kvannjolnut 2 ♂♂ 1 ♀ 21 July; Research station 1 ♀ 21 July (Malaise-trap); 1 ♂ 22 July.

Distribution: Central and north Europe (Pont 1971).

### *Thricops hirsutula* (Zetterstedt, 1838).

Previous records: *Anthomyza hirsutula* Zetterstedt 1838: 673—674 (Norwegian specimens later transferred by Zetterstedt to *innocua*, cf. Zetterstedt 1845: 1494); *Aricia hirsutula* Zett. — Zetterstedt 1845: 1494—1495; Siebke 1877: 109; *Lasiops hirsutula* Zett. — Bidekap 1898: 147; Bidekap 1901: 74—75; *Trichophthicus hirsutululus* Zett. — Strand 1906: 103; *Trichopticus hirsutululus* Zett. — Strand 1913: 326; *Lasiops hirsutululus* Zett. — Ringdahl 1928: 16; Ringdahl 1944b: 83; Ringdahl 1944c: 14—15; Forsslund 1951: 201; Ringdahl 1952: 154—155 No. 472.

Material: 2 ♂♂ 3 ♀♀. — Jomfrunet 1 ♂ 19 July; Kvannjolnut 1 ♀ 21 July; Research station 1 ♀ 19 July (Malaise-trap); 1 ♂ 1 ♀ 21 July (Malaise-trap).

Distribution: Europe (incl. Denmark), east to Japan and Kamtchatka (Pont 1971, Shinonaga & Kano 1971, Michelsen 1977). Not recorded from North America by Hockett (1965).

### *Thricops hirtula* (Zetterstedt, 1838).

Taxonomy: Ringdahl 1939: 141, 152; Hennig 1962: 639.

Previous records: *Aricia subrostrata* Zetterstedt 1845: 1496—1497; Siebke 1877: 109; *Trichophthicus subrostratus* Zett. — Strand 1906: 103; *Trichopticus subrostratus* Zett. — Strand 1913: 326; *Lasiops subrostrata* Zett. — Bidekap 1901: 74 (specimens belong to *aculeipes* according to Ringdahl 1928: 18, see above); *Lasiops subrostratus* Zett. — Ringdahl 1928: 18; Ringdahl 1944c: 15; Ringdahl 1952: 154—155 No. 478.

Material: 58 ♂♂ 46 ♀♀. — Between Finse railway station and Research station 2 ♂♂ 3 ♀♀ 16 July; Nordnut 8 ♂♂ 8 ♀♀ 17 July; Research station 2 ♀♀ 17 July (Malaise-trap); 8 ♂♂ 8 ♀♀ 18 July; 4 ♂♂ 2 ♀♀ 19 July; 1 ♂ 2 ♀♀ 20 July; 9 ♂♂ 2 ♀♀ 21 July (Malaise-trap); Jomfrunet 8 ♂♂ 8 ♀♀ 19 July; Finsefetene 8 ♂♂ 3 ♀♀ 20 July; Kvannjolnut 9 ♂♂ 7 ♀♀ 21 July; Lille Finseut 1 ♂ 1 ♀ 21 July (G.A. Evje leg.).

Distribution: Karskaja Tundra, Kanin peninsula, Kola peninsula, Fennoscandia, British Isles, northern North America (Hennig 1962, Hockett 1965). The only known record from Japan is not accepted by Shinonaga & Kano (1971: 106).

### *Thricops longipes* (Zetterstedt, 1845).

Taxonomy: Ringdahl 1939: 149; Hennig 1962: 641.

Previous records: *Lasiops ater* Fall. — Ringdahl 1944b: 83; Ringdahl 1944c: 15; Ringdahl 1952: 154—155 No. 469; Dahl 1968: 22—23; *Aricia longipes* Zetterstedt 1845: 1403—1404; Siebke 1877: 102; Bidekap 1892: 240; Bidekap 1901: 66; Strand 1906: 103; *Lasiops longipes* Zett. — Ringdahl 1928: 16; *Aricia anthomyzoides* Storm 1895: 239, cf. Ringdahl 1944b: 82; *Anthomyza variabilis* Zetterstedt 1838: 663 (all Norwegian specimens belong to *longipes* according to Zetterstedt 1845: 1403—1404).

Material: 6 ♂♂. — Nordnut 4 ♂♂ 17 July; Kvannjolnut 2 ♂♂ 21 July.

Distribution: Asia, Europe (Hennig 1962).

### *Thricops nigritella* (Zetterstedt, 1838).

Previous records: *Anthomyza nigritella* Zetterstedt 1838: 666—667; *Aricia nigritella* Zett. — Zetterstedt 1845: 1409—1410; Siebke 1877: 103; *Spilogaster nigritella* Zett. — Bidekap 1901: 67; Strand 1906: 103; *Lasiops nigritellus* Zett. — Ringdahl 1928: 17; Ringdahl 1944c: 15; Ringdahl 1952: 154—155 No. 474; Dahl 1968: 22—23; *Lasiops nigritella* Zett. — Ringdahl 1944b: 83; *Thricops nigritella* Zett. — Pont 1971: 119.

Material: 32 ♂♂ 8 ♀♀. — Between Finse railway station and Research station 1 ♂ 1 ♀ 16 July; Nordnut 19 ♂♂ 4 ♀♀ 17 July; Finsefetene 9 ♂♂ 1 ♀ 20 July; Kvannjolnut 3 ♂♂ 2 ♀♀ 21 July.

Distribution: Asia, Europe (Hennig 1962).

### *Thricops rostrata* (Meade, 1882).

Previous records: *Trichopticus rostratus* Mde. — Strand 1913: 326 (P. Stein det.); *Lasiops rostratus* Meade — Ringdahl 1928: 18; Ringdahl 1944b: 83; Ringdahl 1944c: 15; Ringdahl 1952: 154—155 No. 475.

Material: 5 ♂♂ 4 ♀♀. — Jomfrunet 5 ♂♂ 4 ♀♀ 19 July.

Distribution: Kola peninsula, Sweden, British Isles, Faroes, Alps, Pyrenees (Hennig 1962). In Sweden not reported south of Härjedalen (Ringdahl 1952). In Norway not previously recorded south of Trøndelag. Not reported within present boundaries of Finland (Hackman 1980).

### *Alloestylus lividiventris* (Zetterstedt, 1845).

Previous records: *Aricia lividiventris* Zett. — Siebke 1877: 106; *Alloestylus lividiventris* Zett. — Ringdahl 1928: 15; Ringdahl 1944c: 14; Ringdahl 1952: 154—155 No. 463; Hennig 1962: 659.

Material: 1 ♂. — Research station 1 ♂ 19 July (Malaise-trap).

Distribution: East Asia (Manchuria), Europe, North America (Yellowstone park, Alaska) (Hennig 1962, Hockett 1965).

*Alloostylus sundewalli* (Zetterstedt, 1845).

Previous records: *Anthomyza sundewalli* Zett. — Siebke 1877: 120; *Spilogaster sundewalli* Zett. — Strand 1906: 103; *Anthomyza sundewalli* Zett. — Bidentkap 1901: 79; *Alloostylus sundewalli* Zett. — Ringdahl 1928: 15; Ringdahl 1944c: 14; Ringdahl 1952: 154—155 No. 467; Pont 1971: 119. Material: 12♂♂ 3♀♀. — Between Finse railway station and Research station 1♀ 16 July; Nordnut 4♂♂ 17 July; Jomfrunut 1♂ 19 July; Finsefetene 3♂♂ 20 July; Kvannjolnut 4♂♂ 2♀♀ 21 July.

Distribution: Europe (Hennig 1962).

*Hydrotaea dentipes* (Fabricius, 1805).

Previous records: *Aricia dentipes* Fabr. — Zetterstedt 1845: 1426—1427; Siebke 1877: 104—105; Strand 1900: 70; *Hydrotaea dentipes* Fabr. — Bidentkap 1892: 244; Bidentkap 1901: 68—69; Strand 1906: 103; Ringdahl 1928: 24; Ringdahl 1944b: 83; Ringdahl 1944c: 16; Ringdahl 1952: 154—155 No. 493; Ardö 1957: 150. Material: 1♂. — Between Finse railway station and Research station 1♂ 16 July.

Distribution: Asia, Europe, North America, South America (Hennig 1962; Huckett 1965; Pont 1972, 1977).

*Lophosceles frenatus* (Holmgren 1872).

Previous records: *Phaonia frenata* Holmgr. — Ringdahl 1928: 14; *Lophosceles frenatus* Holmgr. — Ringdahl 1952: 154—155 No. 457.

Material: 1♂. — Between Finse railway station and Research station 1♂ 16 July.

Distribution: Kola peninsula, Fennoscandia (northern Finland to Jämtland in Sweden), Alps, Greenland, northern part of North America (Tiensuu 1935; Ringdahl 1952, Hennig 1962, 1964: 1080; Huckett 1965; Pont 1971). From Norway previously reported only from Narvik.

*Phaonia alpicola* (Zetterstedt, 1845).

Previous records: *Aricia alpicola* Zetterstedt 1845: 1401—1402; Siebke 1877: 102; Bidentkap 1901: 65; *Phaonia alpicola* Zett. — Ringdahl 1928: 12—13; Ringdahl 1944b: 83; Ringdahl 1944c: 14; Ringdahl 1952: 150—151 no. 402.

Material: 44♂♂ 30♀♀. — Between Finse railway station and Research station 7♂♂ 5♀♀ 16 July; Nordnut 7♂♂ 1♀ 17 July; Research station 1♂ 17 July (Malaise-trap); 3♂♂ 6♀♀ 18 July; 1♂ 19 July (Malaise-trap); 5♂♂ 1♀ 20 July (Malaise-trap); 4♂♂ 2♀♀ 21 July (Malaise-trap); Jomfrunut 8♂♂ 8♀♀ 19 July; Finsefetene 3♂♂ 3♀♀ 20 July; Kvannjolnut 5♂♂ 4♀♀ 21 July.

Distribution: North-eastern Siberia, Kola peninsula, Fennoscandia, Alps, northern part of North America (Hennig 1962, Huckett 1965). In Norway not previously recorded south of Trøndelag.

*Phaonia consobrina* (Zetterstedt, 1838).

Previous records: See Rognes 1982a.

Material: 1♂. — Jomfrunut 1♂ 19 July.

Distribution: Asia (?), Europe (mostly in mountains), northern part of North America (Hennig 1963, Huckett 1965).

*Phaonia lugubris* Meigen, 1826.

Previous records: *Aricia lugubris* Meig. — Bidentkap 1901: 65—66; *Phaonia lugubris* Meig. — Ringdahl 1928: 12; Ringdahl 1944b: 83; Ringdahl 1944c: 14; Ringdahl 1952: 152—153 No. 422.

Material: 1♂. — Jomfrunut 1♂ 19 July.

Distribution: Asia, Europe (mostly in mountains) (Hennig 1963).

*Phaonia morio* (Zetterstedt, 1845).

Previous records: *Aricia morio* Zetterstedt 1845: 1399; Siebke 1877: 102; Strand 1906: 103; Bidentkap 1892: 240; Bidentkap 1901: 65; *Phaonia morio* Zett. — Strand 1913: 327 (P. Stein det.); Ringdahl 1928: 11—12; Ringdahl 1944b: 83; Ringdahl 1944c: 13; Ringdahl 1952: 152—153 No. 424.

Material: 30♂♂ 17♀♀. — Between Finse railway station and Research station 8♂♂ 2♀♀ 16 July; Nordnut 1♂ 17 July; Research station 3♂♂ 1♀ 18 July; 2♂♂ 2♀♀ 19 July (Malaise-trap); 3♂♂ 1♀ 20 July (Malaise-trap); 3♂♂ 2♀♀ 21 July (Malaise-trap); 1♂ 22 July; Jomfrunut 3♂♂ 6♀♀ 19 July; Finsefetene 3♂♂ 20 July; Kvannjolnut 3♂♂ 2♀♀ 21 July; Lille Finsenu 1♀ 21 July (G.A. Evje leg.).

Distribution: Karskaja Tundra, Kola peninsula, Fennoscandia, Scotland, Alps, Greenland, north-western part of North America (Hennig 1963, Huckett 1965).

*Phaonia pallidisquama* (Zetterstedt, 1849).

Previous records: *Phaonia pallidisquama* Zett. — Ringdahl 1928: 12; Ringdahl 1952: 152—153 No. 429.

Material: 1♂ 4♀♀. — Between Finse railway station and Research station 1♀ 16 July; Nordnut 1♀ 17 July; Research station 1♀ 18 July; Jomfrunut 1♂ 1♀ 19 July.

Distribution: Fennoscandia (Finland: Lapponia enontekiensis; Sweden: Torne Lappmark southwards to Härjedalen) Greenland (west coast), Baffin I., Labrador (Tiensuu 1935, Ringdahl 1952, Huckett 1965). In Norway previously reported only from Finnmark.

*Phaonia subfuscineris* (Zetterstedt, 1838).

Previous records: *Aricia subfuscineris* Zett. — Zetterstedt 1845: 1489—1490; Siebke 1877: 109; *Lasiops subfuscineris* Zett. — Bidentkap 1901: 74; *Phaonia subfuscineris* Zett. — Ringdahl 1954: 50; Rognes 1982a: 41.

Material: 2♂♂ 3♀♀. — Research station 1♀ 18 July; Jomfrunut 2♀♀ 19 July; Finsefetene 2♂♂ 20 July.

Distribution: Fennoscandia, Scotland, Greenland, northern North America (Hennig 1963, Huckett 1965).

*Helina annosa* (Zetterstedt, 1838).

Previous records: *Aricia annosa* Zett. — Siebke 1877: 102; Bidentkap 1892: 240; *Helina annosa* Zett. — Ringdahl 1944b: 84; Ringdahl 1944c: 18; Ringdahl 1952: 160—161 No. 593; Hennig 1957: 160.

Material: 1♀. — Jomfrunut 1♀ 19 July.

Distribution: Asia (incl. Palestine and Japan),

north and central Europe, northern part of North America (Hennig 1957, 1964; Huckett 1965).

*Helina evecta* (Harris, 1780).

Taxonomy: Pont & Michelsen 1982.

Previous records: *Anthomyza lucorum* Fall. — Zetterstedt 1838: 662; *Aricia lucorum* Fall. — Zetterstedt 1845: 1391; Siebke 1877: 101; Bidentkap 1892: 240; Bidentkap 1901: 63—64; *Spilogaster lucorum* Fall. — Strand 1906: 103; *Mydaea lucorum* Fall. — Strand 1913: 327; *Helina lucorum* Fall. — Ringdahl 1928: 21; Ringdahl 1944b: 84; Ringdahl 1944c: 18; Ringdahl 1952: 160—161 No. 614; *Aricia nivalis* Zett. — Siebke 1877: 102; Bidentkap 1892: 240; Bidentkap 1901: 64 (specimen belong to «*marmorata* (Zett.) Stein») (= *rothi* Ringd. = *subvittata* Séguy) according to Ringdahl 1928: 21, see below); *Helina laetifica* R.-D. — Pont 1971: 120.

Material: 2♂♂. — Nordnut 1♂ 17 July; Kvannjolnut 1♂ 21 July. The male from Nordnut suits Ringdahl's (1924, 1939, 1956) description of the variety named «*nivalis* Zett». In addition to the features mentioned by him my specimen has the *pra* very nearly as long as the *post npl* seta and the prosternum with 1—2 very short inwardly directed hairs close to the middle of each margin.

Distribution: Socotra, South Yemen, Yemen, India, Sri Lanka; Palaearctic Region; North America; Mexico, Venezuela (Pont 1981).

*Helina flavisquama* (Zetterstedt, 1849).

Previous records: *Helina flavisquama* Zett. — Ringdahl 1928: 22; Hennig 1957: 182; *Helina balsalis* Zett. — Ringdahl 1944c: 19; Ringdahl 1952: 160—161 No. 595.

Material: 1♂. — Research station 1♂ 19 July (Malaise-trap). The specimen has no seta on shaft of front tibiae and 4 *post dc* on each side. The extra *dc* is between the first and second normally situated ones on each side.

Distribution: Kamchatka, Kola peninsula, Fennoscandia, Alps, North America (Hennig 1957, Huckett 1965). In Scandinavia not previously reported south of Härjedalen in Sweden (Ringdahl 1956: 110).

*Helina subvittata* Séguy, 1923.

Previous records: *Spilogaster marmorata* Zett. — Strand 1906: 103 (det. P. Stein); *Helina marmorata* (Zett.) Stein — Ringdahl 1928: 21; *Helina rothi* Ringd. — Ringdahl 1944b: 84; Ringdahl 1944c: 18; Ringdahl 1952: 162—163 No. 628; *Aricia nivalis* Zett. — Bidentkap 1901: 64 (misidentification, cf. Ringdahl 1928: 21 and above under *evecta*).

Material: 2♂♂. — Jomfrunut 2♂♂ 19 July.

Distribution: Asia, central and north Europe, North America (Hennig 1958, Huckett 1965).

*Mydaea orichalcea* (Zetterstedt, 1849).

Previous records: *Aricia orichalcea* Zetterstedt 1849: 3285—3286; Siebke 1877: 109; *Mydaea orichalcea* Zett. — Ringdahl 1928: 20—21; Ringdahl 1952: 160—161 No. 583.

Material: 1♀. — Nordnut 1♀ 17 July.

Distribution: Kamchatka, Fennoscandia, North America (Hennig 1958, Huckett 1965). Apart from the specimen from Oslo cited by Zetterstedt (*l.c.*), the species is not previously recorded south of Härjedalen (Sweden) in Scandinavia. In Norway also known from Tromsø.

*Mydaea palpalis* Stein, 1916.

Previous records: *Mydaea palpalis* Stein — Ringdahl 1928: 20; Ringdahl 1952: 160—161 No. 585.

Material: 1♂. — Between Finse railway station and Research station 1♂ 16 July.

Distribution: Kanin peninsula, Kola peninsula, Fennoscandia, Iceland, North America (Hennig 1956, Huckett 1965). In Scandinavia not previously known south of Jämtland (Sweden). In Norway previously known only from Narvik.

*Myospila mediatunda* (Fabricius, 1781).

Previous records: See Rognes 1928b: 113.

Material: 3♂♂ 1♀. — Nordnut 1♂ 1♀ 17 July; Finsefetene 1♂ 20 July; Research station 1♂ (Malaise-trap).

Distribution: Holarctic, Oriental and Neotropical Regions (Pont 1977).

*Spilogona alpica* (Zetterstedt, 1845).

Previous records: *Aricia alpica* Zetterstedt 1845: 1624; Siebke 1877: 115.

Material: 24♂♂ 6♀♀. — Nordnut 1♂ 1♀ 17 July; Research station 15♂♂ 4♀♀ 18 July (A.C.P.); 1♀ 20 July (Malaise-trap); Jomfrunut 6♂♂ 19 July; Finsefetene 1♂ 20 July; Kvannjolnut 1♂ 21 July. One aberrant male (Research station) has 4 *post dc* on the left side and 5 *post dc* on the right. The females have 1 og 2 «Lückenborsten», contrary to Hennig's (1959: 267, couplet 71 (66)) statement to the effect that the females are lacking such supplementary mesopleural setae. Most specimens were captured early in the day on the sunny side of stones close to the ground.

Distribution: Sweden (Torne Lappmark, Lule Lappmark, Jämtland), Finland (Kuusamo), Scotland, Alps, Jan Mayen I., Iceland, Greenland, Quebec, Labrador (Tiensuu 1935, Ringdahl 1952, Hennig 1959, Huckett 1965, Pont 1971). In Norway reported by Zetterstedt from Kålahög, near Sul (NTI, Verdal). In addition to the above records I have a male from the southernmost part of the Scandinavian mountain range in the uppermost part of the subalpine birch zone (Rogaland, RI, Forsand: towards Prekestolen 500 m 1♂ 13 June 1981, K. Rognes leg.).

\* *Spilogona brunneifrons* (Ringdahl, 1931).

Material: 1♂ 3♀♀. — Finsefetene 1♂ 3♀♀ 20 July (A.C.P.).

Distribution: Kola peninsula, Sweden (Torne Lappmark, Jämtland) (Tiensuu 1935, Ringdahl 1952). New to Norway.

*Spilogona brunneisquama* (Zetterstedt, 1845).

Previous records: *Aricia brunneisquama* Zetterstedt 1845: 1462; Siebke 1877: 107; *Limnophora brunneisquama* Zett. — Bidentkap 1901: 71; Ringdahl 1928: 29; Ringdahl 1944b: 84; Ringdahl

1944c: 20; Ringdahl 1952: 162—163 No. 659. Material: 5♂♂. — Finsefetene 1♂ 20 July; Kvannjolnut 3♂♂ 21 July (on the walls of a small house at Torbjørnstølen 1220 m); Research station 1♂ 22 July (Malaise-trap).

Distribution: Siberia, central and north Europe (mostly in mountains) (Hennig 1959).

*Spilogona contractifrons* (Zetterstedt, 1838).

Previous records: *Anthomyza contractifrons* Zetterstedt 1838: 683; *Aricia contractifrons* Zett. — Zetterstedt 1845: 1463—1464; Siebke 1877: 107; *Linnophora contractifrons* Zett. — Bidenskap 1901: 69; Ringdahl 1928: 29; Ringdahl 1944c: 20; *Spilogona contractifrons* Zett. — Ringdahl 1952: 162—163 No. 662; *Anthomyza arctica* Zetterstedt 1838: 669; *Spilogona contractifrons arctica* Zett. — Ringdahl 1952: 162—163 No. 662a; *Aricia fumipennis* Zett. — Siebke 1877: 108; *Linnophora fumipennis* Zett. — Ringdahl 1944c: 21.

Material: 76♂♂ 25♀♀. — Nordnut 2♂♂ 1♀ 17 July; Research station 30♂♂ 2♀♀ 18 July; 1♂ 18 July (Malaise-trap); 8♂♂ 1♀ 19 July (Malaise-trap); 3♂♂ 1♀ 20 July (Malaise-trap); 7♂♂ 3♀♀ 21 July (Malaise-trap); 11♂♂ 1♀ 22 July (Malaise-trap); Jomfrunet 1♂ 19 July; Finsefetene 4♂♂ 9♀♀ 20 July; Kvannjolnut 9♂♂ 7♀♀ 21 July. The specimens belong to *S.c. arctica* sensu Ringdahl 1956: 136. The structure of the fifth sternite and genitalia (3 dissections) agrees with Collin's figures of *contractifrons* rather than with those of *arctica* (Collin 1931: 81—82).

Distribution: Asia, Europe, Greenland, North America, (Hennig 1959, Hockett 1965, Pont 1970).

*Spilogona dorsata* (Zetterstedt, 1845).

Previous records: *Aricia dorsata* Zetterstedt 1845: 1472; Siebke 1877: 108; *Linnophora dorsata* Zett. — Ringdahl 1944c: 21; *Spilogona dorsata* Zett. — Ringdahl 1952: 164—165 No. 667.

Material: 1♀. — Finsefetene 1♀ 20 July. The specimen runs to *dorsata* in both Ringdahl's (1956), Hennig's (1959) and Hockett's (1965) keys. It differs from Hennig's description in having the frontal triangle almost reaching the fore margin of the frontal stripe, and in having only 1 *ad* and 1 *v* seta on each mid tibia and 2 *av* on each hind tibia.

Distribution: Wrangel I., Taymyr peninsula, Yenisei Gulf, Sweden (Torne Lappmark, Lule Lappmark, Jämtland), Norway, Svalbard, Greenland, northern part of North America (Ringdahl 1952, Hennig 1959, Hockett 1965, Pont 1970, 1971). In Norway previously reported south of Trøndelag only by Siebke whose record from Oslo cannot be accepted without strong reservation.

\* *Spilogona malaisei* (Ringdahl, 1920)

Material: 1♂. — Research station 1♂ 18 July (A.C.P.).

Distribution: USSR: Murmansk Region (Gavrilovo, Pechenga); Sweden (Torne Lappmark, Lule Lappmark, Åsele Lappmark); Greenland; north-

ern North America (Ringdahl 1952, Hennig 1959, Hockett 1965, Pont 1971). New to Norway. *Spilogona meadei* (Schnabl, 1915).

Previous records: *Linnophora subalpina* Ringd. — Ringdahl 1928: 29; *Spilogona subalpina* Ringd. — Ringdahl 1954: 51; *Spilogona kuntzei* Schnabl (*subalpina* Ringd.) — Ringdahl 1952: 164—165 No. 672.

Material: 1♀. — Research station 1♀ 18 July. Distribution: USSR: Murmansk Region; Sweden; British Isles; the mountains of central Europe (Hennig 1959). In Norway previously reported from Tromsø and Turtagrø.

*Spilogona megastoma* (Bohemann, 1866)

Previous records: *Spilogona megastoma* Boh. — Ringdahl 1952: 164—165 No. 680; Hennig 1959: 317.

Material: 3♂♂ 5♀♀. — Research station 2♂♂ 3♀♀ 18 July; Finsefetene 1♂ 2♀♀ 20 July (A.C.P.).

The *megastoma* females should have *av*, *v* or *pv* setae on the middle tibiae according to Hennig's key (1959: 265, couplet 7 (52)). Two of my females (Research station) do not have any such setae on any side, the remaining three have a single *av* or *pv* seta on one middle tibia only. All the females have the parafrontals brown dusted, the scutellum with a grey dusted stripe along middle, the dorsum of thorax evenly brown dusted with no obvious darker stripes, the basal half of hind femur with long *pv* setae, and yellow to purplish halteres.

Distribution: Novaya Zemlya, Svalbard, Fennoscandia, (south to Härjedalen in Sweden), Iceland, Jan Mayen, Greenland, northern North America (Hennig 1959, Hockett 1965). Both Ringdahl (*l.c.*) and Hennig (*l.c.*) report it from Norway without giving localities.

\* *Spilogona nitidicauda* (Schnabl, 1915).

Material: 50♂♂ 19♀♀. — Nordnut 19♂♂ 3♀♀ 17 July (A.C.P.) (2♂♂ in BMNH, 3♂♂ in CNC); Finsefetene 24♂♂ 13♀♀ 20 July (3♂♂ in CNC); Kvannjolnut 3♂♂ 1♀ 21 July; Lille Finsenu 3♂♂ 2♀♀ 21 July (G.A. Evje leg.); Research station 1♂ 21 July (Malaise-trap). The specimens have 1 or 2 mesopleural supplementary setae («Lückenborsten») and yellow halteres.

Distribution: USSR: Karskaja Tundra; Sweden: Torne Lappmark and Jämtland; northern North America (as *imitatrix* Malloch, 1921, probable synonym according to Hennig 1959: 319) (Hennig 1959, Hockett 1965). New to Norway.

*Spilogona triangulifera* (Zetterstedt, 1838).

Previous records: *Anthomyza triangulifera* Zetterstedt 1838: 680; *Aricia triangulifera* Zett. — Zetterstedt 1845: 1467—1468; Siebke 1877: 108; Bidenskap 1901: 69—70; *Linnophora triangulifera* Zett. — Ringdahl 1928: 30; *Spilogona triangulifera* Zett. — Ringdahl 1952: 164—165 No. 701. Material: 22♂♂ 26♀♀. — Between Finse railway station and Research station 1♂ 16 July;

Nordnut 1♂ 1♀ 17 July; Research station 1♂ 17 July; 2♀ 17 July (Malaise-trap); 17♂♂ 10♀♀ 18 July; 1♂ 2♀♀ 19 July (Malaise-trap); 1♀ 21 July (Malaise-trap); 1♀ 22 July; 1♀ 22 July (Malaise-trap); Jomfrunut 1♂ 5♀♀ 19 July; Finsefetene 2♀♀ 20 July; Kvannjolnut 1♂ 21 July. Most specimens were taken close to running water or snowbeds, many even on the snow. Distribution: USSR: «Jana-land, auf der Tundra beim See Kederan» (Hennig 1959: 352) (by the river Yana?), Kanin peninsula, Kola peninsula; Fennoscandia; Scotland; northern North America (Tiensuu 1935, Hennig 1959, Hockett 1965).

*Spilogona tundrae* (Schnabl, 1915).

Previous record: *Spilogona macropyga* Frey — Dahl 1968: 23.

Material: 1♂. — Research station 1♂ 22 July (Malaise-trap).

Distribution: Wrangel I., Kolyma delta, Taymyr peninsula, Karskaja tundra, Kanin peninsula, Kola peninsula, Sweden (Torne Lappmark), Greenland, northern North America (Ringdahl 1952, Hennig 1959, Hockett 1965). Previously reported from three (unspecified) localities in Northern Norway (Dahl *l.c.*).

*Lispocephala erythrocer*a (Robineau-Desvoidy, 1830).

Previous records: *Lispocephala erythrocer*a R.-D. — Ringdahl 1928: 31; Ringdahl 1944c: 21; Ringdahl 1952: 166—167 No. 718; Dahl 1968: 23.

Material: 1♀. — Research station 1♀ 19 July (Malaise-trap).

Distribution: Palaearctic and Oriental (?) Asia, central and northern Europe, North America (Hennig 1961, Hockett 1965, Pont 1977).

*Coenosia ?pumila* (Fallén, 1825)

Previous records: *Anthomyza pumila* Fall. — Zetterstedt 1838: 694; Zetterstedt 1845: 1730—1731; Siebke 1877: 123; *Coenosia pumila* Fall. — Bidentkap 1901: 80; Strand 1913: 326 (P. Stein det.); Ringdahl 1928: 43; Ringdahl 1944c: 22; Ringdahl 1952: 168—169 No. 751; Ardö 1957: 154—155. Material: 1♀. — Nordnut 1♀ 17 July.

Distribution: Asia, Europe (incl. Faroes, Iceland), North America (Hennig 1962, Hockett 1965).

## DISCUSSION

Ringdahl's (1951) paper on the dipterous fauna of the Swedish mountain regions remains the most important source of information regarding this fauna in the Scandinavian mountains in general. In his lists of Tachinidae (as Phasiinae, Rhinophorinae, Dexiinae, Tachininae) 17 species are recorded as having been captured above the tree line (alpine zone, Ringdahl's regio arctica), in the list of Calliphoridae (as Calliphorinae) the corresponding number is 14. Compared to these numbers the captures at Finse are very

poor. Obviously many more species of these families remains to be taken there. As to Fanniidae and Muscidae (Ringdahl's Muscidae excl. Anthomyiinae) a total of 102 species are recorded as having been taken above the tree-line. Pont (1971) captured 20 species of Muscidae (incl. Fanniidae) above the tree-line in Lule Lappmark. Although the 38 species of muscids and fanniids recorded from Finse in the present paper is a relatively high number, it is fairly obvious that the investigation of the fanniid and muscid fauna of the Finse area is also very far from complete.

Not surprisingly, all the species recorded from Finse except *Coenosia pumila* (identification queried) have also been recorded from the alpine zone in Sweden. Three species from Finse, viz. *Spilogona dorsata*, *S. malaisei* and *S. tundrae*, are classified by Ringdahl as arctic, i.e. they are confined to the area above the tree-line or rarely extends into the upper part of the subalpine birch zone (cf. Ringdahl 1951: 115). Twelve species, viz. *Chaetovoria antennata*, *Caliphora alpina*, *Thricops hirtula*, *Lophosceles frenatus*, *Phaonia pallidisquama*, *P. subfuscineris*, *Mydaea palpalis*, *Spilogona alpica*, *S. brunneifrons*, *S. megastoma*, *S. nitidicauda*, *S. triangulifera*, are classified by Ringdahl as arctic-subarctic, i.e. they occur in the mountains both above the tree-line and in the subalpine birch zone or in the neighbouring upper parts of the coniferous region (cf. Ringdahl 1951: 115—116) (some of these species also occur in the Alps). For several of these arctic and arctic-subarctic species the records from Finse represent important southern extensions of their known range in Fennoscandia.

The remaining species captured at Finse are classified by Ringdahl in ecological groups with wider range of distribution. The following 13 species belong to Ringdahl's group of arctic-highboreal species (most of them also occur in the mountain of central Europe): *Calliphora ur-alensis*, *Thricops aculeipes*, *T. nigrifella*, *T. rostrata*, *Alloeostylus lividiventris*, *A. sundewalli*, *Phaonia alpicola*, *P. consobrina*, *P. morio*, *Helina flavisquama*, *Mydaea orichalcea*, *Spilogona brunneisquama*, *S. meadei*. The remaining 16 species are generally distributed in Sweden: *Caliphora vicina*, *Cynomya mortuorum*, *Protophormia terraenovae*, *Fannia mollissima*, *F. postica*, *Hydrotaea dentipes*, *Thricops hirsutula*, *T. longipes*, *Phaonia lugubris*, *Helina annosa*, *H. evecta*, *H. subvittata*, *Myospila meditabunda*, *Spilogona contractifrons*, *Lispocephala erythrocer*a, *Coenosia pumila*.

## ACKNOWLEDGEMENTS

I wish to thank Eivind Østbye, Zoological Institute, University of Oslo, for having put the facilities of the High Mountain Ecology Research Station, Finse, at my disposal; Stavanger Lærerhøgskole, Stavanger, for financial support; G.A. Evje, University of Oslo, for having found time to catch some Diptera for me while busy collecting mosses; and finally Adrian C. Pont, British Museum (Natural History), London, for most kindly having verified a number of indentifications.

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Received 25 May 1982.