

Fennoscandian records of Lestremiinae (Diptera: Cecidomyiidae)

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The subfamily ground midges (Lestremiinae) has been poorly studied in Fennoscandia. Until quite recently (1986) only eight species of this group was known from this area. However, the number of species recorded has increased considerably the few last years. This article surveys new and old records of ground midge from Fennoscandia. The survey is based on a new material collected in 49 localities in various parts of Fennoscandia, and on records in previous publications. A list of altogether 73 species of ground midges is presented, including 25 species which are new to Finland, Norway or Sweden.

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INTRODUCTION

The family of pearl midges (Cecidomyiidae) consists of three subfamilies: Ground midge (Lestremiinae), log midge (Porricondylinae) and gall midge (Cecidomyiinae) (Økland and Mamaev 1997). The best known representatives of this family seem to be the members of the subfamily gall midges, since they are visible to the human eye by different-shaped galls on a large variety of plants. However, the species in Lestremiinae develop in such substrates as decaying wood, under bark, in litter and fungi, while none of their species are gall-makers. Apparently, they are not so well-known to the public.

The research activity on ground midges (Lestremiinae) in Fennoscandia has been quite low. In early time, five ground midge species (Lestremiinae) were described by Scandinavians (Zetterstedt 1838, 1851, Siebke 1864). However, little attention was subsequently paid to this subfamily in Fennoscandia, and the Catalogue of Palaearctic Diptera published in 1986 contained only eight species from this area (Skuhravá 1986). Obviously, this low number was mainly due to a lack of research. Therefore, the number of pearl midge species in the Fennoscandian countries has so far been based on estimates (Ottesen 1993, Hedström 1994). However in the last few years, several species records of ground

midge have been added by Økland (1995a,b), Jaschhof (1996) and Mamaev (1996a).

Knowledge of which species can be found in an area is basic to many kinds of studies. This paper is meant to be a contribution to future check lists of Diptera in the Fennoscandian countries. It presents an up-dated species list of ground midge (Lestremiinae) from Fennoscandia, based on:

- I a new material of ground midge from 49 localities in various parts of Fennoscandia.
- II previous records of ground midge found in publications.

METHODS

The present material was collected in 49 Fennoscandian localities in the period 1985-94. Various sampling methods were used, such as malaise trap, pitfall trap, light trap, rearing from larvae and sweep netting. For each locality, Table 1 gives local name (site), municipality, region code (Økland 1981, Chvála 1994), number of European Invertebrate Survey-system (EIS), date of sampling, name of collector (leg.), sampling method, and name of collection where the material is preserved in Canadian balsam on microscope slides. Region codes were based on province codes used in

Table 1. Information about sampling sites and previous records. reg. = region code (Norwegian sites: Økland 1981, other sites: Chvála 1994), EIS = European Invertebrate Survey-system, leg. = name of collector, collection = collection for preservation of the material.

no. site	municipality	reg.	EIS	date	leg.	method	collection
1 Prestbakke	Halden	Ø	12	IX 86	F. Midtgaard	malaise	B. Økland
2 Bysætermosan	Enebakk	AK	29	VIII 91	B. Økland	malaise	B. Økland
3 Danemark	Ås	AK	28	VI-IX 94	B. Økland	malaise	B. Økland
4 Ekeberg skog	Enebakk	AK	29	VI, VIII 91	B. Økland	malaise (8)	B. Økland
5 Fagerstrand	Nesodden	AK	28	VI, VIII-X 89-90	S. Kobro	light trap	B. Økland
6 Fjellsjøkampen	Hurdal	AK	45	VII 93	B. Økland	malaise	B. Økland
7 Hågya	Frogn	AK	28	VII, VIII 93	B. Økland	malaise	B. Økland
8 Losby	Lørenskog	AK	29	VIII 91	B. Økland	malaise (2)	B. Økland
9 Rundkollen	Nittedal	AK	36	VII, VIII 93	B. Økland	malaise	B. Økland
10 Smihagen	Ås	AK	28	VII-VIII 94	B. Økland	malaise	B. Økland
11 Styggvann	Lørenskog	AK	29	VI, VIII 91	B. Økland	malaise	B. Økland
12 Tappenberg	Rælingen	AK	29	V-VI, VIII 91	B. Økland	malaise (3)	B. Økland
13 Tofte	Hurum	AK	28	VI 85	F. Midtgaard	malaise	B. Økland
14 Vangen	Enebakk	AK	29	VIII 91	B. Økland	malaise	B. Økland
15 Skvaldra	Ringsaker	HES	54	VIII 93	B. Økland	malaise	B. Økland
16 Tronkeberget	Stor-Elvdal	HEN	64	VII, VIII 93	B. Økland	malaise	B. Økland
17 Finntjern	Jevnaker	OS	36	VIII 93	B. Økland	malaise	B. Økland
18 Hesteskotjern	Jevnaker	OS	36	VIII 93	B. Økland	malaise	B. Økland
19 Hirkjølen	Ringeby	OS	63	VII 93	B. Økland	malaise	B. Økland
20 Håkåseter	Sør-Fron	OS	62	VIII 93	B. Økland	malaise	B. Økland
21 Imsdalen	Ringeby	OS	63	VII-VIII 93	B. Økland	malaise	B. Økland
22 Ormtjernkampen	Gausdal	OS	53	VIII 93	B. Økland	malaise	B. Økland
23 Skarsmoen	Øyer	OS	54	VIII 92	A. Bakke	malaise	B. Økland
24 Skotjernfjell	Lunner	OS	36	VII-VIII 93	B. Økland	malaise	B. Økland
25 Tjuruverket	Gausdal	OS	53	VII-VIII 93	B. Økland	malaise	B. Økland
26 Totenåsen	Østre Toten	OS	45	VII-VIII 93	B. Økland	malaise	B. Økland
27 Fagermes	Nord-Aurdal	ON	53	VI 87	F. Midtgaard	malaise	B. Økland
28 Lortholkollen	Ringerike	BØ	36	VII-VIII 93	B. Økland	malaise	B. Økland
29 Langtjern, Gulsvik	Flå	BV	35	"VIII 86; VI 87"	F. Midtgaard	malaise	B. Økland
30 Skultrevassåsen	Drangedal	TEY	11	V 93	A. Bakke	malaise	B. Økland
31 Elferdalen	Notodden	TEI	18	VIII 93	B. Økland	malaise	B. Økland
32 Lisleherad	Notodden	TEI	27	VII 92-94	A. Bakke	malaise (2)	B. Økland
33 Naustdal	Naustdal	SFY	58	IX 86	F. Midtgaard	malaise	B. Økland
34 Leirbakk	Lierne	NTI	108	VIII 94	A. Winsents	malaise	B. Økland
35 Granhei	Rana	NSI	123	VIII 86	F. Midtgaard	malaise	B. Økland
36 Tromsdalen	Tromsø	TRY	162	VIII 87	H. Barstad	malaise	B. Økland
37 Sletta, Dividalen	Målselv	TRI	154	VI-IX 93-94	F. Midtgaard	malaise	B. Økland
38 Mellesmo, Svanvik	Sør-Varanger	FØ	169	VIII-IX 86	F. Midtgaard	malaise	B. Økland
39 Svanhovd, Svanvik	Sør-Varanger	FØ	169	IX 86	F. Midtgaard	malaise	B. Økland
40 Hækkeberga	Genarp	Sk.	-	23 V 93	B.M. Mamaev	netting	B.M. Mamaev
41 Alsike	Uppsala	Upl.	-	9 VI 93	B.M. Mamaev	netting	B.M. Mamaev
42 Lunsen	Uppsala	Upl.	-	9 VI 93	B.M. Mamaev	netting	B.M. Mamaev
43 Knutby, Herrgården	Uppsala	Upl.	-	16 VII 93	B.M. Mamaev	netting	B.M. Mamaev
44 Uppsala	Uppsala	Upl.	-	22-26 VII 93	B.M. Mamaev	netting	B.M. Mamaev
45 Nås, Gräsberget	Vansbro	Dir.	-	29 V, 26 VI 93	B.M. Mamaev	various	B.M. Mamaev
46 Garpenberg	Hedemora	Dir.	-	14-16 VI 93	B.M. Mamaev	netting	B.M. Mamaev
47 Granlandet	Gällivare	Lu. Lpm.	-	VIII-IX 94	R. Petterson	various	B. Økland
48 Suorke reserve	Jokkmokk	Lu. Lpm.	-	VI-IX 93	B. Wiklund	malaise	B. Økland
49 Vohdensaari	Uusikaupunki	Ab	-	VI-X 94	P. Kejo	malaise	B. Økland

Former published records:

50 Swedish sites in Mamaev (1996)	B.M. Mamaev	various	B.M. Mamaev
51 Norwegian records in Økland (1995a,b)	B. Økland	rearing	B. Økland
52 Eight sites in Lapland, Jaschhof (1996)	M. Jaschhof	various	M. Jaschhof
53 Species included in Catalogue of Palaearctic Diptera, Skuhravá (1986)			

Fauna Ent. Scand. (see f.ex. Chvála 1994). For Norway, the revised code of Økland (1981) was used instead.

The nomenclature of the species presentation follows the Catalogue of Palaearctic Diptera (Skuhravá 1986) with addition of recent publications, such as Berest (1993), Mamaev (1993), Jaschhof (1996) and Mamaev & Økland (1996).

RESULTS

Old and new records of ground midge (Lestremiinae) in Fennoscandia are listed in Table 2, including six species from Finland, 45 species from Norway and 58 species from Sweden, and altogether 73 species from Fennoscandia. In the present material, 25 species are new to the fauna in at least one Fennoscandian country. Three species are new to Finland, 17 species are new to Norway, and nine species are new to Sweden.

Table 2. New and former records of ground midge species (Diptera, Lestremiinae) in Fennoscandia, including information about number of individuals collected, capital letter of Fennoscandian country, region code (full names in Table 3), site reference (see Table 1), and period (month) of records. New species are denoted with a bold letter for the respective countries.

<i>Catarte brevinervis</i> (Zetterstedt, 1851); country: F, S; site: 53.	<i>Anaretella iola</i> Pritchard, 1951; 5 ind.; country: N, S; region: FN, T. Lpm.; site: 52; period: VII.
<i>Catocha latipes</i> Haliday, 1833; 14 ind.; country: N, S; region: Ø, AK, Dlr., T. Lpm.; site: 1, 4, 12, 50, 52; period: VI, VII, VIII, IX.	<i>Anaretella magnicornis</i> Mamaev, 1964; 12 ind.; country: F, N; region: AK, OS, SFY, TRY, TRI, Ab; site: 3, 11, 25, 33, 36, 37, 49; period: VI, VIII, IX.
<i>Anarete candidata</i> Haliday, 1833; 1 ind.; country: S; region: Upl.; site: 50; period: VI.	<i>Anaretella supermagna</i> Mamaev et Økland, 1996; 15 ind.; country: N; region: AK, NTI, TRY, FØ; site: 3, 34, 36, 38; period: VIII, IX.
<i>Anarete coracina</i> (Zetterstedt, 1851); country: S; site: 53.	<i>Anaretella spiraeina</i> (Felt, 1907); 36 ind.; country: N, S; region: AK, OS, TRY, Upl., Dlr., Lu.Lpm.; site: 4, 9, 14, 19, 21, 25, 36, 48, 50; period: VI, VII, VIII.
<i>Anarete lacteipennis</i> Kieffer, 1906; country: F; site: 53.	<i>Lestremia cinerea</i> Macquart, 1826; 136 ind.; country: N, S; region: AK, HES, HEN, OS, ON, BØ, BV, TEI, NTI, NSI, TRY, FN, FØ, Upl., Lu.Lpm., T. Lpm.; site: 2, 4, 5, 6, 8, 12, 14, 15, 16, 17, 18, 21, 24, 25, 26, 27, 28, 29, 32, 34, 35, 36, 39, 47, 48, 50, 52; period: V, VI, VII, VIII, IX, X.
<i>Anaretella cincta</i> Mamaev, 1964; 3 ind.; country: N, S; region: AK, Upl., Dlr.; site: 4, 44, 46; period: VI, VII, VIII.	<i>Lestremia leucophaea</i> (Meigen, 1818); 10 ind.; country: N, S; region: AK, OS, TEY, FØ, Upl., Lu.Lpm.; site: 10, 25, 30, 47, 48, 50, 52, 53; period: VII, VIII.
<i>Anaretella defecta</i> (Winnertz, 1870); 26 ind.; country: F, N, S; region: AK, HES, OS, NTI, TRY, FN, FØ, Upl., Lu.Lpm., Ab; site: 3, 4, 7, 8, 12, 15, 19, 20, 21, 34, 36, 38, 39, 48, 49, 50, 52; period: V, VII, VIII, IX.	<i>Aprionus abiskoensis</i> Jaschhof, 1996; 15 ind.; country: S; region: T. Lpm.; site: 52; period: VII.
<i>Anaretella elegantula</i> Mamaev, 1964; 1 ind.; country: N; region: AK; site: 4; period: VIII.	<i>Aprionus aequatus</i> Mamaev, 1963; 1 ind.; country: S; region: Sk.; site: 50; period: V.
<i>Anaretella glacialis</i> Mamaev et Økland, 1996; 2 ind.; country: N; region: FØ; site: 38; period: IX.	<i>Aprionus angulatus</i> Mamaev, 1963; 1 ind.; country: S; region: Dlr.; site: 46; period: VI.
	<i>Aprionus betulae</i> Jaschhof, 1996; 18 ind.; country: N, S; region: FN, FØ, T. Lpm.; site: 52; period: VII.
	<i>Aprionus bifidus</i> Mamaev, 1963; 7 ind.; country: N, S; region: OS, Upl., Dlr., T. Lpm.; site: 17, 50, 52; period: VI, VII, VIII.
	<i>Aprionus bispinosus</i> Edwards, 1938; 28 ind.; country: N, S; region: FN, FØ, SM; site: 50, 52; period: V, VII.
	<i>Aprionus carinatus</i> Jaschhof, 1996; 10 ind.; country: N, S; region: FØ, T. Lpm.; site: 52; period: VII.
	<i>Aprionus confusus</i> Mamaev, 1969; 7 ind.; country: S; region: Dlr., T. Lpm.; site: 45, 52; period: V, VII.
	<i>Aprionus corniculatus</i> Mamaev, 1963; 3 ind.; country: S; region: Dlr.; site: 45; period: VI.
	<i>Aprionus cornutus</i> Berest, 1986; 2 ind.; country: N, S; region: AK, Dlr.; site: 13, 45; period: VI.
	<i>Aprionus dentifer</i> Mamaev, 1965; 4 ind.; country: N, S; region: AK, OS, BØ, Dlr.; site: 8, 21, 28, 50; period: VI, VIII.
	<i>Aprionus ensiferus</i> Jaschhof, 1996; 3 ind.; country: S; region: T. Lpm.; site: 52; period: VII.
	<i>Aprionus flavidus</i> (Winnertz, 1870); 2 ind.; country: S; region: Dlr.; site: 50; period: VI.
	<i>Aprionus flaviventris</i> (Winnertz, 1870); 1 ind.; country: N; region: TEI; site: 32; period: V.
	<i>Aprionus giganteus</i> Berest, 1991; 3 ind.; country: N; region: TEI; site: 32; period: V.
	<i>Aprionus inquisitor</i> Mamaev, 1963; 16 ind.; country: N, S; region: AK, OS, BØ, FN, Upl., Dlr.; site: 4, 5, 7, 8, 9, 14, 22, 24, 28, 50, 52; period: VI, VII, VIII.

table 2 cont.

Aprionus lapponicus Jaschhof et Mamaev in lit.; 11 ind.; country: N, S; region: FØ, Dlr., T. Lpm.; site: 45, 46, 52; period: VI, VII.
Aprionus longicollis Mamaev, 1963; 1 ind.; country: N; region: FN; site: 52; period: VII.
Aprionus miki Kieffer, 1895; 1 ind.; country: N; region: FN; site: 52; period: VII.
Aprionus paludosus Jaschhof et Mamaev in lit.; 14 ind.; country: N, S; region: FØ, Upl., Dlr.; site: 41, 45, 46, 52; period: VI, VII.
Aprionus spiniger (Kieffer, 1894); 12 ind.; country: N, S; region: FØ, Upl., Dlr.; site: 50, 52; period: VI, VII.
Aprionus svecicus Jaschhof, 1996; 13 ind.; country: S; region: T. Lpm.; site: 52; period: VII.
Monardia stirpium Kieffer, 1895; 27 ind.; country: S; region: Dlr.; site: 50; period: VII.
Mycopriona abnormis (Mamaev, 1963); 1 ind.; country: S; region: Sk.; site: 40; period: V.
Trichopteromyia modesta Williston, 1896; 1 ind.; country: S; region: Upl.; site: 44; period: VII.
Xylopriona monothea (Edwards, 1938); 23 ind.; country: N, S; region: OS, Dlr.; site: 24, 50; period: VI, VII.
Bryomyia apsectra Edwards, 1938; 26 ind.; country: F, N, S; region: AK, OS, Sk., SM, Upl., Dlr., Ab; site: 4, 7, 8, 11, 12, 23, 24, 26, 49, 50; period: V, VI, VII, VIII.
Bryomyia bergrothi Kieffer, 1895; 41 ind.; country: N, S; region: Ø, FN, FØ, Upl., Dlr., Lu.Lpm.; site: 1, 47, 50, 52; period: VI, VII, IX.
Bryomyia gibbosa (Felt, 1907); 33 ind.; country: N, S; region: AK, OS, FN, FØ, Dlr., T. Lpm.; site: 4, 8, 12, 18, 24, 50, 52; period: VI, VII, VIII.
Bryomyia incisa Mamaev, 1963; 12 ind.; country: S; region: Sk.; site: 50; period: V.
Bryomyia producta (Felt, 1908); 76 ind.; country: N, S; region: TRY, FN, FØ, Sk., Dlr., Lu.Lpm., T. Lpm.; site: 36, 48, 50, 52; period: V, VI, VII.
Heterogenella hybrida Mamaev, 1963; 180 ind.; country: N, S; region: FN, FØ, Dlr., T. Lpm.; site: 50, 52; period: VII.
Campylomyza alpina (Siebke, 1864); 7 ind.; country: N, S; region: STI, TRI, FØ, Dlr., Lu.Lpm.; site: 37, 47, 50, 52, 53; period: VII, VIII.
Campylomyza bicolor Meigen, 1818; 2 ind.; country: N; region: OS, FØ; site: 23, 38; period: VIII.
Campylomyza dilatata Felt, 1907; 3 ind.; country: N; region: Ø, FN, T. Lpm.; site: 1, 52; period: VI, VII, IX.
Campylomyza flavipes Meigen, 1818; 55 ind.; country: N, S; region: OS, FN, SM, Upl., T. Lpm.; site: 20, 50, 52; period: V, VI, VII, VIII.
Campylomyza fusca Winnertz, 1870; 21 ind.; country: N; region: TEI, NTL, FØ; site: 31, 34, 52; period: VII, VIII.
Campylomyza monilicornis (Zetterstedt, 1838); region: ON; country: N; site: 53.

Campylomyza pallipes (Zetterstedt, 1850); country: F, S; site: 53.
Campylomyza pumila Winnertz, 1870; 1 ind.; country: S; region: Lu.Lpm.; site: 47; period: VIII, IX.
Polyardis delicata Mamaev, 1993; 3 ind.; country: N; region: AK, TEI; site: 12, 13, 31; period: V, VI, VIII.
Neurolyga bilobata (Mamaev et Rozhnova, 1982); 2 ind.; country: N; region: TRY; site: 36; period: VIII.
Neurolyga ovata Jaschhof, 1996; 1 ind.; country: S; region: T. Lpm.; site: 52; period: VII.
Corinthomyia brevicornis (Felt, 1907); 15 ind.; country: N, S; region: AK, FØ, SM; site: 50, 51, 52; period: V, VII.
Excrescentia mutua Mamaev et Berest, 1991; 11 ind.; country: N, S; region: AK, SM; site: 50, 51; period: V.
Peromyia bicolor (Edwards, 1938); 3 ind.; country: S; region: T. Lpm.; site: 52; period: VII.
Peromyia caricis (Kieffer, 1901); 11 ind.; country: N, S; region: FN, FØ, T. Lpm.; site: 52; period: VII.
Peromyia diadema Mamaev, 1963; 2 ind.; country: S; region: Upl.; site: 50; period: VII.
Peromyia fungicola (Kieffer, 1898); 19 ind.; country: N, S; region: AK, OS, TRY, FØ, T. Lpm.; site: 4, 25, 36, 38, 39, 52; period: VII, VIII, IX.
Peromyia monilis Mamaev in Mamaev and Krivosheina, 1965 [*Peromyia alni* Kleesattel, 1979 is a synonym of *Peromyia monilis* Mamaev (Mamaev 1996b)]; 1 ind.; country: S; region: T. Lpm.; site: 52; period: VII.
Peromyia nemorum (Edwards, 1938); 1 ind.; country: S; region: T. Lpm.; site: 52; period: VII.
Peromyia palustris (Kieffer, 1895); country: S; site: 53.
Peromyia perpusilla (Winnertz, 1870); 1 ind.; country: S; region: Dlr.; site: 50; period: VII.
Peromyia photophila (Felt, 1907); 10 ind.; country: N, S; region: FØ, Upl., T. Lpm.; site: 43, 52; period: VII.
Peromyia syltenfjordensis Jaschhof, 1996; 29 ind.; country: N, S; region: FN, T. Lpm.; site: 52; period: VII.
Peromyia tschirnhausi Jaschhof, 1996; 5 ind.; country: S; region: T. Lpm.; site: 52; period: VII.
Peromyia tundrae Jaschhof, 1996; 1 ind.; country: S; region: T. Lpm.; site: 52; period: VII.
Acoenonia europaea Mamaev, 1964; 5 ind.; country: S; region: SM, Upl.; site: 50; period: VI.

Table 3 presents the number ground midge species recorded in each of the Fennoscandian regions. In this table, species records are lacking for 19 of 20 Finnish regions, for 20 of 37 Norwegian regions, and for nine of 15 Swedish regions. Furthermore, the number of species recorded vary greatly between the regions, - ranging from one to 26. The highest species numbers in

Table 3. The number of ground midge species (Lestremiinae) recorded in each of the Fennoscandian regions. Map of Norwegian regions is found in Økland (1981), and other Fennoscandian regions in Chvála (1994).

Reg.code	region	species	Reg.code	region	species
<i>Norway:</i>			TRY	Troms, outer	8
Ø	Østfold	3	TRI	Troms, inner	2
AK	Akershus	18	FN	Finnmark, northern	16
HES	Hedmark, southern	2	FØ	Finnmark, eastern	22
HEN	Hedmark, northern	1	<i>Sweden:</i>		
OS	Oppland, southern	14	Sk.	Skåne	5
ON	Oppland, northern	2	Sm.	Småland	6
BØ	Buskerud, eastern	3	Upl.	Uppland	17
BV	Buskerud, western	1	Dlr.	Dalarne	23
TEY	Telemark, outer	1	Lu.Lpm.	Lule Lappmark	8
TEI	Telemark, inner	5	T. Lpm.	Torne Lappmark	26
SFY	Sogn og Fjordane, outer	1	<i>Finland:</i>		
STI	Sør-trønderlag, inner	1	Ab	Regio aboensis	3
NTI	Nord-Trønderlag, inner	4			
NSI	southern Nordland, inner	1			

the table are found in regions in the north and east of Scandinavia (Torne Lappmark, Dalarne and eastern Finnmark).

DISCUSSION

This article shows a rapid progress in our knowledge about the Fennoscandian ground midge fauna (Lestremiinae) during the last ten years, - raising the species number from eight in 1986 to 73 at present. However, there is considerable potential for further development of taxonomy and faunistics of ground midges in Fennoscandia.

The species listed in the Catalogue of Palaearctic Diptera (species with site reference 53 in Table 2) may need a closer examination. Altogether, nine Fennoscandian species are listed here; however, *Monardia monilicornis* (Zetterstedt, 1838) was excluded from the present list since *Campylomyza monilicornis* (Zetterstedt, 1838) and *Monardia monilicornis* (Zetterstedt, 1838) refer to the exactly same description. Also, some of the other ground midge species in the catalogue are more uncertain. However, *Campolymyza alpina* Siebke has been reformed as a valid species (Jaschhof 1996) and is present in several localities of the present survey.

The most wide-spread and abundant species in the present study was *Lestremia cinerea* Macquart, which appeared in 66 % of the regions included in the survey. Next to this, *Anaretella defecta* (Winnertz) was collected in 42 % of the regions, *Bryomyia apsectra* Edwards and *B. producta* (Felt) in 29 %, and *Anaretella magnicornis* Mamaev, *A. spiraeina* (Felt), *Lestremia leucophaea* (Meigen), *A. inquisitor* Mamaev, *Bryomyia bergrothi* Kieffer and *B. gibbosa* (Felt) in 25 %.

Still, a lot of work is required before the regional distribution of each species within Fennoscandia can be outlined. It is assumed that the large variation in species numbers between the Fennoscandian regions in the present survey is mainly caused by an uneven sampling effort, and that different methods have been applied in the various regions. If Table 3 reflects any biogeographical trends at all, it is noteworthy that some of the northern and eastern regions were the most species-rich. Several species were restricted to the northern regions in the present survey. However, most of these species are newly described species and difficult to evaluate with respect to distribution, such as *Anaretella glacialis* Mamaev et Økland, *Aprionus abiskoensis* Jaschhof, *A. betulae* Jaschhof, *A. carinatus* Jaschhof, *A. ensiferus* Jaschhof and *A. svecicus* Jaschhof. Outside, Fennoscandia, *Anaretella glacialis* Mamaev et Økland is also

collected in Jamal in the northernmost part of Russia. It cannot be excluded that several ground midge species are confined to the northern areas or are significantly more abundant here. However, more research may reveal other patterns of regional species richness and distribution of single species.

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SAMMENDRAG

Fennoskandiske funn av Lestremiinae (Diptera, Cecidomyiidae)

Underfamilien feltmygg (Lestremiinae) har vært dårlig undersøkt i Fennoskandia, og omfattet inntil nylig (1986) bare 9 kjente arter fra dette området. Artsantallet er betydelig øket gjennom undersøkelser i de siste årene. Denne artikkelen gir en oversikt over nye og tidligere funn av feltmygg i Fennoskandia. Oversikten er basert på et nytt materiale samlet inn i 49 lokaliteter fra ulike deler av Fennoskandia, samt en gjennomgang av tidligere publikasjoner. Det presenteres en liste på i alt 73 arter av feltmygg i Fennoskandia, hvorav 25 arter er nye for faunaen i Finland, Norge eller Sverige.

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