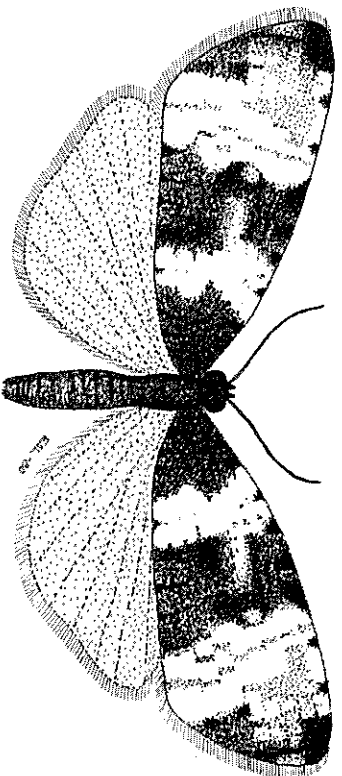

Kevo notes

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ESKO T. LINNALLUOTO and SEPPÖ KOPONEN

Lepidoptera of Utsjoki, northernmost Finland



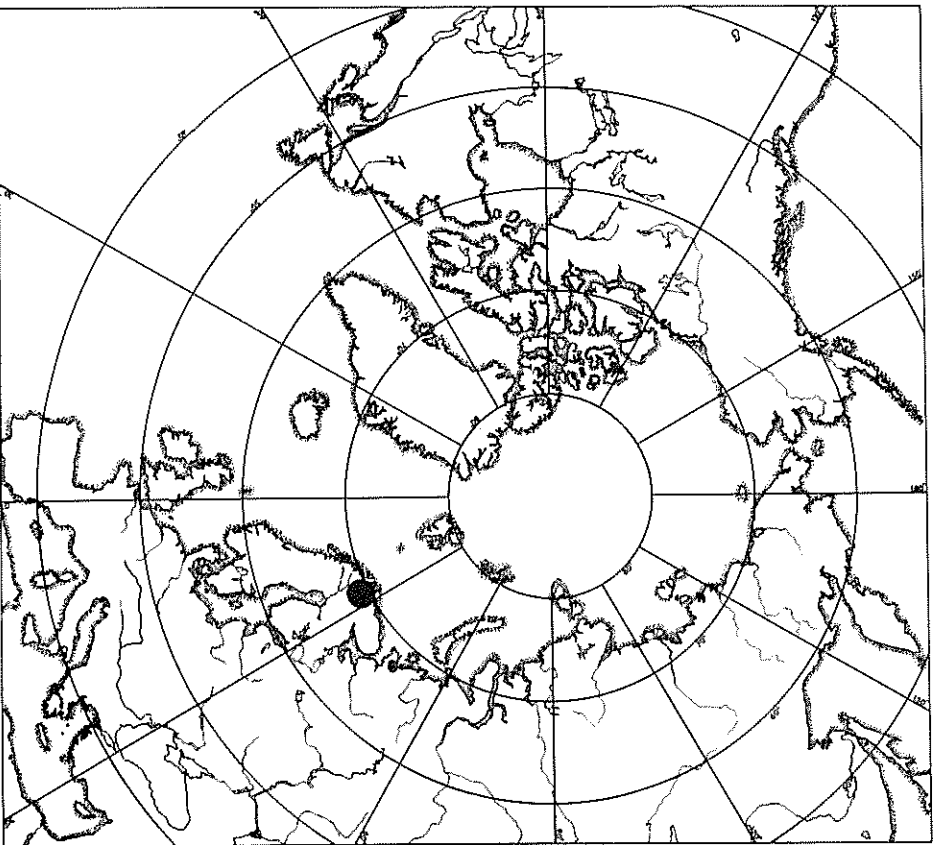


Fig. 1. The location of Utsjoki in the northern circumpolar area.

Lepidoptera of Utsjoki, northernmost Finland

Esko T. Linnahoto and Seppo Koponen

Zoological Museum, Department of Biology, University of Turku,
SF-20500 TURKU 50, FINLAND

The lepidopteran fauna of Utsjoki, the northernmost commune of Finland, is described. Special attention is paid to the fauna in the surroundings of the Kewo Subarctic Research Station. Flight periods, habitat requirements, abundance and yearly fluctuation in abundance are presented with special reference to material collected by means of light traps. The list of species found in Utsjoki includes as comprehensive data as possible from the literature, collections, and information by collectors. Special features of the lepidopteran fauna of Utsjoki are discussed, and comparisons made with certain other northern localities. The lepidopteran species (over 600 species) known in the northernmost part of Europe, divided into eight areas, are listed. The fauna of Utsjoki includes 421 species, of which nearly 25 % are reported here for the first time in Utsjoki. The number of species at Kewo is 238 and that of the whole of Inari Lapland (Utsjoki and Inari) 522 species.

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1. Introduction

Many authors have studied the lepidopteran fauna of northern Fennoscandia, and considerable attention has been paid to areas with fells and mountain birch woodlands. The following study areas are worth mentioning: Muonio and southern Enontekiö (Suomalainen 1929, Lingonblad 1947), Pechenga/Petsamo (Vallé 1933, Krogerus 1943), the Lemmenjoki area in Inari (Krogerus 1938), Kilpisjärvi in northern Enontekiö (Lingonblad 1947, von Schantz & Bruun 1951, Krogerus 1972), the Paltsa and Tjulpa mountains in northern Swedish Tjome Lappmark (Johansson & Svensson 1968), Troms and Finnmark in Norway (Aagaard 1979), and Utisjoki (many studies since Salberg 1895a).

Studies of the lepidopteran fauna of Utisjoki, the northernmost commune of Finland, have a long tradition. The small tortoiseshell (*Aglais urticae*) was noted during phenological observations at Utisjoki church as early as 1820 and 1821 (Moberg 1857). The first published list of species in Utisjoki by Salberg (1895a) consisted of 40 lepidopteran species. Since then, the number of published species has been as follows: Hellén (1931) 74, Nordman (1942) 183, Hackman (1950) 208, Euranto et al. (1957) 278, and Jussila (1963) 280 species. Up to now about 320 species have been reported from Utisjoki.

The systematic collecting of lepidopterans in Utisjoki was started by Mr. Veijo Mannelin. His work provides extensive data on the occurrence, flight periods, and habitat requirements of lepidopteran species in Utisjoki from the 1940's up to the present. In the last two decades many lepidopterologists have visited Utisjoki regularly and collected material in different parts of the commune. Much valuable information about the lepidopterans of Utisjoki has been filed in the Archives of the Lepidopterological Society of Finland, and also published in its reports and leaflets.

The Kevo Subarctic Research Station of the University of Turku was founded in 1957 and many studies of lepidopterans have been made there; e.g. studies dealing with the autumnal moth *Epirrita autumnata* (*Opornia a.*). This well-known defoliator of mountain birch forests has been one of the most important "forces of nature" in Utisjoki. Outbreaks occur as long cycles (Tenow 1972), and the last peak was in 1964-66 when 5 000 km² of birch forest were defoliated in Finnish Lapland (Kallio & Lehtonen 1975). In Utisjoki, an area of about 1 350 km² was totally defoliated, as a result about half of the area was killed and turned into tundra (Kallio & Lehtonen 1973, 1975). Outbreaks of *E. autumnata* and their effect on the birch forest ecosystem in Utisjoki as well as plant-herbivore relationships have been studied both in the field and laboratory (Kallio 1941, Nuorteva 1963, 1966, Nuorteva & Jussila 1967, 1969, Jussila & Nuorteva 1968, Sihvola 1967, Haukioja & Niemelä 1974, 1977, Haukioja & Hakala 1975, Haukioja et al. 1978, Lehtonen & Yli-Rekola 1979, Niemelä 1979).

In addition, as a part of two research programmes of the Kevo Station, information was collected about the occurrence and ecology of certain lepidopteran species. During the Finnish IBP (International Biological Programme) Tundra Biome studies data were collected on lepidopterans feeding on birch (Koponen 1973a, 1973b, 1974, 1979, Koponen & Iso-Iivari 1978, Haukioja & Koponen 1975) and also some experimental work was done (Haukioja 1974). Information about food plants and the occurrence of certain lepidopteran species has also been accumulated during studies of herbivore insects of the cloudberry (e.g. Hippa & Koponen 1977).

The authors have collected lepidopteran material in Utisjoki for many years. Special attention has been paid to visiting localities with less data, collecting during spring and autumn, and studying poorly known macrolepidopteran groups. Since 1971 one of our main methods has been continuous light trapping at the Kevo Station (see Koponen & Linnahuto 1979).

The aim of the present paper is to list the lepidopteran species found in Utisjoki with special reference to the fauna of the Kevo Station area. Information about habitats, flight periods, abundance and yearly fluctuation of species, especially those caught by light traps, is also given. Special features of the fauna of Utisjoki are discussed, and comparisons made with certain other northern localities. The species known in northernmost Europe (mainland) are also listed.

2. Study area

2.1. General features

Utisjoki, the northernmost commune of Finland, is situated in the subarctic vegetation zone, at the border of the subarctic and northern boreal zones (Fig. 1, see also Kallio et al. 1969). The area of Utisjoki commune is 5 200 km². The southernmost point is Ylä-Kuolha (69° 09' N) and the northernmost Nuorgam (70° 05' N). The distance from Nuorgam to Vaangerford on the Arctic Ocean is about 20 km.

The general topography of Utisjoki is monotonous; rounded fells are of approximately the same elevation, and the area is a peneplane with river valleys. Large areas are situated between 200 and 400 m a.s.l. However, differences in elevation are in some cases considerable, as in the canyon of the Kevo River and in the valley of the Teno (Tana) River. The highest peak is Kuivi (640 m) in the Paistunturit mountains, western Utisjoki.

The bedrock in western Utisjoki consists of granulate and in eastern Utisjoki mainly of various gneisses, mixed locally with basic rocks. The dominant mineral soil is glacial till, which is often covered by younger deposits. The characteristic vegetation of Utisjoki is mountain birch (*Betula pubescens* ssp. *forthosa*) forest, often classified as forest tundra. There are also barren fells (alpine belt) and in some river valleys, especially of the Kevojoki and Utisjoki rivers, pine (*Pinus sylvestris*) forests (Fig. 2). There are also extensive mire areas, and nowadays there are large areas of birch forest killed by the geometrid *Epirrita autumnata* (see Kallio & Lehtonen 1973). The whole area lies north of the northern limit of the spruce (*Picea abies*). For a more detailed description of the area, see Kallio et al. (1969) and Seppälä & Rastas (1980).

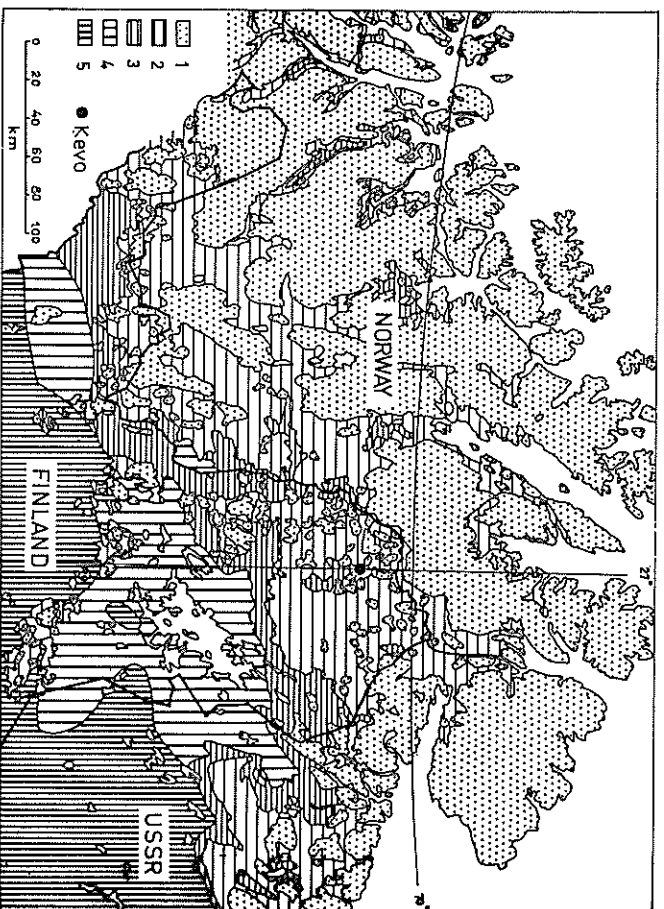


Fig. 2. Vegetation zones in northernmost Fennoscandia. 1 = barren fells, 2 = birch bushes and birch forests, 3 = pine forests and small groves of pines, 4 = pine forests, 5 = coniferous forests (spruce and pine). Redrawn from the Atlas of Finland, 1960.

The UTM squares (Universal Transverse Mercator) for European biological mapping and the Finnish Grid 27° E squares of the study area are shown in Fig. 3. The grid reference at least to the accuracy of 10 x 10 km squares should be used when recording collecting localities in Utsjoki (cf. Heikinheimo & Raatikainen 1971).

The traditional biogeographical province, Inari Lapland (Inl. or Li), comprises the communes of Utsjoki and Inari. In 1974 the Nordic Council of Ministers established a group to propose a rational division of the Nordic countries into natural geographic regions. This division, mainly based on vegetation, was published in 1977; Inari Lapland belongs to four and Utsjoki to two regions (Naturgeografisk regionindelning av Norden 1977). The southern part of Utsjoki belongs to "the continental forests of Finnmark and Lapland" (sub-region "Kevo Lapland"), and the northern part to "the subarctic birch- and pine forests of Finnmark" (sub-region "area east of Lakseelv") (see Kallio 1979).

Our main study site is situated at the Kevo Subarctic Research Station of the University of Turku (69° 45' N, 27° E). The station is situated on a north-facing peninsula of Lake Kevojärvi, which forms part of the Utsjoki river. The rivers Kevojärvi and Tarssejohka flow into Lake Kevojärvi west of the station. The Kevo area in the present paper included an area of 3 km radius around the Kevo Station, and is thus the same as that used when listing vertebrates (Iso-Iivari 1975, 1979) and vascular plants (Mäkinen & Kallio 1979) (Fig. 17). The Grid 27° E square for the station is 774:50.

The elevation of the Kevo area varies between 75 m (Lake Kevojärvi) and 330 m a.s.l. (Jesnalvarri fell). The vegetation is mainly mountain birch forest; at lower altitudes there are also pine forests. There is an area of alpine heath on the top of Jesnalvarri fell. In addition, the Kevo area also includes meadows, ponds, lakes, rivers, different shore habitats (e.g. sand beaches and willow bushes), rock beds, cliffs, human-influenced sites and also birch forest killed by *Epiphyta autumnata*. A more detailed description of the surroundings of the Kevo Station is provided by Kallio (1964).

There is a meteorological station at Kevo, and the following climatological data are from the station. During May–September (about 160 days) the average temperature is higher than 0° C, and the warmest month, on average, is July (1962–71 $\bar{t} = +11.8$). The observed maximum and minimum temperatures are +32.6 and -47.9° C, respectively. The annual mean temperature at Kevo in 1962–71 was -2.5° C. The ten year-average of the thermal sum (over +5° C d.d.) is 645 (1969–78). Southerly winds predominate, followed by southeasterly and northerly winds. Mean precipitation is about 400 mm (in 1962–71 416 mm). The period of continuous light at Kevo lasts from May 17 to July 24. For more information about meteorological data from Kevo, see Kärenlampi (1972) and Seppälä (1976). Some weather data are also available from Nuorgam, the northernmost village of Utsjoki since the year 1929.

2.2. Place-names

We have used the place-names from the new Topographic Map of Finland (see Iso-Iivari 1977). The present names as well as the old ones from the Economic Map of Finland are shown in Table 1, and the localities in Fig. 3. Certain older names, not found on the Economic Map but used in old papers on lepidopterans are also mentioned (e.g. Laiti, Onnela, Keskitalo, Paksujalka, and Uulasuula) in Table 1. The collecting localities of older papers have been changed to the present nomenclature in the list of species (p. 42); thus e.g. Onnela, Keskitalo, and Vanhatalo are now referred to as Utsjoki village.

As many of the localities in Utsjoki have names both in Finnish and Lappish there are some synonyms in Table 1 (e.g. Heikinvaara = Jalgavari and Teno = Teädnu).

The use of certain names from older papers is sometimes confusing. For example, Utsjoki may mean the river, village or whole commune; Kevo is the station, lake, river, river valley or nature reserve; Teno may mean the whole long river valley; and there are three Ailigas fells in Utsjoki. Also the distinction between the village of Utsjoki and the church (Pappila) has sometimes been unclear.

In the following list of place-names the new names are in the left-hand column and the old names (from Economic Maps) in the right-hand column. Numbers before names indicate the localities in Fig. 3. Some Lappish names are also mentioned. Some old names as well as explanatory English and Finnish terms not found on maps are shown in brackets. The letters after names are as follows: c = cliff, f = fell, h = house, l = lake, m = mire, p = peninsula, r = river, and rap = rapid. E, W, and N means east, west, and north of the place. Larger local centres have no letter (in the left-hand column).

Table 1. The place-names of collecting sites in Utsjoki. For explanations see the previous page.

25	Ahkojohka r	Akujoki
32	Ahkovarri f	Akuvaara
12	(K.) Ailigas f	Ailigas
100	(U.) Ailigas f	Ailigas
94	Aksoujumi f	Aksoujumi
26	Akkukoski rap	Akkukoski h
114	Ala-Jalve h	Jelvi (Jalve)
114	Aalköngäs rap	Isoköngäs, Alaköngäs
1	Aahkkaia h	Kolmasuula (Kolnansuu)
71	Erttegarri f	Erđgarra
11	Fäskerafdagak (r)	Fieskejoet
38	Fielokeäđgeskaidi f	Fielugeđgeskaidi
116	Harremahschoikka f	Härmmahschoikka (Härmmischocka)
13	Heikinvaara = Jalgavari f	Jalgavaara
2	Inarijoki r	Inarijoki
79	Jesnalvarri f	Jesnalvaara
80	Jompala h	
19	Kaamasmukka	Kaamasmukka
85	Kaava h	Kaava
47	Kaimmeoivi f	Kaimioivi
18	Kaktsavari f	Kaktsavaara
110	Kalddasjohka r	Kalddausjohki
107	Kalldoarvi f	Kalldoarvi
86	Kalejohka r	Galjujoki
54	Kamajohka r	Kamajoki
41	Kamaoivi f	Kamaoivi
75	Kanekuohka rap	Keniskuohka (Keneskoski)
74	Kanepakti c	Kenishpakti (Kenespakti)
88	Kardeoivi N = (Reindeer marking place)	(Skallovaraan poroerotuspaiikka)
7	Kareganjarga	Kareganjarga
10	Karigasjoki r	Karigasjohka
8	Karigasniemi	Karigasjoki
102	Karngarga	
74	Kesjärväi l	Karungarga (Laiti h, Pajuranta h)
77	(Kevo station h)	Kenishjärvi
53	Kevoiki = Keävva r	(Kevon tukimusserra)
77	Kevojärvi l	Kevojoki
77	Kevonniemi p	Kevojärvi
79	Kevonuu h	Kevusuu
97	Keäđgeporoovi f	Anniavaara
68	Keärduosjärvi l	Keärdujärvi
68	Keävnapakti c	(Konkäänpakta)
83	Kistuskaidi f	Kistuskaidi
81	Koahppeilasvdsjohka r	Koahppeilasvdsjohka
79	Koaskimpakti c	(Kotkapakti)
28	Kohntdanoarvi f	Kohntdanoarvi
121	Kolmmesoaivi f	Kolmmishoivi
63	Korotjoia h	
42	Kuivi f	Kuivi
36		(Kuolba p)
3	Kuoldnavarri f	Kolnavaarat
93	Kuorboarvi f	Kuorboarvi
43	Kuovdaoarvi f	Kuovdaarvi
77	Kutunniemi h	Kutunniemi
24	Kätkkielias f	Kätkkielias
65	Leppäie h	Leppäie
20	Leämmasjohka r	Leämmasjohki
21	Lämmasvarri f	Leämmasvaara
66	Linkepakti c	(Linkekapakti)
57	Linkinjäggi m	Linkinjäggi (Linkinjänkä)
44	Luhkarpaikhi h	Luhkarpaikka
22	Luobmosjärvik l	Luobmosjärvet
16	Luobmosjohka r	Luobmosjohki

23	Luobmossavrik f	Luomushvazara
111	Lovttajohka r	Loktajoki
103	Luosnjansuolu i	Lohntiemensaari (Lohntiemä h)
118	Luossajavri i	Luossajärvi
118	Luossajoki r	Luossajoki
105	Luovosavari f	Luovusvaara
58	Mađjohka r	Mađjoki
87	Mantojävi = Maddajavri i	Mantojärvi
61	Mierasjävri i	Mieras-järvi
62	Mieraslompolo h	Mieraslompolo
37	Moskuskaidi w c	(Kevon seinä)
6	Muotkatunurit f	
101	Niemeä h	Niemeä (Kostejärvi)
9	Niittyvuopio	(Utasuuna h)
113	Niivajoki h	(Niivakoski rap)
59	Njaggajavrik i	(Njaggajärvet)
31	Njaveojohka r	Njaveojoki
29	Njaveoaravvi f	Njaveoaravi
4	Nuhppir f	Nupir
115	Nuorgam	Nuorgam (Pajuniemi h)
55	Nuvvos-Ailigas f	Ailigas
55	Nuvvus	Nuvvus
64	Oihla h	Oihla (Paksujalka)
33	Outakoski	Outakoski
73	Paatus h	Pados
82	Paddaskaiddi f	Paddaskaiddi
87	Pastunturit f: 41, 42, 43, 47	Pastunturit
11	Pappila h (Parsonage & church)	Pappila (& kirkko)
11	Pasjohka r	Pasjoki
80	Patoniiva	Pasijärvi i
78	Pavvaljoavvi f	Paavaivaara
50	Pesikko f	Pesikko
17	Piesjavrik i	Piesjärvi
34	Pihtho h	Pihthojansuu
72	Pirkeoaivi f	Pirkkoarvi
5	Pisto-olja r	Pistooja
39	Podosroadia f	Poddustroadia
35	Podosavari f	Poodduvaara
75	Puksala h	Puksala
67	Puksaljeđgi m	Puksalkaidi
67	Puksalkaidi f	Pulmankjoki
108	Pulmankjoki r	Pulmankjoki
117	Puollamoavri f	Puollamoarvi
78	Rassejohka r	Raassjoki
90	(Rievsakjavrik i)	Riussa kjärvet (Riekkojärvet)
48	Roađa-avdisi r	Roađasthe
15	Rovsuvantto	
27	Ruohthir f	Ruohthir
69	Siedejohka r	Siedejoki
49	Skierrefalls f	Skierrefalls
56	Sparrasulojohka rap	Sparrasuolo h
89	Suorra Skallovari f	Skallovara
30	Suohppisoavri f	Tuolba-Njanguoarvi
46	Talvadas	Talvadas
109	Tavrajohka r	Tourajoki
45	Teno = Teđđnu r	Tenojoki (Tana)
14	Tenokoti h	
70	Tarseejohka r	Tsharsjoki
75	Tieskula h	Juhani Aikio (Tieskula)
76	Tieskuljohka r	Tshieskuljoki
92	Tsuodjavarri f	Tshuogjävrraara
60	Tsuogajohka r	Tshuogajoki
120	Tsumasavari f	Tshuomasvaara

58	Uhtsaskaidas f	Uhtsaskaidas
40	Ulloroadia f	Ulloroadia
119	Utroavvi f	Utro-oarvi
51	Utsjoki = Ohtsejohka r	Utsjoki
100	Utsjoki (village)	(Onnala h, Keestialo h, Vanhatalo h)
95	Vaisjavri i	Vaishjärvi
95	Vaisjeđgi m	Vaishjäägi
96	Vaisjohka r	Vaishjoki
106	Vetsjohki r	Vaishakjoki
91	Vetsijärvi i	Vaishakjärvi
104	Vetsikko	Vaasthak
98	Vidgaveadji r	Vihgavedje
52	Vuogojavri i	Vuogujärvi
63	Vuonib Tsuogajavri i	Tsuogajärvi
68	Vuoskojavri i	Vuoskujärvi
112	Välilmaa h	Varsil jägelveđgi
114	Ylä-Jalve h	Yläjalve
114	Yläköngäs rap	Yläjälve

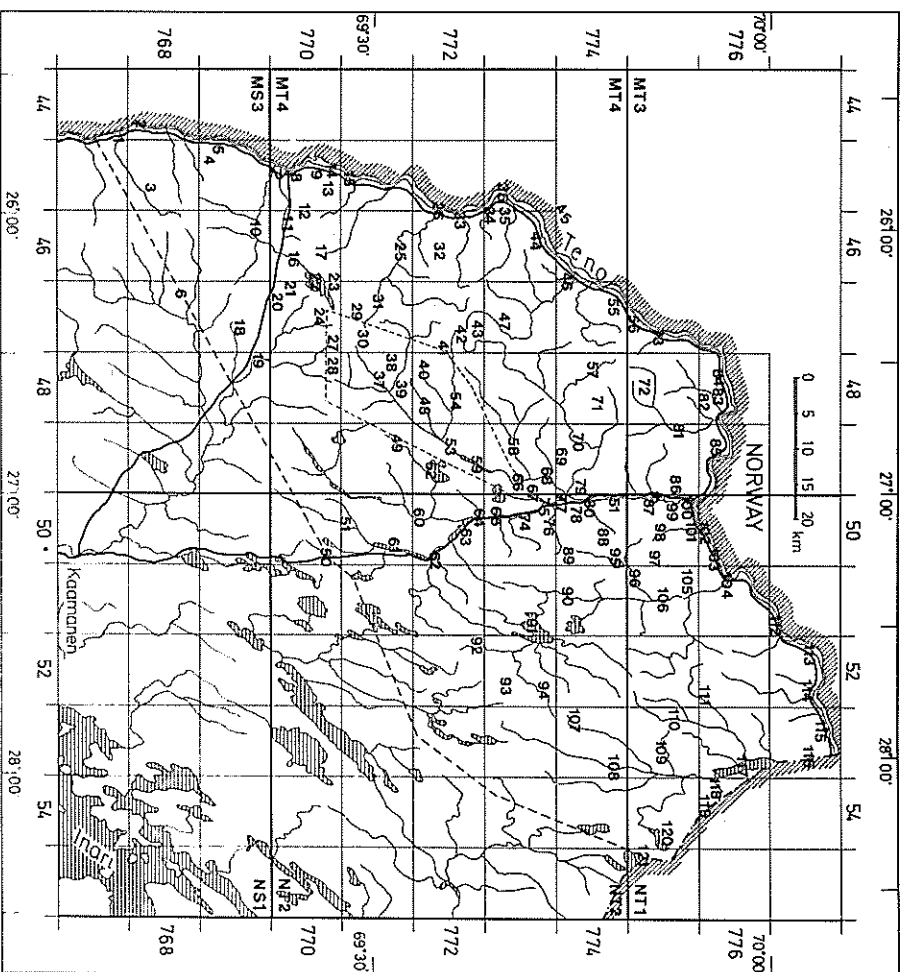


Fig. 3. Collecting localities in Utsjoki; the place-names are in Table 1. The broken line shows the Kevo Strict Nature Reserve. The large squares indicate European UTM system (MT, NT, MS, NS) and the small squares Finnish Grid 270 E system (e.g. for the Kevo Station 774:50).

3. Lepidopteran fauna

3.1. General features

3.1.1. Flight periods and phenology

The flight season of lepidopterans is quite short in Utsjoki. The first species fly in the latter half of May or at the beginning of June, depending on the weather. Thus the active period starts earlier in Utsjoki than in Kilpisjärvi (see Krogerus 1972). Only a few species occur before the birches come into leaf (usually before the middle of June). Early species are *Eriocrania* spp., *Achyra flavicornis*, *Architeris parthenias*, and *Lycia pomonaria*. A little later *Stigmella lapponica*, *S. confusella*, *Solenobinae* species, and *Semiothisa avelanella* appear. Also species hibernating as imago are encountered at least in the first part of June: *Pitella senilella*, *Lyoneta frigidatella*, *Caloptilia suberivella*, *C. betulicola*, *Acleris naccana*, *Epinoia cremana*, and *Aglais urticae*. The migrating species *Pitella xylostella* and *Vanessa cardui* can not hibernate in Utsjoki. The status of *Pitella annulata*, *Agonopterix heracliana*, *Gonapteryx rhamnii*, and *Nymphalis antiopa* in Utsjoki is unclear as so few observations have been made. In general, the proportion of species hibernating in the imaginal stage is small in northernmost Lapland and the most common wintering stage is the larva (e.g. Valle 1933).

Summer temperature affects the flight periods of lepidopteran species. In cold summers their flight begins markedly later. Very unfavourable summer temperatures have been thought possibly to inhibit the emergence of some species, delaying it until the following summer (cf. Krogerus 1972). The great effect of temperature on the flight period of summer species has been shown by Valle (1933) and Hackman (1950), for example, as well as by our own light trap data (Koponen & Linnahoto 1979), cf. also p. 25.

Typical early summer species, starting to fly usually in the first half of June and flying until early or sometimes late July include *Olethreutes schultzeanus*, *Ancylis unguicella*, *Clossiana frigida*, *Lampyris rufifumata*, and *Anarta cordigera*. These early species are rather small in numbers. Species flying typically in July are e.g. *Schiffmueleria stipella*, *Olethreutes obsolentanus*, *Vacciniina opifera*, *Secopula ternata*, and *Symphixis heliophila*. These species are usually very abundant. *Entephria caesia* and *Trichura crataegi*, which have long and two-peaked flight periods also start flying in July (cf. p. 26 and Figs. 12 & 16). From the end of July e.g. *Epinoia cruciana* and *Eulithis populata* can be found, and in August many noctuids, e.g. *Hillia iris*. Autumn species include *Lithonia solidaginis* and many tortricids from the genus *Epinoia*. Hibernating species together with *Epirrita autumnata* and *Poecilocampa populifly* until October. Relatively little has been known of lepidopteran fauna flying in autumn (August–September) in northern Lapland. Continuous light trapping has shown that there are many autumnal species in Utsjoki, many of them not mentioned in earlier publications: e.g. *Ena penziana*, *Acleris aspersana*, *Epinoia solandriana*, *E. brunniclana*, *E. maculana*, *E. niseella*, *Zetaphera dimiana*, *Eupithecia pusillana*, and *Eurois occulta*. Although the late species fly in Utsjoki earlier than farther south, some species seem to fly here remarkably late, e.g. *Eurois occulta* (cf. Mikkola & Jalas 1977).

Some species, e.g. *Pitella xylostella*, seem to be able to produce a new generation even in Utsjoki (cf. Valle 1933). Exceptionally late individuals of *Pieris napi* and *Notodonta dromedarius* have also been found on occasions.

The flight periods are mentioned in the list of species (p. 42) and shown for certain species at Kewo in Figs. 8, 12–16. For more information about flight seasons in Utsjoki and surrounding areas, see e.g. Valle (1933), Nordman (1942), Hackman (1950), and Krogerus (1972).

3.1.2. Fluctuations of abundance and periodicity

Marked differences between years have been observed in lepidopteran catches in Lapland. Krogerus (1972), for example, reported that the fauna of Kilpisjärvi area on the whole seemed to be much richer in even than odd years in 1930–60. The situation in Utsjoki is not very clear; at least the light trap

material indicates higher individual number per trapping night and higher number of species per year at Kewo in odd years in the 1970's.

The light trap data show clearly that it is the temperature of the previous summer that correlates with the total catches and not the temperature of the trapping summer (see p. 25 and Fig. 9, cf. also Koponen & Linnahoto 1979). The effect of the previous summer on the abundance of lepidopterans has already been described, e.g. by Vredlind & Nordström (1950) in Swedish Lapland. However, Valle (1933) could not observe this in Pecheenga, perhaps due to the rather short study time.

Krogerus (1972) reported that in favourable (warm) summers the fauna is rich and species abundant. This may be true of butterflies; cold and rainy summers inhibit their activity. According to our data, the cold weather of the collecting summer may cause the flight periods to be later in the autumn but the flight might be then plentiful (depending on the temperature of the previous summer). Temporary low night temperatures also inhibit the flight of moths (Iso-Irvari & Koponen 1977), which therefore occurs later. Investigation of fluctuations in abundance therefore needs observations over the whole active period of lepidopterans, especially during cold summers when the flight periods are late.

The minimum temperature of the previous winter may also be a limiting factor for the abundance of certain species, especially egg-wintering ones (*Epirrita autumnata*, see Niemelä 1979).

Thus, in general, the abundance of lepidopteran fauna (perhaps excluding butterflies and some late-flying moths) is based on the climatic conditions (especially temperature) of the previous summer, and the temperature of the collecting summer only affects the time of flight (cf. also Sahlberg 1895a, Nordman 1942).

Because of fluctuations in abundance, the northern limit of certain species is changing in the study area. The main reason is probably the weather: during cold unfavourable summers the (larval) populations decrease and the species may then disappear in the area. *Epinoia tetraquetana* and *Hedya arpunciana* are examples of the species which earlier occurred rather abundantly in Utsjoki, but are now very rare or probably absent in the area. These species are known to fluctuate greatly in abundance in the north (cf. e.g. Nordman 1942, Euranto et al. 1957). During the light trapping period in the 1970's, some species seemed to disappear at Kewo. Thus *Ancylis unguicella* and *Syrnagraia interrogatoris* were rather abundant in warm summers but have been absent since the cold summer of 1975. Before this disappearance their flight periods had moved notably towards the autumn (see Figs. 13 & 16). Large fluctuations in abundance have also been observed in species with a clearly northern distribution, e.g. *Olethreutes hypoboraeus* (see Fig. 12).

Some species on the other hand, seem to have increased in numbers and/or their area has expanded to Utsjoki. Thus *Acleris aspersana* and *Zetaphera dimiana* seem to establish their range in Utsjoki during the 1970's. These species have been abundant throughout northern Finland in recent years (J. Kytkäpers, comm.). *Lypusa mauraella* has also been found regularly since its first find in 1976.

Species occurring in the coast area of Finnmark may also sometimes be found in Utsjoki, probably due to their occasionally higher density in Norway. Possibly *Lasiommata maera* and *Semiothisa clathrata* are such species.

Certain species seem to have survived in northernmost Lapland only a few years and then to have disappeared. Especially in the climatically favourable years of the 1930's many species were recorded both in Utsjoki and Kilpisjärvi: *Gambus partellus*, *Coenonympha tullia*, and *Ematurga atomaria* (the two last mentioned are also found in the 1970's in Kilpisjärvi) in the 1950's *Xestia gelida* and *Mertinstola vacciniella* occurred in these northernmost areas (cf. Krogerus 1972).

Migrating species form a separate group. *Pitella xylostella* is often rather abundant during migrations in Utsjoki, but most species, such as *Vanessa cardui*, *Hyles galii*, *Acherontia atropos*, *Catocala adalhera*, and obviously also *Pieris brassicae* and *Arrogia rapae*, are only occasional visitors. Some other species, e.g. *Leucoma salix* and *Papilio machaon*, may be migrants or only temporary residents. Some northern species also exhibit great fluctuations in abundance which seem (possibly) to be independent of weather conditions, e.g. *Hypodryas iduna*, *Zygaena exulans*, and *Rheumaptera subarctica*. The mass occurrences of *Epirrita autumnata* seem to be very complicated, but not clearly directly dependent on the weather (cf. e.g. Tenow 1972, Haukoja & Hakala 1975).

Because older information about many lepidopteran groups, especially early or late-flying species, is

quite poor, the conclusions about fluctuations in abundance over long periods are somewhat unreliable. Also new collecting methods and great activity in Utsjoki in recent years have a confusing effect.

Some species are known to fly only in alternate years. The most discussed group is the noctuid genus *Xestia* (*Anomozyna*, *Pachnobia*, *Episitia*), of which nine northern species (not all species!) fly every second year. Valle (1933) and Krogerus (1943) discussed the flight years in Pechenga and surrounding areas, and Mikkola (1976) summarized the flight data of northwestern Europe and discussed the possible adaptive significance of this flight pattern. Six *Xestia* species that fly in alternate years are found in Utsjoki: *X. speciosa*, *X. gelida*, *X. laetabilis*, *X. kongsvoldensis*, *X. tecta*, and *X. alpicola*. Most of Utsjoki belongs to the even-year flight area as does also western Lapland. Only in the easternmost parts (e.g. Nuorgam and Tsomasaavari) do these moths fly in odd years (cf. Mikkola 1976). The limit of the two flight patterns seems to follow the alpine watershed area between the Vetsjoki and Pulmankjoki river systems (see Fig. 6, cf. also Seppälä & Rastas 1980). The flight pattern in eastern Utsjoki is possibly not so strict, as at least one specimen of *X. laetabilis* has been found in one even year in Nuorgam (Nordman 1942, Lingonblad 1950). The flight system northeast of Nuorgam in Norway is also somewhat unclear (e.g. Mikkola 1976). Three species of *Xestia* have been caught by light traps at Kevu, and their flight pattern is typical of western Lapland: even years only (Fig. 16).

Among other macrolepidopterans of Utsjoki, *Pararctia lapponica* has also been reported to fly more abundantly in alternate years (see Valle 1933, Mikkola 1976). The situation is not so clear and strict as with *Xestia*. Thus in Utsjoki adults have been observed in five even and two odd years, and in 1967 several individuals were caught. If *P. lapponica* does have an alternate-year flight pattern, the situation in Utsjoki is the reverse of that in Pechenga, where the species seemed to prefer odd years (Valle 1933).

Valle (1933) and Krogerus (1943) discussed the possibility that certain microlepidopteran species also flew in alternate years. Their discussions were based on observations made over a number of years in Pechenga. According to their data, at least *Udea inquitatilis*, *Eulia ministrana*, *Choristononura lapponana*, *Aethes deurschiana*, and *Gypsonoma nitidulana* seemed to fly in odd years and some *Apotomis* and *Olethreutes* species in even years. According to the data from Utsjoki, including our light traps, among the five first-mentioned species only *Gypsonoma nitidulana* shows a clear odd-year flight pattern; other species show no clear tendency. Among *Apotomis* and *Olethreutes* species, our trap catches indicate that some species (*A. moestana*, *A. boreana*, *A. sororculana*, *A. sauciana*, and *O. hyperboreana*) are clearly more abundant in odd years.

3.1.3. Distribution of species in northernmost Fennoscandia

The lepidopteran species found in the northernmost parts of Europe (mainland) are listed in Table 2. These areas belong mainly to the subarctic mountain birch zone (with alpine fells) and to the northern boreal pine forest zone. Only in the southern part of Inari are there also spruce forests (see Figs. 2 & 4).

Data from Inari are based on the published sources and unpublished observations of Finnish lepidopterologists collected by Dr. Erkki M. Laasonen. Species found in Finnmark (divided into four sub-areas) are mainly according to Ophim (1975-78) and Aagaard (1979), in (northern) Pechenga according to Valle (1933), and in Kilpisjärvi according to Krogerus (1972). Some new finds and corrections have been included. Data about certain families in Finnmark are very poor, especially of Micropterigidae, Ericocraniidae, Nepticulidae, Incurvariidae, Tineidae, Lyonetiidae, Graclaritidae, Phyllostictidae, Glyphipterigidae, Yponomeutidae, Epermeniidae, Schreckensteiniidae, and Coleophoridae. These families are absent from Ophim's lists, and data on them are taken mainly from Valle (1933) and J. Kyrki (pers. comm.).

The most peculiar lepidopteran fauna of Finland has been found in Kilpisjärvi where 19 species not found elsewhere in the country have been observed (cf. Krogerus 1972). These species are *Hepialus fuscogentus*, *Adela triffrontella*, *Tingena dryadis*, *Plutella geniatella*, *Coleophora unigenella*, *Monochroa siltenella*, *Aristotelia helacella*, *Sophronia gelidella*, *Catantia kistrandella*, *Stenoptilia islandica*, *Pyrgus andromedae*, *Colias nastes*, *Clossiana improba*, *Entephria nobiliaria*, *E. flavicinctata*, *Eupithecia*

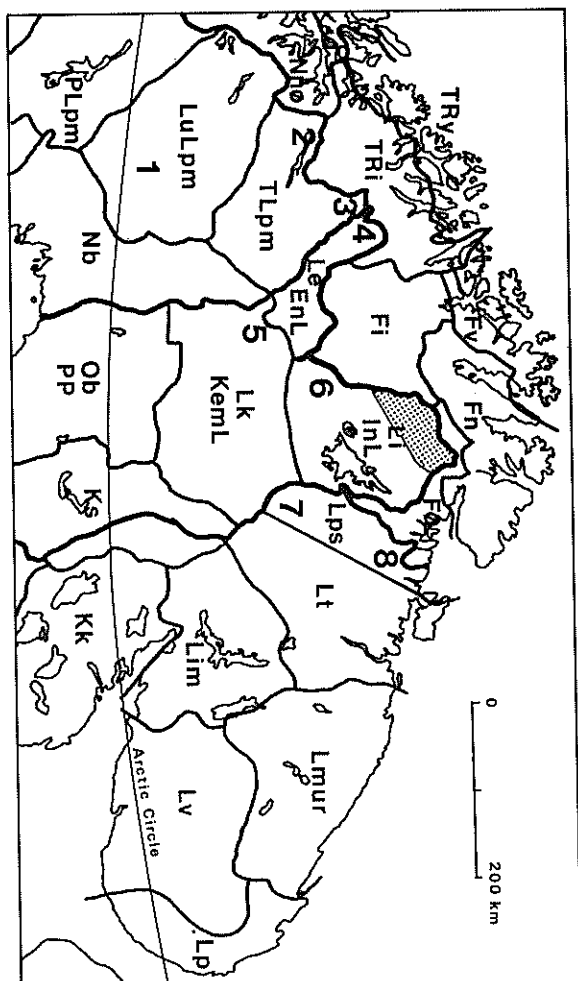


Fig. 4. The biogeographical provinces of northernmost Europe; dotted area = Utsjoki.

FINLAND

- LI Lapponia inarenensis (Inari Lappi, Inari Lapland)
- LE Lapponia enontekiensis (Enontekiö Lapland)
- LK Lapponia kemensis (Kemi Lapland)
- OB Ostrobothnia borealis (Pohjois-Pohjanmaa, North Ostrobothnia)
- KS Kuusamo (Regio kuusamoensis)

NORWAY

- F (Fm) Finnmark
- TR (Trs) Troms
- N Nordland

SWEDEN

- TLpm (TL) Torne Lappmark
- LULpm (LL) Lule Lappmark
- PLpm (PL) Pite Lappmark
- Nb Norrbotten

USSR

- Lps Lapponia petsamoensis (PSL = Petsamon Lappi, Pechenga Lapland)

The numbers show certain areas of intensive studies on lepidopteran fauna:

- 1 Messure
- 2 Abisko
- 3 Paltsa and Tuipal
- 4 Kilpisjärvi area
- 5 Muonio and southern Enontekiö
- 6 Lemmenjoki area
- 7 Southern Pechenga
- 8 Northern Pechenga

	Ut	In	Fø	Fi	Fn	Fv	Pe	Ki
Tri crataegi	x	x	x					
Eri anestrīs	x	x						
Mac rubi								x
SATURNIIDAE								
Sat pavonia	x	x	x	x	x	x	x	x
DREPANIDAE								
Fal lacertharia	x	x						x
THYATRIDAE								
Och duparis	x	x	x					
Ach flavicornis	x	x	x					
GEOMETRIDAE								
Arc parthenas	x	x	x	x	x	x	x	x
Geo papilionaria	x	x						
Jod putara	x	x						
Cyc albipunctata	x	x	x	x	x	x	x	x
Seco ternata	x	x	x	x	x	x	x	x
Seco frigidaria	x	x	x					
Xan designata	x	x						x
Xan abrasaria	x	x	x	x	x	x	x	x
Xan munidata	x	x	x	x	x	x	x	x
Xan spadicaria	x	x	x	x	x	x	x	x
Xan ferrugata	x	x						x
Xan montanata	x	x	x	x	x	x	x	x
Xan fluctuata	x	x	x	x	x	x	x	x
Xan annomatata	x	x	x	x	x	x	x	x
Epo trisetata								
Epi hastulata	x	x						
Epi alterata	x	x	x	x				x
Epi polata	x	x	x	x	x	x	x	x
Epi byssata	x	x						x
Ent nobiliaria	x	x						x
Ent flavicinctata	x	x	x	x	x	x	x	x
Ent caesiata	x	x	x	x	x	x	x	x
Lam suffumata	x	x	x	x	x	x	x	x
Eui prunata	x	x	x	x	x	x	x	x
Eui testata	x	x	x	x	x	x	x	x
Eui populata	x	x	x	x	x	x	x	x
Ecl silicicata	x	x						x
Chl truncata	x	x						x
Chl infuscata	x	x	x	x	x	x	x	x
Chl citrata	x	x						
The obeliscata								x
The variata								
The cognata								x
The juniperata								
Col lineolata								
Hyd furcata								
Hyd impluvyata								
Spa luctuata								
Rhe hastata								
Rhe subhastata								
Epi autumnata								
Ope brumata								
Psy sabini								

	Ut	In	Fø	Fi	Fn	Fv	Pe	Ki
Clo pigra	x							
Org antiqua								
LYMANTRIIDAE								
Gyn fascelina	x	x	x	x	x	x	x	x
Leu salicis	x	x	x	x	x	x	x	x
ARCTIIDAE								
Set irrorella	x	x	x	x	x	x	x	x
Par plantaginis	x	x	x	x	x	x	x	x
Cal quenseselli	x	x	x	x	x	x	x	x
Par lapponica	x	x	x	x	x	x	x	x
Ace alpina	x	x	x	x	x	x	x	x
Arc carya	x	x	x	x	x	x	x	x
Nol fuliginosa	x	x	x	x	x	x	x	x
NOLIDAE								
Nol karelica	x	x	x	x	x	x	x	x
NOCTUIDAE								
Noc pronuba	x							
Gra augur	x	x	x	x	x	x	x	x
Dia mendica	x	x	x	x	x	x	x	x
Dia rubi	x	x	x	x	x	x	x	x
Xes quiescens	x	x	x	x	x	x	x	x
Xes lankialai	x	x	x	x	x	x	x	x
Xes speciosa	x	x	x	x	x	x	x	x
Xes gelida	x	x	x	x	x	x	x	x
Xes borealis	x	x	x	x	x	x	x	x
Xes laetabilis	x	x	x	x	x	x	x	x
Xes kongsvoldensis	x	x	x	x	x	x	x	x
Xes teecta	x	x	x	x	x	x	x	x
Xes alpicola	x	x	x	x	x	x	x	x
Eur occultus	x	x	x	x	x	x	x	x
Ana richardsoni	x	x	x	x	x	x	x	x
Ana asiatica	x	x	x	x	x	x	x	x
Ana myrtilli	x	x	x	x	x	x	x	x
Ana cordigera	x	x	x	x	x	x	x	x
Ana melanopa	x	x	x	x	x	x	x	x
Ana bohemanii	x	x	x	x	x	x	x	x
Had dovensis	x	x	x	x	x	x	x	x
Had staudingeri	x	x	x	x	x	x	x	x
Had straelingia	x	x	x	x	x	x	x	x
Had nana	x	x	x	x	x	x	x	x
Mam contigua	x	x	x	x	x	x	x	x
Mam thalassina								
Mam saasa								
Mam pisi								
Mam birch								
Had rivularis								
Cer grammis								
Ort gothica								
Myl comma								
Hil tris								
Syn funebris								
Syn halophila								
Syn lapponica								
Syn zetterstedtiii								
Das templei								
Lit solidaginis								
Ble adusta								
Par suspecta								
Xan togata								
Xan icteritia								
Acr menyanthidis								
Acr auticoma								
Hyp reclinata								
Apa lateritia								
Apa malliarcti								
Apa remissa								
Aph pallustris								
Plu festucae								
Aur macrogamma								
Aur gamma								
Syn diasema								
Syn mtrogamma								
Syn interrogacionis								
Syn parilis								
Cal hochenwarthi								
Cat adultera								
Cal mi								
Eue glyphica								
Seco libatrix								
Pol tentacularius								

Total number of species 602

Number of observed species in each biogeographical province:

Inari Lapland (L/i/InL)	522
Utsjoki (Ut)	421
Inari (In)	402
Finnmark (F)	354
eastern (ø)	208
inner (i)	283
northern (n)	143
western (w)	96
Northern Peckenga (Pe) in Pst	258
Kilpisjärvi area (Ki) in EnL	322

undata, *Acerbia alpina*, *Xestia lankiladi*, and *Hada dovrensis*. Many of them, however, have been found in areas of Sweden and Norway surrounding Kilpisjärvi (although not in Finnmark, which is why they are not on our list): *M. saltenella*, *C. improba*, *X. lankiladi*, and *H. dovrensis*. In addition, *P. geniatella* and *C. unigenella* have been found at least in Pältsa, Sweden (Johansson & Svensson 1968).

Certain species from Kilpisjärvi have been found in Finland only in southern parts of country. They have an oceanic range along the Norwegian coast, and these finds in Kilpisjärvi are connected with finds in Norway. *Hesperia comma* and *Cupido mhimus* belong to this group. The unexpected find of *Lasionomata maera* in Utsjoki is perhaps also explained by the Atlantic distribution area of the species (cf. Nordström 1955 and Valle 1933). *Trichopaga scandinaviella* is also a typical coast species, which has been found only in Pechenga, the Norwegian coast area, and also along the coasts of southern Finland (J. Jalava, pers. comm.). *Lampronia rapella*, *Xanthorhoe montana*, and *X. fluctuata* may also be oceanic (or northeastern) species in Utsjoki (see Fig. 6). *Eucosma guentheri* has been found in Finland only in Utsjoki. Apart from Utsjoki, this interesting species is known only from F1 (Norway) and Petrozavodsk (Soviet Karelian republic). The main distribution area in Finland of *Erebia medusa* and *Xestia quieta* and probably also *Hada staudingeri* seems to be Utsjoki. The latter two have an eastern distribution in Utsjoki.

Several species have been found in Finland only in Utsjoki and Kilpisjärvi: e.g. *Coleophora tractella*, *Olethreutes aquilonanus*, *O. norticanus*, *Apotomis demissana*, *Epiblema simplicitana*, *Agritades glandon*, *Boloria napaea*, *Colias hecla*, *Psychophora sibirica*, *Pertoma minoratum*, *Anarta richardsoni*, and *Symphistis zetterstedtii*. Most of them are rare and local in Utsjoki, e.g. *B. napaea* only in the vicinity of Nuorgam. *A. glandon* and *S. zetterstedtii* have been observed recently in Utsjoki and this fits well with their general distribution in northernmost Fennoscandia (see Fig. 5). The same is also true of previous microlepidopteran species, the majority of which has also been found in recent years.

A large number of species in Utsjoki is clearly northern (in Finland only in Enl. and Inl. possibly in Keml.): e.g. *Rhigognostis sentella*, *Coleophora thulea*, *Spartanopsis abiskoana*, *Apotomis moestana*, *A. lemniscatana*, *Epimotia mercuriana*, *Catoptria furettella*, *Loxostege ephippialis*, *Polopaeus atensis*, *Clossiana polaris*, *C. cherticola*, *Hypodryas iduna*, *Oenitis bore*, *Eutephrata byssata*, *Callaetia quenselii*, *Xestia kongsvoldensis*, *Anartoma bohemani*, *Hada staudingeri*, and *Symphistis lapponica*.

Certain species with a northern range in Finland are probably not to be expected in Utsjoki. They are species typical of Forest Lapland flying mainly in spruce forests, e.g. *Bryotrophia borealis*, *Schiffermueleria obscurella*, *Olethreutes dissolutanus*, *Pediasia truncatella*, *Scopula freygaria*, *Thera seraria*, *Xestia borealis*, *Anarta asiatica*, and *Hada skræblingia*. The same is true of species of highest alpine fells, e.g. *Acerbia alpina* and *Hepialus fuscogentilis* (cf. Linnaluoto 1976).

Among the species listed but not found in Utsjoki there are some occasional migrants: *Loxostege sibiricaria*, *Agrilus convolvuli*, and *Autographa gamma*. For migrating species in Utsjoki, see p. 9.

Some species are found in northernmost Fennoscandia clearly north of the northern limit of their food plant. Thus they must have been transported here, e.g. *Calyptus auriguttella* in Utsjoki (food *Hypericum*), *Epimotia tedella* in Utsjoki and Kilpisjärvi (*Picea*), *Cydia illutana* in Kilpisjärvi (*Picea*), and *Gonepteryx rhamni* several times in Utsjoki (*Rhamnus*). The only species in Table 2, not found also in Finland is *Epagoge meli* from Norway. It is worth mentioning that the only finds of *Nola ka-relika* and *Xestia gelida* in Norway are from the province Fø.

The northernmost biogeographical province of Finland, Inari Lapland includes the communes of Inari and Utsjoki. The total number of lepidopteran species in Inari Lapland is now 522, of which microlepidopterans (Micropterygidae—Pterophoridae) constitute 317. Kyrki (1979) listed 298 microlepidopteran species in Inari Lapland. In the present list 24 species have been added and 5 species excluded. The known number of species in Finnmark is 354, Kilpisjärvi 322 (Krogerus 1972: 313), and northern Pechenga 258. The total number of species in Table 2 is 602. The lepidopteran fauna of Inari Lapland is now rather well known. Kyrki's paper (1979) showed that the number of species was higher in Inari Lapland than in other northern provinces (Enontekiö Lapland and eastern and western halves of Kemi Lapland).

The fauna of Utsjoki and Inari Lapland is compared with certain other northern areas. The percentage of lepidopteran species common to both Inari Lapland and some northern Atlantic islands is as

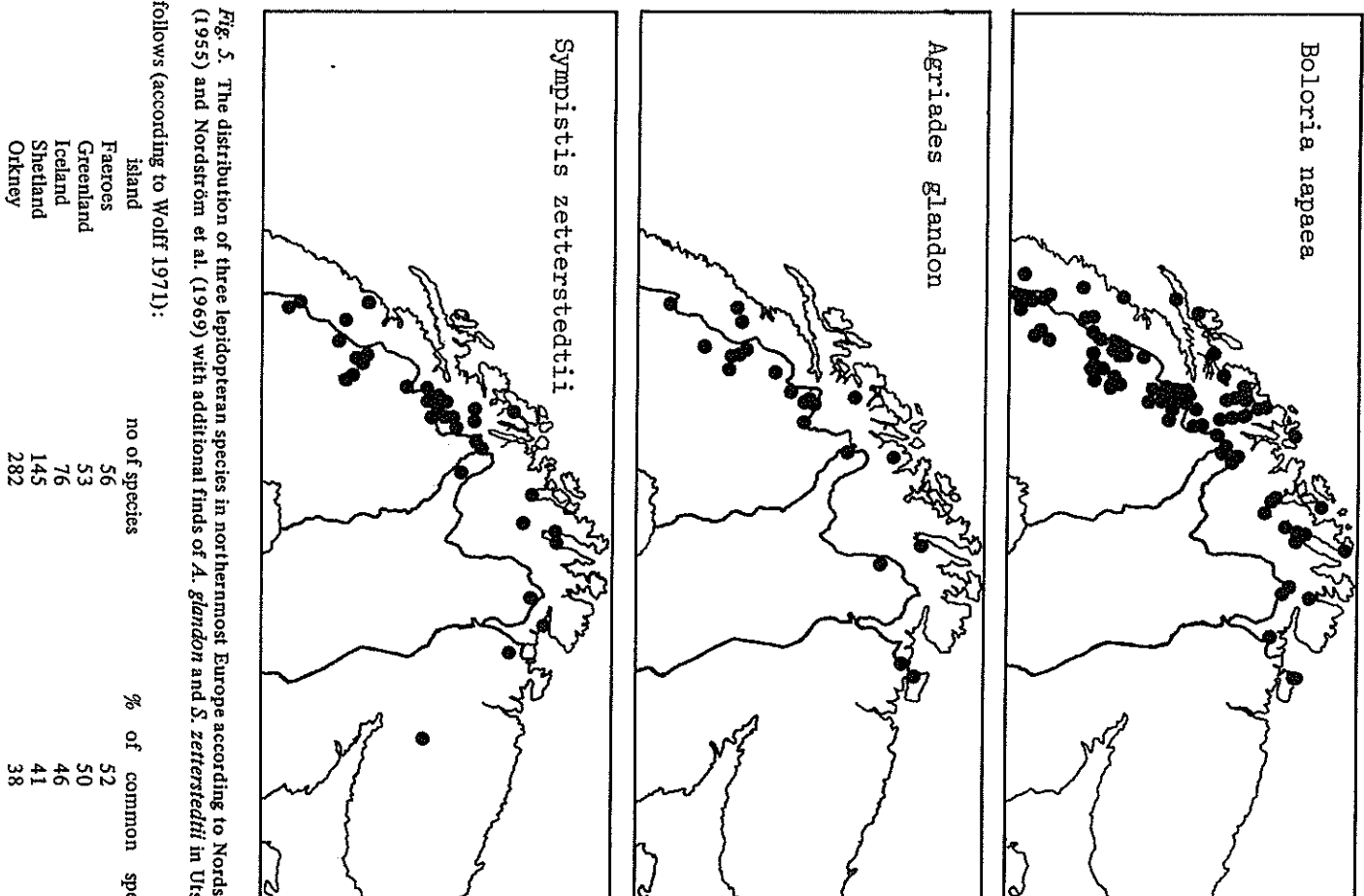


Fig. 5. The distribution of three lepidopteran species in northernmost Europe according to Nordström (1955) and Nordström et al. (1969) with additional finds of *A. glandon* and *S. zetterstedtii* in Utsjoki (according to Wolf 1971):

The percentage of species common to Inari Lapland and Torne Lappmark (Sweden) is 72 %, and Lule Lappmark (Sweden) 71 % (Elinqvist et al. 1977, Gustafsson 1979). Percentage of species common to Inari Lapland and surrounding areas are high: southern Pechenga (Krogerus 1943) and northern Pechenga (Valle 1933) both 90 % and Kilpisjärvi (Krogerus 1972) 87 %. The percentage of species common to Utsjoki and certain northern areas is as follows:

area (see Fig. 4)	percentage	reference
Lemmenjoki area, Inari	97	Krogerus 1938
Northern Pechenga	90	Valle 1933
Pältsä-Tuipal, Sweden	86	Johansson & Swensson 1968
Kilpisjärvi	83	Krogerus 1972
Southern Pechenga	81	Krogerus 1943
only macrolepidoptera:		
Hetta, southern Enontekiö	77	Lingonblad 1947
Muonio	64	Lingonblad 1947
Messaure, Sweden	60	Douwes & Gustafsson 1975

3.1.4. Occurrence in different habitats

No attempt has been made to identify the strict habitat preference or requirement of lepidopteran species in the Utsjoki list (p. 42-). For grouping of northern species according to their habitats see e.g. Valle (1933), Jussila (1964), and Krogerus (1972).

The distribution maps of some interesting species in Utsjoki (Fig. 6) also indicate their habitat preference to some extent. Thus *Erebia medusa* prefers meadows in river valleys. *Colias hecla* occurs in Utsjoki only on the shores of the Teno (and Pulhankijärvi), while in Kilpisjärvi it typically prefers fell slopes. *Oeneis bore* is a typical inhabitant of high fell areas occurring on stony summits, but it has also been found in small numbers on river shores and sandy slopes. *Pyrgus centaureae* and *Erebia disc* fly on mires of fell slopes. *Clossiana polaris* occurs very locally only on extensive, high fell areas. *Colostyga lineolata* is known in only five localities in Utsjoki, although its habitat, moist riverside willow scrub, is common in the area. *Xanthorhoe fluctuata* and *X. montana* occur on luxuriant meadows in river valleys; *X. montana* especially on man-made meadows. Among the alternate-year flying *Xestia* group there are different species. *X. kongsvoldensis* prefers fell heaths, as in Kilpisjärvi, but in Utsjoki it has also been found on mires. *X. gelida* has been observed in Utsjoki in pure birch forests, while in the coniferous zone it lives mainly in moist spruce forests. *X. quieta*, which flies every year, and *Anarta richardsoni* are to be found on alpine fell heaths.

One of the main reasons for the distribution of species and for the preference of habitat is the occurrence of food plants of many mono- or oligophagous species; e.g. cloudberry for *Pyrgus centaureae*, and angelica for *Phaulernis fubigitella*. Some species have a very wide distribution and can be found in many different habitats, e.g. *Vacciniina optilete* and *Epirrita autumnata*, which have widely-distributed and common food plants. Also active flyers, e.g. *Erebia pandrose* and migrants can be found in very different habitats. On the other hand, the occurrence may also be very local although the food plant or habitat is common: e.g. *Erebia medusa* (*Festuca ovina* as food) and *Colostyga lineolata* (see above).

In addition to the species mentioned above, some species typical of different habitats will be listed here. On alpine falls are found e.g. *Clossiana charitella*, *Hypodryas iduna* (mostly), *Agrides glandon* (one find), *Entephria polata* (mostly), *E. byssata*, *Psychophora sabini*, *Anarta melanoza*, *Hada staudingeri*, *Symphistis lapponica* and *S. zetterstedtii* (one find). Among microlepidopterans e.g. *Apotomis lemniscatana*, *Catoptria furcatella*, *Olethreutes aquilonanus*, *O. noricanus*, *Epiblema simpsoniana*, and *Aphelia viturana* are typical fell species. *Vanessa cardui* (during migrations) and *Papilio machaon* have also sometimes been observed on summits of fells.

In Utsjoki *Galleria quenelei* seems to be mainly a species of alpine falls, as also in Kilpisjärvi. However, some larval finds in the birch zone in the Teno valley indicate the possibility that it also occurs sparsely below the alpine zone (cf. also Palmqvist 1977). Such species with two habitats are also e.g. *Oeneis bore*, *Entephria polata*, *Xestia kongsvoldensis* and *Polopentis ditensis*.

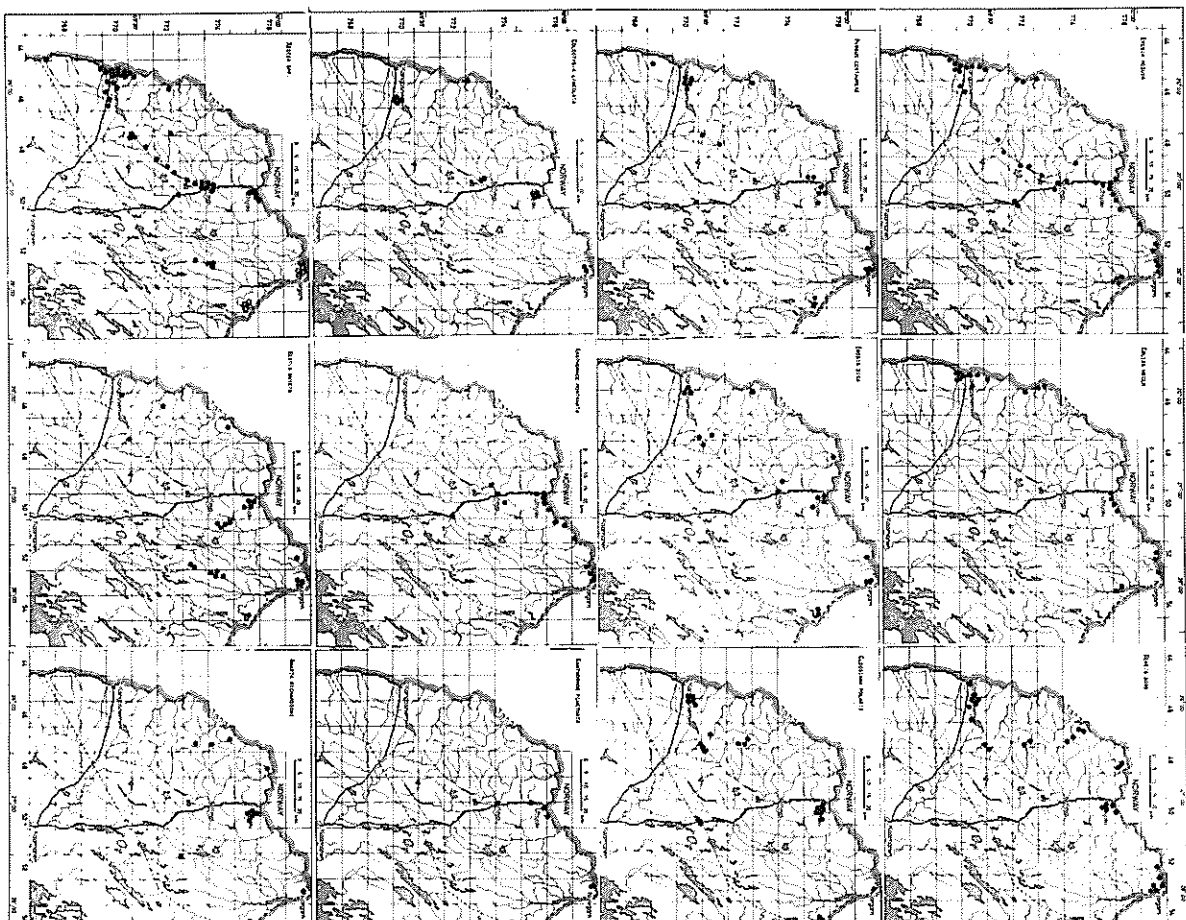


Fig. 6. The distribution of 12 lepidopteran species in Utsjoki. One circle may include one or s finds in the same place. Among the species of *Xestia* flying in alternate years solid circles show in even years and open circles in odd years.

Species typical of mires are *Clossiana figga* and *Olethreutes bipunctatus*. Species occurring on sandy shores of rivers are *Gnorimoschema valesiellum*, *Aproaerema anthyllidella*, and *Eucosma guentheri*. *Pyrausta porphyralis* is to be found on dry meadows and slopes, and *Loxostege ephippialis* on luxuriant meadows (both species are very local).

Typical anthropophilous species are Tineidae species found indoors: *Haplotinea insectella*, *Tinea pelionella*, *T. svenssoni*, *Niditinea pierella*, perhaps *Monopis* species and *Pyralis liegkalis*. Some species possibly derive advantages from human activity, e.g. some Crambinae, *Arctogeia napi* and *Xanthorhoe montana*, when occurring on man-made meadows and Momphidae species living on *Ephibium angustifolium*. *Aglais urticae* occurs both in natural and human-influenced sites in Utsjoki.

3.1.5. Northern forms and colour morphs

Northern individuals often differ in colour and size from southern individuals of the same species. For example, dark colouration is typical of northern specimens: good examples are *Pheosia gnoma*, *Arctogeia napi* (only females), and *Clossiana* species. Northern individuals are often also smaller than southern ones, e.g. *Aglais urticae*, *Meliccia aethalia*, *Lampropteryx suffumata*, and *Selenia dentaria*. These small forms are often also darker than southern ones, but *Xanthorhoe montana*, for example, has light colouration in Lapland. Certain northern forms may be larger than southern individuals, e.g. *Lycæna phlaeas*.

Several subspecies have been described based on northern individuals. The differences between northern and southern populations seem to be mostly clinal, infraspecific variation. In some cases, there is also remarkable local variation. Thus the females of *Arctogeia napi* may be in one sample (from a small meadow) very different in colour: from almost black to light "southern" shade. In certain species there are more or less isolated distribution areas in the north (e.g. *Clossiana thore* and *Hesperia comma*), indicating possible subspecies formation (cf. e.g. Nordström 1955).

Some arctic-alpine species have caused confusions in the taxonomy. For example, the Lapland populations of *Erebia medusa* and *Agriades glandon* have been referred to sometimes as subspecies and sometimes as different species (*E. polaris* and *A. aquilo*; cf. Aagaard 1979).

Difficulties have also been found in microlepidopteran taxonomy due to the northern forms. Thus different opinions have been held as regards the following species: *Phaularnis fulvigitella* (northern form earlier as own species: *P. aurumaculata*), *Stenophila peitadnactyla*—*S. islandica*, *Apotomis soroulana*—*A. boreana*, *Aproaerema anthyllidella*, which occurs on sandy shores in Utsjoki, also seems to differ from the southern form in its behaviour. Microlepidopteran species with remarkable variation in Utsjoki are e.g. *Enna ossana* and *Bryotropha galbanella* ("vinatarialla"). *Olethreutes lacunatus* is often in Utsjoki with almost monochromatic yellow forewings (found also in Pechenga, Valle 1933).

Single aberrative forms have been found in Utsjoki e.g. in *Olethreutes schulzianus* (partly albinistic, see Hackman 1950), *Colias palaeo* (black, see Jussila 1963), and *Falcaria laertinaris* (black, p. 56). A dark, black-brown form of *Eulithis populata* has been found regularly, especially in the Nuorgam area. Noctuid *Cerapteryx graminis* and *Hillia iris* are known to have different colour morphs. In the light trap material at Kewo, there are two mottled and 12 rather monochrome individuals of *C. graminis*, which fits rather well with the data of Pyörmä et al. (1979). Among 17 specimens of *Hillia iris* only 5 dark individuals were found, while other data show the dominance of dark form (about 70%, cf. Mikola & Jalas 1977).

3.2. Lepidoptera caught by light traps

3.2.1. Material and methods

Continuous light trapping is one of the most effective methods of collecting moths (cf. Karvonen et al. 1979). However, data collected by light traps in northern areas are relatively sparse. This is probably due to the light nights of the north and therefore quite small catches. Papers on subarctic areas of Fennoscandia have been published from the Abisko Scientific Research Station, Sweden (Dauves et

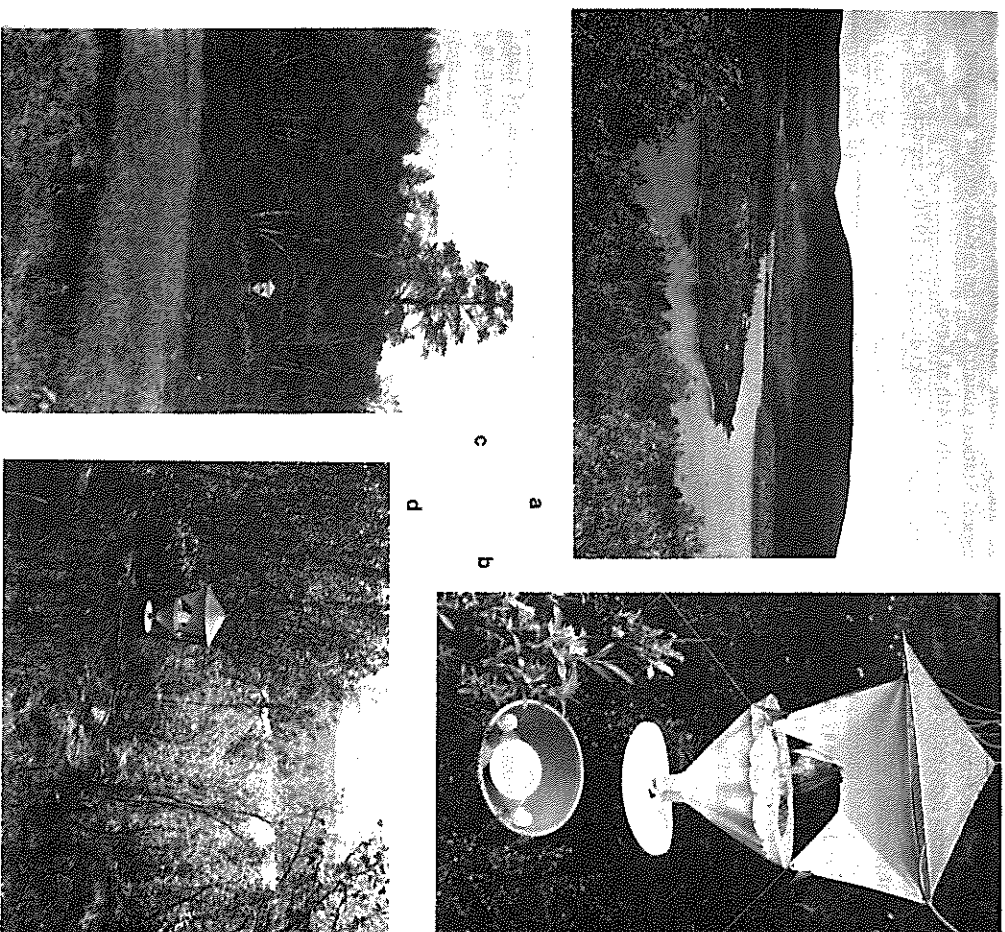


Fig. 7. a) Kewoniemmi and the Kewo Station, b) the construction of the light traps with containers at the border of sedge mire and dwarf birch mire, c) trap site in birch forest.

al. 1972) and from Kewo (Iso-Jivari & Koponen 1977, Koponen 1977, Koponen & Linnaluoto 1977). The experiments with light trapping were carried out at Kewo in 1971, and continuous trapping started in 1972 covering the whole active period of moths (perhaps not in 1972, see Fig. 10). Our traps are based on the type developed by Jalas (1960) and the moth container on the type described by Karvonen et al. (1979) (cf. Fig. 7b). Blended-light lamps (500 W) were used (mostly from 21.1 06.00 hours), and the traps were usually emptied once a week. The elevation of trapping sites varies between 80 and 120 m a.s.l. The traps were placed in different habitats: mixed pine-birch forest,

and willow bush area, dwarf birch and sedge mire, and lake shore with birches (see Fig. 7). The temperature data used are from the Kevö Meteorological Station situated in the middle of our trapping area. The continuous light period lasts from May 17th to July 24th at Kevö.

In addition, some other persons have also used light traps in Utjoki during the 1970's, especially Mr V. Mannelin at Niemelä.

3.2.2. Results and discussion

The total moths material caught by means of light traps during the eight study years comprised approx. 22 500 individuals and 161 species. The total yearly catches with trapping periods, species numbers, diversities, and other data are shown at the end of Table 3, and the pattern of the total catches per trapping night (compared with thermal sums of the study years) are given in Fig. 10. The species numbers per trapping period compared with mean daily temperatures are shown in Fig. 11. The species caught by light traps in 1972-79 are listed in Table 3 with yearly individual number and the first and last flight period in each year. In addition to Table 3, three species have been caught by light at Kevö: *Choristoneura lapponica* (in 1971) and *Achyra flavicornis* and *Lycia pomonaria* (not by traps).

The individual numbers of the 20 most abundant moth species caught by light traps are shown in Table 4; among these species the predominating families are Tortricidae (8 species) and Geometridae (4 species). These 20 dominant species constituted 88.5 % of the total individual number of trap catches. The flight patterns of these 20 abundant species and 10 other interesting species are shown in Figs. 12-16.

In 1974, one trap situated near birches and willows on the lake shore was emptied every morning

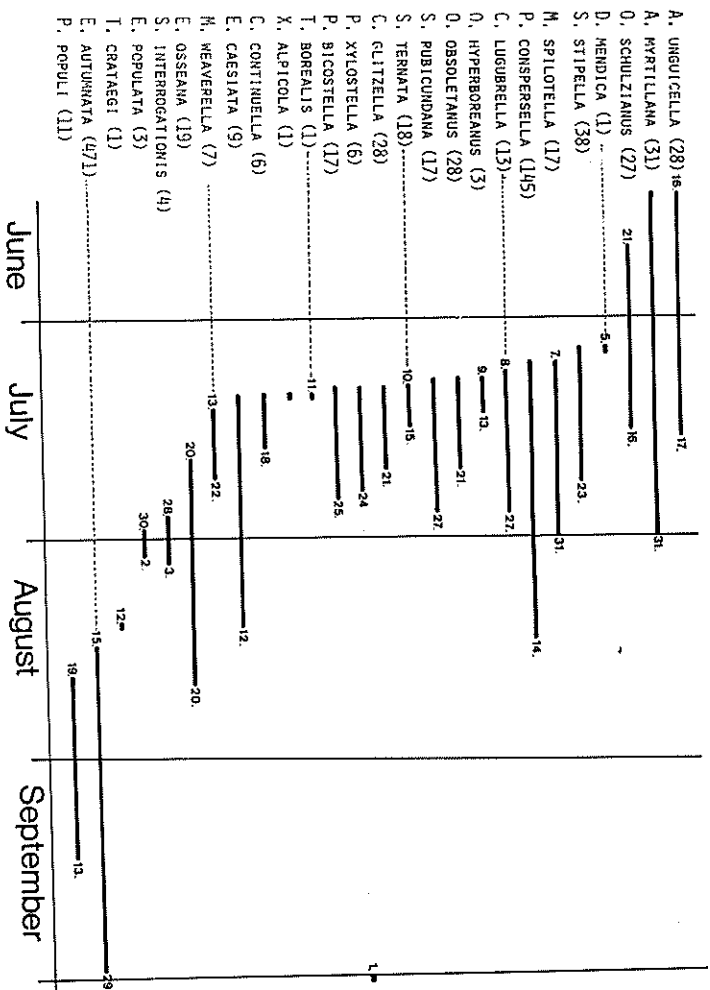


Fig. 8. The exact flight periods of certain moths caught by one trap in 1974. Numbers of individuals in brackets, the date indicates the evening of the first/last individual was caught.

from the middle of June to the beginning of October (cf. Iso-Jivari & Koponen 1977). The exact flight periods of 26 species belonging to the 30 species referred to above and caught in 1974 in this trap are shown in Fig. 8. The temperature conditions in 1974 were a little warmer than average (see Fig. 10).

The seasonal pattern of total catches has two clear peaks: the first in July and the second in the autumn (see Fig. 10). The autumn peak was mainly caused by the dominant *Epirrita autumnata*, and the summer peak by many moth species (Fig. 11; in some years *Entephria caesiata* had a considerable effect on this peak, cf. Douwes et al. 1972). As can be seen from Figs. 10 & 11, the temperature (the mean sum and mean daily temperatures) of the trapping summer affects the timing of the peaks, especially the first one. In warm summers, 1972-74, this peak was clearly earlier than in the cold summer of 1975-78. In 1979, about an average summer, this peak was again rather early. Usually the first peak seemed to occur when thermal sum rose to certain level (often about 2000° d.d.). Then a clear raise in the mean daily temperatures released the main flight of most species; this can be seen even the coldest summer 1975 (see Fig. 11). In 1974, the warmth during the first trapping periods start the flight of some early species (e.g. *Ancylys* spp.), but the cold period at the end of June inhibited their flight almost entirely for a considerable time (cf. Figs. 11 & 13).

As shown earlier (Iso-Jivari & Koponen 1977) the nightly catches correlate with nocturnal temperature conditions, especially with the minimum nocturnal temperature (very significant correlation, also Blomberg et al. 1978). Other climatic factors (change of pressure, rainfall, cloud cover) and geomagnetic factors had no clear effect on nightly moth catches (Iso-Jivari & Koponen 1977).

The total yearly catches correlate significantly with the temperature of the previous summer, not the catching summer. Thus in Fig. 9 we can see that the moth catches and thermal sum of the previous year had the same pattern. The correlation coefficient for total catches and the thermal sum of the previous summer is $r = 0.816^*$ and for catches and thermal sum of trapping year only $r = 0.343$. The temperature of the previous summer explains the total catches (ind./night) in 1973-79 at the level of 67% (cf. also Koponen & Linnaluoto 1979). When the two most dominant species (*Epirrita autumnata* and *Entephria caesiata*) are excluded (to eliminate possible error caused by these very abundant and late species) the coefficient for the previous year is $r = 0.874^*$ and for the trapping year $r = 0.3$ (see also Fig. 9).

Thus the temperature of the trapping summer seems to affect the time of flight and the temperature of the previous summer the abundance of moths caught by light traps.

The effectiveness of continuous light trapping can be seen in the number of species new to Utjoki found only or also by light traps at Kevö: 50 species (approx. 50% of new species and 31% of species caught by light traps). Many of them are late flying species, which have been collected very little by other authors (cf. Valle 1933, Krogerus 1972, Douwes et al. 1972).

When comparing early flying species with late ones, the difference in the attracting effect of light traps during the light night of early and midsummer and, on the other hand, on dark autumn night must be borne in mind. Thus the numbers of certain late species are probably overestimated compared with early species (see Koponen & Linnaluoto 1979). However, the first peak situated always during the continuous light period (May 17-July 24). Thus the catches of early species are comparable in different years, both in cold (late flight) and warm (early flight) ones.

Over a period of eight trapping years, for example, 45.6% of Geometridae species occurring in Utjoki were caught by light traps at Kevö. The percentage for Noctuidae is 28.6 and for Tortricidae 56 (cf. also the trapping efficiency values for geometrids of Iämmis et al. 1980).

Continuous light trapping shows interesting changes in the abundance of many species in the 1971 (Figs. 12-16). The relation of the two most abundant species, *Epirrita autumnata* and *Entephria caesiata* is one: in 1972-76 *E. autumnata* were more abundant (ind./trapping night) during flight period and in 1977-79 *E. caesiata* (see Table 3). Both *Ancylys* species (*A. myrtillana* and *A. unguicella*) were clearly more abundant in 1972-75. Also *Ypsolopha parentivella*, *Zerophora dimiana*, and *Eupithecia pusillata* had their own patterns of occurrence at Kevö, being found only in 1973-75, 1974-78, a 1977-78, respectively. The alternate-year flying *Xestia* species were caught only in even years. Great fluctuations in abundance of many species have been found during study years (e.g. *Olethreutes hypoboreanus* and a mass occurrence of *O. schulzianus* in 1972).

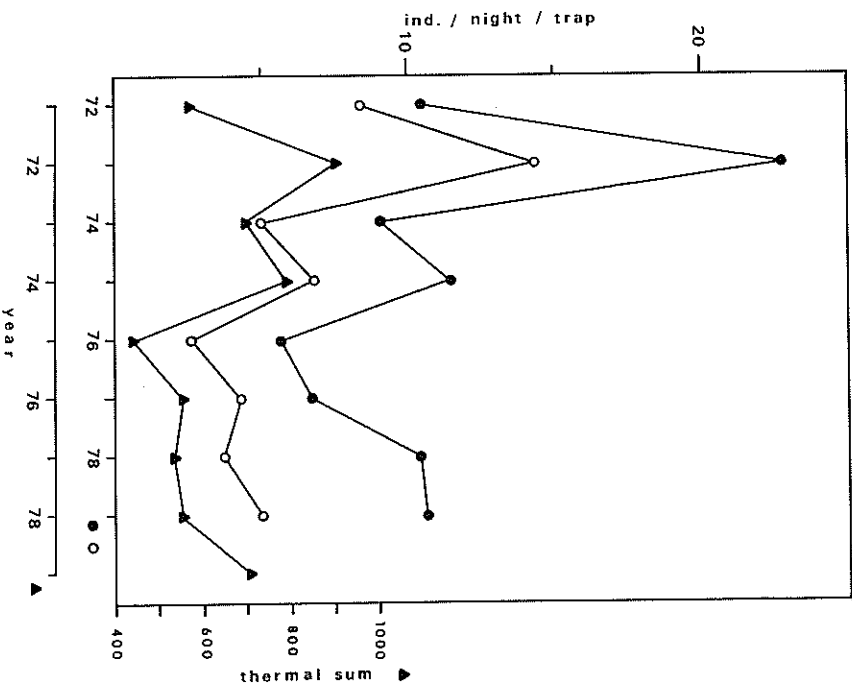


Fig. 9. Moth catches by light traps compared with the thermal sum of the previous summer (● = total catches, ○ = catches without *Epirrita autumnata* and *Entephria caesiata*).

Entephria caesiata has a long flight period, usually with two peaks. These peaks are probably caused by the two larval morphs of the species. There is an earlier green morph feeding mainly on *Vaccinium uliginosum* and *Betula nana* and a later brown morph feeding mainly on *Empetrum* (P. Niemelä & L. Iso-livari pers. comm.). Also *Trichitars crataegi* has a long flight period with two peaks. The flight time in Utsjoki seems to be markedly later than usually reported in Lapland (e.g. Krogerus 1972). During 1972-75 the flight period of most species was moving further in summer (towards autumn), and in some species the cold summer 1975 seemed to affect population crashes (e.g. *Syngrapha interroghatoris* and *Ancylis unguicella* occurred regularly in 1972-75 but no individuals after that). There was also a very clear minimum of occurrence in many species in 1976. However, some exceptions were found: *Epirrita autumnata*, *Schiffmuelleria sipella*, and *Pleurota bicostella*. For more detailed data on light trap material see Koponen & Linnahoto (1979).

The limited material collected by light trapping at Abisko, Sweden (Douwes et al. 1972) shows the same pattern of two peaks, and the dominant species there were also *Epirrita autumnata* and *Entephria caesiata*. The relation between the individual numbers of microlepidopterans and macrolepidopterans was very different compared with Kevo: 0.19 at Abisko and 0.94 at Kevo. This difference may have been caused by the different types of trap used.

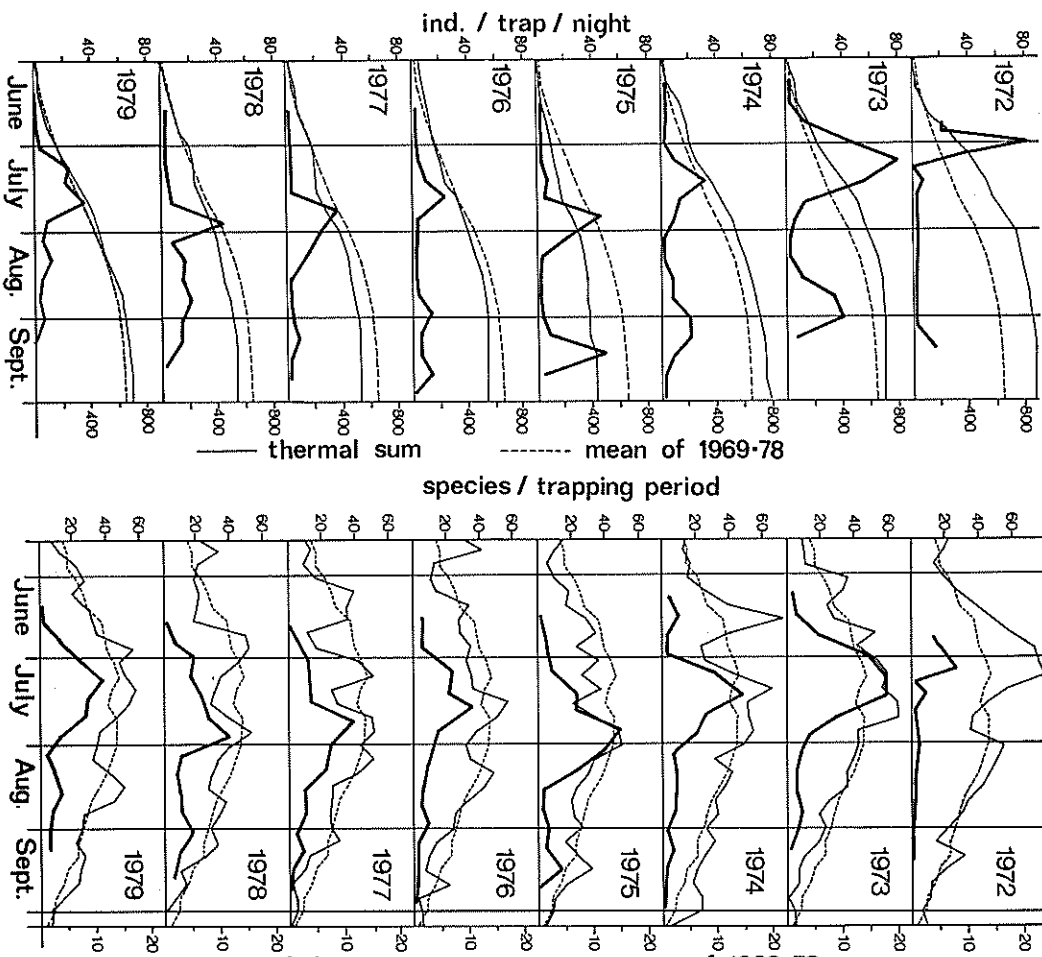
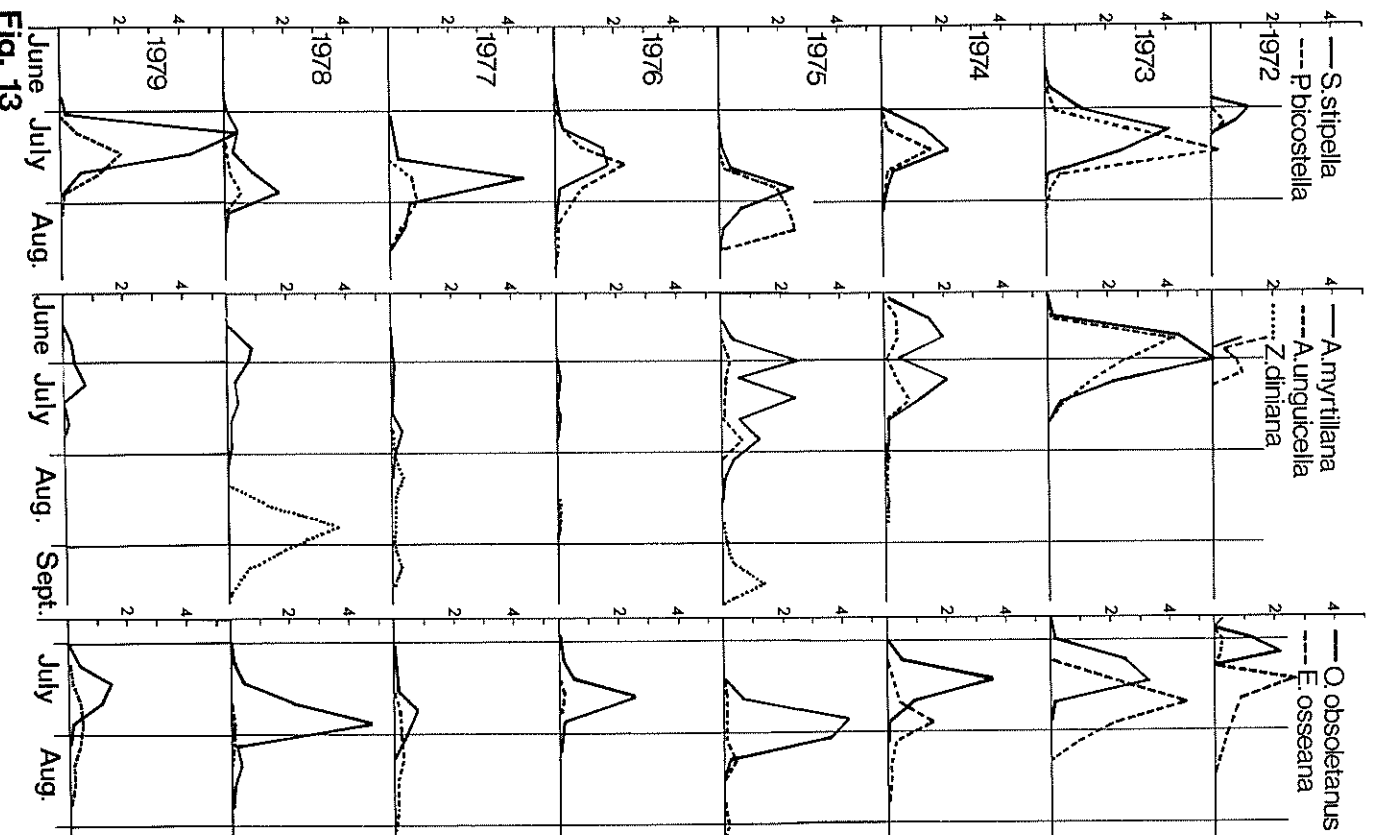
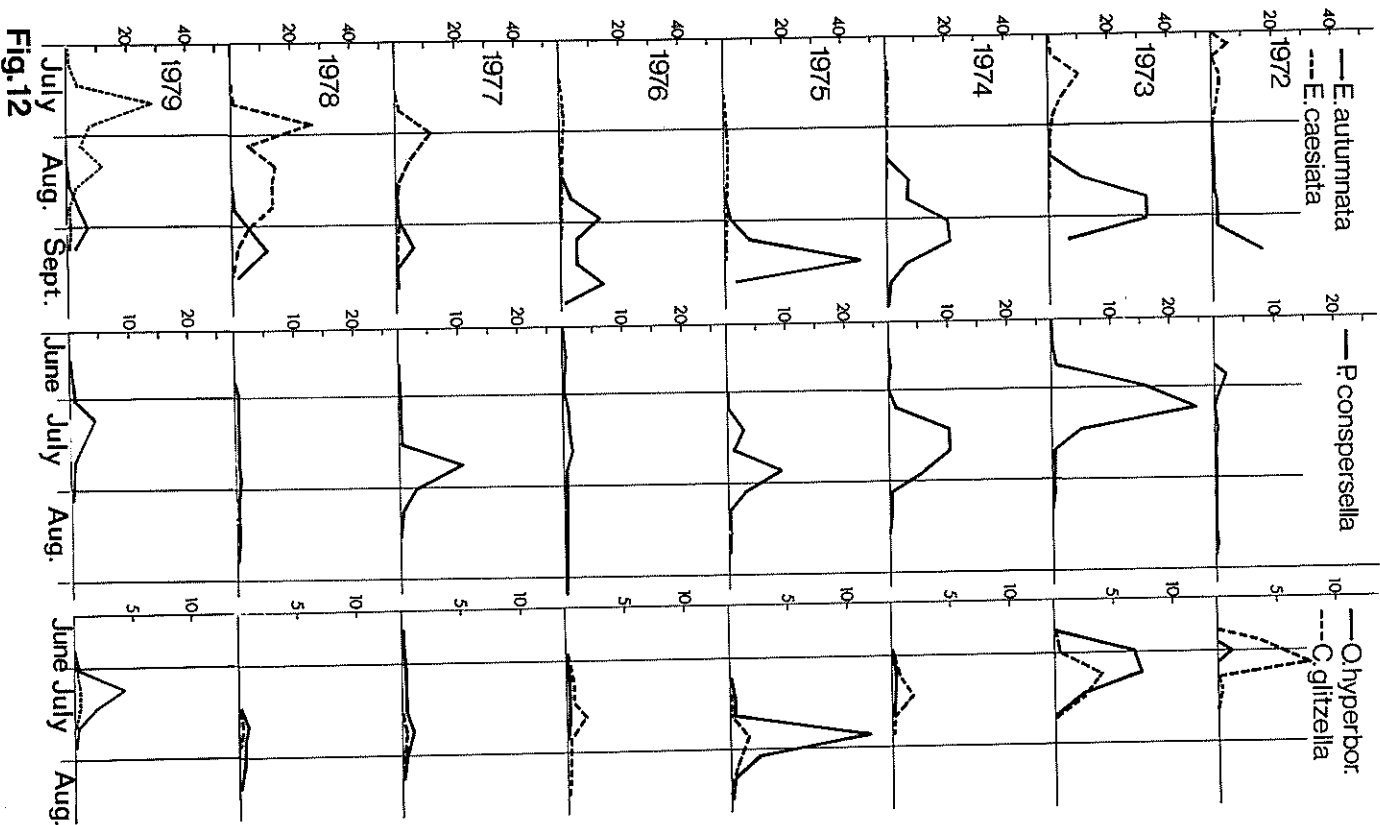
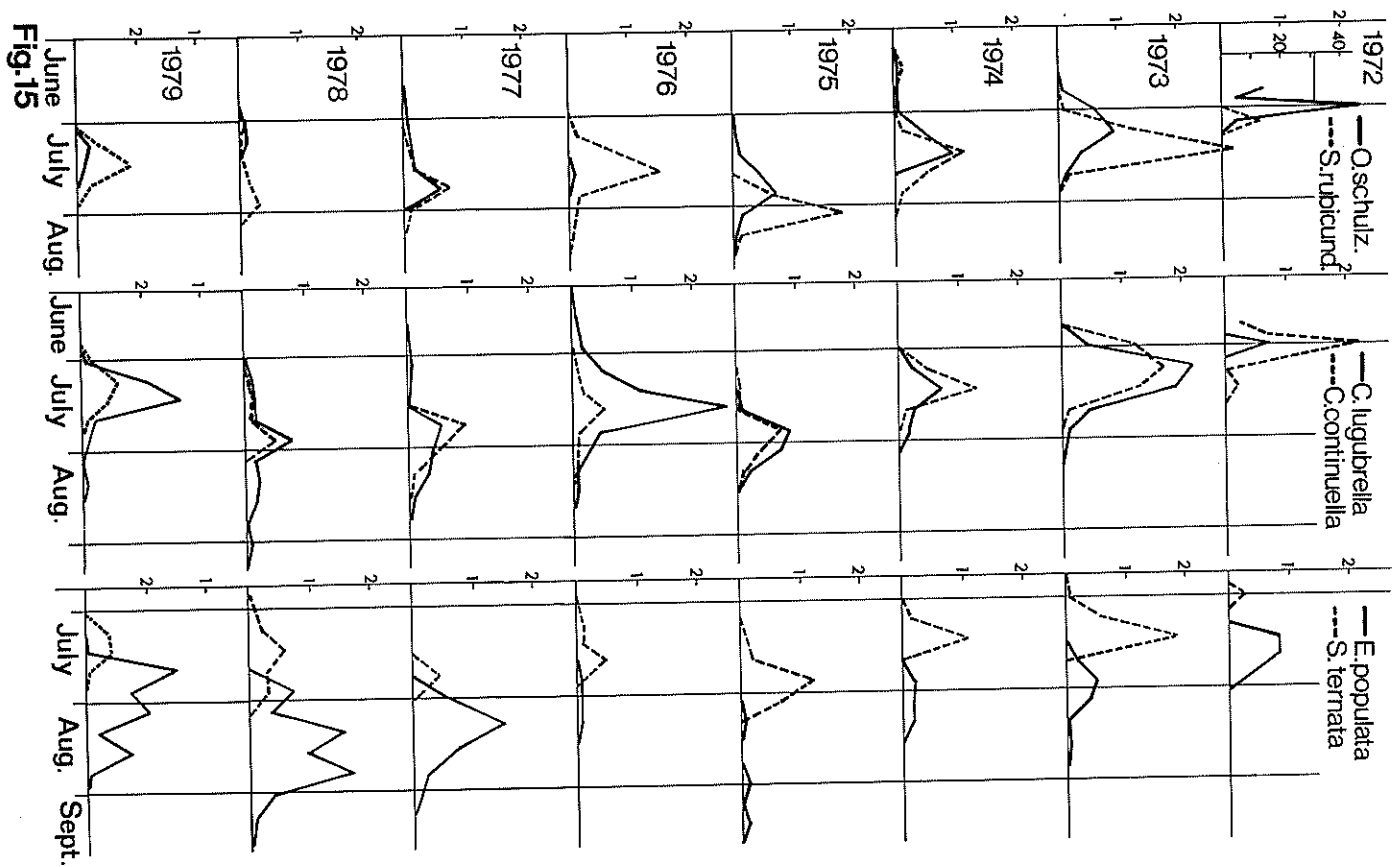
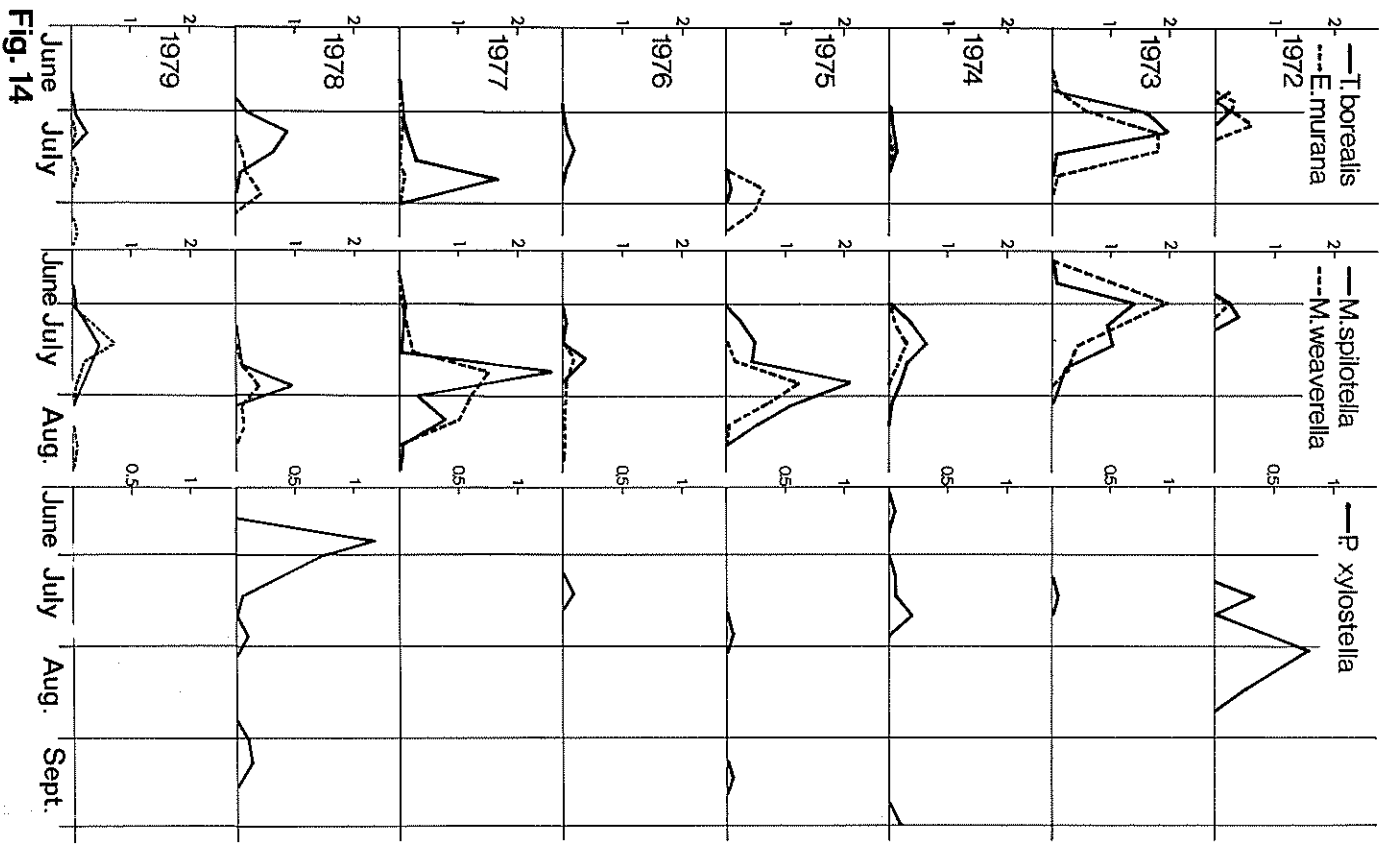


Fig. 10. The total moth catches (ind./trap/night) and thermal sums (over -50 d.d.) of the study summers compared with the mean of thermal sums of ten years. The heavy lines indicating the individual number per trapping night as well as the thin lines indicating the thermal sum reached at the end of each trapping period are drawn through the mid point of each trapping period.

Fig. 11. The number of moth species in each trapping period and the mean daily temperature of the study years compared with average mean daily temperatures of ten years. The heavy lines indicating the species number (per trapping period) are drawn through the mid point of each period and the thin lines indicating temperature are averages of five day periods.

Figs. 12-16. The individual number of 30 moth species per trapping night in each trapping period during the study years. The lines are drawn through the mid point of each period.





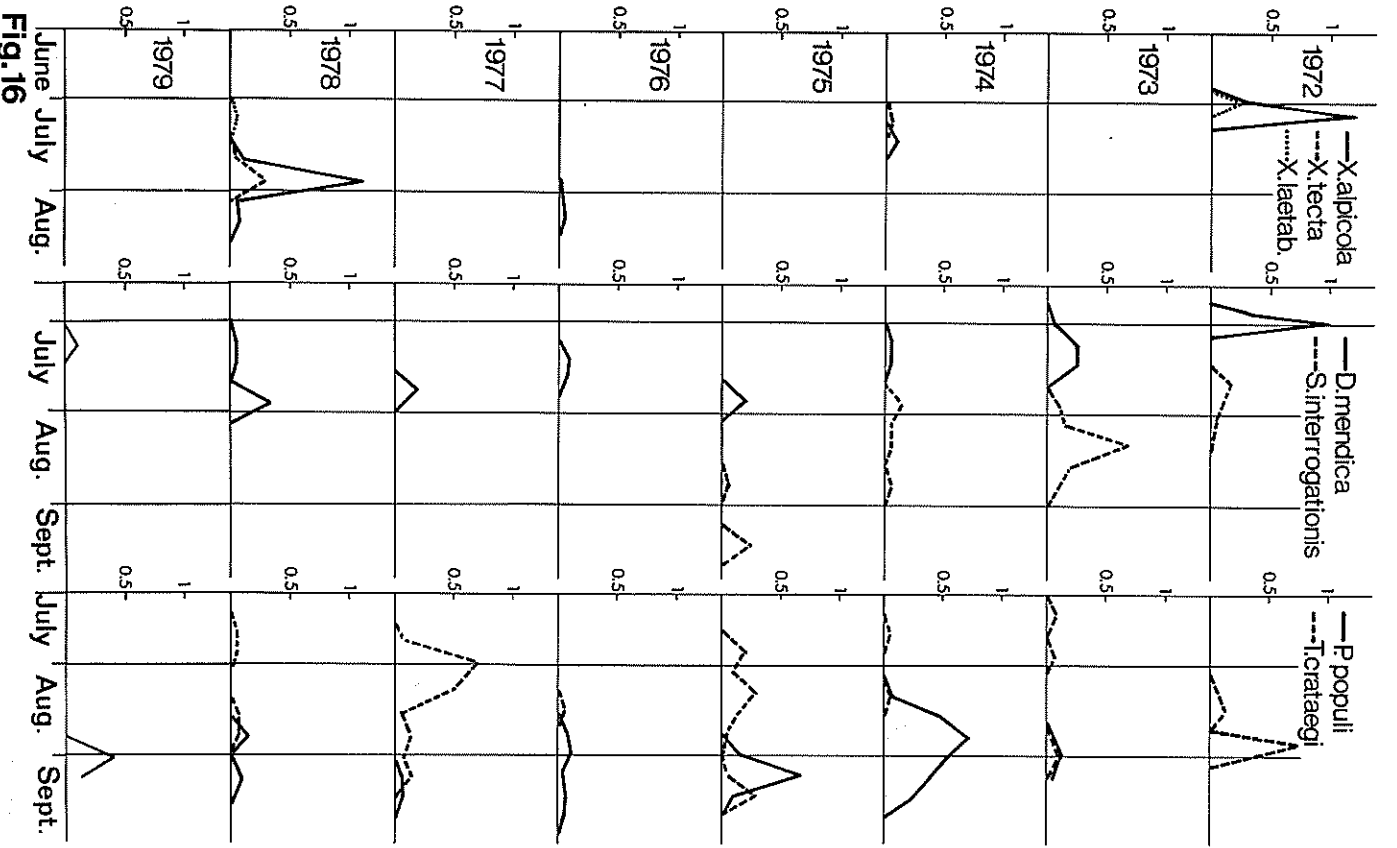


Fig. 16

Table 3. Flight periods and yearly catches of the moth species caught by light traps at Kewo, 1979. The uppermost date of each species indicates the first catching period of the year, the second the last period, and the third figure the individual number of the year. Total individual number der the name of the species.

Year	Number of traps	1972	1973	1974	1975	1976	1977	1978	1
<i>Xalpicola</i>									
<i>X. tecta</i>									
<i>X. laetab.</i>									
<i>D. mendicaria</i>									
<i>S. interrogatoris</i>									
<i>P. populii</i>									
Year									
Number of traps									
<i>Enicrania umbracella</i>		4	4	4	4	4	4	4	4
<i>Enicrania songii</i>		4	4	4	4	4	4	4	4
<i>Enicrania tenuipannella</i>		21	20	20	20	20	20	20	20
<i>Trifargalia medesajascella</i>		2	2	2	2	2	2	2	2
<i>Trifargalia weaveri</i>		129	10	12	25	8	15	20	20
<i>Stigmella myrtillella</i>		2	2	2	2	2	2	2	2
<i>Stigmella</i>		2	2	2	2	2	2	2	2
<i>Lamprolia ochimnithella</i>		1	1	1	1	1	1	1	1
<i>Lamprolia</i>		1	1	1	1	1	1	1	1
<i>Wentia japonica</i>		41	24	4	8	2	2	2	2
<i>Stenella conspersella</i>		14	2	2	1	3	1	3	3
<i>Phylloporia bistriella</i>		2	2	2	2	2	2	2	2
<i>Lamprolia</i>		1	1	1	1	1	1	1	1
<i>Lamprolia</i>		1	1	1	1	1	1	1	1
<i>Lamprolia</i>		1	1	1	1	1	1	1	1
<i>Wentia</i>		61	11	11	2	4	5	6	6
<i>Solenobia juroseella</i>		17	9	9	1	1	1	1	1
<i>Solenobia cheloniella</i>		1	1	1	1	1	1	1	1
<i>Taleporia borealis</i>		141	62	3	1	5	26	35	35
<i>Infulcinea japonica</i>		4	1	1	2	2	2	2	2
<i>Archihemipogon laterellus</i>		4	2	2	2	2	2	2	2
<i>Nemopogon piceivellus</i>		1	15	5	5	5	3	3	3
<i>Monopsis rusticella</i>		5	2	1	1	1	1	1	1
<i>Monopsis</i>		223	71	11	44	8	48	14	14
<i>Monopsis</i>		515	74	52	101	12	48	23	23
<i>Caloptilia betulicella</i>		1	1	1	1	1	1	1	1
<i>Raronix loagenella</i>		3	11	5	4	1	1	1	1
<i>Raronix beutleri</i>		24	5	5	4	1	1	1	1
<i>Raronix polygrammella</i>		5	11	5	4	1	1	1	1

Year	1972	1973	1974	1975	1976	1977	1978	1979
Number of traps	1	3	3	5	4	2	3	3
<i>Lamproleptis suffimata</i>				19.6-28.6				
<i>Eulithis parvata</i>		29.8-4.9						
<i>Eulithis populata</i>	12.7-17.7 18.7-23.7 10	19.7-25.7 15.8-21.8 23	25.7-31.7 8.8-14.8 10	7.8-13.8 14.9-17.9 5	23.7-31.7 6.8-12.8 3	27.7-5.8 30.8-4.9 44	25.7-31.7 5.9-12.9 89	12.7-17.7 22.8-28.8 88
<i>Chlorocybe citrata</i>				11.9-17.9	3.9-10.9	13.8-21.8	29.8-4.9	
<i>Epiphicta autumnata</i>	12.8-19.8 10.9-15.9 130	8.8-14.8 5.9-11.9 18.7	8.8-14.8 26.9-5.10 1400	21.8-27.8 18.9-24.9 1320	13.8-19.8 25.9-1.10 1126	22.8-29.8 19.9-25.9 146	22.8-28.8 13.9-22.9 430	15.8-21.8 5.9-11.9 246
<i>Epiphicta nitescens</i>				4.7-10.7 11.7-18.7				
<i>Epiphicta satyria</i>	22.6-25.6			13.6-19.6				
<i>Epiphicta yulgata</i>	1							
<i>Epiphicta edulata</i>		27.6-3.7 11.7-18.7						
<i>Epiphicta vivescens</i>			4.7-10.7					
<i>Epiphicta vivescens</i>								
<i>Epiphicta pustulata</i>								
<i>Epiphicta pustulata</i>								
<i>Cerita sporidata</i>			8.8-14.8					
<i>Homocera brunnata</i>			25.7-31.7					
<i>Pygmaea fuscata</i>		11.7-18.7	11.7-17.7					
<i>Selenia dentaria</i>				5.9-11.9				
<i>Chorax conraria</i>	22.6-25.6 3.7-7.7 10	4.7-10.7				21.7-26.7		21.6-28.6
<i>Notodonta dironiana</i>								
<i>Diana mendica</i>	26.6-28.6 29.6-2.7 5 38	27.6-3.7 11.7-18.7 11	4.7-10.7 11.7-17.7 2	24.7-30.7 4	12.7-15.7 16.7-21.7 5	21.7-26.7 2	4.7-10.7 25.7-31.7 9 4.7-10.7	5.7-11.7 2
<i>Xestia laeviflora</i>								
<i>Xestia laeviflora</i>			4.7-10.7					
<i>Xestia alpicola</i>	29.6-2.7 3.7-7.7				6.8-12.8			
<i>Eurois oculatus</i>								
<i>Cempitrix granitica</i>		26.7-31.7	25.7-31.7 22.8-28.8 8	31.7-6.8 11.9-17.9 3	13.8-19.8 27.8-2.9 2			
<i>Hilla</i>	34.7-11.8 20.8-25.8 17	8.8-14.8 22.8-28.8 4				22.8-29.8 30.8-4.9 4	22.8-28.8 29.8-4.9 3	15.8-21.8 - 4
<i>Lithomia solidaginis</i>	10.9-15.9	15.8-21.8 5.9-11.9 16	15.8-21.8 5.9-11.9 3		27.8-2.9			15.8-21.8 5.9-11.9 5
<i>Parasichtis suspecta</i>								
<i>Xanthia icterica</i>		22.8-28.8				22.8-29.8		

Year	1972	1973	1974	1975	1976	1977	1978	1979
Number of traps	1	3	3	3	4	2	3	15
<i>Syngasteria interrogatoris</i>	18.7-23.7 24.7-11.8	26.7-31.7 22.8-28.8	25.7-31.7 22.8-28.8	21.8-27.8 11.9-17.9				
<i>Cateca aduleta</i>		29.8-4.9						
First period	22.6-25.6	4.6-12.6	6.6-12.6	14.6-18.6	4.6-10.6	26.6-13.7	13.6-23.6	9.6-
Last period	10.9-15.9	5.9-11.9	26.9-5.10	18.9-24.9	25.9-1.10	19.9-25.9	13.9-22.9	3.9-
Total ind. number	871	5958	3039	3298	2143	1145	2942	2716
Total species number	57	112	87	79	58	65	78	71
Diversity indices H'	2.728	2.851	2.204	2.533	2.092		2.140	2.36
Total ind. 1972-79	22 106							
Total species 1972-79	161							
Total H' 1972-79	2.830							
Thermal sum	906	717	791	443	559	533	555	707
Mean 1969-78	645							
Ind./light/trap:								
Total	10.5	22.8	9.1	11.5	5.7	6.7	10.4	10.7
without <i>E. autumnata</i>	9.0	15.9	4.9	6.9	2.8	5.8	8.8	9.7
-, -, & <i>E. caesia</i>	8.4	14.4	4.9	6.8	2.6	4.3	3.7	5.0
Ind./night/trap (during flight time):								
<i>E. autumnata</i>	(3.7)	17.8	8.9	12.6	6.1	2.1	5.1	3.5
<i>E. caesia</i>	2.6	2.8	0.2	0.2	0.4	2.8	10.3	7.1

Table 4. Individual numbers of the 20 most abundant moth species caught by light traps at K 1972-79.

<i>Epiphicta autumnata</i>	6691
<i>Epiphicta caesiata</i>	3536
<i>Parasammernandania conspersella</i>	2329
<i>Olethreutes hyperboreanus</i>	795
<i>Schiffermuellera stipella</i>	772
<i>Olethreutes obsoletanus</i>	747
<i>Ancylys myrtilana</i>	590
<i>Pleurota bicostella</i>	575
<i>Chionodes lugubrella</i>	420
<i>Olethreutes schizianus</i>	400
<i>Coleophora glitizella</i>	386
<i>Bana osseana</i>	342
<i>Monopsis spilotella</i>	315
<i>Sparganothis rubicundana</i>	313
<i>Eulithis populata</i>	272
<i>Chionodes continuella</i>	254
<i>Ancylys unguicella</i>	226
<i>Monopsis weaverella</i>	223
<i>Scopula ternata</i>	196
<i>Zetaphera ditiana</i>	181

3.3. Lepidoptera of Utsjoki

3.3.1. Compilation of the list

The authors have collected lepidopteran material in Utsjoki over a period of ten years. Our main study area has been the surroundings of the Kevu Station; however, several excursions have been made to other parts of the commune. Different collecting methods have been used, e.g. baits, light traps, sweep netting, and the collecting of caterpillars.

When compiling the list of species, published literature on lepidopterans in the Utsjoki area has been consulted. This literature includes the reports of monthly meetings of the Finnish Lepidopterological Society (1955–75) and the Society's membership leaflet, *Baptria* (1976–).

Valuable information has been obtained from the lepidopterological notes on Utsjoki made by Mr Veijo Mannala, and from the Macrolepidoptera Archives of Prof. Olavi Sotavalta and the Microlepidoptera Archives of Mr Jorma Kyriki. The unpublished data of many collectors, mainly from the Lapland observation forms of the Finnish Lepidopterological Society but also from personal information, are also included in the present list. Also some additional Lepidoptera Archives have been used (J. Alvas: Pyralidae, T. Grönblom, K. J. Valle, K. Mikkola: migrants). In addition, the collections of the universities of Turku and Helsinki as well as certain private collections have been studied.

The reported number of species in Utsjoki was about 280 up to Jussila's (1963) publication. Since then only a few species have been published; the total number up to the present is approx. 310 species (Kaisla 1962, Nuorteva 1966, Nordström et al. 1969, Koponen 1973a, 1974, Mikkola & Jalas 1977–79, Koponen & Linnaluoto 1979, Suomalainen et al. 1980). In addition, some 10 species from Utsjoki have been mentioned only in the reports and leaflets of the Finnish Lepidopterological Society. In the present list of lepidopteran species 421 species (of which about 100 species for the first time) are listed from Utsjoki, and 238 species at Kevu.

No species has been included in the list based only on sight-observation. However, additional observations by sight have been accepted in the case of larger butterflies and moths: e.g. *Papilio machaon*, *Vanessa cardui*, *Lastomima maera*, *Saturnia pavonia*, *Hyles galii*, *Laeconia salixis*, and *Xestia kongsvaldensis*. It has been impossible with some older observations to determine whether they dealt with sight-observed or caught material. Moreover, it is not always clear if observations were based on larval or imago finds. Observations known to be based on larvae or sight are always mentioned as such in the list of species. Only larval observations of the following species have been made in Utsjoki: *Eriocrania sparmannella*, *Stigmella poterii*, *S. nyländriella*, *Incurvaria pectinea*, *Phyllonorycter sorbi*, and *Petrova resinella*.

There is little information about the biology of species due to the limited number of studies carried out in Utsjoki. Some data are available about birch herbivores from recent years, e.g. dealing with larval morphs of *Eriephrina caesia* and wintering strategies of *Lycia pomonaria* and *Archicaris parthenis*. In addition, Nordman (1942) studied the biology of *Erebia medusa*, *Eriephrina polata*, and *Anartoclyta bohlemanni*. For food plants and wintering stages of species, see e.g. Seppänen (1969 and 1970).

Certain difficulties have arisen in determining and confirming some species, especially in the family Nymphalidae. The situation is still somewhat unclear in some cases, e.g. *Triphyrula argenteipedeella* (mines found but adults perhaps confused with *T. mediofasciella*), *Stigmella luteella* (adult observations could not be confirmed, also mines may be unclear), *S. lapponica* and *S. confusella* (seem to occur according to mines, adults often impossible to distinguish). Attempts have been made to confirm older observations by checking private and museum collections. In some species misidentifications have been found. These together with some obviously erroneous old finds (especially in the case of comparisons with the Fennoscandian distribution) have been omitted. Thus the following species, published from Utsjoki, are now excluded from the fauna: *Stigmella salixis*, *Phyllonorycter cavellus*, *Generostoma pinarietum*, *Neofacalia ericetella*, *Olethreutes metallicanus*, and *Opsibotrys fuscalis* (cf. also Kyriki 1979).

The nomenclature in old papers has affected some problems. Especially in the case of old finds of

Psychidae and Tineidae, attempts have been made to confirm their veracity, because some species complexes have been solved in the last years. There is also great diversity in the naming of subspecies forms, etc., in old papers. All subspecies and other infraspecific names are excluded in the list of species. The names of northern forms and subspecies can be found e.g. in Valle (1933), Krogerus (1974) and Aagaard (1979).

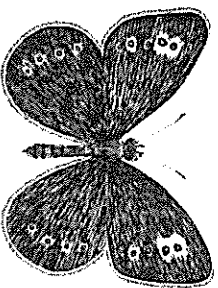
3.3.2. Instructions

The following list of species has been compiled according to the family system and nomenclature of *Suomen perhosten luettelö* (1977), including corrections published in *Baptria*.

Among the observations, possible finds in the surroundings of the Kevu Research Station are mentioned first (K; indicates an area with a radius of 3 km, see Fig. 17). There then follow finds from other parts of Utsjoki (U). In the Kevu data, light trap material is mentioned first: total ind. num. and the earliest and latest periods in which trapped. There may be minor differences between Table and the present flight trap data because the small material from 1971 is included here but not in Table 3. The exact date of trapping in 1974 is also included here if it is the earliest or latest. When the date of flight is not exactly known (e.g. trapping periods), the collecting period is in citation marks ('2–8.7.1979'). Also the place-name is in citation marks, when the exact collecting locality is known (e.g. 'Utsjoki').

After light trap material other observations are mentioned: collecting site (present place-name), number, sex if known, biotope, flight time and observer (abbreviation in brackets) and possible reference (number in brackets). For abbreviations of collectors see p. 00 and for numbers of reference p. 00. The present place-names are shown in Table 1. If the collecting method is imago netting, usually not mentioned. The earliest and latest observed flight date is reported depending on the observation locality under K or U respectively. However, the flight date is not mentioned if it falls between the flight trap data mentioned first for each species. Whether the species prefers daytime or night flight is only mentioned when notable data are available from Utsjoki (even most noctuids fly during daytime, best catches of "night-flyers" are often caught at sunrise). Larval observations are at the day time, with possible food plant notes (only data from Utsjoki). If the earliest and latest flight observation have not been mentioned before, they are included at the end; after them there are references (in form of numbers in brackets) indicating where the species is reported to occur in Utsjoki. However, the reference of each special observation follows immediately after this: the number of the first publication and the abbreviation of observer after the colon in brackets; later references to this same publication are also marked in the same brackets. If more detailed data about a find have been obtained, corrections or confirmations of identification made by checking museums or by personal communications, this has been indicated by MH (Zoological Museum of Helsinki), MT (Zoological Museum of Turku) or PC (personal communication).

We have separated data from different sites, methods, and stages by means of a semi-colon. An example has been made to group the observations so that they are in chronological order by site; the oldest find (if not from the previous site) is after the semi-colon and all finds from this site are listed chronologically. In the case of common species in Utsjoki, not all observations can be reported. In these cases, the abundance in different areas and biotopes has been estimated. With less common and interesting species all observations and other data available have been included in the list of species.



3.3.3. List of species

Micropterygidae

Micropteryx mansuetella Zeller U: Tsuomasvarri locally abundant on sedge mires at lower parts of the southern slope 9-12.7.1979 (JJa & ELi & LLj).

M. aureatella (Scopoli) U: 'Utsjoki' 1897 (9.6:BPo); Utsjoki village fairly abundant at river side bushes 2.7.1930 (1.6:WHo, 9.6, 67); Pihntioja 1-10.7.1949 (8:WHa); Karigasniemi 1 ex 11.7.1955 (MSO) and 1 male 2.7.1978 (HHO); Pulmankijoki 1 ex 7.7.1956 (MSc); Tsuomasvarri fairly abundant among the previous species 9-12.7.1979 (JJa & ELi & LLj).

Eriocraniidae

Eriocrania unimaculella (Zetterstedt) K: light traps 4 exx '4-12.6.1973' and 10.6.1974; Kevonniemi 40 exx (JJa, SKo, ELj), 25.5.1971 (ELj)-16.6.1973 (SKo).

E. sparrmannella (Boss) K: Kevonniemi and Jesnalvarri some mines on mountain birch in 1972 and 1973 (4.2, 9, 44). U: U. Alligas mines in 1966 (72); mines at several localities in 1973 (44). The latest species of the genus, mines from the middle of July (44).

E. sangi (Wood) K: light traps 4 exx '4-12.6.1973' and 8.6.1974; Kevonniemi 5 exx, the earliest 2.6.1979 (SKo); mines fairly abundant on mountain birch in the whole area (42, 44). U: U. Alligas mines in 1966 (72); mines fairly abundant at several localities in 1973 (44).

E. semipurpurella (Stephens) K: light traps 21 exx '4-12.6.1973' and 1.3-23.6.1978; from the whole area 39 exx (SKo, ELj), 24.5.1971 (ELj) - 21.6.1971 (ELj); mines abundant in the whole area, in some years very abundant on mountain birch in the early 1970's (42, 43, 44). U: Karhjarva 5 exx 28.5-6.6.1971 (ELj); Pulmankijoki mines in 1956 (6); U. Alligas mines in 1966 (72); mines abundant, locally very abundant at several localities in the early 1970's, then the most abundant species of the genus (42, 44, 47).

Nepticulidae

Triphurca argentipedella (Zeller) K: Kevonniemi some mines on mountain birch in 1971 and 1972 (42). U: Kevojoki some specimens in 1955, e.g. 9.7. (6: MSc-po); between Nivajoki and Nuorgam 1 ex in 1955 (6); Pulmankijoki 7.7.1956 (6: MSc-po).

T. mediofasciella (Haworth) K: light traps 2 exx '20-26.6.1973' and '29.6-2.7.1975'; Kevonniemi 17 exx on mire with dwarf birches 2-3.7.1978 (ELj); mines on dwarf and mountain birch in 1971 and 1972 (42). U: Utsjoki village abundant in birch woodland 2-4.7.1968 (VKa); Kardeasivi 1 exx on mire 29.6.1978 (ELj); Pulmankijarvi S-end 5 exx 2.7.1978 (ELj).

T. weaveri (Stainton) K: light traps 134 exx '20-26.6.1973' - '7-13.8.1975'. U: between Nivajoki and Nuorgam 3 exx 15-18.7.1955 (6: MSc-po).

Stigmella poterii (Stainton) U: Vaisjäggi several empty mines on cloudberry on palisa mire 30.8.1979 (SKo).

S. myrtillella (Stainton) K: light traps 2 exx '28.6-3.7.1978' and '5-11.7.1979'. U: Pihntioja 1 ex 30.6.1949 (WHa, MH); Karigasniemi 1 ex 15.7.1977 (AKu).

S. lappovinnella (Svensson) K: Kevonniemi 2 exx on willow bush on mire 28.6.1978 (ELj).

S. nylandriella (Tengström) K: Tieskuujohka 2 empty mines 1.9.1977 (SHe, 54), and abundantly empty mines on rowan 30.8.1979 (HHu & SKo).

S. luteella (Stainton) K: Pukalskaidi some mines on mountain birch in 1971 and 1972 (42). U: Kevojoki 1 ex in 1955 (6).

S. lapponica (Wocke) K: light traps 42 exx '4-12.6.1973' - '3-9.7.1975'; Kevonniemi 1 ex 1.6.1970 (ELj); mines abundant in 1971, fairly scarce in 1972 and 1973 (42, 44, 11). U: Pihntioja 1 ex in birch woodland 17.6.1949 (8: WHa); throughout Kevojoki valley to Utsjoki village abundant in 1955, e.g. 4. and 9.7. (6: MSc-po); Pulmankijoki 2 exx in 1956 (6); mines at several localities (72, 42), locally abundant in the early 1970's, when the most abundant mountain birch miner of the family (42, 44).

S. confusella (Wood) K: light traps 15 exx '4-10.6.1976' - '10-16.7.1975'; Kevonniemi 1 ex 2.7.1978 (ELj); mines on mountain birch in 1971-73 (42, 44). U: Kevojoki 1 ex 9.7.1955 (6: MSc-po). Incurvatiidae

Phylloporia bistrigella (Haworth) K: light traps 2 exx '20-26.6.1973' and '26.6-13.7.1977'. U: Utsjoki village 1 ex in birch woodland 4. and 9.7.1967 (VKa).

Incurvatoria pectinea Haworth K: Pukalskaidi one mined leaf of mountain birch in 1972 (42).

Lampyris oehlmannella (Hübner) K: light trap 1 ex '4-10.7.1973'; Jesnalvarri 1 ex 26.6.1970 (ELj); Kevonniemi larvae and adults from cloudberry vegetation introduced from Vadsö, Norway to a

greenhouse in 1978 and 1979 (SKo, ELj). U: Pihntioja 1 ex on mire 7. and 8.7.1949 (8: WHa); ganslemi 1 ex 6.7.1976 (LSj); Utsjoki village 1 ex 7.7.1976 (HHO); Nuorgam 8.7.1976 (MAh).

L. puzosella (Denis & Schiff) U: Utsjoki village 2 exx 26.6.1936 (67: BLi, MH).

L. vetulella (Zetterstedt) K: light traps 62 exx '1.1-24.6.1976' - '21-26.7.1977'; mouth of Rjohka 2 exx 6.7.1970 (ELj). U: fairly abundant in birch forests at several localities (80, 16, 96, 6). *L. fuscicella* (Tengström) U: Utsjoki village 1 male 20.6.1937 (67: ANo); Tsuomasvarri 1 ex 9.7. (R 3/56: JKi, MH).

L. rapella (Denis & Schiff) U: Tsuomasvarri 1 ex in luxuriant birch forest on southern slope 1979 (ELj).

Nemophora esmarkella (Wocke) K: Jesnalvarri 1 ex 10.7.1975 (HOj), and 1 ex 2.7.1978 (KLa) Kevonniemi 1 ex on dwarf birch mire 2.7.1978 (ELj). U: several observations throughout the found usually singly on dwarf birch mires on fell slopes, 1.7.1956 (MSc) - 16.7.1977 (EFf), (67). *Adela cuprella* (Denis & Schiff) U: Pihntioja 1947 (8: ASa), 1 male 26.6.1949 and 1 female 30.6. (8: RFf); Kevojoki 1 ex 9.7.1955 (6: MSc-po).

Nematopogon varrillus (Brandt) U: Kevojoki some specimens in 1955, e.g. 8.7. (6: EU-pc).

Zygaenidae

Zygaena exulans (Hoehenwarth) K: several observations in the whole area (27 & 28: RJu, SKo, ELj). U: abundant but with remarkable fluctuations of abundance, all over the area, both in birch mires and on alpine heaths, 29.6.1936 (67: BLi) - 27.7.1905 (67: USa), (16, 6, 70).

Psychidae

Lypusa mauraella (Denis & Schiff) K: Kevonniemi 10 exx on dwarf birch mire and in surround birch forest 2-3.7.1978 and 3 exx 7.7.1979 (ELj). U: Karigasniemi 1 ex 6.7.1976 (LSj); Pulmankijoki and Nuorgam 7.7.1976 (MAh); Tsuomasvarri 7 exx in moist birch forest on southern slope 7.1979 (JJa & ELi & LLj).

Solenobia fumosella Heinemann K: light traps 17 exx '1.3-19.6.1973' - '29.6-4.7.1979'; Kevonniemi and Pukalskaidi several specimens, also ex larva (SKo, ELj), the earliest observation 9.6. (ELj). U: Pihntioja 3 males 25-29.6.1949 (WHa, MH). Luobmostonka 1 male 4.7.1955, and Kev 2 males 8.7.1955 (EU-pc); (8 & 70 & 6: pineii, 27: sembellia, cf. 91).

S. charlotiae Meier K: light trap 1 ex '20-26.6.1973'; Kevonniemi 1 male 14.6.1979 (SKo).

Siederia ruficollis (Sauter) K: Kevonniemi 1 male 9.6.1970 (ELj).

Taleporia borealis (Wocke) K: light traps 143 exx '22-25.6.1972' - '24-30.7.1975' (48); Kevonniemi and Pukalskaidi several males (ELi, VRI, KSu); 2 females ex larva in 1979 (SKo). U: several observations throughout the area, both larvae and adults (6, 27, 70).

Prouia norvegica (Schöyen) U: Utsjoki village 1 male 24.6.1937 (67: ANo), and 1 male in (RMa); Nuorgam 1 female ex larva in 1937 (67: ANo); 'Utsjoki' 1957 and 1961 (VMa); Karigas 1 male 3.7.1978 (LFe & HHO); (97, 70).

Acanthopsyche atra (Linnaeus) U: Karigasniemi 1 male 7.7.1958 (70: EU-pc).

Sterrhopterix standfussi (Wocke) U: Karigasniemi 1 male in birch forest 4.7.1967 (ELj); Ter 2 females 28.6.1976 (MVu); K. Alligas 3 males in alpine belt 7.7.1979 (HSe).

Tineidae

Myrmecozela ochraceella (Tengström) U: Tenokoti 1 male 14.7.1966 (MRa); east of K. Alligas 1 ex 8. and 20.7.1977 (AKu); Tsuomasvarri 1 ex 8.7.1979 (B 3/79: JJa-pc).

Hufschiltia ignicomella (Herr.-Schäffer) K: light traps 4 exx '11-18.7.1973' - '16-22.7.1976'; *Thaxonomera fulvimitrella* (Sodoffsky) U: Karigasniemi 1 ex in boggy place with dwarf birch at low 3.7.1978 (HHO).

Archinemagogen laterellus (Thunberg) K: light traps 4 exx 8.7.1974 - '16-22.7.1976'.

Nemagogen picarellus (Clerck) K: light traps 25 exx '20-26.6.1973' - '7-13.8.1975'; Kevonniemi 1 ex 9. and 11.7.1979 (SKo). U: Utsjoki village 2 exx 1.7.1930 (1.6: WHa, 96, 67); Pulmankijoki 12.7.1956 (6: MSc-po); Karigasniemi 1 ex 4.7.1967 (ELj); Rassojohka 1 ex in birch forest 11.7. (ELj).

Haplontina insectella (Fabricius) U: Pihntioja 1 ex indoors 9.7.1949 (8: WHa, MH); Karigasniemi 10.7.1974 (AKu).

- Thera peltonella* (Linnaeus) U: Nuorgam 1 ex 15.7.1954 (JKi), and 10 exx indoors 6.7.1976 (MAH).
T. svenssoni Ophelm K: Kevonniemi 1 female in July 1973 (SKo).
Nitidula piercelia (Bentick) U: Tsuomasavari 1 ex inside fell cabin 11.7.1979 (ELI); probably also Kenojärvi (R 3/56: JKi fuscipunctella).
Monopis rusticella (Hübner) K: light traps 6 exx '27.6-3.7.1973' - 27.7.1974; Kevonniemi 1 ex 19.7.1971 (ELI). U: Mierasjärvi 1 ex inside fell cabin 8.7.1894 (80: Jsa, 96, 67); Utsjoki village 2 exx in birch forest 2.7.1930 (16: WHe, 96, 67).
M. weaverella (Scott) K: light traps 228 exx '27.6-3.7.1973' - '15-21.8.1979' (48); Kevonniemi several specimens (SKo, ELI). U: abundant at several localities, the earliest observation 19.6.1937 (67: ANo, MH); 96 & 67: spitiella).
M. spitiella (Tengström) K: light traps 320 exx '20-26.6.1973' - '13-21.8.1977' (48); Kevonniemi some specimens (SKo, ELI). U: Ala-laipe 1 ex 3.7.1953 (JKi); Mierasjärvi, Pulmankijoki, and Utsjoki village fairly scarce in 1956, e.g. Pulmankijärvä 6-10.7. (6: MSc-pc); Kariagsniemi and south of Kariagsnielga 4, exx 19-20.7.1977 (AKu); Tsuomasavari 2 exx 10.7.1979 (ELI); 56 adults emerged from an owl pellet found in July 1979 on an alpine heath of Tsuomasavari (ELI & LLI).
 Lyonetiidae
Lyonetia frigidatella Herr-Schäffer K: Kevojoki mouth 1 ex on willow bush 29.6.1978 (ELI, 54).
Bucculatrix cristatella Zeller U: Kariagsniemi 6 exx on shore meadow 6.7.1976 (LSJ); Väimäa 4 exx 8.7.1976 (MAH).
 Graellariidae
Caloptilia suberinella (Tengström) K: Kevonniemi 1 ex 25.5.1978 (SKo).
C. bertilicola (M. Hering) K: light trap 1 ex '5-11.9.1979'.
Calybrix auroguttella (Stephens) U: Pulmankijoki 1956 (6). This record is probably based on anthro-pochorous material, no food plant in the area (cf. 53, 60).
Parornix loganella (Stainton) K: light traps 3 exx '21-28.6.1979' - '29.6-4.7.1979'; Kevonniemi some mines on mountain birch in 1971-72 (42). U: Kevojoki 1 ex in 1955 (6); Utsjoki village 1 female 10.7.1962 (ONY); Kariagsniemi 2 males in moist dwarf birch-willow site 3.7.1978 (HHO).
P. bertula (Stainton) K: light traps 26 exx '13-19.6.1974' - '31.7-6.8.1975'; Rassejohka mouth 1 ex 15.6.1970 (ELI); Kevonniemi and Pukaskioldi mines on mountain birch in 1971-73 (42). U: Kevojoki 1 ex 9.7.1955 (MSc); Pulmankijoki 1956 (6).
P. polygrammella (Vocke) K: light trap 5 exx on dwarf birch mire '21-28.6.1979' - '5-11.7.1979'; Kevonniemi 1 ex 29.6.1978 and 2 exx 2.7.1978 on the previous mire (ELI). U: Ailigas 1 ex on fell heath 18.6.1937 (67: WHe); Utsjoki 1955 and 1956, e.g. Luobmosjävrik 4.7.1955 (6: MSc-pc).
Callisto coffeella (Zetterstedt) U: Utsjoki village 1 ex in birch forest 30.6.1930 (16: WHe, 96, 67), 1 ex 15.6.1937 (67: WHe), and 6.7.1968 (VKa); Kenojärvi 1 ex 14.6.1937 (67: WHe); Pihltoja some specimens on river shore and fell slope 23.6-10.7.1949 (8: WHa); Kariagsniemi 1 ex 5.7.1949 (ESu), and 29.6.1977 (MAH); Kevojoki 9.7.1955 (MSc); Pappia 1 ex on dwarf birch mire in 1955 and Pulmankijoki 1 ex in 1956 (6).
 Phylloporcycter sorbi (Frey) K: Tiesekulohka several mines on rowan 30.8.1979 (HHu & SKo).
P. junonellus (Zeller) K: light traps 30 exx '4-10.7.1973' - '28.8-3.9.1975'; Kevonniemi 1 ex on willow bush 9.7.1970 (ELI). U: Pihltoja 1 ex 5.7.1949 (8: WHa); Kevojoki 1 ex in 1955 (6); Pulmankijoki 10.7.1956 (MSc), and 7.7.1976 (MAH); Kariagsniemi 1 ex 16. and 18.7.1977 (AKu).
P. spinidellus (Duponchel) K: light trap 1 ex '10-16.7.1975'. U: Utsjoki village 1 ex 15.6.1937 (67: WHe), and 7.7.1968 (VKa); Luobmosjävrik, Kevojoki, and Utsjoki village abundant around willows in 1955, e.g. Kevojoki 9.7. (6: MSc-pc); Pulmankijoki 2 exx in 1956 (6).
P. rolandi (Svensson) K: light traps 2 exx '24-30.7.1975' and '1-7.8.1973'.
P. strigulatus (Lienig & Zeller) U: Pulmankijoki mouth 6.7.1953 (JKi).
P. andwart (Fletcher) U: Luobmosjävrik, Kevojoki, and Utsjoki village abundant around birches and dwarf birches in 1955, e.g. 4-9.7. (6: MSc-pc); Pulmankijoki 3 exx in 1955, e.g. 10.7. (6: MSc-pc).
P. ulmi-foliellus (Hübner) K: light traps 17 exx '4-12.6.1973' - '6-10.7.1971'; Kevonniemi 1 ex 16.6.1973, 1 ex 14.6.1979 (SKo), and 1 ex 28.6.1978 (ELI); mines abundantly on mountain birch, especially in 1972 (42), also reared from mines in 1974 and 1975 (SKo & ELI). U: Pihltoja 1 ex 28.6.1949 (8: WHa); Pulmankijärvä 1 ex 2.7.1978 (ELI); mines at several localities (SKo).

- Phyllocnistidae
Phyllocnistis labyrinthella (Bjerkander) K: light trap 1 ex '16-22.7.1976'. U: Utsjoki village 1 ex 6.7.1968 (VKa).
 Sesidae
Synanthedon scoliaeformis (Borkhausen) K: Kevonsu 2 males 21.7.1959 (27: RJu). U: Utsjoki village 1 ex '1-6.7.1972' (R 8/72: HAt & LDö & JKe); emergence holes on birch trunks abundantly e.g. Luobmosjävrik 1976 (MVu).
S. caliciformis (Linnaeus) U: Utsjoki village 1 ex '19-21.7.1939' (67: KKi, 70); Kevojoki 1 female 1 rich woodland west of Moskuskaidi 15.7.1961 (27: RJu); Rievsälkäjärvi and Nuorgam in 196 (VMA); Kariagsniemi 2 exx 9.7.1974 (LDö & LFe & HHO).
S. polaris (Staudinger) U: Vuolho Tsuogjävri 1 ex 28.6.1953 (82: JKi, 70); Teno shore east of Ahkängäs 2, males 1.7.1953 (82: MKo-pc, 70); Kariagsniemi several larvae in willow stems 2.7.1976, adult emerged (MVu).
 Glyptopterigidae
Glyptopterix haworthiana (Stephens) K: Kevonniemi 1 ex on flower of cloudberry 16.6.1974 (SKo U: Utsjoki village some specimens in 1937 (67: WHe & ANo).
 Yponomeutidae
Blastotera gibbriatella (Zeller) U: Kariagsniemi 1 ex 6.7.1958 (MSc); Pulmankijärvä 1 ex in birch forest 2.7.1978 (SKo & ELI).
Argyrosetia abdominalis Zeller K: light traps 30 exx '11-18.7.1973' - '7-13.8.1975'. U: Pihltoja 1 ex 5.7.1949 (WHA, MH); Kariagsniemi 1 ex 18.7.1956 (MSc).
A. pygmaea (Denis & Schiff) K: light traps 38 exx '18-24.7.1979' - '29.8-4.9.1978'. U: Pulmankijoki 2 exx 16.7.1953 (JKi).
A. conigella Zeller K: light traps 3 exx '18-24.7.1974' and '25-31.7.1978'; Tiesekulohka 1 ex on rowan 17.7.1970 (ELI). U: Tsuomasavari 1 ex on southern slope 9.7.1979 (ELI).
Yponomeuta evonymellus (Linnaeus) K: light traps 4 exx '1-7.8.1973' - '9.9.1974'.
Kesleriella fascipennella (Stainton) U: Utsjoki village 1947 (8: WHe).
Svammerdamia caesiella (Hübner) U: Pihltoja 1 ex 25.6., 30.6. and 12.7.1949 (8: WHa); Kevojoki 9.7.1955 (MSc); Utsjoki 1956 (6); northwestern Utsjoki 1 ex at Teno 30.6.1970 (JAD).
S. passerella (Zetterstedt) U: Utsjoki 1955 and 1956 (6).
Parasvammerdamia lapponica (W. Petersen) K: Kevonniemi 1 female reared from dwarf birch 1975 (HOJ). U: Kaldosarvi 1 ex 4.7.1956, and K. Ailigas 1 ex in birch zone 18.7.1956 (6: MSc-pc); Kariagsniemi 1 male in birch forest 6.7.1976 (LSJ).
P. conspersella (Tengström) K: light traps 2422 exx '13-19.6.1973' - '27.8-2.9.1976' (48); ve abundant in the whole area (SKo, ELI). U: abundant in birch forests at several localities (80, 96, 6).
Xyptolopha parenthesella (Linnaeus) K: light traps 10 exx '15-21.8.1974' - '11-17.9.1975'; Lemvarti 1 ex reared from mountain birch in 1975 (HOJ).
Pruella xylostellata (Linnaeus) K: light traps 66 exx '13-19.6.1974' - '12-19.8.1972' and during 1972-73; 29.8-4.9.1978 - 1.10.1974 (see Fig. 14) (48); Kevonniemi and Pukaskioldi e parate late flight '29.8-4.9.1978' and mass occurrence after 24.6.1978 (SKo & ELI), a 1 ex 6. and 14.7.1970 (ELI), 1 ex 3.6.1978 and mass occurrence after 24.6.1978 (67: BLJ), 1937 (6: ANo), 1949 (8: WHa), 1954, 1955, and 1956 (6), 1966 (MRA), 1970 (JAD), 1974 (AKu), 1978 ve abundant everywhere from 24.6. (SKo & ELI, cf. 59, 48), 1979 (SKo).
Rhagozosis senilis (Zetterstedt) K: Kevonniemi 1 ex 28.5.1979 (SKo). U: Utsjoki village 1 mi 16.6.1937 (67: ANo, MH).
R. annulata (Curtis) U: Utsjoki village 1 ex 16.6.1937 (67: ANo, MH).
 Epimeriidae
Phaenieris fulvigitella (Zeller) K: Rassejohka 28 exx 6.7.1970 and 13 exx 8.7.1970 on flowers angelica (ELI & HMY), Rassejohka larvae feeding on seeds of angelica in 1974 (HHu) and 1979 (AC U: Pulmankijoki 1 ex 10.7.1956 (6: MSc-pc); Tsuomasavari 7 exx on angelica 10-11.7.1979 (JJa); 1 ve in 1979; Luobmosjävrik about 50% of seeds infested (AOJ), Teno valley between Nuuvvas a Utsjoki village, and Varsälkäggi (AOJ, SKo).

- Schreckensteiniidae
Schreckensteiniella festiella (Hübner) U: Pihntioja 1947 (8: WHe).
- Coleophoridae
Coleophora miltipennis Zeller K: light traps 2 males '4-10.7.1973' and '27.7-5.8.1977'.
C. yviniella Zeller K: light traps 2 males '1-18.7.1973' and '24-30.7.1975'.
C. idaeella Hofmann K: light traps 32 exx '26-28.6.1972' - '31.7-6.8.1975'. U: Utsjoki village several specimens in birch forest at Utsjoki mouth 9.7.1976 (LSJ).
C. vacciniella Herr-Schäffer K: light traps 17 exx '26-28.6.1972' - '27.7-5.8.1977'. U: 'Utsjoki' 1956, e.g. Pulmankijoki 7.7., Pulmankijärvi 12.7., Mietaslampole 26.7. (6: MSc-pc); Karigasniemi 12.7.1959 (ONY); Utsjoki village 1 male 10.7.1970 (ELJ); Tsuomasvarti 1 male 10.7.1979 (ELJ).
C. leai Stainton U: Utsjoki village 1 ex 1936 (67: BLJ).
C. plumbella Kanerwa U: Pihntioja some specimens on *Vaccinium uliginosum* in birch forest 1.7.1949 (8: WHa); Pulmankijoki 1 ex 9.7.1956 (23: MSc-pc); Karigasniemi 4 exx in birch forest 6.7.1976 (LSJ).
C. vitisella Gregson K: light trap 1 ex '21-26.7.1977'. U: Karigasniemi 4 exx in birch forest 6.7.1976 (LSJ).
C. glizella Hofmann K: light traps 386 exx '26-28.6.1972' - '7-13.8.1975' (48); Kevonniemi several specimens in birch forest 9-14.7.1970 (ELJ). U: abundant at several localities in birch forests and alpine sites, e.g. Pulmankijoki and Pulmankijärvi very abundant in 1956 (6: MSc-pc).
C. murinella Tengström K: light traps 164 exx '11-24.6.1976' - '31.7-6.8.1975'; Kevonniemi 1 ex in birch forest 9.7.1970 and 6.7.1971 (ELJ). U: Karigasniemi several specimens 6.7.1976 (LSJ); Utsjoki village several specimens 9.7.1976 (LSJ); Tsuomasvarti 11 males 10.7.1979 (JJa & ELJ).
C. thula Johansson U: Pulmankijoki some specimens on luxuriant shore meadows in 1956, e.g. 7.7. (6: MSc-pc); K.A.Higgins 1 ex on slope 6.7.1976 (LSJ); Tsuomasvarti 2 exx in brook side birch forest 10.7.1979 (ELJ); Väisälgegi several larvae on cloudberry on palsa bog in 1977, 1978 and 30.8.1979, some adults reared (SKO).
C. orbicella Zeller K: light traps 14 exx '26-28.6.1972' - '31.7-6.8.1975'; Kevonniemi some larvae on mountain birch in 1972-73 (42: ELJ, SKO). U: Karigasniemi 2 exx 6.7.1976 (LSJ); Tsuomasvarti 1 male 10.7.1979 (JJa); larvae on mountain birch at many sites especially in 1973 (44).
C. traccella Zeller U: Karegansjarga ca 10 exx 8-12.7.1977 (B 4/77: AKU-pc).
C. deauratella Lieng & Zeller U: Karigasniemi 1 ex 4.7.1967 (ELJ).
C. spissicornis (Haworth) U: Karigasniemi 1 ex 6.7.1958 (MSc).
C. glaucicollis Wood U: Pappila 1955 (6).
C. murinipennella (Duponchel) U: Pappila some specimens on meadow in 1955 (6).
C. alticollis Zeller U: Pappila some specimens in 1955 (6).
C. virgurea Stainton K: light traps 5 exx '16-22.7.1976' - '6-12.8.1977'. U: Utsjoki village 3 exx in 1936 (67: BLJ); 'Utsjoki' 1955 and 1956, e.g. Pulmankijoki 10.7.1956, Pulmankijärvi 12.7.1956, Pappila 15.7.1956, and Karigasniemi 17.7.1956 (6: MSc-pc); Nuoragam and Vetsikko 8.7.1976 (MAh); Karigasniemi 1 ex 6.7.1976 (LSJ); Pappila 1 ex on meadow 9.7.1976 (LSJ); Tsuomasvarti 5 exx 13.7.1979 (JJa).
C. pappiferella Hofmann U: Pihntioja 1 ex 8.7.1949 (WHa, MH); Karigasniemi 1 female 7.7.1977 (AKU).
C. straitipennella Nylander U: Pappila 3 exx 19.7.1955 (MSc), and 3 exx on meadow 9.7.1976 (LSJ); Karigasniemi 2 exx 6.7.1976 (LSJ).
C. partipennella Zeller U: Utsjoki village 1 ex at Utsjoki mouth 2.7.1967 (VKA); Pulmankijoki 1 larval case on *Saussurea* at luxuriant brook side 10.7.1956 (6: MSc-pc); Tsuomasvarti 2 larvae on *Cirsium* at luxuriant brook side 12.7.1979 (ELJ).
Elachistidae
Elachista parussella Tr.-Olsen K: light trap 1 male '25-31.7.1978'. U: Aksoujuni and Kaldosivi in alpine belt in 1956, e.g. Kaldosivi 4.7. (6: MSc-pc); Pulmankijoki and Utsjoki valleys on dwarf birch mires in 1956, e.g. Pulmankijoki 7.7. (6: MSc-pc, 94), and Utsjoki village 13. and 15.7. (6: MSc-pc); Pestsikko 1 ex 3.7.1978 (ELJ); Tsuomasvarti 11 exx on southern slope 9-13.7.1979 (JJa & ELJ).
E. diederichella E. Hering U: Välimaa and Vetsikko 8 exx 8.7.1976 (MAh); Utsjoki village 1 ex 9.7.1976 (LSJ); Karigasniemi 1 ex 16.7.1976 (AKU).

- E. ingvarella* Tr.-Olsen K: light trap 1 male '14-20.7.1977'. U: U.A.Higgins 1 male in birch forest (northern slope 2.7.1976 (B 4/78: HHo-pc)).
E. humilis Zeller U: Tsuomasvarti 1 male in birch forest on southern slope 10.7.1979 (JJa).
E. pulchella (Haworth) K: light trap 1 ex '20-26.6.1973'.
Biseldichsia kebneella Tr.-Olsen & Schm. Nielsen U: Feiskerådijagak 1 female in birch forest 9.7.12.7.1959 (95: ONY-pc).
B. serricornis (Stainton) K: Kevojoki mouth 8 exx on shore meadow 29-30.6.1978 (ELJ, 54).
B. albivella (Nylander) U: Tsuomasvarti 1 ex on sedge mire on southern slope 12.7.1979 (ELJ).
Cosmiotes exactella (Herr-Schäffer) K: light traps 3 exx '13-19.6.1974' - '24-30.7.1975'; Kevonniemi 1 ex 29.6.1978 and 2 exx 3.7.1978 (ELJ).
Oecophoridae
Pleurota bicostella (Clerck) K: light traps 584 exx '27.6-3.7.1973' - '13-19.8.1976' (48); abundant in birch forests in the whole area. U: abundant at several localities, the earliest observation 25.6.18 (80: JSA, 67), (16, 96, 6).
Schiffmueleria similis (Hübner) K: light traps 96 exx '27.6-3.7.1973' - '14-20.8.1975'; Kevonniemi some specimens among the following species, the earliest observation 28.6.1978 (ELJ). U: probably overlooked because of the abundance of the following species, the only observations known us are Karigasniemi 1 ex 29. and 30.6.1976 (MVN), and Tsuomasvarti 2 exx 9.7.1979 (JJa).
S. stipella (Linnaeus) K: light traps 785 exx '20-26.6.1973' - '7-13.8.1975' (48); abundant in 1 whole area (SKO, ELJ, VRH). U: abundant in most years at several localities (80, 16, 96, 67, 8, 6).
Pseudatemelia josephinae (Toll) U: Utsjoki village 1 ex at Utsjoki mouth 9.7.1976 (LSJ, 54).
Semioscopsis ovelianella (Hübner) K: Kevonnuu 1 ex 2.6.1970 (ELJ & HMY); Kevonniemi 3 exx 24 1978 and 1 ex 2.6.1979 (SKO).
Agonopterix heracliana (Linnaeus) U: Utsjoki village 1 ex 21.6.1937 (67: ANO, MH).
Gelechiidae
Aithys prunosella (Lieng & Zeller) K: light traps 37 exx '27.6-3.7.1973' - '31.7-6.8.1975'; vonniemi 1 ex 9.7.1970 (ELJ). U: Karigasniemi 1 ex in birch forest 4.7.1930 (16: WHe, 96, 67); Pulmankijoki 1 ex 6.7.1956 (6: MSc-pc); Tsuomasvarti 1 ex 12.7.1979 (JJa).
Teloides partipunctella (Thunberg) U: Pulmankijoki 1956 (6: MSc, 54).
T. proxinella (Hübner) K: light traps 7 exx '27.6-3.7.1973' - '21-26.7.1977'. U: Kevojoki 15 and Pulmankijoki 1956 (6).
Telopsis diffinis (Haworth) U: Tenokoti 1 ex 14.7.1966 (MRa).
Bryotropha similis (Stainton) K: light traps 2 exx '11-18.7.1973' and '19-25.7.1973'.
B. galbanella (Zeller) K: light traps 150 exx '26-28.6.1972' - '31.7-6.8.1975'; Kevonniemi and F valtoavi several specimens (ELJ). U: abundant at several localities, preferring birch forests on slopes, the earliest observation 25.6.1894 (80: JSA, 67, 96), (16, 6).
B. purpurella (Zetterstedt) U: Utsjoki village several specimens on dry grassy slope in 1937, e.g. 1 21.6. (67: ANO, MH); Pappila several specimens on meadow in 1955 and some specimens in 1956 (MSc).
Chionodes viduella (Fabricius) K: Puksalaikaidi 1 ex on flower of cloudberry 15.6.1970 (ELJ); Rajohka mouth 2 exx 6.7.1970 (ELJ); Kevonniemi 1 ex 29.6., 30.6. and 2.7.1978 (ELJ). U: rare in the area, usually singly in moist birch forests and fell slopes, the latest observation 24.7.1; (67: RKR), (6).
C. lugubrella (Fabricius) K: light traps 428 exx '11-24.6.1976' - '29.8-4.9.1978' (48); Kevonniemi rather abundant (SKO, ELJ). U: rather abundant at several localities, however, only few old records (67, 6).
C. violacea (Tengström) U: Karigasniemi 1 male 8.7.1973 (ELA), 1 male 16.7.1977, and 1 male 21 1977 (AKU).
C. distinctella (Zeller) U: Utsjoki village 1956 (MSc).
C. confusella (Zeller) K: light traps 256 exx '22-25.6.1972' - '7-13.8.1975' (48); Kevonniemi; Rassejohka several specimens (SKO, ELJ). U: abundant at several localities, preferring dry heaths (16, 96, 67, 6).

- C. rubicella* (Zetterstedt) K: light traps 88 exx '22-25.6.1972' - '6-12.8.1977'; Kevonniemi 1 ex 9.7.1971 (ELI). U: rather scarce, usually singly on dry heaths and alpine sites (67, 6).
- Lia sexpunctella* (Fabricius) K: light traps 2 exx '27.6-3.7.1973' and '5-11.7.1979'. U: Utsjoki village 1 ex 2.7.1930 (16: WHe, 96, 67), and rather abundant from 20.6. in 1937 (67: ANO); Pihitioja 28.6-11.7.1949 (8: WHA); 'Utsjoki' 1955 and 1956 (6); Pulmankjärvi 4.7.1974 (MAh); Karigasniemi 1 ex 6.7.1974 (AKu), and 29.6.1977 (MAh).
- Aroga veloxella* (Zeller) U: Utsjoki village 1936 (67: BLJ), and abundant on dry grassy slopes from 15.6. in 1937 (67: ANO); Pihitioja 1-9.7.1949 (8: WHA); Karigasniemi 1 ex 5.7.1949 (ESU); Pappila 11.7.1955 (MSC).
- Neofaculia infernella* (Herr-Schäffer) K: light traps 33 exx '22-25.6.1972' - '27.7-5.8.1977'; Kevonniemi some specimens (SKO, ELI). U: fairly abundant at several localities, the earliest observation 19.6.1937 (67: ANO), (16, 96, 6).
- Flutina incomptella* (Herr-Schäffer) U: Utsjoki village 2 exx in 1936 (67: BLJ).
- Altenia perspersella* (Wocke) K: light traps 12 exx '27.6-3.7.1973' - '2-11.7.1976'. U: rather scarce, usually singly on Empetrum heaths, the latest observation 17.7.1956 (6: MSC-pc), (16, 96, 67).
- Gnorimoschema valdeillum* (Staudinger) U: Teno shore near Talvadas 5 exx 29.6.1970 (JAl).
- Scrobipalpa arriplicella* (F. v. Röselst.) K: light trap 4 exx 18.6.1974 - 23.7.1974.
- Aproaerema anthyllidella* (Hübner) U: locally on sandy river shores; Pulmankijoki 10.7.1956 (MSC); Karigasniemi, Teno shore in 1956, e.g. 18.7. (6: MSC-pc); Teno shore near Nuuvus 3 exx 29-30.6. 1970 (JAl); south of Karegasnjärge 1 male 19.7.1977 (AKu); Karigasniemi 1 male 21.7.1977 (AKu).
- Meomphidae*
- Mompha locupletella* (Denis & Schiff) K: Kevonniemi 3 exx 16.7.1978 (VRJ). U: Pulmankijoki 1 ex in 1956 (6); Tsuomasavari 3 exx on Epilobium 13.7.1979 (JJa & ELI); moist site near Urtroaivi 3 exx 13.7.1979 (JJa).
- M. ruschkei* (Zeller) U: Karigasniemi 1 ex 6.7.1958 (MSC).
- M. idaei* (Zeller) K: light traps 21 exx '27.6-3.7.1973' - '6-12.8.1977'. Kevonniemi 2 exx in July 1973 (SKO), and 1 ex 8.7.1979 (RR0).
- M. conhubaei* (Hübner) K: light traps 43 exx '11-18.7.1973' - '15-21.8.1978'; Kevonniemi 1 ex in July 1973 (SKO).
- M. nodicollella* Fuchs U: Utsjoki village 1 ex 17.6.1937 (67: ANO).
- Panacalia lareilleiella* (Curtis) U: Pihitioja 1947 (8: WHe); 'Kuolba' 1 ex on meadow 1.7.1949 (8: WHA); Pulmankijoki 1 ex in 1956 (6).
- Glyptipteryx razzowskii* (Riedl) U: Inarjoki shore south of Karegasnjärge 1 ex on flood meadow with willows 8.7.1979 (JKK).
- Tortricidae*
- Choristoneura lapponana* (Tengström) K: light trap 1 ex '11-13.7.1971'. U: U.Ahigas 2.7.1936 (67: BLJ), and 6.7.1976 (HHO); 'Utsjoki' 1955 and 1956, e.g. Pappila 1 ex 13. and 14.7.1955 (6: EDu-pc), and Tsuodjavarri 1.7.1956 (6: MSC-pc); Karigasniemi 8.7.1958 (MSC), 1 ex '1-5.7.1976' (MVu), and 1 male 11.7.1977 (AKu); Tenokki 1 ex 10.7.1966 (MRA); Vaisjälgegi 1 ex 29.6.1970 (ELI); Nuuvos-Ahigas 1 ex 30.6. and 3.7.1970 (JAl).
- Syndemis musculina* (Hübner) U: Outakoski 1 ex (ETH, MH).
- Aphelia vihurana* (Denis & Schiff) U: fairly scarce, preferring fells up to tops, however, widely distributed; also reared from dwarf and mountain birch (67); 21.6.1894 (80: JSa, 67) - 22.7.1977 (Efr, AKu), (16, 96, 6).
- Lozotania forsterana* (Fabricius) K: light traps 20 exx '21-28.6.1979' - '19-25.7.1973'; Kevonniemi and Jesnavarri some specimens (SKO, ELI). U: fairly abundant in birch forests, in 1894 already from 17.6. (80: JSa, 67), (16, 96, 6).
- Ellia miniatura* (Linnaeus) K: light traps 46 exx '21-28.6.1979' - '25-31.7.1978'; Kevonniemi and Rassejohka some specimens (ELI). U: abundant in birch forests at several localities, in 1894 already from 20.6. (80: JSa, 67), (16, 96, 6).
- Bana ossana* (Scopoli) K: light traps 342 exx '29.6-2.7.1972' - '28.8-3.9.1975' (48); Kevonniemi and Puskasajoki abundant in the latter part of July (SKO, ELI). U: abundant at several localities, in some years very abundant, prefers birch forests and meadows; in 1937 already from 25.6. (67: ANO);

also larvae found (67: ANO); (80, 16, 96, 6).

- E. penziana* (Thunberg) K: light trap 1 ex '11-17.9.1975'.
- Acteris aspersana* (Hübner) K: light traps 13 exx mainly on mire '8-14.8.1979' - '5-11.9.1975' reared from cloudberry in Lapland (SKO).
- A. maccana* (Treitschke) K: light traps 3 exx '14-20.6.1979' and '5-11.9.1979' - '11-17.9.1975'.
- Spangrothia rubicundana* (Herr-Schäffer) K: light traps 313 exx '13-19.6.1974' - '7-13.8.1977' (48); Kevonniemi abundant in birch forests (SKO, ELI). U: rather abundant in birch forests and pine heaths, the main flight period in the middle of July, (80, 96, 67, 6).
- S. abiskona* (Garradja) U: Nilttyvuopio 1 ex 28.7.1905 (67: RKJ); Karinjärge 1 ex 4.7.1930 (16: WH 67); scarce in alpine belt in 1956 (6), e.g. Kaldodovi 2 exx 4.7. (EDu-pc), Tsuodjavarri 30.6. Aki 5.7., and Pulmankijoki 7.7. (MSC-pc); U.Ahigas 1 male 8.7.1966 (ELa), and 12.7.1966 (JAnuvos-Ahigas 2 exx in birch zone 27.6.1970 (JAl); Vaisjälgegi 2 exx in dwarf birch site 30.6.1977 (ELI); K.Ahigas 2 exx 6.7.1974 (AKu).
- Olethreutes ledianus* (Linnaeus) K: Kevonniemi 1 ex 18.6.1971 (ELI). U: usually singly on Ledu mires; Nuorgam 1 ex 7.7.1930 (16: WHe, 96, 67), and 1 ex 7.7.1974 (ELa); Utsjoki 1955 and 1956, e.g. Kevojoki 10.7.1955, Pulmankijoki 7. and 9.7.1956 (6: MSC-pc); Utsjoki village 3.7.1966 (JAnuvos-Ahigas 1 ex in 1968 and 3 exx 30.6.1974 (HHO), and 3 exx 1-3.7.1977 (MVu); Pulmankijoki 7.7.1976 (MAh); Tsuomasavari 1 ex 10.7.1979 (JJa).
- O. bifasciatus* (Haworth) K: light trap 1 male on dwarf birch mire '11-17.9.1975'.
- O. obsoletanus* (Zetterstedt) K: light traps 748 exx '23-25.6.1972' - '15-21.8.1978' (48); abundant all over the area (SKO, ELI). U: very abundant in willow meadows, mires, birch forests and alpine belt (80, 16, 96, 67, 8, 6).
- O. arbutellus* (Linnaeus) K: light traps 23 exx '22-25.6.1972' - '26-31.7.1973'. U: 'Utsjoki' 19 and 1956, e.g. Utsjoki village 15.7.1956 (6: MSC-pc); Karigasniemi 1 male 21.7.1977 (AKu).
- O. aquilonianus* (Karvonen) U: Nuuvus 1 ex 27.6.1970 (JAl).
- O. noricinus* (Herr-Schäffer) U: northwestern Utsjoki 3 exx in alpine belt 1.7.1970 (JAl).
- O. lacunarius* (Denis & Schiff) K: light trap 3 exx '29.6-2.7.1972' and '3-7.7.1972'. U: Pihitioja some specimens 8-10.7.1949 (8: WHA); Pulmankijoki some specimens 10.7.1956 (6: MSC-pc); Nuorgam 7.7.1967 (HVa); Vetsikko 8.7.1976 (MAh); Karigasniemi 4 males 11-21.7.1977 and 1 female 7.1977 (AKu).
- O. bipunctatus* (Fabricius) K: light traps 23 exx '4-10.7.1973 & 1974' - '31.7-6.8.1975'; Kevonniemi 1 ex 9.7.1970 and 2.7.1978 (ELI). U: many observations at several localities, mainly on mire and moist places, in 1930 already 1.7. (16: WHe, 96, 67); larvae on dwarf birch (67: ANO); (8, 6).
- O. hyperboreanus* (Karvonen) K: light traps 800 exx '27.6-3.7.1973' - '7-13.8.1975' (48); very abundant in birch forests, with remarkable yearly fluctuations (SKO, ELI). U: locally abundant in different parts of the area, e.g. Pulmankjärvi 1956 (6), and Nuuvos-Ahigas 1970 (JAl), (67).
- O. palustranus* (Lienig & Zeller) U: Nuorgam 1 ex on brook side willow bushes 6.7.1930 (16: WH 96, 67), and 2 exx 25.6.1937 (67: ANO, MH); Utsjoki village 1936 (67: BLJ); west of Kakisavari exx on mire 12.7.1966 (MRA).
- O. schulzianus* (Fabricius) K: light traps 405 exx '13-19.6.1974' - '7-13.8.1975' (48); several specimens in the whole area (SKO, ELI), in 1970 the first already 8.6. and later in June very abundant (ELI). U: abundantly on mires, fells, and in birch forests, in some years very abundant (80, 16, 67, 8, 6).
- O. schaefferanus* (Herr-Schäffer) K: light traps 9 exx '3-7.7.1972' - '21-26.7.1977'. U: fairly abundant, e.g. in birch forests and shrubs on fell slopes, in 1937 already 16.6. (67: ANO), (16, 96, 6).
- O. furiosanus* (Herr-Schäffer) U: Pihitioja 1 ex 8.7.1949 (WHA, MH); 'Utsjoki' 1956 (6).
- O. concretanus* (Wocke) K: light traps 2 exx '4-10.7.1973'. U: usually singly in birch forests; slope mires; Utsjoki village 1 ex in 1936 (67: BLJ), 13. and 15.7.1956 (MS6), 1 ex 10.7.1962 (ON 1 ex between Pappila and Utsjoki village, and 1 ex between Nivajoki and Nuorgam in 1955 (6); Karigasniemi 1 ex 9.7.1959 (ONY), 1 ex 6.7.1974 (AKu), 1 ex 1.7.1976 (MVu), and 1 ex 6.7.1976 (U.Ahigas 1 male 7.7.1966 (ELa), and 2 exx 11.7.1978 (HHO); K.Ahigas 1 female 19.7.1977 (AK Tsuomasavari 1 ex 9.7.1979 (JJa).
- Hedy atropunctana* (Zetterstedt) U: usually local with very great fluctuations, in the last years very scarce; Utsjoki village 1936 (67: BLJ); Karejärvi 3 exx 14.6-19.7, and Utsjoki village 16.6.1937 (WHe); Utsjoki village very abundant and Nuorgam some specimens in 1937 (67: ANO); Kistuskä

- great numbers on fell shrubs 1-9.7.1949 (8: WHa); abundant on alpine fells and birch forests in 1955 (6: EUu & MSc-pc), some specimens in 1956, e.g. Pappia 3 exx 15.7.1956 (6: MSc-pc); Pulmankijärvi 1 ex on sandy shore 2.7.1978 (ELJ).
- H. rossomaculana* (Herr.-Schäffer) U: Utsjoki village 1 ex in 1955, and Pulmankijoki 1 ex 9.7.1956 (6: MSc-pc); Nuuvus 1 ex 2. and 4.7.1970 (JAl).
- Orthocentrus nudilana* (Denis & Schiff) K: light traps 5 exx '11-17.7.1974' - '25-31.7.1978'. U: Karigasniemi ca 10 exx in birch forest in 1956, e.g. 1.7. (6: MSc-pc), 10.7.1974 (HHo), 6 exx 6.7.1976 (LSJ), and 2 males 22.7.1977 (AKu); Pulmankijoki 27.7.1956 (MSc); Nuuvus abundant in birch forest on fell slope in 1970 (JAl).
- Apotomis bifida* (Heinrich) U: U.Ahligas 1 ex at foot of fell 13.7.1967 (JKO).
- A. moestana* (Wocke) K: light traps 10 exx '21-28.6.1979' - '21-26.7.1977'; Kevonniemi 1 ex in moist birch forest 29.6.1978 (ELJ). U: fairly scarce, however, in willow thickets and birch forests at several localities: Muotokanturit 28.7.1905 (67: RKr); Utsjoki village 1 ex 29.6.1936 (67: BlJ, MH), 1 ex 20.6.1937 (67: ANo), and 1 ex 9.7.1944 (R 3/56: JKI, MH); Pihitoja 1 ex 6.7.1949 (WHa); Pappia 1 ex 14.7.1955 (MSc); Pulmankijoki 3 exx in 1956, e.g. 10.7. (6: MSc-pc); Karigasniemi 1 ex 8.7.1958 (MSc); 1 ex 7.7.1974 (AKu), 6 exx 12-22.7.1977 (B 4/77: AKu-pc), and 1 ex 29.6.1977 (MAh); Nuorgam 5.7.1967 (HYa); U.Ahligas 1 ex 6.7.1976 and Vetsikko 8.7.1976 (MAh).
- A. boreana* Kroggerus K: light traps 41 exx '27.6-3.7.1973' - '7-13.8.1975'; Kevonniemi some specimens in birch forest (SKo, ELJ). U: typical species of birch forests, however, few older observations, e.g. Utsjoki village 1 ex 19.6.1937 (67: ANo, MH), great yearly fluctuations (6).
- A. soroculana* (Zetterstedt) K: light traps 3 exx '20-26.6.1973' - '4-10.7.1973'. U: rather scarce in birch forests in different parts of the area, 19.6.1937 (67: ANo, MH) - 14.7.1955 (MSc), (8).
- A. faterculana* Kroggerus U: Karigasniemi 1 ex 17.7.1956 (6: MSc-pc), and 1 male 11.7.1959 (ONy); Utsjoki village 1 ex in birch forest at Utsjoki mouth 7.7.1976 (LSJ).
- A. lemniscata* (Kenne) U: scarce on alpine heaths; U.Ahligas 1 ex 1.7.1936 (67: BlJ, MH), 1 ex 6.7.1967 (HYa), and 1 ex 3.7.1971 (ELJ); at several localities on fell heaths in 1956, e.g. Tsuodjavarri 1.7. and Aksouunni 5.7. (6: MSc-pc); northwestern Utsjoki 2 exx on fells in 1970 (JAl); Harremahonkka 1 male and female 7.7.1974 (ELJ); Kistussaidi 1 ex 8.7.1976 (LSJ); Tsuomasvarri 2 exx on dwarf birch growing fell top 10.7.1979 (JJa & ELJ).
- A. algidana* Kroggerus U: Pihitoja 1 ex on willow on mire 1.7.1949 (8: WHa); Pulmankijoki 1 ex 7.7.1956 (6: MSc-pc); Karigasniemi 1 male 19.7.1977 (AKu).
- A. sauciana* (Frölich) K: light traps 2 exx '20-30.6.1971' and '4-10.7.1973'. U: Nuorgam scarce in fen area 18.6.1994 (80: Jsa, 96, 67); Utsjoki 1955 and 1956, e.g. Kevojoki 7. and 10.7.1955 (6: EUu-pc), Kaldodaivi 4.7.1956 (6: MSc-pc); Utsjoki village 20.6.1960 (VVi); Karigasniemi 1 ex 6.7.1967 (SMu); northwestern Utsjoki 1 ex at Teno shore in 1970 (JAl).
- A. demissana* (Kenne) U: Kuorboarvi 1 ex 3.7.1956 (6: MSc-pc); Kenesjärvi (R 3/56: JKI); Karigasniemi 1 ex 11.7.1959 (ONy); Vaisjäggi 1 ex on willow thicket on mire edge 30.6.1970 (ELJ); Nuorgam 1 ex 8.7.1976 (MAh).
- Bactra lanceolata* (Hübner) K: light trap 1 ex '18-24.7.1974'.
- Ancylys complana* (Frölich) U: Pihitoja on mire 29.6. and 7.7.1949 (8: WHa); Pulmankijoki 1 ex in 1956 (6).
- A. uncella* (Denis & Schiff) U: Pihitoja 1 ex 8.7.1949 (8: WHa); Utsjoki 1955 and 1956, e.g. Pappia 11.7.1955 (6: MSc-pc); Karigasniemi 1 ex 6.7.1974 (AKu).
- A. unguicella* (Linnaeus) K: light traps 226 exx '13-19.6.1973 & 74' - '24-30.7.1975' (48); abundant in the whole area, early species with great yearly fluctuations (SKo, ELJ), in 1970 already from 3.6. (ELJ). U: abundant on dwarf-shrub heaths, however, we know no observations in 1976-79. (67, 8, 6).
- A. subarctica* (Douglas) U: Pihitoja 1 ex 29.6.1949 (8: WHa); Utsjoki 1955 and 1956, e.g. Pulmankijoki 8.7.1956 (6: MSc-pc).
- A. myrtilana* (Treitschke) K: light traps 594 exx '6-12.6.1974' - '7-13.8.1975' (48); several specimens in the area (ELJ). U: abundant in most years at several localities (16, 96, 67, 8, 6).
- Epinotia indecorana* (Zetterstedt) K: light traps 3 exx '27.8-2.9.1976' - '5-11.9.1977'.
- E. solandriana* (Linnaeus) K: light traps 13 exx '1-7.8.1974' - '13-22.9.1978'.
- E. brunniclana* (Linnaeus) K: light traps 2 exx 9.9.1974 and '11-17.9.1975'.
- E. maculana* (Fabricius) K: light traps 17 exx '22-28.8.1974' - '13-22.9.1978'.
- E. caprana* (Fabricius) K: light trap 1 ex '15-21.8.1979'.
- E. tetraquetra* (Haworth) U: Utsjoki village 5 exx 28.6-8.7.1936 (67: BlJ, MH), and singly from 15.6. in 1937 (67: ANo & WHa, MH); Nuorgam 2 exx 25.6.1937 (ANo, MH); Pihitoja from 15.6.1949, e.g. 4 exx 16.6-4.7. (8: WHa, MH); Outakoski (ETB, MH); Utsjoki very abundant at several localities in 1955, e.g. Kevojoki 4.7., only 5 exx in 1956 (6: EUu & MSc-pc); after that, we know of one observation: Utsjoki village 1 ex 18.6.1960 (ORA, MH).
- E. micella* (Clerck) K: light trap 2 exx '22-28.8.1973' and '5-11.9.1974'. (54).
- E. nemorivaga* (Tengström) K: light traps 21 exx '4-10.7.1973 & 74' - '31.7-6.8.1975'. U: Pihitoja some specimens in 1956 (6); Pappia 15.7.1956 (MSc); Tenokoti 1 ex 10.7.1966 (MRa); Karigasniemi 5 males 7-19.7.1977 (AKu); south of Karegnanjärvi 1 male 19.7.1977 (AKu).
- E. tedella* (Clerck) U: Kevojoki 1955 (6). Recorded also in Kilpisjärvi north of spruce line (83: HBr MSc, 52).
- E. cruciata* (Linnaeus) K: light traps 4 exx '25-31.7.1974' - '15-21.8.1978'; Kevonniemi larvae willow 28.6.1978, emerged in August (ELJ). U: Utsjoki 1956, e.g. Karigasniemi 18.7. (6: MSc-pc); Pihitoja larvae on willow in 1949, emerged in late July (8: WHa); Nuorgam larvae 8.7.1976 (MAh); Karigasniemi larvae 29.6.1977 (MAh).
- E. mercuriana* (Frölich) K: light trap 1 ex '25-31.7.1979'. U: Utsjoki village at Teno shore 24.1905 (67: RKo); Tsuomasvarri 10.7.1953 (JKJ); Utsjoki 1955 and 1956, e.g. Pappia 15.7.1956, and Karigasniemi 17.7.1956 (6: MSc-pc).
- E. cremana* (Hübner) K: Kevonniemi 1 ex 1. and 2.6.1979 (SKo). U: Pihitoja 1947 (8: WHa).
- Rhopobota unipunctana* (Haworth) K: light traps 12 exx '22-28.8.1974 & 78' - '11-17.9.1977'. U: Utsjoki village 1 ex 19.7.1977 (AKu).
- Zethopha diniana* (Guenee) K: light traps 181 exx '27.7-5.8.1977' - '11-17.9.1975' (48). U: Karigasniemi 1 male 19.7.1977 (AKu).
- Gypsonoma nitidulana* (Liemig & Zeller) K: light traps 6 exx '27.6-3.7.1973' - '24-30.7.1975'; Kevonniemi 1 ex 6.7.1971 (ELJ). U: Utsjoki village 22.7.1905 (67: RKr), and several specimens on dry slope in 1937, e.g. 22.6. (67: ANo, MH); Karigasniemi 1 male 11. and 21.7.1977 (AKu); Tsuomasvarri 2 exx 10.7.1979 (JJa & ELJ).
- Epißtina simpliciana* (Duponchel) U: Nuuvus-Ahligas 1 ex 30.6.1970 (JAl); Tsuomasvarri 1 ex on pine fell 11. and 12.7.1979 (B 3/79: JJa-pc).
- Eriopoda quadana* (Hübner) K: light traps 6 exx '22-25.6.1972' - '12.7.1974'; Kevonnu 1 ex 21.1978 (RKo); Kevonniemi 1 ex 30.6.1978 (ELJ). U: rather scarce, usually singly found at several to sites, preferring dry birch heaths (16, 96, 67, 6).
- Eucosma guentheri* (Tengström) U: Utsjoki village 1 male 3.7.1936 (67 & 57: BlJ, MH); northwestern Utsjoki locally abundant on sandy shore of Teno 30.6.1970 (JAl); Teno shore at Sparasuoto oinka several specimens in 1970, and 3 exx in 1973 (NOu); Karigasniemi 1 ex in 1976 (WVu).
- E. aspidiciana* (Hübner) U: Karigasniemi 1 ex 8.7.1958 (MSc), and 1 male 7.7.1977 (AKu).
- Petrova resinella* (Linnaeus) U: Pihitoja larval nodules on pine in 1949 (8: WHa).
- Panneme clanculana* (Tengström) K: Kevonniemi 3 exx on mire 28.6.1978 (SKo & ELJ). U: fa scarce on dwarf birch mires; Utsjoki village 1 ex in 1936 (67: BlJ), and 1 ex 15.6.1937 (67: WHa); Ahligas 1 ex 18.6.1937 (67: WHa); Pihitoja 3 exx 1-8.7.1949 (8: WHa); Pulmankijoki 2 exx 10.7.1. (6: MSc-pc); Karigasniemi 1 male 5.7.1974 (HHo), 1 male 7.7.1974 and 1 female 9.7.1974 (AKu), 1 male 29.6.1975 (HHo), and 29.6.1977 (MAh); Vetsikko 6.7.1976 (MAh).
- Cydia duplicana* (Zetterstedt) K: light trap 1 ex 11.7.1974.
- C. cognata* (Barrett) K: light trap 1 male '4-10.7.1973'. U: Karigasniemi 1 ex 16.7.1959 (OI C. confertana (Saxen) K: light traps 2 exx '4-10.7.1973' and 12.7.1974; Kevonniemi 1 ex 9.7.1966, and 3.7.1971 (ELJ). U: Karigasniemi 1 ex 9.7.1974 (AKu).
- C. strobilella* (Linnaeus) U: Utsjoki village 1 ex 17.6.1937 (67: ANo, MH).
- C. auroclana* (Tengström) K: Kevojoki mouth 1 ex on shore meadow 30.6. and 2.7.1978 (ELJ); Utsjoki village 1 ex in 1936 (67: BlJ), and 1 ex on river shore with *Astragalus alpinus* 20.6.1937 (WHa); Pulmankijoki 2 exx close to *Astragalus frigidus* vegetation 10.7.1956 (6: MSc-pc); U.Ahligas 4.7.1969 (ELJ); northwestern Utsjoki several specimens on Teno shore in 1970 (JAl); Karigasniemi 1 male 27.6.1976 (HHo), 29.6.1977 (MAh), several specimens 6-19.7.1977 (AKu), and rather undant 1.7.1978 (HHo); Tsuomasvarri 1 ex above birch zone 10.7.1979 (LJl).
- Dichoramypha gueneana* Obratzsov U: Karigasniemi 1 ex 6.7.1958 (MSc).

- D. plumbaria* (Scopoli) U: east of K.Ailigas 1 ex 7.7.1977 (Efr).
- Cochylidae**
- Aethes deusschiana* (Zetterstedt) K: light traps 9 exx '27.6.-3.7.1973' - '11.-18.7.1973'; several specimens in different sites of the area (SKO, ELI, RKO); the earliest observation 8.6.1970 (ELI). U: fairly abundant at several localities, e.g. in brook valleys, on river banks, and meadows, (16, 96, 67, 8, 6).
- A. smeathmanniana* (Fabricius) U: Kevonjoki 3 exx in 1955 (6).
- A. rutilana* (Hübner) K: light trap 1 ex 14.-20.7.1977. U: Utsjoki village 1 ex 1.7.1930 (16; WHe, 67); Pulmankijoki 2 exx in 1956 (6); Karigasniemi 7.7.1956 (MSO); Tenokoti 1 ex 14.7.1966 (MRA); Tsuomasavari 3 exx 8.7.1979 (JJa).
- Cochylis dubiana* (Hübner) K: light traps 2 exx '24.-30.7.1975' and '7.-13.8.1975'. U: 'Utsjoki' 1956, e.g. Pulmankijoki 9. and 10.7. (6; EEU & MSc-pc); Tsuomasavari 1 ex 9.7.1979 (JJa).
- Pyralidae**
- Chrysoteuchia culmella* (Linnaeus) U: Phittioja rather abundant on meadows from 6.7. in 1949 (8; WHa); 'Utsjoki' 1955 and 1956 (6).
- Cambus ericellus* (Hübner) K: Rassejohka mouth 1 ex on shore 15.7.1970 (ELI). U: at several localities, usually singly e.g. on dry slopes and shores, however, rather abundant at Pulmankijoki on Myrica in 1956 (6); 17.6.1937 (67; ANO) - 18.7.1969 (ELI); (16, 96).
- C. alienellus* (Germar & Kauff.) U: fairly abundant on fell mires in late June in 1894, e.g. in Nuorgam (80; JSA, MH, 96, 67); Utsjoki village 2 exx on mire in 1937 (67; ANO); Phittioja from 6.7. in 1949 (8; WHa); Karigasniemi 1 ex 7.7.1967 (ELI).
- C. nemorosus* (Hübner) K: light trap 1 ex '24.-30.7.1975'. U: locally on cultural meadows, sometimes abundantly, the earliest observation 30.6.1930 (16; WHe, 96), (67, 8, 6).
- C. hamellus* (Thunberg) U: Pulmankijoki several specimens on Myricaria in 1956, e.g. 8. and 9.7. (6; EEU & MSc-pc); Karigasniemi 3 exx 14.7.1974 (AKu).
- C. perbellus* (Scopoli) U: Utsjoki village 28.6.-6.7.1936 (67; BLI), and rather abundant on dry meadows in 1937, e.g. 6 exx 22.6. (67; ANO, MH); Vetsikko 24.6.1937 (ANO, MH); no new observations, also in Kilpisjärvi recorded only in 1938 (67; ANO) and 1939 (52; BLI).
- Agriphila stramineella* (Denis & Schiff.) U: Pappila some specimens on meadow in 1955 (6).
- A. hiarmica* (Tengström) U: 'Utsjoki' 12.7.1949 (VMA).
- Catoptria pennatella* (Herr.-Schäffer) U: east of K.Ailigas 1 ex 16.7.1954 (6; EEU-pc).
- C. furcatala* (Zetterstedt) U: several specimens in alpine regions of fells in different parts of the area, sometimes locally rather abundant, e.g. Tsuomasavari 9.-12.7.1979 (JJa & ELI), few old records; 25.6. 1894 (80 & 81; JSA, 96, 67) - 17.7.1956 (6; MSc-pc).
- C. maculalis* (Zetterstedt) K: light traps 13 exx '26.-28.6.1972' - '11.-18.7.1973'; Jemalvarri, Rassejohka and Kevonniemi several specimens (SKO, ELI), the latest observation 4.8.1977 (HOJ). U: rather abundant in birch forests, with yearly fluctuations; the earliest observation 23.6.1937 (67; ANO); (16, 96, 6).
- Gesneria centuriella* (Denis & Schiff.) K: light traps 5 exx '11.-18.7.1973' - '6.-12.8.1977'; Kevonniemi 1 ex in July 1973, 9. and 15.7.1979 (SKO). U: 'Utsjoki' 11.7.1950 (VMA); 'Utsjoki' 1954, e.g. 1 ex south of Karegansjarga 14.7. and Karigasniemi 17.7. (6; EEU-pc); Nuorgam 1 ex 15.7.1954, and Karigasniemi 1 ex 16.7.1954 (JKI); U.Ailigas 1 ex on top 10.7.1970 (ELI); south of Karegansjarga 1 ex 18.7.1977 (AKu).
- Scoparia ulmella* Karraes U: 'Utsjoki' 1 ex 11.7.1936 (67; BLI, MH).
- Eudonia alpina* (Curtis) U: rather abundant at several localities, e.g. on shore meadows, mires and in birch forests; 21.6.1937 (67; ANO) - 21.7.1917 (Fab, MH) & 1977 (AKu); (6).
- E. murina* (Curtis) K: light traps 137 exx '20.-26.6.1973' - '8.-14.8.1979' (48); Kevonniemi several specimens (SKO, ELI, HOJ). U: Utsjoki village 1 male and female 3.7.1936 (67; BLI, MH); Nuorgam 30.6. and Tsuomasavari 10.7.1953 (JKI); 'Utsjoki' 1954, 1955 and 1956, e.g. Pulmankijoki 10.7.1956 (6; EEU-pc); Karigasniemi 1 ex 30.6.1960 (VVI); Tsuomasavari 1 ex 10.7.1979 (JJa).
- E. sudetica* (Zeller) K: light trap 1 ex '11.-18.7.1973'; Kevonniemi 1 ex 11.7.1979 (SKO). U: 'Utsjoki' 1954 and 1956, e.g. Pulmankijoki 8.7.1956 (6; MSc-pc).
- Titanio schrankiana* (Hochenwarth) U: Pulmankijärv 1954 (KJ).
- Pyrausta porphyralis* (Denis & Schiff.) U: locally abundant on dry grassy slopes and meadows; Utsjo-

Ki village 1936 (67; BLI) and abundantly from 16.6. in 1937 (67; WHe & ANO), (ORA); Kenešjäki 1 ex 14.6.1937 (67; WHe & ANO); Phittioja 30.6.-8.7.1949 (8; WHa); 'Utsjoki' 1954, 1955 and 195 e.g. Karigasniemi 17.7.1956 (6; EEU & MSc-pc); Karigasniemi 8 exx 8.-12.7.1974 (AKu), ca 20 e 2.7.1978 (HHO), and 1 ex in 1979 (JKO).

Loxostege ephippialis (Zetterstedt) U: scarce and extremely local, obviously with great yearly fluctuations; Utsjoki village some specimens 16. and 23.6.1937 (67; ANO); Phittioja locally rather abundant on a meadow and Outakoski some specimens 28.6.-11.7.1949 (8; WHa); Pulmankijoki 1 ex 8.7.1956 (JKI); Pappila several specimens on meadow in 1955, e.g. 11. and 12.7. (6; EEU & MSc-pc), and 1 ex 1956 (6).

L. commixtalis (Walker) U: east of K.Ailigas 1 ex 14.7.1974 (AKu).

Anania funebris (Ström) U: Utsjoki villages on dry slopes in late July 1937 (67; ANO); Phittioja 26.6.-9.7.1949 (8; WHa); Leäkmashjohka valley 1 ex 14.7.1954 (6; RTe-pc); Kuorboavi 1 in 1956 (6).

Udea inquilinialis (Lienk & Zeller) K: light traps 2 exx '4.-10.7.1973' and '10.-16.7.1975'; Kevonniemi several specimens on mire, the latest one 17.7.1970 (ELI). U: in moist birch forests and mires; over the area, however, not usually abundant; the earliest observation 16.6.1937 (67; ANO); (80, 9 8, 6).

U. decrepitalis (Herr.-Schäffer) K: Pavvalroavvi some specimens 29.6.1970 (ELI). U: in birch forests and meadows, at several localities, but less abundant than the previous species, 16.6.1937 (67; ANO) 14.7.1955 (6; EEU-pc).

Pyralis hienigalis (Zeller) K: Kevonniemi 1 ex indoors 24.7. and 4.8.1970 (ELI), and 2 exx in Aug 1970 (HMV). U: Utsjoki village 1 ex indoors 24.6.1937 (67; ANO); Karigasniemi 1 ex 15.7.1954 (KSu, MT); Nuorgam (JKI); Tenokoti 1 ex 11.7.1966 (MRA).

Polopaeus dilensis (Wocke) U: locally fairly abundant, especially on sandy shores at Pulmankijoki Pulmankijärv and Karigasniemi, found also on alpine fells, e.g. Tsuomasavari (JJa & ELI); 1.7.19 (8; WHa) - 22.7.1977 (AKu); (6).

Dioryctria schuetzeella Fuchs K: light trap 1 ex 26.8.1974.

Metrostola vucchietella (Lienk & Zeller) U: K.Ailigas fairly scarce in alpine zone in 1956, e.g. 17. a 19.7. (6; EEU & MSc-pc); the only record in Kilpisjärvi area made also in 1956 (52).

Pyla fusca (Haworth) K: light traps 5 exx 12.7.1974 - 21.7.1974 and '5.-11.9.1974'; Kevonniemi 1 ex in July 1971 (ELI). U: 'Kuolba' 1 ex in birch forest 6.7.1949 (8; WHa); 'Utsjoki' 1955 and 19 (6); east of K.Ailigas 1 ex 14.7.1974 (AKu).

Citastis marginata (Denis & Schiff.) U: Utsjoki village 1 ex on a dry slope 17.6.1937 (67; ANO); Kevonniemi 1 ex 6.7.1956 (6; RU-pc); Pulmankijärv 1 ex ca 10 exx in 1953 (R 3/56; JKI, MKO-pc); Papp 1 ex 6.7.1976 (MAh).

Myelopsis tetricella (Denis & Schiff.) K: light traps 109 exx '11.-24.6.1976' - '25.-31.7.1978' (4) several specimens in the whole area (SKO, ELI); in 1970 already 15.6. (ELI). U: rather abundant several localities, from river shores to alpine heaths, usually in rather dry birch forests, (16, 96, 67, Apomyzelis bistriatellus (Hulst) K: light trap 1 ex '4.-10.7.1973'.

Pterophoridae

Platyphila tessendactyla (Linnaeus) U: Karigasniemi 1 ex 11.7.1959 (ONY), and several specimens 9.-16.7.1977 (AKu); east of K.Ailigas 1 male 20.7.1977 (AKu).

P. calodactyla (Denis & Schiff.) K: light traps 11 ex '11.-17.7.1974' - '29.8.-4.9.1978'; Kevonniemi 20.7.1948 (HAB); Kevonniemi some specimens in July 1973 (SKO). U: fairly abundant in luxuriant sites at lakes and rivers, the earliest observation 26.6.1936 (67; BLI, MH), (6).

Stenopilia veronicae Karvonen K: light trap 1 ex '6.-12.8.1977'.

Leioptilus osteodactylus (Zeller) U: Phittioja 1 ex on yard 14.7.1949 (8; WHa); south of Karegansjarga 1 male 19.7.1977 (AKu).

L. lephrodactylus (Hübner) K: Kevonnuu 2 exx 20.7.1948 (HAB), and 1 ex 2.8.1970 (ELI); Kevonniemi 1 ex 9.7.1970 (ELI). U: Utsjoki village 3 exx 3.-8.7.1936 (67; BLI, MH); Mierastjärvi and P mankiyöki 6.7.1953 (JKI); Pasijärvi 1954 (6; EEU); Aksonjumi 5.7.1956 (MSO); Pulmankijärv 1 ex abundant on Myricaria in 1956, e.g. 10.7. (6; MSc-pc); south of Karegansjarga 2 males 16.-19.7.1974 and east of K.Ailigas 2 males 20.7.1977 (AKu).

Hesperiidae

Pyrgus centaureae (Rambur) U: rather scarce on slope mires with cloudberry, usually singly; tens

specimens, 15.6.1947 (VMA) — 19.7.1977 (Efr & HFr); (67, 8, 68, 6, 27, 28).

Papilionidae

Papilio machaon Linnaeus K: Puksalaikaidi 1 ex 17.7.1973 (Ula); larvae on angelica in 1974, e.g. at Rassiöinka, also reared (HJu, Lls). U: observed only in five years in the area; Utsjoki village 1 ex 23. and 25.6.1937 (67: ANO); Karjarga 1 male 6.7.1950 (VMA); K.Ailigas 1 ex 11.7.1954 (6: RTe-pc), and Tuomasaari 1954 (JK); in 1973 about 20 exx at several localities 29.6. (VMA) — 19.7. (VMA), also larvae at Kevojoiki (Ula); in 1974 ca 20 observed specimens 30.6. (PKe) — 13.7. (VMA); (68).

Pieridae

Pieris brassicae (Linnaeus) U: Utsjoki village 1 female 3.7. and 3 exx 7.7.1936, also larvae on cabbage in 1936 (67: Bli), 1 male 23.6. and 1 female 24.6.1937 (67: ANO); Nuorgam 1 male 4.7.1960 (VMA & HVA); (68).

Arctogea napi (Linnaeus) K: abundant on meadow of Kevonsu (SKO, Ula, ELj, YR); singly in the whole area (27 & 28: RJu), the latest observation 16.8.1970 (ELE). U: singly at several localities, may be rather abundant on certain meadows depending on the year; 16.6.1937 (67: WhE & ANO) — 18.7. 1959 (27: RJu); (68, 6).

A. rapae (Linnaeus) U: Utsjoki village 3 exx 3—11.7.1936 (67: Bli); 2 exx in 1937 (67: ANO), 1 female 23.6.1973 (R 9/73: VMA-pc), and 1 ex 3.7.1973 (R 9/73: HAl); Niemelä 1 female 1.7.1973 (VMA); (68).

Anthocharis cardamines (Linnaeus) U: Karjarga 1 male 27.6.1967 (VMA); Karjasniemi 1 female 2.7. 1973 (R 9/73: HHO, 100), and 1 male 7.7. and 3 males & 5 females 8.7.1974 (R 8/74: LDö & LFe & HHO-pc); Karjasniemi 2 females 8.7.1974 (AKu); K.Ailigas 1 female 11.7.1974 (AKu); Utsjoki village 1 ex ca 30.6.1975 (KAH & KNU).

Colias hecla Lefebvre U: locally on shores of Teno from Nuorgam to Karjasniemi, where abundant on Thymus carpets at Teno, Karjasjoki, and Inarijoki; observed also on K.Ailigas (OSO), and at Pulmankijärvi (KJi, VMA, HVA), but not e.g. on shores of Utsjoki up from village; 21.6.1937 (67: ANO) — 28.7.1905 (67: USA); (96, 8, 57, 68, 6).

C. palaeno (Linnaeus) K: several specimens in the whole area (27 & 28: RJu, SKO, Ula, ELj). U: rather abundant in most years on meadows, mires etc., 29.6.1930 (16: WhE) & 1936 (67: Bli) — 22.7. 1977 (Efr & HFr), (68, 6).

Gonepteryx thami (Linnaeus) U: Utsjoki village 1 ex in 1947 (8: PNF); Karjarga 2 females 5.6.1949 (VMA); Niemelä 1 male 15.5.1976 (VMA); (68, 100).

Leptidea sinapis (Linnaeus) U: Niemelä 1 ex 27.6.1973 (VMA); Yläköngäs 1 female 30.6.1974 (R 8/74: PKe-pc, 100); Karjasniemi 1 female 30.6.1974 (R 8/74: LDö & LFe & HHO-pc), and 1 female 10.7.1974 (AKu).

Lycenidae

Lycæna phlaeas (Linnaeus) K: Kevonsu 1 ex on meadow in July 1976 (OOJ); U: fairly scarce, however, locally sometimes more abundant; usually on river shores and meadows at Teno, Inarijoki, Utsjoki, and Pulmankijoki; 3.7.1960 (VMA) — 20.7.1977 (AHO); (67, 68, 6).

L. helle (Denis & Schiff) U: Utsjoki village 1 ex 1.7.1936 (67: Bli), and singly on river banks 18—24.6.1937 (67: WhE & ANO); Kevojoiki 1 ex on meadow near Madjohka mouth 5.7.1956 (6: RJu, 27, 28); Utsjoki (ASA); (68).

Palaeopteryx sopianus hippothoe (Linnaeus) U: scarce, ca 20 exx on shore meadows, yards etc.; Yläköngäs 1 female 8.7.1922 (67: USA); Alaköngäs 2 males 6.7.1950 (VMA); Utsjoki village 1 female 15.7. 1936 (VMA); Pulmankijärvi S-end 1 male 5.7.1960 (VMA); Nuorgam 4.7.1970 (VA), 10.7.1973 (ER), and 1 male 16—22.7.1979 (AHO); Niemelä 1 male 16.7.1973 (VMA); Karjasniemi 1 ex 17.7. 1974 (MPo), 1 female 22.7.1977 (Efr & HFr), and 1 male 11.7.1978 (AJa); Pappia 5 males 8.7.1976 (JK); between Nuorgam and Utsjoki village 3 exx 11—12.7.1979 (SLe); (68).

Callophrys rubi (Linnaeus) K: some specimens in different parts of the area (SKO). U: fairly abundant on river shores and in birch forests, 16.6.1937 (67: WhE & ANO) — 13.7.1973 (ERö) & 1976 (VMA), (68, 6, 27, 28).

Celastrina argiolus (Linnaeus) U: Utsjoki village 1 ex 22.6.1937 (67: WhE, 68).

Lycæides ides (Linnaeus) U: locally fairly abundant with remarkable yearly fluctuations, from river shores to alpine belt; many observations e.g. in Karjasniemi and K.Ailigas; 26.6.1936 (67: Bli) — 22.7.1977 (Efr & HFr); (68, 6).

Vaccinia optivete (Knoch) K: abundant in the whole area (27 & 28: RJu, EHa & ThA, SKO, ELj). U: abundant or very abundant from river shores to moist sites of alpine belt, 24.6.1976 (HHO) — 27.7.

1905 (67: USA) (80, 16, 96, 8, 68, 6).

Agradies glandon (Pruener) U: K.Ailigas 1 female in alpine zone 8.7.1977 (B 4/77: AKu-pc).

Polyommatus icarus (Rottemburg) U: found only in some few sites, usually at river shores, sometimes locally fairly abundant; Utsjoki village some specimens 4—8.7.1936 (67: Bli), 1 female 20.6.1937 (6: ANO), and 1 male 3.7.1961 (VMA); Akukoski 1938 (NOU); Niemelä 1 male 11.7.1973 (VMA); Utsjoki 1954 and 1956, e.g. some specimens 14—17.7.1954 (6: EU-pc); Karjasniemi dozens of specimens 30.6—14.7.1974 (LDö & LFe & HHO, AKu), 6 males 6—22.7.1977 (Efr & HFr, AKu & JKu), and 1 ex 7.7.1979 (HSe); Pulmankijärvi S-end 1 male 3.7.1976 (VMA).

Nymphalidae

Nymphalis antiopa (Linnaeus) U: U.Ailigas observed in birch forest 23. and 24.6.1937 (67: ANK Karjasniemi 1954 (6: KSu); Niemelä 1 ex 7.7.1973 (R 9/73: VMA-pc); Yläköngäs 3 exx 30.6.19 (PKe); K.Ailigas 1 female 9.7.1974 (AKu); (68).

Yvrazza cardii (Linnaeus) K: Kevoniemi and summit of Jesnalvarti 4 exx seen 28—30.6.1978 (Efr SKO, ELj, ELj). U: observations in four years: 1949, 1954, 1972 and 1978; K.Ailigas 1 ex 5.7.19 (8: JKi 61); Utsjoki village 1 ex 6.7.1949 (61: PNF); Phitioja 1 ex 9.7.1949 (8: WhA, 61); Karjasniemi 1 ex seen 17.7.1954 (6: RTe-pc); Utsjoki 1954 (WHa); Niemelä 1 ex 7.7.1972 (VMA); Karjarga 1 11.7.1972 (VMA); Kevo 19.7.1972 (VLe, R 9/72); north of Kardeaarvi some specimens seen 29 1978 (SKO & ELj & RRO); for the migration of 1978 cf. (59, 77); (68, 30).

Aglais urticae (Linnaeus) K: only few adults found, Kevoniemi 1 ex 10.9.1972 (ELj), 1 ex 14. a 15.6.1974 (SKO); larvae yearly in the area, e.g. Koaskimpaki July 1971 (Lls & Msa, ELj), Pukse 1977 (SKO). U: rather abundant locally, where Urtica grows (cf. 60); the oldest lepidopteran observations in Utsjoki deal with this species: Pappia 16.6.1820 and 20.6.1821 (64); the earliest is 25.5.19 (79: KMO), hibernated specimens are sometimes seen till July, e.g. 8.7.1973 (ELA & LLa), 11.7.19 (AKu) and 12.7.1975 (RMA); abundant e.g. in 1973, then a new generation from 16.7. (VMA, also R 9/73); (68, 6).

Speyeria aglaja (Linnaeus) U: Akukoski 1 ex 2.8.1938 (68: NOU-pc).

Bolotia napaea (Hoffmannsegg) U: found in Finland only in Nuorgam and its surroundings outside Kilpisjärvi (cf. 68, 52); Nuorgam fairly abundant on meadow at Teno from 20.6. in 1894 (80 & 8 15a, 67), 2 exx 12.7.1936 (67: Bli, 57), 1953 (R 3/56: JKi, Mko-pc), several specimens 3.7.19 (VMA & HVA), 3 males and 1 female 12.7.1961 (VMA & ER), 2 males & 2 females 8.7.1976 and 1 male 9.7.1976 (MNU & PNU), and 5 exx 16—22.7.1979 (AHO); (96).

B. aguilonaris (Stichel) U: fairly scarce on mires at several localities, 21.6.1937 (67: ANO) — 27 1905 (67: USA), (68, 6).

Proclissiana autonomia (Esper) K: abundant, e.g. on slope mires of Jesnalvarti (EHa & ThA, SKO, ELj). U: locally abundant on mires and meadows with willow thickets, 24.6.1976 (HHO) — 15.7.1973 (K 16, 67, 8, 68, 6, 27, 28).

Glossiana selene (Denis & Schiff) K: Kevoniemi and Kevojoiki mouth several specimens (27 & 2 RJu, SKO, Ula). U: abundant on Teno shores and fell valleys, 22.6.1937 (67: ANO) — 22.7.19 (VMA) & 1977 (Efr & HFr), (8, 68, 6).

C. fœlia (Thunberg) K: abundant in the whole area, in birch forests and mires (27 & 28: RJu, SR Ula, ELj). U: abundant from river shores to alpine belt, 16.6.1937 (67: WhE & ANO) — 21.7.19 (67: KKk) & 1977 (Efr & HFr), (80, 81, 16, 8, 68, 6).

C. polaris (Boisduval) U: in alpine zone of highest fells, found e.g. on U.Ailigas, K.Ailigas, Paistun ht, Ruohir, Peiskko and Tuomasaari, 18.6.1894 (80 & 81: Jsa, 67) — 14.7.1961 (VMA & ER 96, 68, 6, 27, 28).

C. thore (Hübner) K: Puksalaikaidi locally abundant (27 & 28: RJu, Ula). U: fairly abundant loca in luxuriant brook sides in different parts of the area, 22.6.1937 (67: ANO) — 20.7.1939 (67: KK 57, 68, 6).

C. frigga (Thunberg) K: Kevoniemi 1 ex on mire 25.6.1974 (SKO). U: fairly scarce, found usua singly in moist river shore sites and small mires on fells, 10.6.1950 & 1964 (VMA) — 20.7.1975 (VM 80, 81, 67, 68, 6, 27, 28).

C. euphyrosyne (Linnaeus) K: Kevoniemi, Kevonsu and Jesnalvarti abundant on mires (27 & 2 RJu, EHa & ThA, SKO, ELj). U: abundant up to alpine zone, preferring mires and luxuriant bir forests, 20.6.1974 (SKO) — 21.7.1939 (67: KKk), (8, 68, 6).

C. charitæa (Schneider) U: abundant in many alpine fell areas, e.g. U.Ailigas and K.Ailigas, 18.6.18 (80 & 81: Jsa, 67) — 19.7.1971 (VMA), the main flight period 5—10.7., (96, 57, 68, 6, 27, 28).

Melitica athalia (Rottemburg) K: Puksalaikaidi and Kevojoiki valley several specimens (27 & 28: R

Ula). U: locally and yearly found, usually singly in slope birch forests and luxuriant river valleys, 29.6.1953 (VMA) — 27.7.1905 (67: USA), (8, 57, 68, 6).

Hypodryas iduna (Dahlman) K: Jasnajari 2 exx 2.7.1978 (EHa & THa). U: on mires and moist alpine fell heaths, very great yearly abundance fluctuations, e.g. 1961 very abundant (27: RJU, VMA), 1973 & 1977 almost lacking, 1974 & 1976 rather abundant, and 1978 & 1979 abundant all over the area; 19.6.1937 (67: ANO) — 21.7.1939 (67: KKI) & 1977 (EFr & HFr); (16, 96, 8, 57, 68, 6, 28).

Satyridae

Erebria ligea (Linnaeus) U: south of Karegansjarga 1 small-sized female 8.7.1979 (JK8).

E. medusa (Denis & Schiff) K: Kevonsu abundant on meadow in many years (SKO, ELI, VRJ), one of the most abundant butterflies in Kevojoiki area (27 & 28: RJU). U: abundant at several localities, however, only in valleys of Teno and its tributaries, usually on meadows, 19.6.1894 (80 & 81: JSA, 67) — 22.7.1977 (EFr & HFr), (16, 96, 8, 57, 68, 6).

E. dika (Thunberg) K: Pukalskaidi 1 ex on mire 28.6.1978 (SKO & ELI). U: fairly scarce, found some dozens of specimens on mires and moist fell slopes, also in alpine zone, 26.6.1972 (VMA) — 21.7.1939 (67: KKI), (8, 68, 6, 27).

E. embla (Thunberg) U: Utsjoki village 1 ex 17.6.1937 (67: ANO); Nuorgam (R 3/56: JKJ); 'Utsjoki' (ASA); Suorra Skallovarri 1 male and female on mire 23.6.1973 (VMA); (68).

E. pandrose (Borkhausen) K: abundant in the whole area (EHa & THa, SKO, ELI). U: abundant from river shores up to alpine fells, 16.6.1937 (67: ANO) — 23.7.1977 (EFr & HFr), (80, 16, 8, 68, 6, 27, 28).

Oenis norina (Thunberg) U: local and scarce species, usually singly found on fell mires between U. Ailigas, Harremahthohkka and Pulmankijärvi, some specimens also in Karigasniemi and its surroundings, fells of Kevojoiki area, and Pitioja; 18.6.1894 (80: ASB, 67) — 15.7.1961 (27: RJU) & 1954 (6: EDu & KSu-pc); (8, 57, 68).

O. bore (Schneider) U: locally fairly abundant on alpine summits and stone beds of the highest fells, e.g. Ruohit, K. Ailigas, U. Ailigas, Nuovos-Ailigas, Puoliamoivi and Harremahthohkka; in addition, on dry meadows, river banks and heaths, especially in Karigasniemi and Nuorgam, however, there fairly scarce; 17.6.1894 (80: JSA, 67) — 21.7.1977 (EFr & HFr); (16, 96, 57, 68, 6, 27, 28).

Coenonympha pamphilus (Linnaeus) U: Utsjoki village and Nuorgam 1961 (VMA); Karigasniemi 1 male 8.7.1974 (LDö & LFe & HHO).

C. tullia (Müller) U: Akukoski 1 ex in 1938 (68: NOU-pc).

Lasiommata maera (Linnaeus) U: Utsjoki village 1 male and female, in addition, several was seen 18.7.1964 (R 3/66: KWE-pc, 100).

Lasiocampidae

Poecilocampa populii (Linnaeus) K: light traps 95 exx '8-14.8.1974' — '18-24.9.1976' (48); Kevonsniemi and Pukalskaidi larvae on mountain birch (LIs, SKO, HOJ). U: Niemiella 1 female 31.8.1977 (B 4/77: VMA); larvae at several localities in 1972-78, also reared (LIs, SKO, PNI, HOJ).

Trichiura critegi (Linnaeus) K: light traps 61 exx '11-18.7.1973' — '11-17.9.1975'; flight period with two peaks (see Fig. 16) (48); Kevonsniemi and Pukalskaidi larvae mainly on dwarf birch but also on mountain birch (SKO, ELI, HOJ). U: Karigasniemi 1 ex 19.7.1956 (6: MSö); Niemiella 1 male 15.8.1968 and 23 males by light in August 1973-76 (VMA); Nuorgam 3 males 7-11.8.1972 (VMA); Utsjoki village 1 male 22.8.1978 (B 4/78: IV); larvae found frequently, mainly on dwarf birch, (67, 6, 27, R 8/57); (70, 43).

Eriogaster lanestris (Linnaeus) U: 'Utsjoki' 1948 (OHö); Nuorgam 1954 (R 3/56: JKJ); Korretoja group of larvae in July 1976 (EAD); (70).

Saturiniidae

Saturnia pavonia (Linnaeus) U: Pitioja 1 larva in 1947 (8: ASA); 'Utsjoki' 1947 (KAe), and 1948 (OHö); Kaldosavi (JKJ); Vaisjeggä 1 male 2.7.1955 (VMA); Heikinvaara 1 ex caught (KMI) and 2 specimens seen (SKJ) 1.7.1958; (70).

Drepanidae

Falcaria lacertiarum (Linnaeus) K: Kevojoiki area abundant (27: RJU); Pukalskaidi 1965 and 1967 (Ula). U: several observations but fairly scarce, in birch forests, 5.6.1965 (Llb, black specimen) — 10.7.1961 (VMA), (67, 6, 70).

Thyatridae

Achlya flavicornis (Linnaeus) K: Kevonsniemi 1 ex by light 25.5.1971, 4 exx 17-25.5.1971 (ELI) and 1 ex in May 1978 (LIs); several larvae on mountain birch in the whole area (6 & 27: RJU, LI SKO, PNI, HOJ). U: fairly abundant in birch forests, few adults observed because of early flight period; Niemiella 1 male 17.5.1957 (Vla), 6 males 20-23.5.1973 (VMA & KMA), and 8 males and 1 female 15-20.5.1974 (VMA); Tenokoti 4 exx 4-8.6.1965 (Llb); larvae in many places (LIs, JKJ, SKO, PNI HOJ); (70, 43).

Geometridae

Archizus parthenias (Linnaeus) K: Kevonsniemi several specimens 25.5.1971 (ELI), 1 ex 3.6.197: 9.6.1977, 25. and 26.5.1979 (SKO); larvae fairly abundant on mountain birch in 1970's (LIs, SKO, PNI, HOJ), also reared, pupa seems to hibernatae often twice (LIs). U: fairly abundant, at least locally in birch forests; early species, the earliest observation 15.5.1957 (Vla) & 1974 (VMA); larvae abundant locally, e.g. Petsikko 1976 (LIs); (67).

Jodis putata (Linnaeus) K: light trap 1 ex '4-10.7.1973'; Kevonsniemi 1 male 19.6.1974 (SKO). 1 Karigasniemi 1 male 10.7.1974 (AKU).

Cyclophora albipunctata (Hufnagel) U: fairly scarce, usually singly found in birch forests; Utsjoki village from 22.6. in 1937 (67: ANO, 97), 2 exx 19-21.7.1939 (67: KKI, 97), and 1 ex 6.7.1962 (ONy); Pitioja fairly abundant in Teno valley 28.6-9.7.1949 (8: WHa); Pulmankijoki 1 ex in 1956 (6: MSö); Niemiella 1 male 16.6.1972 and 1 male 3.7.1976 (VMA); Karigasniemi 1 ex 29.6.1975 (LFe & HHO JWe); Nuorgam singly in several years during 15.6-5.7. (VMA).

Scopula terrata (Schränk) K: light traps 198 exx '27.6-3.7.1973' — '31.7-6.8.1975' (48); abundant in the whole area (27 & 28: RJU, SKO, ELI). U: abundant almost everywhere, especially in birch belt also in pine forests, on mires and meadows; the earliest observation 19.6.1894 (80: JSA, 67); (16, 9 & 6).

Xanthorhoe designata (Hufnagel) U: Utsjoki village 1 ex 15.7.1955 (6: KSU, MT), and 1 ex 13.7.196 (HLa); Nuorgam some specimens 3.7.1960 (VMA & HVA), some specimens 10-11.7.1961 (VMA & AI & ERä), and ca 40 exx 26-27.6.1964 (VMA & MHe); Niemiella 4 exx 6.7.1961 (VMA & AFe & ERä Pappila 3 exx 26.6.1966 (JKY); Karigasniemi 1 male 6.7.1977 (AKU).

X. atrivaria (Herr-Schäffer) K: light traps 11 exx '29.6-2.7.1972' — '25-31.7.1978'; Kevonsniemi several specimens on mire (ELI). U: abundant in several years flying on slope mires in particular; no observations on mires of Karigasniemi and U. Ailigas; the earliest observation 29.6.1976 (HHö); (67, 27, 28).

X. mutitata (Hübner) K: light traps 45 exx '3-7.7.1972' — '13-21.8.1977'; rather abundant in the area (27 & 28: RJU, SKO, ELI). U: abundant, with yearly fluctuations, on meadows in river valley but also at higher altitude in birch forests; the earliest observation 21.6.1972 (VMA); (80, 16, 96, 6 & 6).

X. spadicaria (Denis & Schiff) K: Kevonsu 1 ex 26.6.1970 (ELI). U: fairly scarce; Utsjoki village several specimens 16-20.6.1939 (67: KKI, 97); 'Utsjoki' 1955 and 1956, e.g. Utsjoki village 1 male 11.7.1955 and 1 female 14.7.1955 (6: EDu-pc); Karigasniemi 1 ex 14.7.1966 (MKA), and some specimens 5-8.7.1977 (AJö); several specimens in Niemiella, Pulmankijärvi-end and Nuorgam, where more abundant (VMA); the earliest observation 14.6.1949 (VMA).

X. ferrugata (Clerck) K: light trap 1 ex '19-25.7.1973'. U: Utsjoki village 1 ex 20.6.1937 (67: AN 97); 'Utsjoki' 1954 and 1955, e.g. Karigasniemi 2 exx 11.7.1954 (6: KSU, MT); U. Ailigas 1 ex 10.1957 (VMA); Niemiella 1 ex 3.7.1967 and 5.7.1974 (VMA); Nuorgam 1 male 26.6.1972 (VMA); Karigasniemi 6 exx 30.6.1974 (LDö & LFe & HHO).

X. montanata (Denis & Schiff) K: light trap 2 exx '11-18.7.1973'. U: locally sometimes abundant on luxuriant meadows, most observations are from Utsjoki village and Nuorgam, only few in other parts of commune, e.g. not found in Karigasniemi; 27.6.1972 (VMA) — 26.7.1975 (VMA); (67, 97, 27, 28).

X. fluctuata (Linnaeus) K: light traps 5 exx '4-10.7.1973' — '19-25.7.1973'. U: Utsjoki village exx 19-21.7.1939 (67: KKI); 'Utsjoki' 1955 and 1956, e.g. Utsjoki village 2 males and 1 female 11.1955 (6: EDu-pc); Nuorgam 1 male 27.6.1972 (VMA); Karigasniemi 1 female 20.7.1975 (VMA).

X. amonhata (Zetterstedt) K: light traps 10 exx '20-26.6.1973' — '4-10.7.1978'; abundant in the whole area (27 & 28: RJU, SKO, ELI, RKO). U: abundant from river shores up to alpine belt; 10.1972 (VMA) — 25.7.1975 (VMA); (80, 16, 96, 67, 6).

Epithoe alternata (Müller) K: light trap 1 ex '27.6-3.7.1973'; Kevonsniemi 1 ex 30.6.1978 (EL Kevojoiki mouth several specimens on meadows and rich woodlands (27 & 28: RJU). U: Utsjoki v

lage 1 ex 2.7.1936 (67: BLJ), and 2 exx 22.6.1937 (67: WHē); Utsjoki 1954, 1955 and 1956, e.g. Kargasanemi 3 exx 13-16.7.1954 (6: EU & KSU-pc) and Kewojoki 2 exx 11.7.1955 (6: EU-pc); Kargasanemi 1 ex 10-11.7.1966 (MRa), 1 ex 6.7.1967 (ELJ), 1 female 8.7.1974 (AKu) and 1 female 22.7.1977 (AKu); Nuorgam 1 ex 27.6.1972 (VMA); Yläköngäs 1 ex 30.6.1974 (PKē).

Enterphya polata (Duponchod) K: Jensaheari 1 ex 28.6.1978 (EHa). U: abundant, at least in certain years, in the alpine region, especially on K.Ahlgas and U.Ahlgas (67, 57), fells of Kewojoki area (27, 28), Nuorgam and Tsuomasvarri, in some years also in low situating birch forests at Teno, e.g. Nuorgam 1964 and Niemelä 1971 & 1973 (VMA); the latest observation 17.7.1961 (VMA & ERä); larvae on dwarf birch on U.Ahlgas and Puolimoaivi (67: ANO); (6).

E. byssata (Aurivillius) U: scarce and local species, sometimes locally abundantly, on summits of the highest fells; Puolimoaivi 2 males and 2 females 15.7.1949 (VMA); K.Ahlgas ca 50 exx 18.7.1954 (6: EU & KSU-pc), ca 10 exx 17.7.1956 (6: EU-pc), 1 male 15.7.1973 (JKa), 1 male 11.7.1974 (AKu), 1 female 7-8.7.1978 (MRa), and some specimens 11.7.1978 (AÄ, IVJ); Ruohiti 1 ex 14.7.1954 (6 & 27: OSO), and 3 exx 13.7.1959 (ULa); Tsuoggajohka 1 ex 27.7.1959 (AKO); U.Ahlgas 1 male 6. and 7.7.1978 (LFe & HHO).

E. caesiata (Denis & Schiff) K: light traps 3536 exx 3-7.7.1972 - 5-12.9.1978; flight period with two peaks (see Fig. 12), in the late 1970's more abundant than *E. autumnata* (48); very abundant in the whole area; larvae on many plants, e.g. dwarf birch, *Vaccinium uliginosum*, *Empetrum*, also mountain birch (43, Lis, PNI, see also p. 26). U: abundant or very abundant, with great yearly fluctuations, all over the area; the earliest observation 24.6.1937 (67: BLJ), also reported flying 22.6-21.7. (97); larvae at many localities; (80, 81, 96, 6, 27, 28, 43).

Lampropteryx suffinaria (Denis & Schiff) K: light trap 1 ex 19-28.6.1975; Kevoniemi some specimens (SKO, ELJ, RKO), the earliest 5.6.1978 (SKO); Kewojoki several specimens in rich woodlands and meadows (27 & 28: RJu). U: fairly scarce and local in luxuriant habitats, usually singly, sometimes rather abundant e.g. in Nuorgam 18-20.6.1975 (VMA); the latest observation 12.7.1965 (KMi); (67, 97, 6).

Euthitis punata (Linnaeus) K: light traps 9 exx 8-14.8.1979 - 19.8-4.9.1973; Kevonsu ca 10 exx 28.7-2.8.1970 (ELJ). U: usually scarce, in places with Rubus; Nuorgam and Puolankijärvi (R 3/56: JKJ); Utsjoki village, Niemelä, Vetsikko and Nuorgam singly (VMA); the earliest observation 20.7.1972 (VMA); larvae abundantly at Puolankijärvi (6: EU & MSO).

E. festata (Linnaeus) K: Pukasiskaidi 1 larva on mountain birch 30.6.1975 (HOJ). U: scarce and local, only few adults observed; the main flight period probably in August (VMA); several larvae in 1955 and 1956 (6); Kargasanemi 3 larvae on willow 27-29.6.1977 (MAH).

E. populata (Linnaeus) K: light traps 272 exx 12-17.7.1972 & 1979 - 11-17.9.1975 (48); abundant in the whole area, usually from the latter half of July (27: RJu, ELJ). U: very abundant in some years, e.g. at several localities in 1972 (MA, VMA), then also the earliest observations 2-5.7.1972 (R 8/72: HAt & LDö & JKe-pc) and 10.7.1972 (VMA); some larvae found (6, MAH); (96).

Echiptopera siliceata (Denis & Schiff) U: Tsuomasvarri (R 3/56: JKJ); Nuorgam 1 male 18.6.1972 (VMA); Utsjoki village 1 male 6.7.1978 (KHē).

Chlorocyba trunca (Hufnagel) U: between Nuorgam and Puolankijärvi S-end ca 15 exx 11-15.7.1960 (VMA & HVA); Nuorgam ca 10 exx 11.7.1961 (VMA & ERä), 1 male 14.7.1973 (VMA), 20.7.1979 (EPe), and 21.7.1979 (AHO); Niemelä 2 males 13.7.1961 (VMA & ERä), 1 male 12.7.1972 and 20.7.1975 (VMA); Utsjoki village 4 males and 1 female 23-24.8.1977, 2 males 22.8.1978 and 2 males 10.8.1979 (EVi & IVJ); Vetsikko 1 female 12.7.1979 (RMA).

C. infusata (Tengström) U: some dozens of specimens, the majority from Kargasanemi, in addition some specimens from Vaisjäkäri (ELJ), Puolankijoki (JKJ), Nuorgam (VMA & HVA) and Ollha (VMA); 3.7.1961 (VMA & HVA) - 28.7.1970 (ELJ); (6).

C. citrata (Linnaeus) K: light traps 9 exx 13-21.8.1977 - 11-17.9.1975. U: Puolankijoki 1953 (R 3/56: JKJ); between Nuorgam and Puolankijärvi S-end several specimens 11-15.7.1960 (VMA & HVA); Nuorgam 20.7.1973 (VMA); Niemelä 2 males 29.7.1976 (VMA); Utsjoki village several specimens in August 1977-79 (EVi & IVJ).

Colostyga lineolata (Fabricius) U: in few places, but sometimes locally fairly abundant; Pihntoja 1947 (8: ASö); Vädgårdi 1947 (VMA) and in several later years (VKA, VMA, APe, ERä); other localities, e.g. Luobomjonhka (6: EU & RJu & MSc, LKa & LSi, KMi, SMu, KSU), Kewojoki valley at Madjohka mouth (6 & 27 & 28: RJu, Ula, ELJ) and Nuorgam (MHe & VMA, HAt, et al.); 18.6.1972 (VMA) - 10.7.1965 (KMi).

Hychromena furcata (Thunberg) U: Karinjarga larvae on willow at Teno shore at the end of June in 1967, 6 exx emerged 16-26.7. (VKa).

H. ruberzia (Freyer) K: Kewojoki area abundant at several habitats (27 & 28: RJu). U: fairly scarce, in luxuriant birch forests and brook side shrubs, with great fluctuations in abundance; very abundant e.g. in Karinjarga 15-25.6.1950 (VMA), and Puolankijoki 8-11.7.1956 (EUJ); in early years from 10.6. (VMA), the latest observation 12.7.1977 (OSO); (67, 8, 6).

Spargania luctuata (Denis & Schiff) U: Utsjoki village 1 ex 23.6.1937 (67: ANO), and 1 male & 1 female 8.7.1973 (RMA); Pasjärvi 1 ex in 1954 (6: OSO); Kewojoki near Madjohka mouth 2 exx 30.6.1956 (6: RJu, 27, 28); Niemelä 1 female 7.7.1961 (VMA); Kargasanemi 5 exx 30.6.1974 (LDö & LFe & HHO).

Rheumaptera hastata (Linnaeus) K: Kevoniemi 1 ex in July 1973 (SKO). U: fairly scarce, usually singly found at several localities, e.g. in birch forests and meadows; 20.6.1949 (VMA) - 25.7.1975 (VMA); (67, 97, 8, 6).

R. subhastata (Noleken) K: Kewojoki area very abundant (27 & 28: RJu). U: usually very abundant e.g. in birch forests from river valleys to alpine fells, however, in some years and sites may be nearly absent; 20.6.1972 (VMA) - 30.7.1975 (VMA); (16, 67, 97, 6).

Epirtia autumnata (Borkhausen) K: light traps 6691 exx 8-14.8.1973 & 1974 - 26.9-5.10.1974; the most abundant moth in trap catches (48); very abundant in most years in the whole area, also larvae. U: the well-known deltalator of mountain birch forests, yearly fluctuations of abundance with mass occurrences and forest defoliations; the last peak in 1964-66, larvae locally rather abundant e.g. 1975; (38, 67, 6, 27, 71, 28, 72, 73, 29, 74, 32, 43, 33, 11, 13, 14, 45, 47, 55, 66).

Psychophora sabini (Kirby) U: locally on certain alpine fells; Härremantschokka 1 female on summit 19.6.1894 (80: ASö, 96, 67); Nuorgam 2 males in alpine belt 28.6.1957 (VMA); northwestern Utsjoki several specimens close to summits of fells near Teno in 1970 (R 9/70: IAJ). U: Ahlgas locally abundant in alpine belt 13-18.7.1968 (PEr, MKO, MLa), abundant 26.6-4.7.1972 (VMA), 3 exx 8.7.1976 (LKa & LSJ), 5 males & 3 females 3.7.1978 (KHē), 2 males & 1 female 6.7.1978 and 1 male 7.7.1978 (LFe & HHO).

Pezozoma affinitatum (Stephens) U: Puolankijoki (R 3/56: JKJ).

P. alciemellatum (Linnaeus) U: Puolankijoki (R 3/56: JKJ); Utsjoki 1954, 1955 and 1956, e.g. Utsjoki village 1 female 14.7.1955 (6: EU-pc); Niemelä 1 male 2.7.1973 (VMA).

P. minoratum (Treichschke) U: found for the first time south of Kargasanemi in 1976 (B 2/76 & 3-4/76: HHO, MVu); locally very abundant in the valley of Inarjoki at Kargasanjarga, where food plant, Euphrasia, is growing; with great yearly fluctuations; hundreds of specimens caught in 1977-79 (LFe & HHO, EFr & HFr, NHe, AÄ, JKe, AKu & JKu, EPe, IVJ); 27.6.1976 (HHO) - 22.7.1977 (EFr & HFr).

P. blandatum (Denis & Schiff) K: Kevonsu 2.7.1965 (ULa). U: Utsjoki village some specimens on birch heath 30.6.1930 (16: WHē, 67), 26.6-8.7.1936 (67: BLJ), singly on meadows in 1937 (67: ANO), and 1 ex 11.7.1955 (EUJ); Linkopakti 2 exx 10-11.7.1955, and Madjohka mouth 1 ex 30.6.1956 (6 & 27 & 28: RJu); Puolankijoki abundant on Myrica 9-11.7.1956 (6: EU & MSc-pc); Puolankijärvi S-end abundant 4-5.7.1960 (VMA & HVA); Kargasanemi 1 male and 4 females 16-21.7.1977 (EFr & HFr); (96, 97).

P. albumatum (Denis & Schiff) K: Kevonsu abundant on meadow (27 & 28: RJu), e.g. in 1956 (OSO). U: very abundant in most years on meadows at Teno and its tributaries; 22.6.1937 (67: WHē & ANO, 97) - 21.7.1939 (67: KKi, 97); (16, 96, 6).

Eupithecia andloga Diakonoff U: Linkenaki 2 males and 1 female 10.7.1955 and 1 female 11.7.1955 (6 & 27 & 28: EU-pc); Utsjoki village 1955 (6: KSU); Kargasanemi 1 ex on birch-pine heath 2. and 8.7.1958 (SK), and 3 males & 4 females 9-12.7.1974 (AKu).

E. pygmaea (Hübner) U: Pappila 1955 and 1956 (6: EU & MSc & KSU), e.g. 7 exx 11-14.7.1955 (Ebu-pc) and 2 exx 15.7.1955 (KSU, MTr); Madjohka mouth fairly abundant in rich woodland and meadow (6 & 27 & 28: RJu-pc); Kargasanemi 1 ex 8.7.1958 (SK), and 1 female 6-22.7.1977 (AKu); Utsjoki village 16. and 19.7.1977 (AHO).

E. intricata (Zetterstedt) K: light traps 22 exx 20-26.6.1973 - 31.7-6.8.1975. U: Karinjarga abundant in 1950 (VMA); between Niemelä and Nuorgam fairly scarce, but regularly in shore birch forests at Teno at the turn of June to July (VMA); Utsjoki 1954, 1955 and 1956, e.g. Kewojoki valley abundant 6-10.7.1955 (6 & 27 & 28: EU-pc); Madjohka mouth 1 ex in rich woodland 6.7.1956 (27 & 28: RJu); Kargasanemi 1 male 13.7.1974 (AKu).

E. sazyra (Hübner) K: light traps 2 exx 19.6.1974 and 22-25.6.1972; Kewojoki area abundant on meadow and heaths (27 & 28: RJu). U: fairly abundant on meadows and luxuriant fell slopes at Teno and Kewojoki; 20.6.1949 (VMA) - 21.7.1939 (67: KKi); (8, 6).

E. vulgata (Haworth) K: light trap 1 ex 29.6-2.7.1972. U: Utsjoki 1956 (6).

- E. gelidara* Möscherl K: light trap 2 exx '27.6-3.7.1973' and '1.1-18.7.1973'; Kevojoki mouth (27 & 28: RJU). U: singly on moist fell slopes and meads, e.g. Utsjoki village, Niemelä, Välimä, Karjäärä, Nuorgam, Kevojoki 19.6.1949 (VMA) - 14.7.1955 (EJU); (96, 67, 6).
- E. vitraurata* (Doubleday) K: light traps 6 exx '13-19.6.1974' - '4-10.7.1973'; several specimens from the whole area (27 & 28: RJU, SKO, ELJ). U: fairly scarce and usually singly found, in birch forests and heaths in different parts of the area, e.g. Karigasniemi, Kevojoki, Utsjoki village, Niemelä, Alkongsås and Nuorgam; 15.6.1937 (67: WHE & ANO, 97) - 13.7.1954 (EJU); (16, 96, 8, 6).
- E. pusillata* (Denis & Schiff) K: light traps 11 exx '22-28.8.1978' - '5-11.9.1977'.
- Caria sorviana* (Hübner) K: light traps 7 exx '6-12.8.1977' - '29.8-4.9.1978'. U: Utsjoki village 2 exx 19-21.7.1939 (67: KKI); Utsjoki 1954 and 1955, e.g. Karigasniemi and Kevojoki (6: OSO-pc); Harremahishokka several specimens on me '11.7.1967 (VMA); U. Alligas 1 ex on slope me '15.7.1971 (VMA); Niemelä 2 exx 20.7.1973 (VMA).
- Hydrelia flammelarva* (Hufnagel) U: Nuorgam 1 ex 7.7.1961 (VMA & APE & ERÄ); Niemelä 1 male 1.7.1971 (VMA).
- Semiothisa clathrata* (Linnaeus) U: Niemelä 1 male 20.7.1973 (R 9/73: VMA-pc, 100).
- S. carbonaria* (Clerck) K: Pavalhoarvi 1 ex in birch forest 8.6.1970 (ELJ). U: fairly scarce in birch forests, moist sites and alpine heaths, e.g. Kevojoki area (27 & 28: EJU & RJU), Karigasniemi and K. Alligas (SKR, AKU, ELÄ), Utsjoki village and U. Alligas (67: ANO, VMA, ONY), Pihthoja (8: WHA), and Nuorgam (VMA); the latest observation 15.7.1975 (VMA); (97, 6).
- Itme brunnea* (Thunberg) K: light trap 1 ex 30.7.1974. U: Utsjoki 1954 and 1955, e.g. Karigasniemi 1 male 17.7.1954 (6: EJU-pc); Karigasniemi 2 larvae 27-28.6.1977 (MAH).
- Pygmaea fusca* (Thunberg) K: light traps 3 males '11-18.7.1973' and 13.7.1974; Kevojoki area, Karigasniemi and Jesnahlvarti fairly abundant (27 & 28: RJU, EHA & THA, SKO); 1 female reared (SHE). U: abundant at several habitats all over the area, preferring Empetrum heaths on fells; 22.6.1971 (ELJ) - 22.7.1977 (Efr & HFr); (80, 16, 67, 96, 97, 6).
- Epitriptis diversata* (Denis & Schiff) U: Nihtyvuopio 1 ex 14.6.1949 (8: WHA); Niemelä 1 male 16. and 20.5.1976 (VMA & JMU).
- Selenia dentata* (Fabricius) K: light trap 1 male '21-28.6.1979'; Kevoniemi and Kevonsu several specimens (6: RJU, 27, 28, KLA, RRO, OSO); the latest observation 16.7.1957 (OSO); Pukaskakadi some larvae on birch (HOJ). U: fairly scarce and local in birch forests at Teno and its tributaries; the earliest observation 17.6.1937 (67: ANO, 97); some larvae found (HOJ).
- Lycia pomonaria* (Hübner) K: Kevoniemi 1 ex by light 25.5.1971 (ELJ), 1 male 25. and 26.5.1971 (ELJ), and 2 females on a wall 5.6.1978 (SKO); larvae on birch fairly abundantly in different parts of the area (27: RJU, LAs, PNI, HOJ); also reared, some pupae hibernatae twice (LAs). U: Niemelä 2 males 20.5.1950 (ULÄ), ca 10 males 20-23.5.1973 (VMA & KMS), and 15 males 15-20.5.1974 (VMA); Tenokoti several specimens in 1965 (LAb); larvae abundantly on birch in many places (6: EJU & MSc & KSU, 27: RJU, LAs, JKI, PNI, HOJ).
- Matanga atomaria* (Linnaeus) U: Utsjoki village 1 ex in 1936 (67: BLJ), and between the village and Mantoljärvi singly, most specimens at Pappila in 1937 (67: ANO).
- Catania sordaria* (Thunberg) K: light traps 12 exx '22-25.6.1972' - '21-26.7.1977'; Kevoniemi and Rasselohka some specimens (ELJ). U: usually fairly abundant, mainly in birch zone, sometimes mass occurrences, e.g. Varsjälgegi 29.6.1970 (ELJ); 15.6.1972 (VMA) - 21.7.1977 (Efr & HFr); (80, 16, 67, 97, 8, 6, 28).
- Glacies corricha* (Esper) K: Jesnahlvarti 1 ex on the top in 1971 (SKO). U: fairly abundant especially on fells, but also regularly in river valleys; U. Alligas larvae on dwarf birch in 1937 (67: ANO); 19.6.1894 (80: JSA, 67, 97) - 24.7.1958 (VMA); (16, 6, 27, 28).
- Sphingidae**
- Acherontia atropos* (Linnaeus) K: Jomppala 1 ex in 1920 (18: JHö, 67, 89). U: Utsjoki before 1857 (89); Utsjoki village 1 ex about in 1936 (89: AKö); Asakkala 1 ex about in 1953 (30: ALA); north of Patonva 1 ex in 1963 (LAb); (96, 70).
- Hyles gallii* (Rottemburg) K: Kuntunemi 1 ex seen 27.7.1970 (ELJ). U: Paitunturit 1 ex seen on flower of *Phyllodoce* 17.7.1954 (6: PKA & ULÄ-pc); Ollha 1 male 17.7.1970 (VMA); (70).
- Notodontidae**
- Notodonta dromedarius* (Linnaeus) K: light trap 1 ex '5-11.9.1974'; larvae on mountain birch in 1971, 1972 and 1978 (43: SKO, LAs, PNI, HOJ). U: over 20 exx in birch forests in valleys of Teno and Utsjoki, especially in surroundings of Karigasniemi (LDö & LFe & HHO, Efr & HFr, RMa, KMI) and

Utsjoki village (6: EJU & RJU & MSc & KSU-pc, AHO, SNe, MSa), also Akukoski (JHJ), Luonsjarsuc (VMA) and Alkongsås (HOJ); larvae on birch at many localities, however, fairly scarce, also reared (LHOJ); 29.6.1958 (KMI) - 21.7.1974 (VMA); (70).

Eligmodonta ziczac (Linnaeus) U: Tenokoti 1 ex 29.6.1958 (KMI); Pulmankijoki 1 male 6.7.19 (VMA); (70).

Pheosia gnoma (Fabricius) K: Kevoniemi and Pukaskakadi near Kevojärvi shore some larvae on birch in 1971-72 (43: SKO, HOJ). U: between Pappila and Utsjoki village 1 female 14.7.1955 (6: EJU-pc); Niiggaalavrick 1 female on dry birch heath 12.7.1956 (6: RJU, 27, 28); Utsjoki village 1 ex 24.7.19; and 10.7.1961 (VMA), and 2.7.1968 (R 6/68: KHE); Niemelä ca 5 exx in 1965 (by several persons: e.g. 13.7. (HLA), 1 male 8.7.1973 and 1 male 16.7.1974 (VMA); U. Alligas 1 female on birch 5.7.19 (HOJ); (70).

P. tremula (Clerck) U: Nuorgam 1 female 4.7.1971 (ERÄ).

Lymantriidae

Gynaeophora fasciella (Linnaeus) U: Outakoski 1 ex in 1947 (70: WHE, MH).

Lacocma salicis (Linnaeus) U: Pasjärvi 1954 (6: KSU & RTE), e.g. 14.7. (RTE-pc); U. Alligas and between Nuorgam and Tsuomasavarti several specimens seen and 5 males caught 3-15.7.1960 (VMA HVA), and U. Alligas 1 male 10.7.1961 (VMA); (70).

Arctiidae

Sethia brorella (Linnaeus) U: Petsikko 1 male 4.7.1962 (JKI).

Calliarctia quenselii (Paykull) U: adults found only on U. Alligas above tree-line; 4 exx 9-10.7.19 (VMA & ERÄ), 1 female 8. and 10.7.1974 (RMA), 1 male 8.7.1978 (Alä), 2 males & 2 females 7-9. 1979 (JAU), and 3 males & 1 female 7-10.7.1979 (RMA); all older observations are larvae from Teno valley, Utsjoki village 3 fullgrown larvae on heath in 1937 (67: ANO), and Pihthoja 1 larva in birch forest in 1949 (8: WHA); (70, cf. also 70).

Pararctia lapponica (Thunberg) K: Kevoniemi some specimens seen 23.6.1979 (HHI). U: scarce b caught some dozens at several localities on fells, meads and also in birch forests; most observations even years: 1930 (16: WHE), 1954 (6: TLA & OSO & RTE, R 3/56: ORA, VMA), 1956 (6: RJU & KS 27, 28), 1958 (KMI, SKR), and 1978 (Alä); however, also in odd years: several finds in 1967 (VMA HVA, JLA, et al.), several specimens seen in 1973 (R 9/73: VMA), and 1 ex in 1979 (R 3/79: RMA-pc Karigasniemi 1 larva in 1955 (6: EJU); the latest observation 13.7.1954 (VMA); (96, 70).

Piragnatobia fuliginosa (Linnaeus) U: Utsjoki village some specimens seen and several empty cocoons found in 1937 (67: ANO), 3 larvae in 1960 (EJU), and 1 adult in 1961 (VLA); Pihthoja 1 adult 1949 (8: WHA); Outakoski (WHE, ETH); Pukaskakadi larvae in 1965, 2 specimens reared (ULÄ); (70 Noctuidae

Diarsia mendica (Fabricius) K: light traps 38 exx '26-28.6.1972' - '25-31.7.1978' (48); Kevojoki area abundant everywhere (6 & 27 & 28: RJU). U: abundant at several localities, mainly in birch forests; in some years very abundant, then flying up to the timber line; the earliest observation 17. 1972 (VMA), 1 male 22.8.1978 (VJ); (67, 69, 63).

D. rubi (Viereg) U: Petsikko 1 male 28.6.1970 (VMA); Rovisuvanto 1 male 8.7.1973 (ELA & LLa Xestia qujeta (Hübner) U: fairly scarce with great fluctuations in abundance, on alpine fells, especially U. Alligas and fells of eastern Utsjoki; some specimens also on Ruohit (6: OSO, 27), Nuovos-Ailig and Ahkovaari (ASU), and K. Alligas (Alä, ASU, EVI & IVJ); 17.6.1894 (80: JSA, 81, 67) - 24.7.19 (VMA); (96, 57, 69, 63).

X. speciosa (Hübner) U: this as well as the following five species are flying in Utsjoki commune on every other year, in western parts in even years and in easternmost parts mostly in odd years (see 10, cf. 62, B 2/76); Utsjoki village 2 exx 3.7.1960 (VMA); Nuorgam 21 exx by bait 15.7.1961 (VMA ERÄ); Niemelä 1 ex 18.7.1974 (VMA); (69, 63).

X. gelida (Sp.-Schneider) U: scarce, found mainly in the surroundings of Karigasniemi in the 1950 Pasjärvi, also by baits in 1954, e.g. 1 male 10.7. (6: EJU-pc), and 3 exx 13-14.7. (6: RTE-pc); Ruohit 1 ex by bait 13.7.1954 (6: OSO, 27, 28); Lemänsohka 1 ex in 1956 (6: KSU); Niiggaalavrick 11 male on a fresh birch heath 12.7.1956 (6: RJU, 27, 28); Pulmankijoki (R 3/56: JKI); Nihtyvuopio males in birch forest and pine-birch heath 10.7.1958 (SKR); (69, 63).

X. laetabilis (Zetterstedt) K: light traps 2 males '29.6-2.7.1972' and '4-10.7.1978' (48); east Vuoskojärvi abundant in 1956 (ULÄ); Rasselohka 1 male 6.7.1970 (ELJ); Kevojärvi shore 1 male 9. 1974 (ERÄ); Kevojoki area fairly abundant (6 & 27 & 28: RJU). U: locally rather abundant in ev

years, especially on pine heaths of Karigasniemi and Kevonjoki, found also e.g. in Utsjoki village 1-6.7.1972 (R 8/72: HA & LDö & JKe), Karinjaga 1 male 20.7.1954 (VMA), and Nuorgam 1 ex in 1936 (1) (67: Bli, 57, R 1/58), 1 male 15.7.1965 (VMA), (R 3/56: JKi); (69, 63).

X. kongvoldensis (Grönlie) U: scarce on alpine fells but also on mires, recorded in 1954, 1956, 1972 and 1979; Ruohit 1 female 14.7.1954 (6: OSO, 27); between Kuorboarvi and Kaidoarvi some males in evenings and 2 females in day-time in 1956 (6: EU & MSO), e.g. 3 males and 1 female 3-5.7. (Edu-pc), U. Alligas at foot of the fell 2 males on mire 9.7.1956 (VMA), ca 10 ex 1-6.7.1972 (R 8/72: HA & LDö & JKe), and some males by bait 1-15.7.1972 (VMA); Tuomasvarri several specimens seen on alpine heath, 13 males - in the evenings - and 2 females - early in the morning 9.7. (JJa) - caught 7-12.7.1979 (JJa & ELi & LLi); (69, 63).

X. lecta (Hübner) K: light traps 8 exx 4-10.7.1974² - 25-31.7.1978¹ (48); Puksalaikaidi some specimens 14.7.1956 (Ula); Koaskimpakti 12.7.1964 (Ula); Kevoniemi 1 female 2.7.1970 (ELi). U: fairly abundant in western Utsjoki in even years, especially in surroundings of Karigasniemi finds in eastern parts of Utsjoki; Nuorgam abundant 14-15.7.1961 (VMA & ERä), 1 female 7.7.1967 (VMA & HVA) and 1 male 16-22.7.1979² (AHO); the earliest observation 1.7.1972 (VMA); (80, 96, 67, 6, 27, 28, 69, 63).

X. alpicola (Zetterstedt) K: light traps 37 exx 29.6-2.7.1972² - 8-14.8.1978¹ (48); several specimens in the whole area (27 & 28: RJu, SKO, Ula, ELi, VRI, RKO). U: fairly abundant in western Utsjoki; finds in eastern Utsjoki; Nuorgam and Pulmankijoki 1953 (R 3/56: JKi); Nuorgam abundant 11-15.7.1961 (VMA & ERä), 1 female 7.7.1967 (VMA & HVA), and 2 males 16-22.7.1979² (AHO); Tuomasvarri some specimens in 1963 (VMA), and 1 ex 11.7.1979 (JJa); (80, 81, 67, 6, 69, 63).
Eurois occidius (Linnaeus) K: light trap 3 exx in brook side thicket 5-12.9.1978¹ and 13-22.9.1978¹.

Anarta richardsoni (Curtis) U: scarce on highest alpine fells, some dozens of specimens caught mainly on U. Alligas, singly also e.g. Paistunturit, Nhyvos-Alligas, Kistuskaidi, Keälggeoroarvi, Nuorgam, Tsasomastari and Tsuodjavarri; 1.7.1956 (6: Edu-pc) - 28.7.1975 (VMA); (69, 63, R 3/56).

A. myrtili (Linnaeus) U: Tuomasvarri 1954 (69: JKi); Nuorgam 1 male 6.7.1956 (VMA); (63).
A. corrigera (Thunberg) K: Kevoniemi 1 ex in June 1971 (ELi), and 1 ex 14.6.1976 (SKO). U: fairly abundant in birch forests, on mires and also alpine heaths at several localities, caught usually singly; 12.6.1966 (ELi) - 21.7.1977 (Efr & HFr); (67, 8, 6, 69, 63).

A. melanopa (Thunberg) K: fairly abundant in the area (27 & 28: RJu, SKO, ELi, VRI, RKO). U: abundant, especially on alpine heaths but also on mires and birch forests; 11.6.1973 (VMA, 63) - 28.7.1975 (VMA, 63); (16, 67, 8, 6, 69).

Anartopina bohemanii (Staudinger) K: Kevonsu several individuals seen ca 15.7.1957 (OSO). U: fairly scarce, found some dozens of specimens, especially in the surroundings of Karigasniemi and Utsjoki village, where flying in birch forests; 21.6.1937 (67: ANO, 63) - 15.7.1961 (VMA); (80, 96, 6, 69).
Hada staudingeri (Aurivillius) U: fairly scarce, locally on alpine stony sites of higher fells, especially on U. Alligas, fells of Nuorgam, and Tuomasvarri; only few on K. Alligas; 20.6.1972 (VMA) - 14.7.1954 (27: OSO); (67, 96, 57, 6, 69, 63).

H. nana (Hufnager) U: Utsjoki village several specimens in 1937 (67: WH & ANO), and 1 female 13.7.1961 (VMA); Pihitioja singly on meadow in 1949 (8: WHa); Utsjoki 1955, e.g. Utsjoki village 1 male 11.7. and 1 female 14.7. (6: Edu-pc); Nuorgam (69: JKi), and 3 exx 11.7.1961 (VMA & ERä); Niemelä 2 males 6.7.1957 (VMA), and 1 male 17.7.1958 (VLa); (63).

Mamestra thalassina (Hufnager) U: Pappila 2 exx in 1955 (6: MSO); Nuorgam 1 male 15.7.1961 (VMA); (69, 63).

M. suasa (Denis & Schiff) U: Niemelä 1 male 13.7.1961 (63: VMA-pc).

M. pisi (Linnaeus) U: Karinjaga 1 male indoors 10.7.1949 (VMA); between Nivajoki and Nuorgam 1 ex in 1955 (6: MSO); Niemelä 1 female on meadow with willows 15.7.1961 (VMA); (69, 63).

M. biven (Goetze) U: Utsjoki village several specimens seen in 1937 (67: ANO), and 1 ex 19-21.7.1939 (67: KKi); Niemelä 1 male 28.6.1949 (VMA), and 1 female 2.7.1973 (VMA); Utsjoki 1954 and 1955, e.g. Pasijärvi 1 ex 11.7.1954 (6: OSO-pc) and south of Karigasniemi, 1 female 14.7.1954 (6: Edu-pc); Pulmankijärvi 1 ex in 1954 (ORA); Karinjaga 1 female 4.7.1973 (VMA); (69, 63).

Cerapteryx gaminis (Linnaeus) K: light traps 14 exx 25-31.7.1974² - 11-17.9.1975²; Kevonsu 2 males and 1 female on meadow 21.7.1959 (27: RJu), and some specimens 18.7.1965 (Ula). U: fairly abundantly by light traps in Niemelä and Nuorgam in the 1970's, the main flight period seems to be 5-20.8. (VMA); Utsjoki 1897 (BPO); Pulmankijärvi (69: JKi); Utsjoki village several larvae in 1937 (67: ANO); for colour morphs of adults, see p. 22; (63).

Hilina iris (Zetterstedt) K: light traps 17 exx 24.7-11.8.1972¹ - 30.8-4.9.1977²; Kevonsu 1 larva on willow, emerged 18.7.1978 (VRI). U: locally rather abundantly, especially by light traps, e.g. Utsjoki village (B 4/77: VMA & KMi, B 4/78: EVI & IVI), the main flight period in August (63); larva found and reared from Salix-cattkins in different parts of the area: Karinjaga, Niemelä, Nuorgam, Pulmankijoki and Karigasniemi (R 3/56: JKi, VMA, EFr); for colour morphs, see p. 22; (69).

Symphisistis funebris (Hübner) U: scarce and usually singly at several localities, e.g. on fell mires, bog birch areas, sandy shores, dry heaths and meadows; nearly absent in recent years, only Karigasniemi 10 exx in 1974 (AKU, LDö & LFe & HHO); 20.6.1937 (67: ANO) - 21.7.1959 (27: RJu); (6, 28, 63).

S. heliophila (Paykull) K: very abundant in the whole area, especially on birch heaths (27 & 28: R et al.); 13.6.1971 (ELi) & 1974 (SKO) - 5.8.1978 (VRI). U: very abundant everywhere, flying in sunshine in birch belt and also on alpine heaths, (80, 16, 67, 8, 6, 69, 63).

S. lapponica (Thunberg) U: fairly abundant, sometimes abundant, e.g. U. Alligas ca 80 exx in 15 (VMA & ERä & HVA); also in sunshine on alpine heaths just above tree line, especially on U. Alligas and fells of Nuorgam; flies on Nuhppir, K. Alligas, Kistuskaidi, Ruohit, Tuomasvarri, and Tsuodjavarri; 15.6.1894 (80 & 81: JJa, 67) - 22.7.1971 (63); (96, 6, 69, 27).

S. zetterstedtii (Staudinger) U: Tuomasvarri 1 ex on northern slope close to Dryas vegetation 1979 (B 3/79: JJa-pc); the only Finnish observation outside of Kilpisjärvi (cf. 52, 63).

Lithomoia solidaginis (Hübner) K: light traps 33 exx 15-21.8.1973, 1974 & 1979² - 13-22.1978¹; Kevonjoki mouth 1 ex 18.8.1968 (Ula); Kevoniemi 1 ex in August 1970, and 4 exx by 10.9.1972 (ELi); (63). U: probably local, few observations due to the late flight period; Niemelä male by bait 15.8.1970, by light every year between 1971-75, e.g. from 11.8. in 1972 and from 11.8. in 1973 (VMA); larvae in Kevonjoki area in 1955 (6: Edu & MSO), e.g. 8.7. (27: Edu); (69).

Blepharita adusta (Esper) U: Nuorgam and Pulmankijärvi (R 3/56: JKi, 69); between Pappila and Utsjoki village 1 male 14.7.1955 (6: Edu-pc), and Utsjoki village in 1955 (6: RJu); Nuorgam 1 male 1967 (VMA); (63).

Parastichtis suspecta (Hübner) K: light traps 3 exx 23-31.7.1976² - 22-28.8.1973¹. U: reared from Salix-cattkins; Niemelä 2 males in 1970, Valhama 2 males & 1 female in 1975, and Vetsikkö male in 1976 (VMA).

Xanthia icteritia (Hufnager) K: light traps 2 exx 22-28.8.1973 and 22-29.8.1977¹. U: reared from Salix-cattkins; Niemelä 4 exx in 1970 and 1 ex in 1975 (VMA); (63).

Acrontia auricoma (Denis & Schiff) U: Pihitioja 1 ex on mire 28.6.1949 (8: WHa); Nuorgam 1 (6: Edu & MSO), e.g. 1 female 16.7. (Edu-pc); Pappila 1956 (6: RJu); Utsjoki village 3 males and 1 male 15-17.7.1961 (VMA & ERä); (69, 63).

Hypria rectilinea (Esper) U: Pulmankijoki 14.7.1954 (R 3/56: JKi, MH, 69); Ruohit 1 ex by 1 near tree-line 19.7.1954 (6: OSO, 27); Niemelä 2 males by bait 20.7.1973 (VMA, 63).

Plusia festucae (Linnaeus) K: Kevonsu 1 female on meadow 21.7.1959 (27: RJu-pc, 69, 63).

Syngrapha diaeana (Boisduval) U: Utsjoki village 1 ex 19-21.7.1939² (67: KKi); south of Karinjaga 1 ex on sandy shore of Inarjoki 14.7.1954 and 1 male 17.7.1954 (6: Edu-pc); Pulmankijoki 3/56: JKi); Karigasniemi 1 larva at the end of June in 1977 (R 4/77: Mah); (69, 63).

S. interrogatoris (Linnaeus) K: light traps 39 exx 18-23.7.1972² - 11-17.9.1975² (48); Kevonjoki 2 exx by light 13.9.1975 (HOJ), not found after 1975 at Kevonjoki. U: Niemelä regularly by light the middle of August in 1970-76, abundant in 1974 (VMA); (63).

S. parvif (Hübner) K: Kevonjoki 5 and 1 ex on Thymus at shore 2.7.1956 (6: OSO-pc); Puksalaikaidi ex on mire near Koaskimpakti 6.7.1956 (27: Ula, 28). U: fairly scarce and usually singly found, some dozens of specimens, especially on Thymus vegetation at Pulmankijärvi, Pulmankijoki, Teno and Utsjoki, also sometimes on fell mires; 22.6.1937 (67: ANO, 63) - 17.7.1954 (6: RT-pc); (16, 96, 57, 4).
Caloptilia hochenwarthii (Hochenwarth) K: Kevonsu and valley of Kevonjoki several specimens (2: 28: RJu, Ula, VRI). U: fairly abundant with great yearly fluctuations, on luxuriant meadows on r. shores and fell slopes, e.g. surroundings of Karigasniemi, Utsjoki village, Nuorgam and Pulmankijoki 22.6.1937 (67: ANO) - 22.7.1977 (Efr & HFr); (8, 6, 69, 63).

Catocala adalberti Menetries K: light trap 1 ex 29.8-4.9.1973² (R 10/73 & 2/74). U: Utsjoki vill (30: AKe, 69, 63).

Callistege mi (Clerck) U: Rovvuvanto 1 ex 29.6.1975 (R 7/75: LFe & HHO & JWe, 63).

Euchlidia glyphica (Linnaeus) U: Utsjoki village (69: RJu); Rovvuvanto 1 male 8.7.1973 (Ela & L) Karigasniemi 1 ex 30.6.1974 (LDö & LFe & HHO); (63).

Scoliopteryx libatrix (Linnaeus) K: Kunttinen 1 ex by bait 9.7.1974 (63: ERä-pc).

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| EAI | Aikko Esko | JKu | Kullberg Jaakko | APe | Pekkarinen Antti |
| HAh | Ahqvist Holger | JKy | Kyrki Jorma | Bpo | Poppus Bertil |
| HAt | Athila Heikki | KKi | Kivirikko Kaarlo | Epe | Peltosen Erkki |
| JAI | Aitisto Jyrki | LKa | Kauranen Lauri | Mpo | Poutainen Matti |
| JAl | Alvas Juho | Mko | Kononen Mauri | ERä | Räsänen Eino |
| KAE | Aejmelaeus Kaj | Pka | Kallio Paavo | Mra | Raekunnas Marthi |
| Kah | Ahti Kari | Pke | Keskinen Pekka | ORA | Rann Olli |
| Mah | Ahola Matti | Rkr | Krogerus Rolf | Rro | Roine Rauno |
| Mat | Attila Martti | SKo | Koponen Seppo | VRI | Rinne Veikko |
| HBr | Brunn Henrik | SKr | Korolainen Sakari | ASa | Saarinen Arvi |
| LDö | Döle Leo | VKa | Karvonen Viljo | ASb | Sahlberg Avena |
| EEu | Euranto Erkki | Ala | Laiti A. | ASu | Saura Anssi |
| PEr | Eriksson Peter | Bli | Lingonblad Birger | ESu | Suomalainen Esko |
| Fab | Fabricius | Ela | Laasonen Erkki M. | HSe | Seppälä Heikki |
| EFr | Franssila Erkki | Ele | Lehkönen Esa | JSa | Sahlberg John |
| HFr | Franssila Hilka | Eli | Linnaluoto Esko T. | KSa | Suomala Kai |
| LFe | Fernelius Lars-Erik | HLä | Laiti Hans-Åstak | LSi | Sippola Leo |
| RFr | Frey Richard | ILä | Lämsän Ivar | MSa | Saaristo Michael |
| AHo | Holm Asko | Kla | Laine Kari | MSc | Schantz Max von |
| EHa | Haukioja Erkki | Lla | Laasonen Leena | OSO | Sotavalta Olavi |
| HHi | Hippa Heikki | Llb | Lindblom Lasse | USA | Saahas Uuno |
| HHo | Holmberg Henry | Lli | Linnaluoto Leila | ETH | Thuneberg Erik |
| HHu | Hurme Hei | Mla | Landtman Magnus | Rte | Teraho Reijo |
| HHi | Higman Into | Sle | Leinikka Seppo | RTh | Tarhano Teijo |
| JHö | Högnan Juho | Tla | Lammes Tapio | EVi | Viros Eero |
| KHe | Helomaa Kauko | Ula | Laine Unto | HVa | Valtari Heikki A. |
| MHe | Hellövara Markku | Ull | Laiti Uula-Antti | IVi | Virros Ismo |
| NHe | Helberg Niis | Vla | Laiti Veikko | JW | Wettershovi Jorma |
| OHe | Helenius Olli | VLe | Lepistö Vesa | KW | Wettershovi Kalle |
| SH | Heino Sami | HMv | Myrsky Hannu | MVv | Vuola Mikka |
| THa | Haukioja Timo | JMu | Mustonen Jorma | VVa | Varis Vesa |
| WHa | Hackman Walter | KWi | Mikkola Kauri | VVi | Vikberg Veli |
| WH | Hellen Wolfer | KMö | Moberg K. | | |
| WH | Hellen Wolfer | KMä | Mäkinen Kyösti | | |
| Lis | Iso-Jivari Lasse | SMu | Muuriman Seppo | | |
| | | VMa | Mannelin Veijo | | |
| AJa | Järvelä Armas | ANo | Nordman Adolf | | |
| JJa | Jahs Ilkka | KNu | Nurmi Kalervo | | |
| JJa | Jalava Jukka | MNu | Nupponen Mikko | | |
| AKu | Kaareva Jaakko | ONY | Nyboom Ola | | |
| JKa | Kaare Juhani | PNi | Niemelä Pekka | | |
| JKe | Kangas Jaakko K. | Pnr | Nuorteva Pekka | | |
| JKg | Kangas Jaakko K. | Pnu | Nupponen Pertti | | |
| JKi | Kasiala Jouko | SNe | Nenye Sakari | | |
| JKi | Karvonen Jaakko | AOj | Ojala Arja | | |
| JKo | Karvonen Jaakko | HOj | Ojala Heikki | | |
| | | NOu | Oulatoski Niilla | | |
| | | OOs | Osmonen Olli | | |

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Selostus: Kirjoituksessa luetaan Utsjoen perhoslajisto kirjallisuustietojen ja kerättyjen havaintojen perusteella. Eriyisesti käsitellään Turun yliopiston Lapin tutkimuskesä Kevon ympäröivän lajistoa, jota on tutkittu mm. valopyyntii käyttäen usiden vuosien ajan. Utsjoen perhoslajiston erikoispiirteitä (lentoaikoja, runsaudenvaihteluita, elinympäristövaatimuksia ja pohjoisia muotoja) selvitetään ja lajin levineisyyttä käsitellään verraten sitä pohjoisimman Femoskandian muihin alueisiin.

Kuvassa 3 ja taulukossa 1 esitetään paikat, joilla on perhoshavaintoja. Taulukossa 1 esitetään vasemmalla nykyisin käytössä oleva topografikartan nimistö ja oikealla aikaisemmin käytettyä nimistöä. Numerot viittaavat kuvan 3. Kuvassa esitetään myös eurooppalainen UTM-ruudukko ja Suomen yhtenäiskoordinaattiruudukko alueelle.

Taulukossa 2 luetaan pohjoisimman Femoskandian perhoslajiston (602 lajia) tunnettu esiintymisen Utsjoella ja sitä ympäröivillä alueilla (ks. kuva 4). Erään Utsjoella harvinaisten lajien kokonaislevineisyys Femoskandiassa esitetään kuvassa 5 ja levineisyysdeltään ja elinpaikkavaatimuksetaan erityyppisten lajien tunnettu esiintymisen Utsjoella on kuvassa 6.

Valopyyntialue (Kevoniemmi) ja eräitä valopyyntihabitatteja näkyy kuvassa 7. Kuvassa 8 on eräiden lajien tarkkoja lentoaikoja Kevolla kesästä 1974 (perustuen yhden päivittäin tyhjentyn ryysän aiheistoon), kuvassa 9 esitetään kokonaisaalisis (yks./rysäyö) verrattuna edellisen kesän lämpösummaan v. 1972-79; myös saalis ilman yleisimpiä lajeja (*Epirrita autumnata* ja *Entephria caesiata*) on esitetty. Kuvassa 10 on perhosmäärä (yks./rysäyö) kunakin koentakautena verrattuna kesän lämpösummaan ja 10 vuoden lämpösummien keskiarvoon ja kuvassa 11 kokonaisajainmäärä koentakautta kohti verrattuna vuorokauden keskiarvoon ja 10 vuoden lämpötilojen keskiarvoon. Kuvissa 12-16 esitetään 30-lajin lentotajit ryssäälittien perusteella v. 1972-79. Taulukossa 3 on ryssällä saatujen 161 lajin kokonais-yksilömäärät ja aikaisin ja myöhäisin pyyntikausi ja taulukossa 4 ryssäalimateriaalin 20 runsaslukuisina lajia.

Utsjoen perhosten luetteloa käsitteä 421 lajia, joista n. 100 on Utsjoelle uutta. Kukin lajin kohdalla mainitaan ensin havainnot Kevon aseman alueelta (K.; ks. kuva 17) ja sen jälkeen muualta Utsjoella (U). Lajien löytöpaikat, runsaus, lentoajat, elinympäristövaatimukset ym. tiedot esitetään mahdollisimman tarkasti kirjallisuustietojen (kirjallisuustiedot numerolla sulussa) ja kerättyjen havaintojen (kirjainlyhenteet sulussa, ks. s. 67) perusteella.

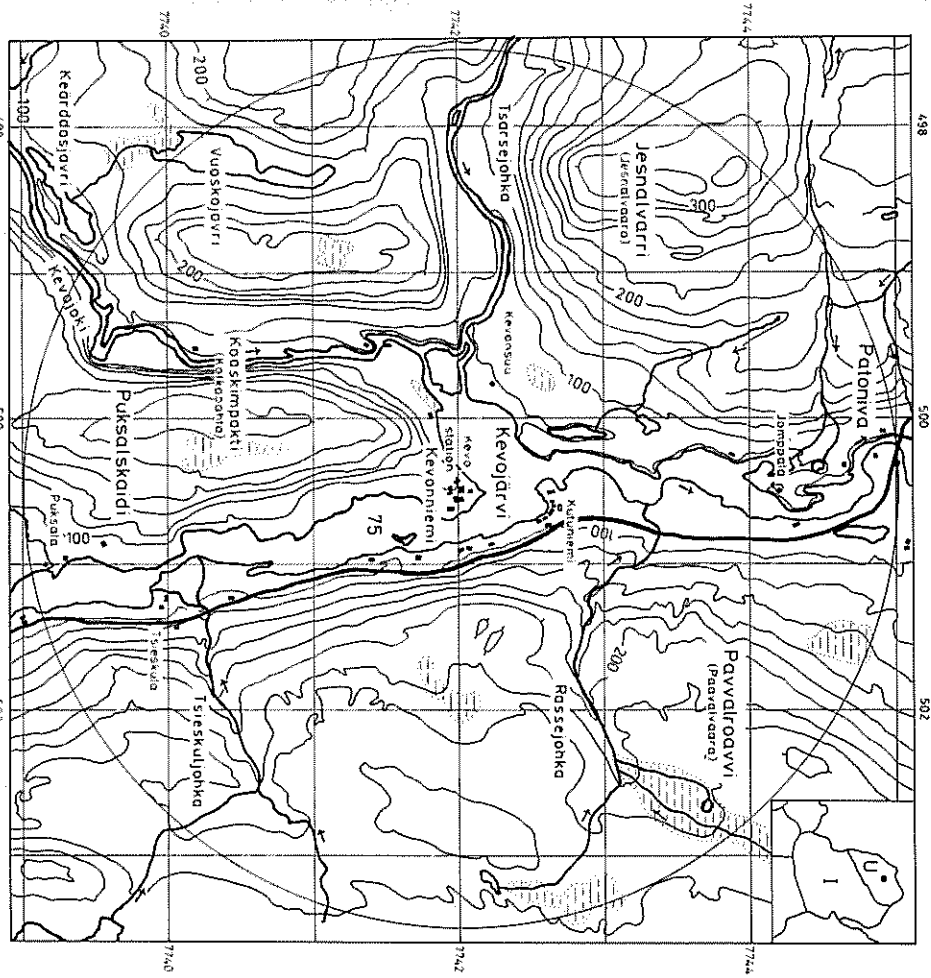


Fig. 17. The surroundings of the Kewo Subarctic Research Station (radius 3 km); U = Utsjoki, 1 = Inarti; 1 = contour line (interval 20 m), 2 = Utsjoki main road and buildings, 3 = stream, lake, mire, and river. Based on the Topographic Map of Finland 1:20 000.

Editor Lasse Iso-Iivari.

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