

15. The Lepidoptera of Spitsbergen

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KAISILA, J. 1973. The Lepidoptera of Spitsbergen. — Ann. Ent. Fenn. 39, 60 – 63.
Data of the Lepidopterous fauna of Spitsbergen are very scarce. Only six species have been recorded, of which *Apamea exulis* (Lef.), *Plutella maculipennis* (Curt.), and *Plutella polaris* (Zell.) seem to be permanent. *Phycitidae* sp. has obviously been transported by air currents, whereas *Pieris napi* (L.) (one specimen only) and *Hofmannospila pseudospirella* (Staint.) have been unintentionally imported by man. The last-mentioned species has not been reported previously from the area. There are some sight records of noctuids, and perhaps also one of an arctiid. The general distribution of the species and data of known observations in Spitsbergen are given, and a couple of erroneous data due to nomenclatural misunderstandings are corrected.

There are records of the following species:

Pieridae

Pieris napi L.

Longyearbyen (Longyear city), without a date (C. Lederer). One specimen was seen in flight, but attempts to catch it were unsuccessful (LEDERER 1941).

General distribution: Holarctic, ranges as several races from northern North America to northern Eurasia (WARREN 1963, DOS PASSOS 1965), but is generally sparse in the arctic zone, excepting Fennoscandia (SCHÖYEN 1880, VALLE 1933, NORDSTRÖM, PPEHEIM & VALLE 1955, PETERSEN 1947).

LEDERER (op. cit.) conjectures that the specimen observed must have been carried to Spitsbergen as a caterpillar or pupa, which also seems likely. *P. napi* does not belong to the permanent fauna of Spitsbergen. According to Lederer, the recorded specimen belonged to the race *arctica* VRTY of *Pieris bryoniae* OCHS. However, it is questionable whether the specimen could have been carried from the Alps, to which area *P. bryoniae* is confined. It is more likely that it originates from northern Europe; moreover, it is impossible to identify a single specimen racially.

Noctuidae

Apamea exulis Lef.

Adventdalen, one specimen 5 June 1964 (J. Lid leg., REBEL 1928).

General distribution: North American Northwest Territories, Ellesmere Islands, Baffin Island, Greenland, the Faroes, Iceland, the Shetlands, northern Scotland (BRYGGMAN 1958, WOLFF 1964, 1970, DOWNES 1966), ? Novaya Zemlya (*A. exulis* Lef. or *A. maillardi* Hb.-G., Rebel 1923). According to REBEL (op. cit.), the specimen was of the form *diffusa* Hb.-G., which he reports as predominating in Iceland, whereas LINDROTH (1931) and WOLFF (1964, 1970) state that the species varies greatly in Iceland, too.

Pyralidae

Pempelia dilutella Hb. (*subornatella* Dup.)

Spitsbergen, without more detailed data (EATON 1874).

General distribution: Central and southern Europe, northern parts of northern Europe (STAUDINGER & REBEL 1901). EATON (1874, according ELTON 1925 a) reported the species under the name '*Phycita subornatella*'. ELTON (op. c.) surmised that the species had been carried by air currents to Spitsbergen. *P. dilutella* does not belong to the permanent fauna of Spitsbergen. Consequently, it seems more probable that some other phycitine species with a more northern distribution was involved, perhaps *Pyla* (*Salebria fusca* HAW., a holarctic species, which in Europe ranges to as far north as Lapland, and in North America to Alaska, Labrador, and Greenland (DE LESSE 1951, HEINRICH 1956, WOLFF 1964), or one or other of the species pair

Polopeustis annulatella ZELL. (*altensis* WCK.) (northern Fennoscandia; northern Siberia: Schigalowo prope Lenam, Coll. Mus. Helsinki) and *P. arctiella* GIBSON (Alaska - Labrador, HEINRICH op. cit.).

Oecophoridae

Hoffmannophila pseudopretella Staint.

Longyearbyen, one specimen indoors 4 August 1965 (J. Kaisila leg.), one specimen 15 August, in the harbour, on the wall of a repository storehouse (JK leg.). The species has not been recorded earlier from Spitsbergen. It is worth mentioning that two specimens were secured on 16 July 1965, on board the vessel Signalhornen (E. Nyholm and JK leg.).

General distribution: Almost cosmopolitan. According to MEYRICK (1927) »not a native of Europe, it seems to have been introduced about 1840, probably from Asia; it has a marked constitutional preference for cool climates, and in hot countries only occurs in mountains.» WOLFF (1929) suggested that it might already have reached Europe by the beginning of the nineteenth century.

The species lives in storehouses and human apartments; its caterpillars are highly polyphagous and will feed on almost any vegetable or animal matter, even bird guano. Thus, *H. pseudopretella* is frequently found in birds' nests [in Finland, NORDBERG (1936) observed this]. According to WOODROFFE (1951) »bird nests, either in houses or in the open, may constitute an important reservoir of this species.» The magnificent adaptability of this species is partly ascribable to great potential variability in the duration of the diapause (WOODROFFE op. cit.). In the northern countries, *H. pseudopretella* is rather a recent arrival. Of the Lepidopterous species living in houses, *H. pseudopretella* obviously possesses the best chances to thrive in the severe environment of Spitsbergen, as its occurrence in Alaska (Pribilof Islands, VAN DUZEE 1921, according JOHNSTON 1950) also indicates.

Hyponomeutidae

Plutella polaris Zell.

Spitsbergen, without more detailed data (EATON 1874).

General distribution: Known from Spitsbergen only.

According to ELTON (1925 a), EATON (1874) reported the species under the name *Plutella cruciferarum* var. *nivella* (*P. cruciferarum* ZELL. and *P. maculipennis* CURT. are synonyms). Eaton had found the caterpillars of this species on *Draba* sp. »in higher parts with little vegetation.» STAINTON (1880) and Zeller regarded the species as new to science, and gave it the name *Plutella polaris*. As far as is known, it has not been encountered

since then, either in Spitsbergen or elsewhere. In Lepidopterorum Catalogus, MEYRICK (1914) considers *P. polaris* a valid species. I do not know whether he re-examined the type specimens of Zeller.

Plutella maculipennis Curt.

Vestspitsbergen, Midterhuken (Middel Hook in Belsund), one specimen 24 August 1961 (A. J. Malmgren leg., BOHEMAN 1865, HOLMGREN 1868); Gronfjorden (Green Harbour) three specimens, 1 August 1868 (A. E. Holmgren leg., Holmgren leg., HOLMGREN 1868); Reinsdyrflya, Liefdefjorden (Reindeer peninsula, Liefde Fjord), one specimen 8 August 1924 (C. S. Elton leg., Elton 1925 a); Ankerbreen, St. Johnsfor 29 July 1960 (Reidar Mehl leg.). At this period many migrating specimens were noted in Finland, and it is possible that the migrants were carried as far as Spitsbergen.

General distribution: Cosmopolitan, see e.g. KANERVO 1936. Northern part of the range: North America, Greenland (WOLFF 1964); Jan Mayen (Becker 1866, by the name *P. xylostella* L.); Iceland LINDROTH 1931, WOLFF 1970); the Shetlands, Faroes (WOLFF 1964); Northern Fennoscandia (VALLE 1933), Kola Peninsula (NOVIKOV 1958); Kanin Peninsula (POPPIUS 1906); Novaya Zemlya (REBEL 1923), Northern Siberia (AURIVILLIUS 1900 and others); Bjornoya (Bear Island) (LACK 1933). *P. maculipennis* is well known for its irruptions, and may occur in masses even in northernmost Finnmarken, e.g. on the bird cliffs of Gjesvaer in the summer of 1949, where the caterpillars fed on *Cochlearia officinalis* (personal observation).

The specimens caught by Malmgren and Holmgren were identified by the courtesy of Wallengren, Elton's specimen was determined by J. H. Durrant and those of Lack by E. Meyrick, whence the records must be regarded as reliable. Accordingly, *P. polaris* is excluded.

Owing to a peculiar confusion, there is also a record from Spitsbergen of *Tinagma dryadis* Stgr., a boreoalpine douglasid, whose developmental stages and food plant are unknown (see KAISILA 1962). L. FULMEK (1962, p. 147) mentions that it is a host of the ichneumonid wasp *Homotropus obscuripes* HGN. (syn. *Bassus arcticus* HGN.), reported from Spitsbergen. In the same connection, Fulmek, gives *Scaeva* as synonymous with the genus *Tinagma*, obviously meaning *Scaeva dryadis*, which Holmgren had described from Spitsbergen. However, *Scaeva* is an old synonym of the genus *Syrphus*, and thus the species concerned is *Syrphus tarsatus* ZETT. (*dryadis* HGN.), already known from Spitsbergen, not *Tinagma dryadis*. On the other hand, SUMMERHAYES & ELTON (1923) mention (p. 282) that *Scaeva dryadis* is a plant louse, on which the caterpillars of *Syrphus tarsatus* feed. These confusions are due to the poor knowledge of Latin by contemporary biologists.

Nevertheless, the Lepidopterous fauna of Spitsbergen seems not so meagre as one might conclude from the paucity of collected or observed specimens. ELTON (1925 a) reports a couple of sight records of Lepidoptera from the inner part of Isfjorden, and in 1965 there were

two observations of some noctuid in the area of Kongsfjorden (Kings Bay). One of the observations was made by E. Nyholm. In 1965, 'Fangstman' Hilmar Nøis told me that some years earlier he had seen a black and yellow moth in Sassendalen.

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16. The Anoplura and Siphonaptera of Spitsbergen

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The first records of the sucking lice and fleas of Spitsbergen were published by H. BOHEMAN (1865). His material included one flea sample and one louse sample, one species in each. BOHEMAN described both species as new to science. As far as I know, no other species have been reported from the Svalbard area. A further specimen of each order was collected on Vestspitsbergen in 1965, and they appeared to be new to the area. I shall present the data of all species encountered on Spitsbergen up to now.

Anoplura

Echinophthirius horridus (Olfers)

Records: Smeerenburgfjorden, near Smeerenburgreen, one specimen from a ringed seal (*Pusa hispida* L.) 28. VII. 1965, E. S. NYHOLM leg. — New to Spitsbergen.

General distribution: Coasts of North Europe (several records, e.g. HELLÉN 1935: Finland, BRINCK 1948: Sweden¹, Helgoland (FAHRENHOLZ 1916), Shetland

Islands (FREUND 1927), Jan Mayen (ssp. *groenlandicus* Becher, BECHER 1886), coasts of Greenland (MALTBAEK 1937 b), Beaufort Sea, Alaska (FERRIS 1918), Bering Strait (NATVIG 1933), coasts of California (FERRIS 1918), Lake Saimaa complex (LUTHER 1910), Lake Baikal (several records, e.g. ASS 1935, ssp. *baicalensis* ASS).

Hosts (nomenclature according to SCHEFFER 1958): harbour seal, *Phoca vitulina* L. [ssp. *vitulina* L., ssp. *concolor* DEKAY, ssp. *largha* Pallas, ssp. *richardi* (Gray)];