

An invasion of migrating insects (Syrphidae and Lepidoptera) on the Faroe Islands in September 2000

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In late September 2000 there was an invasion of insects to the Faroe Islands, including five species of Syrphidae and fourteen species of Lepidoptera. Species such as *Xanthandrus comtus* (Harris, 1780), *Tinea pallescentella* Stainton, 1851 and *Chloroclysta siterata* (Hufnagel, 1767) are unexpected as migrating insects on the Faroe Islands. The different species seen in the invasion apparently arrived from at least two different geographical areas.

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INTRODUCTION

Among the Faroe Islands, Nólsoy Island is situated in the eastern part facing Norway. The island covers an area of 1028 ha and the position is 62°00'N, 6°38'W. The distances from the Faroe Islands to the nearest neighbouring countries are 300 km to Shetland, 450 km to Iceland and 600 km to Norway. The number of migrating insects arriving at the Faroe Islands varies from year to year, depending on the weather. During the first nine months of 2000 there were few migrating Lepidoptera and only two specimens of the syrphid *Episyrphus balteatus* (De Geer, 1776).

METHODS AND MATERIAL

Catches of insects migrating to the Faroe Islands were carried out during 21 - 30 September 2000 using butterfly nets, light traps and traps baited with melasse. Most of the insects were caught on the Nólsoy Island, and a few at Sumba, Torshavn. The Lepidoptera were mainly caught at night or observed during daytime, All syrphids at Nólsoy Island were caught during daytime, while a few unidentified specimens were observed at Sumba during the day. Lepidoptera nomenclature is according to Karsholt & Razowski (1996). Syrphidae nomenclature is according to Torp (1994).

WEATHER CONDITONS

During the period of 21 – 29 September, one and two low-pressure were situated west and south of the Faroe Islands (Figure 1). One high-pressure was situated east and southeast of Norway and down to White Russia and another high-pressure had its centre in northern Italy (Meteo France). The wind direction on the Faroe Islands during this period was between south and east with 3 – 15 m/sec. (DMI). The arrows on the map in Figure 1 show the direction of the air current on 27 September heading directly from the English Channel to north of the Faroe Islands.

RESULTS AND DISCUSSION

The number of migrating insects that were caught or observed on the Faroe Islands during the period of 21 – 30 September 2000 are shown in Figure 2. A few specimens of Lepidoptera appeared almost daily in the early part of the period. The numbers increased considerably on 28 and 29 September, however, corresponding to the weather situation on the previous day (Figure 1). In contrast, syrphids were only collected on 28 September.

Lepidoptera

The different species of Lepidoptera caught or observed in this period are listed in Table 1. The numbers of observed specimens are approximate figures.

P. xylostella, *R. senilella* are both migrants and resident (Dahl 1956). *N. noctuella*, *V. atalanta*, *A. gamma*, *P. meticulosa*, *A. circellaris*, *P. saucia* and *A. ipsilon* are all migrants (Palm 1986, Skou 1991, Tolman et al. 1998, pers. obs.), seen almost every year. Some of the species are able to produce a new generation in the autumn, but have not been observed to survive the winter. *R. lutosa* and *X. c-nigrum* occur as rare migrants (pers. obs.). Since 1993, *X. c-nigrum* has previously only been

observed five times and *C. miata* only six times. Consequently, *C. miata* must be considered as a rare migrant, although if it is reckoned as a local resident (Skinner 1984, Skou 1984). Skou (1984) considers *C. miata* and *C. siterata* to be immigrants to the Faroe Islands. Normally *T. pallescens* is considered as an introduced species, but with the catch of two specimens during the present invasion, it must be reckoned as a migrant. Although it may be able to live in the Faroe Islands *T. pallescens* has previously only been observed twice; in Tórshavn 23 October 1943 (Dahl 1956) and in Sumba 12 December 1997 (coll. A. Poulsen, det. K. P. Bland).

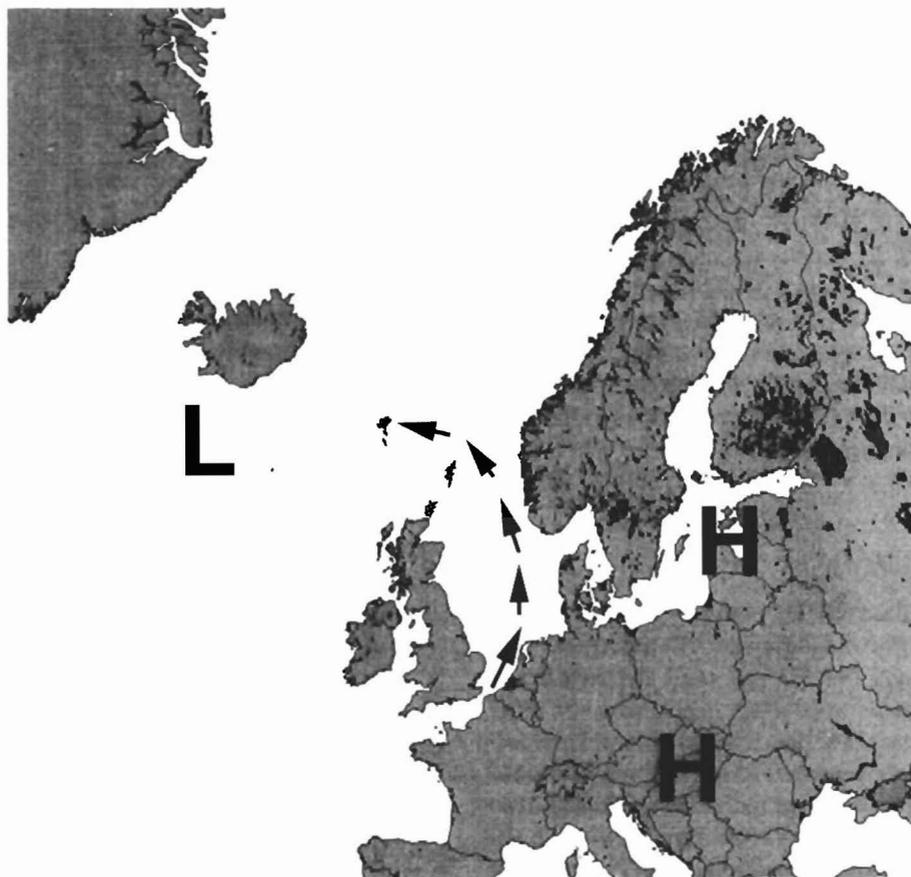


Figure 1. The low and high pressures were situated as in this figure during the period of 21 – 30 September 2000. The arrows on the map show the direction of the air currents on 27 September.

Table 1. The number of migrating Syrphidae and Lepidoptera caught or observed at the Faroe Islands during the period of 21 - 31 September 2000.

	Caught	Observed
Nólsoy		
Lepidoptera		
<i>Agrochola circumcellaris</i> (Hufnagel, 1766)	4	-
<i>Agrotis ipsilon</i> (Hufnagel, 1766)	6	-
<i>Autographa gamma</i> (Linnaeus, 1758)	1	-
<i>Chloroclysta miata</i> (Linnaeus, 1758)	4	-
<i>Chloroclysta siterata</i> (Hufnagel, 1767)	1	-
<i>Nomophila noctuella</i> (Denis & Schiffermüller, 1775)	>33	-
<i>Peridroma saucia</i> (Hübner, 1808)	1	-
<i>Phlogophora meticulosa</i> (Linnaeus, 1758)	12	-
<i>Plutella xylostella</i> (Linnaeus, 1758)	>20	-
<i>Rhigognostis senilella</i> (Zetterstedt, 1839)	>7	-
<i>Rhizedra lutosa</i> (Hübner, 1803)	1	-
<i>Tinea pallescentella</i> Stainton, 1851	2	-
<i>Vanessa atalanta</i> (Linnaeus, 1758)	-	>23
<i>Xestia c-nigrum</i> (Linnaeus, 1758)	1	-
Syrphidae		
<i>Episyrphus balteatus</i> (De Geer, 1776)	>5	-
<i>Eupeodes corollae</i> (Fabricius, 1794)	5	-
<i>Scaeva selenitica</i> (Meigen, 1822)	7	-
<i>Syrphus torvus</i> Osten Sacken, 1875	24	-
<i>Xanthandrus comtus</i> (Harris, 1780)	12	-
Sumba, Tórshavn, Miðvágur		
<i>Vanessa atalanta</i> (Linnaeus, 1758)	2	>22
<i>Nomophila noctuella</i> (Denis & Schiff., 1775)	>2	5
Syrphidae indet.	0	>3

Syrphidae

Among the Syrphidae (Table 1), *S. torvus*, *S. selenitica*, *E. balteatus* and *E. corollae* are all migrants (Torp 1994). *S. torvus* is the only one known as a local resident, although it is also observed as a migrating visitor to Nólsoy. *S. torvus* was not known from the Faroe Islands 90 years ago. (Jensen 2001). *X. comtus* has never been considered as a migrant, but since the numbers of this species has increased considerably in the late 1980's (Stubbs & Falk 1983) it appears that *X. comtus* has become quite common in the northern Europe and therefore has started to migrate (Stubbs 1996).

Observations of insects in Shetland and Iceland

There is frequently a connection in the pattern of migrating birds and insects in Shetland and the Faroe Islands with a delay of 1-2 days in the Faroe Islands (pers. obs.). During 19 – 30 September the following species were observed in Shetland: *N. noctuella* 24 specimens 24 September and 11 specimens 30 September, *V. atalanta* 2 specimens 25 September and 1 specimen 26 September, 1 specimen of *Macroglossum stellatarum* (Linnaeus, 1758) 28 September and a few specimens of *P. saucia* and *X. c-nigrum* (Shetland Wildlife 2000, Pennington & Rogers 2001).

In Iceland almost the same species of Lepidoptera were observed during the same period as those in the Faroe Islands but no migrating Syrphidae (E. Ólafsson, pers. comm.).

Weather

The composition of the species observed during the ten days period indicates that they must come from different areas. Species such as *C. miata* and *C. siterata* has most likely migrated from Norway where they are common and very common (Hoffmeyer 1966, Skou 1984), but both species are very rare in the area around the English Channel and in Denmark. The catch of one specimen of *P. saucia* and a large number of *X. comtus* suggest that they must have migrated from southern countries, since *X. comtus* is rare in Norway (T. R. Nielsen, pers. comm.). Insects migrating from Norway across the North Sea on 27 September would most probably have been caught by the strong isobar (Figure 1) in the middle of the North

Sea with wind force up to 15 m/sec. It is very likely that the same isobar also brought insects from both southern England, Holland, Belgium, North-West Germany and perhaps Denmark to the Faroe Islands. This theory is based on the difference in species of insects observed in Shetland and in the Faroe Islands during the same period. Still the possibility cannot be excluded that some of the insects arrived from countries situated further to the south-east since an unusual number of species of Noctuidae (Top-Jensen 2000) were caught on Bornholm, Denmark in late September. The reason, why no migrating Syrphidae were seen in Iceland, is probably due to unfavourable wind direction on 28 September (E. Ólafsson, pers. comm.).

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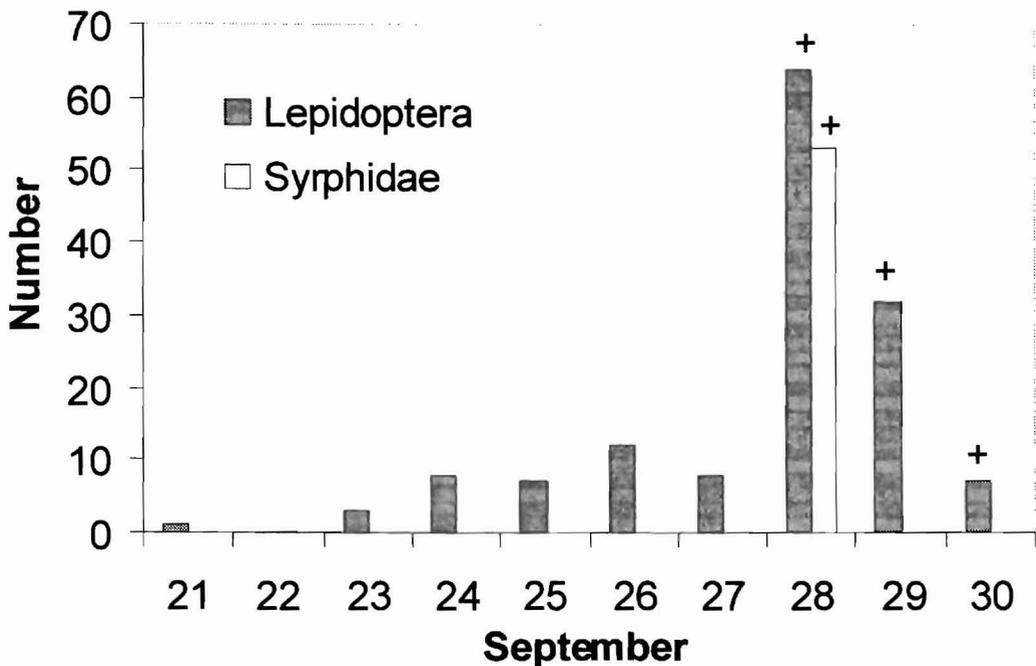


Figure 2. The number of migrating insects on the Faroe Islands in the period 21 September - 30 September 2000. + = more specimens observed.

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