

Fair Isle does National Moth Night, 11th August 2007

As Fair Isle's contribution to National Moth Night, the Fair Isle Wildlife Club organised a come-and-see event at Schoolton in mid morning, an invitation taken up by 7 workcampers and Lowri Best. Not only were the night's contents from the Schoolton actinic trap on view, but Pat Thomson turned up with another set of captures from the Lower Stoneybrek actinic. By splendid coincidence, it was a night of records.

Light traps

The participants were shown the moths in the traps and helped to release them into rose bushes – away from predatory starlings and other birds. The participants were then given a test! One or more individuals of each species had been retained in pots. The participants were divided into two teams, each with a moth identification guide, and asked to name the species. To make the task manageable, the teams were given the page or plate number on which the relevant species were depicted, thus reducing considerably the range of choice. The team using the Skinner guide got all but one of its sample correct. The two ladies in the team claimed it was because of their influence – though they may have received some help from Pat: a gold star for that team! The all-male team, using the Waring, Townsend & Lewington guide, named just over half the species correctly – which we declared an “honourable pass”.

While all this was going on, the Bird Observatory was counting the contents of its MV Trap 2 km to the north. They too had record numbers.

Alcoholic sugar

There is an alternative means of luring moths and that is to posts painted with an alcoholic sugar solution. The moths are attracted to the sugar but, just like humans, the alcohol makes them lose their inhibitions. Close approach becomes possible. All that is needed is a torch (and notebook). The moths can be seen probing avidly with their tube-like proboscis, sucking the energy-giving sugar without taking evasive action.

One of the benefits of alcoholic sugar is that it attracts extra species which rarely enter traps. This was the case at Schoolton on the Friday night. The extra species in this case was a Twin-spot Carpet, which was retained to show people the following morning.

Sugaring was again implemented in the evening. There was a fund-raising box supper followed by a dance in the community hall so posts were painted nearby. The dance ended at 2300 h, an ideal time for visiting the posts. Unfortunately, a strong drizzle had set in and a wind had begun, so just a handful of common moths were available for post-dance folk who made the tour of the posts.

A night of records

The night of 10th/11th August 2007 beat all previous records for total numbers in each of the three light traps, and captures for Large Yellow Underwing and True Lover's Knot. The 153 Dark Arches at Schoolton exceeded all totals from previous years, but takes second place this summer to 162 trapped during the night of 21st July.

The records were:

Total Captures

Schoolton: 298 moths (of 11 macro and 2 micro species).

Lower Stoneybrek: 224 (of 10 macro and 1 micro species).

Bird Observatory: 366 (7 macro and 1 micro species).

Species records

Large Yellow Underwing: 84, Schoolton trap (previous: 52 on sugar at Schoolton, 5th August 2004).

True Lover's Knot: 239, Bird Observatory trap (previous: 108, also at the Bird Observatory, 31st July 2000).

More notes about the species

There has been a steady increment in Dark Arches in the traps and at sugar for at least 10 years, overtaking Ingrailed Clay some years ago as the commonest moth amongst captures. The Large Yellow Underwing total is exceptional, too. The previous best was on sugar and smaller numbers are generally taken in traps. The astonishing True Lover's Knot total at the Bird Observatory more than doubles the previous best!

Dark Arches was well represented at all three sites. However, there were marked differences in species composition between Bird Observatory captures and those at Schoolton and Lower Stoneybrek. The Bird Observatory nestles in a grassy hollow at Mavers Cup, in the north of the isle. Immediately seawards is a strip of close cropped coastal grassland and to the north and west an expanse of moorland dominated by prostrate and dwarf heather *Calluna vulgaris*. The two traps in the south of the isle are sited in small gardens, surrounded by arable, pasture and rough grassland. There is very little heather close to Lower Stoneybrek and Schoolton, hence the absence of True Lover's Knot which is a classic heather-feeding species. Just two Large Yellow Underwings at the Bird Observatory is also explained by lack of suitable habitat for the species. But it tells us that the large numbers in the south are local residents. The species is also a migrant, but during migration influxes could be expected to be more evenly spread between sites.

A large contributor to these records was the overnight weather. Overcast, humid, relatively warm (for Fair Isle!) and no wind were ideal conditions for trapping moths. However, there is evidence that a number of local moth species are having a good year. Dark Arches has been abundant since mid July, Large Yellow Underwing has been present in good numbers and Northern Rustic has been caught in unprecedented numbers.

In addition to quantity, the observers at Schoolton on Saturday morning were treated to a good spread of species. The Square-spot Rustic has only just begun to appear in the Schoolton trap and was the first of the year for Lower Stoneybrek. By contrast, it is getting very late for Small-square Spot, Dusky Brocade and Map-winged Swift. The first two of this triumvirate were very worn individuals so had been on the wing for some time. Lower Stoneybrek has been recording the Confused for a few days, but the Schoolton trap had its first of the year. There has been an unprecedented run of Smoky Wainscots at Schoolton – suggesting that the species may now be breeding on

the isle – but the Lower Stoneybrek individual was the first of the year in that trap. It was heavily worn.

It was good to have an example of all four regular Fair Isle “carpets”. All were in pristine condition, and the Silver-ground Carpet was stunning. The Twin-spot Carpet is common on the isle, but rarely enters traps. Fortunately, it is a little more frequent as a visitor to sugar.

Moth diversity

In all 12 **noctuid**, 4 **geometer**, one **hepialid**, one **pyralid** and two **tortricid** species were caught. A breakdown of numbers, species and locality are given in Tables 1 and 2 below. Note that the species have been colour-coded in the tables to indicate their family allegiance: **Noctuidae**, Geometridae, **Hepialidae**, **Pyralidae** and **Tortricidae**. Compared with many other sites the diversity is low but this reflects Fair Isle’s northerly location, distance from other land masses and small size. In compensation, many of the species have unique local forms; and, though none was taken on the night, Fair Isle is well situated to receive migrant species and to monitor the effects of climate change on moth diversity and populations.

Other insects

The traps also caught 3 species of caddis – *Limnephilus affinis*, *L sparsus* and *Stenophylax permistus* – and the dung beetle *Aphodius rufipes*. They are all residents; and all regular visitors to the traps apart from *Limnephilus affinis* which occurs once a year or less.

Further detail

A full list of captures per trap and locality is presented in the following tables.

Table 1. Full list of captures in Fair Isle traps on night of 10th/11th August 2007

	FIBO	LS	Sch	total
Dark Arches <i>Apamea monoglypha</i>	71	135	153	359
True Lover's Knot <i>Lycophotia porphyrea</i>	239			239
Large Yellow Underwing <i>Noctua pronuba</i>	2	30	84	116
Northern Rustic <i>Standfussiana lucernea</i>	10	19	22	51
Ingrailed Clay <i>Diarsia mendica</i>	24	14	7	45
Antler <i>Cerapteryx graminis</i>	15	4	9	28
Square-spot Rustic <i>Xestia xanthographa</i>		3	6	9
Confused <i>Apamea furva</i>		2	1	3
Dusky Brocade <i>Apamea remissa</i>			1	1
Smoky Wainscot <i>Mythimna impura</i>		1		1
Small Square-spot <i>Diarsia rubi</i>			1	1
Autumnal Rustic <i>Paradiarsia glareosa</i>	1			1
Red Carpet <i>Xanthorhoe decoloraria</i>		2	1	3
Silver-ground Carpet <i>Xanthorhoe montanata</i>		1		1
Garden Carpet <i>Xanthorhoe fluctuata</i>			1	1
Map-winged Swift <i>Hepialus fusconebulosus</i>			1	1
<i>Udea lutealis</i>		2	2	4
<i>Eana osseana</i>			9	9
<i>Eana penziana</i>	1			1
<i>Limnephilus sparsus</i>		4	16	20
<i>Stenophylax permistus</i>		6	1	7
<i>Limnephilus affinis</i>			1	1
<i>Aphodius rufipes</i>		1		1

Key

FIBO: Fair Isle Bird Observatory (at Mavers Cup)

LS: Lower Stoneybrek

S: Schoolton

Table 2. Full list of moths attracted to sugar on nights of 10th & 11th August 2007

	S10	S11	H11
Large Yellow Underwing <i>Noctua pronuba</i>	32	2	2
Dark Arches <i>Apamea monoglypha</i>	16	10	5
Ingrailed Clay <i>Diarsia mendica</i>	2		
Twin-spot Carpet <i>Perizoma didymata</i>	1		
<i>Udea lutealis</i>	2		

Key

S10: night of 10th August at Schoolton

S11: night of 11th August at Schoolton

H11: posts around the community hall on night of 11th August

Nick Riddiford

13th August 2007