

GMS News

Autumn 2022

Weeks 28-36



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Editorial

Now that winter is with us, the moths are few and far between as those of us who undertake Winter GMS know only too well. So now is the time to remind everyone that a record of an empty trap is as valid a data point as one with 100 moths. Remember, the whole point of the Garden Moth Scheme is to track the numbers of our common garden moths over a long period in order to establish trends. Whilst GMS does contribute moth records to the National Moth Recording Scheme it is in essence a monitoring scheme.

The threats to British moth populations are summed up by Butterfly Conservation's Richard Fox in a recent article in the British Journal of Entomology and Natural History. He cites in particular habitat and landscape degradation, nutrient enrichment, imported plant diseases and of course climate change, also mentioning light pollution as a possible factor. However, some of these changes can also lead to increases in some species. If we want to improve the situation we need to understand what's going on and it is therefore vitally important to record changes in moth populations whether these are increases or decreases. So, keep up the good work!

Here we start as usual with Evan's overview of the Autumn Quarter's results, noting that the moth numbers were considerably lower than average. Weather patterns were most unusual with both especially high and low temperatures and rainfall being experienced. The featured moth is Lunar Underwing which as well as being variable in appearance shows great fluctuations in population size both geographically and year by year. An extreme example was experienced by one Welsh recorder who had more Lunar Underwings in their trap in two nights than the total of all the other species over the whole 36 weeks of GMS!

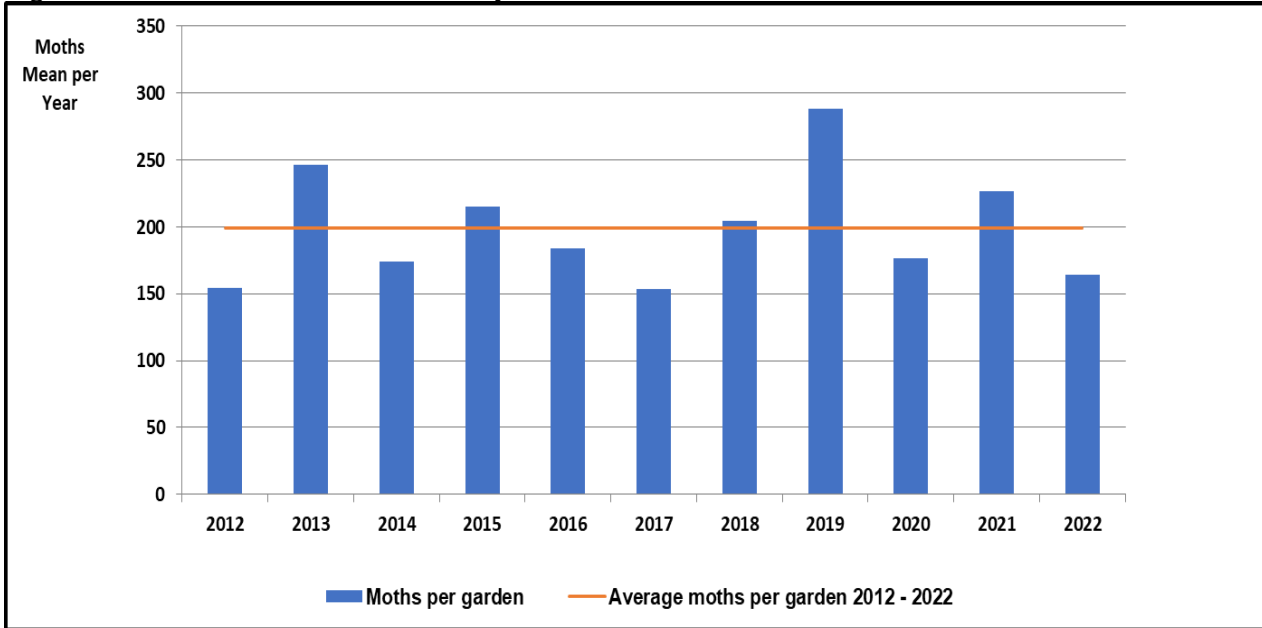
I'm always looking for articles describing recorders' experiences and Hilary May tells us about the enjoyment she has obtained from moth-trapping and in particular her first year of GMS. Then we reach Puzzle Corner where my faithful contributor Nonconformist provides a Christmas Crossword. Thank you, Nonconformist!

Overview GMS 2022 4th Quarter

Evan Lynn

The number of moths this last quarter has been disappointing, possibly as a result of two hot dry summers in succession having had a deleterious effect on the larval survival success rate. While the past two quarters this year have seen their moth numbers reach the average this quarter has fallen sadly short of this target line (fig 1).

Fig 1. GMS 2022 Q4. Mean Quarterly Moth Numbers 2012 to 2022



September began warm but then became colder with some frosts in the last few days of the month. The UK mean temperature was 13.4°C, half a degree higher than the long-term average, though this was mainly prevalent in northern areas. Rainfall amounts were 111% more than normal with northwest Scotland and East Anglia being the driest, whilst parts of the Southeast, eastern Scotland and Northern Ireland were over 150%.

Unstable weather between the 3rd and 9th saw daily thundery showers together with heavy frontal rainfall bringing flooding to many areas in the north and west as mentioned in the last newsletter, since Quarter 3 extended into September.

October started off warmer than average then cooled before warming again at the end of the month when it was milder than average with a temperature at Kew Gardens of 22.9°C on the 29th. This bland description belies several weather-related problems experienced throughout the month. There were several instances of flooding in Scotland in the first week. Then in the last 11 days there were frequent bands of very heavy thundery rain drifting across the country causing frequent disruption in several areas. Some of this weather can be seen in the following charts which may explain the weather experienced in your region.

Fig 2. Mean Maximum Temperature for September & October 2022 (with permission of the Met Office).

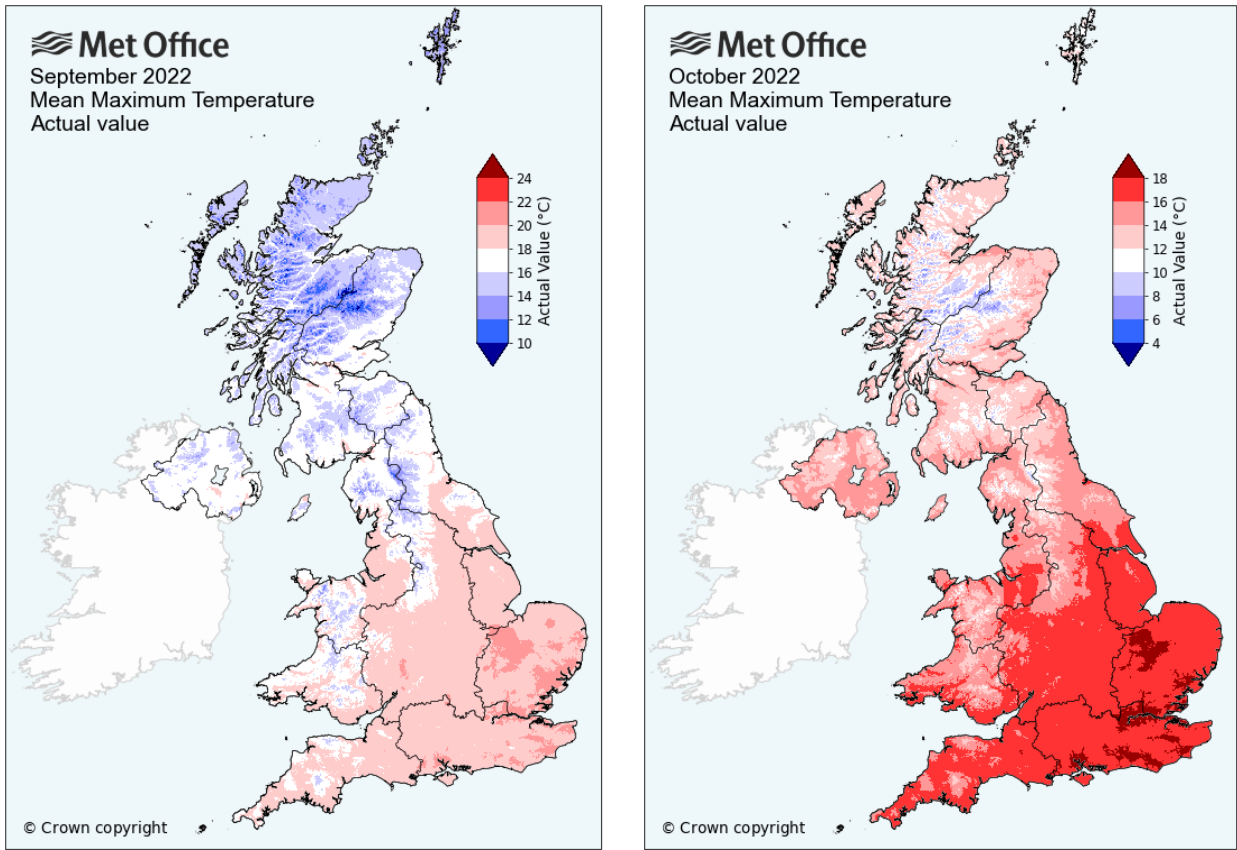


Fig 3. Hours of Sunshine for September & October 2022 (with permission of the Met Office).

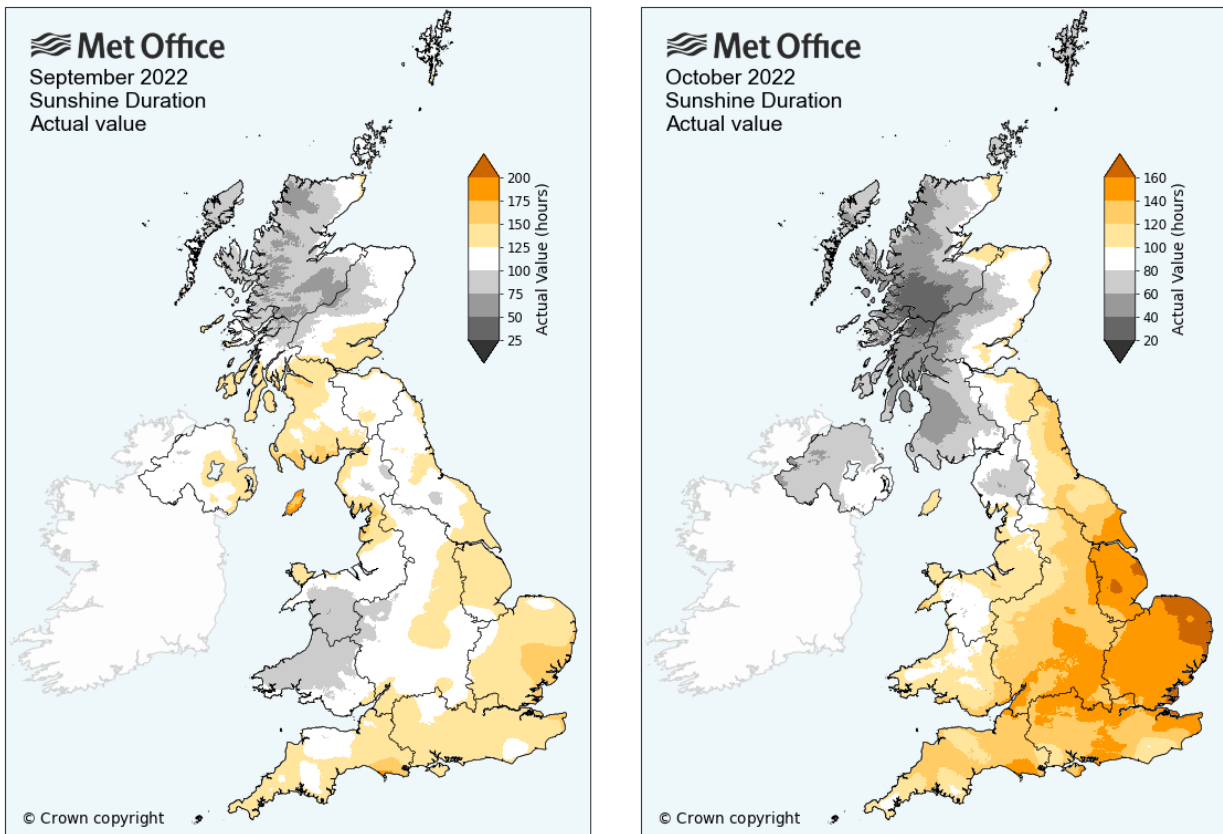


Fig 4. Days of Rainfall ≥ 10 mm for September & October 2022 (with permission of the Met Office).

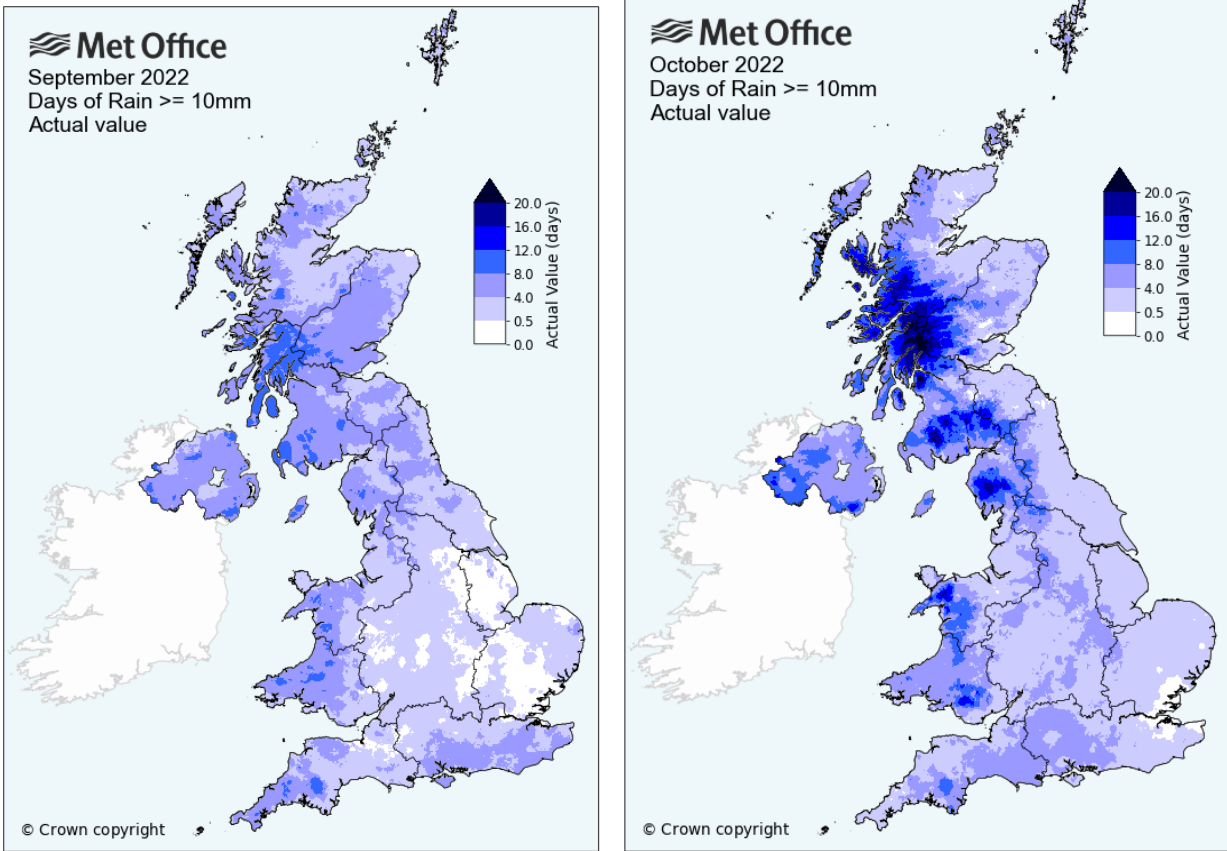
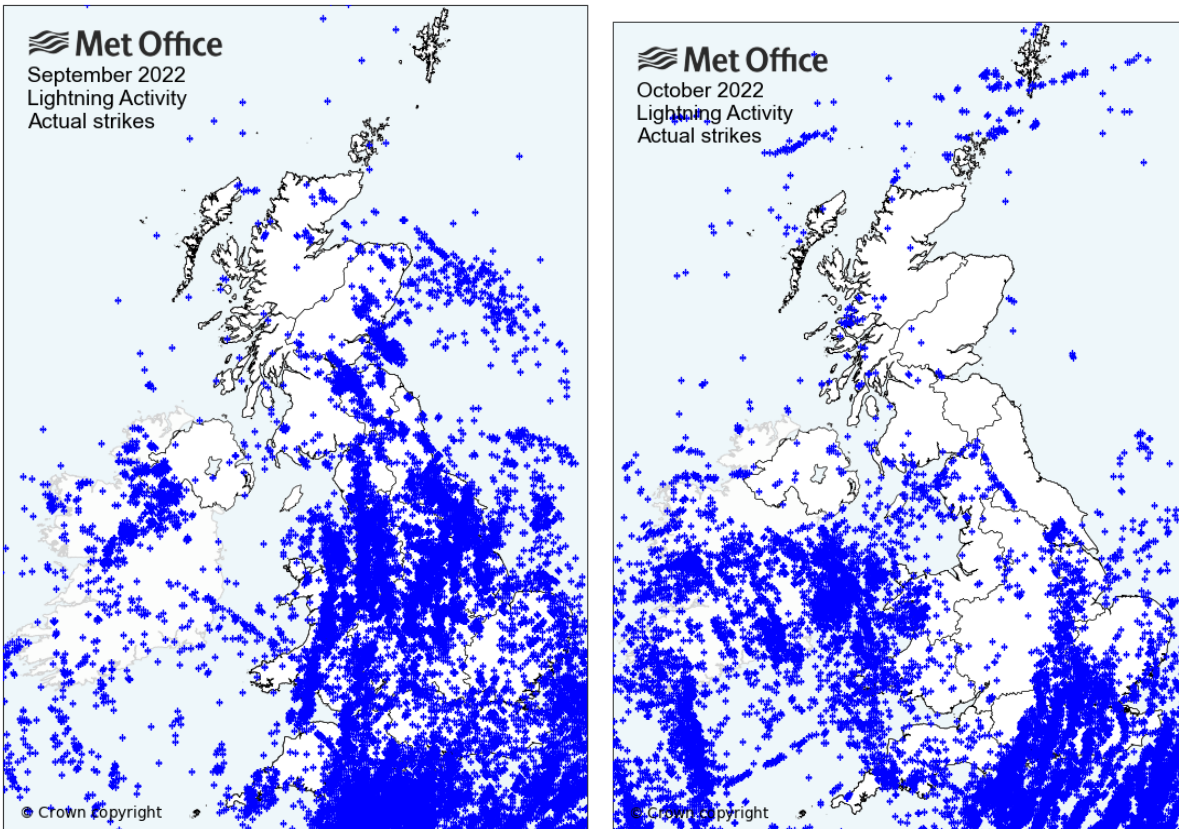
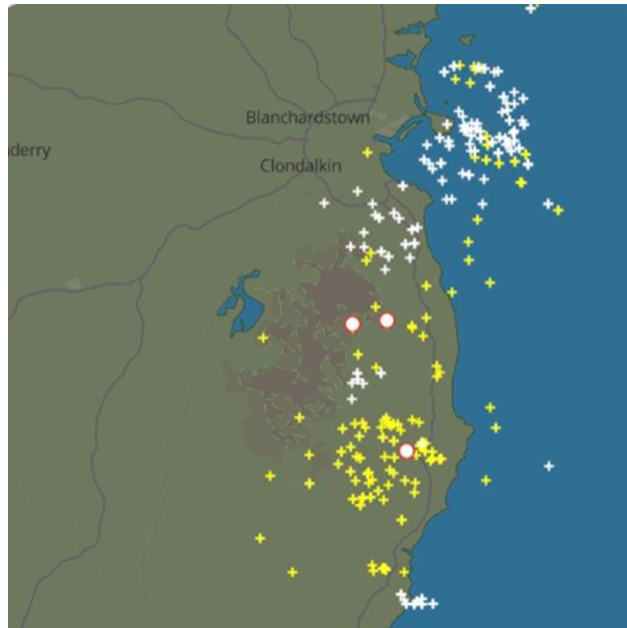


Fig 5. Lightning Activity for September & October 2022 (with permission of the Met Office).



An additional chart shows lightning activity on October 19th when a lightning strike set an offshore wind turbine on fire off the coast of Arklow, county Wicklow.

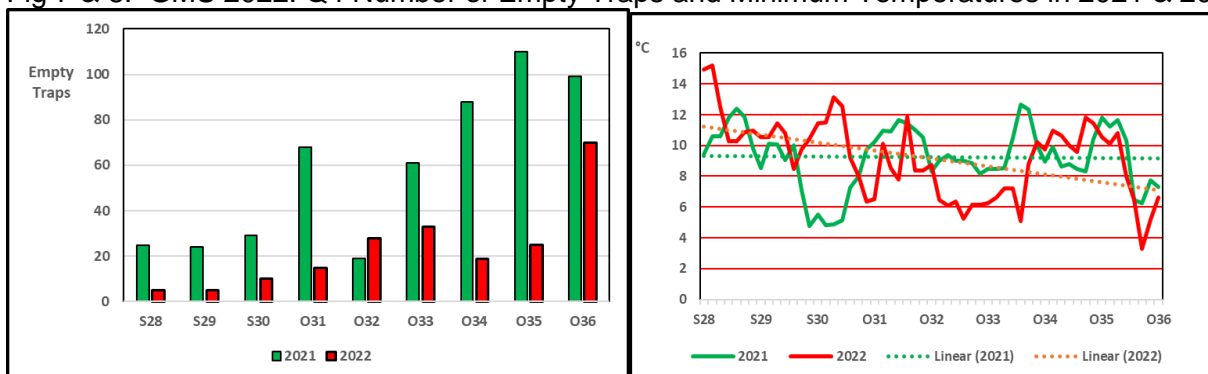
Fig. 6 Lightning activity, County Wicklow October 19 2022 (blitzortung.org)



When wondering about the apparent decline in the number of moths between this quarter and that of last year I looked at the number of empty traps (fig7) and the difference between the two sets of minimum temperatures (fig 8). Just looking at these two histograms demonstrates an apparent paradox. Last year both minimum temperatures and moth numbers were higher yet there were more empty traps. However, temperature is only one factor for this higher number of zero catches – differences in the number of clear moonlit nights, strength and direction of the wind must also play a part together with any major changes in the micro habitat.

Another consideration that might make the figures more even is that I am only dealing with the 2022 recorders who have sent their form in on time. For example, the number of 2021 recorders used in this chart is 383 while if I had made this chart in 2021 comparing against 2020, I would only have had access to 325.

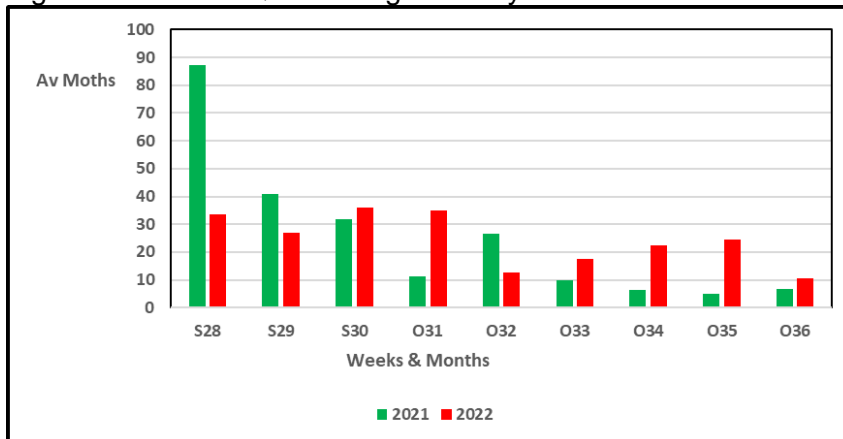
Fig 7 & 8. GMS 2022. Q4 Number of Empty Traps and Minimum Temperatures in 2021 & 2022



As seen in figure 1 the average number of moths was greater in 2021 giving the impression of ever declining numbers this year but when looking at the number of moths per week a different picture emerges. Apparently 2021 had a better fourth quarter but the discrepancy is really in the first week and to lesser extents in weeks 29 & 32. For the remaining weeks, 2022 showed higher numbers of moths.

While 2021 results gradually tailed off towards the autumn, 2022 held up well before dropping abruptly (fig 9).

Fig 9. GMS 2022 Q4. Average Weekly Catches 2021 & 2022



Statistics

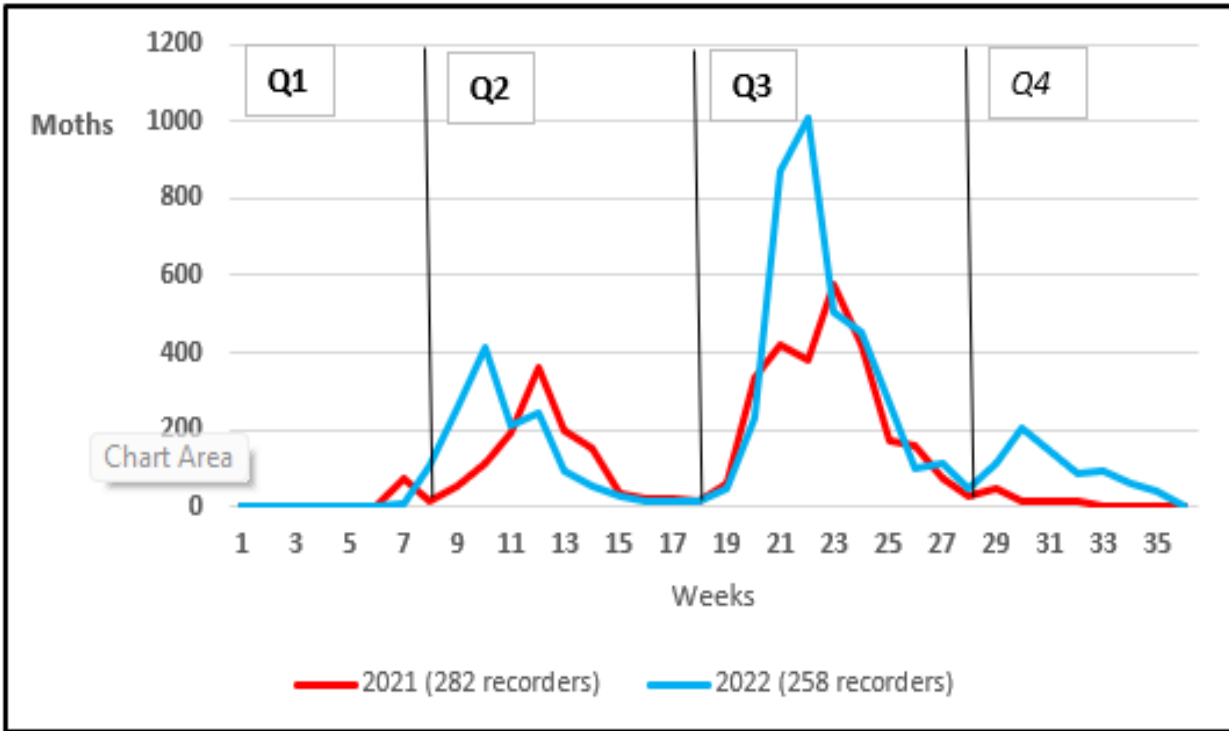
Although Figure 1 showed a loss this quarter compared to previous years the number of several moths do not seem to have suffered greatly compared to last year. The Large Yellow Underwing increased both in number and the percentage of gardens visited, although this latter figure is deceptive as it only records its presence and not actual quantity. Again, this discrepancy is shown with the Setaceous Hebrew Character that dropped from second place to tenth and yet appeared in 12% more gardens.

Table 1. GMS 2022 Q4. Top 20 Core Species

Position		Top 20 Species	Mean Per Trap			Catching Frequency (%. of gdns)		
2021	2022		2021	2022	Change	2021	2022	Diffnce
			372 Gardens	315 Gardens				
1	1	Large Yellow Underwing	27.7	32	4.3	41	95	54
5	2	Lunar Underwing	12.6	21.4	8.8	54	81	27
7	3	Square-spot Rustic	7.4	10	2.6	22	6	-17
4	4	Light Brown Apple Moth	12.7	7.6	-5.0	41	1	-40
10	5	Beaded Chestnut	5.5	7	1.6	48	1	-47
8	6	Lesser Yellow Underwing	6.8	6.7	-0.1	56	87	31
13	7	Red-green Carpet	4.9	5.4	0.5	15	6	-8
12	8	November Moth agg.	5.1	5.3	0.3	28	72	44
16	9	Black Rustic	3.4	5.1	1.7	20	21	1
2	10	Setac Hebrew Character	24	4.9	-19.1	26	32	6
63	11	Shuttle-shaped Dart	0.5	2.9	2.3	16	7	-9
98	12	Rush Veneer	0.1	2.8	2.7	18	7	-11
3	13	Common Marbled Carpet	13.3	2.5	-10.8	31	63	32
24	14	Green-brindled Crescent	2.1	2	-0.1	31	2	-29
28	15	Red-line Quaker	1.9	1.7	-0.2	17	5	-12
15	16	Angle Shades	3.8	1.6	-2.2	41	25	-16
50	17	Rusty-dot Pearl	0.8	1.5	0.8	8	2	-5
34	18	Barred Sallow	1.3	1.5	0.2	21	3	-18
30	19	Ruddy Streak	1.6	1.4	-0.2	24	3	-20
42	20	Merveille du Jour	1.1	1.4	0.3	40	1	-39

Both the Shuttle-shaped Dart and the Rush Veneer made a dramatic recovery from positions 63 & 98 rising to numbers 11 & 12 respectively. While the Rush Veneer is dependent on favourable winds the change in Shuttle-shaped Dart does sound miraculous! This may however be all smoke and mirrors as this table only refers to this quarter and last year it may have emerged earlier in the season. However, looking at the whole GMS period it would appear that the Shuttle-shaped Dart has indeed had a good year (fig 10).

Fig10. GMS Flight Season of the Shuttle-shaped Dart 2021 & 2022



Then Table 2 shows the top ten moths for each region. The Large Yellow Underwing is in pole position in 11 regions but slips to second place in Scotland. As well as showing their positions I have included another column showing the percentage of the moth in relation to the total moth catch for each region.

Table 2. GMS 2022 Q4. Top 10 Regional Core Species

Scotland (23)			North East (30)			North West (37)		
	Mean	%		Mean	%		Mean	%
Spruce Carpet	8.4	10.1	Large Yellow Underwing	14.3	21.6	Large Yellow Underwing	28.5	23.1
Large Yellow Underwing	8	9.5	Lunar Underwing	7.2	10.8	Red-Green Carpet	28.5	23.1
November Moth agg.	7.9	9.4	Setaceous Hebrew	4.7	7.2	Light Brown Apple Moth	10.8	8.7
Red-Green Carpet	4.1	4.9	Square-spot Rustic	3.8	5.7	November Moth agg.	7.5	6.1
Rosy Rustic	3.2	3.8	Red-Green Carpet	3.3	5	Ruddy Streak	6.4	5.2
Common Marbled Carpet	3.1	3.7	Light Brown Apple Moth	2.7	4.1	Lesser Yellow Underwing	5.3	4.3
Angle Shades	2.7	3.2	November Moth agg.	2.4	3.6	Common Marbled Carpet	5.2	4.2
Black Rustic	2.3	2.8	Common Marbled Carpet	2.2	3.3	Lunar Underwing	4.4	3.6
Chestnut	2.2	2.6	Lesser Yellow Underwing	1.7	2.5	Square-spot Rustic	3.9	3.2
Square-spot Rustic	2.1	2.5	Feathered Thorn	1.5	2.3	Black Rustic	3.2	2.6
Yorks & Humber (20)			Ireland (20)			East of England (33)		
	Mean	%		Mean	%		Mean	%
Large Yellow Underwing	43	26.1	Large Yellow Underwing	11.8	11.9	Large Yellow Underwing	34.8	8.2
Lunar Underwing	19.4	11.7	Beaded Chestnut	11.5	11.5	Square-spot Rustic	15.3	3.6
Setaceous Hebrew	12.6	7.6	Square-spot Rustic	8.7	8.7	Beaded Chestnut	12.6	3
Light Brown Apple Moth	9.8	5.9	Light Brown Apple Moth	8	8.1	Light Brown Apple Moth	12	2.8
Lesser Yellow Underwing	6.1	3.7	Setaceous Hebrew	5.7	5.7	Lunar Underwing	11.6	2.7
Square-spot Rustic	6.1	3.7	Lunar Underwing	4.6	4.6	Lesser Yellow Underwing	9.2	2.2
Beaded Chestnut	5.9	3.6	November Moth agg.	4	4	Black Rustic	9	2.1
Red-Green Carpet	5.9	3.5	Common Marbled Carpet	3.5	3.5	Shuttle-shaped Dart	7	1.7
Shuttle-shaped Dart	4.1	2.5	Rosy Rustic	3.5	3.5	Large Wainscot	6.9	1.6
Black Rustic	3.1	1.9	Black Rustic	3.1	3.1	White-point	5.5	1.3
East Midlands (37)			West Midlands (23)			Wales (33)		
	Mean	%		Mean	%		Mean	%
Lunar Underwing	53.9	24.4	Large Yellow Underwing	29.7	19.3	Large Yellow Underwing	37.6	21
Large Yellow Underwing	32.4	14.6	Lunar Underwing	23.1	15	Lunar Underwing	22.9	12.8
Beaded Chestnut	11.1	5	Light Brown Apple Moth	9.5	6.1	Square-spot Rustic	16.4	9.1
Square-spot Rustic	11.1	5	Lesser Yellow Underwing	8.1	5.3	Beaded Chestnut	14.7	8.2
Lesser Yellow Underwing	10.4	4.7	Red-Green Carpet	7.7	5	November Moth agg.	10.9	6.1
Light Brown Apple Moth	10.1	4.6	Square-spot Rustic	7.2	4.6	Lesser Yellow Underwing	5.6	3.1
Black Rustic	8.2	3.7	November Moth agg.	7	4.6	Red-Green Carpet	5.2	2.9
Red-Green Carpet	5.4	2.4	Setaceous Hebrew	6.3	4.1	Black Rustic	5.1	2.9
Setaceous Hebrew	4.9	2.2	Beaded Chestnut	6.3	4.1	Green-brindled Crescent	4	2.2
Shuttle-shaped Dart	4	1.8	Ruddy Streak	4.2	2.7	Setaceous Hebrew	3.7	2.1
South East (31)			Southwest (29)			Channel Islands (1)		
	Mean	%		Mean	%		Mean	%
Large Yellow Underwing	40.4	21.2	Large Yellow Underwing	58.4	21.7	Large Yellow Underwing	135	19
Lunar Underwing	28.9	15.2	Lunar Underwing	43.8	16.3	Rush Veneer	92	13
Square-spot Rustic	14.9	7.8	Square-spot Rustic	15.6	5.8	Square-spot Rustic	74	10
Lesser Yellow Underwing	9.7	5.1	Rusty-dot Pearl	10.9	4.1	Rusty-dot Pearl	50	7
Light Brown Apple Moth	9.2	4.8	Lesser Yellow Underwing	10.2	3.8	Feathered Ranunculus	47	7
Rush Veneer	9.1	4.8	Light Brown Apple Moth	9.8	3.6	Black Rustic	34	5
Black Rustic	6.9	3.6	Beaded Chestnut	9.5	3.5	Flame Brocade	33	5
Red-Green Carpet	5.6	2.9	Black Rustic	8.2	3	Crescent Dart	32	4
November Moth agg.	4.8	2.5	Setaceous Hebrew	7.2	2.7	Lunar Underwing	27	4
Beaded Chestnut	3.5	1.8	Red-Green Carpet	6.3	2.4	Autumnal Rustic	27	4

In last quarter's report I listed the maximum number of moths caught in one night for the last seven species of the top 20 core moths. This time I have listed the moths from the middle section of the table. I am always impressed at the diligence and patience of those who have to count the large number of moths that sometimes are caught in the traps though no doubt they pale into insignificance when compared to the large numbers of Large Yellow Underwings that used to be caught. Notable among these is the recorder in East of England who caught 195 Setaceous Hebrew Characters in 2019 and also another there who caught a mere 146 in 2020. Congratulations to all (Table 3).

Table 3. GMS 2022 Q4. Maximum Catches 2018 to 2022

Species	2018	Reg	2019	Reg	2020	Reg	2021	Reg	2022	Reg
Black Rustic	108	EM	109	EM	127	EE	76	NW	25	SE
Common Marbled Carpet	106	SW	132	SW	124	SW	214	NW	11	NW
November Moth agg.	80	WA	55	WA	82	WA	92	NW	52	WA
Red-green Carpet	65	WA	86	WA	71	EM	131	NW	54	NW
Rush Veneer	5	SE	8	SE	1	C1/EE/SE	10	SW	51	SE
Setaceous Hebrew Character	111	EE	195	EE	146	EE	122	SW	102	Y&H
Shuttle-shaped Dart	99	EM	49	SW	73	EE	26	NW	10	NE

All the trap nights and catches completed by the recorders are summarised in Table 4. The minimum and maximum moth numbers caught in this nine-week period vary considerably, possibly reflecting location, type of trap and/or the individual micro-climates. The minimum catches range from 4 to 68 and the maximum between 249 and 955, while the trapping effort (Moth Trap Nights) is very high considering the time of year when holidays are often taken. Some recorders have expressed concern with their low catches but this is probably related both to their micro climate and garden situations. In fact, I am trying to figure out why our trap has achieved the lowest score in Wales even when the wind has been low and yet we live in a rural location. One possibility is that we are surrounded by lovely monoculture grassland that is regularly heavily grazed. The third section shows the preferred night for trapping. Although Friday is the official night three nights either side are acceptable as everyone hopefully has a life apart from mothing.

Table 4. GMS 2022 Q4. Regional Statistics

Region	Gardens	Moths				Moth Trap Nights		
		Total	Mean	Min	Max	Possible	Actual	Percent
SC	23	1924	84	12	249	207	190	92
NE	30	1983	66	4	479	270	251	93
Y&H	20	3297	165	17	881	180	166	92
NW	37	4555	123	10	443	333	315	95
IRL	20	1986	99	15	438	180	167	93
EE	33	6666	202	22	573	297	286	96
EM	37	8176	221	68	672	333	319	96
WA	33	5921	179	26	525	297	280	94
WM	23	3553	154	29	496	207	195	94
SE	31	5912	191	29	476	279	268	96
SW	29	7802	269	53	955	261	243	93
CI	1	721	N/A	N/A	N/A	9	9	100

Weekday Trap Nights							
Night	Tues	Wed	Thurs	Fri	Sat	Sun	Mon
Days	27	52	263	1067	423	147	94
Percent	1	3	13	51	20	7	5

Additional Species

As mentioned in previous reports, one part of the form which is often ignored is the lower section where you are invited to add moths which are not on the core/regional list.

The number of entries this quarter has been lower with micro moths being less active towards the end of the year. There were 389 rows of data coming from all of the regions giving a total of 1177 moths of 128 species. Some of these may be duplicated several times when one recorder identifies it as the species whilst others record it as a sp. or an agg (table 5).

The Boxworm Moth, or Box-tree Moth, was the predominate species followed by the Horse Chestnut Leaf Miner. There have been a few queries on why I use the name Boxworm Moth instead of the Box-tree Moth. I found that not only do more recorders used the first appellation but also it is the name given in my ID book. As for the mixture of scientific and vernacular names for the micros I take the option of using the scientific name unless UK Moths gives it an English name. If I had used the variety of names entered, then the list of moths would be somewhat longer. There is always the complication that the scientific names can change!

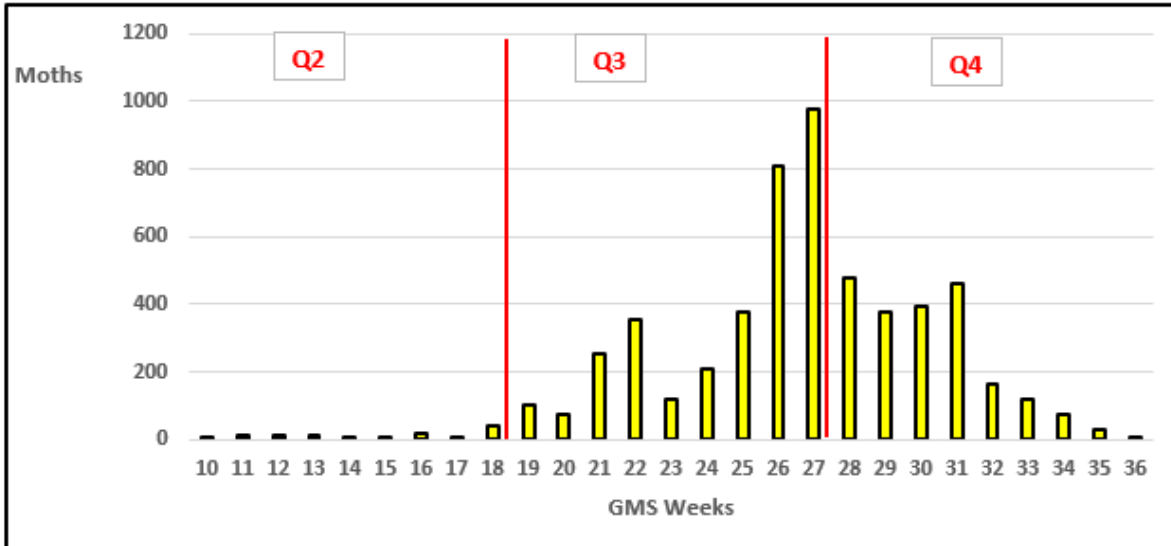
Table 5. GMS 2022 Q4 Top 20 Additional Species

Code	Latin	Vern	Quantity
63.054	<i>Cydalima perspectalis</i>	Boxworm Moth	353
15.089	<i>Cameraria ohridella</i>	Horse Chestnut Leaf-miner	88
35.118	<i>Scrobipalpa ocellatella</i>	Beet Moth	85
73.128	<i>Amphipoea oculea</i> agg.	Ear Moth agg.	64
63.069	<i>Eudonia angustea</i>	<i>Eudonia angustea</i>	57
73.134	<i>Rhizedra lutosa</i>	Large Wainscot	50
73.231	<i>Aporophyla lutulenta</i>	Deep-brown Dart	37
49.069	<i>Acleris sparsana</i>	<i>Acleris sparsana</i>	30
70.038	<i>Rhodometra sacraria</i>	Vestal	27
73.076	<i>Helicoverpa armigera</i>	Scarce Bordered Straw	26
73.3	<i>Mythimna l-album</i>	L-album Wainscot	21
73.093	<i>Caradrina kadenii</i>	Clancy's Rustic	18
70.077	<i>Pennithera firmata</i>	Pine Carpet	15
45.01	<i>Amblyptilia acanthadactyla</i>	Beautiful Plume	14
70.195	<i>Chesias legatella</i>	Streak	10
70.159	<i>Eupithecia phoeniceata</i>	Cypress Pug	9
73.179	<i>Tiliacea citrigo</i>	Orange Sallow	9
41.002	<i>Blastobasis adustella</i>	<i>Blastobasis adustella</i>	9
73.119	<i>Helotropha leucostigma</i>	Crescent	8
63.048	<i>Palpita vitrealis</i>	<i>Palpita vitrealis</i>	8

Lesser Yellow Underwing

Like most mystery novels there is a cliff hanging ending and last report's feature on the Lesser Yellow Underwing was no exception. This report now completes the story showing the abrupt drop into this quarter and then a tailing off of this moth towards the end (fig 11).

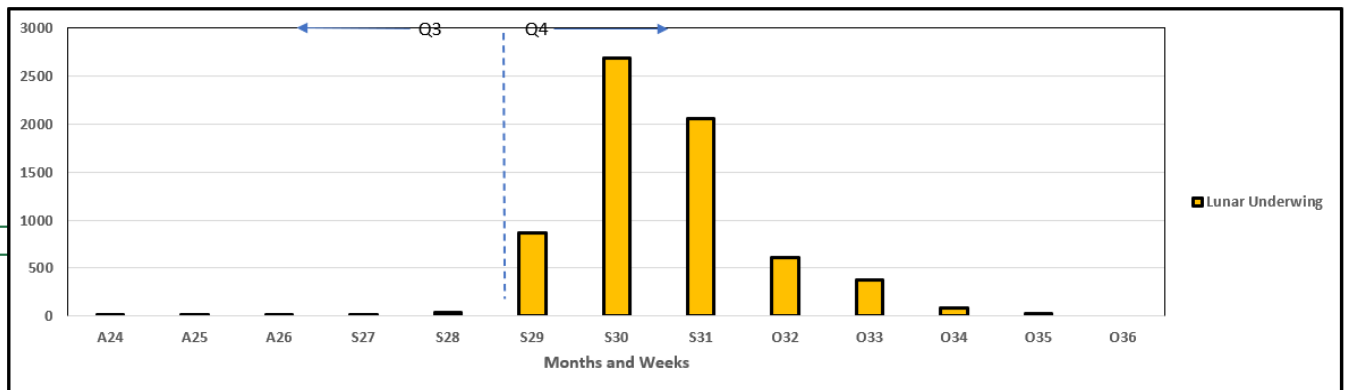
Fig 11. GMS 2022 Q2 – Q4. Flight Period of the Lesser Yellow Underwing



Lunar Underwing (*Omphaloscelis lunosa*)

This widespread and often abundant noctuid moth is number two in our top 20 core moths for this last quarter and is on the wing from late August to mid-October (fig 12).

Fig 12. GMS 2022 Q3 – Q4. Flight Period of the Lunar Underwing



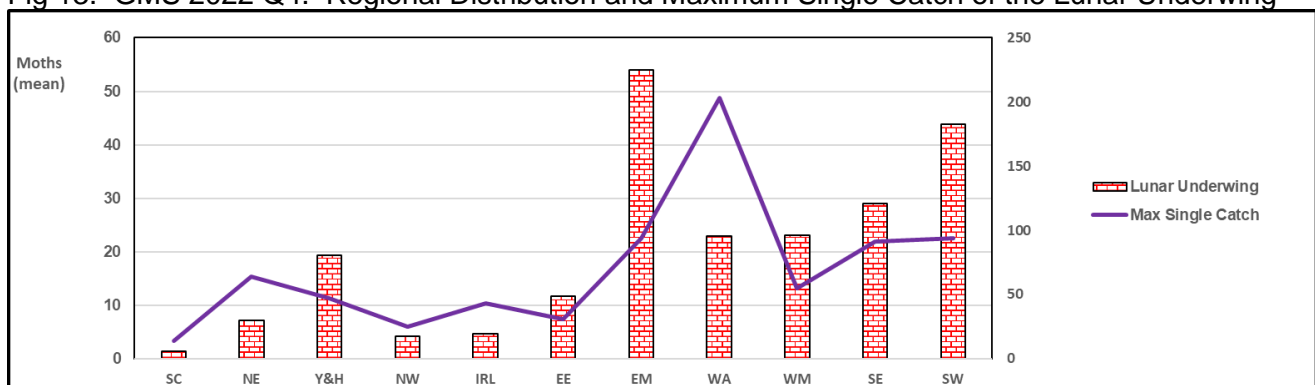
The scientific name *Omphaloscelis* refers to the stain on the discal spot of the hindwing and *lunosa* to its shape of a crescent moon. Peter Marren in his book “Emperors, Admirals and Chimney Sweepers” interprets the genus name as “the navel in the middle” indicating that this round marking is not a moon but a belly button. The vernacular name is self-explanatory.

It is a variable species displaying polymorphism and ranges in colour from pale buff through yellowish orange to dark brown with paler forms being more common. The forewings are usually marked with two dark stigmata, a black streak near the apex and a subterminal line of black dots. The darker forms show contrasting whitish veins and cross-lines giving a netted appearance. The hindwings are whitish marked with a dark moon-shaped crescent.



It occurs in many grassy habitats, including gardens in Southern Britain, Isle of Man and the Channel Islands, being largely coastal further north. It is most frequent in the east of Ireland and its distribution has now expanded into Scotland. Figure 13 shows the regional distribution for this year together with the maximum number caught in any one night – right hand axis. It seems that a recorder in Monmouthshire hit the jackpot with 203 Lunar Underwings.

Fig 13. GMS 2022 Q4. Regional Distribution and Maximum Single Catch of the Lunar Underwing



The larvae feed on all parts of various grasses including Cocksfoot, Annual Meadow-grass and Yorkshire Fog. It overwinters as a small larva (October-May) deep down in the grass feeding at night and hiding low during the day. It pupates underground.

A New Moth-er's first year of GMS

Hilary May

Like many people it was the Covid lockdowns that got me looking more closely at my garden wildlife. I've always had an interest in wildlife and have done the BTO's Garden Birdwatch since moving to our current house in 2008. I was trying to identify bees, butterflies and dragonflies in the garden as well as birds and getting increasingly frustrated as they move too fast and I'm not a great photographer. Then a friend started sending me amazing photos of moths that her teenage son had caught in their garden with his 2020 present of a moth trap. Once lockdown restrictions lifted they came to visit and ran the trap in our garden. This was a great introduction to moths and we caught an Elephant Hawk-moth and various footmen, Buff Ermine and many other species. It took a while but the following year I decided to invest in a moth trap, I was running it occasionally and attempting to identify species using a concise moth guide, What's Flying Tonight website and asking advice from our local nature records centre Facebook group – SEWBREC.



A moth from 2020 that I now know is Coronet

It was one of the staff at SEWBREC who suggested that I might like to try the Garden Moth Survey. I had never heard of it, but on looking into it I thought it might be just the challenge I needed! Certainly it has been quite a learning curve. At the start of 2022 there were probably only 5 or 6 moth species I could identify reasonably confidently, whilst I'm still not sure of many, the GMS ID help Facebook group is amazing. That together with a decent moth book, the amazing app ObsIdentify (recommended in the group) and the What's Flying Tonight app has meant I have been able to identify most of the moths I've caught – it is amazing that with a smartphone camera you can get a decent shot of the moths – I don't think this is a hobby I would have been able to take up a few years ago.

I'm proud and slightly amazed that I have managed to run the trap every week – even running it the night we've got back from holiday a couple of times! We've also taken the trap on holiday and to visit family and friends so have definitely been spreading the moth love. Everyone is wowed by the hawk-moths in particular but the variety even in fairly urban settings is amazing. Having raved about moths on my Facebook and Twitter accounts I also now get sent a lot of photos of moths by friends – normally Elephant Hawk-moths or Jersey Tigers.



Elephant Hawk-moths

We live just outside Cardiff between Penarth and Barry so we have a very mild climate. We are also fortunate enough to live next to a small patch of broadleaved woodland so we have quite a range of

moths. It was interesting to read in the latest GMS newsletter that Jersey Tigers were recorded mostly in the South East and one location in Wales and to realise that that is my garden! They were one of the first species I learnt as I saw a couple last year during the day and this year I've seen on several occasions including twice in my GMS trap.

Over the year I've recorded 112 of the GMS species (837 individual moths) and 32 non GMS species (165 individuals) – I've been amazed that with the exception of some that flew off (especially in the middle of summer) and some that were too worn to ID with help I've been able to identify almost all the macro moths and even a few micros. Thankfully I never broke the 100 moths in one catch – although I came close and my family got used to finding moths all over the kitchen and in pots in the fridge. At times it did feel that quite a lot of my Saturday was spent on moth ID. However it definitely got easier and I love the seasonable variety – even in the final week of the year I caught a new species for me – Feathered Thorn.

My top 10 this year – 30 of the Mocha were in one catch on the 12th of August which was my fullest trap of the year.

Position	Name	Number
1	Large Yellow Underwing	82
2	Mocha	45
3	Riband Wave	38
4	Square-Spot Rustic	37
5	Hebrew Character	32
6	Common Footman	31
7=	Flame Shoulder	29
7=	Lesser Broad-bordered Yellow Underwing	29
9	Treble Lines	24
10	Dusky Thorn	21



One of the 30 Mocha which escaped onto the kitchen window

So I'll definitely be carrying on for the winter and into next year. I look forward to being able to use the NFG and NFY acronyms (*ed - New For Garden and New For Year*) and welcoming back some of my favourites like Buff-tip and the Ermines.

Puzzle Corner

AUTUMN-CATCH CROSSWORD 2022

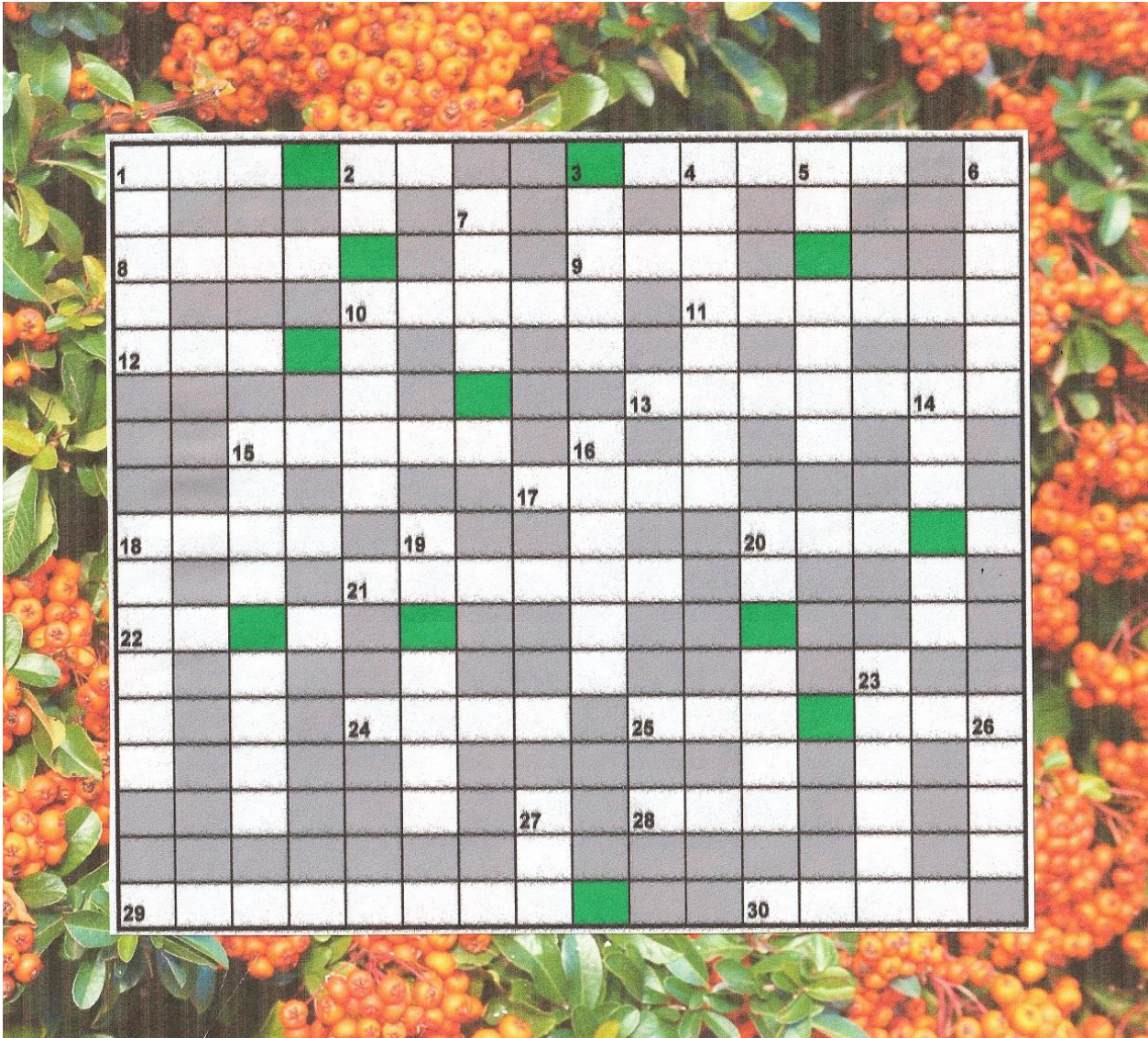
Non-conformist

As Norman pointed out in the Q3 Newsletter I rashly promised I would put together a crossword for the pre-Xmas letter, oh dear! However, after watching this year's Autumn-watch on television I decided to follow the great Stan Laurel's principle and look back at the moths I have caught in September, October and No-wonder. That is:- In Autumn!

So here it is. As usual all the words are a part, or whole, of a word pertaining to the moths which found their way to my moth-trap this Autumn with the exception of one answer which I leave for you to find. The letters in the green squares form an anagram of one visitor we all hope to find in the Xmas season.

After having to use only around sixty moths I now challenge anyone to complete a worthwhile puzzle using the moths from their Winter catches. For me, it will probably be only ten or so.

Good luck and a Happy Christmas and New Year to all of you.



Clues Across

1. Not many around, especially with surrounding drinking aids.....
- 3.... and a part of species certainly not allowed in my trap!
8. Times three would give another geometric species.
9. Initially any other leading description should find our female friend.
10. A colouration matching the aid mentioned in 1 across.
11. A habitat which requires returned rags for its conservation.
12. & 5d. Sort out the game drill to find this late species.
13. A religious figure with a coloured linear motif!
15. What would an Eskimo use to control his electronic device?
17. A singular feature of moth wings and human bodies.
18. Flight condition for many species and not as 12 across.
20. The controlled result of using 21 across.
21. Our predecessors possibly used this as a part of their equipment.
22. A game-player gets around the problem by using a new colour.
24. The initial step in keeping a record of this autumn species.
25. Possibly also found in the centre of a lightly coloured tree..
28. Regularly found in incredible coloured predators.
29. Before getting in a prickly situation this can usually escape from a hated reef.
30. Autumnal facial colouring of an outdoor countryman.

Clues Down

1. With some optimism all things will eventually come out right.
2. Usually found under a spreading tree around Xmas.
3. Do British Railways own all the rights to this livery colour?
4. Stop-go situation in front of a ground covering.
5. See 12a.
6. See 20d.
7. Dress up well before finding your parkland tree.
14. Seems like a gem tunnelled from the centre of the Earth! No just the opposite.
15. Can Emil lever his way out to find a foreign miracle?
16. In my case an accepted carapace and not as in 2a.
18. A close inspection required to clear the way from 18 to 20.
19. A non-aspirated multiple winner, as is the food-plant.
- 20 and 6d. Our local Ford agent rose to the challenge with this crazed brightly painted one.
23. Remove an ex-leader's epaulets and here it is.
26. This implement is used to settle a duplicate high score.
27. Possibly the runner-up in the Greek list, certainly before the Silver Y.

Communications & Links.

GMS Website - <http://www.gardenmoths.org.uk/> - the Communications section gives information on the regional coordinators; the Downloads section provides access to Identification Guides, Annual Reports and Newsletters, as well as all the regional recording forms and instructions.

Facebook Page - <https://www.facebook.com/GardenMothScheme> - over 2500 'Likes'.

Facebook Group - <https://www.facebook.com/groups/438806469608527/> - currently with more than 2700 Members (not all active GMS participants) – open membership – all recording forms, instructions and micro-moth identification guides are available in the Files section.

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