Hoverfly Newsletter
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There has been a longer gap than usual between issues of this newsletter, but I am most grateful to contributors for providing so much material for the current one in a timely manner which has enabled a very full version to be produced. The explanation for the non-appearance of a summer newsletter is outlined in the Hoverfly Recording Scheme's Report below.

Many entomologists will have had an especially frustrating year owing to the dearth of insects. There is much discussion on that subject in some of the articles that follow.

It does not seem long since we were announcing the first International Syrphidae Symposium (at Stuttgart in 2001). These symposia take place in alternate years and the 10th is due in September 2019. Details appear below.

I wish to record my thanks to Martin Matthews for checking the draft of this newsletter prior to publication, as he has now done for several years

Copy for **Hoverfly Newsletter No. 66** (which is expected to be issued with the Autumn 2019 Dipterists Forum Bulletin) should be sent to me: David Iliff, **Green Willows, Station Road, Woodmancote, Cheltenham, Glos, GL52 9HN, (telephone 01242 674398), email:davidiliff@talk21.com**, to reach me by 20 June 2019.

The hoverfly illustrated at the top right of this page is a female *Chrysotoxum cautum*.

10th International Symposium on Syrphidae, September 2019

The following message has been received from the Symposium organisers:

Dear Syrphidologist,

I would take the opportunity to thank all who expressed interest in attending the ISS10 symposium, and kindly ask others who are interested to send us **Registration of interest** by the 15th November 2018.

At this stage of the organization of the symposium, it is important to have an approximate number of participants. If you don't have the precise presentation information, you can leave this field blank. The official registration will start in a few months and then you will be able specify all additional details.

As we mentioned before, the 10th International Symposium on Syrphidae will be held on the island of Lesvos, Greece, from 8th to 14th September 2019.

Here you can read some interesting facts about this beautiful Aegean island. https://iucn-hsg.pmf.uns.ac.rs/iss10/about-lesvos/

If you have additional questions or suggestions feel free to contact us.

10th International Symposium on Syrphidae - ISS10

8th to 14th September 2019, Lesvos, Greece

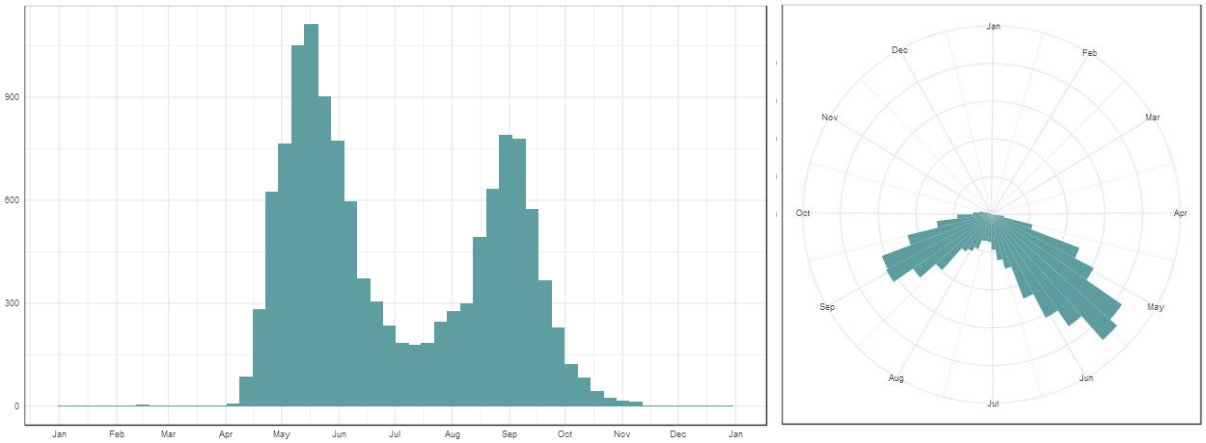
e-mail: syrphidae10@gmail.com

Hoverfly phenology plots

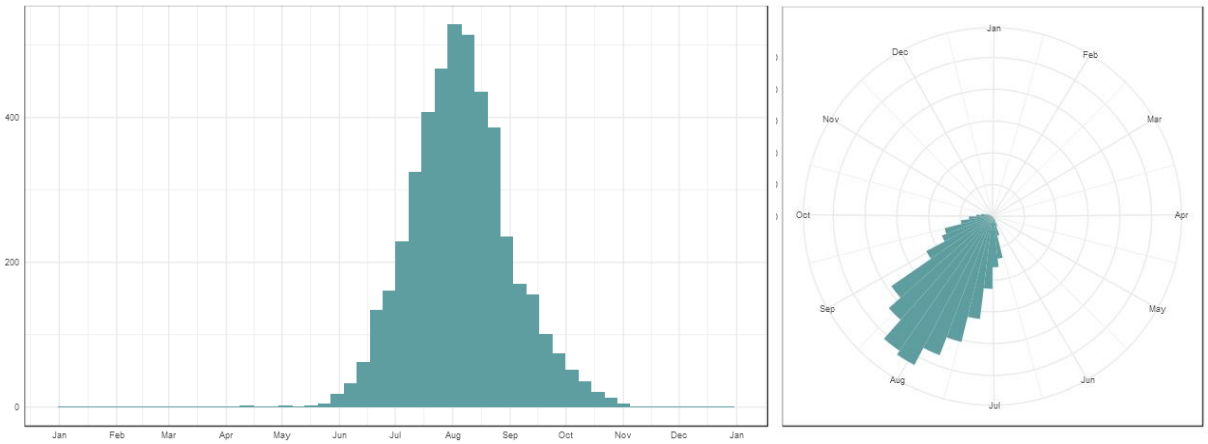
Stuart Ball

Following the article in the Autumn 2018 Dipterists Bulletin, "Phenology Polar Area Charts", I thought I would have a go with some hoverfly data. Here are phenology plots for *Rhingia campestris* and *Volucella zonaria* in 2017 (showing number of unique records received per week) comparing a conventional bar chart with a polar plot. I would be interested to know what people think. Which presentation is clearer?

Rhingia campestris



Volucella zonaria



Hoverfly Recording Scheme Update: Winter 2018

Stuart Ball, Roger Morris, Ian Andrews, Joan Childs, Ellie Rotheray and Geoff Wilkinson

Some readers will have realised that a 'Summer' edition of the HRS Newsletter was not included in the last Bulletin of Dipterists Forum. Unfortunately, the previous edition was omitted from the Spring Bulletin because it went to the DF Bulletin editor a bit late and there were already enough submissions to fill the space – so two scheme newsletters were left out, one being the HRS. We therefore decided not to produce a "Summer" edition and simply to make the Winter edition available. Part of our rationale was that there was insufficient material to justify a newsletter and filling the space would have called for a major writing effort on the part of the scheme organisers.

We were particularly disappointed to find that our milestone event, reaching the 1 million records mark, was not celebrated at the time! There are relatively few schemes with as many records assembled, most of which involve much more popular organisms or much bigger groups of species. It is the only Diptera scheme to have reached this milestone and is probably the largest Diptera dataset world-wide. There is still time to add to the tally, so please submit any outstanding backlog of records.

In the intervening months many thousands more records arrived and almost all have been incorporated into the database. Thus, the current situation stands at 1,089,055 records. As can be seen in Figure 1, the total number of records for 2017 is likely greatly to outstrip previous years once all data have been submitted (this usually takes a couple of years). Hoverfly recording has reached a new paradigm!

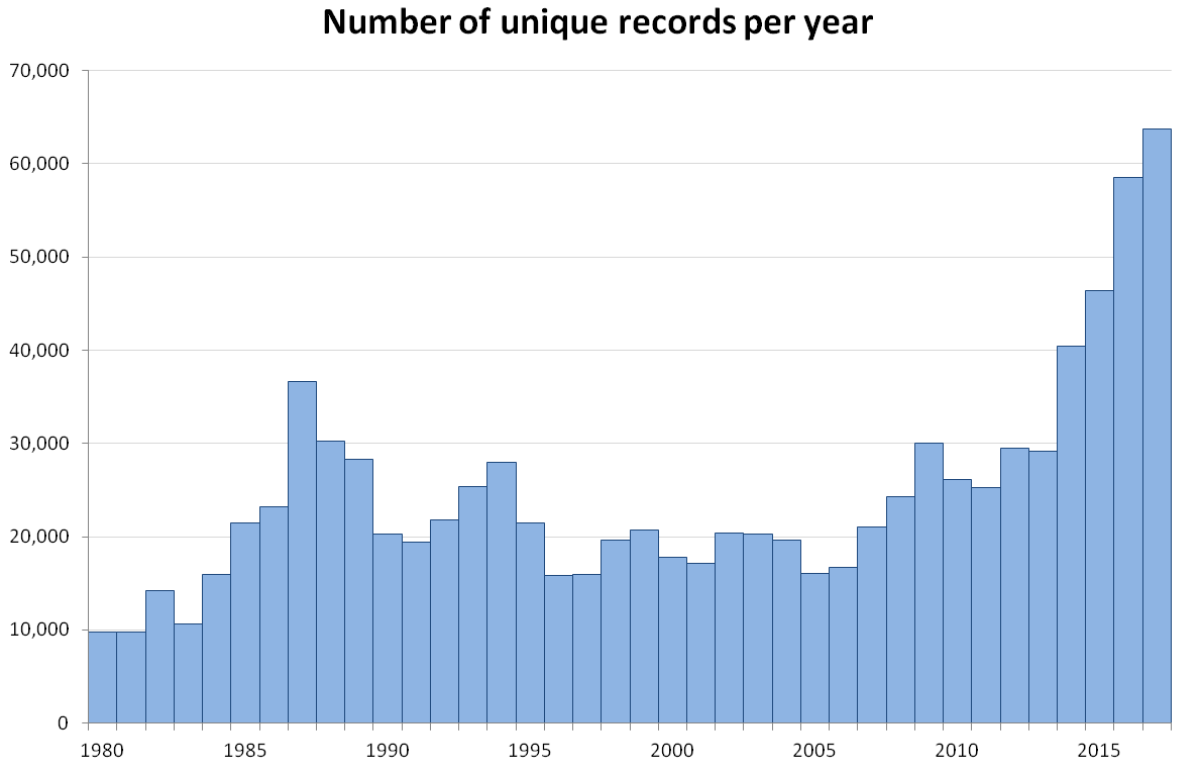


Figure 1 Numbers of 'unique' records per year. This calculation strips out most of the duplicated records that inevitably have crept into the dataset.

As has been the case for several years, we rely very much on the UK Hoverflies Facebook group as our interface with recorders. Membership of the group continues to grow and currently stands at 4,067. We are

indebted to Chris Sellen and David Rayner who shoulder the main burden of administering the Facebook page.

A further important milestone has been achieved because we have also reorganised the Facebook Group to make the system more efficient and less reliant upon just one person. In the past, we have relied upon Roger to extract records from the posts and compile data for inclusion in the recording scheme. This was an unsustainable situation, especially as Roger has had to take on increased responsibilities as a 'carer'. So, a team of data extractors has been established under David Rayner's leadership. David has done an amazing job building a great team from the Facebook user community – Adam Kelsey, 'Chickena Lurve' (FB name), Katie Stanney and Sue Kitt. We are immensely grateful to this team and look forward to the HRS evolving to include a more diverse and resilient arrangement.

If you are not a member of the Facebook group, do please join. It provides more than just a forum, as there is a massive library of files that can be downloaded, together with a long backlist of Newsletters. What is noticeable, however, is that whilst there is lots of activity in recording hoverflies, there is relatively little being written for the Newsletter. We really do need more members to write articles and short notes. That small observation may seem unimportant but at some time down the line it might unlock the key to a bigger ecological picture.

One of the big benefits of recruiting a small army of photographic recorders is our growing ability to understand what people see as a matter of course, and what they only see when they have developed field skills. It is noticeable that the more experienced members are now finding many more species during a recording session and are encountering greater diversity. Unlike other Facebook pages, posts to the UK Hoverflies page often comprise anything up to 20 species and often similar or much larger numbers of photographs. This development shows how members have responded to the interest in generating as complete datasets as possible.

We are also starting to see the development of 'hoverfly tourism', with one or two people obviously going to look for target species. This was inevitable and is a useful way of monitoring the state of individual populations, providing the records are submitted to the HRS. We might be more concerned if it became competitive, as in the birding world! Strangely, however, we see almost no reports of New Forest specialities such as *Caliprobola speciosa*. Anecdotally, it seems that this species is becoming increasingly confined to small parts of the Forest, but whether this is really the case we cannot be sure. Does nobody go to the classic New Forest sites?

2018 – an '*Annus Horribilis*' for hoverfly recording?

No active hoverfly enthusiast will have missed the impact of the summer heatwave. For several weeks in June and July it appeared that hoverflies had all but disappeared! What happened? Did they simply retreat, with larvae and puparia staying in diapause? We simply don't know! The phenology graphs tell an interesting story that will be covered in a separate article. Nevertheless, this event gave a remarkable opportunity to think about the impact of extreme summers and possibly an analogue for the summer of 1976, which Alan Stubbs discussed in his article in the last Bulletin (page 18).

In his article, Alan posed the challenge to Recording Schemes to come up with practical ways of monitoring Diptera. We can reflect that we have tried several initiatives, each of which has highlighted the problems but has not provided any answers. Our latest initiative, the 'Carrot Flower Challenge' was a spectacular disappointment as so many people tried to grow their carrots, only to find that the slugs had a great time eating them! Unfortunately, the only way of investigating these phenomena is likely to come from occupancy modelling, but, even then, the chances of linking cause and effect are low. There are too many environmental variables to consider, so year-on-year differences could be a function of the preceding year's conditions, or there may be an impact from previous winters or summers.

Arguably the most important gap in our knowledge is how larvae and puparia responded to the heatwave. One report is that larvae died – but that was in a polytunnel where temperatures reached 45°C! We really need a lot more people who are interested in breeding larvae out and looking at the effects of different environmental variables.

Highlights from 2018

Spring 2018 was slow to get started and in many ways was a disappointment. Nevertheless, there were important records from a variety of recorders. One of the big highlights was the frequency with which *Cheilosia chrysocoma* was reported from Burns Beck Moss in Cumbria.

Callicera species showed well in 2018, with lots of separate records of *C. aurata*, mostly from southern England but also with a new one from RSPB's Conway reserve. *Callicera rufa* showed well at its now traditional Shropshire sites and was also recorded from RSPB's Sandy Reserve where there were also reports of regular showings of *C. spinolae*, which also turned up in Essex. It seems to be that *Callicera* may be responding positively to climate warming.

Doros profuges turned up at sites in Wiltshire, Hampshire and Sussex. As always, sightings were of single individuals, but the evidence suggests that this species is mostly to be found in hotter, drier habitats.

One of the big advantages of photographic recording is that the absolute novice may turn up surprising records or may show that some species are more common than we have thought hitherto. For example, recording in the North Pennines has shown that *Eristalis rupium* is a good deal commoner than we have seen in the past. Likewise, *Sericomyia superbiens* is proving to be a lot more widespread than we had thought. Perhaps part of the reason for this is that we now have a network of recorders who are less influenced by the time of year and simply want to get out and observe! We have been similarly surprised by the numbers of reports of *Eriozona syrphoides*, which seems to have had a good year.

One of the challenges that we continue to grapple with is 'difficult splits'. Although quite a substantial proportion of British hoverflies can be identified from good photographs, or sequences of photographs, many cannot. This year we have had to rise to the challenge of *Dasysyrphus neovenustus* and amazingly we got two records of this species from photographs that included views of the sternites. Unfortunately, most of the *Dasysyrphus venustus* group will continue to be almost impossible to identify reliably from photos.

Can we use HRS data to investigate the effects of extreme weather events?

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In his discussion article in the last Bulletin of Dipterists Forum (86:18), Alan Stubbs argued that the Recording Schemes should take a lead in coming up with practical ways of monitoring the effects of environmental variables. It is something that the HRS has tried to achieve for several years, including an attempt to develop a programme analogous to the Big Garden Bird Watch, a Garden Monitoring Scheme and our latest: 'Carrot Flower Challenge'. Sadly, we made very little progress on any of these initiatives, partly thwarted by poor weather, compounded by very low numbers of participants and finally thanks to slugs eating our carrots! We have learned from these efforts: most significantly, there is a need for a lot more effort on the part of organisers to make such a scheme work. Unfortunately, we simply don't have the organisational capacity to make anything happen at a suitable scale over a very long timescale. Is there a possible 'Plan B'?

Monitoring schemes require long sequences of samples, ideally from locations that are selected to be representative, as with the Breeding Bird Survey. Alternatively, perhaps we could use transects like the Butterfly Monitoring Scheme (e.g. Alan's Garden Monitoring system (Stubbs, 1991))? In both examples, we would need a big pool of participants spread throughout the British Isles. Unfortunately, we don't have such a pool. It needs to be borne in mind that 50% of the data used in the last atlas (Ball *et al*., 2011) was supplied by just 20 people. Today, we have about 100 people who record hoverflies on a weekly basis and probably 20-30 who record on an almost daily basis. However, we don't have many people who record that frequently **and** do the tricky genera (*Cheilosia*, Pipizini, Bacchini, *Sphaerophoria etc*.). If the HRS, which is the biggest Diptera scheme in the UK and probably holds the biggest dataset in Europe, cannot muster enough capacity to develop a formal monitoring scheme, it seems unlikely that any other scheme will be able to do any better. So, we need an alternative approach.

Several research teams have used occupancy modelling to investigate trends in pollinator abundance. Opportunistic data from recording schemes have been used in such models to inform the 'State of Nature' Report (RSPB, 2016) and the species status review (Ball & Morris, 2014). These models have the potential to smooth out some spatial and temporal inconsistencies in recorder effort, but there are limitations to what they can achieve. They have been shown to work well for some taxa where the numbers of species are small and there is little difficulty identifying animals either in the field or from photographs. Current evidence suggests, however, that occupancy models can be substantially influenced by changes in recorder behaviour such as the trend towards a greater reliance on photography (unpublished analysis by Stuart Ball). We must therefore treat model outputs with caution and not simply accept every trend as reliable, even if the overall message is robust. As the problems with models emerge, there will be refinements and new models, but we must expect that to take a few more years.

Meanwhile, we have just experienced a major perturbation in our weather system with parallels to the summer of 1976 (although in 2018 the preceding winter was very wet whereas in 1976 it was dry). Do the data tell us anything about what happened? Only a small proportion of the data for 2018 has been submitted to the Recording Scheme and it will be many months before most of it arrives and is absorbed into the dataset; so, it is difficult to make any precise comments on the impact of the heatwave and drought in June and July. The immediate impact is further complicated because drought has continued in eastern England through into the autumn, and there have also been abnormally high temperatures throughout the autumn across much of the country.

Anecdotally, it seems that there was a substantial dip in the numbers of hoverflies (and other Diptera) during this time. Can we see these effects in the data and can we be sure about the message they convey?

For this exercise I have confined the analysis to data extracted from the UK Hoverflies Facebook page and from other social media (including photographs e-mailed to me). As I have checked all the photographs I can be sure that if there are identification mistakes then they are consistent (by me)! The graphs are based on week numbers, starting at 1 for 1-7 January (note that other systems normally start on a Monday but in this case they start on the first day of the year). The critical weeks of the heatwave started around 20 June and ended (temporarily) around 10 July i.e. weeks 25 to 28).

It seems that in terms of absolute numbers there was a clear dip (Figure 1), but there was also a firm recovery from around week 28. This graph needs some further interpretation:

- In the previous three years there had been some warm winters and early springs, especially spring 2017, which was extremely early. The 3-year average reflects these influences and so spring 2018 appears to have started between 3 and 4 weeks later than in recent years.
- Similarly, there was an extremely warm autumn in 2016 and hoverfly numbers remained high well into November and even into December. Autumn 2018 seems to have started somewhat earlier than the 3-year average, but this may be misleading given the exceptional Autumn of 2016.
- The precipitous decline in numbers in 2018 seems to be a realistic reflection of the onset of the autumn but two regular recorders moved over to recording on spreadsheets at about this time, so the drop would not otherwise have been quite as big.

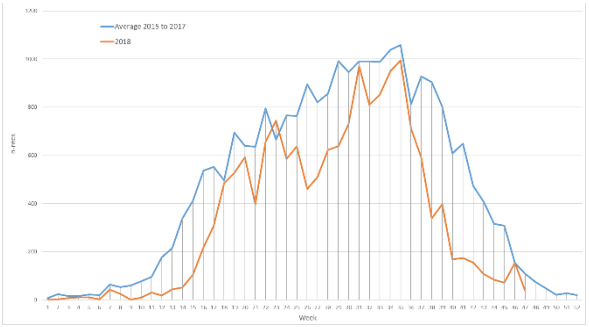

Figure 1. Number of records per week in 2018 set against the three-year average of records extracted from Facebook and other social media. Overall numbers of records extracted in 2018 are lower than average because a substantial number of our most assiduous recorders have switched to maintaining a spreadsheet.

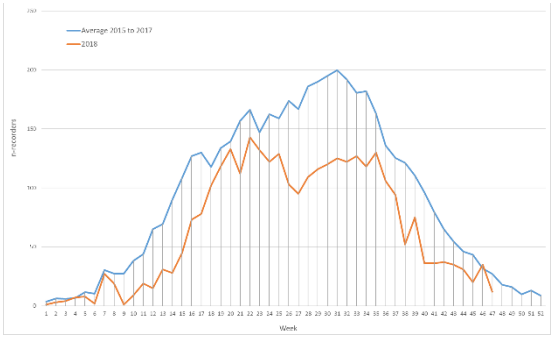

Figure 2. Numbers of contributors to data extracted from social media in 2018 compared with the average for the previous 3 years.

Fluctuations in recorder activity, that may be independent of the weather, mean that simple numbers of records per week cannot be used as a direct metric for climate influences. In the case of the heatwave in June/July, we can see from Figure 2 that there was a corresponding dip in recorder activity that would at least partially account for the drop in the numbers of records reported. In previous years there was a steady growth in recorder activity through the Summer, peaking in late July/early August. In 2018, however, there was a dramatic reduction in activity following the heatwave, even though there was a partial recovery from week 28 onwards. Critically, however, it should be noted that recorder activity in previous years broadly mirrors the numbers of records throughout the season, but in 2018 the graphs diverge after the heatwave. A possible explanation for this difference is that in 2018 only the more committed recorders went out, whilst those who record intermittently did so on far fewer occasions in the aftermath of the heatwave.

The impact is far more pronounced for the number of species recorded on a weekly basis (Figure 3). This metric appears to be a far more useful indicator because it seems to be less influenced by recorder numbers. Figures 4 and 5 compare analogous data for 2017 and 2018 expressed as proportions (percentages) of the total numbers of records, recorders and species.

As a broad generalisation, it seems that the committed contributors who generate long species lists for a site visit are more likely to pick up records of more obscure species, whereas many more casual recorders will normally find the more obvious species that inevitably appear in weekly species lists.

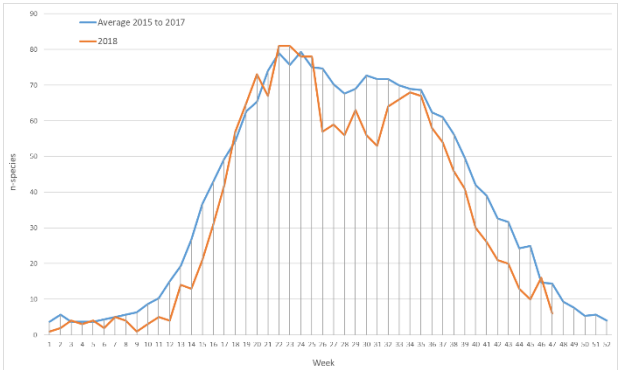

Figure 3. Numbers of species recorded via social media in 2017 and 2018.

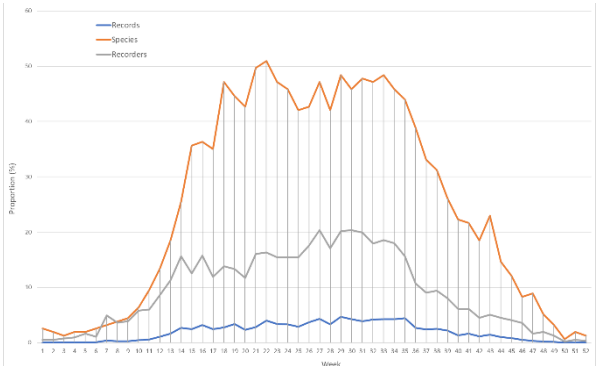

Figure 4. Weekly proportions of records, species and recorders in 2017.

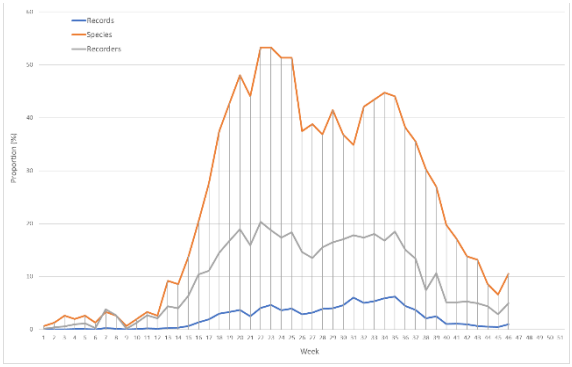

Figure 5. Weekly proportions of records, species and recorders in 2018.

Using this very crude system, it may be possible to represent the effects of seasonal variation upon hoverfly diversity in the year in question, but absolute numbers of records and recorders are not likely to be useful metrics. We also need to bear in mind that recording activity and absolute numbers of records can be strongly influenced by spring and autumn temperatures, so it is unlikely that we will be able to pick up large-scale knock-on effects in subsequent years. We might, however, start to see differences in the composition of assemblages. There might also be individual species responses, both in the affected year and in subsequent years, so investigation of this possibility is also needed. This will be the subject of a separate article.

It seems that the most efficient way of picking up responses to annual weather fluctuations will come from that small cohort of recorders who attempt to record everything they see on each day or visit. The data shown here comprise a sub-set of the species that would be recorded by someone who goes out with net and pooter but are clearly powerful enough to pick up responses. Consequently, the most obvious answer to the question of how to establish long-term monitoring is to continue to encourage photographic recorders and specifically the compilation of as full species lists as possible. It won't be perfect, but it will be sufficiently sensitive to convey critical messages.

References:

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Impact of extreme weather – species responses

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As a follow-up to my notes on detecting the signals of extreme weather events in the HRS dataset, there remains the question 'how do individual species respond to drought or heatwave'? For this analysis I have again used the data extracted from social media during the year and compared it against the same data for previous years. We already know that the data for numbers of species recorded on a weekly basis convey a

signal that suggests a drop in the numbers of species recorded during the most extreme part of the heatwave. It follows that there must be some species that respond more dramatically than others.

Picking up signals from individual species is more problematic because in many cases we get too few records to establish a clear pattern on a weekly basis. We must therefore look at species that are both abundant and easily identified from photographs. These criteria restrict the range of models, but, even so, there are several examples where a signal does seem to be present.

As far back as 1948, B.R. Laurence (Laurence, 1948) highlighted a lack of *Rhingia campestris* in August. His observations were followed by Bernard Verdcourt (Verdcourt, 1948) who noticed a similar scarcity; and Len Parmenter noted that there seemed to have been an almost complete absence of *Rhingia campestris* in the places that he had visited (in southern England) (Parmenter, 1948). These early observations have led me to follow the fortunes of *R. campestris* during hot summers. Anecdotally, I believe that we do see a dip in numbers during hot summers, but I have yet to see a complete absence. In 2018, however, there seems to have been far more compelling evidence of a significant response to the effects of drought and high temperatures. Figures 1 to 4 explore the signals at both national and regional scales.

Three 'regions' were used, based on the OS grid:

- Scotland and northern England from 100km grid squares TA, SE and SD northwards.
- Wales and the Midlands comprising grid squares SH, SJ, SK, SN, SM, SO, SP, TL & TM
- Southern England and the extreme south of Wales comprising grid squares SR, SS, ST, SV, SW, SY, SZ, TQ, TR & TV

This initial evidence suggests that the spring emergence was slightly delayed but broadly followed the pattern of 2017 in the spring brood. The summer brood, in contrast, seems to have been both delayed and much smaller (Figure 2), especially in southern England where there were very few records from the south-east and slightly more in the south-west. In northern England and Scotland there seems to have been less of an effect. The explanation for the drop in numbers in the summer brood in more southerly locations may reflect a failure of larvae to develop or it may simply be that the animals remain in diapause; we will only know this in spring 2019! Looking at previous years, it seems that there is a relatively small difference between the numbers of records in spring and summer broods and that lower numbers in the summer brood do not always lead to lower numbers the following spring (Figure 3). It is noticeable, however, that the size of the summer brood in 2018 is considerably smaller than might be expected and there may be a knock-on effect in spring 2019. A dip in the numbers of records of several other widespread and abundant species is also apparent, and it seems likely that at least some species will have been adversely affected. Much more work is needed before these effects can be presented.

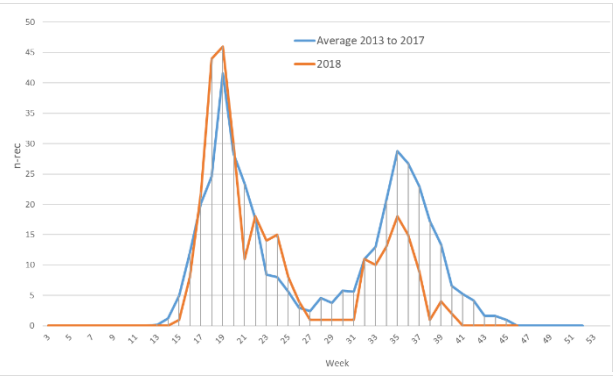

Figure 1. Records of *Rhingia campestris* from social media in 2018 compared against the preceding 3-year average from the same origins.

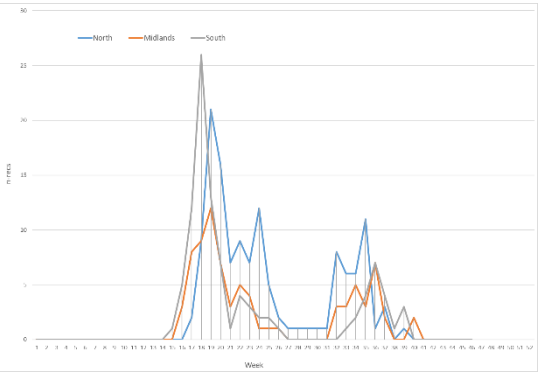

Figure 2. Records of *Rhingia campestris* from social media in 2018 from three regions of Great Britain. Note that it is only in the northernmost region that there appears to be continuity between the spring and summer generations.

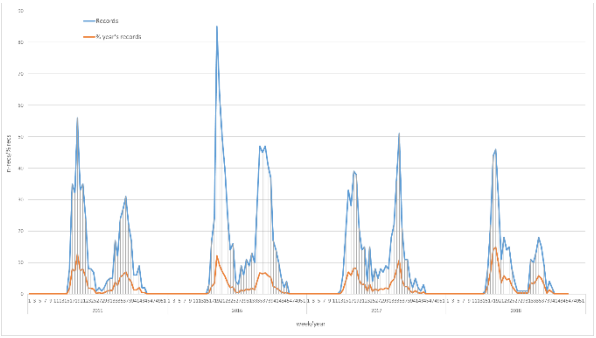

Figure 3. Comparison between 2018 data for *Rhingia campestris* and those for the preceding 3 years. Weekly totals have also been presented as the proportion of the year's records to take account of differing numbers of records in each year.

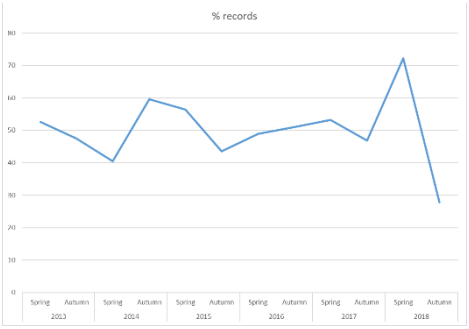

Figure 4. Spring and summer generations of *Rhingia campestris* presented as proportions of the year's total records for the species from 2013 to 2018 i.e. the main run of data extracted from social media. The trend for the full 6 years is flat, but the summer generation in 2018 is substantially below that for previous years.

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Parmenter L., 1948. *Rhingia campestris* Mg. (Dipt., Syrphidae) – a Further Note. *Entomologist's Record & Journal of Variation* **60**: 119-120.

Verdcourt, B., 1948. Scarcity of *Rhingia campestris* Mg. (Dipt., Syrphidae). *Entomologist's Record & Journal of Variation* **60**: 108.

Two hoverfly species apparently unfazed by 2018 heatwave

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The preceding article highlighted the heatwave and concurrent drought that occurred in the summer of 2018.

Although I search for hoverflies in many locations, for obvious reasons a fair percentage of my records come from my own garden and I am fortunate that over the years it has been a very fruitful source of hoverfly records. Unsurprisingly 2018 has been almost unprecedentedly disappointing; I saw few hoverflies in the spring and the supply dwindled even further during the long drought in July and August. However two species, *Myathropa florea* and *Syritta pipiens* bucked the trend and were seemingly unaffected by the adverse conditions.

20 years ago we were given a florist's pot containing three very small ornamental shrubs. It was clear that if these shrubs were to survive they needed to be planted into a situation which allowed them space to grow, so I transferred them into the garden. One of them was a *Euonymus*, probably *Euonymus japonicus*, and as it grew it proved to be an excellent attractant of insects when it was in flower. Among the Diptera that fed at the flowers were the Soldier Fly *Stratiomys potamida* (in three separate years), and many species of hoverfly including *Chrysotoxum festivum* and *Scaeva selenitica*. During 2018 I saw very few hoverflies on the *Euonymus* with the notable exception of two somewhat dissimilar species. While I noted only occasional visits by other species, between 15th July and 23rd August *Myathropa florea* and *Syritta pipiens* were seen daily on the shrub, often several simultaneously. Their behaviour in this situation differed: the *Myathropa*

were feeding at the flowers or resting on the leaves, while the *Syritta* were mostly observed hovering in small groups close to the foliage, with occasional flower visits. Do these two species perhaps have greater tolerance of heat and/or drought than others? I would be interested to hear of the experiences of readers.

Myathropa florea male (left) and female (right) at *Euonymus* flowers

Syritta pipiens male hovering

Photos: David Iliff

Third record of *Mallota cimbiciformis* for Scotland with a note on the early stages (Diptera, Syrphidae)

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Third record of Mallota for Scotland

Mallota cimbiciformis is a rather splendid looking hive-bee mimic with long-tailed larvae that develop in water-filled rot-holes on a range of broadleaf trees. The larva makes a living by filtering micro-organisms from the wet decay (Rotheray 1993). It's mainly a southern English species that occurs sporadically as far north as the bosky Clyde Valleys near Glasgow (Ball et al. 2011). The first Scottish record was based on a single empty puparium found in the roof of a horse-chestnut *Aesculus hippocastanum* rot-hole near Motherwell in August 1994 (Boyd 1996). The second record involved the discovery of at least twenty larvae from two rot-holes in sycamore *Acer pseudoplatanus* and horse-chestnut at Pollok Park, Glasgow in May 2010 (Gemmell *et al*. 2011). On 1st July 2017 I added a third record for Scotland by finding an adult female

nectaring on hogweed near Brechin, Angus NO616589 (Fig. 1). This marks a considerable extension to the known range of *Mallota* in Britain and comes from a county that is intensively farmed and fairly impoverished for semi-natural broadleaf woodland.

Notes on the early stages

In January 2018 I made a visit to Pollok Park near Glasgow with Lindsay Gemmell and Geoff Hancock to search for *Mallota* larvae in the two rot-holes reported in Gemmell *et al.* (2011). The sycamore rot-hole was situated about 1.8 metres from the ground and measured around 16.5cm (width) x 35.0cm (height) x 70cm (depth). Much of the hole contained relatively clear rainwater and was lined with fermenting woody debris derived from heart-rot. Around twelve handfuls of said material yielded 6 *Mallota* larvae and one dead puparium plus 8 crushed cans, 6 tennis balls, 1 golf ball and a plastic tap. The second rot-hole was about 1.47m above ground in a horse-chestnut and measured 10.0cm (width) x 17.5cm (height) x 40 cm (depth). Much of the hole was filled with material resembling to a thick beef stew and a few scoops using a 10cm x 10cm fine meshed aquarium net yielded six *Mallota* and several *Myathropa* larvae.

As noted by Rotheray (1990) the larva and puparium of *M. cimbiciformis* are easily recognised in the field. The "long tail" has three pairs of short, fleshy lateral projections at its base and these can also be seen on small larvae with the aid of x10 hand lens. These features are retained on the puparia albeit with a now brittle appearance (see Fig. 2). These key characters easily distinguish *Mallota* from the ubiquitous long-tailed larvae of *Myathropa florea* which are often found cohabiting the same rot-hole.

Larvae can be found in their rot-holes throughout the year and together with other rot-hole species (e.g. *Brachypalpus*, *Callicera*, *Pocota*, *Myathropa*) can be recorded outside the adult flight period and during inclement weather. Rotheray (1993) provides further information and this species is included within his excellent identification key. Additional pictures and film footage of *M. cimbiciformis* can be viewed in this Flickr album: https://www.flickr.com/photos/entangledentomology/albums/72157692787593565.

Acknowledgements

Many thanks to Lindsay Gemmell and Geoff Hancock for showing me *Mallota* rot-holes on a cold winter's day at Pollok Park.

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Figure 1: *Mallota cimbiciformis* adult

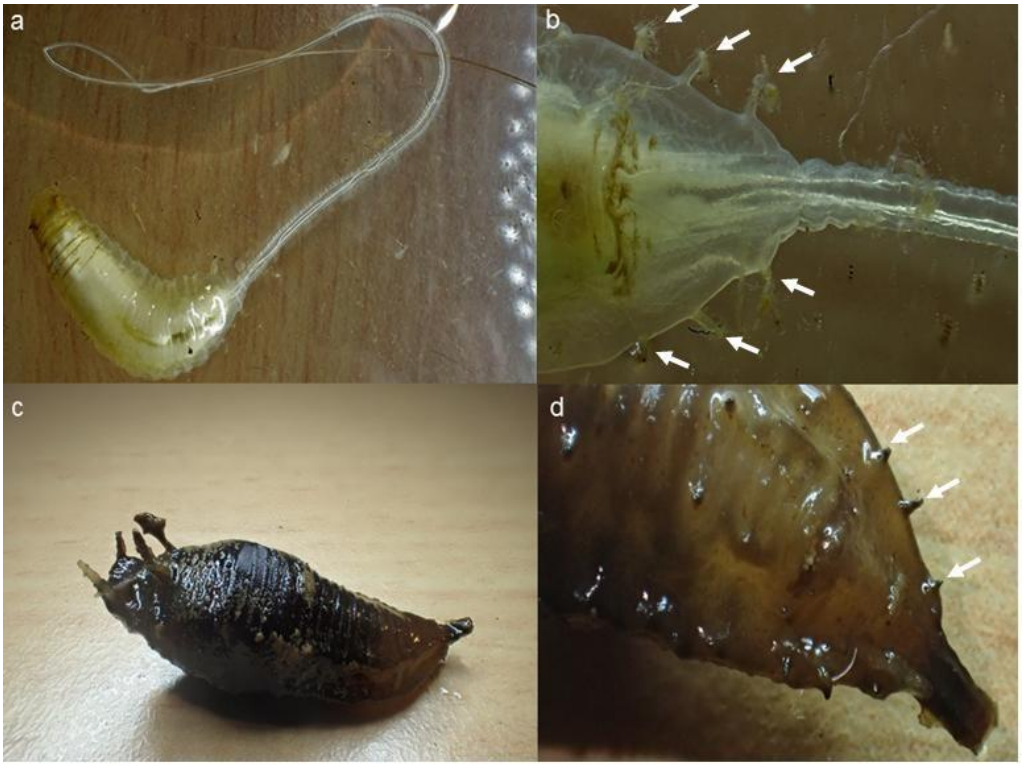

Figure 2. a) dorsal view of whole larva. **b)** ventral view of larval anal segment bearing three pairs of fleshy projections. **c)** lateral view of puparia with "tail" broken off. **d)** ventral view of puparia with anal segment bearing three projections

Photos: Geoff Wilkinson

Putting to rest *Cheilosia nigripes* records in Yorkshire

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Sand Dale, in Dalby Forest, North Yorkshire, SE857849, is one of my favourite and most productive local hoverflying sites. I visited on 12 May 2018 and took a series of *Cheilosia* specimens for later examination and identification under the microscope. Unsurprisingly, by the number of primroses on site, many of these *Cheilosia* proved to be *C. antiqua* with the thoracic dorsum bearing an even pelt of golden hairs. Two of the specimens however, both male, keyed out in Stubbs and Falk[1] as *C. nigripes* with black hairs of two different lengths on the thoracic dorsum (a shining frons ruling out *C. vicina*). Knowing the southern distribution of *C. nigripes*, I was suspicious of this identification, even though the specimens keyed out easily to this end point, and looked very different from the other pale-haired *C. antiqua* collected. In the *C. nigripes* text in Stubbs and Falk (page 255), there is a note that this species has been confirmed from a site in Yorkshire by Roy Crossley, which made me wonder if the identification might be correct, but I had no prior experience of *C. nigripes* and no comparative material.

Taking the specimens through the key in van Veen[2], they keyed out to the *C. antiqua/C. nigripes* pair exhibiting a mix of characters of both (the thoracic dorsum with long and short hairs again suggesting *C. nigripes*).

When I sought help, Gerard Pennards pointed me in the direction of a paper revising the Palaearctic bare-eyed and black-legged Cheilosia[3]. Using this paper, which does not use the feature of hairs of two lengths on the thoracic dorsum, the specimens keyed out as *C. antiqua*, and this was confirmed against illustrations of genitalia in the paper.

Subsequently, in a list of Yorkshire records provided to me by Yorkshire Diptera recorder Andy Grayson, I noted records of *C. nigripes* from Ramsdale NZ9304, 1929 and Robin Hood's Bay NZ9503, 1924 with a note 'both regarded as erroneous'. There is an additional record of *C. nigripes* from Coulton Fen, 12.5.2000 with the note '*C. antiqua*! Close to *nigripes*'.

The variation in *C antiqua* is apparent from the keys in Stubbs and Falk, and Barkalov and Ståhls, as identification of this species can be reached in both by three different routes in males alone. It is worth a note in the margin of the *Cheilosia* keys in Stubbs and Falk, and van Veen, that *C. antiqua* males can show the feature of hair of two lengths on the thoracic dorsum.

References:

[1] Stubbs, A. E. and Falk, S. J. 2002. *British Hoverflies: An illustrated identification guide*. 469 pp. British Entomological and Natural History Society, Reading.

[2] Van Veen, M. P. 2004. *Hoverflies of Northwest Europe: Identification Keys to the Syrphidae*. 254 pp. KNNV Publishing.

[3] Barkalov, A. V. and Ståhls, G. 1997 Revision of the Palaearctic bare-eyed and black-legged species of the genus *Cheilosia* Meigen (Diptera, Syrphidae) *Acta Zool. Fennica* 208: 1-74.

Acknowledgements:

I am grateful to Gerard Pennards for making me aware of a key reference paper, and to Andy Grayson for providing historic Yorkshire records. Thanks also to John O'Sullivan for his comments on a draft of this note.

A note on the behaviour of male *Parasyrphus nigritarsis*

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On a trip to Malham Tarn, North Yorkshire, SD884671, on 27 May 2018 surveying hoverflies, exercising a permit from the National Trust, two hoverflies were observed flying low, backwards and forwards along the breadth of a boardwalk across wet ground, seemingly holding territory. Their behaviour was similar to that seen in *Eristalis pertinax* males, but lower to the ground, at a height of approximately 40 to 50 cm. On catching these hoverflies, they proved to be male *Parasyrphus nigritarsis.* I have seen *P. nigritarsis* females hunting under the leaves of dock looking for egg clusters of dock beetles on which to lay their own eggs[1], but this is the first time I have observed the behaviour of males. In this habitat, there were no docks, so presumably the hoverflies were predating the eggs and larvae of beetles on alder or sallow. Alder was certainly very prevalent at the site.

References:

[1]Childs, J. 2017 Discovery of another *Parasyrphus nigritarsis* (Zetterstedt) (Diptera, Syrphidae) colony in North Yorkshire, *Dipterists Digest* 24 (2): 174-178.

Acknowledgements:

I am grateful to John O'Sullivan and Nicola Garnham for checking a draft of this note.

Caught in the act - a rare case of predation of a hoverfly by a bird

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Although it is assumed that hoverflies mimic various Hymenoptera models, very few examples of predation by animals capable of being fooled by mimicry are on record. The majority of predation captured as images involves spiders, with occasional examples of yellow dung flies *Scathophaga stercoraria* and social wasps making up the mix.

The photographs taken by Rob Salem of a stonechat with a hoverfly as a prey item at Powderham, on the Exe Estuary, on 13 May 2018 are therefore noteworthy. They nicely show a female *Eristalis intricaria*, which is generally considered to be a bumblebee mimic; clearly mimicry failed to work on this occasion! For Facebook members, the original post can be seen at:
https://www.facebook.com/groups/609272232450940/permalink/1880976578613826/

(Photos: Rob Salem)

Constant effort recording – to be encouraged

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This spring, a contributor to the UK Hoverflies Facebook group commented that they had the impression that *Leucozona lucorum* was becoming scarcer. That comment sparked a thought in my mind, as I could not remember when I last saw this species on my 'local' patch (Mitcham Common). It is a site I have visited for the past 35+ years and did a lot of recording on in the late 1980s and early 1990s. Sadly, I have not put in quite as much effort as perhaps I should. That shortfall became apparent when I looked at the data for *L. lucorum*.

My data comprised just nine records: 6 in the 1980s, 2 in the 1990s and one in 2002. For the past three years I have been far more active on The Common, and this spring I visited it daily; yet *L. lucorum* was noticeable by its absence! It seems to have been lost from the site. Is *L. lucorum*, like the skylark and house sparrow, contracting away from urban areas? The overall HRS dataset indicates a decline, but the maps show little superficial evidence of localised decline that cannot be explained by recorder effort, or a decline confined to SE England.

Although it seems that at least one species has been lost from Mitcham Common, there have been several gains. For example, *Cheilosia soror* was once almost entirely confined to calcareous areas in Surrey, but today it is one on the most abundant *Cheilosia* on The Common! Similarly, *Epistrophe melanostoma* was first recorded in the UK from The Common (in 1991) and is now widespread and even common in many parts of southern England. It is certainly frequently encountered on The Common!

This one set of observations is inconsequential on its own, but it does highlight the value of generating comprehensive local lists that are augmented by additional yearly records. So, if you have a local 'patch', why not try to visit on a regular basis and record all that you see on each visit. Most of what you record will be 'common' species but, as can be seen with my example of *Leucozona lucorum*, over time some interesting changes may well happen. It is these species rather than rarities that are the canaries of the Diptera world.

Hovering behaviour in *Eristalis nemorum*

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David Iliff's article in Hoverfly Newsletter No. 63 about *Leucozona lucorum* immediately brought to mind a behaviour pattern I had observed and photographed during a visit to Normandy garden in September 2014. The sequence in the accompanying pictures is clear: A female *Eristalis nemorum* (the i/d I arrived at later, not having a key to hand) attracts a male, and the hovering lasts for perhaps half a minute, with some exploratory dips but no decisions, other than a change of orientation. Nothing new there then. Suddenly a second male arrives and hovers equidistantly above the first male, again with just the occasional change of orientation, but no change of behaviour on the part of Male 1 or the female. Was she aware that she had attracted a new admirer? This threesome lasted for perhaps another half minute. No decision was arrived at during the time I watched and waited. Did the lady get bored and move away? Alas, I shall never know the final outcome, as a wifely call summoned me.

Have others observed similar behaviour? And is it clear whether in such cases the later arrival loses out?

(Editor's note: in Hoverfly Newsletter No. 62 (Spring 2017) John Bridges offered suggestions on the purposes of hovering by his species.)

Loitering with intent: *Eristalis nemorum* (Photos: Anthony Bainbridge)

Volucella zonaria

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It has been remarked that *Volucella zonaria* is sighted more frequently year on year than most of us have been used to. The culmination of this for me occurred this summer, when I observed two simultaneously on the same *Hebe* in our garden. By the time I had reached for my camera one had gone; the other remained peacefully long enough for a photo shoot. I had also had a sighting from SU055940 (Ashton Keynes Millennium Green) reported to me by John Grearson, the county's sawfly expert.

It is good to have this large, colourful flagship species to generate interest amongst those who watch and take an interest, especially those who may become the next generation of dipterists. There seems no doubt that this splendid insect will be around for us to enjoy for a long time.

Volucella zonaria female
(Photo: Anthony Bainbridge)