Hoverfly Newsletter
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This newsletter gives notice of next year's hoverfly symposium, the 8th in the series that began in Stuttgart in July 2001. Although we have always tried to include a review of previous Syrphidae symposia, I was unable to attend the 7th Symposium in Novosibirsk last year and have yet to find an attendee who is able to provide one. If any reader who went to Novosibirsk is willing to offer an appropriate review for inclusion in a newsletter it would be very welcome.

The recording scheme update below expresses concern that we may be witnessing a decline not only of hoverflies but perhaps of insects in general, something that has also been worrying the county invertebrate group to which I belong.
I spent two hours in late July at a promising site in the Cotswolds, in apparently ideal conditions, and insects there were very sparse (only four hoverfly species seen, mostly single examples); the only exception was in beds of lavender where bumblebees were abundant, but with the cuckoo species outnumbering the others by about four to one.

Roger Morris's piece on recording from photographs mentions the pea green halteres of some *Melanostoma* (the subject of a note in Hoverfly Newsletter No.28, August 1999). This is an example of a colour character that fades after death, as are the coral-red sternites of live female *Baccha elongata* (Bernard Verdcourt wrote of this in Hoverfly Newsletter No. 25, February 1998). The growth in photography of insects will probably increase awareness of such instances of colour features of hoverflies that have in the past gone unnoticed because they are no longer apparent in dead specimens. Probably very few of us, including myself, have seen *Didea alneti* in life; specimens in collections do not look much different in colour from the two more common species of the genus. But a search on the internet for photographs of live examples will reveal how much more colourful *D. alneti* is than many of us might have imagined.

Articles and illustrations (including colour images) for the next newsletter are always welcome. Copy for **Hoverfly Newsletter No. 58** (which is expected to be issued with the Spring 2015 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 November 2014. The hoverfly illustrated at the top right of this page is a male *Brachyopa scutellaris*.

Hoverfly Recording Scheme Update Summer 2014 (& call for records)

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Writing at the end of July 2014, one can only surmise how August will turn out, but if the last couple of months are anything to go by it may be a bit disappointing. For a greater part of this summer there has been a constant stream of comments of 'where are the hoverflies?' The Dipterists summer field meeting in North Wales was a real disappointment from this perspective: we saw precious few hoverflies and very little diversity. The one species of note was *Neoascia geniculata* on several of the Anglesey fens. It is quite likely to have been overlooked elsewhere, as we were finding just the odd example amongst a far bigger sample of *N. tenur*. *Lejogaster tarsata* and *Eristalinus aeneus* were also

noteworthy but despite a real attempt to sample saltmarshes we failed to see *Platycheirus immarginatus* and this genus was generally noteworthy by its absence.

The general observation has been that hoverflies have been poorly represented in field notes and that *Cheilosia* were particularly lacking. Is this really the case, or is there an explanation that we have yet to identify? There are localised reports of good numbers of *Cheilosia*, such as by Ian Andrews in East Yorkshire. Overall, however, it seems as if there has been a definite crash and that the only species doing reasonably well are some of the cosmopolitan ones such as *Episyrphus balteatus*. It is difficult to be sure quite what is happening but there are clearly grounds for concern that hoverflies, and as likely as not other insects, are suffering a serious decline. The implications for other wildlife are profound, as insects form a huge part of the food chain, so this may have serious knock-on effects, especially on birds.

Putting 2014 into context is not easy, as we have no standardised monitoring data for previous years. The database compiled by the scheme can be used in some ways to investigate trends, but without a clear baseline to detect change, there will always be uncertainty about what is really happening. The more data that come into the scheme, the more likely it is that answers can be provided, so we are, as always, keen to encourage more recording.

One of the products of that recording is the Species Status Review that we wrote for JNCC in 2006. In the intervening years it has been revised and updated on a regular basis but a combination of factors have delayed its publication. Last week (24-25 July) we finalised the text in response to a further round of comments from the country agencies and we believe that the review will now be published; indeed it should be out before this newsletter is circulated. Take a look on the HRS website for an announcement. It will be available in pdf form but we are also looking at the possibility of a short print run to meet the needs of those who want a bound copy.

Following up on publication of the review, we have been looking at the provisional atlas, which is currently out of print. We think a simple refresh is needed, especially as the database is close to the 800,000 record mark. We'd like to get a revised set of maps published by spring 2015, hopefully in time for a one-day hoverfly workshop/conference that we hope to run next April. We cannot say more at this stage but will make announcements of the meeting (probably in London) on the website and on the UK Hoverflies Facebook page. So, we would be extremely grateful for any backlog of records that readers might have. It is now three years since the last burst of records and hopefully there will be a fair few more!

When we wrote the last update, we mentioned that there was a relatively newly established UK Hoverflies Facebook page. At the time we could not have imagined quite how this project would take off. The response has been overwhelming and at the time of writing there are 849 members, with perhaps 50-60 people regularly posting records and photographs for identification. We owe a huge vote of thanks to Stephen Plummer who suggested the idea and very kindly set up the page. Stephen and Judy McKay manage the page and make new members welcome - it is a fantastic contribution that is greatly appreciated. What is also nice about this site is that it is developing a new community of recorders with emerging leaders. This is immensely heartening because in the course of the next couple of years we need to diversify the leadership of the Recording Scheme and to bring in new faces to help the scheme grow and to make sure that there is greater resilience against the inevitable passage of time. We (Stuart & Roger) remain committed to the scheme but as time passes we know that there is a need to start to pass on the baton so that the scheme does not get stuck in a two-man rut. So, in due course we will hopefully be announcing new team members.

Part of the purpose of expanding the team running the recording scheme is to think about ways in which we can develop initiatives to start answering some of the questions posed in the opening paragraphs of this report. We have a developing garden monitoring programme with several of the Facebook group maintaining records - these already look quite exciting because a continuous log of records will help to develop local and national contextual information. In addition, we are wondering about how we might look at usage of popular nectar plants such as hogweed, and also whether there is scope for a 'bioblitz'-like event or events. To do this we will need a team, as we are already pretty stretched.

Do keep a note of the proposed event in April 2015 - and visit the HRS website in the winter. Anybody with a possible interest in attending should drop Roger a line and he will alert you to arrangements once made (roger.morris@dsl.pipex.com).

Meanwhile, we look forward to receiving your records.

Recording from photographs - an update

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Over the last few years I have written various notes on the results of scanning the internet for photographs of Diptera and, especially, for hoverflies. By December 2013 I had amassed a database of nearly 17,000 hoverfly records from these sources. This database lists 155 species positively identified, suggesting that maybe as much as 60% of the British fauna might be identified from photographs. In practice, rather fewer will be identified from average quality photographs but it is still possible to put names to a surprising number of photographs and to a wide range of species. In this original dataset shots that could not be identified were not recorded. This omission was rectified in the middle of 2013 and by December 2013 some 950 'records' that could not be taken to species were listed. The growth of the dataset is illustrated in Figure 1.

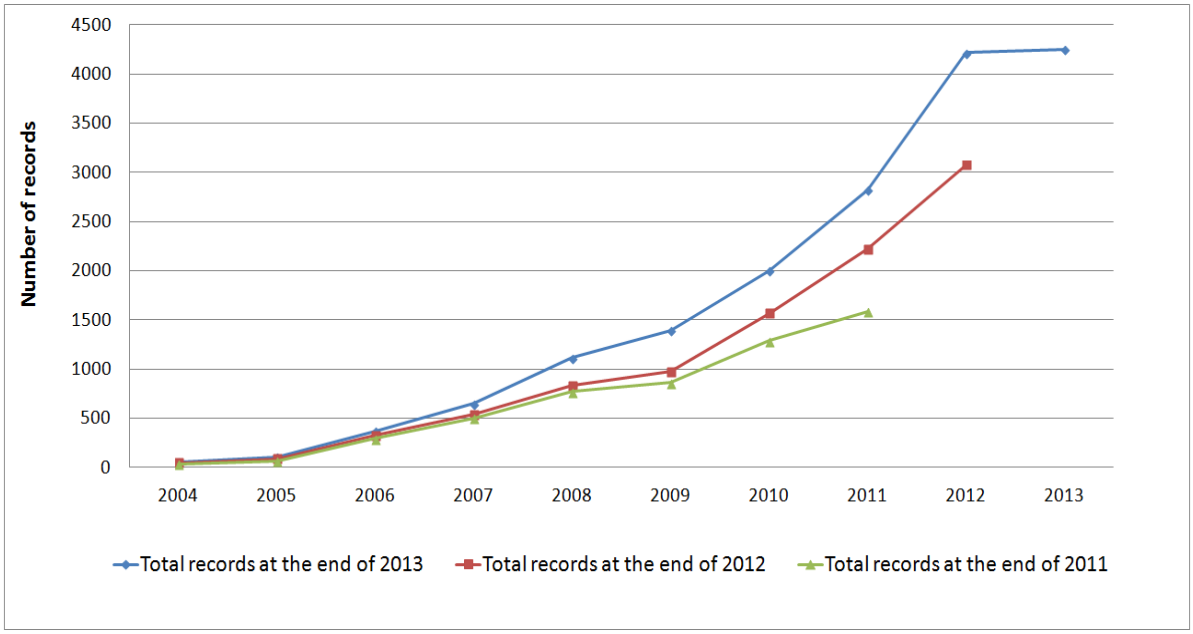

Fig. 1. Growth of the database between 2011 and 2013.

2013 was a critical turning point because a great deal of effort was made to seek out records from Flickr using techniques that could not be employed now because the design of the website has changed and has made it far more labour intensive to track down the locations where photographs were taken. It is doubtful whether such an exercise could be repeated today using volunteer labour! In 2014 much less effort has been made to pursue data from Flickr, whereas a great deal more effort has been spent supporting recruits to the UK Hoverflies Facebook page (many of whom are/were Flickr users recruited during contact to secure location data).

As there appears to have been very limited effort to quantify the potential of photography as a medium for biological recording, it seems logical to reflect on what can and cannot be done for more difficult taxa such as Diptera and Hymenoptera. There is also a need to discuss the techniques that may be employed to reach a conclusion on an individual's identity.

The quality of photographs posted varies hugely, from fuzzy long-range shots to extremely crisp photo-stacked shots. Clearly there are limits to what can be done with poor photographs, but high-resolution sharp photos can be almost as good as a specimen in a single plane. The problem is that without several photos from different angles it is unlikely that more challenging taxa will be identifiable, with occasional exceptions: hence out of 17,000 records there are small numbers of records of taxonomically difficult species such as *Cheilosia*, *Pipiza* and *Platycheirus*. In reality, however, part of this data weakness can be explained by the low numbers of photographs of these taxa posted on the internet.

Photographers who post high quality photographs on Flickr often produce shots that can be readily identified - the eye hairs of *Syrphus torvus* often show well, and on one occasion the bald patch on the underside of *Eumerus funeralis* hind

femur showed sufficiently well to allow a firm identification. Anybody wanting to see what can be done should visit Brian Valentine's (LordV) Flickr site[1]. It is perhaps no surprise that Brian was a significant contributor to photographs in the WILDGuide. High quality shots of this nature can often be enlarged to look for key characters. On occasions the hairs of the scutellum of *Epistrophe melanostoma* are sufficiently well represented to offer confidence in separating this species from *E. nitidicollis*, and there are numerous other species where it is sometimes, but not always, possible to make a firm identification. Therefore, the bigger the dataset gets, it is inevitable that the overall level of coverage will also grow. This of course depends upon the efforts made to investigate individual photographs.

I tend to copy photos into 'Paint' before cropping and re-sizing to the point where resolution is not distorted but allows detailed examination of those key features. Where it is not possible to copy photos (e.g. Flickr) I do a screen shot and then crop and re-size. Clearly, identification depends upon the degree to which critical features are shown, so those species that are most readily identified by a range of large and obvious features are most frequently identified. Obvious examples include *Episyrphus balteatus*, *Rhingia campestris* and several *Eristalis* species, plus of course big obvious species such as the *Volucella*, *Sericomyia*, *Arctophila* and some *Chrysotoxum*.

When I first started trying to identify hoverflies from photographs I was unconvinced that it would be possible for more than a small fraction of the fauna to be identified. In reality, the possibilities are much greater than might be thought, but there are obvious weak areas: *Cheilosia*, *Chrysogastrini*, *Eumerus*, Pipizines, *Platycheirus*, many (but not all) *Syrphus* and many *Eupeodes*. In many cases live animals have a 'jizz' that is not present in the dead specimen. For example, many *Melanostoma* have beautiful pea-green halteres, making the genus highly distinctive even if not all features can be seen.

The big problem is how to turn 'jizz' into a meaningful description that can be used by others. One recent contributor commented that it was time that keys were written for identification from photographs. Such an idea is not quite as far-fetched as it may seem, although I think the aspiration to be able to identify all species from photographs is unlikely to be achieved. Even so, the results to date do point to the need to pay far more attention to the possibility of photography as an adjunct to recording, even though it will never achieve the breadth of records that can be generated by a taxonomically competent recorder employing a wide variety of collecting techniques and retaining specimens for detailed examination.

Are the records useful?

The possible value of a dataset composed of records from photographs will doubtless be questioned. Some commentators might argue that there is little point in making an effort to record data of just a few very common species. Is that really true, however? After all, one needs big blocks of data to generate a dataset that can be interrogated to any level of confidence. Yes, it is always nice to get records of rarer species, but the odd record here and there will never be sufficiently robust to provide any indication of trends in abundance/ distribution. Detecting change requires a lot of data collected in a roughly similar manner, so photography potentially has a role. After all, photographers will record the animals that they see and that make themselves available for a photograph. Many of these are cosmopolitan species that may be the bellwethers for overall insect abundance, so we should not ignore them!

The data assembled from photographers will always be partial, but in the right location they may yield important information. For example, Brian Valentine's garden on the south coast has yielded a list of nearly 50 species over a ten year period. At the most basic level this is indicative of what can and does occur in a highly urbanised environment. Such records combined with the work of other photographers working in a similar manner can help to develop an ongoing monitoring programme for readily identified species. The greater the number of photographers, the more robust the dataset becomes. So, scanning the internet for photographs could be an immensely useful monitoring tool if carried out over many years.

Using this principle, in the spring of 2014 I looked at the possibility of using photographers to track phenological changes. The following graphs are based on the contributions of UK Hoverflies Facebook group members, combined with photographs posted on iSpot and on Flickr. They suggest that as the number of contributors grows, there is a strong possibility that year-on-year changes in abundance and emergence will be detectable in a substantial number of species, some of which are likely to be useful indicators of environmental change.

A first example involves the common spring species *Epistrophe eligans*. It's larvae are often predacious upon aphids on fruit trees and therefore it can be quite common in gardens. When I first started recording hovers in the 1980s I saw it most frequently in May. By 2000 its earliest dates were in the third week of March. This year it was 9 March! It is clearly very responsive to temperature and could be a really useful model for following climate change.

This year there have been good numbers of photographic posts of this species. The majority of records are from the midlands and southern England, with far fewer records from northern England and Scotland (the latter is at the extremity of its range). I therefore wondered if I could show differences in emergence at different latitudes. Even using very limited data for one year, the differences are clear when the data are cleaned by creating a three week rolling mean

[1] https://www.flickr.com/photos/lordv/sets/72157594222560977/

(Figure 2.). In this analysis it is clear that differences in emergence periods can be detected from a relatively small sample of 107 records!

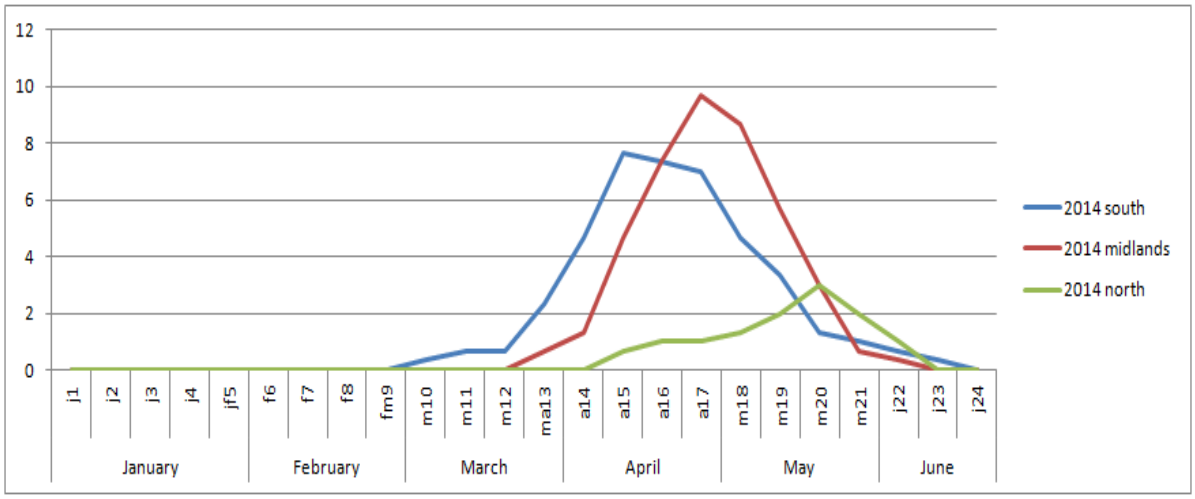

Figure 2. Phenology of *Epistrophe eligans* in 2014 using photographic data. Data are split into 3 regions: **South** - all 10km squares below a line formed below 100km squares SM0000 to TM9900; **Midlands** - below a line formed between 100km squares SC0000 and TA9900 and above the line formed below 100km squares SM0000 to TM9900; **North** - above the line formed between 100km squares SC0000 and TA9900. inter-week fluctuations are smoothed using a five week running mean.

Turning to inter-year variability, there are fewer species with adequate data at the moment but using the most recorded species *Episyrphus balteatus* (Figure 3) it is possible to show how yearly fluctuations might be followed. In the case of *Episyrphus balteatus*, the scale and timing of the main surge in populations appears to be very variable. Bearing in mind that the main HRS database largely comprised data sent in by a relatively small number of individuals each year, many of whom might not make an assiduous attempt to record the abundance of this species, it is possible that photographers whose main interest is the photograph rather than the record will actually create a more accurate record of the abundance of a particular species. After all, the photographer will generally concentrate on a subject that is available and obliging: different species will provide this opportunity at different times of year.

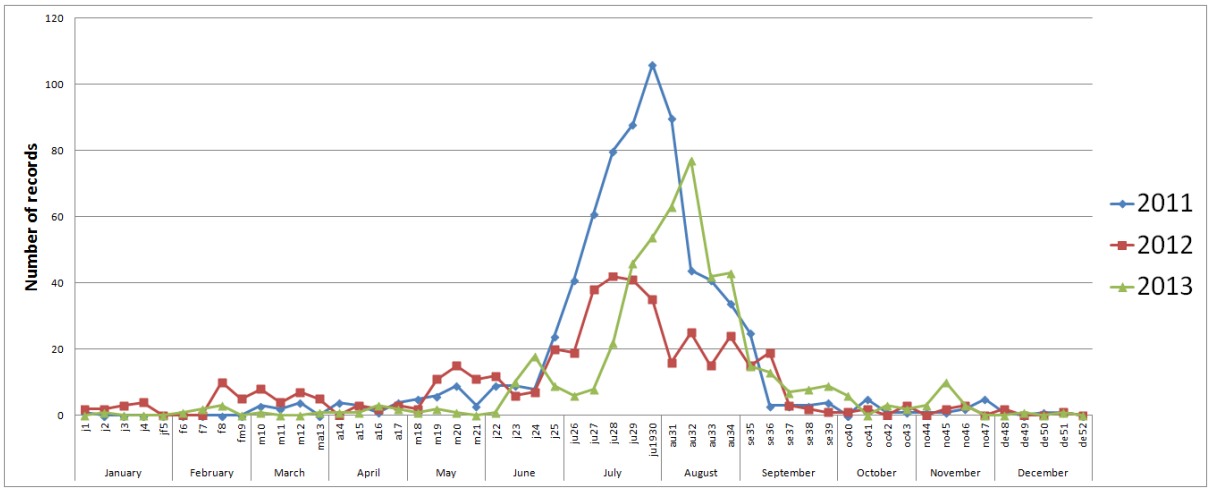

Figure 3. Inter-yearly phenology of *Episyrphus balteatus* based on photographic records.

Can other useful information be gained?

Regular evaluation of photographs has started to show me where the major identification errors occur. Shots of *Syrphus* are most frequently misidentified or given a false degree of accuracy, with huge numbers of shots of males from less than ideal angles listed as *Syrphus ribesii*. On this basis, I am inclined to the view that records of *Syrphus* in many databases are likely to contain a significant number of erroneous records unless the recorder retains and checks

specimens under the microscope. Similarly, there are frequent misidentifications of *Volucella pellucens* as *Leucozona lucorum*, *Syrphus* as either *Epistrophe diaphana/ grossulariae*, and *Eristalis pertinax* as E. *tenax*. Such errors are probably of limited consequence in the context of the size of the dataset, but they do highlight the fact that readily identifiable species can sometimes be misidentified by photographers.

All of this experience will be put to good use in developing a second and subsequent editions of the WILDGuide, and in producing new HRS products.

Myathropa florea pupa

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On the 19th April, the first Devon Fly Group field meeting of 2014 took place at Whitlands on the East Devon coast with the primary aim of trying to discover *Bombylius discolor*. Within the cleared areas of the heavily wooded coastal slopes, I examined the loose bark of a large felled trunk and found a pupa. Martin Drake, Rob Wolton and I all agreed it looked like a hoverfly so I took it home to see what would emerge. It took a mere two days for a male *Myathropa florea* to emerge. The fly had left the puparium head first via a small quadrate opening. Examination of the interior revealed a smooth silvery coating with the rough grey mottled coating forming a separate thin layer. I suspect the silver coating may be some form of breathable insulating barrier whilst the mottled external coating serves as a degree of camouflage. I have provided an image to illustrate the specimen.

Myathropa florea male (photo: Andrew Cunningham)

Large numbers of *Criorhina ranunculi* at cherry laurel

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Criorhina ranunculi is not that difficult to find in East Yorkshire in early April, being seen in small numbers wherever sallows grow - within deciduous and coniferous woodland, along river courses - anywhere where sallows and the odd larger old tree are found together. I find them every spring within the Forestry Commission plantation of Allerthorpe Common (SE7548) in ones and twos.

At Allerthorpe on 19th April this year, I happened to park in a different lay-by from my normal spot, alongside a large cherry laurel (*Prunus laurocerasus*) in full flower, growing at the edge of the Scots pines. It was buzzing with flies at a time when the Common has little to offer insects in terms of flowering plants. *Criorhina ranunculi* was the main species involved and there were several males flying around the top of the bush, at around 15ft. They were highly aggressive towards each other, flying straight at any rivals resting on a leaf or inflorescence and bumping them off their spot with their head, living up to derivation of the name *Crio-rhina* (ram's nose), as they seemed to use it like a battering ram. As well as bumping each other, I also saw them do the same to individuals of the flies *Calliphora vicina*, *Eristalis pertinax* and *Tachina ursina*, as well as the Tree Bumblebee *(Bombus hypnorum)*, any other similarly-sized rival apparently being subject to removal from their territory.

Altogether at one time I was able to count 14 individuals either in flight or at rest on a flower or leaf. Given that some were flying further up to the pines to rest, the actual numbers involved could have been much greater. The behaviour is referred to in Stubbs and Falk, but to see so many individuals participating at one time seemed exceptional, and it was interesting to witness the aggression displayed to other species.

Criorhina ranunculi male at cherry laurel (photo: Ian Andrews)

Observations on *Eumerus sabulonum*

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On 21 June this year, the Devon Fly Group visited the north Devon coast in search of this hoverfly. The first place we visited was a steep south-facing slope at Welcombe Mouth, and here we found more than 100 individuals and were able to observe them closely. The larval food plant, sheep's-bit *Jasione montana*, was abundant on the slope, having apparently responded well to the open conditions created by a fire two or three years beforehand which had removed much of the dwarf gorse *Ulex gallii* and ericaceous plants that tend to dominate coastal slopes in the area. About 20% of the ground surface was still free of vegetation. The majority of the *Eumerus* were seen flying a short distance (usually less than 50cm) from one bare patch to another, alighting briefly on the ground or a dead twig or leaf, flying up in response to any other insect flying nearby, apparently searching for mates. None was seen visiting flowers of the sheep's-bit or other herbs, and no egg laying behaviour was noted.

At the second site we visited, just south of Hartland Point, we again found *Eumerus sabulonum*, but only some 10-15 individuals. Here they were again on a sunny south-facing slope, but sheep's-bit was only locally occasional and the sward more closed. The behaviour of the flies was not observed so closely, but appeared similar to that at the first site.

A few days later, I visited a third site, near Hartland Quay, and again found the hoverfly on a sunny, south-facing slope. Here sheep's-bit was patchily common and, as at Welcombe, the slope had been burnt a few years beforehand, but it was also being grazed by hill sheep. The result was an open sward with plenty of bare ground. It would seem that the plant and the fly respond well to management such as winter burning or periodic tight grazing which leaves an open sward with much bare earth exposed.

From specimens collected, we found no difference in the intensity of the red colour on the abdominal tergites between males and females, contrary to the suggestion in British Hoverflies (Stubbs and Falk 2002).

Eumerus sabulonum (photo: Andrew Cunningham)

Odd wing venation in a female *Cheilosia albitarsis/ranunculi*

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Certain families of flies, like Tipulids and Empids, seem prone to having odd wing venation, with an extra cross vein or extensions at the bend of a vein, for example. I have not noticed this very much at all among hoverflies, though, so the venation of this female *Cheilosia albitarsis agg*. seemed unusual. As can be seen in the photo below, the cross vein r-m has split at the distal end to form a small circular cell against vein M. That circular cell then has an extension at each side and the whole three cells seem almost to have their own *vena spuria* within them. This unusual specimen was collected at Sand Dale in Dalby Forest, North York Moors on 26th May 2014. I would be interested to know how common such abnormalities are within Syrphid wing venation.

Female *Cheilosia albitarsis/ranunculi* (left) with close-up of its right wing (right) (photos: Ian Andrews)

8th International Symposium on the Syrphidae

We have received the following invitation from Björn Rulik & Ximo Mengual :

Welcome

Dear Fellow Dipterists and Friends,

We cordially invite you to attend the 8th International Symposium on Syrphidae (ISS8). On this occasion, the ISS8 will take place in the heart of Europe, in the historic town of Monschau (Germany) from 4th to 8th of June 2015. After the great time we had in Novosibirsk (Russia), the people voted to have a symposium which reflects a look back to the original model of this symposium: the engagement that stimulates new research collaborations and the delight of sharing experiences on Syrphidae. More information is already posted in our website: www.iss8.zfmk.de

This information is also posted on the www.syrphidae.com, www.nadsdiptera.org, and www.diptera.info.

We invite you to attend the ISS8 and contribute to the scientific program by presenting your research. Come and meet colleagues, get informed, exchange ideas, and have fun!

We look forward to meeting you all in Monschau.

Best regards,

Björn Rulik & Ximo Mengual
The Organising committee

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